U.S. Department of the Interior
Bureau of Land Management

March 2019

Wyoming Greater Sage-Grouse

Approved Resource Management Plan Amendment and Record of Decision

The Bureau of Land Management's multiple-use mission is to sustain the health and productivity of the public lands for the use and enjoyment of present and future generations. The Bureau accomplishes this by managing such activities as outdoor recreation, livestock grazing, mineral development, and energy production, and by conserving natural, historical, cultural, and other resources on public lands.

Cover Photo: Mark Thonhoff

Lower Bar Photos (L to R):
US Fish and Wildlife, Rachel Woita, Mark Thonhoff

ERRATA SHEET

On March 15, 2019, the Bureau of Land Management (BLM) noticed in the Federal Register (84 FR 10327) the availability of the Record of Decision (ROD) and Approved Resource Management Plan Amendment (ARMPA). The BLM has identified the need for clarification related to the BLM's protest resolution process. These modifications do not substantially change the alternatives or the analysis of effects on the human environment, therefore there is no need to supplement the National Environmental Policy Act (NEPA) analysis or issue a new ROD.

Attached you will find an errata sheet that corrects Section 2.5 (page 15) of the Wyoming Greater Sage-Grouse ROD/ARMPA. The new text has been highlighted on the attached errata sheet. You should replace these pages in your copies of the ROD/ARMPA with the corrected sheet.

2.5 Protest Resolution

The BLM's planning regulations at 43 CFR 1610.5-2 allow any person who participated in the planning process and has an interest that may be adversely affected by the BLM's planning decisions to protest proposed planning decisions within 30 days of when the notice of availability (NOA) of the Proposed RMP/Final EIS was published in the *Federal Register* (December 10, 2018).

Pursuant to the BLM's 2016 Delegation of Authority Manual (MS-1203 Delegation of Authority, Rel. 1-1779), the BLM Assistant Director for Resources and Planning and staff at the BLM Washington Office reviewed all of the protest issues. The Assistant Director concluded that the BLM Wyoming State Director followed all applicable laws, regulations, and policies and considered all relevant resource information and public input in developing the Proposed RMPA/Final EIS. Each protesting party has been notified in writing of the BLM Assistant Director's findings and the disposition of their protests. The Assistant Director resolved the protests without making significant changes to the Proposed RMPA/Final EIS, though minor clarifications were made and are summarized in Section 2.4. The Assistant Director's decisions on the protests, which are the final decisions of the US Department of the Interior (43 CFR 1610.5-2(b)), are summarized in the Protest Resolution Report which is available on the following BLM website: https://www.blm.gov/programs/planning-and-nepa/public-participation/protest-resolution-reports.

The BLM received seven timely protest submissions. Six of the protesting parties had standing. One submission was dismissed because it did not contain any valid protest points, pursuant to 43 CFR 1610.5-2. Valid Protest issues addressed in the Assistant Director's Protest Resolution Report are as follows:

Compliance with FLPMA Compliance with NEPA
Compliance with the BLM special status species policy in BLM Manual 6840
Rights governed by the Mining Law of 1872
Delegation of authority to states and local government
Compensatory Mitigation
Compliance with the Administrative Procedures Act
RDFs / Best available science

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Summary

This Record of Decision (ROD) and Approved Resource Management Plan Amendment (ARMP Amendment) support the Bureau of Land Management (BLM) Field Office RMPs in Wyoming, including the Buffalo, Casper, Cody, Kemmerer, Lander, Newcastle, Pinedale, Rawlins, Rock Springs, and Worland Field Offices. The ARMP Amendment refines some of the decisions from the 2015 planning effort related to Greater Sage-Grouse habitat management and leaves in place the majority of the decisions from 2014 and 2015. These amendments build on the work that was completed in 2015 to respond to the deteriorating health of the sagebrush landscapes of the American West and the declining population of the Greater Sage-Grouse, a ground-dwelling bird that was under consideration by the U.S. Fish and Wildlife Service (FWS) for protection under the Endangered Species Act (ESA).

The BLM has amended its RMPs for Greater Sage-Grouse habitat management in order to provide additional consistency and alignment with the State of Wyoming's Greater Sage-Grouse management strategy. On March 29, 2017, the Secretary of the Interior (Secretary) issued Secretary's Order (SO) 3349, *American Energy Independence*, which ordered agencies to reexamine practices "to better balance conservation strategies and policies with the equally legitimate need of creating jobs for hard-working American families." On June 7, 2017, the Secretary issued SO 3353, with a purpose of enhancing cooperation among 11 western states and the BLM in managing and conserving Greater Sage-Grouse. SO 3353 directed an Interior Review Team, consisting of the BLM, FWS, and the U.S. Geological Survey (USGS), to coordinate with the Greater Sage-Grouse Task Force. The agencies were also directed to review the 2015 Greater Sage-Grouse plans and associated policies to identify provisions that may require modification to make the plans more consistent with the individual state plans and to better balance the BLM's multiple-use mission. On August 4, 2017, the Interior Review Team submitted its report in response to SO 3353, and recommended modifying the Greater Sage-Grouse plans and associated policies to better align with the individual state plans.

BLM Wyoming has amended its RMPs to achieve greater consistency with the State of Wyoming's Sage-Grouse conservation strategy, while continuing to protect and conserve Greater Sage-Grouse habitat.

1. Introduction

The Bureau of Land Management (BLM) manages Greater Sage-Grouse habitat as part of the agency's multiple use mission. In 2015, resource management plans that guide conservation of sagebrush steppe habitat on BLM-administered public lands in 9 western states were amended to include specific management allocations, resource objectives, and management actions for designated Greater Sage-Grouse Habitat Management Areas to help ensure conservation, enhancement, and restoration of Greater Sage-Grouse habitat. Six resource management plans covering BLM-managed public lands in Wyoming were amended at this time, and in 2014 and 2015, four resource management plans were revised, to reach this objective.

The BLM has used these initial resource management plans as a platform for its ongoing commitment to on-the-ground activities that promote conservation through close coordination with state, local, and private partners. Most notably, in coordination with the contributions of multiple partners, the BLM has treated an increasing number of acres of sagebrush steppe habitat in every fiscal year since 2015, accomplishing important goals for sage-grouse conservation and for other programs and activities, including fuels, riparian, and range management.

These habitat projects show that successful conservation of Greater Sage-Grouse requires a shared stewardship vision among states, private citizens, landowners and federal land management agencies. Current law and regulations put state and local agencies at the forefront of efforts to maintain healthy fish and wildlife populations and to conserve at-risk species. State-led efforts to conserve Greater Sage-Grouse and its habitat date back to the 1950s. For the past two decades, state wildlife agencies, local agencies, federal agencies and many others interested in the health of the species have been collaborating to conserve Greater Sage-Grouse and its habitats across its range.

With the publication of these Records of Decision (RODs) and Approved Resource Management Plan Amendments (ARMPAs), the BLM is now concluding a planning effort focused on furthering cooperation with western states by ensuring greater consistency between individual state plans for managing the Greater Sage-Grouse as a wildlife species and the BLM's multiple-use mission for managing public land resources, including wildlife habitat. The planning process has given the BLM an opportunity to work with states and other partners to promote shared conservation goals, strike a regulatory balance, and build trust as we find ways to sustainably utilize public land resources for multiple-uses. The effort focused on ways to increase management flexibility, maintain access to public resources, promote positive conservation outcomes for Greater Sage-Grouse, and incorporate new information that is considered the best available science and is rooted in on-the-ground experience.

On October 11, 2017, following direction in Secretary's Order (SO) 3353 to enhance cooperation among western states and the BLM in managing and conserving Greater Sage-Grouse, the BLM issued a Notice of Intent (NOI) to amend the 2015 Resource Management Plans (RMPs) guiding Greater Sage-Grouse habitat management, focused on bringing the plans into closer alignment with the individual states' species management plans and conservation strategies. Reflecting the commitment by the Department of the Interior (DOI), the NOI indicated that states would play a central role in the planning process, and state partners have declared their desire to avoid the need to list Greater Sage-Grouse under the Endangered Species Act (ESA).

On May 4, 2018, the BLM released Draft Resource Management Plan Amendments and Environmental Impact Statements (Draft RMPA/EISs) for Wyoming and six other western states that considered and

analyzed the potential impacts of a No Action Alternative and a Management Alignment Alternative. While all changes proposed in the Alignment alternatives were meant to enhance coordination with respective state plans, variations reflected the different approaches states are taking within their jurisdictions to conserve Greater Sage-Grouse and the BLM's determination that greater flexibility was needed to ensure that each state can manage the habitat within its borders for the particular needs of its landscapes and communities.

On December 7, 2018 the BLM released the Proposed Resource Management Plan Amendments and Final Environmental Impact Statements (Proposed RMPA/FEISs) for a 30-day protest period (which was extended during the temporary lapse in Federal government funding) and a 60-day Governor's Consistency Review. The proposed plans built on the 2014 and 2015 revisions and amendments to the RMPs, and incorporated 3 years of on-the-ground experience with what is working to conserve sage-grouse habitat on public lands in support of healthy populations managed and conserved by the states.

Together, the amended plans retain the priority habitat designation (PHMA) for 29 million acres of BLM-administered sagebrush-steppe, where the management priority is: to open to oil and gas leasing, but with restrictions; to exclude or avoid disturbance to sage-grouse and their habitat; and to minimize impacts to PHMA where they cannot be avoided. Another 23 million acres retain identification as general habitat (GHMA), where avoidance and minimization are applied flexibly, consistent with both local conditions and the State's science-based objectives for species management. The plans for BLM-administered lands in Wyoming include protections for 8 million acres of PHMA on BLM-managed surface and another 3.4 million acres of PHMA on BLM-administered federal mineral estate beneath non-federal surface ownership or National Forest System lands.

Including habitat in Montana, North Dakota, and South Dakota, a total of approximately 32 million surface acres will be managed as priority habitat across the Greater Sage-Grouse's range, while another approximate 25 million acres are designated general habitat. The plans for BLM lands in Wyoming include additional habitat categories, acreages and management objectives specific to the states' needs. Trigger points remain in place for BLM-managed habitat to indicate when adaptive management measures are needed to address population declines in designated habitat. The amended plans also outline procedures once it is determined that a decline has been stopped and reversed.

Finally, the amended plans formalize coordination between the BLM and respective states in applying compensatory mitigation measures to approved actions. These plans reflect the BLM's determination that the Federal Land Policy and Management Act of 1976 (FLPMA) does not explicitly mandate or authorize the BLM to require public land users to implement compensatory mitigation as a condition of obtaining authorization for the use of BLM-administered lands. The plans clarify that the BLM will consider compensatory mitigation only as a component of compliance with a state mitigation plan, program, or authority; other federal law; or when offered voluntarily by a project proponent.

The amended plans reinvigorate the Department of the Interior's commitment to collaborate with our neighbors in conserving sagebrush habitats and sage-grouse populations. Further, the amended plans reflect the BLM's determination that greater flexibility for each state to manage Greater Sage-Grouse and sagebrush habitat will lead to improved outcomes for the species.

1.1 Purpose and Need for Action

The Federal Land Policy and Management Act (FLPMA) of 1976 provided the BLM with the discretion and authority to manage public lands for multiple use and sustained yield and declared it the policy of the United States to coordinate the land use planning process with other federal, state, and local

governments. Further, FLPMA specifically provides that it neither enlarges nor diminishes the authority of the states in management of fish and wildlife. As the sovereign with the lead role in managing game species, including Greater Sage-Grouse, states play a critical role in conserving and restoring the Greater Sage-Grouse and its habitat. The BLM's purpose and need in preparing the PRMPAs is to modify the approach to Greater Sage-Grouse management in existing land use plans through (1) enhancing cooperation and coordination with the State of Wyoming (2) aligning with DOI and BLM policy directives that have been issued since 2015, and (3) incorporating appropriate management flexibility and clarifications to better align with Wyoming's conservation plan.

1.2 Description of the Planning Area

The planning area for this Greater Sage-Grouse RMP amendment consists of lands within all the BLM Wyoming Field Offices: Buffalo, Casper, Cody, Kemmerer, Lander, Newcastle, Pinedale, Rawlins, Rock Springs, and Worland (Map 1-1). The decision area is BLM-administered lands and federal mineral estate in Greater Sage-Grouse habitat (Map 1-2).

The BLM manages approximately 17,500,000 acres of surface estate and 40,700,000 acres of federal mineral estate in Wyoming. The decision area encompasses approximately 17,000,000 acres of surface and 28,000,000 acres of federal mineral estate. Table 1-1, below, identifies the acreage of Priority Habitat Management Areas (PHMAs) and General Habitat Management Areas (GHMAs) for federal surface and federal mineral estate in each field office across the decision area.

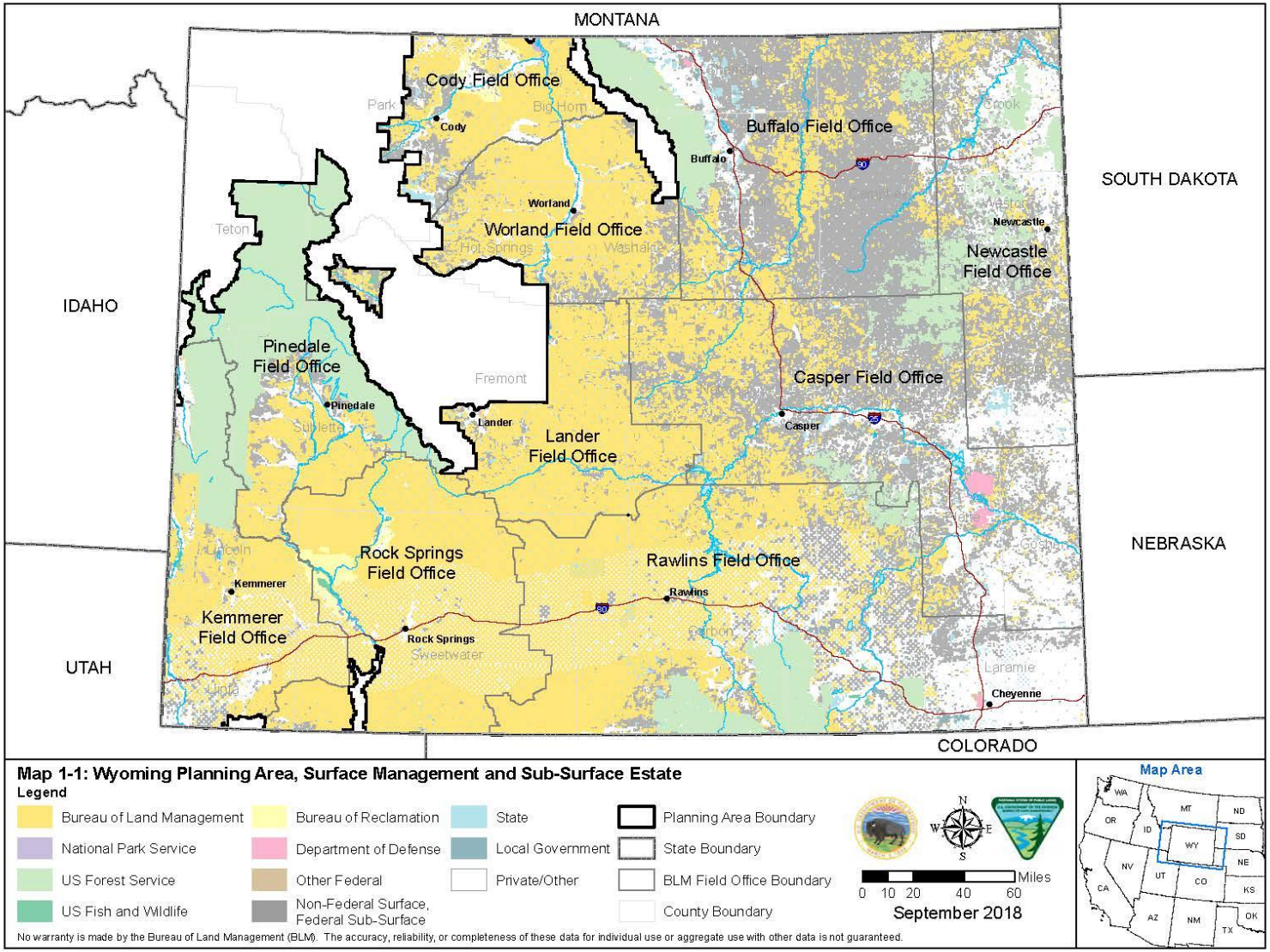
Table 1-1
Acres of Greater Sage-Grouse Habitat by BLM Field Office in the Decision Area

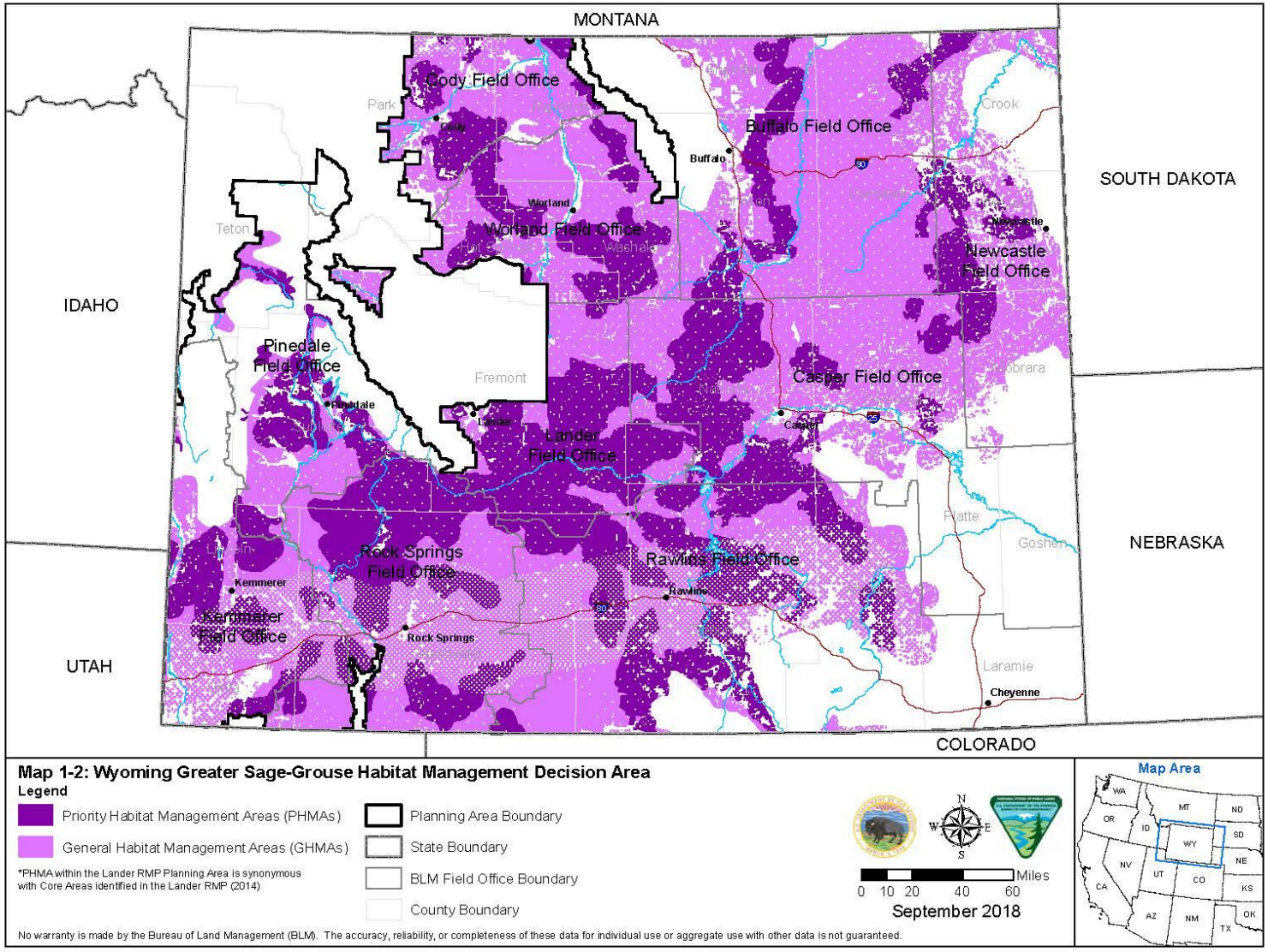
BLM Office	PHMA Acres		GHMA Acres		Total Habitat Acres	
	BLM Surface	Federal Mineral	BLM Surface	Federal Mineral	BLM Surface	Federal Mineral
Buffalo Field Office	136,877	840,465	627,579	3,994,864	764,456	4,835,329
Casper Field Office	726,376	1,561,575	531,643	2,281,859	1,258,019	3,843,434
Cody Field Office	317,262	435,451	769,356	1,101,459	1,086,618	1,536,910
Kemmerer Field Office	632,810	686,546	768,146	910,615	1,400,956	1,597,161
Lander Field Office*	1,686,648	1,888,629	685,289	882,057	2,371,937	2,770,686
Newcastle Field Office	81,468	529,358	169,349	1,150,165	250,817	1,679,523
Pinedale Field Office	421,079	675,858	491,028	818,530	912,107	1,494,388
Rawlins Field Office	1,520,006	1,920,060	1,916,257	2,384,409	3,436,263	4,304,469
Rock Springs Field Office	1,731,730	1,808,975	1,865,180	1,920,425	3,596,910	3,729,400
Worland Field Office	797,448	1,019,544	1,301,942	1,670,110	2,099,390	2,689,654
Total decision area acres	**8,051,704**	**11,366,461**	**9,125,769**	**17,114,493**	**17,177,473**	**28,480,954**

Table 1-1
Acres of Greater Sage-Grouse Habitat by BLM Field Office in the Decision Area

BLM Office	PHMA Acres		GHMA Acres		Total Habitat Acres	
	BLM Surface	Federal Mineral	BLM Surface	Federal Mineral	BLM Surface	Federal Mineral

*The Lander Field Office does not contain PHMA/GHMA designations but rather uses the terminology of core and non-core areas, similar to the State of Wyoming's Executive Orders.


MONTANA
SOUTH DAKOTA
IDAHO
NEBRASKA
UTAH
COLORADO
Cody Field Office
Buffalo Field Office
Worland Field Office
Newcastle Field Office
Pinedale Field Office
Casper Field Office
Lander Field Office
Rock Springs Field Office
Rawlins Field Office
Kemmerer Field Office
Park
Cody
Big Horn
Buffalo
Johnson
Sheridan
Crook
Weston
Newcastle
Worland
Washakie
Hot Springs
Teton
Fremont
Pinedale
Sublette
Lander
Natrona
Casper
Converse
Niobrara
Goshen
Lincoln
Kemmerer
Rawlins
Carbon
Rock Springs
Sweetwater
Uinta
Albany
Laramie
Cheyenne
Map 1-1: Wyoming Planning Area, Surface Management and Sub-Surface Estate
Legend
Bureau of Land Management
National Park Service
US Forest Service
US Fish and Wildlife
Bureau of Reclamation
Department of Defense
Other Federal
Non-Federal Surface, Federal Sub-Surface
State
Local Government
Private/Other
Planning Area Boundary
State Boundary
BLM Field Office Boundary
County Boundary
N
W
E
S
0 10 20 40 60
Miles
September 2018
No warranty is made by the Bureau of Land Management (BLM). The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.
Map Area
WA
OR
CA
ID
NV
MT
WY
UT
AZ
CO
NM
ND
SD
NE
KS
OK
TX


MONTANA
SOUTH DAKOTA
IDAHO
NEBRASKA
UTAH
COLORADO
Cody Field Office
Buffalo Field Office
Worland Field Office
Newcastle Field Office
Pinedale Field Office
Casper Field Office
Lander Field Office
Rock Springs Field Office
Rawlins Field Office
Kemmerer Field Office
Park
Crook
Teton
Fremont
Platte
Goshen
Laramie
Cheyenne
Buffalo
Worland
Newcastle
Pinedale
Lander
Casper
Rawlins
Rock Springs
Kemmerer
Map 1-2: Wyoming Greater Sage-Grouse Habitat Management Decision Area
Legend
Priority Habitat Management Areas (PHMAs)
General Habitat Management Areas (GHMAs)
*PHMA within the Lander RMP Planning Area is synonymous with Core Areas identified in the Lander RMP (2014)
Planning Area Boundary
State Boundary
BLM Field Office Boundary
County Boundary
N
W
E
S
Miles
0 10 20 40 60
September 2018
No warranty is made by the Bureau of Land Management (BLM). The accuracy, reliability, or completeness of these data for individual use or aggregate use with other data is not guaranteed.
Map Area
WA
OR
CA
ID
NV
MT
WY
UT
AZ
CO
NM
ND
SD
NE
KS
OK
TX

Current management for Greater Sage-Grouse conservation in Wyoming is provided in the Resource Management Plan Amendments for Greater Sage-Grouse in the Casper, Kemmerer, Newcastle, Pinedale, Rawlins, and Rock Springs Field Offices, as well as the RMPs for Buffalo, Cody, Lander, and Worland; however, management actions proposed in this Final EIS/Proposed RMPA would not be universally applied across all RMPs. There are various management decisions in the existing ARMPA, for example, that apply only to the ARMPA decision area and not to the Lander, Buffalo, Cody, or Worland RMPs because those RMPs were developed independently as land use plan revisions.

The Lander RMP revision, although completed in 2014, is being included in this RMPA because there are some proposed management actions that will apply to the Lander RMP. For example, one of the actions the BLM proposes is to update its Greater Sage-Grouse habitat management area designations when the State of Wyoming updates its core areas. This management action will apply to Lander, along with the other plans; however, there are several actions (identified by No Similar Action in **Table 1-2**) that do *not* apply to the Lander RMP. See **Chapter 2** for more information.

1.3 Planning Criteria

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

- The BLM will comply with all laws, regulations, policies, and guidance related to public lands management and implementing the National Environmental Policy Act (NEPA) on BLM-administered lands.
- Greater Sage-Grouse is a state-managed species that depends on sagebrush steppe habitats managed in partnership by federal, state, and local authorities. In making management determinations on BLM-administered lands, the BLM will use, to the fullest extent practicable, state game and fish agencies' Greater Sage-Grouse data and expertise.
- Lands addressed in the RMPA will be BLM-administered land in Greater Sage-Grouse habitats, including surface and split-estate lands with federal subsurface mineral rights. Any decisions in the RMPA will apply only to BLM-administered lands.
- This RMPA will comply with orders of the Secretary, including SO 3353 (Greater Sage-Grouse Conservation and Cooperation with Western States), which strives for compatibility with state conservation plans.
- The EIS supporting this RMPA incorporated, as appropriate, information in a USGS report that identified and annotated Greater Sage-Grouse science published since January 2015 (Carter et al. 2018) and a report that synthesized and outlined the potential management implications of this new science (Hanser et al. 2018).
- This RMPA will comply with BLM Manual 6840, Special Status Species Management.
- This RMPA will recognize valid existing rights.
- All activities and uses in Greater Sage-Grouse habitats will be managed to achieve Greater Sage-Grouse objectives and existing land health standards.

- This RMPA will not amend land use allocations or decisions for other resources under existing RMPs, such as wilderness study areas, areas of critical environmental concern, and riparian areas.

1.4 Clarification of Planning Decisions from the 2014 and 2015 Amendments and Revisions

The following issues with existing planning decisions were either raised during scoping or during the Draft EIS comment period. These issues did not require new analysis or planning level decisions, but do require some clarification. The BLM intends to address these issues outside of the current planning process.

- Clarification is required for implementation level actions on restrictions that should be applied only to PHMA. Based on language in the existing land use plans, there has been some confusion regarding application of PHMA-type restrictions in non-PHMA areas. BLM Wyoming will clarify this with future step-down guidance for implementation level actions.

- Currently, there is no direction on how the BLM and the State of Wyoming could work to incentivize development outside PHMA. The BLM will work with the State of Wyoming in determining the appropriate path forward in incentivizing development outside PHMAs.

- The State of Wyoming has identified several de minimis activities that are exempt from the requirements and restrictions of the Governor's Executive Order for Greater Sage-Grouse Core Area Protection (Executive Order 2015-4). These include activities such as residential and agricultural electric utilities, fence modifications, and small impoundment development, among other activities. Currently, the BLM has several categorical exclusions that may be used to satisfy the requirements of NEPA when some such proposals are received on BLM-administered lands. Other de minimis activities are not covered by an appropriate categorical exclusion, so the BLM must comply with NEPA by preparing an environmental assessment or, as appropriate, an EIS. BLM Wyoming will issue guidance to field offices regarding the appropriate use of categorical exclusions for those actions where categorical exclusions exist. BLM Wyoming will also explore the development of a programmatic NEPA analysis for other activities that the State of Wyoming considers de minimis in order to enable, as appropriate, field offices to use other tools, such as a determination of NEPA adequacy, to authorize projects.

- The 2015 ARMPA and ARMP developed a suite of Required Design Features (RDFs) that should be applied at the project and/or site-specific level when projects are proposed in Greater Sage-Grouse habitat. There has been some confusion relating to when these RDFs should be applied; therefore, BLM Wyoming will develop guidance and clarification on the use of RDFs when they are applied at the implementation level. RDFs are to be used as appropriate at the site-specific level and should not be assumed to apply to all projects.

- Recognizing that the Greater Sage-Grouse is a state managed species, the BLM will work with the State of Wyoming (primarily the Wyoming Game and Fish Department) when considering timing stipulation exception requests submitted by fluid mineral lease developers. Following an environmental record of review, the BLM can and does approve exception requests. The BLM will consider the analysis completed by the WGFD when preparing the appropriate environmental record of review and will document appropriate measures to avoid, minimize, and analyze State-imposed compensatory mitigation (when and where required) following the

State of Wyoming Greater Sage-Grouse Compensatory Mitigation Framework (see Management Decision Tables). Exceptions, waiver, and modifications will incorporate these management goals, objectives, and decisions as exception criteria.

2. Approved Resource Management Plan Amendment

2.1 Summary of the Approved Resource Management Plan Amendment

The decision is hereby made to approve the Wyoming Greater Sage-Grouse RMP Amendments. This Approved Resource Management Plan Amendment (ARMPA) amends the following RMPs in Wyoming for Greater Sage-Grouse Habitat Management:

- Buffalo (2015)
- Cody (2015)
- Casper (2007)
- Kemmerer (2008)
- Lander (2014)
- Newcastle (2000)
- Rawlins (2008)
- Rock Springs (1997)
- Pinedale (2008)
- Worland (2015)

The decisions included in this ROD and ARMPA amend the RMPs for the above BLM Field Offices. Not all decisions in this ARMPA apply to all RMPs. Please see **Section 2.7** of this ROD for specifics on which RMPs are being amended for which actions. Although decisions identified in the ARMPA are final and effective when this ROD is signed, the BLM will continue to prepare environmental assessments and environmental impact statements where appropriate as part of the implementation level planning and decision-making. All future resource use authorizations in Greater Sage-Grouse habitat will conform to, or be consistent with, the decisions contained in this ARMPA. This ARMPA does not repeal or diminish valid existing rights on public lands.

2.2 What the ROD and ARMPA Provide

The decisions provided in this ROD and ARMPA build upon the decisions contained in the 2014 and 2015 RMP Amendments and Revisions. This ARMPA provides clarification and consistency with the State of Wyoming's Greater Sage-Grouse Core Area Strategy for the following topics:

- Updating Habitat Management Areas;
- Removal of the Sagebrush Focal Area designation;
- Clarifying the habitat objectives tables;
- Noise thresholds and monitoring;
- Adaptive management; and
- Compensatory mitigation.

The decisions in this ARMPA do not modify all of the existing decisions in the 2014 and 2015 RMP Amendments and revisions. Only those decisions pertaining to the issues identified above are affected.

Please see Appendix A for the complete list of existing and new decisions for the RMPs that are applicable on BLM Wyoming administered surface and federal mineral estate in Greater Sage-Grouse habitat.

2.3 What the ROD and ARMPA Do Not Provide

The ARMPA does not contain decisions for public lands outside of Greater Sage-Grouse Habitat Management Areas.

The ARMPA does not violate or diminish existing valid rights nor contain decisions for mineral estates that are not administered by the BLM. ARMPA decisions for surface estate only apply to BLM-administered lands (BLM Wyoming administered surface and federal mineral estate). In addition, many decisions are not appropriate at this level of planning and are not included in this ROD. For example:

- Statutory requirements: The decision does not change the BLM's responsibility to comply with applicable laws, rules, and regulations.
- National policy: The decision does not change the BLM's obligation, consistent with applicable laws and regulations, to implement current or future national policy.
- Funding levels and budget allocations: These are determined annually at the national level and are beyond the control of State, District, or Field Offices.

Implementation decisions generally authorize on-the-ground activities, usually at a specific location. They generally require appropriate site-specific consideration and NEPA analysis. Such decisions may be incorporated into broader implementation plans (activity or project plans) or may be stand-alone decisions. This ARMPA does not contain any implementation decisions.

2.4 Modifications and Clarifications

The ARMPA contains minor modifications and clarifications from the Proposed RMPA based on comments received during the 30-day protest period, the resolution of protests, and the Governor's consistency review.

General Management Direction
Management Direction (MD) GMD 23 in Appendix A was revised to clarify that if an inconsistency is noted between the decisions or appendices in this Greater Sage-Grouse ARMPA and the 2015 Greater Sage-Grouse ARMPA or previous RMP decisions on Greater Sage-Grouse, the decisions and appendices found in this ARMPA apply. It also clarifies that other resource decisions, even if more restrictive than an overlapping Greater Sage-Grouse decision, will be retained.

Special Status Species (SSS)
Text revisions were made in Appendix A to MDs SSS 7-10 in order to reduce redundancy. The sentence "Activities in unsuitable habitats will be evaluated under the exceptions and modifications criteria and shall be allowed on a case by case basis" was removed as it is assumed that consideration of activities in unsuitable habitats is included in the State's mitigation framework process.

Text revisions were made to management direction MD SSS 12 to include reference to the amended management direction SSS 4 that describes interaction with the State of Wyoming for mitigation.

Lander RMP MD 4104, 4015, 4106, 4107, and 4108 were modified to provide clarification consistent with the amended MD SSS 4 (Lander's new MD 4134).

Appendix C
Additional text was added to Step 2.3 in Appendix C to reference the use of established tools and processes to determine impacts of proposed undertakings on the Greater Sage-Grouse Core Area populations.

Appendix C was modified to state that it would include this appendix in the Lander RMP Revision as a new appendix, Appendix Q.

*Tables depicting the Greater Sage-Grouse Management Decisions for this amendment and for each of the 2014 Lander RMP Revision and 2015 Buffalo, Worland, and Cody RMP Revisions are attached (Appendix A).

2.5 Protest Resolution

The BLM's planning regulations at 43 CFR 1610.5-2 allow any person who participated in the planning process and has an interest that may be adversely affected by the BLM's planning decisions to protest proposed planning decisions within 30 days of when the notice of availability (NOA) of the Proposed RMP/Final EIS was published in the *Federal Register* (December 7, 2018).

The Office of the BLM Director concluded that the BLM followed all applicable laws, regulations, and policies and considered all relevant resource information and public input in developing the Proposed RMPA/Final EIS. Each protesting party has been notified in writing of the BLM's findings and the disposition of their protests. The Office of the Director resolved the protests without making significant changes to the Proposed RMPA/Final EIS, though minor clarifications were made and are summarized in Section 2.4. The Office of the Director's decisions on the protests are summarized in the Proposed RMPA / Final EIS Protest Resolution Report which is available on the following BLM website: https://www.blm.gov/programs/planning-and-nepa/public-participation/protest-resolution-reports.

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Delegation of authority to states and local government
Compensatory Mitigation
Compliance with the Administrative Procedures Act
RDFs / Best available science

2.6 Governor's Consistency Review

The BLM's planning regulations require that RMPs be "consistent with officially approved or adopted resource-related plans, and the policies and procedures contained therein, of other Federal agencies, State and local governments, and Indian tribes, so long as the guidance and resource management plans also are consistent with the purposes, policies, and programs of Federal laws and regulations applicable to public lands" (43 CFR 1610.3-2(a)). The BLM is aware that there are specific State laws and local plans relevant to aspects of public land management that are separate and independent of Federal law. However, the BLM is bound by Federal law; as a consequence, there may be inconsistencies that cannot be reconciled. The FLPMA and its implementing regulations require that the BLM's RMPs be consistent with officially approved State and local plans only if those plans are consistent with the purposes, policies, and programs of Federal laws and regulations applicable to public lands.

The 60-day Governor's consistency review period ended on February 28, 2019. The Governor of Wyoming submitted a letter to the BLM Wyoming State Director, asserting inconsistencies between the BLM's Proposed RMPA/Final EIS and the State's or local governments' resource-related plans and procedures, as well as other concerns that they had with her proposed planning documents. The BLM Wyoming State Director accepted all of the Governor's recommendations and incorporated the changes into the final RMP.

2.7 Goals, Objectives, and Management Decisions

This section of this ROD identifies the goals, objectives, and management decisions associated with the Approved RMP Amendment. The majority of the goals, objectives, and management decisions remain the same as those identified and approved in the 2014 Lander RMP revision, the 2015 RMP Revisions, and the 2015 RMP Amendments. In addition, not all of the amended management decisions will apply to all RMPs in Wyoming; the RMPs to which the amended management decisions apply are also identified. The goals, objectives, and management decisions that *have not* changed and are still in full force and effect are presented below the management decisions that have been amended.

New and Amended Decisions that apply to all RMPs in Wyoming:

New Management Decision 1: The BLM will update its Greater Sage-Grouse habitat management areas, including biologically significant units (BSUs), in conjunction with the State of Wyoming's core areas, upon issuance of any Wyoming Governor's Executive Order revising or amending the core area boundaries and upon completion of appropriate NEPA analysis and process. The BLM will complete the appropriate NEPA documentation (including appropriate public comment) prior to adopting any revised core area boundaries (e.g., maintenance action or plan amendment, environmental assessment, etc.).

Amended MD SSS 12 (Casper, Kemmerer, Newcastle, Pinedale, Rawlins, Rock Springs); Amended #SS WL 4025 (Buffalo); Amended #4111 (Cody); Amended # 4110 (Worland); Amended #4117 (Lander): Within PHMA (core only), new project noise levels, either individual or cumulative, should not exceed 10 dBA (as measured by L50) above baseline noise at the perimeter of the lek (or lek center if no perimeter is yet mapped) from 6:00 pm to 8:00 am during the breeding season (March 1–May 15). The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD SSS 4). In coordination with the State of Wyoming, specific noise protocols for measurement and implementation will be developed as additional research and

information emerges. These measures would be considered at the site-specific project level where and when appropriate.

Amended MD SSS 4 (Casper, Kemmerer, Newcastle, Pinedale, Rawlins, Rock Springs); New Management Decision 2 (Buffalo, Cody, Lander, Worland): Specific to management for Greater Sage-Grouse, all RMPs are amended as follows:

Adopt the State of Wyoming's Greater Sage-Grouse Compensatory Mitigation Framework to the extent consistent with federal law, regulations, and policy.

In all Greater Sage-Grouse habitat, when authorizing third-party actions in designated Greater Sage-Grouse habitat, the BLM will seek to achieve the planning-level Greater Sage-Grouse management goals and objectives through implementation of mitigation and management actions, consistent with valid existing rights and applicable law. Under this Plan Amendment, management would be consistent with the Greater Sage-Grouse goals and objectives, and in conformance with BLM Manual 6840, Special Status Species Management. In accordance with BLM Manual 6840, the BLM will undertake planning decisions, actions and authorizations "to minimize or eliminate threats affecting the status of [Greater Sage-Grouse] or to improve the condition of [Greater Sage-Grouse] habitat" across the planning area.

Accordingly, before authorizing third-party actions that result in habitat loss and degradation, the BLM will complete the following steps, in alignment with the Governor of Wyoming's Executive Order 2015-4 (July 29, 2015):

1. Work jointly with the WGFD to evaluate projects and recommend mitigation in the form of avoidance and minimization.
2. The WGFD will determine if the State requires or recommends any additional mitigation – including compensatory mitigation – under State regulations, policies, or programs related to the conservation of Greater Sage-Grouse.
3. Incorporate state required or recommended mitigation into the BLM's NEPA decision-making process, if the WGFD determines that compensatory mitigation is required to address impacts to GRSG habitat as a part of State policy or authorization, or if a proponent voluntarily offers mitigation.
4. Analyze whether the compensatory mitigation (deferring to the appropriate State authority to quantify habitat offsets, durability, and other aspects used to determine the recommended compensatory mitigation action):
   - achieves measurable outcomes for Greater Sage-Grouse habitat function on a landscape scale as determined by WGFD that are at least equal to the lost or degraded values in accordance with the Governor of Wyoming's Executive Order 2015-4.
   - provides benefits that are in place for at least the duration of the impacts.
   - accounts for a level of risk that the mitigation action may fail or not persist for the full duration of the impact.
5. Ensure mitigation outcomes are consistent with the State of Wyoming's mitigation strategy and principles outlined in 2018 Approved RMPA Appendix C, The Greater Sage-Grouse Habitat Management Strategy.

The BLM has determined that compensatory mitigation must be voluntary unless required by other applicable law and in recognition that State authorities may also require compensatory mitigation (IM 2019-018, *Compensatory Mitigation*, December 6, 2018). Therefore, consistent with valid existing rights and applicable law, when authorizing third-party actions that result in habitat loss and degradation, the BLM will consider voluntary compensatory mitigation actions only as a component of compliance with a State mitigation plan, program, or authority, or when offered voluntarily by a project proponent.

Project-specific analysis will be necessary to determine how a compensatory mitigation proposal addresses impacts from a proposed action. The BLM will cooperate with the State to determine appropriate project design and alignment with State policies and requirements, including those regarding compensatory mitigation. When the BLM is considering compensatory mitigation as a component of the project proponent's submission or based on a mitigation requirement from the State, the BLM's NEPA analysis would evaluate the need to avoid or minimize impacts of the proposed project and achieve the goals and objectives of this RMPA. The BLM will defer to the appropriate State authority to quantify habitat offsets, durability, and other aspects used to determine the recommended compensatory mitigation action.

The following amended decisions apply to the Casper, Kemmerer, Newcastle, Pinedale, Rawlins, and Rock Springs RMPs:

Amended MD SSS 14: Lands identified as Sagebrush Focal Areas (SFAs) will no longer be designated as SFAs. Lands previously identified as SFAs will be managed as Priority Habitat Management Areas (PHMAs), consistent with Core Area boundaries.

Amended MD MR 12: Areas previously identified as recommended for withdrawal from location and entry under the Mining Law of 1872 in the 2015 RMP Amendments for the Casper, Kemmerer, Newcastle, Pinedale, Rawlins, and Rock Springs RMPs are no longer recommended for withdrawal. While the BLM proposed to withdraw these areas in 2015, the BLM canceled the proposed withdrawal, as noticed in the Federal Register (82 FR 47248), on October 11, 2017.

Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows:
A total of approximately 21,251,690 acres are open to locatable mineral location and entry (Map 2-3). Operators may be requested to submit modifications to the accepted notice or approved plan of operations so that the operations minimally impact PHMA. The AO may convey to the operator suggested conservation measures, based on 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 and 36 CFR 228.3). 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 Greater Sage-Grouse 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 and 36 CFR 228.3. The request containing the suggested conservation measures must make clear that the operator's compliance is not mandatory.

Notices or Plans of Operation, or modifications thereto, submitted following the issuance of this guidance: As part of the 15-day completeness review of notices [or modifications thereto] and 30-day completeness review of plans of operations [or modifications thereto], the proposed project area(s) where exploration, development, mining, access and reclamation will take place shall be reviewed for overlap of PHMA in the corporate GIS database. If there is overlap, the BLM AO may notify the operator of ways that they may minimize impacts on PHMA 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.
(see also MD SSS 4 through MD SSS 10 and MD SSS 12)

For values other than Greater Sage-Grouse, the following RMP decisions remain in effect:

1,785,230 acres are withdrawn from mineral entry for the protection of sensitive resources.

Amended Management Objective #6: Develop specific habitat objectives to protect, enhance, or restore Greater Sage-Grouse priority habitat based on Ecological Site Descriptions (ESDs) and BLM land health evaluations (including within wetlands and riparian areas) taking into account site history (historic treatments or habitat manipulations) that have changed the soil chemistry, possibly altering the ESD.

Amended MD LG 8: In PHMA, existing range improvements (e.g., fences and livestock/wildlife watering facilities) would continue to be evaluated and modified when necessary. Supplements and supplemental feeding will continue to be authorized where appropriate.

Amended MD LG 10: In PHMA, for riparian and/or wet meadow communities utilized by Greater Sage-Grouse, livestock grazing will be managed to promote the production and availability of beneficial grasses and forbs for use during brood-rearing, while maintaining upland conditions and functions.

Amended Management Objective #14: Where the BLM has a backlog of Expressions of Interest for leasing, the BLM will prioritize its work first in non-habitat management areas, followed by lower priority habitat management areas (e.g., GHMA) and then higher priority habitat management areas (i.e., PHMA). To the extent consistent with federal regulation, law, and policy, priority would be given to leasing and development of fluid mineral resources, including geothermal, outside of PHMAs. When analyzing leasing and authorizing development of fluid mineral resources, including geothermal, in PHMAs, and subject to applicable stipulations for the conservation of Greater Sage-Grouse, priority would be given to development in non-habitat areas first and then in the least suitable habitat for Greater Sage-Grouse. The implementation of these priorities would be subject to valid existing rights and any applicable law or regulation, including, but not limited to, 30 USC 226(p) and 43 CFR 3162.3-1(h). Where a proposed fluid mineral development project on an existing lease could adversely affect Greater Sage-Grouse populations or habitat, the BLM will work with the lessees, operators, or other project proponents to avoid, reduce, and mitigate adverse impacts to the extent compatible with lessees' rights to drill and produce fluid mineral resources. To incentivize development to locate outside of PHMA, the BLM will work with the lessee, operator, or project proponent in developing an application for permit to drill (APD) for the lease to avoid and minimize impacts to Greater Sage-Grouse or its habitat and would ensure that the best information about the Greater Sage-Grouse and its habitat informs and helps to guide development of such federal leases.

The following amended decisions apply to the Buffalo, Casper, Cody, Kemmerer, Newcastle, Pinedale, Rawlins, Rock Springs, and Worland RMPs:

Amended MD LG 4 (Casper, Kemmerer, Newcastle, Pinedale, Rawlins, Rock Springs); Amended Grazing #6017 (Buffalo); Revised #6130 (Cody); Revised #6202 (Worland): Within PHMA, if monitoring data show the wildlife/special status species standard has not been meeting nor progress being made toward meeting that standard, there would be an evaluation and a determination made as to the cause. If it is determined that the current authorized livestock use is a significant causal factor in failing to achieve the wildlife/special status species standard, the BLM will address achievement or progress toward achieving the LHSs (43 CFR 4180.2) and, if needed, Greater Sage-Grouse habitat maintenance or improvement. When NEPA analysis is required for a specific implementation action, one alternative would include mechanisms to make adjustments to meet or make progress toward meeting the wildlife/special status species standard. The analysis should also identify the BLM-approved data collection methodologies used for monitoring conditions and determining when adjustments are necessary. If current grazing management meets land health standards and provides for Greater Sage-Grouse habitat, there would be no need to analyze an alternative for Greater Sage-Grouse. Authorized

uses in PHMA that incorporate habitat objectives for Greater Sage-Grouse must develop desired conditions based on Greater Sage-Grouse habitats present in the allotment and the ecological potential of sites which supports these habitats. Metrics used to monitor for objectives must be developed and inform the wildlife/special status species portion of the Standards for Healthy Rangelands. Within PHMAs, seasonal habitat objectives for Greater Sage-Grouse apply only to those habitats delineated within an allotment during the specific season (e.g., breeding season objectives during breeding season). Data needed to inform the relationship between the authorized use and habitat condition would come from sample locations that appropriately reflect the impact of the authorized use on habitat conditions. Data points should fall within Greater Sage-Grouse seasonal habitat areas and be collected on ecological sites that have the potential to produce Greater Sage-Grouse habitat.

Amended MD LG 5 (Casper, Kemmerer, Newcastle, Pinedale, Rawlins, Rock Springs); Amended # Grazing 6017 (Buffalo); Amended #6126 (Cody); Amended # 6198 (Worland): Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: BLM monitoring would be used to evaluate progress toward achieving land health standards within PHMA and, where not achieved, to determine if existing grazing management practices or levels of grazing use on public lands are significant causal factors in failing to meet, maintain, or make progress toward achieving the standards and conform with the guidelines, which, through this process, will identify appropriate actions to address non-achievement and non-conformance. The BLM will prioritize (1) the review of grazing permits/leases, in particular to determine if modification is necessary prior to renewal, and (2) the processing of grazing permits/leases in PHMA. In setting workload priorities, precedence would be given to existing permits/leases in these areas not meeting land health standards, with an emphasis on those containing riparian areas, including wet meadows. The BLM may use other criteria for prioritization to respond to urgent natural resource concerns (e.g., fire) and legal obligations.

Amended MD SSS 13 (Casper, Kemmerer, Newcastle, Pinedale, Rawlins, Rock Springs); Amended #SS WL 4010 (Buffalo); Amended #4116 (Cody); Amended #4115 (Worland): The Adaptive Management Working Group would define a process to review and reverse adaptive management actions once the identified causal factor is resolved (e.g., returning to previous management once objectives of interim management strategy have been met).

Appendix A presents all management goals, objectives, and decisions for management of Greater Sage-Grouse (including existing, new, and amended decisions identified above) for the Casper, Kemmerer, Newcastle, Pinedale, Rawlins, and Rock Springs RMPs (Table A-1), the Buffalo RMP (Table A-2), the Cody RMP (Table A-3), the Lander RMP (Table A-4), and the Worland RMP (Table A-5).

Appendix B presents the Required Design Features.

Appendix C presents the Greater Sage-Grouse Habitat Management Strategy as Amended.

Table 2-1, below, identifies the seasonal habitat objectives for Greater Sage-Grouse in the Wyoming Basin Ecoregion. The purpose of the habitat objectives table is to identify vegetation attributes important to Greater sage- grouse site selection as described in the Habitat Assessment Framework (HAF; Stiver, 2015). Indicators should be measured during the appropriate season, within the seasonal habitat being assessed, and in the context of the ecological potential for the site.

The habitat objectives table outlines range-wide attributes and values for each. Some of the science-based information used to establish indicator values in the Habitat Objectives table was developed in disparate geographic regions and will not reflect local conditions. Therefore, the BLM should use

indicator values that reflect high quality data at the local or the project level, to the extent it is available. Collectively, the indicators for sagebrush (cover, height, and shape), perennial grass, and perennial forb (cover, height, and/or availability) represent the desired vegetation components for the seasonal habitats. Indicators are not standards to be achieved but a metric used to evaluate habitat conditions. Data collected at each location (during the appropriate season) in Greater Sage-Grouse habitat is compared to each seasonal habitat indicator value in the table. These indicator values would then be examined using a preponderance of evidence approach (BLM Technical Reference 1734-6).

When completing site-scale assessments for Greater Sage-Grouse, it is not appropriate to use a single indicator to determine habitat suitability. Site-scale Greater Sage-Grouse habitat assessments inform the land health standard evaluation for the wildlife/special status species standard.

Not all areas within a given habitat type will be capable of achieving the indicator values, due to inherent variation in vegetation communities and ecological site potential. Further, local data supported by BLM-approved data collection protocols or most recent available science may indicate Greater Sage-Grouse select for vegetation structure and composition not characterized by values in the table.

The values in the table should be considered as initial references and do not preclude development of local desired conditions or utilizing other indicators/values, based on site selection preferences of the local population and ecological site capability of sagebrush communities.

Table 0-1
Seasonal Habitat Objectives for GRSG Wyoming Basin Ecoregion

Attribute	Indicators	Desired Condition[6]	Reference
Breeding and Nesting (Seasonal Use Period March 1-June 15 (Doherty 2008, Holloran and Anderson 2005)			
Lek Security	Proximity of trees	Trees absent or uncommon shrub/grassland ecological sites within 1.8 miles (approx. 3 km) of occupied leks.	Baruch-Mordo, S., J. S. Evans, J. P. Severson, D. E. Naugle, J. D. Maestas, J. M. Kiesecker, M. J. Falkowski, C. A. Hagen, and K. P. Reese 2013. Stiver, S. J., E. T. Rinkes, D. E. Naugle, P. D. Makela, D. A. Nance, and J. W. Karl (2015).
	Proximity of sagebrush to leks	Adjacent protective sagebrush cover within 330 ft. (approx. 100 m) of an occupied lek.	Stiver, S. J., E. T. Rinkes, D. E. Naugle, P. D. Makela, D. A. Nance, and J. W. Karl (in press).
Cover	% of seasonal habitat meeting desired conditions	>80% of the nesting habitat meets the recommended vegetation characteristics, where appropriate (relative to ecological site potential, etc.).	Connelly, J. W., M. A. Schroeder, A. R. Sands, and C. E. Braun 2000.
	Sagebrush cover[2]	5 to 25%	Connelly, J. W., M. A. Schroeder, A. R. Sands, and C. E. Braun 2000. Connelly, J. W., K. P. Reese, and M. A. Schroeder 2003. Hagen, C. A., J. W. Connelly, and M. A. Schroeder 2007.
	Sagebrush height Arid sites[3] Mesic sites[4]	4-31 inches (10-80cm) 12-31 inches (30-80cm)	Connelly, J. W., M. A. Schroeder, A. R. Sands, and C. E. Braun 2000.
	Predominant sagebrush shape	Predominantly spreading shape[5]	Stiver, S. J., E. T. Rinkes, D. E. Naugle, P. D. Makela, D. A. Nance, and J. W. Karl (in press).
	Perennial grass cover (such as native bunchgrass)[2] Arid sites[3] Mesic sites[4]	>10% >15% Cool-season bunchgrasses preferred	Connelly, J. W., M. A. Schroeder, A. R. Sands, and C. E. Braun 2000. Stiver, S. J., E. T. Rinkes, D.E. Naugle, P. D. Makela, D.A. Nance, and J. W. Karl (in press). Cagney J., E. Bainter, B. Budd, T. Christiansen, V. Herren, M. Holloran, B. Rashford, M. Smith and J. Williams 2010.
	Perennial grass and forb height (including residual grasses)	Adequate nesting cover would be as determined by ESD site potential or best available science in consideration of local variability.	Connelly, J. W., M. A. Schroeder, A. R. Sands, and C. E. Braun 2000. Connelly, J. W., K. P. Reese, and M. A. Schroeder 2003.

Table 0-1
Seasonal Habitat Objectives for GRSG Wyoming Basin Ecoregion

Attribute	Indicators	Desired Condition[6]	Reference
			Doherty, K.E., D.E. Naugle, J.D. Tack, B.L Walker, J.M. Graham and J.L. Beck 2014. Hagen, C. A., J. W. Connelly, and M. A. Schroeder 2007. Stiver, S. J., E. T. Rinkes, D.E. Naugle, P. D. Makela, D.A. Nance, and J. W. Karl (inpress).
	Perennial forb cover[2] Arid sites[3] Mesic sites[4]	>5% >10%	Connelly, J. W., M. A. Schroeder, A. R. Sands, and C. E. Braun 2000.
Brood-Rearing/Summer[1] (Seasonal Use Period June 16-October 31)			
Cover	% of Seasonal habitat meeting desired condition	>40% of the summer/brood habitat meets recommended brood habitat characteristics where appropriate (relative to ecological site potential, etc.)	Connelly, J. W., M. A. Schroeder, A. R. Sands, and C. E. Braun 2000.
	Sagebrush cover[2]	5-25%	Connelly, J. W., M. A. Schroeder, A. R. Sands, and C. E. Braun 2000.
	Sagebrush height	4 to 32 inches (20.3-80cm)	Connelly, J. W., M. A. Schroeder, A. R. Sands, and C. E. Braun 2000.
	Perennial grass cover and forbs[2]	>5% arid sites >10% mesic sites	Connelly, J. W., M. A. Schroeder, A. R. Sands, and C. E. Braun 2000.
	Riparian areas/mesic meadows[2]	Proper Functioning Condition	Preferred forbs are listed in Stiver et al. (2015).
	Upland and riparian perennial forb availability	Preferred forbs are common with several preferred species present	Stiver, S. J., E. T. Rinkes, D.E. Naugle, P. D. Makela, D.A. Nance, and J. W. Karl (in press).
Winter (Seasonal Use Period November 1-February 28)			
Cover and Food	% of seasonal habitat meeting desired conditions	>80% of the wintering habitat meets winter habitat characteristics where appropriate (relative to ecological site, etc.).	Connelly, J. W., M. A. Schroeder, A. R. Sands, and C. E. Braun 2000.
	Sagebrush cover above snow[2]	>5%	Connelly, J. W., M. A. Schroeder, A. R. Sands, and C. E. Braun 2000. Stiver, S. J., E. T. Rinkes, D.E. Naugle, P. D. Makela, D.A. Nance, and J. W. Karl (2015).
	Sagebrush height above snow	>10 inches (>25cm)	Connelly, J. W., M. A. Schroeder, A. R. Sands, and C. E. Braun 2000.

Table 0-1
Seasonal Habitat Objectives for GRSG Wyoming Basin Ecoregion

Attribute	Indicators	Desired Condition[6]	Reference

Notes:
[1] Where credible data support different seasonal dates than those identified, dates may be shifted but the amount of days cannot be shortened or lengthened by the local unit.
[2] Absolute cover is the actual recorded cover and can exceed 100% when recorded across all species and all layers. It is not relative cover, which is the proportions of each species, and equals 100%. Note that cover is reported for only those species (e.g., sagebrush, preferred forbs) that are sampled to determine suitability of habitat for sage-grouse. Overall cover at the site will be greater than that sampled for sage-grouse habitat, due to other species present.
[3] Arid corresponds to the 10 – 12 inch precipitation zone; *Artemisia tridentata wyomingensis* is a common big sagebrush sub- species for this type site (Stiver et al. 2015).
[4] Mesic corresponds to the ≥12 inch precipitation zone; *Artemisia tridentata vaseyana* is a common big sagebrush sub-species for this type site (Stiver et al. 2015).
[5] Collectively the indicators for sagebrush (cover, height, and shape), perennial grass and perennial forb (cover, height and/or availability) represent the desired condition range for nesting/early brood rearing habitat characteristics, consistent with the breeding habitat suitability matrix identified in Stiver et al. 2015. Sagebrush plants that are more tree or columnar-shaped provide less protective cover near the ground than sagebrush plants with a spreading shape (Stiver et al. 2015). Some sagebrush plants are naturally columnar (e.g., Great Basin big sagebrush), and a natural part of the plant community. However, a predominance of columnar shape arising from animal impacts may warrant management investigation or adjustments at site specific scales.
[6] All Desired Conditions will be dependent upon site capability and local variation (e.g., weather patterns, localized drought, ESD state, etc.).

3. Alternatives Considered in the Environmental Impact Statement

The BLM evaluated two alternatives in detail in the Draft EIS: the No Action Alternative and the Management Alignment Alternative. In the Final EIS, the BLM modified the Management Alignment Alternative based on external and internal review of the Draft EIS to develop the Proposed RMP Amendment.[1] Summaries of these Alternatives are provided below.

3.1 The No Action Alternative

Under the No Action Alternative, management of Greater Sage-Grouse habitat in Wyoming would have remained the same as that identified in the 2014 and 2015 RMP Amendments and Revisions. The BLM would not have amended the existing RMPs regarding Greater Sage-Grouse habitat management, and no changes or clarifications regarding Greater Sage-Grouse habitat management in Wyoming would have occurred.

3.2 The Management Alignment Alternative

The Management Alignment Alternative, identified as the Preferred Alternative in the Draft EIS, was developed through coordination with the State of Wyoming's Greater Sage-Grouse Core Area Strategy (Executive Order [EO] 2015-4) and to support conservation outcomes for Greater Sage-Grouse. The enhanced cooperation inherent in the Management Alignment Alternative would lead to improved management and greater coordination across the range of Greater Sage-Grouse in Wyoming. Key aspects of this alternative included:

- Ensuring that the BLM has the flexibility to update habitat management areas based on information consistent with the State of Wyoming's core areas;
- Removing the Sagebrush Focal Area (SFA) designation;
- Clarifying the use of habitat objectives table(s);
- Ensuring that noise thresholds and monitoring are consistent with those identified in EO 2015-4;
- Defining a process to review and reverse adaptive management actions once the identified causal factor is resolved; and
- Following the State of Wyoming's Greater Sage-Grouse Compensatory Mitigation Framework.

3.3 The Proposed Resource Management Plan Amendment Alternative

The Proposed RMP Amendment in the Final EIS was a refinement of the Management Alignment Alternative and was developed based on internal review and comments received on the Draft EIS. Changes between the Management Alignment Alternative and the Proposed RMP Amendment included refinement of the language relating to habitat objectives, livestock grazing management, and prioritization of leasing. In addition, the Proposed RMP Amendment provided additional language for the management action related to compensatory mitigation that further refines and clarifies the coordination that would occur between the BLM and the State of Wyoming when compensatory

[1] The BLM's DEIS and FEIS also incorporated by reference the range of alternatives evaluated by the EISs for the 2014 and 2015 land use plan amendments and revisions addressing the conservation of Greater Sage-Grouse and its habitat.

mitigation for Greater Sage-Grouse when the State of Wyoming determines it to be necessary. The BLM identified the Proposed RMP Amendment as the preferred alternative.

3.4 Environmentally Preferred Alternative

This land use planning effort builds off of the BLM's 2015 plan revisions and amendments for the conservation of the Greater Sage-Grouse and its habitat and the Approved RMP Amendment retains many of the management actions contained in the 2015 decisions, while adding some management flexibility and aligning the BLM's conservation plan with the conservation measures of the expert State agency. As reflected in the analysis in the FEIS, the limited management flexibility offered by the alignment alternative and alignment with the State's approach results in effects that are well understood and disclosed in BLM's analysis of impacts on Greater Sage-Grouse and other resources in the planning area. As described in more detail below, the Approved RMP Amendment will enhance cooperation and coordination with the State while reducing inconsistencies between the BLM's land use plans and the State's approach to protecting and conserving Greater Sage-Grouse. Harmonizing these efforts will improve the BLM's and the State's ability to marshal resources to conserve, enhance, and restore Greater Sage-Grouse habitat in an efficient and coordinated manner. Accordingly, neither alternative is "environmentally preferable" to the other as that term is defined in Question 6A of CEQ's 40 most-asked questions regarding NEPA. Moreover, even if the No-Action Alternative were "environmentally preferable", neither FLPMA nor NEPA requires the BLM in this context to maximize the conservation of biological and other natural resources, and selection of the No Action Alternative would not achieve the BLM's Purpose and Need for Action to enhance cooperation and coordination with the State while reducing inconsistencies between the BLM's land use plans and the State's approach

4. Management Considerations and Rationale for the Decision

Furthering the Administration's goals of restoring trust with local communities and responsibly developing our natural resources while easing regulatory burdens, the Bureau of Land Management is issuing this Record of Decision (ROD) amending the land use plans for Greater Sage-Grouse habitat management on public lands. The decisions described herein affect resource management plans that guide conservation of sagebrush steppe habitat on BLM-administered public lands in seven Western states. The changes were developed during months of close cooperation with state governments in Wyoming, Nevada, California, Idaho, Oregon, Utah, and Colorado to better align BLM plans for managing habitat with state plans for conserving the species.

These changes conform to the Department of the Interior's commitment to collaborate with our neighbors in conserving sagebrush habitats and sage-grouse populations. The planning effort began in 2017 when governors of most of the affected states asked the BLM to revisit existing plans for managing sage-grouse habitat and adapt them to better meet their individual needs. In response, the BLM proposed changes developed in consideration of input from governors and state wildlife agency professionals in the seven affected states, as well as other concerned organizations and individuals, largely through the Western Governors Association's Sage-Grouse Task Force.

These decisions reflect the BLM's determination that greater flexibility was needed to ensure that habitat in each state is managed for the particular needs of its landscapes and communities. This Approved RMPA builds on the measures identified and incorporated in the 2014 and 2015 RMP Amendments and Revisions to conserve, enhance, and restore Greater Sage-Grouse habitat by addressing threats to Greater Sage-Grouse and its habitat and providing for consistent management of Greater Sage-Grouse between the BLM and the State of Wyoming. The 2014 and 2015 RMP Amendments and Revisions provided a comprehensive, coordinated, and effective conservation strategy

for addressing the threats to Greater Sage-Grouse. This more focused Approved RMPA improves the management coordination between the BLM and the State of Wyoming for Greater Sage-Grouse. The actions taken on BLM management lands will now more clearly complement the State of Wyoming's and WGFD's management strategy in order to conserve the species and its habitat.

This Approved RMP Amendment, in conjunction with the State of Wyoming's Core Area Strategy, reflect a high level of commitment by Federal and State partners to conserve Greater Sage-Grouse and its habitat. The actions taken on BLM management lands will now more clearly complement the State of Wyoming's management strategy in order to conserve the species and its habitat.

Over 350 species of plants and wildlife rely on sagebrush steppe ecosystems and coexist with Greater Sage-Grouse and may be similarly affected by development or disturbance threats that pose a risk to Greater Sage-Grouse habitats; however, nothing in the approved plan lessens the BLM's authority or responsibility to provide for the needs of special status species, including BLM Manual 6840, Special Status Species Management.

This 2019 planning process builds on the 2015 planning process and the BLM identified special status species as an issue for further consideration and analysis. The approved plan will continue to ensure that the BLM complies with its special status species policy, including the commitment to "implement measures to conserve species and their habitats… and promote their conservation and reduce the likelihood and need for such species to be listed pursuant to the ESA." (BLM Manual 6840, Special Status Species Management). In accordance with the Manual, the BLM will continue to undertake planning decisions, actions and authorizations "to minimize or eliminate threats affecting the status of [Greater Sage-Grouse] or to improve the condition of [Greater Sage-Grouse] habitat" across the planning area.

5. Mitigation

The BLM has determined that FLPMA does not explicitly mandate or authorize the BLM to require public land users to implement compensatory mitigation as a condition of obtaining authorization for the use of BLM-administered lands (IM 2019-018, *Compensatory Mitigation*, December 6, 2018). Consistent with that determination, compensatory mitigation must be voluntary unless required by other applicable laws, but the BLM recognizes that state authorities may also require compensatory mitigation.

To align this planning effort with the BLM's compensatory mitigation policy, IM 2019-018, the amended plans clarify that the BLM will consider compensatory mitigation only as a component of compliance with a state mitigation plan, program, or authority; when required by a law other than FLPMA; or when offered voluntarily by a project proponent. In accordance with the State's goals for managing Greater Sage-Grouse, the plans modify the net conservation gain standard for compensatory mitigation to clarify that the BLM would pursue conservation benefits as a broader planning goal and objective. This means that the BLM would continue to require avoidance, minimization, and other onsite mitigation to adequately conserve Greater Sage-Grouse and its habitat, while remaining committed to implementing beneficial habitat management actions to reduce the threats of fire and invasive species. In fiscal year 2018, the BLM funded approximately $29 million in sage-grouse management actions resulting in approximately 500,000 acres of treated sage-grouse habitat and expects to invest another $17 million of habitat management projects in fiscal year 2019.

Since the signing of the 2015 ARMPA, BLM Wyoming has committed over $15 million to complete more than 230 Greater Sage-grouse habitat improvement projects. This work includes a wide variety of invasive species and fuels reduction treatments, riparian improvements, energy reclamation, habitat

monitoring, and leading research identifying impacts associated with land use proposals. This funding also helped leverage state partner funding contributions and state-wide initiatives such as the Wyoming Landscape Conservation Initiative and the Powder River Basin Restoration Initiative that adopts an "all hands, all lands" approach to engaging stakeholder involvement.

The BLM would continue to apply the mitigation hierarchy as described in the CEQ regulations at 40 CFR 1508.20; however, the BLM would focus on avoiding, minimizing, rectifying, and reducing impacts over time. Compensation, which involves replacing or providing substitute resources for the impacts (including through payments to fund such work), would be considered only when voluntarily offered by a proponent, required by a law other than FLPMA, or to meet a State recommendation or requirement. The BLM commits to cooperating with the State to analyze applicant-proposed, state-recommended, or state-imposed compensatory mitigation to offset residual impacts.[2] The BLM remains committed to achieving the planning-level management goals and objectives identified in this ROD and the 2015 ARMPA by ensuring Greater Sage-Grouse habitat impacts are addressed through implementing mitigating actions consistent with the governing RMP.

All practicable measures to avoid and/or minimize environmental harm are encompassed in the applicable RMPs.

6. Plan Monitoring

BLM planning regulations (43 CFR 1610.4-9) require the monitoring of RMPs on a continual basis with a formal evaluation done at periodic intervals. As the RMP is implemented, the BLM expects that new information gathered from field inventories and assessments, research, other agency studies, and other sources will update baseline data or support new management techniques and scientific principles. To the extent that such new information or actions address issues covered in this Approved RMPA, the BLM will integrate the data through a process called plan maintenance. This process includes the use of monitoring, which is the repeated measurement of activities and conditions over time with the implied purpose to use this information to adjust management, if necessary, to achieve or maintain resource objectives. CEQ regulations implementing NEPA state that agencies may provide for monitoring to assure that their decisions are carried out and should do so in important cases (40 CFR 1505.2(c)).

7. Public Involvement, Consultation, and Coordination

7.1 Public Involvement

The public involvement process, consultation, and coordination conducted for the RMPA are described in Chapter 5 of the Proposed RMPA and Final EIS. Public scoping meetings were conducted following the publication of the Notice of Intent to prepare an EIS in the *Federal Register* on October 11, 2017. Meetings were held in Cheyenne, Wyoming and Pinedale, Wyoming on November 6 and 8, 2017, respectively.

A Notice of Availability (NOA) for the Draft RMP/EIS was published in the *Federal Register* on May 4, 2018 and initiated a 90-day public comment period. The BLM held public meetings for the Draft

[2] With respect to any State compensatory mitigation requirements, the BLM will defer to the appropriate State authority to quantify habitat offsets, durability, and other aspects used to determine the recommended compensatory mitigation action.

RMPA/EIS in Cheyenne and Pinedale, Wyoming, on June 17 and 25, respectively. Meetings were held from 4:00 to 7:00 pm at each location. Comments received on the Draft RMP/EIS and BLM's responses are summarized in Appendix E of the Proposed RMPA and Final EIS.

The NOA for the Proposed RMPA and Final EIS was published on December 7, 2018, initiating a 30-day protest period and a 60-day Governor's Consistency review period. The 30-day protest period was extended in Wyoming due to an errata and ended on January 28, 2019. Five protests were received.

7.2 Consultation and Coordination

The BLM established cooperating agency status with government entities and agencies throughout the state (Table 7-1).

Table 7-1
Cooperating Agencies

- Bighorn County
- Campbell County
- Campbell County Conservation District
- Clear Creek Conservation District
- Converse County
- Fremont County
- Hot Springs County
- Hot Springs Conservation District
- Johnson County
- Lincoln County
- Lincoln County Conservation District
- Lower Wind River Conservation District
- Medicine Bow Conservation District
- Meeteetse Conservation District
- Natrona County Conservation District
- Park County
- Popo Agie Conservation District
- Saratoga-Encampment-Rawlins Conservation District
- Sheridan County
- Sublette County
- Sublette County Conservation District
- Sweetwater County
- Sweetwater County Conservation District
- Teton County
- Uinta County
- Uinta County Conservation District
- US Fish and Wildlife Service
- US Office of Surface Mining and Reclamation Enforcement
- Washakie County
- Washakie County Conservation District
- Weston County
- Wyoming Department of Agriculture
- Wyoming Department of Environmental Quality – Industrial Siting Division
- Wyoming Game and Fish Department
- Wyoming Office of the Governor
- Wyoming Office of State Lands and Investments
- Wyoming Oil and Gas Conservation Commission

Cooperating agencies were invited to participate in the development of alternative and to provide data and other information relative to their expertise and jurisdiction. The BLM held cooperating agency meetings on March 27 and 28, 2018, as well as April 3 and 4, 2018, regarding the planning process and development of alternatives. A cooperating agency meeting was also held August 29, 2018, to discuss the changes that would occur between the Draft and Final RMPA/EIS.

American Indian Tribal Consultation

In the fall of 2017, the BLM mailed letters to the following Native American tribes:

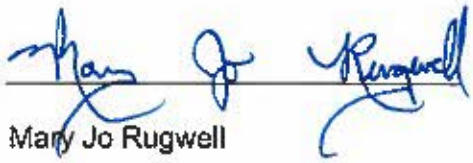
- Eastern Shoshone
- Northern Arapaho
- Omaha Tribe of Nebraska
- Ponca Tribe of Nebraska
- Santee Sioux Nation of Nebraska
- Winnebago Tribe of Nebraska

These tribes were invited to participate as cooperating agencies for this planning effort. The Draft RMPA/EIS as well as the Proposed RMPA/Final EIS were provided to the Native American tribes concurrently with the other cooperating agencies.

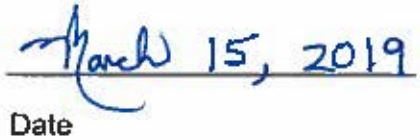
U. S. Fish and Wildlife Service Coordination
BLM Wyoming coordinated with the USFWS Wyoming State Office regarding BLM's evaluation of any potential effects on Proposed, Threatened, and Endangered species as well as any impacts to proposed or designated critical habitats. BLM Wyoming also reviewed all pertinent land-use plan level Biological Assessments and Endangered Species Act (ESA) Section 7 consultation documents related to the BLM's former Greater Sage-Grouse Plan Amendment and concurrent Resource Management Plan (RMP) Revisions in Wyoming. Based on that review and the evaluation mentioned above, BLM Wyoming found that this Amendment would result in no new or additional potential impacts to the species or their proposed or designated critical habitats. The USFWS responded with appreciation for the coordination.

Approval:

The Wyoming Greater Sage-Grouse Resource Management Plan Amendment is hereby approved by the Wyoming State Director.



Mary Jo Rugwell



Date

Appendix A

Approved RMP Amendment with Management Goals, Objectives, and Decisions

Appendix A. Approved RMP Amendment with Management Goals, Objectives, and Decisions

Table A-1
ARMPA with All Management Goals, Objectives, and Decisions

Action #	2019 ARMPA
Management Goal 1	Conserve, restore, and enhance Greater Sage-Grouse 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 lands.
Management Objective (MO) 1	In cooperation with the State of Wyoming and its agencies, local governments, private landowners, local Greater Sage-Grouse working groups, partners, and stakeholders, develop site-specific conservation strategies to maintain or enhance Greater Sage-Grouse habitats and habitat connectivity.
MO 2	Maintain and enhance quality/suitable habitat to support the expansion of Greater Sage-Grouse populations on federally administered lands within the planning area.
MO 3	Manage Greater Sage-Grouse seasonal habitats and maintain habitat connectivity to support population objectives set by the State of Wyoming in cooperation with the agencies.
MO 4	Identify and prioritize opportunities for habitat enhancement and conservation within Greater Sage-Grouse core habitat areas based on threats and the ability to manage Greater Sage-Grouse habitat.
MO 5	Restore native (or desirable) plants and create landscape patterns that most benefit Greater Sage-Grouse.
*MO 6	Develop specific habitat objectives to protect, enhance, or restore Greater Sage-Grouse priority habitat based on ESDs and BLM land health evaluations (including within wetlands and riparian areas) taking into account site history (historic treatments or habitat manipulations) that have changed the soil chemistry, possibly altering the ESD.
MO 7	Establish measurable objectives related to Greater Sage-Grouse habitat from baseline monitoring data, ESDs, or land health assessments/evaluations.
MO 8	Manage for vegetation composition and structure consistent with ecological site potential to achieve Greater Sage-Grouse seasonal habitat objectives.
MO 9	Incorporate available site information collected using the Sage-Grouse Habitat Assessment Framework or similar methods to evaluate existing resource conditions and to develop any necessary resource solutions in cooperation with the State of Wyoming and its agencies, the local governments, private landowners, project proponents, partners, and stakeholders.
MO 10	Incorporate management practices that will provide for maintenance and/or enhancement of Greater Sage-Grouse habitats, including specific attention to maintenance of desired understories of sagebrush plant communities. When developing objectives for residual cover and species diversity, identify the ecological site types within the planning area and refer to the appropriate ESDs.
MO 11	In determining appropriate management actions that will be considered, refer to the document, *Grazing Influence, Management, and Objective Development in Wyoming's Greater Sage-Grouse Habitat* (Cagney et al. 2010) for guidance.
MO 12	Identify PHMA and GHMA for each WAFWA MZ across the current geographic range of Greater Sage-Grouse that are large enough to stabilize populations in the short term and enhance populations over the long term. Greater Sage-Grouse habitat in this planning area overlaps two WAFWA MZs: (1) MZ I - Great Plains and (2) MZ II - Wyoming Basin.
MO 13	Protect PHMA and GHMA from anthropogenic disturbance that will reduce distribution or abundance of Greater Sage-Grouse.

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Action #	2019 ARMPA
*MO 14	Leasing is allowed in PHMA. Where the BLM has a backlog of Expressions of Interest for leasing, the BLM will prioritize its work first in non-habitat management areas, followed by lower priority habitat management areas (e.g., GHMA) and then higher priority habitat management areas (i.e., PHMA). To the extent consistent with federal regulation, law, and policy, priority would be given to leasing and development of fluid mineral resources, including geothermal, outside of PHMA. When analyzing leasing and authorizing development of fluid mineral resources, including geothermal, in PHMA, and subject to applicable stipulations for the conservation of Greater Sage-Grouse, priority would be given to development in non-habitat areas first and then in the least suitable habitat for Greater Sage-Grouse. The implementation of these priorities will be subject to valid existing rights and any applicable law or regulation, including, but not limited to, 30 U.S.C. 226(p) and 43 CFR 3162.3-1(h). Where a proposed fluid mineral development project on an existing lease could adversely affect Greater Sage-Grouse populations or habitat, the BLM will work with the lessees, operators, or other project proponents to avoid, reduce, and mitigate adverse impacts on the extent compatible with lessees' rights to drill and produce fluid mineral resources. To incentivize development to locate outside of PHMA, the BLM would work with the lessee, operator, or project proponent in developing an APD for the lease to avoid and minimize impacts on Greater Sage-Grouse or its habitat and will ensure that the best information about the Greater Sage-Grouse and its habitat informs and helps to guide development of such federal leases.
MO 15	In PHMA, the desired condition is to maintain all lands ecologically capable of producing sagebrush (but no less than 70 percent) with a minimum of 15 percent sagebrush cover or as consistent with specific ecological site conditions. The attributes necessary to sustain these habitats are described in *Interpreting Indicators of Rangeland Health* (BLM Tech Ref 1734-6).
**MO 16	The habitat objectives (see 2019 Wyoming GrSG ARMPA ROD Table 2-1) will be part of the Greater Sage-Grouse habitat assessment to be used during land health evaluations (see Monitoring Framework in 2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA) Appendix C). These habitat objectives are not obtainable on every acre within the designated Greater Sage-Grouse habitat management areas. Therefore, the determination on whether the objectives have been met will be based on the specific site's ecological ability to meet the desired condition identified in the table.
MO 17	Effects of infrastructure projects, including siting, will be minimized using the best available science, updated as monitoring information on current infrastructure projects becomes available.
Management Direction (MD) General Management Direction (GMD) 1	Continue to support the development of statewide Greater Sage-Grouse seasonal habitat models for the State of Wyoming.
MD GMD 2	Field offices will 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 best management practices (BMPs).

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Action #	2019 ARMPA
**MD GMD 3	Utilize the Wyoming SGIT and LWG plans or other state plans, analyses, and other sources of information to guide development of conservation objectives for local management of Greater Sage-Grouse habitats. The BLM will collaborate with appropriate federal agencies, and the State of Wyoming as contemplated under Governor EO 2015-4, to: (1) develop appropriate conservation objectives; (2) define a framework for evaluating situations where Greater Sage-Grouse conservation objectives are not being achieved on federal land, to determine if a causal relationship exists between improper grazing (by wildlife or wild horses or livestock) and Greater Sage-Grouse conservation objectives; and (3) identify appropriate site-based action to achieve Greater Sage-Grouse conservation objectives within the framework.
MD GMD 4	Include the collection of baseline data and outline post-project monitoring components in project planning, as appropriate and necessary.
MD GMD 5	The BLM will coordinate new recommendations, mitigation, habitat objectives, and management considerations applied for Greater Sage-Grouse with the WGFD and other appropriate agencies, local government cooperators, and the Wyoming SGIT. These measures will be analyzed in site-specific NEPA documents, and planning-level documents, as necessary.
MD GMD 6	Apply appropriate seasonal restrictions for implementing vegetation management treatments according to the type of seasonal habitats present within Greater Sage-Grouse habitat. Vegetation treatments must include monitoring to determine achievement of objectives and their long-term success.
MD GMD 7	Ensure site-specific, measurable conservation and mitigation objectives are included in project planning within Greater Sage-Grouse habitats.
MD GMD 8	Each BLM field office will develop landscape-scale restoration, conservation, and maintenance strategies, including special management of seasonal habitats and identified connectivity zones outside of PHMA, working with voluntary partners and cooperating agencies. These strategies and habitat designations must be coordinated and reconciled with Wyoming's Greater Sage-Grouse Core Area Protection strategy (EO 2015-4), and where possible, with adjoining management entities that share habitats or populations.
MD GMD 9	Design all projects in a manner that minimizes potential for invasive species establishment. Monitor and treat invasive species associated with all permitted activities consistent with BLM Handbook H-1740-2.
**MD GMD 10	Apply all appropriate RDFs (2019 Wyoming GrSG ARMPA Appendix B) as mandatory Stipulations/COA/Terms and Conditions within PHMA for all program areas as applicable.
MD GMD 11	Integrated vegetation management will be used to control, suppress, and eradicate, where possible, noxious and invasive species per BLM Handbook H-1740-2. Manage weed treatments to maintain and improve Greater Sage-Grouse habitat. RDFs and BMPs will be applied to the permit as COA as determined through the site-specific analysis.
MD GMD 12	Existing notices and approved plans of operations under 43 CFR 3809: For projects that overlap PHMA, operators may be requested to submit modifications to the accepted notice or approved plan of operations so that the operations minimally affect PHMA (core only). The AO may convey to the operator suggested conservation measures, based on 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 priority/core population area strategy and may not be reasonable or

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Action #	2019 ARMPA
	applicable to the BLM's determination of whether the proposed operations will cause unnecessary or undue degradation under 43 CFR 3809.5. The request containing the suggested conservation measures must make clear that the operator's compliance is not mandatory. Notices or plans of operation, or modifications thereto, submitted following the issuance of this guidance: As part of the 15-day completeness review of notices (or modifications thereto) and 30-day completeness review of plans of operations (or modifications thereto), the proposed project area(s) where exploration, development, mining, access and reclamation would take place will be reviewed for overlap of Greater Sage-Grouse PHMA in the corporate GIS database. If there is overlap, the BLM AO may notify the operator of ways that they may minimize impacts on PHMA (core only) 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.
MD GMD 13	As new occupied Greater Sage-Grouse habitat is found or occurs either through additional inventories or expansion into previously unoccupied habitat, the BLM will incorporate, through appropriate processes and analyses, these areas into the GHMA category and manage them as such, until the earliest review occurs by the SGIT. At that time, they will be considered for PHMA status or continue to be managed as GHMA and will be added to the statewide map.
MD GMD 14	Contribute to actions that help to ground-truth the statewide Greater Sage-Grouse seasonal habitat models for the State of Wyoming.
MD GMD 15	Use the Sage-grouse Habitat Assessment Framework or best available assessment tool (approved by the AO) when assessing or evaluating Greater Sage-Grouse habitats at multiple scales.
MD GMD 16	The official Wyoming Greater Sage-Grouse lek database is maintained by the WGFD in accordance with Appendix 4B of the Umbrella MOU between the WGFD and BLM (WGFD and BLM 1990). The MOU states that agencies will meet at least annually to coordinate and review the accuracy of data, and incorporate the most up-to-date information.
MD GMD 17	Many Greater Sage-Grouse seasonal habitats within and outside of PHMA (core only) are encumbered by valid existing rights, such as mineral leases or existing rights-of-way. Fluid mineral leases often will include less stringent lease stipulations than the timing, distance, and density requirements identified for consideration in this plan. The BLM 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 Greater Sage-Grouse 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 management objectives set by the WGFD) are included in all project proposals.
MD GMD 18	PHMA will be designated as OHV Limited Areas. The OHV limitation will ultimately be to "Designated Routes" as determined through a subsequent implementation/activity-level Travel Management Plan. In the interim, motorized use on existing routes may occur; however, no new routes may be created without specific authorization.

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ARMPA with All Management Goals, Objectives, and Decisions

Action #	2019 ARMPA
MD GMD 19	Complete activity-level travel plans within 5 years of the record of decision (ROD) for this planning effort. During activity-level planning, where appropriate, designate routes in PHMA with current administrative/agency purpose or need to administrative access only. Existing plans shall be assessed for consistency with Greater Sage-Grouse conservation objectives.
MD GMD 20	Construct roads needed for production activities to minimum design standards within PHMA, in compliance with the Density and Disturbance Calculation Tool (DDCT) process.
MD GMD 21	Field office staff will work with project proponents (including those within the BLM) and the WGFD to site their projects in locations that meet the purpose and need for their project, utilize the DDCT, and have been determined to contain the least sensitive habitats.
MD GMD 22	Evaluate opportunities to coordinate management plans and strategies on multiple allotments where coordination under a single management plan/strategy will result in enhancing Greater Sage-Grouse populations or its habitat, as determined in coordination with the state wildlife agency and with project proponents, partners, and stakeholders.
**MD GMD 23	Existing RMP decisions, pertaining to non-Greater Sage-Grouse resources, will be retained unless vacated or modified by decisions in this ARMPA. Where inconsistencies between the 2015 Greater Sage-Grouse ARMPA and this 2019 Wyoming GrSG ARMPA arise, the 2019 Wyoming GrSG ARMPA decisions and Appendices apply.
MD GMD 24	Fire and fuels management actions will be designed to contribute to the protection and enhancement of sagebrush habitat that support Greater Sage-Grouse populations (including large, contiguous blocks of sagebrush).
MD GMD 25	BLM planning units (Districts), in coordination with the USFWS and relevant state agencies, will complete and continue to update Greater Sage-Grouse 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 Greater Sage-Grouse populations. These assessments and subsequent assessment updates will also be a coordinated effort with an interdisciplinary team to take into account other Greater Sage-Grouse priorities identified in this plan. 2015 ARPMA Appendix L describes a minimal framework example and suggested approach for this assessment. Implementation actions will be tiered to the Local (District) Greater Sage-Grouse Landscape Wildfire & Invasive Species Assessment using the best available science related to the conservation of Greater Sage-Grouse. In coordination with the USFWS and relevant state agencies, the BLM planning units (Districts) will identify annual treatment needs for wildfire and invasive species management as identified in local unit-level Landscape Wildfire and Invasive Species Assessments. Annual treatment needs will be coordinated across state/regional scales and across jurisdictional boundaries for long-term conservation of Greater Sage-Grouse. These landscape assessment implementation efforts will be reviewed annually with appropriate USFWS and state agency personnel.
MD GMD 26	Implement a coordinated inter-agency approach to fire restrictions based on National Fire Danger Rating System thresholds (fuel conditions, drought conditions, and predicted weather patterns) for Greater Sage-Grouse habitat.
MD GMD 27	Within acceptable risk levels, utilize a full range of fire management strategies and tactics, including the management of wildfires, to achieve resource objectives across the range of Greater Sage-Grouse habitat consistent with land use plan direction.

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Action #	2019 ARMPA
*MD GMD 28	The BLM will update its Greater Sage-Grouse habitat management areas, including biologically significant units (BSUs), in conjunction with the State of Wyoming's core areas, upon issuance of any Wyoming Governor's Executive Order revising or amending the core area boundaries and upon completion of appropriate NEPA analysis and process. The BLM will complete the appropriate NEPA documentation (including appropriate public comment) prior to adopting any revised core area boundaries (e.g., maintenance action or plan amendment, environmental assessment, etc.).
**MD SSS 1	Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: The BLM, in coordination with the State of Wyoming and its agencies, other local partners and stakeholders, will establish monitoring framework (2019 Wyoming GrSG ARMPA Appendix C) for Greater Sage-Grouse populations and habitat that will be incorporated into individual project approvals, including small and in-house projects, as appropriate and necessary. Outside of PHMA and/or for values other than Greater Sage-Grouse, the following RMP decisions remain in effect with the modification described above: <u>Casper RMP:</u> Bates Hole and Fish Creek/Willow Creek: The areas will have priority for vegetation treatments to improve Greater Sage-Grouse habitats and for vegetation monitoring to ensure residual herbaceous vegetation is maintained for nesting cover on public lands.
MD SSS 2	In PHMA (core only), the density of disturbance of an energy or mining facility will be limited to an average of one site per square mile (640 acres) within the DDCT, subject to valid existing rights. The one location and cumulative value of existing disturbances will not exceed 5 percent of suitable habitat of the DDCT area. Inside PHMA, all suitable habitat disturbed (any program area) will not exceed 5 percent within the DDCT area using the DDCT process.
MD SSS 3	Inside PHMA (connectivity only), all suitable habitat disturbed (any program area) will not exceed 5 percent of suitable habitat within the DDCT area using the DDCT process.
*MD SSS 4	Specific to management for Greater Sage-Grouse, all RMPs are amended as follows: Adopt the State of Wyoming's Greater Sage-Grouse Compensatory Mitigation Framework to the extent consistent with federal law, regulations, and policy. In all Greater Sage-Grouse habitat, when authorizing third-party actions in designated Greater Sage-Grouse habitat, the BLM will seek to achieve the planning-level Greater Sage-Grouse management goals and objectives through implementation of mitigation and management actions, consistent with valid existing rights and applicable law. Under this Plan Amendment, management would be consistent with the Greater Sage-Grouse goals and objectives, and in conformance with BLM Manual 6840, Special Status Species Management. In accordance with BLM Manual 6840, the BLM will undertake planning decisions, actions and authorizations "to minimize or eliminate threats affecting the status of [Greater Sage-Grouse] or to improve the condition of [Greater Sage-Grouse] habitat" across the planning area. Accordingly, before authorizing third-party actions that result in habitat loss and degradation, the BLM will complete the following steps, in alignment with the Governor of Wyoming's Executive Order 2015-4 (July 29, 2015):

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Action #	2019 ARMPA
	1. Work jointly with the WGFD to evaluate projects and recommend mitigation in the form of avoidance and minimization. 2. The WGFD will determine if the State requires or recommends any additional mitigation – including compensatory mitigation – under State regulations, policies, or programs related to the conservation of Greater Sage-Grouse. 3. Incorporate state required or recommended mitigation into the BLM's NEPA decision-making process, if the WGFD determines that compensatory mitigation is required to address impacts to GRSG habitat as a part of State policy or authorization, or if a proponent voluntarily offers mitigation. 4. Analyze whether the compensatory mitigation (deferring to the appropriate State authority to quantify habitat offsets, durability, and other aspects used to determine the recommended compensatory mitigation action): • achieves measurable outcomes for Greater Sage-Grouse habitat function on a landscape scale as determined by WGFD that are at least equal to the lost or degraded values in accordance with the Governor of Wyoming's Executive Order 2015-4. • provides benefits that are in place for at least the duration of the impacts. • accounts for a level of risk that the mitigation action may fail or not persist for the full duration of the impact. 5. Ensure mitigation outcomes are consistent with the State of Wyoming's mitigation strategy and principles outlined in 2019 GrSG ARMPA Appendix C, The Greater Sage-Grouse Habitat Management Strategy. The BLM has determined that, except where the law specifically requires, compensatory mitigation must be voluntary unless required by other applicable law and in recognition that State authorities may also require compensatory mitigation (IM 2019-018, *Compensatory Mitigation*, December 6, 2018). Therefore, consistent with valid existing rights and applicable law, when authorizing third-party actions that result in habitat loss and degradation, the BLM will consider voluntary compensatory mitigation actions only as a component of compliance with a State mitigation plan, program, or authority, or when offered voluntarily by a project proponent. Project-specific analysis will be necessary to determine how a compensatory mitigation proposal addresses impacts from a proposed action. The BLM will cooperate with the State to determine appropriate project design and alignment with State policies and requirements, including those regarding compensatory mitigation. When the BLM is considering compensatory mitigation as a component of the project proponent's submission or based on a mitigation requirement from the State, the BLM's NEPA analysis would evaluate the need to avoid or minimize impacts of the proposed project and achieve the goals and objectives of this RMPA. The BLM will defer to the appropriate State authority to quantify habitat offsets, durability, and other aspects used to determine the recommended compensatory mitigation action.
**MD SSS 5	Greater Sage-Grouse leks inside PHMA: Surface occupancy and surface-disturbing activities will be prohibited on or within a 0.6-mile radius of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped) (Map 2-8). The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD SSS 4).

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**MD SSS 6	Greater Sage-Grouse leks outside PHMA: Surface occupancy and surface-disturbing activities will be prohibited on or within a 0.25-mile radius of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped) (Map 2-8). The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4)(see MD SSS 4).
**MD SSS 7	Greater Sage-Grouse breeding, nesting, and early brood-rearing habitat inside PHMA (core only): Surface-disturbing and/or disruptive activities will be prohibited from March 15–June 30 to protect Greater Sage-Grouse breeding, nesting, and early brood rearing habitat. This timing limitation will be applied throughout the PHMA (core only). The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD SSS 4). 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, but not both.
**MD SSS 8	Greater Sage-Grouse breeding, nesting, and early brood-rearing habitat inside PHMA (connectivity only): Surface-disturbing and/or disruptive activities will be prohibited from March 15–June 30 to protect breeding, nesting, and early brood-rearing habitats within 4 miles of the perimeter of any occupied Greater Sage-Grouse lek (or lek center if no perimeter is yet mapped) within identified PHMA (connectivity only). The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD SSS 4). Where credible data support different timeframes for this seasonal restriction, dates can be shifted by 14 days prior or subsequent to the above dates, but not both.
**MD SSS 9	Greater Sage-Grouse breeding, nesting, and early brood-rearing habitat outside PHMA: Surface-disturbing and/or disruptive activities will be prohibited from March 15—June 30 to protect Greater Sage-Grouse breeding, nesting, and early brood rearing habitat within 2 miles of the perimeter of an occupied lek (or lek center if no perimeter is yet mapped) located outside PHMA. The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD SSS 4). Where credible data support different timeframes for this seasonal restriction, dates may be expanded up to 14 days prior to or subsequent to the above dates but not both.
**MD SSS 10	Greater Sage-Grouse Winter Concentration Areas: Surface-disturbing and/or disruptive actives in Greater Sage-Grouse winter concentration areas would be prohibited from December 1—March 14. The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD SSS 4). Protection of additional mapped winter concentration areas in GHMA would be implemented where winter concentration areas are mapped and

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	designated by the State of Wyoming. Appropriate seasonal timing restrictions and habitat protection measures would be considered and evaluated on consultation with the WGFD in all identified winter concentration areas.
MD SSS 11	The BLM will support other agencies in their efforts to minimize impacts from predators. The BLM will implement strategies and techniques in land management decisions that address predators shown to pose a threat to Greater Sage-Grouse (2015 ARMPA Appendix N). The BLM will support and encourage other agencies in their efforts to minimize impacts from predators on Greater Sage-Grouse where needs have been documented.
*MD SSS 12	Within PHMA (core only), new project noise levels, either individual or cumulative, should not exceed 10 dBA (as measured by L50) above baseline noise at the perimeter of the lek (or lek center if no perimeter is yet mapped) from 6:00 pm to 8:00 am during the breeding season (March 1–May 15). The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD SSS 4). In coordination with the State of Wyoming, specific noise protocols for measurement and implementation will be developed as additional research and information emerges. These measures would be considered at the site-specific project level where and when appropriate.
*MD SSS 13	The Greater Sage-Grouse adaptive management plan (2019 Wyoming GrSG ARMPA Appendix C) provides a means of addressing and responding to unintended negative impacts on Greater Sage-Grouse, and its habitat will be addressed before consequences become severe or irreversible. The Wyoming Greater Sage-Grouse ARMPA will include the requirement for projects requiring an EIS to develop adaptive management strategies in support of the population management objectives for Greater Sage-Grouse set by the State of Wyoming. Wyoming ADPPs will include an adaptive management plan, as reviewed by the BLM WO, Solicitor's Office, and USFWS, which includes: Upon determination that a hard trigger is tripped, the BLM will immediately defer issuance of discretionary authorizations for new actions for a period of 90 days. In addition, within 14 days of a determination, the AMWG will convene to develop an interim response strategy and initiate an assessment to determine the causal factors. The AMWG would define a process to review and reverse adaptive management actions once the identified causal factor is resolved (e.g., returning to previous management once objectives of interim management strategy have been met). Adaptive management triggers are essential for identifying when potential management changes are needed in order to continue meeting Greater Sage-Grouse conservation objectives. With respect to Greater Sage-Grouse, all regulatory entities in Wyoming, including the BLM, use soft and hard triggers. Soft and hard triggers are focused on three metrics: 1) number of active leks, 2) acres of available habitat, and 3) population trends based on annual lek counts. In making amendments to this plan, the BLM will coordinate with the USFWS as the BLM continues to meet its objective of conserving, enhancing, and restoring Greater Sage-Grouse habitat by reducing, minimizing, or eliminating threats to that habitat. The hard and soft trigger data will be analyzed as soon as it becomes available after the signing of the ROD and then at a minimum, analyzed annually thereafter. <u>Soft Triggers:</u>

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	Soft triggers are indicators that management or specific activities may not be achieving the intended results of conservation action or that unanticipated changes to populations or habitats have occurred that have the potential to place habitats or populations at risk. The soft trigger is any deviation from normal trends in habitat or population in any given year. Metrics include, but are not limited to, annual lek counts, wing counts, aerial surveys, habitat monitoring, and DDCT evaluations. BLM field offices, with the assistance of their respective land and resource management plan implementation groups, local WGFD offices, and local Greater Sage-Grouse working groups, will evaluate the metrics with the AMWG on an annual basis. For population metrics, normal population trends are calculated as the 5-year running mean of annual population counts. The purpose of these strategies is to address localized Greater Sage-Grouse population and habitat changes by providing the framework in which management will change if monitoring identifies negative population and habitat anomalies in order to avoid crossing a hard trigger threshold. Hard Triggers: Hard triggers are indicators that management is not achieving desired conservation results. Hard triggers will be considered a catastrophic indicator that the species is not responding to conservation actions, or that a larger-scale impact or set of impacts is having a negative effect. Within the range of normal population variables (5-year running mean of annual population counts), hard triggers shall be determined to take effect when two of the three metrics exceeds 60 percent of normal variability for the area under management in a single year, or when any of the three metrics exceeds 40 percent of normal variability for a 3-year time period within a 5-year range of analysis. A minimum of 3 consecutive years in a 5-year period is used to determine trends (i.e., Y1-2-3, Y2-3-4, Y3-4-5).
*MD SSS 14	Lands identified as Sagebrush Focal Areas (SFAs) will no longer be designated as SFAs. Lands previously identified as SFAs will be managed as Priority Habitat Management Areas (PHMAs), consistent with Core Area boundaries.
MD Vegetation (VEG) 1	Manage vegetation composition, diversity, and structure, as determined by ESD, or other methods that reference site potential, and WGFD protocols, to achieve Greater Sage-Grouse habitat management objectives, in cooperation with stakeholders.
MD VEG 2	Within PHMA in northeast Wyoming (as mapped in EO 2015-4), vegetation treatments in nesting and wintering habitat that will reduce sagebrush canopy to less than 15 percent will not be conducted.
MD VEG 3	Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: For vegetation treatments in sagebrush within PHMA, refer to 2015 ARMPA Appendix H, WGFD Protocols for Treating Sagebrush to Benefit Sage-Grouse (WGFD 2011, as updated) and BLM Washington Office Instruction Memorandum 2013-128 (Sage-grouse Conservation Related to Wildland Fire and Fuels Management). These recommended protocols will be used in determining whether proposed treatment constitutes a "disturbance" that will contribute toward the 5 percent threshold within PHMA maintenance. Additionally, these protocols will be used to determine whether the proposed treatment configuration is expected to have neutral or beneficial impacts for PHMA (core only) populations or if they represent additional habitat loss or fragmentation. Treatments to enhance sagebrush/grasslands habitat for Greater Sage-Grouse will be evaluated based on habitat quality and the functionality/use of treated habitats post-treatment.

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	The BLM will work collaboratively with partners at the state and local level to maintain and enhance Greater Sage-Grouse habitats. Seasonal restriction would be applied, as needed, for implementing fuels management treatments according to the type of seasonal habitat present. Outside of PHMA and/or for values other than Greater Sage-Grouse, the following RMP decisions remain in effect with the modification described above: <u>Green River RMP:</u> Prescribed burns generally will be conducted in areas having greater than 35 percent sagebrush composition, 20 percent desirable grass composition, and greater than 10 inches of precipitation. Other vegetation manipulation methods will be considered on a case-by-case basis depending on objectives and cost benefits. <u>Casper RMP:</u> Decision 4053: The areas (Bates Hole and Fish Creek/Willow Creek) will have priority for vegetative treatments to improve Greater Sage-Grouse habitats and for vegetation monitoring to ensure residual herbaceous vegetation is maintained for nesting cover on public lands.
MD VEG 4	Within PHMA, grazing will be deferred on treated areas for two full growing seasons unless vegetation objectives or vegetation recovery indicates a shorter or longer rest period is necessary based on vegetation monitoring results.
MD VEG 5	Reclamation of surface disturbances in PHMA will be consistent with the Wyoming Reclamation Policy (BLM 2009a), vegetation objectives (2019 Wyoming GrSG ARMPA ROD Table 2-1), and 2015 ARMPA Appendix M. A monitoring plan will be developed for each restoration or reclamation project and will report progress and changes in resource condition.
MD VEG 6	Areas for vegetation restoration and/or restoration criteria that include state Greater Sage-Grouse conservation plans and appropriate local information will be identified. The use of native plants and seeds for restoration will be required unless the probability for success is low (nonnative plants and seeds may be used as long as they meet Greater Sage-Grouse habitat objectives), and restoration management will be designed to obtain long-term persistence based on ESD. Reestablishment of sagebrush cover and desirable understory plants will be the highest priority for restoration efforts. Landscape patterns that most benefit Greater Sage-Grouse will be restored and created, considering potential changes in climate.
MD VEG 7	Within PHMA, implementation of restoration projects will be prioritized based on environmental variables that improve chances for project success in areas most likely to benefit Greater Sage-Grouse. Restoration will be prioritized in seasonal habitats that are thought to be limiting Greater Sage-Grouse distribution and/or abundance.
MD VEG 8	Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: Where probability of success or native seed availability is low or where there is a specific identified purpose that cannot be met with natives, nonnative seeds can be used provided they meet Greater Sage-Grouse habitat conservation and vegetation (2019 Wyoming GrSG ARMPA ROD Table 2-1) objectives. The use of native seeds for fuels management treatment will be prioritized based on availability, adaptation (site potential), and probability of success. Where probability of success or native seed availability is low, non- native seeds may be

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	used to meet Greater Sage-Grouse habitat objectives to trend toward restoring the fire regime. When reseeding, use fire resistant native and nonnative species, as appropriate, to provide for fuel breaks. Native seed allocation will be prioritized for use in Greater Sage-Grouse habitat. Outside of PHMA and/or for values other than Greater Sage-Grouse, the following RMP decisions remain in effect with the modification described above: Kemmerer RMP: Require the use of certified weed-free seed and mulch for rehabilitation projects. Pinedale RMP: Disturbed areas will be reclaimed to native site plant composition. If reclamation of original plant composition is impossible or not desirable, reclamation will achieve a native plant community that meets the Wyoming Standards for Rangeland Health.
MD VEG 9	Post emergency stabilization and rehabilitation (ES&R) and burn area emergency rehabilitation (BAER) management will be designed 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 travel management, etc., to achieve and maintain the desired condition of ES&R and BAER projects to benefit Greater Sage-Grouse (Eiswerth and Shonkwiler 2006).
MD VEG 10	Evaluate the role of existing seedings that are currently composed of primarily introduced perennial grasses in and adjacent to Greater Sage-Grouse habitat to determine if they should be restored to sagebrush or habitat of higher quality for Greater Sage-Grouse. If these seedings provide value in conserving or enhancing Greater Sage-Grouse habitats, then no restoration would be necessary. Assess the compatibility of these seedings for Greater Sage-Grouse habitat during the land health assessments.
MD VEG 11	Priority will be given for implementing specific Greater Sage-Grouse habitat restoration projects in areas invaded by annual grasses first to sites that are adjacent to or surrounded by PHMA. Areas invaded by annual grasses will be second priority for restoration when the sites are not adjacent to PHMA, but are within 2 miles of PHMA. The third priority for areas invaded by annual grasses habitat restoration projects will be sites beyond 2 miles of PHMA. The intent will be to focus restoration outward from existing, intact habitat.
MD VEG 12	In fire prone areas where sagebrush seed is required for Greater Sage-Grouse habitat restoration, the BLM will consider establishing seed harvest areas that are managed for seed production and are a priority for protection from outside disturbances.
MD VEG 13	Vegetation treatment proposals must include evaluation of soils, precipitation, invasive/exotic plants, as well as the current condition of PHMA. Avoid aerial pesticide/herbicide spraying in favor of ground applications to minimize drift into nontarget areas in Greater Sage-Grouse habitat unless benefits of treatments are likely to outweigh impacts.
MD VEG 14	Treat areas that contain cheatgrass and other invasive or noxious species to minimize competition and favor establishment of desired species.

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MD VEG 15	Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: The BLM can implement treatments within PHMA 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 BLM will work collaboratively with partners at the federal, state, and local levels, including the Wyoming Weed and Pest Districts within the counties where the treatment is to occur, to maintain and enhance Greater Sage-Grouse habitats in a manner consistent with the core population area strategy for conservation. The BLM will be directed to utilize the Wyoming Grasshopper and Mormon Cricket Control website as a resource for updated information when conducting analysis of grasshopper and Mormon cricket control in Greater Sage-Grouse habitats. Avoid aerial pesticide/herbicide spraying in favor of ground applications to minimize drift into nontarget areas in Greater Sage-Grouse habitat unless benefits of treatments are likely to outweigh impacts. Outside of PHMA and/or for values other than Greater Sage-Grouse, the following RMP decisions remain in effect with the modification described above: <u>Casper RMP:</u> Work with Animal and Plant Health Inspection Service to control outbreaks of grasshoppers and Mormon crickets on public lands in the planning area in accordance with the MOU between U.S. Department of the Interior and Animal and Plant Health Inspection Service.
MD FIRE 1	Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: For Wildland Fire Management, the protection of human life is the single, overriding priority. Setting priorities among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources will be done based on the values to be protected, human health and safety, and the costs of protection. The goal is to restore, enhance, and maintain areas suitable for Greater Sage-Grouse. Greater Sage-Grouse habitat (GHMA) will be prioritized commensurate with local fire plans, property values and other important habitat to be protected, with the goal to restore, enhance, and maintain areas suitable for Greater Sage-Grouse. PHMA (and Priority Areas for Conservation, if so determined by individual RMP efforts) will be the highest priority for conservation and protection during fire operations and fuels management decision-making. The PHMA will be viewed as more valuable than GHMA when priorities are established. When suppression resources are widely available, maximum efforts will be placed on limiting fire growth in GHMA polygons as well. These priority areas will be further refined following completion of the Greater Sage-Grouse Landscape Wildfire and Invasive Species Habitat Assessments described in 2015 ARMPA Appendix L. Outside of PHMA and/or for values other than Greater Sage-Grouse, the following RMP decisions remain in effect with the modification described above: Casper RMP: Appropriate management response will be used on all wildfires in the planning area. Full protection strategies and tactics will be used in the following areas: Wildland Urban Interface (WUI) Wildland industrial interface

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	Developed recreation sites Developed electronics sites of all types. In all other areas appropriate management response (AMR) strategies and tactics will be determined by (but not limited to) the following: Firefighter and public safety Resource values at risk Proximity to private land Firefighting resource availability. Tactical constraints follow: The use of retardant within 300 feet of surface water (standing or running) is prohibited. No trees are to be cut during suppression activities within 200 yards of an identified bald eagle roost. No heavy equipment will be used within the following areas, except when human safety is at risk: Areas of cultural resource sensitivity Riparian/wetland habitats Big game crucial winter range habitats Greater Sage-Grouse leks Areas of highly erosive soils. In areas not identified as full protection, heavy equipment usage will be limited to existing roads and trails or immediately adjacent to them. <u>Kemmerer RMP:</u> In areas of high-density urban and (or) industrial interface with intermingled BLM-administered lands, suppression objectives will follow the AMR in an approved fire management plan for the planning area to provide first for human health and safety, while minimizing loss of property and threats to other surface owners. Generally, wildland fires are suppressed in these areas. In areas of low-density urban and (or) industrial interface where BLM-administered lands occur in large contiguous blocks, fire suppression objectives will follow the AMR in an approved fire management plan for the planning area to provide first for human health and safety, while allowing for achievement of resource objectives. <u>Newcastle RMP:</u> Full suppression will be used on fires endangering human life or that spread to within 0.25 miles of state or private lands, structures and facilities, oil and gas fields, important riparian habitat, or other sensitive resources. All wildfires will be evaluated to determine the need for rehabilitation or restoration measures. Restoration of burned areas will be by natural succession unless a special need is identified to prevent further resource damage. <u>Pinedale RMP:</u> Wildland fire mitigation and fuels activities will be managed to provide for firefighter and public safety as a first priority. Public lands within intermixed land ownership areas will be managed in association with the adjoining and nearby private and state lands. Areas of mixed land ownership, communities at risk as identified in the *Federal Register*, Volume 66, Number 160, 2001 (Antelope Run, Beaver Creek area, Boulder, Cottonwood Creek, Daniel, Forty Rod, Hoback Ranches, New Fork, Pinedale, Pocket Creek, and Upper

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	Green); urban and industrial interface areas; and areas containing high-priority resource values have high priority for response to wildland fires and/or for fuels reduction and mitigation. Wildland fire suppression activities will be based on the AMR. Rawlins RMP: A high priority for fire management activities will be given to areas identified as communities at risk, industrial interface areas, and areas containing resource values considered high priority within the RMP planning area. Green River RMP: Wildfire suppression will emphasize AMR. Immediate control actions will be used only in cases of arson, direct threat to public safety, or a strong potential threaten structural property. Fire suppression actions will be based on achieving the most efficient control and allowing historical acres burned to increase. Activity plans will be developed for designated fire management areas defining specific parameters for all fire occurrences. JMH CAP: Appropriate management response to protect the basin big sagebrush/lemon scurfpea plant communities will be applied. Wildland and prescribed fires will be managed in all vegetation types to maintain or improve biological diversity and the overall health of the public lands. In particular, plant species and age class diversity will be a priority; thus, AMR for all wildland fires will be identified and implemented depending on the resources and management objectives for the area. Suppression techniques and hazardous fuels reduction activities will be identified to reduce wildland fire severity and occurrence on portions of the landscape where fire causes undesirable changes in plant community composition and structure. A site-specific analysis will be prepared for sensitive resource areas, such as special status plant species sites, heritage sites, historic trails, and areas of critical environmental concern (ACECs), to determine the type of fire suppression activity that will be acceptable. Fire equipment and fire suppression techniques, such as vegetation clearing, will be limited to existing roads and trails in special status plant species habitat. As appropriate, the Fire Management Plan will be updated to reflect the appropriate suppression activity in sensitive resource areas.
MD FIRE 2	In PHMA, fuels treatments will be designed and implemented with an emphasis on protecting existing sagebrush ecosystems and enhancing and protecting future sagebrush ecosystems (refer to WGFD Protocols for Treating Sagebrush to Benefit Sage-grouse [WGFD 2011, as updated]) and 2015 ARMPA Appendix H. 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. Fuel treatments will be designed through an interdisciplinary process to expand, enhance, maintain, and protect Greater Sage-Grouse habitat. Green strips (using native fire resistant/resilient species) and/or fuel breaks will be used, where appropriate, to protect seeding efforts from subsequent fire events. In coordination with the USFWS and relevant state agencies, BLM planning units (Districts) with large blocks of Greater Sage-Grouse habitat will develop, using the assessment process described in 2015 ARMPA Appendix L, a fuels management strategy which considers an up-to-date fuels profile, land use plan direction, current and potential habitat fragmentation, sagebrush and Greater Sage-Grouse ecological factors, and active vegetation management steps to provide critical breaks in fuel continuity, where appropriate. When developing this

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	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. Utilizing 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 will be acceptable. Upon project completion, fuels projects will be monitored and managed to ensure long-term success, including persistence of seeded species and/or other treatment components. Invasive vegetation post-treatment will be controlled. Wildfire prevention plans will be developed that explain the resource value of Greater Sage-Grouse habitat and include fire prevention messages and actions to reduce human-caused ignitions.
MD FIRE 3	Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: For fuels management, the BLM will consider multiple tools for fuels reduction and will analyze in NEPA compliance documentation before electing to implement prescribed fire in PHMA. If prescribed fire is used in Greater Sage-Grouse habitat, the NEPA analysis for the Burn Plan will address: Why alternative techniques were not selected as a viable options. How Greater Sage-Grouse goals and objectives will be met by its use. How the COT (Conservation Objectives Team) report objectives will be addressed and met. A risk assessment to address how potential threats to Greater Sage-Grouse habitat will be minimized. Prescribed fire as a vegetation or fuels treatment shall only be considered after the NEPA analysis for the Burn Plan has addressed the four bullets outlined above. Prescribed fire can be used to meet specific fuels objectives that protect Greater Sage-Grouse habitat in PHMA (e.g., creation of fuel breaks that disrupt the fuel continuity across the landscape in stands where annual invasive grasses are a minor component in the understory, burning slash piles from conifer reduction treatments, used as a component with other treatment methods to combat annual grasses and restore native plant communities). Prescribed fire in known winter range shall only be considered after the NEPA analysis for the Burn Plan has addressed the four bullets outlined above. Any prescribed fire in winter habitat will need to be designed to strategically reduce wildfire risk around and/or in the winter range and designed to protect winter range habitat quality. Refer to 2015 ARMPA Appendix H, WGFD Protocols for Treating Sagebrush to Benefit Sage-grouse (WGFD 2015, as updated) and BLM Washington Office Instruction Memorandum 2013-128. If prescribed fire activities are not in compliance with these protocols, the treatment will be considered a PHMA disturbance. Outside of PHMA and/or for values other than Greater Sage-Grouse, the following RMP decisions remain in effect with the modification described above: <u>Casper RMP:</u> Use prescribed burning to achieve measurable 5th-order watershed objectives from (1) other resources, including, but not limited to, forestry, wildlife, range, vegetation, and watershed; (2) the reduction of hazardous fuels; and (3) the introduction of fire into fire-adapted ecosystems. <u>Green River RMP/JMH CAP:</u>

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	Prescribed fire will generally be the preferred method of vegetation manipulation to convert decadent stands of brushland to grasslands and to stimulate sprouting of old, decadent aspen stands and/or shrub species. Prescribed burns are preferred in areas having greater than 35 percent sagebrush composition, 20 percent desirable grass composition, and greater than 10 inches of precipitation. Rawlins RMP: Fuel treatments, including prescribed fire, mechanical, chemical, and biological treatments will be used for fuels reduction and to meet other multiple-use resource objectives, including returning fire to its natural role in the ecosystem. WUIs and communities at risk will receive priority for fuels reduction.
MD FIRE 4	Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: Remove conifers encroaching into sagebrush habitats in a manner that considers tribal cultural values. Prioritize treatments closest to occupied Greater Sage-Grouse habitats and near occupied leks, and where juniper encroachment is phase 1 or phase 2. Use of site-specific analysis and principles like those included in the FIAT (Fire and Invasive Species Assessment) report (Chambers et. al., 2014) and other ongoing modeling efforts to address conifer encroachment will help refine the location for specific priority areas to be treated. Outside of PHMA and/or for values other than Greater Sage-Grouse, the following RMP decisions remain in effect with the modification described above: Casper RMP: Treat woodland encroachment in grassland, sagebrush, aspen, and other vegetative communities where it is determined to be detrimental to other resource values or uses. Manage 630,180 acres of sagebrush communities toward Desired Plant Community.
MD FIRE 5	The following RMP decisions remain in effect for both PHMA and GHMA: Pinedale RMP: In the WUI or industrial interface, fuels reduction methods best suited to the area will be used to reduce the risk of catastrophic fire to these areas. Casper RMP: Use prescribed burning to achieve measurable 5th-order watershed objectives from (1) other resources, including, but not limited to, forestry, wildlife, range, vegetation, and watershed; (2) the reduction of hazardous fuels; and (3) the introduction of fire into fire-adapted ecosystems. Utilize an integrated management technique approach (defined as prescribed fire, mechanical, chemical, or biological, followed by desired reseeding) to reduce fuels to protect high priority areas or resource values defined as, but not limited to the following: Urban and industrial interface areas Developed recreation areas Commercial timber areas Wildlife habitats Range-improvement facilities Communication sites Municipal watersheds. Decision 3008 Fuels Management.

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	Rawlins RMP: A high priority for fire management activities will be given to areas identified as communities at risk, industrial interface areas, and areas containing resource values considered high priority within the RMP planning area. JMH CAP: Appropriate management response to protect the basin big sagebrush/lemon scurfpea plant communities will be applied. Wildland and prescribed fires will be managed in all vegetation types to maintain or improve biological diversity and the overall health of the public lands. In particular, plant species and age class diversity will be a priority; thus, AMR for all wildland fires will be identified and implemented depending on the resources and management objectives for the area. Suppression techniques and hazardous fuels reduction activities will be identified to reduce wildland fire severity and occurrence on portions of the landscape where fire can cause undesirable changes in plant community composition and structure. A site-specific analysis will be prepared for sensitive resource areas, such as special status plant species sites, heritage sites, historic trails, and ACECs, to determine the type of fire suppression activity that will be acceptable. Fire equipment and fire suppression techniques, such as vegetation clearing, will be limited to existing roads and trails in special status plant species habitat. As appropriate, the Fire Management Plan will be updated to reflect the appropriate suppression activity in sensitive resource areas.
MD FIRE 6	Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: Burned areas within PHMA will be restored to suitable habitat with consideration given to ESDs, reference sites, site potential, habitat objectives and local variability. Outside of PHMA and/or for values other than Greater Sage-Grouse, the following RMP decisions remain in effect with the modification described above: Kemmerer RMP: Implement BLM Emergency Stabilization and Rehabilitation standards located in the DOI Interagency Burned Area Emergency Response Guidebook and BLM Burned Area Emergency Stabilization and Rehabilitation Handbook on wildland fires to protect and sustain healthy ecosystems and protect life and property. Newcastle RMP: All wildfires will be evaluated to determine the need for rehabilitation or restoration measures. Restoration of burned areas will be by natural succession unless a special need is identified to prevent further resource damage. Rawlins RMP: Rehabilitation and restoration efforts specific to a fire event will be undertaken to protect and sustain ecosystems, public health and safety, and to help communities protect infrastructure.
MD FIRE 7	Within PHMA, post fuels management projects will be designed to ensure long-term persistence of seeded or pre-treatment native plants (while controlling for erosion and treating infestation of invasive plant species), to return to suitable Greater Sage-Grouse habitat.

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Action #	2019 ARMPA
MD LG 1	The BLM policy in WO-IM-2009-007 and BLM Handbook H-4180-1 will be used to evaluate land health standards achievement in PHMA (core only) and, where not achieved, to determine if existing grazing management practices or levels of grazing use on public lands are significant factors in failing to achieve the standards and conform with the guidelines, which through this process will identify appropriate actions to address nonachievement and nonconformance. When determining appropriate actions to address nonachievement of land health standards and nonconformance with the guidelines due to existing grazing management practices or levels of grazing use, management actions including but not limited to the following will be considered singly or in combination: Season or timing of use Numbers of livestock (includes temporary nonuse or livestock removal) Distribution of livestock use Intensity of use Kind of livestock (e.g., cattle, sheep, horses, llamas, alpacas and goats) Class of livestock (e.g., yearlings versus cow calf pairs) Range improvements. Refer to the document, "Grazing Influence, Management, and Objective Development in Wyoming's Greater Sage-Grouse Habitat" (Cagney et al. 2010) for guidance when considering appropriate management actions to achieve conformance.
MD LG 2	Within PHMA the BLM will work cooperatively with permittees, lessees, and other landowners to develop voluntary grazing management strategies that integrate both public and private lands into single management units to improve Greater Sage-Grouse habitat.
MD LG 3	The following RMP decisions remain in effect: <u>Casper RMP:</u> Grazing leases will be adjusted where an evaluation of monitoring, field observations, or other data indicate changes, and either increases or decreases, in forage allocation are needed or when necessary or required by other applicable law or regulation. <u>Kemmerer RMP:</u> Vegetative communities will be managed in accordance with Wyoming Standards for Healthy Rangelands. Appropriate livestock grazing management actions will be developed and integrated to address rangeland health standards, improve forage for livestock, and enhance rangeland health. <u>Newcastle RMP:</u> Any adjustments in livestock grazing use will be made as a result of monitoring and consultation with grazing permittees. Monitoring studies will be conducted using the current BLM-approved methodology**.** <u>Pinedale RMP:</u> Monitoring of the range and the vegetation resource will be conducted at a level sufficient to detect changes in grazing use, trend, and range conditions. Monitoring will be tied to land health standards and indicators that help determine change in status and progress toward meeting objectives. Data will be used to direct and support grazing management decisions consistent with national policy.

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	Rawlins RMP: Livestock grazing will be managed to meet the Wyoming Standards for Healthy Rangelands. Green River RMP/JMH CAP: The kinds and seasons of livestock grazing use will continue to be licensed until monitoring, negotiation, consultation, or a change in resources conditions indicate that a modification is needed. Monitoring will be continued or initiated following adjustments in grazing use to assure that grazing and other management objectives are being met.
*MD LG 4	Within PHMA, if monitoring data show the wildlife/special status species standard has not been met nor progress being made toward meeting that standard, there would be an evaluation and a determination made as to the cause. If it is determined that the current authorized livestock use is a significant causal factor in failing to achieve the wildlife/special status species standards~~,~~ the BLM would address the achievement or progress toward achieving the LHSs (43 CFR 4180.2) and, if needed, Greater Sage-Grouse habitat maintenance or improvement. When NEPA analysis is required for a specific implementation action, one alternative would include mechanisms to make adjustments to meet or make progress toward meeting the wildlife/special status species standard. The analysis should also identify the BLM-approved data collection methodologies used for monitoring conditions and determining when adjustments are necessary. If current grazing management meets land health standards and provides for Greater Sage-Grouse habitat, there would be no need to analyze an alternative for Greater Sage-Grouse. Authorized uses in PHMA that incorporate habitat objectives for Greater Sage-Grouse must develop desired conditions based on Greater Sage-Grouse habitats present in the allotment and the ecological potential of sites that supports these habitats. Metrics used to monitor for objectives must be developed and inform the wildlife/SSS portion of the Standards for Healthy Rangelands. Within PHMA, seasonal habitat objectives for Greater Sage-Grouse apply only to those habitats delineated within an allotment during the specific season (e.g., breeding season objectives during breeding season). Data needed to inform the relationship between the authorized use and habitat condition would come from sample locations that appropriately reflect the impact of the authorized use on habitat conditions. Data points should fall within Greater Sage-Grouse seasonal habitat areas and be collected on ecological sites that have the potential to produce Greater Sage-Grouse habitat.
*MD LG 5	Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: BLM monitoring would be used to evaluate progress toward achieving land health standards within PHMA and, where not achieved, to determine if existing grazing management practices or levels of grazing use on public lands are significant factors in failing to meet, maintain or make progress toward achieving the standards and conform with the guidelines, which through this process will identify appropriate actions to address nonachievement and nonconformance. The BLM would prioritize (1) the review of grazing permits/leases, in particular to determine if modification is necessary prior to renewal, and (2) the processing of grazing permits/leases in PHMA. In setting workload priorities, precedence would be given to existing permits/leases in these areas not meeting LHSs, with focus on those containing riparian areas, including wet meadows. The BLM may use other criteria for prioritization to respond to urgent natural resource concerns (e.g., fire) and legal obligations.

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	Outside of PHMA and/or for values other than Greater Sage-Grouse, the following RMP decisions remain in effect with the modification described above: Casper RMP: Conversions in kinds of livestock and changes in season of use will be considered on a case-by-case basis through an environmental analysis. Such changes will be consistent with rangeland health objectives. Grazing leases will be adjusted to accurately reflect the kind of livestock use on public land in all allotments. Kemmerer RMP: Current amounts, kinds, and seasons of livestock grazing uses will be authorized until rangeland health standards assessment results and (or) monitoring indicates a grazing use adjustment is necessary, or that a kind and (or) class of livestock or season of use modification can be accommodated. Newcastle RMP: Any adjustments in livestock grazing use will be made as a result of monitoring and consultation with grazing permittees. Monitoring studies will be conducted using the current BLM-approved methodology. Pinedale RMP: Conversions from one type of livestock to another will be evaluated on a case-by-case basis, including an environmental analysis, and will be authorized in conformance with the goals and objectives of the RMP. Rawlins RMP: The current amounts, kinds, and seasons of livestock grazing use will be authorized until monitoring, field observations, ecological site inventory, or other data acceptable to BLM indicates a grazing use adjustment is needed, as appropriate. Requests for changes in season-of use or kind-of-livestock will be considered on a case-by-case basis. Any decision regarding changes in grazing use will include cooperation, consultation, and coordination with the grazing permittees and the interested public. Green River RMP: The Wyoming Standards for Healthy Rangelands (BLM 1997a) will apply to all resource uses on BLM- administered lands. These standards are the minimal acceptable conditions that address the health, productivity, and sustainability of the rangeland. The standards describe healthy rangelands rather than rangeland by-products. Achievement of a standard is determined through observing, measuring, and monitoring appropriate indicators. An indicator is a component of a system whose characteristics (e.g., presence, absence, quantity, and distribution) can be observed, measured, or monitored based on sound scientific principles. The standards will direct the management of public lands and focus the implementation of this activity plan toward the maintenance or attainment of healthy rangelands.
MD LG 6	At the time a permittee or lessee voluntarily relinquishes a permit or lease, the BLM will consider whether the public lands where that permitted use was authorized should remain available for livestock grazing or be used for other resource management objectives, such as reserve common allotments or fire breaks. This does not apply to or impact grazing preference transfers, which are addressed in 43 CFR 4110.2-3.

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MD LG 7	Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: When periods of drought occur, where appropriate, the AO will evaluate strategies to address drought through coordination with grazing permittee/lessee and annual billings processes. In cooperation with livestock grazing permittees/lessees, drought contingency plans will be developed at the appropriate landscape unit that provide for a consistent/appropriate BLM response. Contingency plans shall establish strategies for addressing ongoing drought and post-drought recovery. Outside of PHMA and/or for values other than Greater Sage-Grouse, the following RMP decisions remain in effect with the modification described above: Casper RMP: Other management considerations for use of stock driveway withdrawals (SDW) will include providing emergency use for relief from fire, drought, or other natural causes or to meet management objectives in adjoining allotments that require rest. These other uses will be addressed on a case-by-case basis and may occur any time during the year provided the AO has determined adequate forage is available and it does not interfere with regular trail use. The decision determining there is adequate forage will be documented and filed in the appropriate SDW file. Consultation and coordination with livestock owners who regularly use the respective SDW will be made prior to authorizing this type of use. This use will be authorized in accordance with federal grazing regulations (also see MD LG 9). A drought contingency plan will be developed to maintain adequate habitat components for viable fish, wildlife, and SSS populations.
*MD LG 8	In PHMA, existing range improvements (e.g., fences, livestock/wildlife watering facilities) would continue to be evaluated and modified when necessary. Supplements and supplemental feeding would continue to be authorized where appropriate. Outside of PHMA and GHMA, and/or for values other than Greater Sage-Grouse, the following RMP decisions remain in effect with the modification described above: Casper RMP: Identified hazard fences will be modified and new fences will be constructed in accordance with the BLM Fencing Handbook 1741-1. Decision 4010. Placement of salt, mineral, or forage supplements for livestock will not be allowed within 0.25 miles of water, wetlands, and riparian areas, unless written analysis shows that watershed, riparian, wetland, wildlife, and vegetative values will not be adversely affected. Forage supplements will be required to be "certified weed- free." Kemmerer RMP: BLM fencing standards will be applied to newly constructed fences on BLM-administered lands within the planning area. Existing fences will be eliminated or modified to reduce conflicts on a case-by-case basis. Livestock salt or mineral supplements will be located a minimum of 0.25 miles away from water sources, riparian areas, and aspen stands. Buffers will be based on resource concerns on a case-by-case basis. Newcastle RMP: Fence construction will be required to meet current BLM fence standards.

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	Fences on BLM-administered land surface that cause documented wildlife conflicts will be removed, reconstructed, or modified, as appropriate or necessary, to eliminate or reduce the conflict. Construction of fences that interfere with movements of big game species in crucial big game winter range will not be allowed on BLM-administered land surface. Pinedale RMP: Mineral supplement blocks will be placed in locations that promote proper grazing distribution and prevent inappropriate livestock use on riparian habitat; for example, by locating supplements on ridgetops and/or approximately 0.25 miles from riparian habitat. Placement of supplements near water sources, such as wells and reservoirs, will consider rangeland objectives, such as grazing distribution, wildlife habitat requirements, and reclamation success. Mineral supplement blocks will not be placed within 0.25 miles of an occupied Greater Sage-Grouse lek. Mineral supplement blocks will not be placed within 0.25 miles of known Special Status Plant Species locations. Rawlins RMP: New fence construction will be authorized according to BLM standards unless modified following consultation with affected parties. Existing fences will be modified according to current BLM standards and according to wildlife and livestock management needs. Green River RMP/JMH CAP: Where documented wildlife conflicts with fencing on public lands occur, fences will be modified, reconstructed, or, if necessary, removed. Herding control of livestock will be encouraged as an alternative to fencing. Fence construction will be in accordance with BLM design standards and located so as not to overly impede wildlife movement. Consideration will also be given to SSS and wild horse movement. Green River RMP: Livestock water developments and range improvements will be considered to maintain or improve resource conditions, enhance livestock distribution, or both. Compatibility with special status plant species will be required. Water developments and/or range improvements proposed in sensitive areas will be considered only if wildlife habitat and resource conditions are maintained or improved and no significant or irreversible adverse effects will occur. Salt or nutritional supplements will be prohibited within 500 feet of riparian habitat and National Historic and Scenic Trails unless analysis shows that these resources will not be adversely affected. These supplements also will be prohibited on areas inhabited by special status plant species. Placement of supplements at least 500 feet away from wells, troughs, and other human-made water sources will be encouraged to better distribute livestock. JMH CAP: Livestock water developments and range improvements will be considered to maintain or improve resource conditions, enhance livestock distribution, or both. Compatibility with special status plant species will be required. Water developments and/or range improvements proposed in sensitive areas will be considered only if wildlife habitat and resource conditions were maintained or improved and no significant or irreversible adverse effects will occur. Salt or nutritional supplements will be prohibited within 500 feet of riparian habitat and National Historic and Scenic Trails unless analysis shows that these resources will not be adversely affected. These supplements also will be prohibited on areas inhabited by special status plant

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	species. Placement of supplements at least 500 feet away from wells, troughs, and other human-made water sources will be encouraged to better distribute livestock.
MD LG 9	Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: Livestock trailing that is authorized will include a trailing plan to utilize non-habitat to the extent possible, include specific routes and timeframes for trailing, utilize existing trails, and avoid stopovers on occupied leks, as appropriate. The following RMP decisions remain in effect with the modification described above: Casper RMP: The revocation of withdrawals for those trails that are no longer active will be reviewed and recommended and these lands will be incorporated into adjacent allotments (46,050 acres). Grazing leases will be offered to the respective grazing lessees. All remaining SDW lands for trail use (55,680 acres) will be retained. Kemmerer RMP: Current livestock trails will be retained. Livestock trailing use will occur within 0.5 miles of the mapped centerline. Pinedale RMP: Adequate stock trails will be maintained to support livestock trailing needs.
*MD LG 10	Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: In PHMA, for riparian habitats and/or wet meadow communities utilized by Greater Sage-Grouse, livestock grazing would be managed to promote the production and availability of beneficial forbs for use during brood-rearing, while maintaining upland conditions and functions. Outside of PHMA and/or for values other than Greater Sage-Grouse, the following RMP decisions remain in effect with the modification described above: Casper RMP: Lotic and lentic wetland/riparian areas will be managed toward Proper Functioning Condition (PFC). The BLM will manage toward PFC and identified Desired Plant Community on 350 miles of lotic and adjacent riparian habitat and 10,000 acres of lentic habitat to meet fish, wildlife, and SSS habitat requirements. Kemmerer RMP: Livestock conversions will be allowed in allotments with riparian concerns only when a plan is approved to address riparian issues. Management actions and range improvements proposed to address riparian issues will have to be implemented prior to authorizing the conversion. Livestock conversions may be approved only after completion of a suitability study for the conversion. The conversion may be authorized if it is determined that riparian habitats will be maintained or improved by the conversion. Pinedale RMP: Meet the Wyoming Standards for Rangeland Health and maintain or enhance wetland and riparian vegetation to achieve PFC. Grazing systems will be designed to maintain or improve watershed and range condition; for example, through changing seasons of use, implementing rotational or other grazing management systems, or developing infrastructure for livestock management. In allotments with riparian habitat, grazing management actions will be designed to maintain or achieve proper functioning condition.

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	Green River RMP: Range improvements will be directed at resolving or reducing resource concerns, improvement of wetland/riparian areas, and overall improvement of vegetation/ground cover. New range improvements may be implemented in "I" and "M" category allotments. Maintenance of range improvements will be required in accordance with the BLM Rangeland Improvement Policy. JMH CAP: Implementation of grazing management systems will assist in improving or maintaining the desired range condition. Approved AMPs, or other activity plans intended to serve as the functional equivalent to an AMP, for each of the designated grazing allotments will provide the necessary guidance for achieving grazing management objectives. Appropriate actions for improving degraded rangeland and riparian habitat (i.e., meeting Wyoming Standards for Healthy Rangelands (BLM 1997a)) include, but will not be limited to, reduction of permitted animal unit months, modified turnout dates, livestock water developments, range improvements, modified grazing periods, growing season rest, riparian pastures, exclosures, implementation of forage utilization levels, and livestock conversions. These improvements will be considered individually using the method outlined in Appendix 2 of the JMH CAP ROD to ensure conformance with management objectives for the planning area and other resource values.
MD LG 11	Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: Range improvement projects will be planned and authorized in a way that contributes to rangeland health and maintains and/or improves Greater Sage-Grouse and its habitat. Outside of PHMA and/or for values other than Greater Sage-Grouse, the following RMP decisions remain in effect with the modification described above: Green River RMP: Water sources may be developed in crucial wildlife winter ranges only when consistent with wildlife habitat needs. Such sources will be designed to benefit livestock, wild horses, and wildlife. Alternative water supplies or facilities for livestock may be provided to relieve livestock grazing pressure along stream bottoms and improve livestock distribution. JMH CAP: Livestock water developments and range improvements will be considered to maintain or improve resource conditions, enhance livestock distribution, or both. Compatibility with special status plant species will be required. Water developments and/or range improvements proposed in sensitive areas will be considered only if wildlife habitat and resource conditions are maintained or improved and no significant or irreversible adverse effects will occur.
MD LG 12	Existing water developments associated with springs and seeps will be evaluated and associated pipelines/structures to those developments having a negative effect on PHMA will be modified.
MD Wild Horses and Burro (WHB) 1	Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: Manage herd management areas (HMAs) in Greater Sage-Grouse habitat within established appropriate management level range to achieve and maintain Greater Sage-Grouse habitat.

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	Outside of PHMA and/or for values other than Greater Sage-Grouse, the following RMP decisions remain in effect with the modification described above: Green River RMP/JMH CAP: Specific habitat objectives for herd management areas will be developed. Consideration will be given to desired plant communities, wildlife, watershed, livestock grazing, and other resource needs.
MD WHB 2	PHMA (core only) management objectives will be considered when evaluating appropriate management levels.
MD WHB 3	PHMA (core only) management objectives will be considered when conducting land health assessments in BLM HMAs.
MD WHB 4	When conducting NEPA analysis for wild horse management activities, water developments or other rangeland improvements for wild horses in PHMA, the direct and indirect effects on Greater Sage-Grouse populations and habitat will be addressed. Water developments or rangeland improvements will be implemented using the criteria identified for domestic livestock identified above in PHMA.
MD WHB 5	Coordinate with other resources (Range, Wildlife, and Riparian) to conduct land health assessments within all BLM HMAs.
**MD Mineral Resources (MR) 1 Fluid Minerals (Unleased Estate)	Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: The BLM will allow oil and gas leasing consistent and subject to the leasing stipulations analyzed in the timing, distance, disturbance, and density restrictions sections (Map 2-2) (see MD SSS 4 through MD SSS 10 and MD SSS 12, see also 2015 Wyoming ARMP Amendment Appendix A – Fluid Mineral Stipulations). Ensure that leasing activities in PHMA comply with Greater Sage-Grouse resource management plan decisions and remain in compliance with laws, regulations and policy. Fluid mineral leasing will be allowed in PHMA, except in areas that are closed to leasing due to the need to protect other sensitive resources.
**MD MR 2 Fluid Minerals (Unleased Estate)	Fluid Minerals (Unleased Estate) Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: Geophysical exploration projects that are designed to minimize habitat fragmentation within PHMA will be allowed, except where prohibited or restricted by existing RMP decisions, and in conformance with timing and distances Management Decisions (see MD SSS 4 through MD SSS 10 and MD SSS 12). Outside of PHMA and/or for values other than Greater Sage-Grouse, the following RMP decisions remain in effect with the modification described above: Casper RMP: The blocks of public land identified as mapped in the Casper Field Office GIS database will be managed to retain intact blocks of native vegetation (192,550 acres, of which 131,880 acres are BLM-administered surface). In these areas, the following restrictions apply: These blocks are (1) unavailable for oil and gas leasing, and (2) a geophysical operation on public surface for the life of the plan. Activities for existing oil and gas leases are managed intensively (see Appendix U of the Casper RMP). Existing leases will be allowed to expire and not be renewed. Within these blocks, a withdrawal from the operation of the public land laws, including the mining laws will be pursued.

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	These blocks are closed to mineral material disposal. Existing permits will be allowed to expire without renewal or expansion. These blocks are not open to wind/renewable energy development. These blocks remain open to livestock grazing. All allowed surface-disturbing activities within the designated blocks are subject to a Controlled Surface Use restriction, minimizing surface disturbance to meet management objectives. Decision 4024 The North Platte River Special Recreation Management Area will continue to be open to oil and gas leasing and geophysical operations. Decision 7039 The area is unavailable for oil and gas leasing and geophysical exploration is not allowed. Decision 7047 The MA is unavailable for new oil and gas leasing. No geophysical operations will be allowed on public surface. Activities on existing leases will be managed intensively to meet the objectives of the MA (see Appendix U of the Casper RMP – Intensive Management). To minimize surface-disturbing activities, oil and gas exploration and development will use directional drilling techniques and well twinning whenever practicable. Decision 7059 The Red Wall/Gray Wall complex is located entirely within the South Bighorns/Red Wall Management Area and is unavailable for new oil and gas leasing. No geophysical operations will be allowed on public surface. Activities on existing leases will be intensively managed to meet the objectives of the MA (see Appendix U of the Casper RMP– Intensive Management). To minimize surface-disturbing activities, oil and gas exploration and development will use directional drilling techniques and well twinning whenever practicable. Decision 7063 Those lands currently open to oil and gas leasing will continue to be open to geophysical operations. Those lands open to oil and gas leasing, but subject to a NSO restriction, may be open to geophysical operations should site specific NEPA analysis disclose a finding of no significant impact. No geophysical operations are allowed in areas closed for oil and gas leasing. Decision 2019 <u>Kemmerer RMP:</u> Allow for geophysical exploration on lands throughout the planning area subject to identified conditions of approval. <u>Newcastle RMP:</u> Surface-disturbing and disruptive activities associated with all types of minerals exploration and development and with geophysical exploration will be subject to appropriate mitigation measures determined through, but not limited to, use of MD SSS 4. <u>Pinedale RMP:</u> Vehicle-based geophysical activities will be assessed on a case-by-case basis. The use of surface and/or aboveground (Poulter shot) explosive charges for geophysical exploration will be assessed case by case. Geophysical projects, including projects proposed in areas with an NSO restriction, will be analyzed and mitigation developed on a case-by-case basis. Geophysical activities that are considered casual use actions are allowed within 0.25 miles of active Greater Sage-Grouse leks provided that: Operations are conducted on designated roads and trails. Operations during the breeding season (March 1 through May 15) are conducted between the hours of 8:00 a.m. and 8:00 p.m. A 150-foot wide strip of undisturbed sagebrush is maintained around the perimeter of the lek for hiding and escape cover.

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	Rawlins RMP: All lands open to oil and gas leasing consideration will also be open to geophysical exploration, subject to appropriate resource surveys, surface protection measures, adequate bonding, and adherence to State of Wyoming standards for geophysical operations. Vehicular use for "necessary tasks" (as defined in the glossary), such as geophysical exploration including project survey and layout, will be permitted except where specifically prohibited (e.g., some SD/MAs). Green River RMP: Geophysical exploration (vehicles and detonation) activities will be prohibited within 0.5 miles of the Pinnacles Geologic Feature. Areas of sensitive heritage resources and geologic features, such as Boars Tusk, White Mountain Petroglyphs, special status plant species, wilderness study areas (WSAs), and historic trails, will remain closed. Receiver lines may be laid using foot traffic within these areas. Exceptions to these restrictions may be granted on a case-by-case basis subject to appropriate site-specific analysis and mitigation requirements. The remainder of the planning area will be open to geophysical exploration, with application of appropriate mitigation. Rights-of-way limitations in the planning area apply to on- and off-road vehicle traffic used for geophysical activities. Exploration activities will be allowed in sensitive resource areas only if they can be performed with acceptable mitigation of impacts. JMH CAP: Geophysical exploration (vehicles and detonation) activities will be prohibited within 0.5 miles of the Pinnacles Geologic Feature. Areas of sensitive heritage resources and geologic features, such as Boars Tusk, White Mountain Petroglyphs, special status plant species, WSAs, and historic trails, will remain closed. Receiver lines may be laid using foot traffic within these areas. Exceptions to these restrictions may be granted on a case-by-case basis subject to appropriate site-specific analysis and mitigation requirements. The remainder of the planning area will be open to geophysical exploration, with application of appropriate mitigation. ROW limitations in the planning area apply to on- and off-road vehicle traffic used for geophysical activities. Exploration activities will be allowed in sensitive resource areas only if they can be performed with acceptable mitigation of impacts.
**MD MR 3 Fluid Minerals, Leased Estate	Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: In cases where federal oil and gas leases have been issued with stipulations varying from those in 2019 Wyoming GrSG ARMPA Appendix A for the protection of Greater Sage-Grouse or their habitats, as provided in the applicable RMP decision, as revised or amended, their inclusion as APD COAs will be considered when approving exploration and development activities through completion of the environmental record of review (43 CFR 3162.5 and 36 CFR 228.108), including appropriate documentation of compliance with NEPA. Overall consideration shall be given to minimizing the impact on Greater Sage-Grouse through a project design that avoids, minimizes, reduces, rectifies, and/or adequately compensates for direct and indirect impacts on PHMA or use and includes applicable and technical COAs (see MD SSS 4 through MD SSS 10 and MD SSS 12). Selection and application of these measures shall be based on current science and research on the effects on important breeding, nesting, brood-rearing, and wintering areas. For proposed operations in PHMA, 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, off-site mitigation, and expected periods of use associated with the proposed project. Seasonal habitats or project features related to potential Greater Sage-

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	Grouse 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 the BLM will 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 (See MD SSS 4). The BLM will work with project proponents in these situations to promote measurable Greater Sage-Grouse conservation objectives such as, but not limited to, consolidation of project related infrastructure to reduce habitat fragmentation and loss and to promote effective conservation of seasonal habitats and PHMA that support population management objectives set by the state. The BLM will continue to work with project proponents and the WGFD 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 (based on vegetation, topography, or other habitat features) and resources whether inside or outside of PHMA (utilizing DDCT analysis process). Valid existing rights will be recognized and respected. For values other than Greater Sage-Grouse, the following RMP decisions remain in effect with the modification described above: <u>Kemmerer RMP:</u> Choose and implement appropriate mitigation in a timely manner to minimize decreases in habitat function. Utilize appropriate voluntary off-site compensatory mitigation to reduce impacts. This will be necessary if (1) all on-site mitigation has been accomplished and adverse effects have not been mitigated; or (2) if on-site mitigation is not feasible. <u>Pinedale RMP:</u> Off-site mitigation proposed by oil and gas or other operators can be considered and analyzed in future environmental documents as mitigation for proposed activities within the planning area. Proposed off-site mitigation will be described and analyzed for effectiveness in detail on a project-specific basis. Off-site mitigation will conform to requirements in the Pinedale RMP regarding the order of use of mitigation methods, stipulations applied to off-site mitigation measures, and priority order for mitigating resource impacts on-site or off-site. <u>Green River RMP:</u> Development actions will be analyzed on a case-by-case basis to identify mitigation needs to meet RMP objectives, provide for resource protection, and provide for logical development. Limitations on the amount, sequence, timing, or level of development may occur. This may result in transportation planning and in limitations in the number of roads and drill pads, or deferring development in some areas until other areas have been restored to previous uses. <u>JMH CAP:</u> COAs attached to an APD will be based on site-specific NEPA or other analysis and will establish specific, necessary mitigation measures not covered by stipulations for resource and environmental protection. Some areas will need more intensive mitigation measures to protect sensitive resources and provide for public health and safety. These intensive mitigation measures or COAs will mostly apply to areas with overlapping sensitive resources (e.g., Areas 2 and 3). Examples of intensive mitigation that can apply to all activities based on site- specific analysis include off-site placement of facilities, remote control monitoring, restricted or prohibited surface use including road construction,

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	multiple wells from a single pad, central tank batteries/facilities, and pipelines and power lines concentrated in specific areas. In addition, refer to Section 3.12.3 for additional mitigation measures that may apply as part of the transportation plan.
**MD MR 4	Within PHMA, field offices will work with project proponents (including those within BLM) to site their projects in locations that minimize impacts on sensitive resources (see also MD SSS 4 through MD SSS 10 and MD SSS 12).
**MD MR 5	Master Development Plans will be considered and encouraged for projects involving multiple proposed disturbances within PHMA (see also MD SSS 4 through MD SSS 10 and MD SSS 12).
**MD MR 6	Within PHMA, unitization will be encouraged as a means of minimizing adverse impacts on Greater Sage-Grouse to reduce fragmentation and surface-disturbing and disruptive activities (see also MD SSS 4 through MD SSS 10 and MD SSS 12).
**MD MR 7	The BLM shall closely examine the applicability of categorical exclusions in PHMA and GHMA. If extraordinary circumstances review is applicable, the BLM shall determine whether those circumstances exist. For proposed actions in PHMA, determine whether a categorical exclusion is applicable and if so, closely examine the extraordinary circumstances, if applicable, to determine whether one or more exists that will require preparation of a NEPA analysis. If a categorical exclusion applies, and no extraordinary circumstances exist, determine whether preparing a NEPA analysis will help inform decision making (see also MD SSS 4 through MD SSS 10 and MD SSS 12).
**MD MR 8	Federal Regulations, 43 CFR 3104.1 requires that a bond be furnished before any drilling or surface disturbance activities begin. The lessee, sublessee or the operator must furnish a surety or personal bond in the amount of at least $10,000 to ensure compliance with all the lease terms, including protection of the environment. With the consent of the surety and principal, the operator may use the bond of another party, such as the lessee. Each time there is a new operator, that operator must notify the BLM that he/she is the responsible operator, giving the particulars of the bond under which he/she will operate. The BLM can require an increase in a bond amount any time conditions warrant such an increase. A reclamation bond will be required on all projects that is commensurate with the scope, scale, size of the project within PHMA. Partial bonding may be appropriate depending on these factors. (see also MD SSS 4 through MD SSS 10 and MD SSS 12)
**MD MR 9	Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: Produced water from coalbed natural gas wells will be treated and disposed of in collaboration and consistent with the requirements of the state, and RDFs specified in Management Action 10 (see 2019 Wyoming GrSG ARMPA Appendix B). Outside of PHMA and/or for values other than Greater Sage-Grouse, the following RMP decisions remain in effect with the modification described above: <u>Pinedale RMP:</u> Produced water from coalbed natural gas wells will be treated and disposed of in collaboration and consistent with the requirements of the state. (see also MD SSS 4 through MD SSS 10 and MD SSS 12)
**MD MR 10	Specific to management for Greater Sage-Grouse, within PHMA, all RMPs are amended as follows:

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	Where the federal government owns the mineral estate, and the surface is in nonfederal ownership, apply the same stipulations, COAs, and/or conservation measures and RDFs applied if the mineral estate is developed on BLM-administered lands in that management area, to the maximum extent permissible under existing authorities, and in coordination with the landowner (see also MD SSS 4 through MD SSS 10 and MD SSS 12). Within PHMA and outside of PHMA and/or for values other than Greater Sage-Grouse, the following RMP decisions remain in effect with the modification described above: <u>Pinedale RMP:</u> BLM-permitted actions on split estate lands are subject to the same stipulations as leased federal mineral estate on federal surface lands, provided the stipulations do not adversely affect the surface owner's land use or actions. Exceptions to surface development restrictions may be granted if requested or agreed to by the surface owner.
**MD MR 11	Within PHMA where the federal government owns the surface and the mineral estate is in nonfederal ownership, apply appropriate surface use COAs, stipulations, and mineral RDFs through ROW grants or other surface management instruments, to the maximum extent permissible under existing authorities, in coordination with the mineral estate owner/lessee (see also MD SSS 4 through MD SSS 10 and MD SSS 12).
MD MR 12	Locatable Minerals Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: A total of approximately 21,251,690 acres are open to locatable mineral location and entry (Map 2-3). Operators may be requested to submit modifications to the accepted notice or approved plan of operations so that the operations minimally impact PHMA. The AO may convey to the operator suggested conservation measures, based on 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 and 36 CFR 228.3). 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 Greater Sage-Grouse 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 and 36 CFR 228.3. The request containing the suggested conservation measures must make clear that the operator's compliance is not mandatory. Notices or Plans of Operation, or modifications thereto, submitted following the issuance of this guidance: As part of the 15-day completeness review of notices [or modifications thereto] and 30-day completeness review of plans of operations [or modifications thereto], the proposed project area(s) where exploration, development, mining, access and reclamation will take place shall be reviewed for overlap of PHMA in the corporate GIS database. If there is overlap, the BLM AO may notify the operator of ways that they may minimize impacts on PHMA 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.

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	(see also MD SSS 4 through MD SSS 10 and MD SSS 12) For values other than Greater Sage-Grouse, the following RMP decisions remain in effect: 1,785,230 acres are withdrawn from mineral entry for the protection of sensitive resources.
**MD MR 13	Salable Minerals PHMA will be open to mineral material exploration, sales, and free use permits, except in areas that are unavailable due to the need to protect other resource values. All salable mineral activities within PHMA will be considered, provided they can be completed in compliance within surface occupancy, seasonal restrictions, and disturbance and density stipulations (Map 2-4 and MD SSS 2, 3, 4 through 10 and 12) analyzed through the DDCT process.
**MD MR 14	Salable Minerals Within PHMA closure and restoration of salable mineral pits no longer in use will be considered to meet Greater Sage-Grouse habitat conservation objectives (see also MD SSS 4 through MD SSS 10 and MD SSS 12). Emphasis will be given to reclamation/restoration of PHMA as a viable long term goal to improve Greater Sage-Grouse habitat.

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*MD MR 15	Nonenergy Leasable Minerals Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: All nonenergy leasable mineral activities will be considered in PHMA, provided that the activities can be completed in compliance with all occupancy, timing, density and disturbance restrictions (Map 2-5) (see also MD SSS 4 through MD SSS 10 and MD SSS 12). Exploration licenses and prospecting permits will be considered with appropriate mitigating measures. Outside of PHMA and/or for values other than Greater Sage-Grouse, the following RMP decisions remain in effect with the modification described above: Portions of PHMA will be unavailable for leasing in accordance with existing RMP decisions for resource values other than Greater Sage-Grouse. <u>Kemmerer RMP:</u> Sodium: All public lands (outside of the Raymond Mountain WSA and exceptions identified below) within the planning area are available for sodium leasing consideration. Exploration for sodium will be considered on a case-by-case basis. Limited surface occupancy criteria contained in the Sodium Mineral Development Environmental Assessment will be applied on a case-by-case basis. No new sodium leases or exploration licenses may be issued on lands within the Raymond Mountain WSA. No new sodium exploration and leasing will be considered for Rock Creek/Tunp and Bear River Divide management areas. Phosphate: All public lands (outside of the Raymond Mountain WSA and exceptions identified below) within the planning area are available for phosphate leasing consideration. Exploration for phosphate will be considered on a case-by-case basis. No new phosphate exploration and leasing will be considered for Rock Creek/Tunp and Bear River Divide management areas. <u>Pinedale RMP:</u> Should interest in other leasable minerals materialize in the future, leasing will be considered on a case-by- case basis, and the RMP will be amended as appropriate and necessary. The same surface disturbance restrictions will be used in analyzing leasing proposals and determining the issuance of any leases (for example, geothermal steam, coal, sodium, oil shale, and phosphate). <u>Green River RMP/JMH CAP:</u> The known sodium leasing area is open to exploration and consideration for leasing and developments, but is closed to prospecting permits. The remainder of the planning area is open to sodium prospecting except for areas that are closed to mineral leasing, surface mining, or mechanical prospecting type activities (areas closed to drilling, off road vehicle use, and explosive charges). Sodium (trona) leasing will be considered on a case-by-case basis, and is subject to the same conditional requirements as oil and gas and coal, and the general management direction applied in this RMP.
**MD MR 16	Solid Leasable Minerals Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: At the time an application for a new coal lease or lease modification is submitted to the BLM, the BLM will determine whether the lease application area is "unsuitable" for all or certain coal mining methods pursuant to 43 CFR 3461.5 (see also MD SSS 4 through MD SSS 10 and

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	MD SSS 12). PHMA is essential habitat for maintaining Greater Sage-Grouse for purposes of the suitability criteria set forth at 43 CFR 3461.5(o)(1). The BLM will also consider that USFWS has found "the core area strategy…if implemented by all landowners via regulatory mechanisms, would provide adequate protection for Greater Sage-Grouse and their habitats in the state" when considering leasing coal in PHMA under the criteria set for at 43 CFR 3461.5(o)(1). Outside of PHMA and/or for values other than Greater Sage-Grouse, the following RMP decisions remain in effect with the modification described above: Casper RMP: If coal development potential is shown to exist, all BLM-administered lands outside the Coal Development Potential Area (CDPA) will be considered for coal leasing, unless specifically closed to mineral leasing. The coal-screening process will be completed on all newly identified lands having coal development potential. All BLM-administered lands within the CDPA identified in the 2001 Buffalo RMP maintenance action are acceptable for further consideration for coal leasing. The only exceptions are those lands determined unacceptable within the area or those lands that fall within PHMA. The coal unsuitability criteria are re- evaluated whenever new coal lease applications are received. Kemmerer RMP: Process new coal lease applications by using the coal screening process. The coal screening process results will determine which lands may be available for further consideration for coal leasing and development. Appropriate NEPA analysis will be required prior to leasing. Federal land within the proposed Haystack project area outside of the PHMA is determined acceptable for further consideration for coal leasing and development. No coal LBAs will be considered for Rock Creek/Tunp and Bear River Divide management areas. Pinedale RMP: Decisions on lands acceptable for leasing consideration for coal development will be made after an application is received and the coal screening process is conducted. Rawlins RMP: Federal coal lease applications will be accepted only on those federal coal lands with development potential identified as suitable for further leasing consideration after application of the coal unsuitability criteria (the above-mentioned approximately 51,250 acres and 2,318.7 million tons of surface minable federal coal). Green River RMP/JMH CAP: Federal coal lands within the Coal Occurrence and Development Potential area (about 422,000 acres) are open to further consideration for coal leasing and development (i.e., new competitive leasing, emergency leasing, lease modifications, and exchange proposals, under the Federal Coal Management Program) with appropriate and necessary conditions and requirements for protection of other land and resource values and uses.
**MD MR 17	Solid Leasable Minerals Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows:

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	Upon receipt of a coal lease application proposing underground mining methods that include surface operations and impacts within PHMA, Criterion 15 will be applied and the area will be identified 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 Greater Sage-Grouse. Stipulated methods may include, but not limited to, underground mining methods with no placement of surface facilities except for purposes of health and human safety. Unsuitability is not applied to underground operations without surface impacts (43 CFR 3461.1) This will be consistent with IM WY-2012-019 says that the BLM will assess potential impacts on Greater Sage-Grouse through the NEPA process, and that the state regulatory agency will apply this mitigation, as well as protective measures consistent with the state policy for solid leasable mining action at the permitting stage (see also MD SSS 4 through MD SSS 10 and MD SSS 12). Outside of PHMA and/or for values other than Greater Sage-Grouse, the following RMP decisions remain in effect with the modification described above: <u>Casper RMP:</u> If coal development potential is shown to exist, all BLM-administered lands outside the CDPA will be considered for coal leasing, unless specifically closed to mineral leasing. The coal-screening process will be completed on all newly identified lands having coal development potential. All BLM-administered lands within the CDPA identified in the 2001 Buffalo RMP maintenance action are acceptable for further consideration for coal leasing. The only exceptions are those lands determined unacceptable within the area. The coal unsuitability criteria are re-evaluated whenever new coal lease applications are received. <u>Kemmerer RMP:</u> Process new coal lease applications by using the coal screening process. The coal screening process results will determine which lands may be available for further consideration for coal leasing and development. Appropriate NEPA analysis will be required prior to leasing. Federal land within the proposed Haystack project area is determined acceptable for further consideration for coal leasing and development. No coal LBAs will be considered for Rock Creek/Tunp and Bear River Divide management areas. <u>Pinedale RMP:</u> Decisions on lands acceptable for leasing consideration for coal development will be made after an application is received and the coal screening process is conducted. <u>Rawlins RMP:</u> Federal coal lease applications will be accepted only on those federal coal lands with development potential identified as suitable for further leasing consideration after application of the coal unsuitability criteria (the above-mentioned approximately 51,250 acres and 2,318.7 million tons of surface minable federal coal). <u>Green River RMP/JMH CAP:</u> Federal coal lands within the Coal Occurrence and Development Potential area (about 422,000 acres) are open to further consideration for coal leasing and development (i.e., new competitive leasing, emergency leasing, lease modifications, and exchange proposals, under the

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	Federal Coal Management Program) with appropriate and necessary conditions and requirements for protection of other land and resource values and uses.
**MD MR 18	Coal exploration activities will be allowed in PHMA if they can be completed in compliance to surface occupancy and disturbance and density stipulations analyzed through the DDCT process (see also MD SSS 4 through MD SSS 10 and MD SSS 12).
**MD MR 19	Exceptions to lease stipulations, COA, and terms and conditions: Exceptions waivers, and modifications to lease stipulations, COAs, and terms and conditions, for Greater Sage-Grouse will continue to be considered on a case-by-case basis consistent with approved LUPs and other BLM policy and regulations as they relate to exceptions within PHMA and GHMA (see also MD SSS 4 through MD SSS 10 and MD SSS 12).
MD Renewable Energy (RE) 1	Within PHMA, all RMPs are amended as follows: Wind energy development would be avoided in PHMA (Map 2-6), and not allowed unless it can be sufficiently demonstrated that the development activity would not result in declines of PHMA populations. Sufficient demonstration of "no declines" should be coordinated with the WGFD and USFWS. For values other than Greater Sage-Grouse, the following RMP decisions remain in effect: Areas that are currently unavailable due to the need to protect sensitive resources would remain unavailable to wind energy development.
MD RE 2	Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: The use of guy wires for meteorological towers (MET) tower supports would be avoided within PHMA. All existing and any new unavoidable guy wires should be marked with recommended bird deterrent devices. The siting of new temporary MET towers within PHMA would be avoided within 2 miles of occupied Greater Sage-Grouse leks, unless they are out of the direct line of sight of the occupied lek. Outside of PHMA, the following RMP decisions remain in effect: <u>Kemmerer RMP:</u> New MET towers would be avoided within 1 mile of occupied sagebrush obligate habitats, unless anti-perch devices are installed. MET towers relying on guy wires for support would be prohibited in these habitats. Exceptions could be made if NEPA analysis shows little or no impact on sagebrush obligate species. <u>Rawlins RMP:</u> MET towers would be authorized on a case-by-case basis from 0.25 miles to 1 mile of an occupied Greater Sage-Grouse and sharp-tailed grouse lek.
**MD Lands and Realty (LR) 1	*Land Use Authorizations* Specific to management for Greater Sage-Grouse, all RMPs are amended as follows: PHMA will be managed as ROW avoidance areas for new ROW or Special Use Authorization (SUA) permits (Map 2-7). Within PHMA where new ROWs/SUAs are necessary, new ROWs/SUAs will be located within designated RMP corridors or adjacent to existing ROWs/SUAs where technically feasible. Subject to valid existing rights including nonfederal land inholdings, required new

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	ROWs/SUAs will be located adjacent to existing ROWs/SUAs or where it best minimizes Greater Sage-Grouse impacts. Consider the likelihood of development of not-yet-constructed surface-disturbing activities, as defined in Table 2 of the Monitoring Framework (2019 Wyoming GrSG ARMPA Appendix C) under valid existing rights. For values other than Greater Sage-Grouse, the following RMP decisions remain in effect: Portions of PHMA will be managed as ROW exclusion areas in accordance with existing RMP decisions for resource values other than Greater Sage-Grouse.
MD LR 2	Specific to management for Greater Sage-Grouse, all RMPs are amended as follows: Within GHMA where new ROWs/SUAs are necessary, new ROWs/SUAs will be collocated within existing ROWs/SUAs where technically feasible. Appropriate Greater Sage-Grouse seasonal timing constraints will be applied. For values other than Greater Sage-Grouse, the following RMP decisions remain in effect: Portions of GHMA will be managed as ROW avoidance areas in accordance with existing RMP decisions for resource values other than Greater Sage-Grouse.
**MD LR 3	Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: <u>New Transmission Lines (greater than 115 kV):</u> New transmission lines greater than 115 kV in PHMA (core only) will be allowed only (1) within the 2-mile wide transmission line route through PHMA (core only) population areas in south-central and southwestern Wyoming (Attachment 1 from EO 2015-4); (2) when located within 0.5 miles or less of an existing 115 kV or greater transmission line constructed prior to 2008; or (3) in designated RMP corridors authorized for aboveground transmission lines. Transmission lines routed using one or more of the three criteria listed above will not be counted against the DDCT 5 percent disturbance cap. New transmission lines greater than 115 kV proposed outside of these areas will be considered where it can be demonstrated that declines in Greater Sage-Grouse populations can be avoided through project design and/or mitigation. These projects will be subject to the density and disturbance restrictions for PHMA. Construction of new transmission lines will adhere to the restrictions associated with conducting activities within PHMA. Review of transmission line proposals will incorporate the Framework for Sage-grouse Impacts Analysis for Interstate Transmission Lines and other appropriate documents consistent with the three routing criteria described above. New projects within PHMA that may require future utility lines, including distribution and transmission lines or pipelines, will include the proposed utility lines in their DDCT as part of the proposed disturbance. Lines permitted but not located in the above mentioned routes or a designated corridor will be counted toward the 5 percent disturbance calculation (line disturbance is equal to the anticipated construction footprint or construction ROW width multiplied by length and includes all access roads, staging areas, and other surface disturbance associated with construction outside of the construction ROW). <u>New Electric Distribution Lines (less than 115 kV):</u> New electric distribution lines will be buried where feasible and economically feasible. If not economically feasible, distribution lines may be authorized when effectively designed/mitigated to protect Greater Sage-Grouse and the AO determines that overhead installation is the

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	action alternative with the fewest adverse impacts while still meeting the project need. Agricultural and residential lines will be considered to be adequately mitigated for Greater Sage-Grouse if constructed at least 0.6 miles from the lek perimeter (or lek center if no perimeter is yet mapped) with appropriate timing constraints and constructed to the latest APLIC guidance. These ROW authorizations will be subject to approval by the State Director. Priority Transmission Lines: PHMA are designated as avoidance areas for high voltage transmission line and pipeline ROWs, except for the transmission projects specifically identified below. All authorizations in these areas, other than the following identified projects, must comply with the conservation measures outlined in this proposed plan, including the RDF and avoidance criteria presented in 2019 Wyoming GrSG ARMPA Appendix B. The BLM is currently processing an application for Gateway South, Gateway West, and TransWest Express and the NEPA review for these projects is well underway. The BLM is analyzing Greater Sage-Grouse mitigation measures through the project's NEPA review process. Pipelines: New pipelines through PHMA will be allowed: (1) within an RMP corridor currently authorized for that use or designated through future RMP amendments; or (2) constructed in or adjacent to existing utilities (buried and aboveground) or roads. Pipelines constructed in RMP corridors or adjacent to existing utilities or roads will require completion of a DDCT analysis for baseline data collection but the project is not required to meet the threshold of 5 percent. However, within 6 months of the completion of construction, the project proponent will provide the AO with as-built drawings so that total disturbance within core area can be calculated annually. The following RMP decisions remain in effect with the modification described above: Casper RMP: No new corridor designations will be made in Bates Hole. When placement of a major ROW facility within a designated corridor is not possible, and for smaller ROW and other linear facilities, placement will be adjacent to existing facilities or disturbances. Cross-country placement of ROW and other linear facilities will be allowed only when placement in a designated corridor or adjacent to an existing facility is not practical or feasible. The extent of all surface disturbances will be minimized. No new corridors will be established in the Sand Hills Management Area; ROWs will be allowed when management objectives for the area can still be achieved. All currently designated corridors will be maintained. All special restrictions that apply to types of use/facilities on the corridors will be removed, except as noted for the Oregon Trail Road ROW Corridor, Segment A. The corridors include 351,020 acres, of which 94,580 acres are federal surface. The widths/size of designated corridors will not change. Special restrictions applying to types of use/facilities on the corridors will be removed on a case-by-case basis. Existing corridors include: Oregon Trail Road Corridor, Segment A Oregon Trail Road Corridor, Segment B Oregon Trail Road Corridor, Segment C Poison Spider/Gas Hills Road Corridor

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Action #	2019 ARMPA
	Highway 20-26 Corridor Wyoming Highway 259/U.S. 87 Corridor Wyoming Highway 387 Corridor Lost Cabin-Arminto Road Corridor RMP Change No. 2012-03, including the West-Wide Energy Corridor Cabin Creek Corridor Existing Oregon Trail Road ROW Corridor, Segment A. Oregon Trail Road ROW Corridor, Segment A allows additional ROW facilities provided they are subsurface, surface, or low profile developments. ROW facilities that introduce visual intrusions on the skyline along the corridor will not be allowed. Special restrictions applying to types of use/facilities on the corridors will be removed on a case-by-case basis, and a new corridor, to be called the Cabin Creek Corridor, will be designated. Future Corridor Adjustments and New Corridor Designations: Future corridor adjustments and new corridor designations will be made only when facility placement within an existing designated corridor is incompatible, unfeasible, or impractical and when the environmental consequences can be adequately mitigated. Problems of technical compatibility between facilities and spacing of facilities in corridors will be solved on a case-by-case basis. Special restrictions applying to types of use/facilities on the corridors will be removed on a case-by-case basis. South Bighorns/Red Wall Management Area: No corridors will be designated; however, ROWs will be allowed on a case-by-case basis when management objectives for the area can still be achieved. <u>Kemmerer RMP:</u> Utility corridors will be designated, based on use (i.e., power lines, pipelines, and fiber optic lines). Preferred utility corridors will be 2 miles wide (width will be determined based on resource values) and designated as follows, but variances will be allowed based on application where conflicts with other resources were minimal or can be mitigated through resource-specific stipulations: High-voltage power line corridors will be established north of and parallel to I-80, and along Wyoming State Highway 89 from the junction of I-80 and the Wyoming state line. Fiber optic and low-voltage power line corridors will be located along currently established road systems (e.g., interstate or state highways and paved county roads). <u>Newcastle RMP:</u> Utility/transportation systems will be located adjacent to existing utility/transportation systems whenever practical. Areas to be avoided for new facility placement and routes will be identified on a case-by-case basis, rather than attempting to establish utility corridors. <u>Pinedale RMP:</u>

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	Utility facilities will be restricted to existing routes and designated corridors where practicable, including environmental and socioeconomic considerations. Corridor routes include U.S. Highways 189 and 191 and State Highways 189, 191, 350, 351, 352, 353, and 354. New corridors may be established as oil and gas fields are developed. Rawlins RMP: All BLM-administered lands, except WSA and some SD/MAs (including ACEC/Special Interest Areas), will be open to consideration for placement of utility ROW systems. Each utility ROW will be located adjacent to existing facilities, when possible. Areas with important or sensitive resource values will be avoided. Existing major transportation and utility ROW routes will be designated corridors. However, major transportation routes within the planning area that are located east of the Carbon County-Albany County line will not be considered for ROW corridor designation because of the scattered public land ownership pattern in the area. All corridors will be designated for power lines (aboveground and buried), telephone lines, and fiber optic lines. Specific proposals will require site-specific environmental analysis and compliance with established permitting processes. Activities generally excluded from ROW corridors include mineral materials disposal, range and wildlife habitat improvements involving surface disturbance and facility construction, campgrounds, and public recreation facilities and other facilities that will attract public use. ROW facilities will not be placed adjacent to each other if issues with safety or incompatibility or resource conflicts were identified. The designated width, allowable uses, and excluded uses for each corridor may be modified during implementation of the Approved RMP. Green River RMP: Areas designated as utility windows will be preferred locations for future grants. Five windows have been identified: 2 east-west, 3 north-south. Other areas will be considered for rights-of-way on a case-by-case basis. Windows 0.5 miles in width have been identified for the placement of utilities. The northern east-west window will be for underground facilities only, and the southern east-west window will be for both above and below ground facilities. A 0.5-mile wide north-south window on the west side of Flaming Gorge, a window south along Highway 430, and a north-south window along the east side of Flaming Gorge have been identified for above and below ground utilities. JMH CAP: The planning area, with the exception of defined exclusion and avoidance areas, will be open to considering grants of rights-of-way if area objectives can be met. Exclusion areas are closed to rights-of-way. Avoidance and special management areas not identified as exclusion areas will be open to consideration only after site-specific analysis demonstrates area objectives can be met (see glossary) in Greater Sage-Grouse potential nesting habitat.
**MD LR 4	Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: Maintenance/replacement of existing structures will be allowed subject to valid and existing rights. Upgrades will be considered, subject to mandatory RDFs (2019 Wyoming GrSG ARMPA Appendix B). Existing guy wires shall be removed or appropriately marked with bird flight diverters to make them more visible to Greater Sage-Grouse in flight. Power lines (distribution and transmission) will be designed to minimize wildlife-related impacts and constructed to the latest APLIC standards.

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	Outside of PHMA the following RMP decisions remain in effect: Kemmerer RMP: New utility lines will be buried or BLM-approved anti-perch devices will be installed on all new utility lines within sagebrush and/or semiarid shrub-dominated habitats, unless NEPA analysis shows little or no impact without burial or modification.
MD LR 5	Within PHMA where existing authorizations, ROWs, or SUAs have had some level of development (e.g., road, fence, and well) and are expired and are no longer in use, the site will be reclaimed by removing these features and restoring the habitat. Power lines (distribution and transmission) will be designed to minimize wildlife-related impacts and constructed to the latest APLIC standards.
MD LR 6	Within PHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: The use of guy wires for MET tower supports will be avoided within PHMA. All existing and any new unavoidable guy wires shall be marked with recommended bird deterrent devices. The siting of new temporary MET towers within PHMA will be avoided within 2 miles of occupied Greater Sage-Grouse leks, unless they are out of the direct line of sight of the occupied lek. Outside of PHMA, the following RMP decisions remain in effect: Kemmerer RMP: New MET towers will be avoided within 1 mile of occupied sagebrush obligate habitats, unless anti-perch devices are installed. MET towers relying on guy wires for support will be prohibited in these habitats. Exceptions can be made if NEPA analysis shows little or no impact on sagebrush obligate species. Rawlins RMP: MET towers will be authorized on a case-by-case basis from 0.25 miles to 1 mile of an occupied Greater Sage-Grouse and sharp-tailed grouse lek.
**MD LR 7	Within PHMA and GHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: Lands classified as PHMA for Greater Sage-Grouse will be retained in federal management unless: (1) the agency can demonstrate that disposal of the lands, including land exchanges, is in the public's best interest or (2) the agency can demonstrate that the disposal of the lands, including land exchanges, will have no direct or indirect adverse impact on conservation of the Greater Sage-Grouse. Exceptions will be considered where there is mixed ownership and land exchanges will allow for additional or more contiguous federal ownership patterns within PHMA. For PHMA with minority federal ownership, an additional, effective mitigation agreement will be included for any disposal of federal land. As a final preservation measure, consideration shall be given to pursuing a permanent conservation easement. For lands in GHMA that are identified for disposal, the BLM will only dispose of such lands consistent with the goals and objectives of this plan, including, but not limited to, the RMP goal to conserve, recover, and enhance Greater Sage-Grouse habitat on a landscape scale. For values other than Greater Sage-Grouse, the following RMP decisions remain in effect with the modification described above: Casper RMP:

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	224,830 acres of public lands are identified as potentially suitable for disposal. At the implementation stage, site-specific analysis with public participation will be conducted. Based on the analysis and public comments received, a determination will be made on whether disposal of the parcel is in the public's best interest. If it is not in the public's best interest, the parcel will be retained in public ownership. Restricted Disposal – dispose of 5,450 acres on a restricted basis. Allow land-use authorizations under FLPMA Section 302(b) leases and permits to meet public demand. Evaluate on a case-by-case basis as proposals are presented. Potential lease and permit areas may include, but are not limited to the following: Areas where there are documented or existing trespass facilities that can be resolved by an authorization under this section Areas along major highways where developments may facilitate public needs Areas in or adjacent to residential, agricultural, commercial, or industrial developments. The BLM will pursue acquisition of lands and interest in lands in the South Bighorns/Red Wall area.
MD LR 8	Within PHMA and GHMA, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: Areas where acquisitions (including subsurface mineral rights) or conservation easements will benefit Greater Sage-Grouse habitat will be identified. Outside of PHMA and GHMA, and/or for values other than Greater Sage-Grouse, the following RMP decisions remain in effect with the modification described above: <u>Casper RMP:</u> The BLM will pursue acquisition of lands and interest in lands in the Bolton Creek Drainage and Bates Creek areas.
MD LR 9	Greater Sage-Grouse habitat requirements will be utilized to prioritize parcels for exchange or acquisition within PHMA.
MD LR 10	Within PHMA, non-mineral withdrawals will be evaluated to determine if the withdrawal action is consistent with Greater Sage-Grouse conservation.
MD Recreation and Visitor Services (REC) 1	Specific to management for Greater Sage-Grouse or PHMA, all RMPs are amended as follows: BLM Special Recreation Permits will be allowed in PHMA, unless negative impacts on Greater Sage-Grouse cannot be adequately mitigated. Outside of PHMA and/or for values other than Greater Sage-Grouse, the following RMP decisions remain in effect with the modification described above: <u>Casper RMP:</u> The entire planning area will remain open to dispersed recreation. The camping limit on public lands is set by BLM policy and is currently limited to 14 days. Emphasis will be placed on providing interpretive and information signs and materials for public land visitors, maintaining existing facilities to a high standard consistent with the recreational setting, and limiting development of additional facilities to those areas where public recreational use of surrounding public lands requires. Work with state, local groups, and adjacent landowners will be conducted to identify and develop recreational trails, both motorized and nonmotorized, when the opportunities presents themselves. Special Recreation Permits will be allowed for commercial, noncommercial, and competitive events on a case-by-case basis. Cooperation

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	will be maintained with a variety of user groups, especially in the local area, to provide diverse recreational opportunities for enjoyment of public lands. BLM will pursue acquisition of lands and interest in lands in the Rattlesnake Range and Pine Ridge areas, as well as promote and support recreation-based tourism. Kemmerer RMP: Allow dispersed recreation and permit special recreational activities (e.g., outfitting and guiding permits and OHV events permitted on an annual basis after evaluation). Green River RMP: Special recreation permits will be considered on a case-by-case basis. Appropriate mitigation will be included in special recreation permits, commercial recreation uses, and major competitive recreation events to provide resource protection and public safety. JMH CAP: Special recreation use permits for managed activities that occur in the JMH CAP planning area will be reviewed and subject to recommendations made by the Rock Springs Field Office. This will allow the Rock Springs Field Office to track the amount, location, and timing of organized activity occurring within the planning area to monitor resource pressure. The permit evaluation process will consider the nature of the event, potential impacts on resources, conflicts with other events, and impacts on the quality of other visitors' experiences. Mitigation measures necessary to protect the resources will be included in any permit issued. A plan of operation will be required for all commercial recreational operators and outfitters. The plan will describe the type, extent, and location of the recreation use and the mechanisms by which the operator/outfitter will prevent impacts on environmental resources. Any requests in special recreation use permit applications to remove natural resources will be evaluated on a case-by-case basis after an environmental analysis process.
**MD REC 2	Construction of recreation facilities within PHMA must conform to the avoidance and minimization measures of this plan. If it is determined that these conservation measures are inadequate for the conservation of Greater Sage-Grouse, the BLM will consider mitigation consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4 (see also MD SSS 4).
MD Travel and Transportation (TTM) 1	Specific to management for Greater Sage-Grouse, all RMPs are amended as follows: Within PHMA, designate the non-sand dune portions of the following OHV Open Areas as OHV Limited Area. The OHV limitation will ultimately be to "Designated Routes" as determined through a subsequent implementation/activity level Travel Management Plan. In the interim, motorized use on existing routes may occur; however, no new routes may be created without specific authorization: Rawlins Field Office: Dune Pond Cooperative Management Area. Rock Springs Field Office: Portion of the Greater Sand Dunes Recreation Area. The following RMP decisions remain in effect: The Casper Field Office Poison Spider OHV Park (290 acres) will remain as an "open" OHV area.
MD TTM 2	Within PHMA and GHMA, all motorized use (of which OHVs are a subset) will be limited to designated routes. Route designations will occur in subsequent implementation/activity level Travel Management Plans. In the interim motorized use on existing routes may occur; however, no new routes may be created without specific authorization. In PHMA and GHMA, temporary closures will be considered in

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	accordance with 43 CFR subpart 8364 (Closures and Restrictions); 43 CFR subpart 8351 (Designated National Area); 43 CFR subpart 6302 (Use of Wilderness Areas, Prohibited Acts, and Penalties); 43 CFR subpart 8341 (Conditions of Use). Temporary closure or restriction orders under these authorities are enacted at the discretion of the AO to resolve management conflicts and protect persons, property, and public lands and resources. Where an AO determines that off-highway vehicles are causing or will cause considerable adverse effects upon soil, vegetation, wildlife, wildlife habitat, cultural resources, historical resources, threatened or endangered species, wilderness suitability, other authorized uses, or other resources, the affected areas shall be immediately closed to the type(s) of vehicle causing the adverse effect until the adverse effects are eliminated and measures implemented to prevent recurrence. (43 CFR 8341.2) A closure or restriction order shall be considered only after other management strategies and alternatives have been explored. The duration of temporary closure or restriction orders shall be limited to 24 months or less; however, certain situations may require longer closures and/or iterative temporary closures. This may include closure of routes or areas.
**MD TTM 3	New local or collector roads (as defined in BLM Manual 9113) will be avoided within 1.9 miles of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped) within PHMA. All new roads will be prohibited within 0.6 miles of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped) within PHMA.
MD TTM 4	Within PHMA, no upgrading of existing routes that will change route category or capacity will be allowed unless the upgrading will have minimal impact on Greater Sage-Grouse in PHMA, was necessary for motorist safety, or eliminated the need to construct a new road.
MD TTM 5	In PHMA, existing roads or realignments will be used to access valid existing rights that are not yet developed. If valid existing rights cannot be accessed via existing roads, any new road will be constructed to the absolute minimum standard necessary, and the surface disturbance will be added to the total disturbance in the PHMA.
**MD TTM 6	Specific to management for Greater Sage-Grouse or PHMA, all RMPs are amended as follows: For roads, primitive roads and trails not designated in travel management plans within PHMA, natural reclamation of roads and trails will be allowed in appropriate situations where additional resource damage is not foreseeable. This will include 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. In PHMA, locate new roads that will have relatively high levels of activity (accessing multiple wells, housing development) greater than 1.9 miles from the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped). Locate new other roads used to provide facility site access and maintenance >0.6 miles from the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped). Outside of PHMA and/or for values other than Greater Sage-Grouse, the following RMP decisions remain in effect with the modification described above: <u>Kemmerer RMP:</u>

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	Roads and two-track routes determined to be unauthorized or redundant and unnecessary for resource management purposes will be reclaimed to achieve surrounding native conditions. Rawlins RMP: Roads or trails that are eroding beyond a reasonable level will be fixed or closed. JMH CAP: Transportation planning will provide for access to achieve multiple-use goals while providing maximum protection for crucial habitats and sensitive resources and will consider: Closing and rehabilitating unused roads and trails and those causing resource damage. This will be subject to county review of existing rights-of-way needs.
MD TTM 7	Within PHMA, when reseeding roads and trails, appropriate seed mixtures will be used and the use of transplanted sagebrush will be considered.
MD Special Designations and Other Management Areas	New Greater Sage-Grouse conservation ACECs will not be designated.

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Table A-2
ARMPA – Buffalo Field Office with All Management Goals, Objectives, and Decisions

Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA) – Buffalo Field Office
Management Goal (MG) BR:10	Distribution and abundance of all special status species are optimized.
Management Objective (MO) BR:10.1	Maintain or enhance special status species plant communities and habitats.
MO:10.2	Manage BLM-administered lands to maintain or restore populations and habitat consistent with conservation requirements for special status species.
MO:10.3	Develop effective conservation and cooperative management plans, strategies, and agreements with stakeholders.
MG BR:11	Sustainable sagebrush habitats that provide the quantity, quality, and connectivity that is necessary to maintain sustainable populations of Greater Sage-Grouse and other special status species.
MO BR:11.1	Maintain large patches of high quality interconnected sagebrush habitats, with emphasis on patches occupied by Greater Sage-Grouse.
MO BR:11.2	Maintain connectivity between and within sagebrush habitats with emphasis on communities occupied by Greater Sage-Grouse.
MO BR:11.3	In all PHMA, the desired condition is to maintain all lands ecologically capable of producing sagebrush (but no less than 70%) with a minimum of 15% sagebrush cover or as consistent with specific ecological site conditions. The attributes necessary to sustain these habitats are described in Interpreting Indicators of Rangeland Health (BLM Tech Ref 1734-6).
MG BR:12	Successful restoration and rehabilitation of potential Greater Sage-Grouse habitat across the planning area.
MO BR:12.1	Reestablish sagebrush corridors, where feasible, between Greater Sage-Grouse occupied habitats.
MO BR:12.2	Reconnect large patches of sagebrush habitat with emphasis on reconnecting patches occupied by stronghold and isolated populations of Greater Sage-Grouse.
Management Decision (MD) SS WL-4001	Utilize current research, management and conservation plans, and similar related documents to guide special status species habitat management.
MD SS WL-4002	Implement actions set forth in recovery plans, conservation measures, terms and conditions, protection measures, and appropriate BMPs and reasonable and prudent measures within biological opinions for Threatened and/or Endangered wildlife species, including those specific to this RMP and any future statewide programmatic biological opinions.
MD SS WL-4003	Maintain (size and quality) or enhance current habitat utilized by special status species. Enlarge/restore habitat on a site-specific basis.
MD SS WL-4004	Maintain or enhance the integrity of identified special status wildlife species migration corridors. Manage identified special status wildlife species travel corridors consistent with other resource values.
MD SS WL-4005	Locate and manage facilities to mitigate noise impacts on special status species.
MD SS WL-4006	Manage surface-disturbing and disruptive activities to mitigate impacts on special status wildlife species and their habitats.

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Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA) – Buffalo Field Office
MD SS WL-4007	Apply a CSU stipulation to fluid mineral leases containing special status species habitat. Surveys required for clearance.
*MD SS WL-4010	The BLM will coordinate new recommendations, mitigation, and Greater Sage-Grouse habitat objectives and management considerations with the WGFD and other appropriate agencies, local government cooperators, and the Wyoming Sage-Grouse Implementation Team. These measures will be analyzed in site-specific NEPA documents, as necessary. The Greater Sage-Grouse adaptive management plan (2019 Wyoming GrSG ARMPA Appendix C) provides regulatory assurance that unintended negative impacts to Greater Sage-Grouse habitat will be addressed before consequences become severe or irreversible. Projects requiring an EIS shall develop adaptive management strategies in support of the population management objectives for Greater Sage-Grouse set by the State of Wyoming (State of WY EO 2015-4). Adaptive management triggers are essential for identifying when potential management changes are needed in order to continue meeting Greater Sage-Grouse conservation objectives. With respect to Greater Sage-Grouse, all regulatory entities in Wyoming, including the BLM, use soft and hard triggers. Soft and hard triggers are focused on three metrics: (1) number of active leks, (2) acres of available habitat, and (3) population trends based on annual lek counts. <u>Soft Triggers Response</u>: Soft triggers require immediate monitoring and surveillance to determine causal factors and may require curtailment of activities in the short- or long-term, as allowed by law. The project level adaptive management strategies will identify appropriate responses where the project's activities are identified as the causal factor. The management agency (BLM) and the Adaptive Management Working Group will implement an appropriate response strategy to address causal factors not attributable to a specific project or to make adjustments at a larger regional or statewide level. <u>Hard Trigger Response</u>: Upon determination that a hard trigger has been tripped, the BLM will immediately defer issuance of discretionary authorizations for new actions within the Biologically Significant Unit for a period of 90 days. In addition, within 14 days of a determination that a hard trigger has been tripped, the Adaptive Management Working Group will convene to develop an interim response strategy and initiate an assessment to determine the causal factor or factors (hereafter called the causal factor assessment). The Adaptive Management Working Group would define a process to review and reverse adaptive management actions once the identified causal factor is resolved (e.g., returning to previous management once objectives of interim management strategy have been met).
MD SS WL-4011	Develop avoidance areas restricting the application of broad-spectrum pesticides in areas containing Greater Sage-Grouse nesting and brood-rearing habitats.
MD SS WL-4012	Restore Greater Sage-Grouse brood-rearing habitats in wetland/riparian areas. Maintain seeps, springs, wet meadows, and riparian vegetation in a functional and diverse condition for young Greater Sage-Grouse and other species that depend on forbs and insects associated with these areas.
**MD SS WL-4013	Manage vegetation composition, diversity and structure, as determined by ecological site description and WGFD protocols, to achieve Greater Sage-Grouse habitat management objectives, in cooperation with stakeholders. Vegetation treatments in nesting and wintering

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Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA) – Buffalo Field Office
	habitat that would reduce sagebrush canopy cover to less than 15% would not be conducted unless it can be shown to be beneficial to sage-grouse habitat and removal of sagebrush canopy cover below 15% will be subject to the DDCT. For vegetation treatments in sagebrush within PHMAs, refer to 2015 Buffalo RMP Appendix A, WGFD Protocols for Treating Sagebrush to Benefit Sage-Grouse (WGFD 2015, as updated). These recommended protocols, subject to seasonal conditions of approval, would be used in determining whether proposed treatment constitutes a "disturbance" that would contribute toward the 5% threshold for habitat maintenance. Additionally, these protocols would be used to determine whether the proposed treatment configuration would be expected to have neutral or beneficial impacts for PHMA (core only) populations or if they represent additional habitat loss or fragmentation. Treatments to enhance sagebrush/grasslands habitat for sage-grouse would be evaluated based upon habitat quality and the functionality/use of treated habitats post-treatment. The BLM would work collaboratively with partners at the state and local level to maintain and enhance sage-grouse habitats. Seasonal restrictions would be applied, as needed, for implementing fuels management treatments according to the type of seasonal habitat present. Wildland fire burns will be treated as disturbance if sagebrush is reduced below 5% canopy cover, unless there is an implementation plan outlining restoration efforts and 3 years of data showing a trend back to suitable habitat. Burned areas within PHMAs would be restored to suitable habitat with consideration given to ESDs, reference sites, site potential and local variability.
MD SS WL-4014	Minimize disturbances that would result in alterations to springs and riparian Greater Sage-Grouse habitat. In coordination with stakeholders, develop alternative water sources to replace natural sources that have been affected or destroyed.
MD SS WL-4015	Manage stored water to control mosquitoes and prevent the spread of WNv to Greater Sage-Grouse.
MD SS WL-4016	Design water facilities with protective features to reduce mortality of Greater Sage-Grouse from drowning or entrapment.
MD SS WL-4017	Design and locate fences to reduce impacts to important Greater Sage-Grouse habitat.
MD SS WL-4018	Use the Fire Management Plan to incorporate the most current sagebrush habitat information and to guide fire suppression priorities in sagebrush habitats.
MD SS WL-4019	Remove conifers where they have encroached upon Greater Sage-Grouse habitat in cooperation with stakeholders. Reduce the density of conifers that have encroached into, but do not yet dominate sagebrush plant communities.
MD SS WL-4020	Inventory, record, and report existing type and condition of BLM fences. Prioritize areas and annually implement modifications to existing fences to reduce hazards to flying Greater Sage-Grouse, in cooperation with stakeholders. All new fences, in priority areas, will be properly designed and located to avoid hazards to flying Greater Sage-Grouse.
MD SS WL-4021	Avoid renewable energy (solar and wind) projects in Greater Sage-Grouse Core Population Areas unless it can be demonstrated that the activity would not result in declines of core Greater Sage-Grouse populations. Sufficient demonstration of "no declines" should be coordinated with the WGFD and USFWS.
**MD SS WL-4022	Powerlines (distribution and transmission) will be designed to minimize wildlife related impacts. This action includes but is not limited to:

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Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA) – Buffalo Field Office
	● Avoid areas of high avian use such as water bodies (including ponds, lakes, rivers, streams and wetlands), ridge tops, prairie dog colonies, Greater Sage-Grouse Core Population and Core Population Connectivity Corridors, and sharp-tailed grouse leks (PRB Final EIS, EO 2015-4). ● Prohibit above ground distribution powerlines unless identified in an approved distribution plan. ● PHMA: ○ New transmission lines greater than 115 kV in PHMA (core only) would be allowed only: (1) when located within 0.5 mile or less of an existing 115 kV or greater transmission line or constructed prior to 2008; or (2) in designated RMP corridors authorized for aboveground transmission lines. Transmission lines routed using one or more of the two criteria listed above will not be counted against the DDCT 5% disturbance cap. New transmission lines greater than 115 kV proposed outside of these areas would be considered where it can be demonstrated that declines in Greater Sage-Grouse populations could be avoided through project design and/or mitigation. These projects will be subject to the density and disturbance restrictions for PHMA. Construction of new transmission lines will adhere to the restrictions associated with conducting activities within PHMAs. Review of transmission line proposals would incorporate the Framework for Sage-grouse Impacts Analysis for Interstate Transmission Lines and other appropriate documents consistent with the three routing criteria described above. ○ New electric distribution lines (less than 115 kV) would be buried where feasible and economically feasible. If not economically feasible, distribution lines may be authorized when effectively designed/mitigated to protect Greater Sage-Grouse and the authorized officer determines that overhead installation is the action alternative with the fewest adverse impacts while still meeting the project need. Agricultural and residential lines will be considered to be adequately mitigated for Greater Sage-Grouse if constructed at least 0.6 mile from the lek perimeter (or lek center if no perimeter is yet mapped) with appropriate timing constraints and constructed to the latest APLIC guidance. These ROW authorizations will be subject to approval by the State Director. Within GHMA: Within general Greater Sage-Grouse habitat (outside core population and connectivity areas) overhead powerlines will be located at least 0.5 mile from occupied Greater Sage-Grouse leks (modified from PRB Final EIS). Any new powerlines authorized within the above identified areas will be buried or if overhead then constructed to the latest APLIC guidance (modified from PRB Final EIS). ○ New pipelines through PHMA would be allowed: (1) within an RMP corridor currently authorized for that use or designated through future RMP amendments; or (2) constructed in or adjacent to existing utilities (buried and above-ground) or roads. Pipelines constructed in RMP corridors or adjacent to existing utilities or roads will require completion of a DDCT analysis for baseline data collection but the project is not required to meet the threshold of 5%. However, within 6 months of the completion of construction, the project proponent will provide the authorized officer with as-built drawings so that total disturbance within core area can be calculated annually. PHMA is designated as avoidance areas for high voltage transmission line and pipeline ROWs. All authorizations must comply with the conservation measures outlined in this approved plan, including the RDF and avoidance criteria presented in 2019 Wyoming GrSG ARMPA Appendix B.

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Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA) – Buffalo Field Office
**MD SS WL-4023	Lease fluid minerals dependent upon lease location and habitat suitability. Ensure that leasing activities in PHMA comply with Greater Sage-Grouse resource management plan decisions and remain in compliance with laws, regulations and policy (see also MD SS WL-4024 and MS SS WL-4036).
*MD SS WL-4024	Apply the following stipulations to fluid mineral leases within Greater Sage-Grouse Core Population Areas: ● NSO prohibiting surface occupancy and disturbing activities, within 0.6 mile of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped) (independent of habitat suitability). ● CSU within Greater Sage-Grouse Core Population Areas: ○ In Greater Sage-Grouse core population areas, the density of disturbance of a facility (oil and gas or mining) would be limited to an average of one site per square mile (640 acres) within the DDCT, subject to valid existing rights and applicable law. The one location and cumulative value of existing disturbances will not exceed 5% of suitable habitat of the DDCT area using the DDCT process. Inside Greater Sage-Grouse (priority habitat) core population areas, all suitable habitat disturbed (any program area) will not exceed 5% of suitable habitat within the DDCT area using the DDCT process. ○ Design and manage facilities to prevent WNv transmission. ○ Locate new Local or Collector roads (as defined in BLM Manual 9113) greater than 1.9 miles from the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped). Locate new roads greater than 0.6 mile from the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped). ○ Restore disturbed sagebrush communities on BLM surface to meet the Wyoming DEQ community-specific full shrub density standard (Chapter 4 Rules and Regulations, option III) for all predisturbance shrub species and 5% minimum canopy cover of sagebrush. A 90% confidence interval is required to demonstrate achievement of the standard. The standard must be demonstrated the last year of the responsibility period, and all planted shrubs shall have been in place for at least two years. ● TLS prohibiting surface-disturbing and/or disruptive activities from March 15 to June 30 (independent of habitat suitability). The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD SS WL-4036). 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. ● TLS prohibiting surface-disturbing and disruptive activities within mapped Greater Sage-Grouse winter concentration areas, from December 1 to March 14. The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD SS WL-4036). Protection of additional mapped winter concentration areas in GHMA would be implemented where winter concentration areas are mapped and designated by the State of Wyoming. Appropriate seasonal timing restrictions and habitat protection measures would be considered and evaluated in consultation

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	with the WGFD in all identified winter concentration areas. 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. Apply the following stipulations to fluid mineral leases within Greater Sage-Grouse Core Population Connectivity Corridors: ● NSO prohibiting surface occupancy and disturbing activities, within 0.6 mile of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped) (independent of habitat suitability). ● CSU within Greater Sage-Grouse Population Connectivity Corridors. ○ Inside Greater Sage-Grouse (priority habitat) core population area connectivity corridors, all suitable habitat disturbed (any program area) will not exceed 5% of suitable habitat within the DDCT area using the DDCT process. ○ Design and manage facilities to prevent WNv transmission. ○ Restore disturbed sagebrush communities on BLM surface to meet the Wyoming DEQ community-specific full shrub density standard (Chapter 4 Rules and Regulations, option III) for all predisturbance shrub species and 5% minimum canopy cover of sagebrush. A 90% confidence interval is required to demonstrate achievement of the standard. The standard must be demonstrated the last year of the responsibility period, and all planted shrubs shall have been in place for at least two years. ● TLS prohibiting surface-disturbing and/or disruptive activities within 4.0 miles of an occupied Greater Sage-Grouse lek, from March 15 to June 30 (independent of habitat suitability and restricted to within Population Connectivity Corridors). The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD SS WL-4036). 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. ● TLS prohibiting surface-disturbing and/or disruptive activities within mapped Greater Sage-Grouse winter concentration areas, from December 1 to March 14. The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD SS WL-4036). Protection of additional mapped winter concentration areas in GHMA would be implemented where winter concentration areas are mapped and designated by the State of Wyoming. Appropriate seasonal timing restrictions and habitat protection measures would be considered and evaluated in consultation with the WGFD in all identified winter concentration areas. 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. Apply the following stipulations to fluid mineral leases within Greater Sage-Grouse habitat outside of Core Population Areas and Core Population Connectivity Corridors:

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	● NSO prohibiting surface occupancy and disturbing activities, within 0.25 mile of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped). ● CSU within 0.25 mile of occupied Greater Sage-Grouse leks. ○ Design and manage facilities to prevent WNv transmission. ● CSU – Restore disturbed sagebrush communities on BLM surface to meet the Wyoming DEQ community-specific full shrub density standard (Chapter 4 Rules and Regulations, option III) for all predisturbance shrub species and 5% minimum canopy cover of sagebrush. A 90% confidence interval is required to demonstrate achievement of the standard. The standard must be demonstrated the last year of the responsibility period, and all planted shrubs shall have been in place for at least two years. Recommend for all surface-disturbing activities on BLM surface adjacent to Core or Connectivity Population Areas, or within or adjacent to lands involved in Greater Sage-Grouse conservation projects. ● TLS prohibiting surface-disturbing and disruptive activities within 2.0 miles of occupied Greater Sage-Grouse leks, from March 15 to June 30 (independent of habitat suitability). The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD SS WL-4036). 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. ● TLS protecting mapped winter concentration areas, from December 1 to March 14, in GHMA would be implemented only where winter concentration areas are identified. Protection of additional mapped winter concentration areas in GHMA would be implemented where winter concentration areas are mapped and designated by the State of Wyoming. Appropriate seasonal timing restrictions and habitat protection measures would be considered and evaluated in consultation with the WGFD in all identified winter concentration areas. 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. In cases where federal oil and gas leases are or have been issued without stipulated restrictions or requirements that are later found to be necessary, or with stipulated restrictions or requirements later found to be insufficient, consider their inclusion before approving subsequent exploration and development activities. Include these restrictions or requirements only as reasonable measures or as conditions of approval in authorizing APDs or Master Development Plans. Conversely, in cases where leases are or have been issued with stipulated restrictions or requirements that are later found to be excessive or unnecessary, the stipulated restrictions or requirements may be appropriately modified, excepted or waived in authorizing actions. Both the application of reasonable measures or COAs and the modification or exception of stipulated restrictions or requirements must first be based upon site-specific analysis including the necessary supporting NEPA.

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	Note (PHMA and GHMA): The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD SS WL-4036).
*MD SS WL-4025	Manage Greater Sage-Grouse Core Population Areas as follows: ● Prohibit surface-disturbing activities and occupancy within 0.6 mile of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped) (independent of habitat suitability). ● In Greater Sage-Grouse core population areas, the density of disturbance of a facility (oil and gas or mining) would be limited to an average of one site per square mile (640 acres) within the DDCT, subject to valid existing rights and applicable law. The one location and cumulative value of existing disturbances will not exceed 5 percent of suitable habitat of the DDCT area using the DDCT process. ● Inside Greater Sage-Grouse (priority habitat) core population areas and connectivity corridors, all suitable habitat disturbed (any program area) will not exceed 5% of suitable habitat within the DDCT area using the DDCT process. ○ Design and manage facilities to prevent WNv transmission. ○ New project noise levels, either individual or cumulative, should not exceed 10 dBA (as measured by L50) above baseline noise at the perimeter of the lek (or lek center if no perimeter is yet mapped) from 6:00 pm to 8:00 am during the breading season (March 1- May 15). Specific noise protocols for measurement and implementation will be developed as additional research and information emerges. These measure would be considered at the site-specific project level where and when appropriate. ○ Locate new Local or Collector roads (as defined in BLM Manual 9113) greater than 1.9 miles from the perimeter of occupied Greater Sage-Grouse leks. Locate new Resource roads greater than 0.6 mile from the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped). ○ Restore disturbed sagebrush communities on BLM surface to meet the Wyoming DEQ community-specific full shrub density standard (Chapter 4 Rules and Regulations, option III) for all predisturbance shrub species and 5% minimum canopy cover of sagebrush. A 90% confidence interval is required to demonstrate achievement of the standard. The standard must be demonstrated the last year of the responsibility period, and all planted shrubs shall have been in place for at least two years. ● Prohibit surface-disturbing and disruptive activities from March 15 to June 30 (independent of habitat suitability). The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD SS WL-4036).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. ● Prohibit surface-disturbing and disruptive activities within mapped Greater Sage-Grouse winter concentration areas, from December 1 to March 14. The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently

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	Governor of Wyoming's Executive Order 2015-4) (see MD SS WL-4036). Protection of additional mapped winter concentration areas in GHMA would be implemented where winter concentration areas are mapped and designated by the State of Wyoming. Appropriate seasonal timing restrictions and habitat protection measures would be considered and evaluated in consultation with the WGFD in all identified winter concentration areas. 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. To the extent necessary to prevent unnecessary or undue degradation, manage as follows within Greater Sage-Grouse Core Population Connectivity Corridors: ● Prohibit surface occupancy and disturbing activities, within 0.6 mile of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped) (independent of habitat suitability). ● In Greater Sage-Grouse Core Population Connectivity Corridors, subject to valid existing rights and applicable law, the cumulative value of existing disturbances will not exceed 5% of suitable habitat of the DDCT area using the DDCT process. Inside Greater Sage-Grouse (priority habitat) core population areas and connectivity corridors, all suitable habitat disturbed (any program area) will not exceed 5% of suitable habitat within the DDCT area using the DDCT process. ○ Design and manage facilities to prevent WNv transmission. ○ Restore disturbed sagebrush communities on BLM surface to meet the Wyoming DEQ community-specific full shrub density standard (Chapter 4 Rules and Regulations, option III) for all predisturbance shrub species and 5% minimum canopy cover of sagebrush. A 90% confidence interval is required to demonstrate achievement of the standard. The standard must be demonstrated the last year of the responsibility period, and all planted shrubs shall have been in place for at least two years. ● Prohibit surface-disturbing and disruptive activities within 4.0 miles of occupied Greater Sage-Grouse leks from March 15 to June 30 (independent of habitat suitability and restricted to within Population Connectivity Areas). The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD SS WL-4036).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. ● Prohibit surface-disturbing and disruptive activities within mapped Greater Sage-Grouse winter concentration areas, from December 1 to March 14. The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD SS WL-4036). Protection of additional mapped winter concentration areas in GHMA would be implemented where winter concentration areas are mapped and designated by the State of Wyoming. Appropriate seasonal timing restrictions and habitat protection measures would be considered and evaluated in consultation with the WGFD in all

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	identified winter concentration areas. 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. Manage as follows within occupied Greater Sage-Grouse habitat outside of Core Population and Core Population Connectivity Corridors: ● Prohibit or restrict surface occupancy and disturbing activities within 0.25 mile of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped). ● Reduce surface disturbance for authorizations within 0.25 mile of occupied Greater Sage-Grouse leks by: ○ Design and manage facilities to prevent WNv transmission. ● Restore disturbed sagebrush communities on BLM surface to meet the Wyoming DEQ community-specific full shrub density standard (Chapter 4 Rules and Regulations, option III) for all predisturbance shrub species and 5% minimum canopy cover of sagebrush. A 90% confidence interval is required to demonstrate achievement of the standard. The standard must be demonstrated the last year of the responsibility period, and all planted shrubs shall have been in place for at least two years. Recommend for all surface-disturbing activities on BLM surface adjacent to core or connectivity population areas, within or adjacent to lands involved in Greater Sage-Grouse conservation projects. BLM parcels less than 640 acres that only meet the population density factor may be excluded. ● Prohibit surface-disturbing and/or disruptive activities within 2.0 miles of occupied Greater Sage-Grouse leks, from March 15 to June 30 (independent of habitat suitability). The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD SS WL-4036). 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. ● Protect mapped winter concentration areas, from December 1 to March 14, in GHMA, only where winter concentration areas are identified. Protection of additional mapped winter concentration areas in GHMA would be implemented where winter concentration areas are mapped and designated by the State of Wyoming. Appropriate seasonal timing restrictions and habitat protection measures would be considered and evaluated in consultation with the WGFD in all identified winter concentration areas. 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. **Note (PHMA and GHMA):** The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD SS WL-4036).
*MD SS WL-4035	The BLM will update its Greater Sage-Grouse habitat management areas, including biologically significant units (BSUs), in conjunction with the State of Wyoming's core areas, upon issuance of any Wyoming Governor's Executive Order revising or amending the core area boundaries and upon completion of appropriate NEPA analysis and process. The BLM will complete the appropriate NEPA

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	documentation (including appropriate public comment) prior to adopting any revised core area boundaries (e.g., maintenance action or plan amendment, environmental assessment, etc.).
*MD SS WL-4036	Specific to management for Greater Sage-Grouse, all RMPs are amended as follows: Adopt the State of Wyoming's Greater Sage-Grouse Compensatory Mitigation Framework to the extent consistent with federal law, regulations, and policy. In all Greater Sage-Grouse habitat, when authorizing third-party actions in designated Greater Sage-Grouse habitat, the BLM will seek to achieve the planning-level Greater Sage-Grouse management goals and objectives through implementation of mitigation and management actions, consistent with valid existing rights and applicable law. Under this Plan Amendment, management would be consistent with the Greater Sage-Grouse goals and objectives, and in conformance with BLM Manual 6840, Special Status Species Management. In accordance with BLM Manual 6840, the BLM will undertake planning decisions, actions and authorizations "to minimize or eliminate threats affecting the status of [Greater Sage-Grouse] or to improve the condition of [Greater Sage-Grouse] habitat" across the planning area. Accordingly, before authorizing third-party actions that result in habitat loss and degradation, the BLM will complete the following steps, in alignment with the Governor of Wyoming's Executive Order 2015-4 (July 29, 2015): 1. Work jointly with the WGFD to evaluate projects and recommend mitigation in the form of avoidance and minimization. 2. The WGFD will determine if the State requires or recommends any additional mitigation – including compensatory mitigation – under State regulations, policies, or programs related to the conservation of Greater Sage-Grouse. 3. Incorporate state required or recommended mitigation into the BLM's NEPA decision-making process, if the WGFD determines that compensatory mitigation is required to address impacts to GRSG habitat as a part of State policy or authorization, or if a proponent voluntarily offers mitigation. 4. Analyze whether the compensatory mitigation (deferring to the appropriate State authority to quantify habitat offsets, durability, and other aspects used to determine the recommended compensatory mitigation action): • achieves measurable outcomes for Greater Sage-Grouse habitat function on a landscape scale as determined by WGFD that are at least equal to the lost or degraded values in accordance with the Governor of Wyoming's Executive Order 2015-4. • provides benefits that are in place for at least the duration of the impacts • accounts for a level of risk that the mitigation action may fail or not persist for the full duration of the impact 5. Ensure mitigation outcomes are consistent with the State of Wyoming's mitigation strategy and principles outlined in 2019 Wyoming GrSG ARMPA Appendix C, The Greater Sage-Grouse Habitat Management Strategy. The BLM has determined that compensatory mitigation must be voluntary unless required by other applicable law and in recognition that State authorities may also require compensatory mitigation (IM 2019-018, *Compensatory Mitigation*, December 6, 2018). Therefore,

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	consistent with valid existing rights and applicable law, when authorizing third-party actions that result in habitat loss and degradation, the BLM will consider voluntary compensatory mitigation actions only as a component of compliance with a State mitigation plan, program, or authority, or when offered voluntarily by a project proponent. Project-specific analysis will be necessary to determine how a compensatory mitigation proposal addresses impacts from a proposed action. The BLM will cooperate with the State to determine appropriate project design and alignment with State policies and requirements, including those regarding compensatory mitigation. When the BLM is considering compensatory mitigation as a component of the project proponent's submission or based on a mitigation requirement from the State, the BLM's NEPA analysis would evaluate the need to avoid or minimize impacts of the proposed project and achieve the goals and objectives of this RMPA. The BLM will defer to the appropriate State authority to quantify habitat offsets, durability, and other aspects used to determine the recommended compensatory mitigation action.
MO PR:2.1	Achieve and maintain Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for the Public Lands Administered by the BLM in the State of Wyoming (Appendix I (p. 419)).
MO PR:2.3	Rehabilitate all surface-disturbing activities consistent with applicable laws, regulations, and policies.
MD Soil-1002	Authorized surface-disturbing activities will include plans for reclamation; site-specific reclamation actions should reflect the complexity of the project, environmental concerns, and the reclamation potential of the site.
MG PR:3	Watershed, surface water, and groundwater resources are consistent with applicable state and federal standards and regulations.
MO PR:3.1	BLM actions maintain or improve watershed, wetland, and riparian functions to support desired surface-flow regimes and water quality.
MD Water-1007	Design and manage land use and surface-disturbing activities to reduce channel and bank erosion and the associated loss of riparian habitats.
MD Water-1013	Allow surface disturbance within 500 feet of springs, non-CBNG reservoirs, water wells, or perennial streams with an approved site-specific plan that ensures construction, stabilization and reclamation methods are meeting water and other resource objectives including, but not limited to soil, slope, and vegetation, and wildlife habitat.
MD Water-1016	Evaluate unneeded reservoirs for removal and reclamation.
MO MR:1.1	Provide opportunities for the exploration and development of locatable minerals, as well as mill and tunnel site operations, while avoiding or mitigating the effects of these activities on other resource values so that unnecessary or undue degradation is prevented.
MO MR:2.1	Maintain coal leasing and exploration, while minimizing impacts to other resource values.
MD Coal-2001	Coal planning was completed as part of the April 2001 BFO RMP update. At that time the four coal planning screens (i.e., coal development potential, unsuitability, multiple use and surface owner consultation) were applied to certain federal coal lands within the BFO planning area. The result of this planning effort was a decision identifying lands acceptable for further coal leasing consideration. The coal management decisions made in the BFO RMP update will be carried forward in this Approved RMP. Federal coal lands identified

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	acceptable for further coal leasing consideration are available for Lease By Applications, lease modifications, emergency leases, and exchanges. Prior to offering a coal tract for sale, the need to reapply the unsuitability criteria will be reviewed, a tract specific NEPA analysis will be completed, and there will be opportunity for public comment. At the time an application for a new coal lease or lease modification is submitted to the BLM, the BLM will determine whether the lease application area is "unsuitable" for all or certain coal mining methods pursuant to 43 CFR 3461.5. Priority habitat (core population areas and core population connectivity corridors) is essential habitat for maintaining Greater Sage-Grouse for purposes of the suitability criteria set forth at 43 CFR 3461.5(o)(1).
MO MR:3.4	Priority will be given to leasing and development of fluid mineral resources, including geothermal, outside of Greater Sage-Grouse habitat. When analyzing leasing and authorizing development of fluid mineral resources, including geothermal, in priority habitat (core population areas and core population connectivity corridors) and general habitat, and subject to applicable stipulations for the conservation of Greater Sage-Grouse, priority will be given to development in non-habitat areas first and then in the least suitable habitat for Greater Sage-Grouse. The implementation of these priorities will be subject to valid existing rights and any applicable law or regulation, including, but not limited to, 30 U.S.C. 226(p) and 43 CFR 3162.3-1(h). Where a proposed fluid mineral development project on an existing lease could adversely affect Greater Sage-Grouse populations or habitat, the BLM will work with the lessees, operators, or other project proponents to avoid, reduce and mitigate adverse impacts to the extent compatible with lessees' rights to drill and produce fluid mineral resources. The BLM will work with the lessee, operator, or project proponent in developing an APD for the lease to avoid and minimize impacts to Greater Sage-Grouse or its habitat and will ensure that the best information about the Greater Sage-Grouse and its habitat informs and helps to guide development of such federal leases.
**MD O&G-2001	Continue to require lessees to conduct operations in a manner that minimizes adverse impacts to other resources and other land uses and users. Where the federal government owns the mineral estate in Greater Sage-Grouse habitat and the surface is in non-federal ownership, apply to BLM authorizations regulating the federal lessee the same stipulations, COAs, and/or conservation measures and RDFs applied if the mineral estate is developed on BLM-administered surface lands in that management area, to the maximum extent permissible under existing authorities, and in coordination with the landowner. Where the federal government owns the surface and the mineral estate is in non-federal ownership in Greater Sage-Grouse habitat, apply appropriate surface use COAs, stipulations, and mineral RDFs through ROW grants or other surface management instruments, to the maximum extent permissible under existing authorities, in coordination with the mineral estate owner/lessee (see also MD SS WL-4024 and MD SS WL-4036).

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**MD O&G-2006	Areas that are open to oil and gas leasing are open to geophysical exploration subject to appropriate mitigation developed through use of the mitigation guidelines described in Appendix F (p. 397). Areas closed to oil and gas leasing are closed to geophysical exploration. Geophysical exploration is subject to motorized travel limitations and restrictions on surface-disturbing and disruptive activities. Geophysical exploration projects that are designed to minimize habitat fragmentation within PHMA would be allowed, except where prohibited or restricted by LUP decisions, and in conformance with timing and distances Management Decisions (see also MD SS WL-4024 and MD SS WL-4036).
MG MR:4	Manage leasable minerals other than oil, gas, coal, and geothermal energy based on demand, while avoiding or mitigating impacts to other resource values.
MO MR:4.1	Make opportunities available for exploration and development of leasable minerals other than oil, gas, coal, and geothermal energy, while avoiding or mitigating impacts of these activities on other resource values.
MD OL-2001	All lands in the planning area are available to exploration and development of other leasable minerals unless closed to mineral leasing. All non-energy leasable mineral activities would be considered in PHMA, provided that the activities can be completed in compliance with all Greater Sage-Grouse occupancy, timing, density and disturbance restrictions (see also MD SS WL-4024 and MD SS WL-4036).
MO MR:5.1	Provide opportunities for exploration and development of salable minerals while avoiding or mitigating effects to other resource values.
MG FM:1	Life, property, and resource values are protected. The protection of human life is the single, overriding priority. Setting priorities among protecting human communities and community infrastructure, other property and improvements, and natural and cultural resources will be done based on the values to be protected, human health and safety, and the costs of protection.
MO FM:1.1	Respond to unplanned wildfires based on: (1) ecological, (2) social, and (3) legal consequences while supporting other resource values.
MO FM:1.5	Implement appropriate emergency stabilization and rehabilitation actions following wildland fire.
MG FM:2	Plant community and hazardous fuel objectives are achieved.
MO FM:2.1	Improve fire regime condition class and maintain or improve conditions of fire-adapted landscapes by managing fire, planned and unplanned, to accomplish beneficial resource objectives.
MD Fire-3001	A Fire Management Plan for the Wyoming High Plains District will be maintained that more specifically outlines management response and implementation actions for wildland fire response of public lands.
MD Fire-3002	A resource advisor appropriate to the potentially affected resource will be consulted, or assigned, to all wildland fires that involve or threaten BLM-administered lands.
MD Fire-3006	Implement the BLM Emergency Stabilization and Burned Area Rehabilitation standards located in the DOI Interagency Burned Area Emergency Response Guidebook (DOI 2004) and BLM Burned Area Emergency Stabilization and Rehabilitation Handbook (BLM 2007a) as needed. Appendix P (p. 625) provides additional information regarding the BLM's approach to emergency stabilization and rehabilitation.

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MD Fire-3007	Use the District Fire Management Plan to implement the objectives of this RMP; to address fire management on a landscape scale, to maintain or improve conditions in fire-adapted landscapes, and to accomplish resource management objectives.
MD Fire-3008	Ensure all prescribed burning activities comply with Wyoming DEQ air quality standards and smoke management rules. For fuels management, the BLM would consider multiple tools for fuels reduction and would analyze in NEPA compliance documentation before electing to implement prescribed fire in PHMAs. If prescribed fire is used in Greater Sage-Grouse habitat, the NEPA analysis for the Burn Plan will address: ● why alternative techniques were not selected as a viable options; ● how Greater Sage-Grouse goals and objectives would be met by its use; ● how the Conservation Objectives Team Report objectives would be addressed and met; ● a risk assessment to address how potential threats to Greater Sage-Grouse habitat would be minimized. Prescribed fire as a vegetation or fuels treatment shall only be considered after the NEPA analysis for the Burn Plan has addressed the four bullets outlined above. Prescribed fire could be used to meet specific fuels objectives that would protect Greater Sage-Grouse habitat (e.g., creation of fuel breaks that would disrupt the fuel continuity across the landscape in stands where annual invasive grasses are a minor component in the understory, burning slash piles from conifer reduction treatments, used as a component with other treatment methods to combat annual grasses and restore native plant communities). Prescribed fire in known Greater Sage-Grouse winter range shall only be considered after the NEPA analysis for the Burn Plan has addressed the four bullets outlined above. Any prescribed fire in winter habitat would need to be designed to strategically reduce wildfire risk around and/or in the winter range and designed to protect winter range habitat quality.
MD Fire-3011	Response to wildfire varies from full protection in areas where fire is undesirable to monitoring fire behavior in areas where fire can be managed to accomplish other resource objectives. The entire planning area is available to manage wildfire for multiple objectives.
MD Fire-3012	Prohibit heavy equipment use within the following areas, except when human safety is at risk or if the expected fire effects would cause more resource damage than the use of heavy equipment: ● Areas of cultural resource sensitivity ● Riparian/wetland habitats ● Identified Greater Sage-Grouse important habitats: Core Population Areas, nesting, brood-rearing, Core Population Connectivity Corridors, or winter habitat ● Areas of highly erosive soils ● Lands with wilderness characteristics Limit heavy equipment usage to existing roads and trails, or immediately adjacent to them, in areas not identified as full protection
MD Fire-3013	Use protection strategies in the following areas:

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Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA) – Buffalo Field Office
	● WUI ● Wildland Industrial Interface ● Developed recreation ● Developed electronic/communication sites of all types ● Where sensitive or high value resources would be adversely affected by fire (i.e., Greater Sage-Grouse Core Population Area and Connectivity Corridor)
MD Fire-3014	Evaluate all fires and rehabilitate fire-damaged lands as needed to meet resource objectives. Repair suppression damages as necessary. Post ES&R and BAER management would be designed 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 travel management, etc., to achieve and maintain the desired condition of ES&R and BAER projects to benefit Greater Sage-Grouse (Eiswerth and Shonkwiler 2006). The BLM could bring in BAR and BAER teams who would work collaboratively with partners at the federal, state, and local level to rehabilitate and restore Greater Sage-Grouse habitats in a manner consistent with the core habitat population area strategy for conservation. DDCT reviews would be conducted in coordination with the WGFD Habitat Protection Program located in Cheyenne, Wyoming at the WGFD headquarters. Areas within PHMAs would be high priority for restoration of Greater Sage-Grouse habitat beyond immediate response.
MD Fire-3015	Use wildland fire and other vegetation treatments to meet desired management objectives.
MG BR:1	Vegetation resources sustained in desired ecological conditions.
MO BR:1.1	Manage communities for a diversity of native species, habitats, seral stages, and distribution.
MO BR:1.2	Manage for healthy vegetation communities to ensure their capability to provide sufficient plant composition, cover, and litter accumulation to protect soils from wind and water erosion and enhance nutrient cycling and productivity.
MO BR:1.3	Reclaim areas affected by surface-disturbing activities to promote healthy functioning native plant communities.
MO BR:1.4	Manage habitat to facilitate the conservation, recovery, and maintenance of populations of native, desirable non-native, and special status plant species consistent with appropriate local, state, and federal conservation requirements and management plans.
MO BR:1.5	Manage for healthy native plant communities by reducing and managing invasive, non-native noxious species.
MD Forest-4006	Actively manage woodlands to prevent expansion into other communities consistent with multiple resource values, on a project-specific basis.
MG BR:3	A diverse landscape of native grasslands and shrublands sustained in desired ecological conditions.
MO BR:3.1	Manage for a full range of sagebrush, shrub, and grassland communities with diverse native species and subspecies, composition, canopies, densities, and age classes across the landscape.
MD GS-4001	Manage vegetative communities in accordance with Wyoming Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for the Public Lands Administered by the BLM in the State of Wyoming.

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MD GS-4003	Use an integrated management approach (e.g., mechanical, chemical, biological treatments, prescribed fire, and grazing management techniques) to maintain, restore, and enhance the health and diversity of plant communities to achieve resource or multi-resource objectives.
MD GS-4005	Manage grasslands and shrublands to protect, preserve, or enhance plant communities.
MD GS-4006	Manage the siting of facilities and related infrastructure (utility corridors, roads) to reduce impacts to vegetation resources.
MD GS-4007	Manage the planning and development of travel routes, recreational uses, mineral exploration and development sites, and ROW to reduce impacts to the vegetation resource.
MD GS-4008	Develop a contingency plan addressing catastrophic natural events such as drought, wildfires, and large-scale pest infestations, incorporating strategies that best protect vegetation resources.
MD GS-4009	Work with landowners on split estate lands to reestablish disturbed sites to healthy plant communities in accordance with the ecological site potential.
MG BR:4	Health and functional capabilities in riparian/wetland systems.
MO BR:4.1	Manage lotic and lentic wetland/riparian systems at a minimum to achieve and/or maintain PFC.
MO BR:4.2	Improve riparian systems and wetlands in systems operating at less than PFC.
MO BR:4.3	Manage contributing watersheds to sustain riparian health and water quality.
MO BR:4.4	Manage and enhance riparian and wetland systems for plant, insect, fish and wildlife species that depend on these systems for their health and well-being.
MO BR:4.5	CBNG created riparian and wetland systems will be evaluated, retained, or reclaimed to support vegetation and other resource values.
MD Riparian-4002	Prioritize and develop activity and implementation plans to manage riparian systems to be at or above, or continue to be improving toward, PFC while achieving the Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for the Public Lands Administered by the BLM in the State of Wyoming.
MD Riparian-4003	Manage riparian and wetland systems to enhance forage conditions and improve water quality. Manage all riparian systems with sensitive species concerns to a succession stage appropriate for that system, including vertical as well as horizontal vegetative structure and composition.
MD Riparian-4004	Expand and enhance riparian/wetland systems and habitat in cooperation with stakeholders.
MD Riparian-4005	Prevent degradation, loss, or destruction of riparian/wetland habitat.
MD Riparian-4008	Allow surface-disturbing activities within 500 feet of riparian/wetlands systems with an approved site-specific plan that ensures construction, stabilization, and reclamation methods are meeting resource objectives, including, but not limited to soil, vegetation and wildlife habitat.
MD Riparian-4010	Identify and manage systems capable of achieving DFC.

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MD Riparian-4011	Restore vegetation in CBNG supported wetland and riparian systems on BLM surface and/or lease in accordance with the ecological site potential.
MG BR:5	Healthy native communities with manageable levels of pathogens, undesirable, invasive, non-native, or noxious species.
MO BR:5.1	Develop and maintain baseline information regarding the extent, location, and potential impact(s) of pest species. From this baseline information develop and implement an Integrated Pest Management Plan. Integrated management would be used to control, suppress, and eradicate, where possible, noxious and invasive species per BLM Handbook H-1740-2. Manage noxious or invasive species treatments to maintain or improve Greater Sage-Grouse habitat. Apply Required Design Features as Conditions of Approval, such as those in the 2019 Wyoming GrSG ARPMA Appendix B. Encourage the use of voluntary BMPs.
MO BR5.2	Facilitate support for an integrated approach for the detection, management, or eradication of new and minor infestations.
MO BR:5.3	Develop, implement, and maintain a management program for annual bromes and other invasive or undesirable species not listed as noxious, utilizing the best available science and BMPs.
MO BR:5.4	Coordinate with APHIS to facilitate pest and predator management.
MD Pest-4002	Manage designated pests on public surface lands using an Integrated Pest Management Approach consistent with DOI Manual 517 (BLM 2007b).
MD Pest-4003	Limit surface disturbance to the minimum needed for safe project completion to limit the spread of noxious weeds.
MD Pest-4004	Use certified noxious weed seed-free products on all BLM-administered projects and lands.
MD Pest-4005	Implement and maintain cooperative integrated pest management programs with county weed and pest districts, state agencies, private industry, grazing lessees, and other stakeholders in conjunction with BLM weed and pest control work on public lands adjoining deeded and state lands.
MD Pest-4006	Require surface or vegetation disturbance areas, including areas formerly receiving or holding water, be treated for invasive species and revegetated.
MD Pest-4009	Treat those plants on the State of Wyoming Designated list, the appropriate county lists, and other species of concern as determined by BLM resource specialists. Note: Priority treatments are those areas where infestations on private land are threatening public lands. Treat areas that contain annual bromes and/or other invasive species to minimize competition and favor establishment of desired species.
MD Pest-4010	Designate and prioritize areas for the treatment of annual brome species.
MG BR:6	Distribution and abundance of all native and desirable non-native species are optimized.
MO BR:6.1	BLM actions prevent and/or reduce impacts to desirable species.
MO BR:6.2	In coordination with cooperating agencies, develop and implement an achievable Wildlife Monitoring and Protection Plan.
MO BR:6.3	Maintain, restore, or improve the continuity and productivity of fish and wildlife habitats to support WGFD population objectives.
MO BR:6.4	Develop and implement an adaptive conservation and management strategy.
MG BR:7	Sufficient functional habitat for native and desirable non-native species.

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MO BR:7.1	Evaluate, update, and revise as necessary existing Wildlife Habitat Management Plans.
MO BR:7.2	Develop Wildlife Habitat Management Plans for areas with important habitats.
MO BR:7.3	Manage habitat consistent with local, state, and federal management plans, as applicable.
MO BR:7.4	Continue to gather habitat and population data while concurrently monitoring human and natural disturbance dynamics to improve habitat management.
MO BR:7.5	Provide security habitat, sufficient in amount and distribution, to support WGFD population objectives for fish and wildlife to escape from disruptive activities.
MO BR:7.6	Maintain and provide functioning sagebrush habitat to sustain sagebrush obligates and other sagebrush dependent species.
MG BR:8	Fish and wildlife are able to move between areas of functionally intact habitat.
MO BR:8.1	Develop Travel Management Plans for areas important for fish and wildlife while supporting other resource values.
MO BR:8.2	Develop a ROW Management Plan for utility corridors to manage impacts to areas of habitat important to fish and wildlife consistent with other resource values.
MO BR:8.3	Land acquisitions should support desirable fish and wildlife populations or habitat.
MO BR:8.4	Restore functionality to areas of degraded habitat important to fish and wildlife populations consistent with other resource values.
MD Fish-4008	Maintain or enhance streams and riparian areas associated with Class I and II streams (WGFD classifications), Powder River, Tongue River, and other appropriate areas for desired fisheries potential.
MD Fish-4012	Allow surface-disturbing activities within 0.25 mile of naturally occurring water bodies containing native and desirable non-native fish species where fish resource objectives can be met.
MD WL-4001	Develop appropriate mitigation for surface-disturbing and disruptive activities associated with wildlife habitat management through use of the mitigation guidelines described in Appendix F (p. 397).
MD WL-4002	Maintain or improve important wildlife habitats through vegetative manipulations, habitat improvement projects, livestock grazing strategies and the application of The Wyoming Guidelines for Managing Sagebrush Communities with Emphasis on Fire Management (Wyoming Interagency Vegetation Committee 2002) and Appendix F (p. 397), WGFD Strategic Habitat Plan (WGFD 2001), State Wildlife Action Plan (WGFD 2010), and similar guidance updated over time.
MD WL-4003	Continue to use existing Habitat Management Plans and update as necessary to include management objectives and prescriptions for wildlife: South Big Horns Habitat Management Plan (BLM 1986b), including a portion or all of the Gardner Mountain and North Fork WSAs; Wetlands Habitat Management Plan (BLM 1986a); and Middle Fork Powder River Habitat Management Plan (BLM 1980).
MD WL-4005	Consult with the WGFD and USFWS, in accordance with MOUs, when applying mitigation for wildlife and before waiving, allowing exceptions to, or modifying wildlife-related land use restrictions and mitigation.
MD WL-4006	Provide, to the extent possible, suitable habitat and forage to support wildlife population objectives as defined by WGFD. BLM will cooperatively consider proposals by the WGFD to change population objective levels based on habitat capability and availability.

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Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA) – Buffalo Field Office
MD WL-4007	Manage access to protect crucial habitats in cooperation with WGFD and other stakeholders
MD WL-4008	Utilize current research, management and conservation plans, and similar related documents to guide wildlife habitat management.
MD WL-4009	Construct new fences to avoid adverse impacts to wildlife and in accordance with BLM Fencing Handbook 1741-1 (BLM 1989) and WO Instruction Memorandum 2010-022: Managing Structures for the Safety of Sage-grouse, Sharp-tailed grouse, and Lesser prairie chicken (BLM 2009b).
MD WL-4012	Inventory, record, and report existing type, condition, and location of BLM fences. Prioritize fence projects and annually implement modifications in accordance with appropriate wildlife needs and the BLM Fencing Handbook 1741-1.
MD WL-4013	Allow surface-disturbing and disruptive activities to occur throughout the entire life of projects during seasons important for wildlife when wildlife resource objectives can be met.
MD WL-4014	Powerlines (distribution and transmission) will be designed to minimize wildlife related impacts and constructed to the latest APLIC guidance. Prohibit above ground distribution powerlines unless identified in an approved distribution plan.
MD Cultural-5007	Prohibit surface disturbance within the following sites: ● Pumpkin Buttes ● Cantonment Reno ● Dull Knife Battle ● Crazy Woman Battle ● Contributing and Unevaluated Segments of the Bozeman Trail ● All Rock Art Sites ● All Rock Shelter Sites ● All Native American Burials Allow surface disturbance and infrastructure within 3.0 miles of the following sites where development is either not visible, or will result in a weak contrast to the setting: ● Pumpkin Buttes ● Cantonment Reno ● Dull Knife Battle ● Crazy Woman Battle ● Contributing and Unevaluated Segments of the Bozeman Trail ● All Rock Art Sites ● All Native American Burials
MD Paleo-5001	Retain public lands with significant paleontological values.
MD Paleo-5006	Avoid areas containing paleontological resources of high quality or importance when developing locatable minerals.

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MD Paleo-5007	Apply an NSO stipulation to mineral leases in areas containing paleontological resources of high quality or importance.
MD Paleo-5008	Avoid areas containing paleontological resources of high quality or importance when developing salable minerals.
MD VRM-5002	Incorporate BMPs for visual resources into project planning for federal actions.
MG LR:2	Manage land tenure adjustments and land use authorizations to meet the needs of the customers while protecting other resource values.
MO LR:2.1	Develop and maintain a land-ownership pattern that improves access for public use, and improves management and protection of BLM-administered lands by: 1. Acquiring legal easements to BLM-administered lands for recreational opportunities and administrative use. 2. Responding to requests for land authorizations for access needs. 3. Responding to requests for land transfers. 4. Giving priority to land exchanges and/or sales on custodial grazing allotments while supporting other resource values.
MO LR:2.3	Effects of infrastructure projects, including siting, will be minimized using the best available science, updated as monitoring information on current infrastructure projects becomes available.
MD L&R-6002	Consider land use authorizations (permits, leases, etc.) on a project-specific basis consistent with other resource objectives.
MD L&R-6003	Consider withdrawals for surface and/or minerals on a project-specific basis.
MD L&R-6011	Acquire private or state land or interest in land from willing sellers consistent with other resource objectives, on a project-specific basis.
**MD L&R-6012	Acquire and dispose of land based on all resource values, including but not limited to agricultural potential and water. Do not classify, open, or make available any BLM-administered public lands within the planning area for agricultural leasing or agricultural entry under either Desert Land Entry or Indian Allotment for one or more of the following reasons: rugged topography, presence of sensitive resources, lack of water or access, small parcel size, and/or unsuitable soils. Lands classified as PHMA and GHMA for Greater Sage-Grouse will be retained in federal management unless: (1) the agency can demonstrate that disposal of the lands, including land exchanges, is in the public's best interest or (2) the agency can demonstrate that the disposal, including land exchanges, of the lands will have no direct or indirect adverse impact on conservation of the Greater Sage-Grouse. Exceptions would be considered where there is mixed ownership and land exchanges would allow for additional or more contiguous federal ownership patterns within PHMA. For PHMA with minority federal ownership, an additional, effective mitigation agreement would be included for any disposal of federal land. As a final preservation measure, consideration should be given to pursuing a permanent conservation easement. For lands in GHMA that are identified for disposal, the BLM will only dispose of such lands consistent with the goals and objectives of this plan, including, but not limited to, the land use plan goal to conserve, recover, and enhance Greater Sage-Grouse habitat on a landscape scale.

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MD L&R-6014	Prioritize acquiring land or interests in lands in areas adjacent to large blocks of BLM-administered land or other lands having significant resource or other values before other areas.
MG LR:4	Primary infrastructure corridors and subsidiary routes consistent with other resource values.
MO LR:4.1	Manage public lands to meet the needs of ROW customers while supporting other resource values.
MO LR:4.3	Identify infrastructure corridors consistent with other resource values.
MO LR:4.4	Make opportunities available for exploration and development of CO2 sequestration research and activities, while avoiding or mitigating impacts of these activities on other resource values.
MO LR:4.5	Effects of infrastructure projects, including siting, will be minimized using the best available science, updated as monitoring information on current infrastructure projects becomes available.
MD ROW-6001	Designate corridors for major ROW to minimize surface disturbance and impacts to other resources.
MD ROW-6004	The preferred location for new ROW will be in or adjacent to existing disturbed areas associated with existing ROW, constructed roads, or highways.
MD ROW-6005	Maintain a transportation management system in cooperation with appropriate state and local agencies to meet public and resource management needs.
MD ROW-6006	Make lands available for ROW in accordance with management identified within the Approved RMP to conserve other resources. This results in: ● 79,777 acres excluded from ROW. ● 321,149 acres identified for ROW avoidance. PHMA would be managed as ROW avoidance areas for new ROW or SUA permits. Within PHMA where new ROWs/SUAs are necessary, new ROWs/SUAs would be located within designated RMP corridors or adjacent to existing ROWs/SUAs where technically feasible. Subject to valid existing rights including non-federal land inholdings, required new ROWs/SUAs would be located adjacent to existing ROWs/SUAs or where it best minimizes Greater Sage-Grouse impacts. Greater Sage-Grouse priority habitat (Core Population Areas and Core Population Connectivity Corridors) are designated as avoidance areas for ROWs. ● 381,176 acres are open for ROW development.
MD ROW-6009	Designate the following corridors for major ROW transportation and utility use, in cooperation with the State of Wyoming: ● Echeta Road ● Sheridan to Gillette, largely following US 14/16 ● Highway 59 north of Gillette ● Interstate 25 ● Interstate 90, Gillette to Montana State Line ● Powder River

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	● Powder River Breaks (Buffalo to Gillette) Corridor use is required. No above ground lines will be authorized in the Powder River or Powder River Breaks corridors. Corridor requirements within Greater Sage-Grouse habitat are identified in SS WL-4022.
MD ROW-6010	Authorize and place above ground facilities (i.e., compressors, electric distribution powerlines) within ROW and other disturbance areas when resource objectives can be met.
MD ROW-6012	Evaluate CO2 sequestration proposals where in accordance with management identified within the Approved RMP.
MG LR:5	A safe transportation network that supports other resource values.
MO LR:5.1	Utilize a comprehensive travel management approach to sustain and enhance access, recreational experiences, and support other resource values.
MO LR:5.3	Designate all BLM-administered lands as Open, Limited, or Closed to OHV use, in consideration of other resource values.
MO LR:5.4	Provide for acceptable modes of legal public access that supports other resources, reduces conflicts, and provides for diverse recreation opportunities.
MD Trans-6002	Evaluate roads constructed under other initiatives (e.g., oil and gas exploration) for inclusion in the BLM transportation system. Roads that are no longer needed for their original purposes are assessed for addition to the BLM transportation system prior to reclamation.
MD Trans-6004	Design, construct, and maintain roads or trails based on the specific objectives for that trail or road in consideration of other resources. Design, construct, and maintain roads to minimize surface disturbance, changes to surface water runoff, and erosion.
MD Trans-6006	Base road or trail closures and abandonments on resource protection, demand for new roads, and accommodation of authorized uses.
MD Trans-6007	Maintain transportation system roads under BLM jurisdiction in accordance with assigned maintenance levels and in consideration of other resource values. Maintain administrative roads on an as needed basis, dependent on time, funding, and access priorities.
MD Trans-6008	Within 5 years of the ROD, inventory all routes on public land and develop a travel management plan to classify and designate routes for continued use or decommissioning and reclamation. Include maintenance standards for routes to be retained for public use, as well as specific measures to accomplish road closure in the travel management plan. Inventory, designate, number, and sign all routes as appropriate. Posted signs will include allowed uses and activities. Restrictions to existing roads and trails remains in effect until travel management planning is completed and designated routes are identified. Appendix S (p. 667) provides additional information regarding the travel management planning process.
MD Trans-6013	Allow temporary closures to motorized vehicle use in areas that pose public health and safety risks, and/or where resource damage is imminent. In Greater Sage-Grouse priority habitat (Core Population Areas and Core Population Connectivity Corridors) and general habitat, temporary closures will be considered in accordance with 43 CFR subpart 8364 (Closures and Restrictions); 43 CFR subpart 8351 (Designated National Area); 43 CFR subpart 6302 (Use of Wilderness Areas, Prohibited Acts, and Penalties); 43 CFR subpart 8341 (Conditions of Use).

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	Temporary closure or restriction orders under these authorities are enacted at the discretion of the authorized officer to resolve management conflicts and protect persons, property, and public lands and resources. Where an authorized officer determines that OHVs are causing or will cause considerable adverse effects upon soil, vegetation, wildlife, wildlife habitat, cultural resources, historical resources, threatened or endangered species, wilderness suitability, other authorized uses, or other resources, the affected areas shall be immediately closed to the type(s) of vehicle causing the adverse effect until the adverse effects are eliminated and measures implemented to prevent recurrence (43 CFR 8341.2). A closure or restriction order should be considered only after other management strategies and alternatives have been explored. The duration of temporary closure or restriction orders should be limited to 24 months or less; however, certain situations may require longer closures and/or iterative temporary closures. This may include closure of routes or areas.
MD Trans-6014	Limit OHV use to designated routes unless compelling reasons exist to classify parcels as Open or Closed, and is consistent with other resource values. Until individual routes are designated, areas subject to route designation will be classified as Limited to existing routes. Once route designation is completed, areas will no longer be classified as Limited to existing routes.
MD Trans-6019	Limit motorized vehicle use to designated routes within habitat of special status species consistent with travel management designations for that area. Routes will be designated to avoid occupied habitat during travel management planning.
MD Trans-6020	Evaluate existing routes in the vicinity of any new system roads for closure and reclamation consistent with other resource values.
MO LR:7.2	Manage recreation to protect resources, maintain public health and safety, and to provide a diverse array of benefits to the public.
MG LR:8	Recreation facilities balance public demand with other resource values.
MO LR:8.1	Design and maintain recreation sites to meet acceptable health and safety standards while supporting other resource values.
MD Rec-6003	Open the planning area to dispersed recreation where consistent with other resource values.
MD Rec-6010	Avoid riparian habitat or develop and manage recreational sites, recreation facilities, and recreational access in a manner that minimizes impacts to riparian habitats.
MD Rec-6011	Prohibit dispersed camping and commercial camps within 200 feet of perennial surface water.
**MD Rec-6015	Allow additional recreation facilities in areas where they are supported by recreational use and are consistent with other resource values. Construction of recreation facilities within Greater Sage-Grouse PHMA (Core Population Areas and Core Population Connectivity Corridors) must conform to the avoidance and minimization measures of this plan. If it is determined that these conservation measures are inadequate for the conservation of Greater Sage-Grouse, the BLM will consider mitigation consistent with the applicable State Management Strategy (currently Governor's Executive Order 2015-4) (see also MD SS WL-4036).
MD Rec-6018	Designate the following areas as SRMAs and delineate discrete recreation management zone boundaries: ● Burnt Hollow (17,280 acres) ● Dry Creek Petrified Tree (2,567 acres) ● Hole-in-the-Wall (11,952 acres) ● Middle Fork Powder River (10,083 acres)

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	● Mosier Gulch (1,026 acres) ● Welch Ranch (1,748 acres) ● Weston Hills (9,504 acres) Strategically emphasize a variety of recreation opportunities along with the protection of natural and cultural resources. R&VS management will be recognized as the predominant land use focus in SRMAs. Manage SRMAs under site-specific management plans. Site-specific management plans will be consistent with and implement the provisions specified for SRMAs in Appendix T (p. 679).
MD Rec-6019	Do not lease minerals within the boundary of the following SRMAs: ● Burnt Hollow (17,280 acres) ● Dry Creek Petrified Tree (2,567 acres) ● Hole-in-the-Wall (11,952 acres) ● Middle Fork Powder River (10,083 acres) ● Mosier Gulch (1,026 acres) ● Welch Ranch (1,748 acres) Lease fluid minerals with a CSU stipulation to be consistent with SRMA management in the following SRMA: ● Weston Hills (9,504 acres)
MD Rec-6021	Allow surface disturbance within designated SRMAs for administrative use only, where consistent with other resource values.
MD Rec-6022	Recommend withdrawals from mineral entry under the mining laws in designated SRMAs.
MD Rec-6023	Allow salable mineral development within designated SRMAs for administrative use only.
MG LR:11	Public rangelands provide for a sustainable level of livestock grazing consistent with other resource values and sustained yield.
MO LR:11.2	Manage forage to maintain or improve ecological states and achieve and/or maintain Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for the Public Lands Administered by the BLM in the State of Wyoming.
MO LR:11.3	Monitor and evaluate rangeland health and condition in coordination with cooperators, and lessees to determine if, and what additional management is needed to achieve desired ecological state.
MD Grazing-6001	Develop and implement appropriate livestock grazing management actions to achieve the Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for the Public Lands Administered by the BLM in the State of Wyoming, to provide watershed protection, to improve forage for livestock, forage and habitat for wildlife, and enhance rangeland health.
MD Grazing-6004	Continue implementation of existing AMPs. Develop and implement new AMPs with grazing lessees and other stakeholders to achieve desired resource goals and objectives.
MD Grazing-6005	Manage livestock grazing to sustain riparian, wetland, mountain mahogany, specials status species or other special habitats.
MD Grazing-6009	Implement strategies that best protect rangeland resources during periods of drought. Cooperate with stakeholders for voluntary adjustments in livestock use and/or livestock management.
MD Grazing-6015	Develop range improvements in accordance with resource needs and livestock management.

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Table A-2
ARMPA – Buffalo Field Office with All Management Goals, Objectives, and Decisions

Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA) – Buffalo Field Office
MD Grazing-6016	Conduct baseline inventories. Develop, implement, and monitor AMPs. Base AMP goals/objectives in Category I and M allotments on resource protection and watershed health.
*MD Grazing-6017	Allow livestock grazing on all public lands in the planning area except where an evaluation has determined it to be incompatible with other resource uses or values (campgrounds, entrances of caves, sites of cultural significance). ● The BLM will prioritize (1) the review of grazing permits/leases, in particular to determine if modification is necessary prior to renewal, and (2) the processing of grazing permits/leases in Greater Sage-Grouse priority habitat (Core Population Areas and Core Population Connectivity Corridors) followed by general habitat. In setting workload priorities, precedence will be given to existing permits/leases in these areas not meeting Land Health Standards, with focus on those containing riparian areas, including wet meadows. The BLM may use other criteria for prioritization to respond to urgent natural resource concerns (e.g., fire) and legal obligations. ● Within PHMA, if monitoring data show the wildlife/special status species standard has not been met nor progress being made toward meeting that standard, there would be an evaluation and a determination made as to the cause. If it is determined that the current authorized livestock use is a significant causal factor in failing to achieve the wildlife/special status species standards~~,~~ the BLM would address the achievement or progress toward achieving the LHSs (43 CFR 4180.2) and, if needed, Greater Sage-Grouse habitat maintenance or improvement. The BLM will collaborate with appropriate federal agencies and the State of Wyoming, as contemplated under the Wyoming Governor's Executive Order 2013-3, to: (1) develop appropriate conservation objectives; (2) define a framework for evaluating situations where Greater Sage-Grouse conservation objectives are not being achieved on federal land, to determine if a significant causal relationship exists between improper grazing (by wildlife or wild horses or livestock) and Greater Sage-Grouse conservation objectives; and (3) identify appropriate site-based actions to achieve Greater Sage-Grouse conservation objectives within the framework. Absent substantial and compelling information that adjustments are necessary to the core population area strategy, these core population areas, connectivity areas, identified and mapped winter concentration areas, and protective stipulations shall not be altered for a minimum of 7 years. Any changes shall involve a transparent process that provides an opportunity for public input and proper consideration of any proposal consistent with the provisions contemplated under Wyoming's core population area strategy. ● When NEPA analysis is required for a specific implementation action, one alternative would include mechanisms to make adjustments to meet or make progress toward meeting the wildlife/special status species standard. The analysis should also identify the BLM-approved data collection methodologies used for monitoring conditions and determining when adjustments are necessary. If current grazing management meets land health standards and provides for Greater Sage-Grouse habitat, there would be no need to analyze an alternative for Greater Sage-Grouse. Within PHMA, seasonal habitat objectives for Greater Sage-Grouse apply only to those habitats delineated within an allotment during the specific season (e.g., breeding season objectives during breeding season). Data needed to inform the relationship between the authorized use and habitat condition would come from sample locations that appropriately reflect the impact of the authorized use on habitat conditions. Data points should fall within Greater Sage-Grouse seasonal habitat areas and be collected on ecological sites that have the potential to produce Greater Sage-Grouse habitat.

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	● Allotments within priority habitat (Core Population Areas and Core Population Connectivity Corridors), and focusing on those containing riparian areas, including wet meadows, will be prioritized for field checks to help ensure compliance with the terms and conditions of the grazing permits. Field checks could include monitoring for actual use, utilization, and use supervision. Authorized uses in PHMA that incorporate habitat objectives for Greater Sage-Grouse must develop desired conditions based on Greater Sage-Grouse habitats present in the allotment and the ecological potential of sites that supports these habitats. Metrics used to monitor for objectives must be developed and inform the wildlife/SSS portion of the Standards for Healthy Rangelands. ● At the time a permittee or lessee voluntarily relinquishes a permit or lease, the BLM will consider whether the public lands where that permitted use was authorized should remain available for livestock grazing or be used for other resource management objectives, such as reserve common allotments or fuel breaks. This does not apply to or impact grazing preference transfers, which are addressed in 43 CFR 4110.2-3. 9,992 acres are incompatible with and 772,110 acres are available for livestock grazing. This does not apply to or impact grazing preference transfers, which are addressed in 43 CFR 4110.2-3.
MD Grazing-6019	Locate livestock salt or mineral supplements a minimum of 500 feet away from water sources, riparian areas, and aspen stands.
MD Grazing-6021	Provide rest/deferment from livestock grazing following wildfire, prescribed burns, and other vegetative treatments until resource objectives are met.

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Table A-3
ARMPA – Cody Field Office with All Management Goals, Objectives, and Decisions

Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA) – Cody Field Office
MO MR:2.3	Priority will be given to leasing and development of fluid mineral resources, including geothermal, outside of PHMA and GHMA. When analyzing leasing and authorizing development of fluid mineral resources, including geothermal, in PHMA and GHMA, and subject to applicable stipulations for the conservation of Greater Sage-Grouse, priority will be given to development in non-habitat areas first and then in the least suitable habitat for Greater Sage-Grouse. The implementation of these priorities will be subject to valid existing rights and any applicable law or regulation, including, but not limited to, 30 U.S.C. 226(p) and 43 CFR 3162.3-1(h).
*MO MR:2.4	Where a proposed fluid mineral development project on an existing lease could adversely affect Greater Sage-Grouse populations or habitat, the BLM will work with the lessees, operators, or other project proponents to avoid, reduce, and mitigate adverse impacts to the extent compatible with lessees' rights to drill and produce fluid mineral resources. The BLM will work with the lessee, operator, or project proponent in developing an APD for the lease to avoid and minimize impacts to Greater Sage-Grouse or its habitat and will ensure that the best information about the Greater Sage-Grouse and its habitat informs and helps to guide development of such federal leases (see MDs 4107, 4108, 4109, 4111, and 4157).
**MD 2006	Consider interest in exploration for, or leasing of, federal coal (Map 3-5), if any on a case-by-case basis. Allow coal exploration licenses subject to the regulations of 43 CFR 3410, and subject to guidance mitigating for surface-disturbing activities in the Wyoming BLM Standard Oil and Gas Lease Stipulations (2015 Cody RMP Appendix B, Oil and Gas Lease Notices and Lease Stipulations, including Exception, Modification, and Waiver Criteria (p. 211)). Before issuing a coal exploration license, require the authorized officer to prepare an environmental assessment or environmental impact statement, if necessary, of the potential effects of the proposed exploration on the natural and socioeconomic environment of the affected area. If an application for a federal coal lease is received, conduct an appropriate land use and environmental analysis, including the coal screening process, to determine whether the area(s) proposed for leasing is (are) acceptable for coal development and leasing (as per 43 CFR 3425). If public lands are determined to be acceptable for further consideration for coal leasing, amend the land use plan as necessary. Only accept federal coal lease applications on those federal coal lands with development potential identified as suitable for further leasing consideration, after application of the coal screens and unsuitability criteria. At the time an application for a new coal lease or lease modification is submitted to the BLM, the BLM will determine whether the lease application area is "unsuitable" for all or certain coal mining methods pursuant to 43 CFR 3461.5. PHMA is essential habitat for maintaining Greater Sage-Grouse for purposes of the suitability criteria set forth at 43 CFR 3461.5(o)(1). The BLM will also consider that USFWS has found "the core area strategy…if implemented by all landowners via regulatory mechanisms, would provide adequate protection for sage-grouse and their habitats in the state" when considering leasing coal in PHMA under the criteria set for at 43 CFR 3461.5(o)(1) (USFWS 2010) (see also MDs 4107, 4108, 4109, 4111, and 4157).
**MD 2013	Process oil and gas lease applications on a case-by-case basis. Ensure that leasing activities in PHMAs comply with Greater Sage-Grouse RMP decisions and remain in compliance with laws, regulations, and policy (see also MDs 4107, 4108, 4109, 4111, and 4157).
**MD 2023	Delineate Oil and Gas Management Areas (Map 3-9) (108,174 acres of federal mineral estate) around existing intensively-developed fields, applying a 2-mile buffer from the outer boundary of the existing field (Map 3-10); adding enhanced oil recovery areas identified by the Governor's Office Enhanced Oil Recovery Institute and excluding Greater Sage-Grouse PHMAs. Manage these areas primarily for oil and

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Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA) – Cody Field Office
	gas exploration and development. Oil and gas development, including enhanced oil recovery operations, within Oil and Gas Management Areas is allowed to take place at the same level and density as the existing development in the field, except in the Oregon Basin Oil Field, where new development must result in no net gain of surface disturbance. Levels and densities beyond the existing field development may require additional reclamation or voluntary compensatory offsite mitigation. As oil and gas fields expand or exploration reaches beyond the Oil and Gas Management Areas depicted on Map 3-9, Oil and Gas Management Areas may be enlarged as appropriate. To enlarge Oil and Gas Management Areas, the expansion area would: i) have to be adjacent to the field and under valid oil and gas lease(s) with stipulations allowing surface occupancy and development; ii) have to have a surface density of, on average, at least four well pads per 640 acres; a determination that additional well density is required to efficiently and adequately produce the oil or gas resource; iii) have a project-specific environmental analysis prepared to analyze the impacts and determine operating methods, mitigation, and BMPs to be used in the efficient and comprehensive development of the field; iv) need surface resources to be satisfactorily mitigated; and v) need commitment to accelerate reclamation as required by the authorized officer.
MO FM:1.5	Following wildland fires, conduct appropriate emergency stabilization and rehabilitation when and where needed. In priority Greater Sage-Grouse habitat areas, prioritize suppression immediately after life and property to conserve the habitat. In general Greater Sage-Grouse habitat, prioritize suppression where wildfires threaten priority Greater Sage-Grouse habitat.
MO FM:2.1	Consult and cooperate with adjacent landowners, state and local governments, and other stakeholders to plan and implement prescribed fire and other vegetation treatments across the landscape. In areas of general Greater Sage-Grouse habitat, design and implement fuels treatments with an emphasis on protecting existing sagebrush ecosystems.
MD 3008	Suppress fires threatening Greater Sage-Grouse habitats and crucial winter wildlife habitat within Wyoming big sagebrush communities. Where fire would be utilized to meet resource objectives, work closely with resource specialists to protect and improve Greater Sage-Grouse habitat. For fuels management, the BLM would consider multiple tools for fuels reduction and would analyze in NEPA compliance documentation before electing to implement prescribed fire in PHMAs. If prescribed fire is used in Greater Sage-Grouse habitat, the NEPA analysis for the Burn Plan will address: ● why alternative techniques were not selected as a viable options; ● how Greater Sage-Grouse goals and objectives would be met by its use; ● how the COT Report objectives would be addressed and met; and ● a risk assessment to address how potential threats to Greater Sage-Grouse habitat would be minimized. Prescribed fire as a vegetation or fuels treatment in Greater Sage-Grouse habitat shall only be considered after the NEPA analysis for the Burn Plan has addressed the four bullets outlined above. Prescribed fire could be used to meet specific fuels objectives that would protect Greater Sage-Grouse habitat in PHMAs (e.g., creation of fuel breaks that would disrupt the fuel continuity across the landscape in stands where annual invasive grasses are a minor component in the understory, burning slash piles from conifer reduction treatments, used as a component with other treatment methods to combat annual grasses and restore native plant communities).

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Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA) – Cody Field Office
	Prescribed fire in known crucial winter wildlife habitat shall only be considered after the NEPA analysis for the Burn Plan has addressed the four bullets outlined above. Any prescribed fire in and/or around crucial winter wildlife habitat must be strategically-designed to reduce wildfire risk and protect winter range habitat quality.
MO BR:2.6	In PHMAs, the desired condition is to maintain all lands ecologically capable of producing sagebrush (but no less than 70 percent) with a minimum of 15 percent sagebrush cover or as consistent with specific ecological site conditions. The attributes necessary to sustain these habitats are described in Interpreting Indicators of Rangeland Health (BLM Technical Reference 1734-6 [BLM 2005c]).
MG BR:9	GREATER SAGE-GROUSE – Sustain the integrity of the sagebrush biome to provide the amount, continuity, and quality of habitat that is necessary to maintain sustainable populations of Greater Sage-Grouse and other species by achieving the objectives below.
MO BR:9.1	Maintain large patches of high quality sagebrush habitats, with emphasis on patches occupied by Greater Sage-Grouse.
MO BR:9.2	Maintain connections between sagebrush habitats, with emphasis on connections between habitats occupied by Greater Sage-Grouse.
MO BR:10.1	Reconnect large patches of sagebrush habitat with emphasis on reconnecting patches occupied by stronghold and isolated populations of Greater Sage-Grouse.
**MD 4059	Maintain or improve important wildlife habitats through vegetative manipulations, habitat improvement projects, livestock grazing strategies and the application of The Wyoming Guidelines for Managing Sagebrush Communities with Emphasis on Fire Management (Wyoming Interagency Vegetation Committee 2002) and the Wyoming BLM Standard Mitigation Guidelines for Surface-Disturbing and Disruptive Activities (Appendix F, Wyoming Bureau of Land Management Mitigation Guidelines for Surface-Disturbing and Disruptive Activities (p. 351)), BMPs (2019 Wyoming GrSG ARMPA Appendix B, Required Design Features and Best Management Practices), and similar guidance updated over time.
MD 4071	Conduct habitat enhancement vegetation treatments within sagebrush communities as opportunities and funding allow, consistent with EO 2015-4 (Wyoming Office of the Governor 2015).
MD 4072	Modify identified hazard fences, and analyze and construct new fences in accordance with wildlife needs, the BLM Fencing Handbook 1741-1, and WO IM 2010-022, Managing Structures for the Safety of Sage-grouse, Sharp-tailed grouse, and Lesser Prairie-chicken, and similar guidance and policy as updated over time.
MD 4077	Allow water development projects in crucial elk winter range and in Greater Sage-Grouse nesting habitat with 10 inches or less annual precipitation only when adverse effects can be avoided, minimized and/or compensated based on site-specific analysis. Allow existing uses pending site-specific analysis on a priority basis.
MD 4081	Avoid wind energy projects in big game crucial winter range and raptor concentration areas. Wind-energy development would be avoided in Greater Sage-Grouse PHMAs (Map 3-17), and not allowed unless it can be sufficiently demonstrated that the development activity would not result in declines of Greater Sage-Grouse PHMA populations. Sufficient demonstration of "no declines" should be coordinated with the WGFD and USFWS.

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Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA) – Cody Field Office
MD 4088	Discourage the use of broad-spectrum insecticides where insect control is required. Target pest control toward key problem areas and schedule applications to be effective in minimum doses in Greater Sage-Grouse brood-rearing areas. Field Offices may implement treatments within Greater Sage-Grouse habitat utilizing RAATS protocols.
MD 4089	Avoid aerial pesticide spraying in favor of ground applications to minimize drift into non-target areas in Greater Sage-Grouse habitat unless benefits of treatments are likely to outweigh impacts.
MD 4090	Avoid applying pesticides to Greater Sage-Grouse breeding habitat during the nesting and early brood-rearing season (March 15 through June 30) to reduce the loss of food supply to chicks and avoid the chance of secondary poisoning unless benefits of treatments are likely to outweigh impacts.
MD 4091	Maintain seeps, springs, wet meadows, and riparian vegetation in a functional and diverse condition for young Greater Sage-Grouse and other species that depend on forbs and insects associated with these areas. Consider management actions if desirable green vegetation associated with these wet areas is not available, accessible, or cannot be maintained with current livestock, wildlife, or wild horse use, and the impacts are outweighed by the improved habitat quality.
MD 4092	Restore Greater Sage-Grouse brood-rearing habitats in riparian/wetland areas.
MD 4093	Restore lost riparian functioning systems by repairing abnormally incised drainages to raise water tables and increase water storage and brood-rearing habitats within Greater Sage-Grouse habitat.
MD 4094	Manage vegetation composition diversity and structure, as determined by ESD, or other methods that reference site potential, and WGFD protocols to achieve Greater Sage-Grouse habitat management objectives, in cooperation with stakeholders. Evaluate the role of existing seedings that are currently composed of primarily introduced perennial grasses in and adjacent to Greater Sage-Grouse habitat to determine if they should be restored to sagebrush or habitat of higher quality for Greater Sage-Grouse. If these seedings provide value in conserving or enhancing Greater Sage-Grouse habitats, then no restoration would be necessary. Assess the compatibility of these seedings for Greater Sage-Grouse habitat during the land health assessments. Burned areas within PHMAs would be restored to suitable habitat with consideration given to ESDs, reference sites, site potential and local variability. The BLM could bring in burned area rehabilitation and Burned Area Emergency Response teams who would work cooperatively with partners at the federal, state, and local levels to rehabilitate and restore Greater Sage-Grouse habitats in a manner consistent with the core habitat population area strategy for conservation. DDCT reviews would be conducted in coordination with the WGFD Habitat Protection Program located in Cheyenne, Wyoming at the WGFD headquarters. Areas within PHMAs would be prioritized for restoration of Greater Sage-Grouse habitat beyond immediate response.
MD 4095	Maintain sagebrush and understory diversity (relative to ecological site description) in crucial seasonal Greater Sage-Grouse habitats unless such removal is necessary to achieve Greater Sage-Grouse habitat management objectives. For example, thinning small patches of dense sagebrush may increase desirable forbs in early brood-rearing habitat.

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Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA) – Cody Field Office
MD 4096	Increase the composition and canopy cover of Wyoming big sagebrush, within existing nonnative grass seedings with less than 5 percent sagebrush canopy cover, to greater than or equal to neighboring sagebrush communities or historical levels. (See Shrubland-Salt Desert/Salt Bottom on Map 3-14; deeper soiled, and gentler sloped portions of the Shrubland-Salt Desert/Salt Bottom, colored in pink, would be those areas where sagebrush restoration efforts could be conducted.)
MD 4097	Investigate opportunities to increase sagebrush in lower precipitation zones.
MD 4098	Plan and construct mining and mineral development activities, to the degree possible given state water rights, to minimize disturbances that would result in alterations to springs and riparian Greater Sage-Grouse habitat. Alternative water sources may be developed to replace natural sources that have been affected or destroyed during these development activities.
MD 4099	Treat constructed or non-natural water storage impoundments to control mosquito breeding (and the associated spread of West Nile virus), to prevent disease spread to Greater Sage-Grouse as necessary.
MD 4100	In cooperation with stakeholders, manage to promote the growth and persistence of native shrubs, grasses, and forbs needed by Greater Sage-Grouse for seasonal food and concealment.
MD 4101	In cooperation with stakeholders, design and locate fences so as not to disturb PHMAs. Increase the visibility of fences in these areas which have been identified as hazardous to flying Greater Sage-Grouse.
MD 4102	Conduct fire management activities to minimize overall wildfire size and frequency in sagebrush plant communities where Greater Sage-Grouse habitat objectives are at risk. General priorities for habitat protection: Priority # 1 – Protection of Greater Sage-Grouse PHMAs. Priority # 2 – Wyoming big sagebrush communities outside Greater Sage-Grouse PHMAs and habitats recovering from disturbance within or adjacent to Greater Sage-Grouse PHMAs.
MD 4103	Annually maintain FMPs to incorporate updated sagebrush habitat information as well as fire suppression priorities in sagebrush habitats. Incorporate fire management objectives for the management of sagebrush ecosystems into FMPs. Provide fire management objectives for sagebrush ecosystems to initial attack personnel at the beginning of each fire season.
MD 4104	Establish fuels treatment projects at strategic locations to minimize size of wildfires and limit loss of Greater Sage-Grouse habitat.
MD 4105	Reintroduce appropriate fire regimes to limit conifer encroachment into the sagebrush plant communities. Take into account invasive herbaceous species and Fire Regime Group and FRCC (measure of departure from historic fire regime) with treatments. Where possible, achieve a balance between treating areas that have significantly departed from the historic fire regime (Condition Class 3) and areas that are functioning within an appropriate fire regime (Condition Class 1).
MD 4106	Remove conifers encroaching into sagebrush habitats in a manner that considers tribal and cultural values. Prioritize treatments closest to occupied Greater Sage-Grouse habitats and near occupied leks, and where juniper encroachment is phase 1 or phase 2 as defined in Miller et al. (2005). Refine the location of specific priority areas to be treated by utilizing site-specific analysis and principles like those included in the FIAT report (Chambers et. al. [2014]) and other ongoing modeling efforts to address conifer encroachment.

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Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA) – Cody Field Office
**MD 4107	**Inside PHMAs** Prohibit surface occupancy and surface-disturbing activities on or within a 0.6-mile radius of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped). **Outside PHMAs** Prohibit surface-disturbing and disruptive activities and apply a NSO restriction within a ¼-mile radius of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped) (Map 3-17). Outside Greater Sage-Grouse PHMAs, the BLM's goal is to sustain important habitats that support core populations and to maintain lek persistence over the long term in sufficient proportions of the Greater Sage-Grouse population to facilitate movement and genetic transfer between core populations, including those found in adjacent states. The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD 4157).
**MD 4108	**Inside PHMAs** Prohibit disruptive activities on or within a 0.6-mile radius of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped) from March 15 to June 30 (40,039 acres). **Outside PHMAs** Prohibit disruptive activities on or within a ¼-mile radius of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped) from March 15 to June 30 (1,116 acres). **Inside PHMAs** Prohibit surface-disturbing and/or disruptive activities from March 15 to June 30 to protect Greater Sage-Grouse breeding, nesting, and early brood-rearing habitat (437,045 acres). Apply this timing limitation throughout the PHMAs. **Outside PHMAs** Prohibit surface-disturbing and/or disruptive activities in Greater Sage-Grouse nesting and early brood-rearing habitat within a 2-mile radius of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped) from March 15 to June 30. Note: Where credible data support different timeframes for these seasonal restrictions, dates may be expanded by up to 14 days prior to or subsequent to the above dates. The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD 4157).
**MD 4109	**Greater Sage-Grouse winter concentration areas:** Surface-disturbing and/or disruptive actives in Greater Sage-Grouse winter concentration areas would be prohibited from December 1—March 14. The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with

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	the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD 4157). Protection of additional mapped winter concentration areas in GHMA would be implemented where winter concentration areas are mapped and designated by the State of Wyoming. Appropriate seasonal timing restrictions and habitat protection measures would be considered and evaluated on consultation with the WGFD in all identified winter concentration areas.
**MD 4110	Density of Disturbances: In Greater Sage-Grouse PHMAs, the density of disturbance of energy or mining facilities would be limited to an average of one site per square mile (640 acres) within the DDCT, subject to valid existing rights (2019 Wyoming GrSG ARMPA Appendix C, Greater Sage-Grouse Habitat Management Strategy). The one location and cumulative value of existing disturbances would not exceed 5 percent of habitat of the DDCT area. Inside PHMA, all suitable habitat disturbed (any program area) will not exceed 5 percent within the DDCT area using the DDCT process. Consolidate anthropogenic features from development and transmission on the landscape. Allow on a case-by-case basis high profile structures within Greater Sage-Grouse nesting habitat. Sagebrush Treatment: For vegetation treatments in sagebrush within PHMAs, refer to WGFD Protocols for Treating Sagebrush to Benefit Sage-Grouse (WGFD 2015, as updated) and BLM WO IM 2013-128 (Sage-grouse Conservation Related to Wildland Fire and Fuels Management). These recommended protocols, subject to seasonal conditions of approval, would be used in determining whether proposed treatment constitutes a "disturbance" that would contribute toward the 5 percent threshold for habitat maintenance. Additionally, these protocols would be used to determine whether the proposed treatment configuration would be expected to have neutral or beneficial impacts for PHMA populations or if they represent additional habitat loss or fragmentation. Treatments to enhance sagebrush/grasslands habitat for Greater Sage-Grouse would be evaluated based upon habitat quality and the functionality/use of treated habitats post-treatment. The BLM would work collaboratively with partners at the state and local level to maintain and enhance Greater Sage-Grouse habitats. Seasonal restrictions would be applied, as needed, for implementing fuels management treatments according to the type of seasonal habitat present. Wildfire burns will be treated as disturbed if sagebrush is reduced below 5 percent unless there is an implementation plan outlining restoration efforts and 3 years of data showing a trend back to suitable habitat.
*MD 4111	Within PHMA (core only), new project noise levels, either individual or cumulative, should not exceed 10 dBA (as measured by L50) above baseline noise at the perimeter of the lek (or lek center if no perimeter is yet mapped) from 6:00 pm to 8:00 am during the breeding season (March 1–May 15). The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD 4157). In coordination with the State of Wyoming, specific noise protocols for measurement and implementation will be developed as additional research and information emerges. These measures would be considered at the site-specific project level where and when appropriate.

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Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA) – Cody Field Office
MD 4112	Allow motorized vehicle use in Greater Sage-Grouse PHMAs consistent with other resource objectives. Manage new road construction in and adjacent to Greater Sage-Grouse habitat consistent with applicable restrictions on surface-disturbing and disruptive activities. Avoid construction of new or local collector roads (as defined in BLM Manual 9113 [BLM 2011d]) within 1.9 miles of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped) within PHMAs. Prohibit all new roads within 0.6 miles of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped) within PHMAs. Construct roads to minimum design standards needed for production activities.
MD 4113	In PHMAs, implement mitigation and minimization guidelines and required design features, including specific measures for Greater Sage-Grouse (refer to 2019 Wyoming GrSG ARMPA Appendix B, Required Design Features and Best Management Practices), as applicable and consistent with EO 2015-4 (Wyoming Office of the Governor 2015). Incorporate Greater Sage-Grouse specific measures into project proposals as required design features or mitigation for any authorized federal action, regardless of surface ownership.
MD 4114	In PHMAs, require the development of a wildlife resource monitoring and mitigation plan to address potential impacts from mineral development on wildlife populations and/or habitat on a case-by-case basis.
MD 4115	Use the following travel management criteria in PHMAs: ● During subsequent travel management planning, all routes within PHMAs would undergo a route evaluation to determine its purpose and need and the potential resource and/or user conflicts from motorized travel. Where resource and/or user conflicts outweigh the purpose and need for the route, the route would be considered for closure or considered for relocation outside of sensitive Greater Sage-Grouse habitat. ● During implementation-level travel planning, threats to Greater Sage-Grouse and their habitat would be considered when evaluating route designations and/or closures. ● During subsequent travel management planning, routes within PHMAs that do not have a purpose or need would be considered for closure. ● During subsequent travel management planning, routes within PHMAs that are duplicative parallel, or redundant would be considered for closure. ● During subsequent travel management planning, OHV timing limitations would be considered in important seasonal habitats where OHV use is a threat. ● During subsequent travel management planning, consider limiting snow machine travel to designated routes or consider seasonal closures in Greater Sage-Grouse wintering areas from November 1 through March 31. ● During subsequent travel management planning, routes in PHMAs not required for public access or recreation with a current administrative/agency purpose or need would be evaluated for administrative access only. ● During subsequent travel management planning, prioritize restoration of routes not designated in a Travel Management Plan within PHMAs.

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Table A-3
ARMPA – Cody Field Office with All Management Goals, Objectives, and Decisions

Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA) – Cody Field Office
	● During subsequent travel management planning, consider using seed mixes or transplant techniques that will maintain or enhance Greater Sage-Grouse habitat when rehabilitating linear disturbances. ● During subsequent travel management planning, consider scheduling road maintenance to avoid disturbance during sensitive periods and times to the extent practicable. Use time of day limits (after 10:00 AM to 7:00 PM) to reduce impacts on Greater Sage-Grouse during breeding and nesting periods.
*MD 4116	The Greater Sage-Grouse adaptive management plan provides regulatory assurance that unintended negative impacts to Greater Sage-Grouse habitat will be addressed before consequences become severe or irreversible. Adaptive management triggers are essential for identifying when potential management changes are needed in order to continue meeting Greater Sage-Grouse conservation objectives. With respect to Greater Sage-Grouse, all regulatory entities in Wyoming, including the BLM, use soft and hard triggers. Soft and hard triggers are focused on three metrics: 1) number of active leks, 2) acres of available habitat, and 3) population trends based on annual lek counts. See 2019 Wyoming GrSG ARMPA Appendix C, Greater Sage-Grouse Habitat Management Strategy for more information on soft and hard triggers. <u>Soft Triggers Response:</u> Soft triggers are indicators that management or specific activities may not be achieving the intended results of conservation action or that unanticipated changes to populations or habitats have occurred that have the potential to place habitats or populations at risk. The soft trigger is any deviation from normal trends in habitat or population in any given year. Metrics include, but are not limited to, annual lek counts, wing counts, aerial surveys, habitat monitoring, and DDCT evaluations. For population metrics, normal population trends are calculated as the 5-year running mean of annual population counts. BLM field offices, with the assistance of their respective land and RMP implementation groups, local WGFD offices, and local sage-grouse working groups will evaluate the metrics with the Adaptive Management Working Group on an annual basis. The purpose of these strategies is to address localized Greater Sage-Grouse population and habitat changes by providing the framework in which management will change if monitoring identifies negative population and habitat anomalies in order to avoid crossing a hard trigger threshold. Soft triggers require immediate monitoring and surveillance to determine causal factors and may require curtailment of activities in the short or long term, as allowed by law. The project level adaptive management strategies will identify appropriate responses where the project's activities are identified as the causal factor. The management agency (BLM) and the Adaptive Management Work Group will implement an appropriate response strategy to address causal factors not attributable to a specific project or to make adjustments at a larger regional or statewide level. <u>Hard Trigger Response:</u> Hard triggers are indicators that management is not achieving desired conservation results. Hard triggers would be considered a catastrophic indicator that the species is not responding to conservation actions, or that a larger-scale impact or set of impacts is having a negative effect.

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	Within the range of normal population variables (5-year running mean of annual population counts), hard triggers shall be determined to take effect when two of the three metrics exceeds 60 percent of normal variability for the area under management in a single year, or when any of the three metrics exceeds 40 percent of normal variability for a 3 year time period within a 5-year range of analysis. A minimum of 3 consecutive years in a 5-year period is used to determine trends (i.e., years 1-2-3, years 2-3-4, years 3-4-5). Upon determination that a hard trigger has been tripped, the BLM will immediately defer issuance of discretionary authorizations for new actions within the Biologically Significant Unit for a period of 90 days. In addition, within 14 days of a determination that a hard trigger has been tripped, the Adaptive Management Work Group will convene to develop an interim response strategy and initiate an assessment to determine the causal factor or factors (hereafter called the causal factor assessment). The Adaptive Management Working Group would define a process to review and reverse adaptive management actions once the identified causal factor is resolved (e.g., returning to previous management once objectives of interim management strategy have been met). In making amendments to this plan, the BLM will coordinate with the USFWS as BLM continues to meet its objective of protecting, restoring, and enhancing Greater Sage-Grouse habitat by reducing, minimizing or eliminating threats to that habitat. The hard and soft trigger data will be analyzed as soon as it becomes available after the signing of the ROD and then at a minimum, analyzed annually thereafter.
MD 4145	Base future adjustments to the appropriate management level on monitoring information and multiple use considerations through development of and/or revisions to HMA Plans. Update HMA plans to include Greater Sage-Grouse objectives.
*MD 4156	The BLM will update its Greater Sage-Grouse habitat management areas, including biologically significant units (BSUs), in conjunction with the State of Wyoming's core areas, upon issuance of any Wyoming Governor's Executive Order revising or amending the core area boundaries and upon completion of appropriate NEPA analysis and process. The BLM will complete the appropriate NEPA documentation (including appropriate public comment) prior to adopting any revised core area boundaries (e.g., maintenance action or plan amendment, environmental assessment, etc.).
*MD 4157	Specific to management for Greater Sage-Grouse, all RMPs are amended as follows: Adopt the State of Wyoming's Greater Sage-Grouse Compensatory Mitigation Framework to the extent consistent with federal law, regulations, and policy. In all Greater Sage-Grouse habitat, when authorizing third-party actions in designated Greater Sage-Grouse habitat, the BLM will seek to achieve the planning-level Greater Sage-Grouse management goals and objectives through implementation of mitigation and management actions, consistent with valid existing rights and applicable law. Under this Plan Amendment, management would be consistent with the Greater Sage-Grouse goals and objectives, and in conformance with BLM Manual 6840, Special Status Species Management. In accordance with BLM Manual 6840, the BLM will undertake planning decisions, actions and authorizations "to minimize or eliminate threats affecting the status of [Greater Sage-Grouse] or to improve the condition of [Greater Sage-Grouse] habitat" across the planning area.

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	Accordingly, before authorizing third-party actions that result in habitat loss and degradation, the BLM will complete the following steps, in alignment with the Governor of Wyoming's Executive Order 2015-4 (July 29, 2015): 1. Work jointly with the WGFD to evaluate projects and recommend mitigation in the form of avoidance and minimization. 2. The WGFD will determine if the State requires or recommends any additional mitigation – including compensatory mitigation – under State regulations, policies, or programs related to the conservation of Greater Sage-Grouse. 3. Incorporate state required or recommended mitigation into the BLM's NEPA decision-making process, if the WGFD determines that compensatory mitigation is required to address impacts to GRSG habitat as a part of State policy or authorization, or if a proponent voluntarily offers mitigation. 4.Analyze whether the compensatory mitigation (deferring to the appropriate State authority to quantify habitat offsets, durability, and other aspects used to determine the recommended compensatory mitigation action): • achieves measurable outcomes for Greater Sage-Grouse habitat function on a landscape scale as determined by WGFD that are at least equal to the lost or degraded values in accordance with the Governor of Wyoming's Executive Order 2015-4. • provides benefits that are in place for at least the duration of the impacts. • accounts for a level of risk that the mitigation action may fail or not persist for the full duration of the impact 5. Ensure mitigation outcomes are consistent with the State of Wyoming's mitigation strategy and principles outlined in 2018 Approved RMPA Appendix C, The Greater Sage-Grouse Habitat Management Strategy. The BLM has determined that compensatory mitigation must be voluntary unless required by other applicable law and in recognition that State authorities may also require compensatory mitigation (IM 2019-018, *Compensatory Mitigation*, December 6, 2018). Therefore, consistent with valid existing rights and applicable law, when authorizing third-party actions that result in habitat loss and degradation, the BLM will consider voluntary compensatory mitigation actions only as a component of compliance with a State mitigation plan, program, or authority, or when offered voluntarily by a project proponent. Project-specific analysis will be necessary to determine how a compensatory mitigation proposal addresses impacts from a proposed action. The BLM will cooperate with the State to determine appropriate project design and alignment with State policies and requirements, including those regarding compensatory mitigation. When the BLM is considering compensatory mitigation as a component of the project proponent's submission or based on a mitigation requirement from the State, the BLM's NEPA analysis would evaluate the need to avoid or minimize impacts of the proposed project and achieve the goals and objectives of this RMPA. The BLM will defer to the appropriate State authority to quantify habitat offsets, durability, and other aspects used to determine the recommended compensatory mitigation action.
MO LR:1.5	Effects of infrastructure projects, including siting, will be minimized using the best available science, updated as monitoring information on current infrastructure projects becomes available.

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**MD 6016	Retain approximately 1,072,653 acres of BLM-administered land. 14,283 acres of BLM-administered land are available for disposal by sale, exchange or other means (Map 3-21) (Appendix I, Land Disposal and Acquisition (p. 381)). Disposal can include none, some, or all of the mineral estate as allowed by 43 CFR 2720 and FLPMA Section 209(b)(1). A mineral potential report would determine if a surface estate disposal includes none, some, or all of the mineral estate. Lands classified as PHMAs and GHMAs for Greater Sage-Grouse will be retained in federal management unless: (1) the agency can demonstrate that disposal of the lands, including land exchanges, will be in the public's best interest or (2) the agency can demonstrate that the disposal of the lands, including land exchanges, will have no direct or indirect adverse impact on conservation of the Greater Sage-Grouse. Consider exceptions where there is mixed ownership. Allow land exchanges for additional or more contiguous federal ownership patterns within PHMAs. For PHMAs with minority federal ownership, include an additional, effective mitigation agreement for any disposal of federal land. Consider pursuing a permanent conservation easement as a final preservation measure. For lands in GHMAs that are identified for disposal, the BLM will only dispose of such lands consistent with the goals and objectives of this plan, including, but not limited to, the land use plan objective to maintain or increase Greater Sage-Grouse abundance and distribution. Note: All land actions to acquire or dispose of lands would require a site specific analysis under NEPA.
**MD 6032	Designate ROW corridors as shown on Map 3-24. PHMAs are designated as avoidance areas for high voltage transmission line and pipeline ROWs. All authorizations in these areas must comply with the conservation measures outlined in this Approved RMP, including the RDFs and avoidance criteria presented in 2019 Wyoming GrSG ARMPA Appendix B, Required Design Features and Best Management Practices (p. 251). Within PHMAs, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: **New Transmission Lines (greater than 115 kV):** New transmission lines greater than 115 kV in PHMA would be allowed only (1) when located within 0.5 miles or less of 115 kV or greater transmission lines constructed prior to 2008; or (2) in designated RMP corridors authorized for aboveground transmission lines. Transmission lines routed using one or more of the two criteria listed above will not be counted against the DDCT 5 percent disturbance cap. New transmission lines greater than 115 kV proposed outside of these areas would be considered where it can be demonstrated that declines in Greater Sage-Grouse populations could be avoided through project design and/or mitigation. These projects will be subject to the density and disturbance restrictions for PHMA. Review of transmission line proposals would incorporate the Framework for Sage-grouse Impact Analysis for Interstate Transmission Lines (BLM 2012b) and other appropriate documents consistent with the three routing criteria described above. New projects within PHMAs that may require future utility lines, including distribution and transmission lines or pipelines, would include the proposed utility lines in their DDCT as part of the proposed disturbance. Lines permitted, but not located in the above mentioned routes or a designated corridor will be counted toward the 5 percent disturbance calculation (line distance is equal to the anticipated

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	construction footprint or construction ROW width multiplied by length and includes all access roads, staging area, and other surface disturbance associated with construction outside of the construction ROW). **New Electric Distribution Lines (less than 115 kV):** Require burial of new electric distribution lines where economically feasible. If not economically feasible, distribution lines may be authorized when effectively designed/mitigated to protect Greater Sage-Grouse and when the authorized officer determines that overhead installation is the action alternative with the fewest adverse impacts while still meeting the project need. Consider agricultural and residential distribution lines to be adequately mitigated for Greater Sage-Grouse if constructed at least 0.6 mile from the lek perimeter (or lek center if no perimeter is yet mapped) with appropriate timing constraints and constructed to the latest APLIC standards. These ROW authorizations will be subject to approval by the State Director. **Pipelines:** Allow new pipelines through PHMAs: (1) within an RMP corridor currently authorized for that use or designated through future RMP amendments; or (2) constructed in or adjacent to existing utilities (buried and aboveground) or roads. Pipelines constructed in RMP corridors or adjacent to existing utilities or roads will require completion of a DDCT analysis for baseline data collection, but the project is not required to meet the threshold of 5 percent. However, within 6 months of the completion of construction, the project proponent will provide the authorized officer with as-built drawings so that the total disturbance within PHMAs can be calculated annually.
MD 6033	Manage 637,154 acres as ROW avoidance areas (Map 3-24). Manage PHMAs as ROW avoidance areas for new ROW or SUA permits (317,307 acres). Within PHMAs where new ROWs/SUAs are necessary, locate new ROWs/SUAs within designated RMP corridors or adjacent to existing ROWs/SUAs where technically feasible. Subject to valid existing rights, including non-federal land inholdings, locate new, required ROWs/SUAs adjacent to existing ROWs/SUAs or where impacts to Greater Sage-Grouse are minimized. Work with proponents to design ROW applications to protect Greater Sage-Grouse.
MD 6046	Allow temporary closures to motorized vehicle use in areas that pose public health and safety risks, and/or where resource damage is imminent. In PHMAs and GHMAs, temporary closures will be considered in accordance with 43 CFR subpart 8364 (Closures and Restrictions); 43 CFR subpart 8351 (Designated National Area); 43 CFR subpart 6302 (Use of Wilderness Areas, Prohibited Acts, and Penalties); 43 CFR subpart 8341 (Conditions of Use). Temporary closure or restriction orders under these authorities are enacted at the discretion of the authorized officer to resolve management conflicts and protect persons, property, and public lands and resources. Where an authorized officer determines that off-highway vehicles are causing or will cause considerable adverse effects upon soil, vegetation, wildlife, wildlife habitat, cultural resources, historical resources, threatened or endangered species, wilderness suitability, other authorized uses, or other resources, the affected areas shall be immediately closed to the type(s) of vehicle causing the adverse effect until the adverse effects are eliminated and measures implemented to prevent recurrence. (43 CFR 8341.2) A closure or restriction order should be considered only after other management strategies and alternatives have been explored. The duration of temporary closure or restriction orders should be limited to 24 months or

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	less; however, certain situations may require longer closures and/or iterative temporary closures. This may include closure of routes or areas.
*MD 6059	Design recreational sites, recreation facility development, and recreational access to avoid riparian habitat areas or develop and manage them in a manner that minimizes effects on riparian habitats. Construction of recreation facilities within PHMA must conform to the avoidance and minimization measures of this plan. If it is determined that these conservation measures are inadequate for the conservation of Greater Sage-Grouse, the BLM will consider mitigation is consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4 (see also MD 4157).
**MD 6126	In cooperation, consultation, and coordination with permittees/lessees, cooperators, and interested public, develop and implement appropriate livestock grazing management actions to enhance land health, improve forage for livestock, and meet other multiple use objectives by using the Wyoming Guidelines for Livestock Grazing Management, other appropriate BMPs (see 2019 Wyoming GrSG ARMPA Appendix B, Required Design Features and Best Management Practices), and development of appropriate range improvements. The BLM will prioritize (1) the review of grazing permits/leases, in particular to determine if modification is necessary prior to renewal, and (2) the processing of grazing permits/leases in PHMAs. In setting workload priorities, precedence will be given to existing permits/leases in areas not meeting Land Health Standards, with focus on allotments containing riparian areas or wet meadows. The BLM may use other criteria for prioritization to respond to urgent natural resource concerns (e.g., wildfire) and legal obligations. The BLM will collaborate with appropriate federal agencies, and the State of Wyoming as contemplated under EO 2013–3 (Wyoming Office of the Governor 2013), to 1) develop appropriate conservation objectives; (2) defined a framework for evaluating situations where Greater Sage-Grouse conservation objectives are not being achieved on federal land, to determine if a causal relationship exists between improper grazing (by wildlife or wild horses or livestock) and Greater Sage-Grouse conservation objectives; and 3) identify appropriate site-specific actions to achieve Greater Sage-Grouse conservation objectives within the framework.
*MD 6130	Utilize a rangeland health assessment, resource monitoring, or analysis to determine if livestock grazing adjustments in amounts, kinds, or season are necessary. Within PHMA, if monitoring data show the wildlife/special status species standard has not been met nor progress being made toward meeting that standard, there would be an evaluation and a determination made as to the cause. If it is determined that the current authorized livestock use is a significant causal factor in failing to achieve the wildlife/special status species standards, the BLM would address the achievement or progress toward achieving the LHSs (43 CFR 4180.2) and, if needed, Greater Sage-Grouse habitat maintenance or improvement. When NEPA analysis is required for a specific implementation action, one alternative would include mechanisms to make adjustments to meet or make progress toward meeting the wildlife/special status species standard. The analysis should also identify the BLM-approved data collection methodologies used for monitoring conditions and determining when adjustments are necessary. If current grazing management meets land health standards and provides for Greater Sage-Grouse habitat, there would be no need to analyze an alternative for Greater Sage-Grouse.

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	Authorized uses in PHMA that incorporate habitat objectives for Greater Sage-Grouse must develop desired conditions based on Greater Sage-Grouse habitats present in the allotment and the ecological potential of sites that supports these habitats. Metrics used to monitor for objectives must be developed and inform the wildlife/SSS portion of the Standards for Healthy Rangelands. Within PHMA, seasonal habitat objectives for Greater Sage-Grouse apply only to those habitats delineated within an allotment during the specific season (e.g., breeding season objectives during breeding season). Data needed to inform the relationship between the authorized use and habitat condition would come from sample locations that appropriately reflect the impact of the authorized use on habitat conditions. Data points should fall within Greater Sage-Grouse seasonal habitat areas and be collected on ecological sites that have the potential to produce Greater Sage-Grouse habitat.
MD 6142	Allotments within PHMAs, focusing on those containing riparian areas, including wet meadows, will be prioritized for field checks to help ensure compliance with the terms and conditions of the grazing permits. Field checks could include monitoring for actual use, utilization, and use supervision.

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Table A-4
ARMPA – Lander Field Office with All Greater Sage-Grouse Management Goals, Objectives, and Decisions

Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA – Lander Field Office
**MD 1015	Implement BLM National and Wyoming Reclamation Policies requiring the development of reclamation plans for all federal actions authorized, conducted, or funded by the BLM that disturb vegetation and/or the mineral/soil resources. Require that site-specific interim and final reclamation practices be developed and implemented that will meet the reclamation standards as identified in 2014 Lander RMP Appendix B (p. 185). The type and detail of the reclamation plan will be commensurate with the extent and duration of soil disturbance. For extensive disturbance such as a full-field oil and gas development, a detailed, multi-phase plan such as the Continental Divide Creston oil and gas project reclamation plan (attached as Appendix G to the Proposed RMP and Final EIS as an example) will be required.
**MD 1016	Require a full reclamation bond specific to the site for all new disturbances in accordance with 43 CFR 3104.2, 3104.3, and 3104.5 or current policy. Ensure bonds are sufficient for costs relative to reclamation (Connelly et al. 2000; Hagen et al. 2007) that would result in restoration of disturbed lands in accordance with the final reclamation standards and objectives identified in 2014 Lander RMP Appendix B (p. 185). Base the reclamation costs on the assumption that contractors for the BLM will perform the work.
MD 1017	Require that surface-disturbing activities minimize the surface disturbance footprint to the maximum extent possible to limit the areas requiring reclamation. Limit disturbance of desirable vegetative communities established during interim reclamation when implementing final reclamation.
MD 1018	Require that all reclamation plans identify the desired plant community for final reclamation.
MD 1019	Consider wildlife habitat objectives in all final reclamation objectives. In Core Area, final reclamation objectives will be to restore Greater Sage-Grouse habitat. Include metrics to ensure that restoration goals are met.
MD 1020	Require site stabilization and sediment control in compliance with Wyoming Stormwater Discharge requirements and BLM reclamation policies.
**MD 1021	Require that during and following reclamation activities, the land user is responsible for monitoring to help ensure interim and final reclamation success as defined in reclamation policies and with the standards identified in 2014 Lander RMP Appendix B (p. 185) is achieved. Require follow-up seeding and/or other corrective or remedial erosion-control measures on areas of surface disturbance, as appropriate and, if necessary, protecting the reclaimed landscape until reclamation standards have been achieved. Monitoring and follow-up reclamation practices will continue on interim and final reclaimed areas until the standards identified in 2014 Lander RMP Appendix B (p. 185) have been successfully achieved.
MD 1022	Identify areas with soil disturbance that were not successfully reclaimed. Priorities for reclamation of these areas are determined on a case-by-case basis with an emphasis on Greater Sage-Grouse Core Area and other important wildlife habitat. Develop partnerships and funding sources to implement reclamation where no responsible party has the reclamation obligation.
**MD 1023	Adapt reclamation methods to specific requirements based on plant communities within ecological sites and site-specific objectives. Incorporate reclamation objectives and require reclamation plans, including reclamation standards as identified in 2014 Lander RMP Appendix B (p. 185) on a site-specific basis.

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Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA – Lander Field Office
MD 1024	Utilize management practices, including phased development and BMPs, to achieve reclamation success. Require Reclamation Objectives and Standards as identified in all reclamation plans.
**MD 1025	Reclamation management practices will select native plant species based on site characteristics and ecological site descriptions. Reclamation success will be determined based on the criteria and standards identified in 2014 Lander RMP Appendix B (p. 185).
MD 2001	Do not lease coal or oil shale-tar sands.
MD 2002	Incorporate proponent committed or BLM Required Design Features or mitigation such as BMPs as Conditions of Approval for any authorized mineral activity for federal minerals, regardless of surface ownership.
MD 2004	Recommend for withdrawal from locatable mineral entry (Map 9) approximately 467,065 acres. (In addition, approximately 8,634 acres are withdrawn in pre-FLPMA actions that do not expire.) See decisions under resource programs such as wildlife, cultural, and recreation for specific details of acres recommended for withdrawals. A total of approximately 2,333,402 acres are open to locatable mineral entry (Map 9).
MD 2008	Approximately 80,198 acres of federal mineral estate are open to oil and gas leasing subject only to standard lease stipulations (Map 11). Approximately 1,419,568 acres of federal mineral estate are open to oil and gas leasing subject to controlled surface use and/or timing limitation stipulations (Map 11 and Appendix I (p. 255)). Approximately 1,137,666 acres of federal mineral estate are open to oil and gas leasing subject to NSO stipulations (Map 11 and Appendix I (p. 255)). Approximately 171,669 acres of federal mineral estate are closed to oil and gas leasing (Map 11).
MD 2009	All oil and gas and other mineral leases are subject to standard lease stipulations. Additional stipulations may apply as otherwise specified in this RMP. In areas that are closed to mineral leasing, do not re-offer existing leases when they expire. If drainage occurs in an area closed to oil and gas leasing, authorize leasing on a case-by-case basis with an NSO stipulation.
MD 2010	For proposed actions in Greater Sage-Grouse Core Area, determine whether a categorical exclusion is applicable and if so, closely examine the extraordinary circumstances, if applicable, to determine whether one or more exists that would require preparation of a NEPA analysis. If a categorical exclusion applies, and no extraordinary circumstances exist, determine whether preparing a NEPA analysis would help inform decision making.
MD 2011	Require unitization when deemed necessary for proper development and operation of an area or to facilitate more orderly (e.g., phased and/or clustered) development as a means of minimizing adverse impacts to resources, including Greater Sage-Grouse, so long as the unitization plan adequately protects the rights of all parties, including the United States.
MD 2012	Disposal of produced water is authorized in accordance with Onshore Oil and Gas Order #7, Disposal of Produced Water, and in compliance with state regulations. If there is Wyoming Pollutant Discharge Elimination System permitted discharge, consider soil erosion, degradation of soil quality, sedimentation, and other factors in coordination with the State of Wyoming.

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Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA – Lander Field Office
MD 2013	The planning area is open to geophysical exploration except for lands identified as closed to mineral leasing or NSO to oil and gas leasing or as otherwise provided in other decisions. Geophysical exploration is subject to motorized travel limitations and restrictions on surface disturbing and disruptive activities.
MD 2015	1,472,776 acres of federal mineral estate are open to phosphate leasing subject to standard lease stipulations (Map 13). 1,336,325 acres of federal mineral estate are closed to phosphate leasing (Map 13).
MD 3004	In Greater Sage-Grouse Core Area, prioritize suppression to conserve the habitat. Where applicable and technically feasible, apply Greater Sage-Grouse BMPs such as those identified in Appendix E (p. 215).
MD 3007	Use chemical, biological, and mechanical treatments to reduce the risk of landscape-level wildfire within priority areas. Alter fuel loading and improve ecological condition of vegetation communities. Consider the presence and potential for noxious and nonnative plant species when designing wildland fire response and fuels treatments.
MD 3008	Use personal use and commercial vegetation sale permits, where not otherwise constrained or prohibited, for removal of firewood, post and pole, Christmas trees, sawlogs, and wildlings, for hazardous fuels management.
MD 3009	Monitor fuels treatment and wildfire burn areas for sufficient time after treatment or fire event in order to determine short-term and long-term project success, detect weed infestations and accelerated soil erosion, and assess overall vegetation recovery. Utilize all available rehabilitation tools to control weed infestation and accelerated soil erosion. Implement post-treatment rest of treated areas from livestock grazing for two full growing seasons on all prescribed or wildland fire burn areas unless vegetation recovery dictates otherwise.
MD 3010	Partner with the University of Wyoming and other research entities to develop a greater understanding of the ecology and disturbance regime of sagebrush steppe, woodland, and forested vegetation communities found within the planning area. Use this information to develop a regionally specific scientific foundation for vegetation management activities.
MD 3011	Inventory the Fire Regime Condition Class (Map 14) of the vegetative communities found within the fire management units (Map 15). In coordination with stakeholders and in consideration of Greater Sage-Grouse Core Area objectives, prioritize areas requiring treatment and utilize appropriate vegetation treatment techniques to improve the condition class across a landscape. Prioritize those projects in areas with the greatest benefits to wildlife and the highest likelihood of landscape-level wildfire.
MD 3012	Allow vegetation treatments in Greater Sage-Grouse Core Area that conserve, enhance, or restore Greater Sage-Grouse habitat excluding the use of prescribed fire unless specifically for the purpose of Greater Sage-Grouse habitat improvement (this includes treatments that benefit livestock as part of an allotment management plan/conservation plan to improve Greater Sage-Grouse habitat). In suitable habitat within Greater Sage-Grouse Core Area, incorporate specific Greater Sage-Grouse habitat objectives and apply appropriate seasonal restrictions for implementing vegetation management treatments. In identified Greater Sage-Grouse winter concentration areas, vegetation treatments should emphasize strategically reducing wildfire risk around or in the winter concentration areas and maintaining winter concentration habitat quality. Prioritize restoration treatments in areas that are thought to limit Greater Sage-Grouse distribution and/or abundance. Focus vegetation treatments outward from existing, intact Greater Sage-Grouse habitat. Utilize BMPs, such as those in Appendix E (p. 215) and other current habitat management guidelines, when designing and implementing the project.

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Table A-4
ARMPA – Lander Field Office with All Greater Sage-Grouse Management Goals, Objectives, and Decisions

Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA – Lander Field Office
MD 3013	In suitable Greater Sage-Grouse Core Area, do not reduce sagebrush canopy cover to less than 15 percent within a defined treatment polygon unless a vegetation management objective requires additional reduction in sagebrush cover to protect or to conserve habitat quality for Greater Sage-Grouse or other sagebrush steppe obligate species. Maintain sagebrush and understory diversity (relative to ecological site description) unless such removal is necessary to achieve Greater Sage-Grouse habitat management objectives. Remove conifers or reduce the density of conifers that have encroached into sagebrush plant communities.
MD 3015	Cooperate with stakeholders to conduct landscape level treatments resulting in enhanced fuels management and/or restoration of fire-adapted ecosystems. In cooperation with stakeholders, manage to promote the growth and persistence of native shrubs, grasses, and forbs.
MD 3016	Limit the use of fire to treat areas receiving less than 12 inches of annual precipitation. Prescribed fire to reduce hazardous fuels or enhance land health in areas receiving less than 12 inches of annual precipitation could be utilized after exploring other potential treatment methods and in areas where the relative resistance and relative recovery rate of the site allows for the successful post-fire reestablishment of desired native vegetation.
MD 3017	Utilizing Required Design Features and BMPs applied as Conditions of Approval, establish fuels treatment projects at strategic locations to minimize the size of wildfires. Restore native or desirable plants and create landscape patterns to benefit wildlife. Power wash all fire vehicles including engines, water tenders, personnel vehicles, and OHVs after they have been in the field to help prevent the establishment or spread of invasive weeds.
MD 4015	Identify unique plant communities and manage to protect, preserve, or enhance these communities.
MD 4016	Manage vegetation communities for vegetative attributes described in NRCS Ecological Site Guides and to meet identified vegetative goals. When existing Ecological Site Descriptions have not been developed, are too general, or are not correct to serve adequately as benchmarks, identify and document local areas of similar potential within each specific ecological site that exemplify achievement of appropriate habitat objectives, and use these sites for the development of new reference sheets to be used as the benchmark reference.
MD 4017	Use vegetation treatments to change plant community composition in a manner that achieves wildlife objectives, rangeland health objectives, and facilitates grazing management. Ensure that projects conform to resource objectives for the site.
MG BR:3	Manage for healthy native plant communities by reducing, preventing expansion of, or eliminating the occurrence of invasive nonnative species, undesirable vegetation, or noxious weeds, and predatory plant pests or disease by implementing decisions consistent with goals included in Partners Against Weeds and consistent with state and local weed management plans.
MO BR:3.1	Maintain adequate baseline information, and inventory and monitoring data, regarding the extent and control of invasive species. Evaluate effectiveness of decisions, and assess progress toward goals to improve invasive species management. Develop a prevention and early detection program.
MO BR:3.2	Coordinate with adjoining jurisdictions in management and control of invasive nonnative species across jurisdictional and political boundaries.
MO BR:3.3	Include provisions for invasive nonnative species management in all BLM-funded or authorized actions.
MG BR:4	Support internal and external education and awareness of noxious weeds.

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MO BR:4.1	Develop and deploy educational and public awareness programs and materials in cooperation with other agencies and organizations
MG BR:5	In all parts of the planning area, manage for the reduction, prevention, and halting the expansion of cheatgrass. Emphasize the prevention of invasive annual grass and woody plants in Greater Sage-Grouse Core Area.
MD 4020	Manage weed treatments to maintain and improve Greater Sage-Grouse habitat. Apply Required Design Features and BMPs as Conditions of Approval, such as those in Appendix E (p. 215).
MD 4021	Require the use of certified noxious-weed free forage, mulch, and other land-applied products for BLM-authorized activities on BLM-administered lands.
MD 4022	Should invasive nonnative species become established in a location, develop and implement site-specific plans to eradicate/control invasive weeds for all surface-disturbing activities in the immediate vicinity. Priority for control will be: (1) Wyoming Declared Weed and Pest Species, (2) those weeds on the Western States Combined Declared Noxious Weed List, (3) those annual/biennial invasive weeds interfering with reclamation efforts, and (4) those invasive nonnative species interfering with a management objective.
MD 4023	Require that equipment and vehicles used for BLM-authorized activities be cleaned for seeds of noxious weeds and invasive nonnative species before moving onto BLM-administered lands. Prohibit project vehicles accessing BLM-administered lands via cross-county travel from driving through infestations during access to the site. If the area on which BLM-authorized activities take place is identified as being a high risk for invasive and/or noxious weeds, require that vehicles be cleaned before leaving the worksite and include prescriptions for the disposal of wash water.
MD 4024	Develop a plan to manage cheatgrass in coordination with other agencies and individuals, with the local County Weed & Pest Control Districts acting as the point of contact among all parties.
MD 4025	If the Authorized Officer determines that BLM-authorized activities are contributing to the spread of noxious or invasive species, adjust the terms of the authorized activity to aid in the control of the species.
MD 4026	If the Authorized Officer determines that livestock are likely carrying ingested seeds of invasive nonnative species, the Authorized Officer may require that livestock be flushed for weeds for a period of 72 hours before allowing livestock to move onto BLM-administered lands.
MD 4027	Develop and implement a program promoting public awareness of Wyoming Declared Noxious Weeds and Pests as well as invasive nonnative species.
MD 4028	Identify riparian-wetland management actions to promote biodiversity and develop an implementation plan to incorporate actions into BLM-authorized activities. Manage riparian-wetland areas and wet meadows to achieve or maintain diverse species richness that includes a component of perennial forbs in conjunction with desirable riparian sedges, rushes, bulrushes, and grasses, as appropriate.
MD 4029	Implement management actions to have riparian-wetland areas meet or exceed proper functioning conditions and Standard 2 of the Wyoming Standards for Healthy Rangelands.
MD 4051	Avoid the movement of water from one 4th level hydrologic unit code drainage to another 4th level hydrologic unit code drainage to prevent aquatic invasive species and disease transfer.

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**MD 4056	Outside of DDAs, wildlife seasonal protections for surface-disturbing and disruptive activities apply to maintenance and operations actions when the activity is determined to be detrimental to wildlife (see Appendix F (p. 229)). Reclamation of surface disturbance will be in accordance with 2014 Lander RMP Appendix B (p. 185) for non-DDAs.
MD 4059	On a case-by-case basis, close and reclaim redundant roads to reduce road density and habitat fragmentation in coordination with adjacent landowners and/or state and county governments.
MD 4067	On a case-by-case basis, manage vegetation in identified crucial winter range and parturition areas to benefit the identified species (Maps 18-22).
MD 4069	Avoid authorizing road development in big game crucial winter range and parturition areas.
MG BR:13	Maintain and/or increase Greater Sage-Grouse abundance and distribution by conserving, enhancing, or restoring the sagebrush ecosystem upon which populations depend, in cooperation with other conservation partners. Sustain the integrity of the sagebrush biome to provide the amount, continuity, and quality of habitat that is necessary to maintain sustainable populations of Greater Sage-Grouse and other species by achieving the objectives below.
MO BR:13.1	Maintain large patches of high-quality sagebrush habitats with emphasis on patches occupied by Greater Sage-Grouse.
MO BR:13.2	Maintain connections between sagebrush habitats, with emphasis on connections between habitats occupied by Greater Sage-Grouse.
MD 4074	Coordinate with agencies, including state and local governments, in the restoration, reintroduction, augmentation, or reestablishment of threatened, endangered, and other special status species populations and/or habitats.
MD 4076	Develop site-specific measures for BLM-authorized activities to protect threatened, endangered, and sensitive species. Reduce the footprint of development and facilities to the smallest practical to protect special status species and their habitat. Incorporate Required Design Features and BMPs such as those identified in Appendix E (p. 215) as conditions of approval as appropriate for authorized activities to address adverse impacts to special status species. Conditions of approval are called stipulations or terms and conditions in some programs.
MD 4079	On a case-by-case basis, require surveys for BLM sensitive species as part of authorizing actions. Require protective actions when appropriate.
MD 4080	Establish limits of acceptable cumulative habitat loss, including habitat modification, fragmentation, and loss of function, for special status species on a case-by-case basis. Limits of habitat loss and fragmentation for Greater Sage-Grouse in Core Area are addressed in Decision Record 4109.
MD 4096	Manage travel corridors for threatened and endangered species and BLM sensitive species on a case-by-case basis (Map 25). (Note: Only Canada lynx analysis units have been identified to date.) Manage permitted activities within travel corridors to avoid adverse impacts to sensitive species.
MD 4097	To protect the concentration of special status species and their habitats, mineral and ROW actions in the Dubois area not within a WSA or an ACEC are managed as follows: ● Closed to oil and gas leasing ● Closed to geophysical exploration

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	● Closed to phosphate leasing ● Open to locatable minerals ● Closed to mineral material disposals unless entirely contained within the 120 acres located in T41N, R107W, Sec. 1 N½SE¼ ● Excluded to major ROWs ● Avoided for minor ROWs
**MD 4098	Maintain sagebrush and understory diversity (relative to ecological site description) in seasonal Greater Sage-Grouse and other sagebrush-obligate species habitats unless plant removal is necessary to achieve habitat management objectives. Vegetation treatments for Greater Sage-Grouse would follow the "Wyoming Game and Fish Department Protocols for Treating Sagebrush to be Consistent with Wyoming Executive Order 2015-4; Greater Sage-Grouse Core Area Protection" (WGFD 2015) or the most current version or science available.
MD 4099	To minimize adverse impacts to Greater Sage-Grouse from allowable uses, utilize recommendations and guidance from the following sources: ● Grazing Influence, Management, and Objective Development in Wyoming's Greater Sage-Grouse Habitat-With Emphasis on Nesting and Early Brood Rearing ● Sage-Grouse Habitat Management Guidelines for Wyoming ● Studies in Avian Biology article "Ecology and Conservation of Greater Sage-Grouse: A Landscape Species and Its Habitats" ● Western Association of Fish and Wildlife Agencies Greater Sage-Grouse Conservation Strategy ● Conservation Objectives Team Report ● National Technical Team Report Utilize additional information as it becomes available.
MD 4100	Maintain seeps, springs, wet meadows, and riparian vegetation in a functional and diverse condition for young Greater Sage-Grouse and other species that depend on forbs and insects associated with these areas. Restore non-functioning riparian systems by repairing abnormally incised drainages to raise water tables and increase water storage and brood-rearing habitats within Greater Sage-Grouse habitat.
MD 4101	Discourage the use of broad-spectrum insecticides where insect control is required. Target pest control toward key problem areas and schedule applications to be the smallest amount effective in Greater Sage-Grouse brood-rearing areas.
MD 4102	Establish forage utilization levels in Greater Sage-Grouse nesting habitat to ensure adequate cover remains.
MD 4103	Except as otherwise provided in this RMP, Greater Sage-Grouse Core Area is open to oil and gas and geothermal leasing, subject to standard stipulations for the protection of Greater Sage-Grouse and other resources as described elsewhere in this RMP.
**MD 4104	Prohibit surface-disturbing activities or surface occupancy on or within a 0.6-mile radius of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped) in Core Area and on or within a 0.25-mile radius of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped) outside Core Area (Map 24). In Core Area, keep any new roads or road upgrades 1.9 miles from the perimeter of the lek (or lek center if no perimeter is yet mapped). The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of

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	Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see also MD 4134).
**MD 4105	Prohibit surface-disturbing and/or disruptive activities from March 15 to June 30 in Core Area. Outside of Core Area, prohibit surface-disturbing and/or disruptive activities from March 15 to June 30 within 2 miles of the perimeter of occupied leks (or lek center if no perimeter is yet mapped) (Map 24). The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see also MD 4134). Where credible data support different timeframes for these seasonal restrictions, dates may be expanded 14 days prior to or subsequent to the above dates.
**MD 4106	Consistent with the BLM's regulatory authority over locatable mineral exploration and development, prohibit surface disturbance or disruptive activities from notice-level activity under 43 CFR 3809.320 in Core Area during the period March 15 to June 30. The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see also MD 4134).
**MD 4107	Prohibit disruptive activities between 6 p.m. and 8 a.m. from March 1 to May 15 on or within a 0.6-mile radius of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped) in Core Area (Map 24). The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see also MD 4134).
**MD 4108	Prohibit surface-disturbing and disruptive activities in Greater Sage-Grouse winter concentration areas, as they are identified, from December 1 to March 14 unless data indicate a date modification is necessary to better protect wintering Greater Sage-Grouse. The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see also MD 4134). Protection of additional mapped winter concentration areas in GHMA would be implemented where winter concentration areas are mapped and designated by the State of Wyoming. Appropriate seasonal timing restrictions and habitat protection measures would be considered and evaluated in consultation with the WGFD in all identified winter concentration areas.
MD 4109	In Greater Sage-Grouse Core Area, limit the density of disturbance of an activity (oil and gas or mining) to an average of one site per square mile (640 acres) within the DDCT. The one location and cumulative value of existing disturbances will not exceed 5 percent of suitable habitat of the DDCT area. Utilize the most current Greater Sage-Grouse density disturbance process or other state and/or federal agreed-upon process for compliance evaluations.

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MD 4110	If in order to accommodate valid existing rights, the new disturbance for a ROW in Greater Sage-Grouse Core Area coupled with existing disturbance would exceed 5 percent of suitable habitat within the DDCT area (see current guidance with respect to disturbance calculations), then additional effective mitigation is necessary to offset the resulting loss of Greater Sage-Grouse habitat. Interim reclamation following construction of the ROW and final reclamation following the relinquishment of the ROW will ensure reestablishment of the predisturbance Greater Sage-Grouse habitat, with the reclamation bond amount set in consideration of this reclamation obligation. These ROW authorizations will be subject to approval by the State Director.
MD 4111	In Core Area, major overhead powerlines will not be authorized unless co-located with an existing 115 kilovolt or greater powerline, as close as technically feasible not to exceed 0.5 miles or within a designated corridor authorized for overhead powerlines. Distribution lines may be authorized when effectively mitigated to protect Greater Sage-Grouse and the Authorized Officer determines that overhead installation is the action alternative with the fewest adverse impacts. Agricultural and residential lines will be considered to be adequately mitigated for Greater Sage-Grouse if constructed at least 0.6 mile from the lek perimeter (or lek center if no perimeter is yet mapped) with appropriate timing constraints and installation of raptor deterrents. These ROW authorizations will be subject to approval by the State Director.
MD 4112	Until research on impacts of wind energy to Greater Sage-Grouse is completed and adequate mitigation can be developed, exclude wind-energy development in Core Area.
MD 4113	Allow livestock water development projects in Greater Sage-Grouse nesting habitat. Consistent with the intent of Greater Sage-Grouse Core Area management, such projects will only be allowed if they will contribute to improved Greater Sage-Grouse habitat, developments can be designed to be compatible with Greater Sage-Grouse, and they are part of a comprehensive grazing strategy.
MD 4114	The BLM will collaborate with appropriate federal agencies and the State of Wyoming, as contemplated under the Wyoming Governor's Executive Order 2013-3, to: 1) develop appropriate conservation objectives; 2) define a framework for evaluating situations where Greater Sage-Grouse conservation objectives are not being achieved on federal land, to determine if a significant causal relationship exists between improper grazing (by wildlife or wild horses or livestock) and Greater Sage-Grouse conservation objectives; and 3) identify appropriate site-based actions to achieve Greater Sage-Grouse conservation objectives within the framework.
MD 4115	In cooperation with stakeholders, design and locate fences, so as not to disturb important Greater Sage-Grouse habitat areas. When fences are authorized, require a design that has the fewest adverse impacts to Greater Sage-Grouse, including features to reduce Greater Sage-Grouse strikes and mortality. Require the installation of fence markers on wire fences constructed in Greater Sage-Grouse habitat to increase fence visibility and reduce collision potential. Remove, modify, or mark fences with high-risk for collision.
MD 4116	New permanent, high-profile structures within Greater Sage-Grouse nesting habitat will be allowed on a case-by-case basis. Require the installation of anti-perching devices on appropriate structures to reduce predation opportunities.
*MD 4117	Within PHMA (core only), new project noise levels, either individual or cumulative, should not exceed 10 dBA (as measured by L50) above baseline noise at the perimeter of the lek (or lek center if no perimeter is yet mapped) from 6:00 pm to 8:00 am during the breeding season (March 1–May 15). The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific

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	analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD 4134). In coordination with the State of Wyoming, specific noise protocols for measurement and implementation will be developed as additional research and information emerges. These measures would be considered at the site-specific project level where and when appropriate.
MD 4118	To minimize raptor use, require anti-perching devices on new overhead powerlines in Greater Sage-Grouse Core Area. Require anti-perching devices on new overhead powerlines and wind energy meteorological towers in prairie dog, mountain plover, and pygmy rabbit habitats on a case-by-case basis. Work with ROW holders to install anti-perching devices on existing powerlines in these habitats.
MD 4119	Allow above ground low voltage utility lines or require burying lines in Greater Sage-Grouse, prairie dog, mountain plover, and pygmy rabbit habitats on a case-by-case basis. Evaluate and take advantage of opportunities such as the renewal of existing ROWs to remove or modify existing powerlines, prioritizing Greater Sage-Grouse Core Area.
MD 4120	In order to avoid surface-disturbing activities in Core Areas, priority will be given to development of oil and gas and other mineral resources outside of Core Areas, subject to applicable stipulations. When authorizing development of oil and gas and other mineral resources in core habitat, subject to applicable stipulations for the conservation of Greater Sage-Grouse, priority will be given to development in non-habitat areas first and then in the least suitable habitat for Greater Sage-Grouse.
MD 4129	Update the Herd Area Management Plan as needed to meet herd health objectives, including Appropriate Management Levels, and to address impacts to other resources. Consider forage competition and evaluate overall utilization levels by all grazing animals, and incorporate Greater Sage-Grouse habitat management objectives.
*MD 4133	The BLM will update its Greater Sage-Grouse habitat management areas, including biologically significant units (BSUs), in conjunction with the State of Wyoming's core areas, upon issuance of any Wyoming Governor's Executive Order revising or amending the core area boundaries and upon completion of appropriate NEPA analysis and process. The BLM will complete the appropriate NEPA documentation (including appropriate public comment) prior to adopting any revised core area boundaries (e.g., maintenance action or plan amendment, environmental assessment, etc.).
*MD 4134	Specific to management for Greater Sage-Grouse, all RMPs are amended as follows: Adopt the State of Wyoming's Greater Sage-Grouse Compensatory Mitigation Framework to the extent consistent with federal law, regulations, and policy. In all Greater Sage-Grouse habitat, when authorizing third-party actions in designated Greater Sage-Grouse habitat, the BLM will seek to achieve the planning-level Greater Sage-Grouse management goals and objectives through implementation of mitigation and management actions, consistent with valid existing rights and applicable law. Under this Plan Amendment, management would be consistent with the Greater Sage-Grouse goals and objectives, and in conformance with BLM Manual 6840, Special Status Species Management. In accordance with BLM Manual 6840, the BLM will undertake planning decisions, actions and authorizations "to minimize or eliminate threats affecting the status of [Greater Sage-Grouse] or to improve the condition of [Greater Sage-Grouse] habitat" across the planning area. Accordingly, before authorizing third-party actions that result in habitat loss and degradation, the BLM will complete the following steps, in alignment with the Governor of Wyoming's Executive Order 2015-4 (July 29, 2015):

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	1. Work jointly with the WGFD to evaluate projects and recommend mitigation in the form of avoidance and minimization. 2. The WGFD will determine if the State requires or recommends any additional mitigation – including compensatory mitigation – under State regulations, policies, or programs related to the conservation of Greater Sage-Grouse. 3. Incorporate state required or recommended mitigation into the BLM's NEPA decision-making process, if the WGFD determines that compensatory mitigation is required to address impacts to GRSG habitat as a part of State policy or authorization, or if a proponent voluntarily offers mitigation. 4. Analyze whether the compensatory mitigation (deferring to the appropriate State authority to quantify habitat offsets, durability, and other aspects used to determine the recommended compensatory mitigation action): • achieves measurable outcomes for Greater Sage-Grouse habitat function on a landscape scale as determined by WGFD that are at least equal to the lost or degraded values in accordance with the Governor of Wyoming's Executive Order 2015-4. • provides benefits that are in place for at least the duration of the impacts. • accounts for a level of risk that the mitigation action may fail or not persist for the full duration of the impact. 5. Ensure mitigation outcomes are consistent with the State of Wyoming's mitigation strategy and principles outlined in 2019 Wyoming GrSG ARMPA Appendix C, The Greater Sage-Grouse Habitat Management Strategy. The BLM has determined that compensatory mitigation must be voluntary unless required by other applicable law and in recognition that State authorities may also require compensatory mitigation (IM 2019-018, *Compensatory Mitigation*, December 6, 2018). Therefore, consistent with valid existing rights and applicable law, when authorizing third-party actions that result in habitat loss and degradation, the BLM will consider voluntary compensatory mitigation actions only as a component of compliance with a State mitigation plan, program, or authority, or when offered voluntarily by a project proponent. Project-specific analysis will be necessary to determine how a compensatory mitigation proposal addresses impacts from a proposed action. The BLM will cooperate with the State to determine appropriate project design and alignment with State policies and requirements, including those regarding compensatory mitigation. When the BLM is considering compensatory mitigation as a component of the project proponent's submission or based on a mitigation requirement from the State, the BLM's NEPA analysis would evaluate the need to avoid or minimize impacts of the proposed project and achieve the goals and objectives of this RMPA. The BLM will defer to the appropriate State authority to quantify habitat offsets, durability, and other aspects used to determine the recommended compensatory mitigation action.
MD 6001	Respond to specific proposals for land use authorizations on a case-by-case basis. Do not classify, open, or make available any BLM-administered lands for agricultural leasing or agricultural entry under either Desert Land Entry or Indian Allotment for one or more of the following reasons: unsuitable topography, presence of sensitive resources or resource conflicts, lack of water or access, small parcel size, or unsuitable soils.
MD 6003	Continue to administer lands leased under the Recreation and Public Purposes Act. Respond to requests for additional Recreation and Public Purposes Act leases.

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Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA – Lander Field Office
MD 6005	No parcels within a National Landscape Conservation System unit, including the National Trails Management Corridor or an ACEC, or in Greater Sage-Grouse Core Area, are identified for disposal unless the disposal would benefit the goals and objectives of the area's priority values or other important resource values. Acquire lands in areas with mixed ownership and where land exchanges would result in additional or more contiguous federal ownership patterns or would improve management for the benefit of priority resources as identified in other decisions such as ACECs.
MD 6011	Management prescriptions for wind-energy development in important wildlife habitat, areas managed as VRM Classes I and II, RMZs, areas with cultural resources, and special designations are found in those respective sections.
MD 6012	Implement the programmatic policies and BMPs for wind-energy development as identified in the ROD for Wind-Energy Development on Bureau of Land Management-Administered Land in the Western States (BLM 2005b) and Instruction Memorandum 2009-043 or subsequent guidance as part of any wind-energy authorization.
MD 6015	Programmatic policies, BMPs, leasing procedures, and stipulations identified in the ROD for the Programmatic EIS for Geothermal Leasing in the Western United States (BLM and Forest Service 2008) are analyzed in the Minerals section.
**MD 6016	Manage 1,282,773 acres as ROW avoidance areas (Map 33). See 2014 Lander RMP Appendix C (p. 191) for avoidance criteria. Manage 567,476 acres as ROW exclusion areas (Map 33). Manage 543,961 acres as open to ROW (Map 33).
MD 6017	The Beef Gap section of the Sweetwater Rocks Complex (the gap between the Split Rock and the Miller Springs WSAs [Map 44]) is closed to any new ROWs even if co-located with existing ROWs.
MD 6018	Energy Corridor 79-216 is a designated corridor (Map 34).
MD 6019	The following are designated corridors for major ROW development (Map 34) open for above and/or below ground ROWs as indicated. The location of the designated corridors as represented on the map is approximate and subject to verification based on existing disturbance, particularly in the Sand Draw to Casper corridor through the Gas Hills mining district and the Lost Creek corridor north and south of Jeffrey City. The corridor widths displayed on Map 34 are overstated to improve clarity. The specific location of the designated corridors is based on the existing ROW. The Lost Creek Corridor, for example, is the area adjacent to the Lost Creek pipeline. These locations are subject to on-the-ground verification which will be reflected on updated iterations of Map 34. ● Jim Bridger (containing the Spence-Mustang-Jim Bridger existing 230 kV powerline) from where it enters the Lander planning area in Township 25 North, Range 94 West to where it intersects with the Lost Creek pipeline: above and below ground ● Lost Creek: variously below ground only and above and below ground as follows: ○ Lost Creek 1: from where the pipeline enters the Lander planning area in the south in Township 25 North, Range 93 West to where the pipeline meets the existing 230 kV powerline in the Jim Bridger corridor: below ground only ○ Lost Creek 2: from the Jim Bridger meeting point northward until the Lost Creek pipeline meets the Sand Draw to Casper designated corridor: above and below ground. The section of the corridor through the Jeffrey City area that is not within the National Trails Management Corridor is open to oil and gas leasing subject to CSU stipulations

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Table A-4
ARMPA – Lander Field Office with All Greater Sage-Grouse Management Goals, Objectives, and Decisions

Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA – Lander Field Office
	○ Lost Creek 3: from the Sand Draw to Casper meeting point north to Highway 20/26: below ground only ○ Lost Creek 4: from north of Highway 20/26 to the Westwide Corridor: above and below ground ● Pathfinder: below ground only. (The Pathfinder corridor is only in the Lander planning area in Township 30 North, Range 85 West.) ● Sand Draw to Casper: above and below ground ● Highway 20/26: above and below ground ● Beaver Creek (formerly called Beaver Creek North and Lost Creek Spur): below ground only ● Shoshoni/Badwater: below ground ● Bairoil: below ground only ● Sand Draw: below ground only ● Bison Basin: below ground only ● Frontier going southwest from the Bairoil corridor to where it leaves the Lander planning area: below ground only ● Rattlesnake Hills (formerly called Frontier-Anadarko) north of Black Rock: below ground ● Black Rock (formerly called Pacificorp): above and below ground ● Pacificorp (going east-west in Township 35): above and below ground Widths for these corridors are 0.5 mile unless there are resource conflicts, then the construction ROW width will be adjusted accordingly. Within these corridors, new facilities will be constructed adjacent to existing linear facilities and overlapping existing ROWs where feasible, recognizing the need for adequate separation for operating system integrity, safety (construction and operation), appropriate local, state, and federal policies, regulations and laws, and land-use constraints. Designated corridors are subject to the prescriptions for resource protections except that they are open for ROWs even if the surrounding areas are excluded or avoided. Management prescriptions for ROWs are found in other resource areas such as Special Designations.
MD 6020	The preferred location for new ROWs and access route authorizations is in areas already disturbed by existing ROWs. See Appendix E (p. 215) for design constraints to limit surface disturbance associated with new ROWs. Identify opportunities to reclaim duplicative ROWs or those no longer in use.
MD 6021	Utilize the most current Greater Sage-Grouse density disturbance process or other state/federal agreed-upon process for compliance evaluations
MD 6022	Locate linear ROWs such as fiber optic and low-voltage powerline corridors along currently established road systems (for example, state highways and county roads).
MD 6024	Lands that are available to oil and gas leasing are available to carbon dioxide sequestration and research subject to the same surface limitations as would be applied to oil and gas operations. Lands that are closed to oil and gas leasing are excluded for carbon dioxide sequestration and research.

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Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA – Lander Field Office
MD 6029	Grant administrative use authorizations on a case-by-case basis with approval from the Authorized Officer. All access agreements will specify the following: what type of use is allowed and for what purpose, times, dates or seasons of access, where the use will occur, and additional stipulations required to provide for adequate resource protection and to meet pertinent planning decisions.
MD 6050	Livestock grazing in the planning area (Map 38) is managed as follows: ● 2,323,152 acres are open to grazing ● 7,665 acres are closed to grazing ● 63,393 acres are unavailable to grazing
MD 6054	Conduct grazing program monitoring (see Glossary) of allotments by focusing on Category I allotments in order of priority starting with those allotments that have degraded riparian-wetland areas or are in whole or in part in Greater Sage-Grouse Core Area. Modify BLM-authorized grazing use on an allotment-by-allotment basis to protect soil, water, vegetative resources, and wildlife.
MD 6055	When a permittee or lessee voluntarily takes non-use of their grazing preference in a specific grazing allotment, permit annual periods of non-use of grazing preference, without penalty, on a case-by-case basis when the advantage to Greater Sage-Grouse habitat or other resource values warrant.
MD 6056	Include terms and conditions on grazing permits and leases that ensure plant growth requirements are met and that adequate forage remains available for Greater Sage-Grouse hiding cover as necessary. Do not permit new range improvement projects within 0.5 mile of water and riparian-wetland areas. Develop project-specific BMPs that become terms and conditions.
MD 6057	Locate supplements such as minerals and salt in a manner designed to conserve, enhance, or restore greater sage-grouse habitat.
MD 6058	Prioritize completion of land health assessments and processing of grazing permits within Greater Sage-Grouse Core Area and on allotments with riparian-wetland areas not achieving or making significant progress towards proper functioning condition. Emphasize allotments that have the best opportunities for riparian-wetland improvement or for conserving, enhancing, or restoring habitat for Greater Sage-Grouse. When conducting land health assessments, include indicators and measurements of structure, condition, and composition of vegetation specific to achieving greater sage-grouse habitat objectives. If local/state seasonal habitat objectives are not available, use greater sage-grouse habitat recommendations from Connelly et al. 2000 and Hagen et al. 2007 or updated research findings.
MD 6059	Work cooperatively with permittees, lessees, and other landowners to develop comprehensive grazing management strategies to develop site-specific objectives to conserve, enhance, or restore Greater Sage-Grouse Core Area and general habitat areas. Develop a comprehensive grazing strategy to achieve these objectives. In Core Area, monitor measurable objectives in representative sites and evaluate grazing management to ensure that decisions are achieving Greater Sage-Grouse habitat objectives.
MD 6060	Monitor precipitation and vegetative production trends on BLM-administered lands as a tool to understand impacts to soil, water, and vegetative resources. Monitor measurable objectives and evaluate grazing management to confirm that decisions are achieving Greater Sage-Grouse habitat objectives
MD 6061	Allotments are categorized as M, I, and C (see Appendix G (p. 231)). Re-categorize as appropriate during livestock grazing permit renewals.

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Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA – Lander Field Office
MD 6062	When livestock grazing permits and/or grazing preference are voluntarily relinquished in portions of or all of an allotment, analyze suitable livestock grazing management, including closure to livestock grazing where appropriate, based on benefits to resources and other uses.
MD 6063	Establish stocking rates in areas preferred by livestock that allow for appropriate utilization levels by livestock, adjusted for the anticipated intensity of use necessary to provide sufficient forage and cover to support and maintain healthy, diverse wildlife and wild horse populations and to achieve the Wyoming Standards for Healthy Rangelands. Utilization levels may vary based on the implementation of a comprehensive grazing strategy or as needed to achieve vegetation objectives.
MD 6064	Prioritize the management of hot-season grazing on riparian-wetland and meadow complexes to promote recovery or maintenance of key vegetation species appropriate for the ecological site and water quality through the use of comprehensive grazing strategies (see Glossary) as identified in Appendix G (p. 231). In areas of continuous season-long grazing where rangeland health standards are not met, modify existing grazing permits to incorporate rest and/or deferment of grazing to facilitate rangeland health recovery and attainment of rangeland health standards.
MD 6065	Continue implementation of existing allotment management plans. Develop and implement new comprehensive grazing strategies and Allotment Management Plans with grazing permittees/lessees and interested public to achieve desired resource goals. Grant administrative use authorizations on a case-by-case basis with approval from the Authorized Officer. All administrative use agreements will specify the following: what type of use is allowed and for what purpose; times, dates or seasons of access; where the use will occur; and additional stipulations required to provide for adequate resource protection and to meet planning decisions.
MD 6066	Utilizing Required Design Features and BMPs such as those in Appendix E (p. 215) applied as Conditions of Approval, develop and install range improvement projects necessary to implement comprehensive grazing strategies which will lead to improved rangeland health, or to enhance successful comprehensive grazing strategies already in place. Benefits associated with the projected improvement in rangeland health should exceed the adverse impacts associated with the project infrastructure. Avoid projects that would expand grazing on the landscape without a clear link to a comprehensive grazing strategy and consideration of other resources.
MD 6067	Evaluate existing project infrastructure in the development of comprehensive grazing strategies. In consultation with the livestock grazing permittees authorized to use the allotment, identify projects that are no longer necessary, or that are contributing to adverse impacts to other resources, and modify or remove projects as appropriate to mitigate impacts. Evaluate whether the infrastructure contributes to the introduction or spread of invasive nonnative species, and develop mitigation (including removal of infrastructure) to reduce or eliminate weed infestation and spread.
MD 6068	Remove or modify fences and cattleguards on a case-by-case basis to enhance other resource values and to facilitate livestock, wild horses, and wildlife movement and management.
MD 6069	Establish and manage future forage reserves as opportunities arise within the planning area on a voluntary basis or as lands are acquired.
MD 6070	Retain designated stock driveways. Permit other livestock trails on a case-by-case basis.

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Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA – Lander Field Office
MD 6071	Require that forage supplements have label information stating that the material is safe/compatible for sheep, wildlife, and wild horses in areas where their ranges overlap. Require that all forage supplement labels be submitted to the field office for approval by the Authorized Officer prior to use.
MD 6072	Prohibit placement of salt and mineral supplements, such as low-moisture block supplements, in the following areas: ● Within 0.5 mile of water and riparian-wetland areas. ● Within 0.6 mile of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped). ● Within 0.5 mile of areas being reclaimed from surface disturbance.
MD 6073	Modify or implement livestock grazing management (Appendix G (p. 231)) to facilitate successful reclamation efforts.
MD 6074	Determine livestock grazing management for acquired lands consistent with the management objectives for the acquisition or for the area in which the land is located, for example, an ACEC, WSA, or within the National Trails Management Corridor.
MD 6090	Sustain or enhance the Johnny Behind the Rocks RMZ (4,828 acres) for nonmotorized recreationists to engage in horseback riding, hiking, trail running, wildlife viewing, and mountain biking so that participants in visitor assessments/surveys report a higher than average (mean average of 4.0 on a 5-point scale) realization of the following experience and benefit outcomes: ● Experiences: Enjoying the sensory experience of a natural landscape, enjoying exercise and physical fitness, developing skills and abilities, enjoying having access to close to home outdoor amenities, and feeling that this community is a special place to live. ● Benefits: Improved mental and physical health, greater connection to nature, improved opportunity to view wildlife close up, greater sense of place, improved outdoor recreation skills, heightened sense of satisfaction with our community, and reduced adverse human impacts such as litter, vegetative trampling, and unplanned trails.
MD 6091	Create and maintain the following desired future recreation setting qualities in the Johnny Behind the Rocks RMZ: ● Physical Recreation Setting: The natural setting may have subtle modifications that would be noticed but not draw the attention of the casual observer wandering through the area. Facility and trail development will focus on sufficient densities and developments to provide for a full day (6 to 8 hours or up to 40 miles of trail) of use. Non-trail facilities and structures will continue to be rare and collocated within close proximity to the highway/parking area. ● Social Recreation Setting: Usually 3-6 encounters per day off travel routes and 7-15 encounters per day on travel routes. Group size is usually small. ● Operational Recreation Setting: Excluding the adjacent highway, the Blue Ridge Road, and livestock permittee access to range improvements; the area will be managed for mountain bikes and other nonmotorized use(s). Mechanized/motorized trail building will be approved as needed to support the identified outcome objective. Onsite controls and services will be present, but harmonize with the natural environment.
MD 6092	Mineral and ROW actions in the Johnny Behind the Rocks RMZ are managed with the following restrictions: ● Oil and gas leasing subject to NSO ● Closed to geophysical exploration

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Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA – Lander Field Office
	● Closed to phosphate exploration ● Recommend for withdrawal to locatable mineral entry ● Closed to mineral material sales ● Excluded from ROW actions
MD 6093	Initiate the following recreation decisions to support the identified outcome objective and desired future setting condition: ● Utilize monitoring and evaluation to adjust management techniques and implementation decisions as necessary to reach desired future setting conditions and provide identified recreation opportunities (activities, experiences, and benefits). ● New trails will be identified and authorized in a master trails plan and supported through implementation-level decision making. ● Pursue land exchanges and access agreements for parcels in and adjacent to this RMZ. ● Solicit partnerships and cooperative agreements to monitor outcome attainment and preferences through customer assessments (focus group interviews or visitor studies). ● Monitor recreation setting condition through onsite patrols May through November.
MD 6094	Close the Johnny Behind the Rocks RMZ to motorized travel, except with an allowance for administrative access agreements with livestock grazing permittees. This management decision does not close motorized travel on the Blue Ridge Road and other roads adjacent to or outside of the SRMA. Motorized travel on and west of Cedar Ridge will be closed as a result of this decision.
MD 6095	The Johnny Behind the Rocks area is open to cross-country nonmotorized travel.
MD 6096	Manage the Johnny Behind the Rocks RMZ as VRM Class II.
MD 6113	Mineral and ROW actions in the Dubois Mill-Site SRMA are managed with the following restrictions: ● Closed to oil and gas leasing ● Closed to geophysical exploration ● Closed to phosphate leasing ● Open to locatable minerals ● Closed to mineral material disposals ● Excluded to major ROWs and avoided for minor ROWs

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Table A-5
ARMPA – Worland Field Office with All Greater Sage-Grouse Management Goals, Objectives, and Decisions

Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA) - Worland Field Office
MO MR:2.3	Priority will be given to leasing and development of fluid mineral resources, including geothermal, outside of PHMA and GHMA. When analyzing leasing and authorizing development of fluid mineral resources, including geothermal, in PHMA and GHMA, and subject to applicable stipulations for the conservation of Greater Sage-Grouse, priority will be given to development in non-habitat areas first and then in the least suitable habitat for Greater Sage-Grouse. The implementation of these priorities will be subject to valid existing rights and any applicable law or regulation, including, but not limited to, 30 U.S.C. 226(p) and 43 CFR 3162.3-1(h).
MO MR:2.4	Where a proposed fluid mineral development project on an existing lease could adversely affect Greater Sage-Grouse populations or habitat, the BLM will work with the lessees, operators, or other project proponents to avoid, reduce, and mitigate adverse impacts to the extent compatible with lessees' rights to drill and produce fluid mineral resources. The BLM will work with the lessee, operator, or project proponent in developing an APD for the lease to avoid and minimize impacts to Greater Sage-Grouse or its habitat and will ensure that the best information about the Greater Sage-Grouse and its habitat informs and helps to guide development of such federal leases.
**MD 2005	Consider interest in exploration for, or leasing of, federal coal (Map 3-5), if any on a case-by-case basis. Allow coal exploration licenses subject to the regulations of 43 CFR 3410, and subject to guidance mitigating for surface-disturbing activities in the Wyoming BLM Standard Oil and Gas Lease Stipulations (2015 Worland RMP Appendix B, Oil and Gas Lease Notices and Lease Stipulations, including Exception, Modification, and Waiver Criteria (p. 211)). Before issuing a coal exploration license, require the authorized officer to prepare an environmental assessment or environmental impact statement, if necessary, of the potential effects of the proposed exploration on the natural and socioeconomic environment of the affected area. If an application for a federal coal lease is received, conduct an appropriate land use and environmental analysis, including the coal screening process, to determine whether the area(s) proposed for leasing is (are) acceptable for coal development and leasing (as per 43 CFR 3425). If public lands are determined to be acceptable for further consideration for coal leasing, amend the land use plan as necessary. Only accept federal coal lease applications on those federal coal lands with development potential identified as suitable for further leasing consideration, after application of the coal screens and unsuitability criteria. At the time an application for a new coal lease or lease modification is submitted to the BLM, the BLM will determine whether the lease application area is "unsuitable" for all or certain coal mining methods pursuant to 43 CFR 3461.5. PHMA is essential habitat for maintaining Greater Sage-Grouse for purposes of the suitability criteria set forth at 43 CFR 3461.5(o)(1). The BLM will also consider that USFWS has found "the core area strategy…if implemented by all landowners via regulatory mechanisms, would provide adequate protection for sage-grouse and their habitats in the state" when considering leasing coal in PHMAs under the criteria set for at 43 CFR 3461.5(o)(1) (USFWS 2010).
MD 2013	Process oil and gas lease applications on a case-by-case basis. Ensure that leasing activities in PHMAs comply with Greater Sage-Grouse RMP decisions and remain in compliance with laws, regulations, and policy (See MDs 4106, 4107, 4108, 4110, and 4152).
**MD 2023	Delineate Oil and Gas Management Areas (Map 3-9) (333,488 acres of federal mineral estate) around existing intensively-developed fields, applying a 2-mile buffer from the outer boundary of the existing field (Map 3-10); adding MR:2.1 enhanced oil recovery areas identified by the Governor's Office Enhanced Oil Recovery Institute and excluding Greater Sage-Grouse PHMAs. Manage these areas primarily for oil and gas exploration and development.

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Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA) - Worland Field Office
	Oil and gas development, including enhanced oil recovery operations, within Oil and Gas Management Areas is allowed to take place at the same level and density as the existing development in the field. Levels and densities beyond the existing field development may require additional reclamation or voluntary compensatory offsite mitigation. As oil and gas fields expand or exploration reaches beyond the Oil and Gas Management Areas depicted on Map 3-9, Oil and Gas Management Areas may be enlarged as appropriate. To enlarge Oil and Gas Management Areas, the expansion area would: i) have to be adjacent to the field and under valid oil and gas lease(s) with stipulations allowing surface occupancy and development; ii) have to have a surface density of, on average, at least four well pads per 640-acres; a determination that additional well density is required to efficiently and adequately produce the oil or gas resource; iii) have a project-specific environmental analysis prepared to analyze the impacts and determine operating methods, mitigation, and BMPs to be used in the efficient and comprehensive development of the field; iv) need surface resources to be satisfactorily mitigated; and v) need commitment to accelerate reclamation as required by the authorized officer.
MO FM:1.5	Following wildland fires, conduct appropriate emergency stabilization and rehabilitation when and where needed. In priority Greater Sage-Grouse habitat areas, prioritize suppression immediately after life and property to conserve the habitat. In general Greater Sage-Grouse habitat, prioritize suppression where wildfires threaten priority Greater Sage-Grouse habitat.
MD FM:2.1	Consult and cooperate with adjacent landowners, state and local governments, and other stakeholders to plan and implement prescribed fire and other vegetation treatments across the landscape. In areas of general Greater Sage-Grouse habitat, design and implement fuels treatments with an emphasis on protecting existing sagebrush ecosystems.
MD 3008	Suppress fires threatening Greater Sage-Grouse habitats and crucial winter wildlife habitat within Wyoming big sagebrush communities. Where fire would be utilized to meet resource objectives, work closely with resource specialists to protect and improve Greater Sage-Grouse habitat. For fuels management, the BLM would consider multiple tools for fuels reduction and would analyze in NEPA compliance documentation before electing to implement prescribed fire in PHMAs. If prescribed fire is used in Greater Sage-Grouse habitat, the NEPA analysis for the Burn Plan will address: ● why alternative techniques were not selected as a viable options; ● how Greater Sage-Grouse goals and objectives would be met by its use; ● how the COT Report objectives would be addressed and met; and ● a risk assessment to address how potential threats to Greater Sage-Grouse habitat would be minimized. Prescribed fire as a vegetation or fuels treatment in Greater Sage-Grouse habitat shall only be considered after the NEPA analysis for the Burn Plan has addressed the four bullets outlined above. Prescribed fire could be used to meet specific fuels objectives that would protect Greater Sage-Grouse habitat in PHMAs (e.g., creation of fuel breaks that would disrupt the fuel continuity across the landscape in stands

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	where annual invasive grasses are a minor component in the understory, burning slash piles from conifer reduction treatments, used as a component with other treatment methods to combat annual grasses and restore native plant communities). Prescribed fire in known crucial winter wildlife habitat shall only be considered after the NEPA analysis for the Burn Plan has addressed the four bullets outlined above. Any prescribed fire in and/or around crucial winter wildlife habitat must be strategically-designed to reduce wildfire risk and protect winter range habitat quality.
MO BR:2.6	In PHMAs, the desired condition is to maintain all lands ecologically capable of producing sagebrush (but no less than 70 percent) with a minimum of 15 percent sagebrush cover or as consistent with specific ecological site conditions. The attributes necessary to sustain these habitats are described in Interpreting Indicators of Rangeland Health (BLM Technical Reference 1734-6 [BLM 2005c]).
MG BR:9	GREATER SAGE-GROUSE – Sustain the integrity of the sagebrush biome to provide the amount, continuity, and quality of habitat that is necessary to maintain sustainable populations of Greater Sage-Grouse and other species by achieving the objectives below.
MO BR:9.1	Maintain large patches of high quality sagebrush habitats, with emphasis on patches occupied by Greater Sage-Grouse.
MO BR:9.2	Maintain connections between sagebrush habitats, with emphasis on connections between habitats occupied by Greater Sage-Grouse.
MO BR:10.1	Reconnect large patches of sagebrush habitat with emphasis on reconnecting patches occupied by stronghold and isolated populations of Greater Sage-Grouse.
MD 4058	Maintain or improve important wildlife habitats through vegetative manipulations, habitat improvement projects, livestock grazing strategies and the application of The Wyoming Guidelines for Managing Sagebrush Communities with Emphasis on Fire Management (Wyoming Interagency Vegetation Committee 2002) and the Wyoming BLM Standard Mitigation Guidelines for Surface-Disturbing and Disruptive Activities (Appendix F, Wyoming Bureau of Land Management Mitigation Guidelines for Surface-Disturbing and Disruptive Activities (p. 351)), BMPs (2019 Wyoming GrSG ARMPA Appendix B, Required Design Features and Best Management Practices), and similar guidance updated over time.
MD 4070	Conduct habitat enhancement vegetation treatments within sagebrush communities as opportunities and funding allow, consistent with EO 2015-4 (Wyoming Office of the Governor 2015).
MD 4071	Modify identified hazard fences, and analyze and construct new fences in accordance with wildlife needs, the BLM Fencing Handbook 1741-1, and WO IM 2010-022, Managing Structures for the Safety of Sage-grouse, Sharp-tailed grouse, and Lesser Prairie-chicken, and similar guidance and policy as updated over time.
MD 4076	Allow water development projects in crucial elk winter range and in Greater Sage-Grouse nesting habitat with 10 inches or less annual precipitation only when adverse effects can be avoided, minimized and/or compensated based on site-specific analysis. Allow existing uses pending site-specific analysis on a priority basis.
MD 4080	Avoid wind energy projects in big game crucial winter range and raptor concentration areas. Wind-energy development would be avoided in Greater Sage-Grouse PHMAs (Map 3-17), and not allowed unless it can be sufficiently demonstrated that the development activity would not result in declines of Greater Sage-Grouse PHMA populations. Sufficient demonstration of "no declines" should be coordinated with the WGFD and USFWS.

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Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA) - Worland Field Office
MD 4087	Discourage the use of broad-spectrum insecticides where insect control is required. Target pest control toward key problem areas and schedule applications to be effective in minimum doses in Greater Sage-Grouse brood-rearing areas. Field Offices may implement treatments within Greater Sage-Grouse habitat utilizing RAATS protocols.
MD 4088	Avoid aerial pesticide spraying in favor of ground applications to minimize drift into non-target areas in Greater Sage-Grouse habitat unless benefits of treatments are likely to outweigh impacts.
MD 4089	Avoid applying pesticides to Greater Sage-Grouse breeding habitat during the nesting and early brood-rearing season (March 15 through June 30) to reduce the loss of food supply to chicks and avoid the chance of secondary poisoning unless benefits of treatments are likely to outweigh impacts.
MD 4090	Maintain seeps, springs, wet meadows, and riparian vegetation in a functional and diverse condition for young Greater Sage-Grouse and other species that depend on forbs and insects associated with these areas. Consider management actions if desirable green vegetation associated with these wet areas is not available, accessible, or cannot be maintained with current livestock, wildlife, or wild horse use, and the impacts are outweighed by the improved habitat quality.
MD 4091	Restore Greater Sage-Grouse brood-rearing habitats in riparian/wetland areas.
MD 4092	Restore lost riparian functioning systems by repairing abnormally incised drainages to raise water tables and increase water storage and brood-rearing habitats within Greater Sage-Grouse habitat.
MD 4093	Manage vegetation composition diversity and structure, as determined by ESD, or other methods that reference site potential, and WGFD protocols to achieve Greater Sage-Grouse habitat management objectives, in cooperation with stakeholders. Evaluate the role of existing seedings that are currently composed of primarily introduced perennial grasses in and adjacent to Greater Sage-Grouse habitat to determine if they should be restored to Greater Sage-Grouse or habitat of higher quality for Greater Sage-Grouse. If these seedings provide value in conserving or enhancing Greater Sage-Grouse habitats, then no restoration would be necessary. Assess the compatibility of these seedings for Greater Sage-Grouse habitat during the land health assessments. Burned areas within PHMAs would be restored to suitable habitat with consideration given to ESDs, reference sites, site potential and local variability. The BLM could bring in burned area rehabilitation and Burned Area Emergency Response teams who would work cooperatively with partners at the federal, state, and local levels to rehabilitate and restore Greater Sage-Grouse habitats in a manner consistent with the core habitat population area strategy for conservation. DDCT reviews would be conducted in coordination with the WGFD Habitat Protection Program located in Cheyenne, Wyoming at the WGFD headquarters. Areas within PHMAs would be prioritized for restoration of Greater Sage-Grouse habitat beyond immediate response.
MD 4094	Maintain sagebrush and understory diversity (relative to ecological site description) in crucial seasonal Greater Sage-Grouse habitats unless such removal is necessary to achieve Greater Sage-Grouse habitat management objectives. For example, thinning small patches of dense sagebrush may increase desirable forbs in early brood-rearing habitat.

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Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA) - Worland Field Office
MD 4095	Increase the composition and canopy cover of Wyoming big sagebrush, within existing nonnative grass seedings with less than 5 percent sagebrush canopy cover, to greater than or equal to neighboring sagebrush communities or historical levels. (See Shrubland-Salt Desert/Salt Bottom on Map 3-15; deeper soiled, and gentler sloped portions of the Shrubland-Salt Desert/Salt Bottom, colored in pink, would be those areas where sagebrush restoration efforts could be conducted.)
MD 4096	Investigate opportunities to increase sagebrush in lower precipitation zones.
MD 4097	Plan and construct mining and mineral development activities, to the degree possible given state water rights, to minimize disturbances that would result in alterations to springs and riparian Greater Sage-Grouse habitat. Alternative water sources may be developed to replace natural sources that have been affected or destroyed during these development activities.
MD 4098	Treat constructed or non-natural water storage impoundments to control mosquito breeding (and the associated spread of West Nile virus), to prevent disease spread to Greater Sage-Grouse as necessary.
MD 4099	In cooperation with stakeholders, manage to promote the growth and persistence of native shrubs, grasses, and forbs needed by Greater Sage-Grouse for seasonal food and concealment.
MD 4100	In cooperation with stakeholders, design and locate fences so as not to disturb PHMAs. Increase the visibility of fences in these areas which have been identified as hazardous to flying Greater Sage-Grouse.
MD 4101	Conduct fire management activities to minimize overall wildfire size and frequency in sagebrush plant communities where Greater Sage-Grouse habitat objectives are at risk. General priorities for habitat protection: Priority # 1 – Protection of Greater Sage-Grouse PHMAs. Priority # 2 – Wyoming big sagebrush communities outside Greater Sage-Grouse PHMAs and habitats recovering from disturbance within or adjacent to Greater Sage-Grouse PHMAs.
MD 4102	Annually maintain FMPs to incorporate updated sagebrush habitat information as well as fire suppression priorities in sagebrush habitats. Incorporate fire management objectives for the management of sagebrush ecosystems into FMPs. Provide fire management objectives for sagebrush ecosystems to initial attack personnel at the beginning of each fire season.
MD 4103	Establish fuels treatment projects at strategic locations to minimize size of wildfires and limit loss of Greater Sage-Grouse habitat.
MD 4104	Reintroduce appropriate fire regimes to limit conifer encroachment into the sagebrush plant communities. Take into account invasive herbaceous species and Fire Regime Group and FRCC (measure of departure from historic fire regime) with treatments. Where possible, achieve a balance between treating areas that have significantly departed from the historic fire regime (Condition Class 3) and areas that are functioning within an appropriate fire regime (Condition Class 1).
MD 4105	Remove conifers encroaching into sagebrush habitats in a manner that considers tribal and cultural values. Prioritize treatments closest to occupied Greater Sage-Grouse habitats and near occupied leks, and where juniper encroachment is phase 1 or phase 2 as defined in Miller et al. (2005). Refine the location of specific priority areas to be treated by utilizing site-specific analysis and principles like those included in the FIAT report (Chambers et. al. [2014]) and other ongoing modeling efforts to address conifer encroachment.

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Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA) - Worland Field Office
**MD 4106	**Inside PHMAs** Prohibit surface occupancy and surface-disturbing activities on or within a 0.6-mile radius of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped). **Outside PHMAs** Prohibit surface-disturbing and disruptive activities and apply a NSO restriction within a ¼-mile radius of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped) (Map 3-17). Outside Greater Sage-Grouse PHMAs, the BLM's goal is to sustain important habitats that support core populations and to maintain lek persistence over the long term in sufficient proportions of the Greater Sage-Grouse population to facilitate movement and genetic transfer between core populations, including those found in adjacent states. The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD 4152).
**MD 4107	**Inside PHMAs** Prohibit disruptive activities on or within a 0.6-mile radius of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped) from March 15 to June 30 (81,281 acres). **Outside PHMAs** Prohibit disruptive activities on or within a ¼ mile radius of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped) from March 15 to June 30 (3,157 acres). **Inside PHMAs** Prohibit surface-disturbing and/or disruptive activities from March 15 to June 30 to protect Greater Sage-Grouse breeding, nesting, and early brood-rearing habitat (1,021,583 acres). Apply this timing limitation throughout the PHMAs. Activities in unsuitable habitats would be evaluated under the exception and modification criteria and could be allowed on a case-by-case basis. **Outside PHMAs** Prohibit surface-disturbing and/or disruptive activities in Greater Sage-Grouse nesting and early brood-rearing habitat within a 2-mile radius of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped) from March 15 to June 30. Note: Where credible data support different timeframes for these seasonal restrictions, dates may be expanded by up to 14 days prior to or subsequent to the above dates. The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD 4152).
**MD 4108	Greater Sage-Grouse winter concentration areas: Surface-disturbing and/or disruptive activities in sage-grouse winter concentration areas would be prohibited from December 1–March 14. The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements,

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	and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD 4152). Protection of additional mapped winter concentration areas in GHMA would be implemented where winter concentration areas are mapped and designated by the State of Wyoming. Appropriate seasonal timing restrictions and habitat protection measures would be considered and evaluated in consultation with the WGFD in all identified winter concentration areas. 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.
**MD 4109	**Density of Disturbances:** In Greater Sage-Grouse PHMAs, the density of disturbance of energy or mining facilities would be limited to an average of one site per square mile (640 acres) within the DDCT, subject to valid existing rights (2019 Wyoming GrSG ARMPA Appendix C, Greater Sage-Grouse Habitat Management Strategy). The one location and cumulative value of existing disturbances would not exceed 5 percent of habitat of the DDCT area. Inside PHMA, all suitable habitat disturbed (any program area) will not exceed 5 percent within the DDCT area using the DDCT process. Consolidate anthropogenic features from development and transmission on the landscape. Allow on a case-by-case basis high profile structures within Greater Sage-Grouse nesting habitat. Sagebrush Treatment: For vegetation treatments in sagebrush within PHMAs, refer to WGFD Protocols for Treating Sagebrush to Benefit Sage-Grouse (WGFD 2015, as updated) and BLM WO IM 2013-128 (Sage-grouse Conservation Related to Wildland Fire and Fuels Management). These recommended protocols, subject to seasonal conditions of approval, would be used in determining whether proposed treatment constitutes a "disturbance" that would contribute toward the 5 percent threshold for habitat maintenance. Additionally, these protocols would be used to determine whether the proposed treatment configuration would be expected to have neutral or beneficial impacts for PHMA populations or if they represent additional habitat loss or fragmentation. Treatments to enhance sagebrush/grasslands habitat for Greater Sage-Grouse would be evaluated based upon habitat quality and the functionality/use of treated habitats post-treatment. The BLM would work collaboratively with partners at the state and local levels to maintain and enhance Greater Sage-Grouse habitats. Seasonal restrictions would be applied, as needed, for implementing fuels management treatments according to the type of seasonal habitat present. Wildfire burns will be treated as disturbed if sagebrush is reduced below 5 percent unless there is an implementation plan outlining restoration efforts and 3 years of data showing a trend back to suitable habitat.
*MD 4110	Within PHMA (core only), new project noise levels, either individual or cumulative, should not exceed 10 dBA (as measured by L50) above baseline noise at the perimeter of the lek (or lek center if no perimeter is yet mapped) from 6:00 pm to 8:00 am during the breeding season (March 1–May 15). The authorized officer may grant an exception on a case-by-case basis subject to appropriate site-specific analysis, mitigation requirements, and consultation with the State of Wyoming and consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4) (see MD SSS 4). In coordination with the State of Wyoming, specific

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	noise protocols for measurement and implementation will be developed as additional research and information emerges. These measures would be considered at the site-specific project level where and when appropriate.
MD 4111	Allow motorized vehicle use in Greater Sage-Grouse PHMAs consistent with other resource objectives. Manage new road construction in and adjacent to Greater Sage-Grouse habitat consistent with applicable restrictions on surface-disturbing and disruptive activities. Avoid construction of new or local collector roads (as defined in BLM Manual 9113 [BLM 2011d]) within 1.9 miles of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped) within PHMAs. Prohibit all new roads within 0.6 miles of the perimeter of occupied Greater Sage-Grouse leks (or lek center if no perimeter is yet mapped) within PHMAs. Construct roads to minimum design standards needed for production activities.
**MD 4112	In PHMAs, implement mitigation and minimization guidelines and required design features, including specific measures for Greater Sage-Grouse (refer to 2019 Wyoming GrSG ARMPA Appendix B, Required Design Features and Best Management Practices (p. 251)), as applicable and consistent with EO 2015-4 (Wyoming Office of the Governor 2015). Incorporate Greater Sage-Grouse specific measures into project proposals as required design features or mitigation for any authorized federal action, regardless of surface ownership.
MD 4113	In PHMAs, require the development of a wildlife resource monitoring and mitigation plan to address potential impacts from mineral development on wildlife populations and/or habitat on a case-by-case basis.
MD 4114	Use the following travel management criteria in PHMAs: ● During subsequent travel management planning, all routes within PHMAs would undergo a route evaluation to determine its purpose and need and the potential resource and/or user conflicts from motorized travel. Where resource and/or user conflicts outweigh the purpose and need for the route, the route would be considered for closure or considered for relocation outside of sensitive Greater Sage-Grouse habitat. ● During implementation-level travel planning, threats to Greater Sage-Grouse and their habitat would be considered when evaluating route designations and/or closures. ● During subsequent travel management planning, routes within PHMAs that do not have a purpose or need would be considered for closure. ● During subsequent travel management planning, routes within PHMAs that are duplicative parallel, or redundant would be considered for closure. ● During subsequent travel management planning, OHV timing limitations would be considered in important seasonal habitats where OHV use is a threat. ● During subsequent travel management planning, consider limiting snow machine travel to designated routes or consider seasonal closures in Greater Sage-Grouse wintering areas from November 1 through March 31. ● During subsequent travel management planning, routes in PHMAs not required for public access or recreation with a current administrative/agency purpose or need would be evaluated for administrative access only.

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	● During subsequent travel management planning, prioritize restoration of routes not designated in a Travel Management Plan within PHMAs. ● During subsequent travel management planning, consider using seed mixes or transplant techniques that will maintain or enhance Greater Sage-Grouse habitat when rehabilitating linear disturbances. ● During subsequent travel management planning, consider scheduling road maintenance to avoid disturbance during sensitive periods and times to the extent practicable. Use time of day limits (after 10:00 AM to 7:00 PM) to reduce impacts on Greater Sage-Grouse during breeding and nesting periods.
*MD 4115	The Greater Sage-Grouse adaptive management plan provides regulatory assurance that unintended negative impacts to Greater Sage-Grouse habitat will be addressed before consequences become severe or irreversible. Adaptive management triggers are essential for identifying when potential management changes are needed in order to continue meeting Greater Sage-Grouse conservation objectives. With respect to Greater Sage-Grouse, all regulatory entities in Wyoming, including the BLM, use soft and hard triggers. Soft and hard triggers are focused on three metrics: 1) number of active leks, 2) acres of available habitat, and 3) population trends based on annual lek counts. See 2019 Wyoming GrSG ARMPA Appendix C, Greater Sage-Grouse Habitat Management Strategy for more information on soft and hard triggers. <u>Soft Triggers Response</u>: Soft triggers are indicators that management or specific activities may not be achieving the intended results of conservation action or that unanticipated changes to populations or habitats have occurred that have the potential to place habitats or populations at risk. The soft trigger is any deviation from normal trends in habitat or population in any given year. Metrics include, but are not limited to, annual lek counts, wing counts, aerial surveys, habitat monitoring, and DDCT evaluations. For population metrics, normal population trends are calculated as the 5-year running mean of annual population counts. BLM field offices, with the assistance of their respective land and RMP implementation groups, local WGFD offices, and local sage-grouse working groups will evaluate the metrics with the Adaptive Management Working Group on an annual basis. The purpose of these strategies is to address localized Greater Sage-Grouse population and habitat changes by providing the framework in which management will change if monitoring identifies negative population and habitat anomalies in order to avoid crossing a hard trigger threshold. Soft triggers require immediate monitoring and surveillance to determine causal factors and may require curtailment of activities in the short or long term, as allowed by law. The project level adaptive management strategies will identify appropriate responses where the project's activities are identified as the causal factor. The management agency (BLM) and the Adaptive Management Work Group will implement an appropriate response strategy to address causal factors not attributable to a specific project or to make adjustments at a larger regional or statewide level. <u>Hard Trigger Response</u>: Hard triggers are indicators that management is not achieving desired conservation results. Hard triggers would be considered a catastrophic indicator that the species is not responding to conservation actions, or that a larger-scale impact or set of impacts is having a negative effect.

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	Within the range of normal population variables (5-year running mean of annual population counts), hard triggers shall be determined to take effect when two of the three metrics exceeds 60 percent of normal variability for the area under management in a single year, or when any of the three metrics exceeds 40 percent of normal variability for a 3 year time period within a 5-year range of analysis. A minimum of 3 consecutive years in a 5-year period is used to determine trends (i.e., years 1-2-3, years 2-3-4, years 3-4-5). Upon determination that a hard trigger has been tripped, the BLM will immediately defer issuance of discretionary authorizations for new actions within the Biologically Significant Unit for a period of 90 days. In addition, within 14 days of a determination that a hard trigger has been tripped, the Adaptive Management Work Group will convene to develop an interim response strategy and initiate an assessment to determine the causal factor or factors (hereafter called the causal factor assessment). The AMWG would define a process to review and reverse adaptive management actions once the identified causal factor is resolved (e.g., returning to previous management once objectives of interim management strategy have been met). In making amendments to this plan, the BLM will coordinate with the USFWS as BLM continues to meet its objective of protecting, restoring, and enhancing Greater Sage-Grouse habitat by reducing, minimizing or eliminating threats to that habitat. The hard and soft trigger data will be analyzed as soon as it becomes available after the signing of the ROD and then at a minimum, analyzed annually thereafter.
MD 4142	Base future adjustments to the appropriate management level on monitoring information and multiple use considerations through development of and/or revisions to HMA Plans. Update HMA plans to include Greater Sage-Grouse objectives.
*MD 4151	The BLM will update its Greater Sage-Grouse habitat management areas, including biologically significant units (BSUs), in conjunction with the State of Wyoming's core areas, upon issuance of any Wyoming Governor's Executive Order revising or amending the core area boundaries and upon completion of appropriate NEPA analysis and process. The BLM will complete the appropriate NEPA documentation (including appropriate public comment) prior to adopting any revised core area boundaries (e.g., maintenance action or plan amendment, environmental assessment, etc.).
*MD 4152	Specific to management for Greater Sage-Grouse, all RMPs are amended as follows: Adopt the State of Wyoming's Greater Sage-Grouse Compensatory Mitigation Framework to the extent consistent with federal law, regulations, and policy. In all Greater Sage-Grouse habitat, when authorizing third-party actions in designated Greater Sage-Grouse habitat, the BLM will seek to achieve the planning-level Greater Sage-Grouse management goals and objectives through implementation of mitigation and management actions, consistent with valid existing rights and applicable law. Under this Plan Amendment, management would be consistent with the Greater Sage-Grouse goals and objectives, and in conformance with BLM Manual 6840, Special Status Species Management. In accordance with BLM Manual 6840, the BLM will undertake planning decisions, actions and authorizations "to minimize or eliminate threats affecting the status of [Greater Sage-Grouse] or to improve the condition of [Greater Sage-Grouse] habitat" across the planning area. Accordingly, before authorizing third-party actions that result in habitat loss and degradation, the BLM will complete the following steps, in alignment with the Governor of Wyoming's Executive Order 2015-4 (July 29, 2015):

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	1. Work jointly with the WGFD to evaluate projects and recommend mitigation in the form of avoidance and minimization. 2. The WGFD will determine if the State requires or recommends any additional mitigation – including compensatory mitigation – under State regulations, policies, or programs related to the conservation of Greater Sage-Grouse. 3. Incorporate state required or recommended mitigation into the BLM's NEPA decision-making process, if the WGFD determines that compensatory mitigation is required to address impacts to GRSG habitat as a part of State policy or authorization, or if a proponent voluntarily offers mitigation. 4. Analyze whether the compensatory mitigation (deferring to the appropriate State authority to quantify habitat offsets, durability, and other aspects used to determine the recommended compensatory mitigation action): • achieves measurable outcomes for Greater Sage-Grouse habitat function on a landscape scale as determined by WGFD that are at least equal to the lost or degraded values in accordance with the Governor of Wyoming's Executive Order 2015-4. • provides benefits that are in place for at least the duration of the impacts. • accounts for a level of risk that the mitigation action may fail or not persist for the full duration of the impact. 5. Ensure mitigation outcomes are consistent with the State of Wyoming's mitigation strategy and principles outlined in 2019 Wyoming GrSG ARMPA Appendix C, The Greater Sage-Grouse Habitat Management Strategy. The BLM has determined that compensatory mitigation must be voluntary unless required by other applicable law and in recognition that State authorities may also require compensatory mitigation (IM 2019-018, *Compensatory Mitigation*, December 6, 2018). Therefore, consistent with valid existing rights and applicable law, when authorizing third-party actions that result in habitat loss and degradation, the BLM will consider voluntary compensatory mitigation actions only as a component of compliance with a State mitigation plan, program, or authority, or when offered voluntarily by a project proponent. Project-specific analysis will be necessary to determine how a compensatory mitigation proposal addresses impacts from a proposed action. The BLM will cooperate with the State to determine appropriate project design and alignment with State policies and requirements, including those regarding compensatory mitigation. When the BLM is considering compensatory mitigation as a component of the project proponent's submission or based on a mitigation requirement from the State, the BLM's NEPA analysis would evaluate the need to avoid or minimize impacts of the proposed project and achieve the goals and objectives of this RMPA. The BLM will defer to the appropriate State authority to quantify habitat offsets, durability, and other aspects used to determine the recommended compensatory mitigation action.
MO LR:1.5	Effects of infrastructure projects, including siting, will be minimized using the best available science, updated as monitoring information on current infrastructure projects becomes available.
MD 6014	Retain approximately 2,048,905 acres of BLM-administered land. 52,080 acres of BLM-administered land are available for disposal by sale, exchange or other means (Map 3-21) (Appendix I, Land Disposal and Acquisition (p. 381)). Disposal can include none, some, or all of the mineral estate as allowed by 43 CFR 2720 and FLPMA Section 209(b)(1). A mineral potential report would determine if a surface estate disposal includes none, some, or all of the mineral estate.

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	Lands classified as PHMAs and GHMAs for Greater Sage-Grouse will be retained in federal management unless: (1) the agency can demonstrate that disposal of the lands, including land exchanges, is in the public's best interest or (2) the agency can demonstrate that the disposal of the lands, including land exchanges, will have no direct or indirect adverse impact on conservation of the Greater Sage-Grouse. Consider exceptions where there is mixed ownership. Allow land exchanges for additional or more contiguous federal ownership patterns within PHMAs. For PHMAs with minority federal ownership, include an additional, effective mitigation agreement for any disposal of federal land. Consider pursuing a permanent conservation easement as a final preservation measure. For lands in GHMAs that are identified for disposal, the BLM will only dispose of such lands consistent with the goals and objectives of this plan, including, but not limited to, the land use plan objective to maintain or increase Greater Sage-Grouse abundance and distribution. Note: All land actions to acquire or dispose of lands would require a site specific analysis under NEPA.
**MD 6028	Designate ROW corridors as shown on Map 3-24. PHMAs are designated as avoidance areas for high voltage transmission line and pipeline ROWs. All authorizations in these areas must comply with the conservation measures outlined in this Approved RMP, including the RDFs and avoidance criteria presented in 2019 Wyoming GrSG ARPMA Appendix B, Required Design Features and Best Management Practices. Within PHMAs, specific to management for Greater Sage-Grouse, all RMPs are amended as follows: New Transmission Lines (greater than 115 kV): Allow new transmission lines greater than 115 kV in PHMA only (1) when located within 0.5 miles or less of an existing 115 kV or greater transmission lines constructed prior to 2008; or (2) in designated RMP corridors authorized for aboveground transmission lines. Do not count Transmission lines routed using one or more of the two criteria listed above against the DDCT 5 percent disturbance cap. Consider new transmission lines greater than 115 kV proposed outside of these areas where it can be demonstrated that declines in Greater Sage-Grouse populations could be avoided through project design and/or mitigation. These projects will be subject to the density and disturbance restrictions for PHMAs. Incorporate the Framework for Sage-grouse Impact Analysis for Interstate Transmission Lines (BLM 2012b) and other appropriate documents into the review of transmission line proposals, consistent with the three routing criteria described above. For new projects within PHMAs that may require future utility lines, including distribution and transmission lines or pipelines, include the proposed utility lines in their DDCT as part of the proposed disturbance. Count lines permitted, but not located in the above mentioned routes or a designated corridor, toward the 5 percent disturbance calculation (line distance is equal to the anticipated construction footprint or construction ROW width multiplied by length and includes all access roads, staging area, and other surface disturbance associated with construction outside of the construction ROW). New Electric Distribution Lines (less than 115 kV): Require burial of new electric distribution lines where economically feasible. If not economically feasible, distribution lines may be authorized when effectively designed/mitigated to protect Greater Sage-Grouse and when the authorized officer determines that overhead installation is the action alternative with the fewest adverse impacts while still meeting the project need. Consider agricultural and residential lines to be adequately mitigated for Greater Sage-Grouse if constructed at least 0.6 mile from the lek perimeter (or lek center if

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	no perimeter is yet mapped) with appropriate timing constraints and constructed to the latest APLIC standards. These ROW authorizations will be subject to approval by the State Director. Pipelines: Allow new pipelines through PHMAs: (1) within an RMP corridor currently authorized for that use or designated through future RMP amendments; or (2) constructed in or adjacent to existing utilities (buried and aboveground) or roads. Pipelines constructed in RMP corridors or adjacent to existing utilities or roads will require completion of a DDCT analysis for baseline data collection, but the project is not required to meet the threshold of 5 percent. However, within 6 months of the completion of construction, the project proponent will provide the authorized officer with as-built drawings so that the total disturbance within PHMAs can be calculated annually.
MD 6029	Manage 1,767,274 acres as ROW avoidance areas (Map 3-24). Manage PHMAs as ROW avoidance areas for new ROW or SUA permits (799,391 acres). Within PHMAs where new ROWs/SUAs are necessary, locate new ROWs/SUAs within designated RMP corridors or adjacent to existing ROWs/SUAs where technically feasible. Subject to valid existing rights, including non-federal land inholdings, locate new, required ROWs/SUAs adjacent to existing ROWs/SUAs or where impacts to Greater Sage-Grouse are minimized. Work with proponents to design ROW applications to protect Greater Sage-Grouse.
MD 6040	Allow temporary closures to motorized vehicle use in areas that pose public health and safety risks, and/or where resource damage is imminent. In PHMAs and GHMAs, temporary closures will be considered in accordance with 43 CFR subpart 8364 (Closures and Restrictions); 43 CFR subpart 8351 (Designated National Area); 43 CFR subpart 6302 (Use of Wilderness Areas, Prohibited Acts, and Penalties); 43 CFR subpart 8341 (Conditions of Use). Temporary closure or restriction orders under these authorities are enacted at the discretion of the authorized officer to resolve management conflicts and protect persons, property, and public lands and resources. Where an authorized officer determines that off-highway vehicles are causing or will cause considerable adverse effects upon soil, vegetation, wildlife, wildlife habitat, cultural resources, historical resources, threatened or endangered species, wilderness suitability, other authorized uses, or other resources, the affected areas shall be immediately closed to the type(s) of vehicle causing the adverse effect until the adverse effects are eliminated and measures implemented to prevent recurrence. (43 CFR 8341.2) A closure or restriction order should be considered only after other management strategies and alternatives have been explored. The duration of temporary closure or restriction orders should be limited to 24 months or less; however, certain situations may require longer closures and/or iterative temporary closures. This may include closure of routes or areas.
MD 6054	Design recreational sites, recreation facility development, and recreational access to avoid riparian habitat areas or develop and manage them in a manner that minimizes effects on riparian habitats. Construction of recreation facilities within PHMA must conform to the avoidance and minimization measures of this plan. If it is determined that these conservation measures are inadequate for the conservation of Greater Sage-Grouse, the BLM will consider mitigation consistent with the applicable State management strategy (currently Governor of Wyoming's Executive Order 2015-4 (see also MD 4152).

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**MD 6198	In cooperation, consultation, and coordination with permittees/lessees, cooperators, and interested public, develop and implement appropriate livestock grazing management actions to enhance land health, improve forage for livestock, and meet other multiple use objectives by using the Wyoming Guidelines for Livestock Grazing Management, other appropriate BMPs (see 2019 Wyoming GrSG ARMPA Appendix B, Required Design Features and Best Management Practices), and development of appropriate range improvements. The BLM will prioritize (1) the review of grazing permits/leases, in particular to determine if modification is necessary prior to renewal, and (2) the processing of grazing permits/leases in PHMAs. In setting workload priorities, precedence will be given to existing permits/leases in areas not meeting Land Health Standards, with focus on allotments containing riparian areas or wet meadows. The BLM may use other criteria for prioritization to respond to urgent natural resource concerns (e.g., wildfire) and legal obligations. The BLM will collaborate with appropriate federal agencies, and the State of Wyoming as contemplated under EO 2013–3 (Wyoming Office of the Governor 2013), to 1) develop appropriate conservation objectives; (2) defined a framework for evaluating situations where Greater Sage-Grouse conservation objectives are not being achieved on federal land, to determine if a causal relationship exists between improper grazing (by wildlife or wild horses or livestock) and Greater Sage-Grouse conservation objectives; and 3) identify appropriate site-specific actions to achieve Greater Sage-Grouse conservation objectives within the framework.
*MD 6202	Within PHMA, if monitoring data show the wildlife/special status species standard has not been met nor progress being made toward meeting that standard, there would be an evaluation and a determination made as to the cause. If it is determined that the current authorized livestock use is a significant causal factor in failing to achieve the wildlife/special status species standards~~,~~ the BLM would address the achievement or progress toward achieving the LHSs (43 CFR 4180.2) and, if needed, Greater Sage-Grouse habitat maintenance or improvement. When NEPA analysis is required for a specific implementation action, one alternative would include mechanisms to make adjustments to meet or make progress toward meeting the wildlife/special status species standard. The analysis should also identify the BLM-approved data collection methodologies used for monitoring conditions and determining when adjustments are necessary. If current grazing management meets land health standards and provides for Greater Sage-Grouse habitat, there would be no need to analyze an alternative for Greater Sage-Grouse. Authorized uses in PHMA that incorporate habitat objectives for Greater Sage-Grouse must develop desired conditions based on Greater Sage-Grouse habitats present in the allotment and the ecological potential of sites that supports these habitats. Metrics used to monitor for objectives must be developed and inform the wildlife/SSS portion of the Standards for Healthy Rangelands. Within PHMA, seasonal habitat objectives for Greater Sage-Grouse apply only to those habitats delineated within an allotment during the specific season (e.g., breeding season objectives during breeding season). Data needed to inform the relationship between the authorized use and habitat condition would come from sample locations that appropriately reflect the impact of the authorized use on habitat conditions. Data points should fall within Greater Sage-Grouse seasonal habitat areas and be collected on ecological sites that have the potential to produce Greater Sage-Grouse habitat.

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Table A-5
ARMPA – Worland Field Office with All Greater Sage-Grouse Management Goals, Objectives, and Decisions

Action #	2019 Wyoming Greater Sage-Grouse (GrSG) Approved Resource Management Plan Amendment (ARMPA) - Worland Field Office
MD 6214	Allotments within PHMAs, focusing on those containing riparian areas, including wet meadows, will be prioritized for field checks to help ensure compliance with the terms and conditions of the grazing permits. Field checks could include monitoring for actual use, utilization, and use supervision.

* Denotes Management Goals, Objectives, and Decisions that were amended.
** Denotes Management Goals, Objectives, and Decisions that were clarified to be consistent with the amended Management Goals. Objectives, and Decisions and/or update references.

The purpose of the habitat objectives table is to identify vegetation attributes important to Greater Sage-Grouse site selection as described in the Habitat Assessment Framework (HAF; Stiver 201 5). Indicators should be measured during the appropriate season, within the seasonal habitat being assessed, and in the context of the ecological potential for the site.

The habitat objectives table outlines rangewide attributes and values for each. Some of the science-based information used to establish indicator values in the habitat objectives table was developed in disparate geographic regions and will not reflect local conditions. The BLM is required to use the best available information, and specific values should be developed locally or at the project level. Collectively, the indicators for sagebrush (cover, height, and shape), perennial grass, and perennial forb (cover, height, and/or availability) represent the desired vegetation components for the seasonal habitats. Indicators are not standards to be achieved but a metric used to evaluate habitat conditions. Data collected at each location (during the appropriate season) in Greater Sage-Grouse habitat is compared with each seasonal habitat indicator value in the table. These indicator values would then be examined using a preponderance of evidence approach (BLM Technical Reference 1734-6).

When completing site-scale assessments for Greater Sage-Grouse, it is not appropriate to use a single indicator to determine habitat suitability. Site-scale Greater Sage-Grouse habitat assessments inform the land health standard evaluation for the wildlife/special status species standard.

Not all areas within a given habitat type will be capable of achieving the indicator values, due to inherent variation in vegetation communities and ecological site potential. Further, local data supported by BLM-approved data collection protocols or most recent available science may indicate Greater Sage-Grouse select for vegetation structure and composition not characterized by values in the table.

The values in the table should be considered as initial references and do not preclude development of local, desired conditions or utilizing other indicators/values, based on site selection preferences of the local population and ecological site capability of sagebrush communities.

Table 2-1
Seasonal Habitat Objectives for the Greater Sage-Grouse Wyoming Basin Ecoregion

Attribute	Indicators	Desired Condition[6]	Reference
Breeding and Nesting (Seasonal Use Period March 1–June 15 (Doherty 2008; Holloran and Anderson 2005)			
Lek Security	Proximity of trees	Trees absent or uncommon shrub/grassland ecological sites within 1.8 miles (approximately 3 kilometers) of occupied leks	Baruch-Mordo et al. 2013; Stiver et al. 2015
	Proximity of sagebrush to leks	Adjacent protective sagebrush cover within 330 feet (approximately 100 meters) of an occupied lek	Stiver et al. 2015
Cover	% of seasonal habitat meeting desired conditions	>80% of the nesting habitat meets the recommended vegetation characteristics, where appropriate (relative to ecological site potential, etc.).	Connelly et al. 2000
	Sagebrush cover[2]	5 to 25%	Connelly et al. 2000; Connelly et al. 2003; Hagen et al. 2007
	Sagebrush height Arid sites[3] Mesic sites[4]	4–31 inches (10–80 centimeters) 12–31 inches (30–80 centimeters)	Connelly et al. 2000
	Predominant sagebrush shape	Predominantly spreading shape[5]	Stiver et al. 2015
	Perennial grass cover (such as native bunchgrass)[2] Arid sites[3] Mesic sites[4]	>10% >15% Cool-season bunchgrasses preferred	Connelly et al. 2000; Stiver et al. 2015; Cagney et al. 2010
	Perennial grass and forb height (including residual grasses)	Adequate nesting cover would be as determined by ESD site potential or best available science in consideration of local variability.	Connelly et al. 2000; Connelly et al. 2003; Doherty et al. 2014; Hagen et al. 2007; Stiver et al. 2015
	Perennial forb cover[2] Arid sites[3] Mesic sites[4]	>5% >10%	Connelly, J. W., M. A. Schroeder, A. R. Sands, and C. E. Braun 2000.
Brood-Rearing/Summer[1] (Seasonal Use Period June 16–October 31)			
Cover	% of seasonal habitat meeting desired condition	>40% of the summer/brood habitat meets recommended brood habitat characteristics where appropriate (relative to ecological site potential, etc.)	Connelly et al. 2000
	Sagebrush cover[2]	5–25%	Connelly et al. 2000
	Sagebrush height	4–32 inches (20.3–80 centimeters)	Connelly et al. 2000
	Perennial grass cover and forbs[2]	>5% arid sites >10% mesic sites	Connelly et al. 2000

Table 2-1
Seasonal Habitat Objectives for the Greater Sage-Grouse Wyoming Basin Ecoregion

Attribute	Indicators	Desired Condition[6]	Reference
Cover *(cont'd)*	Riparian areas/mesic meadows[2]	Proper functioning condition	Preferred forbs are listed in Stiver et al. 2015
	Upland and riparian perennial forb availability	Preferred forbs are common with several preferred species present	Stiver et al. 2015
Winter (Seasonal Use Period November 1–February 28)			
Cover and Food	% of seasonal habitat meeting desired conditions	>80% of the wintering habitat meets winter habitat characteristics where appropriate (relative to ecological site, etc.).	Connelly et al. 2000
	Sagebrush cover above snow[2]	>5%	Connelly et al. 2000; Stiver et al. 2015
	Sagebrush height above snow	>10 inches (>25 centimeters)	Connelly et al. 2000

Notes:
[1] Where credible data support different seasonal dates than those identified, dates may be shifted, but the amount of days cannot be shortened or lengthened by the local unit.
[2] Absolute cover is the actual recorded cover and can exceed 100% when recorded across all species and all layers. It is not relative cover, which is the proportions of each species, and equals 100%. Note that cover is reported for only those species (e.g., sagebrush and preferred forbs) that are sampled to determine suitability of habitat for Greater Sage-Grouse. Overall cover at the site will be greater than that sampled for Greater Sage-Grouse habitat, due to other species present.
[3] Arid corresponds to the 10-12-inch precipitation zone; *Artemisia tridentata wyomingensis* is a common big sagebrush subspecies for this type site (Stiver et al. 2015).
[4] Mesic corresponds to the ≥12-inch precipitation zone; *Artemisia tridentata vaseyana* is a common big sagebrush subspecies for this type site (Stiver et al. 2015).
[5] Collectively, the indicators for sagebrush (cover, height, and shape), perennial grass, and perennial forb (cover, height, and/or availability) represent the desired condition range for nesting/early brood-rearing habitat characteristics, consistent with the breeding habitat suitability matrix identified in Stiver et al. 2015. Sagebrush plants that are more tree or columnar shaped provide less protective cover near the ground than sagebrush plants with a spreading shape (Stiver et al. 2015). Some sagebrush plants are naturally columnar (e.g., Great Basin big sagebrush) and a natural part of the plant community; however, a predominance of columnar shape arising from animal impacts may warrant management investigation or adjustments at site-specific scales.
[6] All desired conditions will be dependent upon site capability and local variation (e.g., weather patterns, localized drought, and ESD state).

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Appendix B
Required Design Features

Appendix B. Required Design Features

INTRODUCTION

The following conservation measures have typically been referred to as best management practices (BMP) or recommended management practices. These conservation measures are treated in the Resource Management Plan (RMP) as required design features (RDFs) to ensure regulatory certainty and the conservation of Greater Sage-Grouse. The source of these conservation measures came from Washington Office Instruction Memorandum No. 2012-044, (12/27/2011) Bureau of Land Management (BLM) National Greater Sage-Grouse Land Use Planning Strategy (IM No. WO-2012-044).

RDFs are site-specific measures that can be applied, as necessary and when appropriate, to a site-specific project. Not all RDFs are recommended or advised for all projects. The list below should serve as a list of potential RDFs that may be applied to site-specific projects, based on the applicability and suitability of that particular project. It is not expected that all RDFs would be applied to all projects.

The applicability and overall effectiveness of each RDF cannot be fully assessed until the project level when the project location and design are known. Because of site-specific circumstances, some RDFs may not apply to some projects (e.g., a resource is not present on a given site) and/or may require slight variations (e.g., a larger or smaller protective area). All variations in RDFs would require that at least one of the following be demonstrated in the National Environmental Policy Act of 1969 (NEPA) analysis associated with the project/activity:

- A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g., due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable. A checklist as part of the project record would suffice for determination of RDF applicability to a particular project.
- An alternative RDF, a state-implemented conservation measure, or plan-level protection is determined to provide equal or better protection for Greater Sage-Grouse or its habitat. A specific RDF will provide no additional protection to Greater Sage-Grouse or its habitat.
- Through the coal planning process it will be determined if areas are suitable for further coal leasing consideration. Greater Sage-Grouse will be protected from leasing using the coal screening process (unsuitability criteria #15 or multiple use conflict analysis (screen 3)). The coal planning process (see 43 CFR 3420.1- 4 and 43 CFR 3461) will identify areas where coal leasing is not suitable or acceptable and those areas will be removed from further coal consideration for coal leasing and development (i.e., they will not be leased, so no development and no further protection needed).

Mines (particularly large surface coal mines) do not have the flexibility to move operations, so it is assumed that if a lease is ultimately offered, sold, and issued, the federal coal lessee can use the entire coal lease for mining operations once they receive their federal permit. The following measures would be applied as RDFs for all solid minerals. The measures would also apply to locatable minerals subject to valid existing rights and consistent with applicable law.

Required Design Features for Lands and Realty, Range Management, Fluid Minerals, Coal Exploration, Wild Horses, Travel Management, Vegetation Management, Wildfire and Fuels Management, Noise, and West Nile Virus

Priority Habitats—RDFs/BMPs are continuously improving as new science and technology become available and therefore are subject to change. Include from the following RDFs/BMPs those that are appropriate to mitigate effects from the approved action.

Evaluate and take advantage of opportunities to remove or modify existing power lines within priority Greater Sage-Grouse habitat areas. When possible, require perch deterrents on existing or new overhead facilities. Encourage installation of perch deterrents on existing facilities.

Where existing leases or rights-of-way (ROW) 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.

Locate man camps outside priority Greater Sage-Grouse habitats.

Work cooperatively with permittees, lessees, and other landowners to develop grazing management strategies that integrate both public and private lands into single management units.

Coordinate RDFs/BMPs and vegetative objectives with the Natural Resources Conservation Service (NRCS) for consistent application across jurisdictions where the BLM and NRCS have the greatest opportunities to benefit Greater Sage-Grouse, particularly as it applies to the NRCS's National Sage-Grouse Initiative (http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/programs/farmbill/initiatives/andcid=steldevb1 027671).

Evaluate the role of existing seedings that are currently composed of primarily introduced perennial grasses in and adjacent to priority Greater Sage-Grouse habitats to determine if they should be restored to sagebrush or habitat of higher quality for Greater Sage-Grouse. If these seedings are part of an Allotment Management Plan/Conservation Plan, or if they provide value in conserving or enhancing the rest of the priority habitats, then no restoration would be necessary. Assess the compatibility of these seedings for Greater Sage-Grouse habitat or as a component of a grazing system during land health assessments (Davies et al. 2011). For example, some introduced grass seedings are an integral part of a livestock management plan and reduce grazing pressure in important sagebrush habitats, or serve as a strategic fuels management area.

Where the federal government owns the surface, and the mineral estate is in nonfederal ownership, apply appropriate BMPs to surface development.

ROADS

Design roads to an appropriate standard no higher than necessary to accommodate their intended purpose. Locate roads to avoid important areas and habitats.

Coordinate road construction and use among federal fluid mineral lessees and ROW or special use authorization (SUA) holders.

Construct road crossings of ephemeral, intermittent, and perennial streams to minimize impacts on the riparian habitat, such as by crossing at right angles to ephemeral drainages and stream crossings.

Establish slow speed limits on BLM-administered roads or design roads for slower vehicle speeds to reduce Greater Sage-Grouse mortality.

Establish trip restrictions (Lyon and Anderson 2003) or minimization through use of telemetry and remote well control (e.g., Supervisory Control and Data Acquisition).

Do not issue ROWs or SUAs to counties on energy development roads, unless for a temporary use consistent with all other terms and conditions including this document.

Designate all newly constructed routes for authorized use only (using signage, gates, etc.). Apply dust abatement on roads, well pads, and other surface disturbances.

Close and rehabilitate duplicate roads by restoring original landform and establishing desirable habitat conditions.

OPERATIONS

Conduct reclamation on unused roads as soon as possible using appropriate Greater Sage-Grouse seed mixes. Reclaim the permitted ROWs used in the construction of the running surface immediately.

Site and/or minimize linear ROWs or SUAs to reduce disturbance and fragmentation of sagebrush habitats.

Place new utility developments (power lines, pipelines, etc.) and transportation routes in existing utility or transportation corridors.

Bury distribution power lines to the extent technically feasible.

Cover all fluid-containing pits and open tanks with netting (maximum 1.5-inch mesh size) regardless of size to reduce Greater Sage-Grouse mortality.

Equip tanks and other aboveground facilities with structures or devices that discourage nesting and perching of raptors and corvids.

Control the spread and effects of invasive nonnative plant species (Evangelista et al. 2011), including treating weeds prior to surface disturbance and washing vehicles and equipment at designated wash stations when constructing in areas with weed infestations.

Require Greater Sage-Grouse-safe fences (Christiansen 2009; Stevens 2011). Clean up refuse (Bui et al. 2010).

Eliminate sumps; if the sump is absolutely necessary, then construct Greater Sage-Grouse-safe fences around the sump (Christiansen 2009; Stevens 2011).

Cluster disturbances, operations (hydraulic fracture stimulation, liquids gathering, etc.), and facilities. If the geology is exploratory and there is the potential that subsequent wells may not be drilled, do not

disturb additional habitat until geology has proven additional wells can go on the pad and it is necessary to do so.

Use directional and horizontal drilling to the extent feasible as a means to reduce surface disturbance in relation to the number of wells.

Place infrastructure in already disturbed locations where the habitat has not been fully restored. Apply a phased development approach with concurrent reclamation.

Place liquid gathering facilities outside priority areas. To reduce truck traffic and perching and nesting sites for ravens and raptors, do not place tanks at well locations within priority habitat areas.

Pipelines must be under or immediately adjacent to the road (Bui et al. 2010).

Use remote monitoring techniques for production facilities and develop a plan to reduce the frequency of vehicle use (Lyon and Anderson 2003).

Restrict the construction of tall facilities, distribution power lines, and fences to the minimum number and amount needed.

Design or site permanent structures to minimize impacts on Greater Sage-Grouse, with emphasis on locating and operating facilities that create movement (e.g., pump jacks) or attract frequent human use and vehicular traffic (e.g., fluid storage tanks) in a manner that will minimize disturbance of Greater Sage-Grouse or interference with habitat use.

Use only closed-loop systems for drilling operations, with no reserve pits.

Consider using oak (or other material) mats for drilling activities where topography permits to reduce vegetation disturbance and for temporary roads between closely spaced wells to reduce soil compaction and maintain soil structure to increase likelihood of vegetation reestablishment following drilling.

WEST NILE VIRUS

Artificial water impoundments will be managed for the prevention and/or spread of West Nile virus where the virus poses a threat to Greater Sage-Grouse. This may include but is not limited to: (a) the use of larvicides and adulticides to treat waterbodies; (b) overbuilding ponds to create non-vegetated, muddy shorelines; (c) building steep shorelines to reduce shallow water and emergent aquatic vegetation; (d) maintaining the water level below rooted vegetation; (e) avoiding flooding terrestrial vegetation in flat terrain or low-lying areas; (f) constructing dams or impoundments that restrict seepage or overflow; (g) lining the channel where discharge water flows into the pond with crushed rock, or use a horizontal pipe to discharge inflow directly into existing open water; (h) lining the overflow spillway with crushed rock and construct the spillway with steep sides to preclude the accumulation of shallow water and vegetation; and (i) restricting access of ponds to livestock and wildlife (Doherty 2007). This does not apply to naturally occurring waters.

Field offices should consider alternative means to manage produced waters that could present additional vectors for West Nile virus. Such remedies may include re-injection under an approved Underground Injection Control permit, transfer to single/centralized facility, etc.

Water impoundments will be managed to prevent the spread of West Nile virus where analysis shows the virus poses a threat to Greater Sage-Grouse and in consideration of potential negative impact on other species of concern.

Restrict pit and impoundment construction to reduce or eliminate threats from West Nile virus (Doherty 2007).

NOISE

Within PHMA (core only), new project noise levels, either individual or cumulative, should not exceed 10 dBA (as measured by L50) above baseline noise at the perimeter of the lek from 6:00 pm to 8:00 am during the breeding season (March 1–May 15).

Require noise shields when drilling during the lek / breeding season.

Locate new compressor stations outside priority habitats and design them to reduce noise that may be directed toward priority habitat.

RECLAMATION

Include objectives for ensuring habitat restoration to meet Greater Sage-Grouse habitat needs in reclamation practices/sites (Pyke 2011). Address post-reclamation management in reclamation plan such that goals and objectives are to protect and improve Greater Sage-Grouse habitat needs.

Maximize the area of interim reclamation on long-term access roads and well pads, including reshaping, topsoiling, and revegetating cut-and-fill slopes where practicable; material used for irrigation must be removed thereafter.

Restore disturbed areas at final reclamation to the pre-disturbance landforms and desired plant community.

Implement irrigation during interim or final reclamation for sites where establishment of seedlings has been shown or is expected to be difficult due to dry conditions.

Use mulching, soil amendments, and/or erosion blankets to expedite reclamation and to protect soils.

Identify and work with partners to increase native seed availability and work with plant material centers to develop new plant materials, especially the forbs needed to restore Greater Sage-Grouse habitat.

Consider potential changes in climate (Miller at al. 2011) when proposing 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).

Use Ecological Site Descriptions (ESD) or other protocols (e.g., Terrestrial Ecological Unit Inventory or Lands System Inventory) to identify the understory species and sagebrush subspecies needed to restore desirable habitat conditions.

VEGETATION TREATMENTS/FIRE AND FUELS MANAGEMENT

During vegetation management project design, consider the utility of using livestock to strategically reduce fine fuels (Diamond et al. 2009), and implement grazing management that will accomplish this objective (Davies et al. 2011; Launchbaugh et al. 2007). Consult with ecologists to minimize impacts on native perennial grasses.

Provide planning vegetation treatments information to personnel on Greater Sage-Grouse biology, habitat requirements, and identification of areas utilized locally.

Use vegetation treatment prescriptions that minimize undesirable effects on vegetation or soils (e.g., minimize mortality of desirable plant species and reduce risk of hydrophobicity).

Ensure that treatments are configured in a manner (e.g., strips) that promotes use by Greater Sage-Grouse (see Connelly et al. 2000).

Design vegetation treatments in areas of high fire frequency which facilitate firefighter safety, reduce the potential acres burned, and the fire risk to Greater Sage-Grouse habitat. Additionally, develop maps for Greater Sage-Grouse habitat which spatially display existing fuels treatments that can be used to assist suppression activities.

Restore prior perennial grass/shrub plant communities infested with invasive species to a species composition characterized by perennial grasses, forbs, and shrubs as outlined in ESDs.

Emphasize the use of native plant species, recognizing that nonnative species may be necessary depending on the availability of native seed and prevailing site conditions.

Reduce the risk of vehicle- or human-caused wildfires and the spread of invasive species into Greater Sage-Grouse habitats. This could be minimized by planting perennial vegetation (e.g., green-strips) paralleling road ROWs. (This RDF could be applied to BLM linear ROW authorizations.)

Strategically place and maintain pre-treated strips/areas (e.g., mowing, herbicide application, and strictly managed grazed strips) to aid in controlling wildfire, should wildfire occur near key habitats or important restoration areas (such as where investments in restoration have already been made).

As appropriate, utilize existing fuel breaks, such as roads or discrete changes in fuel type, as control lines to minimize fire spread.

Design vegetation treatments in Greater Sage-Grouse habitats to strategically reduce wildfire threats in the greatest area. This may involve spatially arranging new vegetation treatments with past treatments, vegetation with fire-resistant serial stages, natural barriers, and roads in order to constrain fire spread and growth. This may require vegetation treatments to be implemented in a more linear versus block design (Launchbaugh et al. 2007).

Design post-Emergency Stabilization and Rehabilitation (ES&R) and Burn Area Emergency Rehabilitation (BAER) 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 horses, travel management, etc., to achieve and maintain the desired condition of ES&R and BAER projects to benefit Greater Sage-Grouse

(Eiswerth and Shonkwiler 2006). Include Greater Sage-Grouse habitat parameters as defined by Connelly et al. (2000), Hagen et al. (2007) or if available, state Greater Sage-Grouse conservation plans and appropriate local information in habitat restoration objectives. Maintain these objectives, within priority Greater Sage-Grouse habitat areas, as a high restoration priority.

Make reestablishment of sagebrush and desirable understory plant cover (relative to ecological site potential) a high priority for restoration efforts. Write specific vegetation objectives to reestablish sagebrush cover and desirable understory cover.

Where applicable, design fuels treatment objective to protect existing sagebrush ecosystems, modify fire behavior, restore native plants, and create landscape patterns which most benefit Greater Sage-Grouse habitat.

Provide training to fuels treatment personnel on Greater Sage-Grouse biology, habitat requirements, and identification of areas utilized locally.

Use burning prescriptions which minimize undesirable effects on vegetation or soils (e.g., minimize mortality of desirable perennial plant species and reduce risk of annual grass invasion).

Ensure proposed sagebrush treatments are planned with full interdisciplinary input from the BLM (pursuant to NEPA) and coordination with state fish and wildlife agencies, and that treatment acreage is conservative in the context of surrounding Greater Sage-Grouse seasonal habitats and landscape.

Power-wash all vehicles and equipment involved in vegetation treatment and fuels management activities prior to entering the area to minimize the introduction of undesirable and/or invasive plant species.

Give priority for implementing specific Greater Sage-Grouse habitat restoration projects in annual grasslands, first to sites which are adjacent to or surrounded by priority/core habitat or that reestablish continuity between priority habitats. Annual grasslands are a second priority for restoration when the sites are not adjacent to priority/core habitat but within 2 miles of priority/core habitat. The third priority for annual grassland habitat restoration projects is sites beyond 2 miles of priority/core habitat. The intent is to focus restoration outward from existing, intact habitat.

As funding and logistics permit, restore annual grasslands to a species composition characterized by perennial grasses, forbs, and shrubs or one of those referenced in land use planning documentation.

Emphasize the use of native plant species, recognizing that nonnative species may be necessary depending on the availability of native seed and prevailing site conditions.

Remove standing and encroaching trees within at least 110 yards of occupied Greater Sage-Grouse leks and other habitats (e.g., nesting, wintering, and brood rearing) to reduce the availability of perch sites for avian predators, as resources permit.

Design fuel treatments that would increase fire suppression efficiencies to protect wildland areas from wildfire originating on private lands, infrastructure corridors, and recreational areas. Where applicable, incorporate roads and natural fuel breaks into fuel break design.

Develop state-specific Greater Sage-Grouse reference information and resource materials containing maps, a list of resource advisors, contact information, local guidance, and other information relevant to agency administrators and fire suppression resources.

During periods of multiple fires, ensure line officers are involved in setting priorities.

Provide localized maps to dispatch offices and extended attack incident commanders for use in prioritizing wildfire suppression resources and designing suppression tactics.

Assign a resource advisor with Greater Sage-Grouse expertise or who has access to Greater Sage-Grouse expertise to all extended attack fires in or near Greater Sage-Grouse habitat. Prior to the fire season, provide training to Greater Sage-Grouse resource advisors on wildfire suppression organization, objectives, tactics, and procedures to develop a cadre of qualified individuals. Involve state wildlife agency expertise in fire operations through the following:

- Instructing resource advisors during preseason trainings
- Qualification as resource advisors
- Coordination with resource advisors during fire incidents
- Contributing to incident planning with information such as habitat features or other key data useful in fire decision-making

On critical fire weather days, pre-position additional fire suppression resources to optimize a quick and efficient response in Greater Sage-Grouse habitat areas.

Locate wildfire suppression facilities (i.e., base camps, spike camps, drop points, staging areas and heli-bases) in areas where physical disturbance to Greater Sage-Grouse habitat can be minimized. These include disturbed areas, grasslands, near roads/trails, or other areas where there is existing disturbance or minimal sagebrush cover.

Minimize unnecessary cross-country vehicle travel during fire operations in Greater Sage-Grouse habitat.

Minimize burnout operations in key Greater Sage-Grouse habitat areas by constructing a direct fire line whenever safe and practical to do so.

Utilize retardant, mechanized equipment, and other available resources to minimize burned acreage during initial attack.

As safety allows, conduct mop-up where the black adjoins unburned islands, dog legs, or other habitat features to minimize sagebrush loss.

Adequately document the fire operation activities in Greater Sage-Grouse habitat for potential follow-up coordination activities.

Compile the District-level information into state-wide Greater Sage-Grouse tool boxes. Tool boxes will contain maps, listing of resource advisors, contact information, local guidance, and other relevant information for each District, which will be aggregated into a state-wide document.

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Appendix C

Greater Sage-Grouse Habitat Management Strategy

Appendix C – The Greater Sage-Grouse Habitat Management Strategy Table of Contents

Introduction

The Wyoming Greater Sage-Grouse Approved Resource Management Plan Amendments (ARMPA) provides specific goals, objectives, management actions, and required design features for the conservation of Greater Sage-Grouse in Wyoming. These are the commitments made to meet the federal agencies' national policy and direction for the conservation of Greater Sage-Grouse in light of the 2010 US Fish and Wildlife Service listing decision as warranted but precluded from listing under the Endangered Species Act. The Bureau of Land Management (BLM), in coordination with the State of Wyoming has identified conservation measures, consistent with the Wyoming Executive Order 2015-4, to be included in the Wyoming land use plans as the principal regulatory mechanisms to assure adequate conservation of the Greater Sage-Grouse and its habitat throughout the state.

The measures identified in the ARMPA have been developed in coordination with not just the USFWS, but also the State of Wyoming, including the Wyoming Game and Fish Department (WGFD), and local cooperating agencies including conservation districts and counties.

Wyoming has established core population areas to help delineate landscape planning units by distinguishing areas of high biological value. These areas are based on the locations of breeding areas and are intended to help balance Greater Sage-Grouse habitat requirements with demand for energy development (Doherty et al. 2011). The ARMPA is consistent with the Core Area Strategy, which results in protections to Greater Sage-Grouse habitat and achieving conservation objectives identified in the Conservation Objectives Team (COT) report on BLM-managed public lands. The COT report indicates that the Core Area Strategy is a substantial regulatory mechanism that contributes to the conservation of Greater Sage-Grouse and balances the priorities of retaining a healthy Greater Sage-Grouse population on the landscape and energy development.

This appendix will introduce the framework for implementation of Greater Sage-Grouse conservation measures within BLM Field Offices. Implementation is a combination of permitting activities under the auspices of management direction provided in the ARMPA, undertaking specific activities in pursuit of the goals and objectives identified in the plan and monitoring of sagebrush habitat and populations.

The implementation framework outlined here replaces Appendix D in the 2015 Approved RMP Amendments and 2015 Bighorn Basin and Buffalo Field Office Revisions and will be added as Appendix Q in the 2014 Lander Field Office RMP Revision. This Appendix C is intended to conform to the objectives of the Approved RMP Amendment Alternative. is focused specifically towards Greater Sage-Grouse and is reflective of how the national strategy will be assimilated into the existing statewide implementation efforts currently in place in Wyoming. This framework has been developed mindful of the varying scales at which implementation will be evaluated: at the local level to define successful conservation measures; at the state level to assess success of the statewide strategy: and across the species' range.

In 2013, the Director of the USFWS tasked staff with the development of range-wide conservation objectives for the sage-grouse to define the degree to which threats need to be reduced or ameliorated to conserve sage-grouse so that it is no longer in danger of extinction or likely to become in danger of extinction in the foreseeable future. Recognizing that state wildlife agencies have management expertise and management authority for sage-grouse, the USFWS created a COT of state and USFWS representatives to accomplish this task.

The COT conservation framework consisted of (1) identifying sage-grouse population and habitat status and threats, (2) defining a broad conservation goal, (3) identifying priority areas for conservation, and (4) developing specific conservation objectives and measures. The COT used three parameters—population and habitat representation, redundancy, and resilience (Shaffer and Stein 2010, Redford *et al.* 2011)—as guiding concepts in developing the conservation goal, priority areas for conservation, conservation objectives, and measures.

The COT report identified priority areas for Greater Sage-Grouse population habitats as Priority Areas for Conservation (PACs). PACs are recognized as key areas across the landscape that are necessary to maintain redundant, representative, and resilient populations of the species. The COT Report describes maintaining the integrity of PACs as "the essential foundation for sage-grouse conservation." PACs cover nearly 73 million acres across the West; within Wyoming, more than 15 million acres are considered priority habitat. Fifty-two percent of the priority habitat is BLM administered surface and 71 percent is BLM-administered minerals.

Due to the variability in ecological conditions and the nature of the threats across the range of the sage-grouse, developing detailed, prescriptive species or habitat actions was not attainable at the range-wide scale. Specific strategies and actions necessary to achieve the conservation objectives have been developed by the BLM in cooperation with state and local governments to ensure implementation of activities to meet the objectives identified in the COT report.

COT Objective 1: Stop Population Declines and Habitat Loss

> *"There is an urgent need to 'stop the bleeding' of continued population declines and habitat losses by acting immediately to eliminate or reduce the impacts contributing to population declines and range erosion. There are no populations within the range of sage-grouse that are immune to the threat of habitat loss and fragmentation (COT report 2013)."*

The COT report identified a series of threats to Greater Sage-Grouse habitat and the extent of those threats at the population scale. The management actions identified in the ARMPA were specifically designed to reduce the threats, as they were identified. The Wyoming RMPs encompass lands within WAFWA Management Zones 1 and 2. To ensure that the threats are adequately addressed by the ARMPA, a strategy for reviewing activities and projects on public lands to determine the extent of their impact on Greater Sage-Grouse habitat has also been developed. The BLM will ensure that any activities or projects in Greater Sage-Grouse habitats would only occur in compliance with the Wyoming BLM's Greater Sage-Grouse goals and objectives for priority management areas.

To ensure that impacts from activities proposed in sage-grouse Core Areas are appropriately approved and mitigated as necessary, the BLM will apply avoidance and minimization measures and conservation actions. . The avoidance and minimization measures and conservation actions (Appendix B) for proposed projects or activities in these areas will be identified as part of the National Environmental Policy Act (NEPA) environmental review process, through interdisciplinary analysis involving resource specialists, project proponents, government entities, landowners or other surface management agencies.

The BLM has determined that compensatory mitigation is not compulsory unless required by other applicable law and in recognition that State authorities may also require compensatory mitigation (IM 2019-018, *Compensatory Mitigation,* December 6, 2018). Therefore, consistent with valid existing rights and applicable law, when authorizing third-party actions that result in habitat loss and degradation, the BLM will consider compensatory mitigation actions only as a component of compliance with a State mitigation plan, program, or authority, or when offered voluntarily by a project proponent.

Those measures selected for implementation will be identified in the record of decision (ROD) or decision record (DR) for those authorizations and will inform a potential lessee, permittee, or operator of the requirements that must be met when using BLM-administered public lands and minerals to mitigate impacts from the activity or project such that sage-grouse goals and objectives are met.

To achieve the goals and objectives for core areas in the ARMPA, the BLM will assess all proposed land uses or activities such as road, pipeline, communication tower, or power line construction, fluid and solid mineral development, range improvements, and recreational activities proposed for location in core areas in a step- wise manner. The following steps identify a screening process for review of proposed activities or projects in these areas. This process will provide a consistent approach and ensure that authorization of these projects, if granted, will appropriately mitigate impacts and be consistent with ARMPA goals and objectives for sage- grouse. The following steps provide for a sequential screening of proposals.

Step 1 – Determine Proposal Adequacy

This screening process is initiated upon formal submittal of a proposal for authorization for use of BLM lands. The actual documentation of the proposal would include at a minimum a description of the location, scale of the project and timing of the disturbance. The acceptance of the proposal(s) for review would be consistent with existing protocol and procedures for each type of use. Evaluating consistency with (at a minimum) state sage-grouse regulations.

Step 2 – Evaluate Proposal Consistency with ARMPA

Step 2.1 –The proposal will be reviewed to determine whether it would be allowed as prescribed in the ARMPA. For example, some activities or types of development are prohibited in sage-grouse habitat, such as wind

developments in priority habitat. Evaluation of projects will also include an assessment of the current state of the adaptive management hard and soft triggers. If the proposal is for an activity that is specifically prohibited, the applicant should be informed that the application is being rejected since it would not be allowed, regardless of the design of the project.

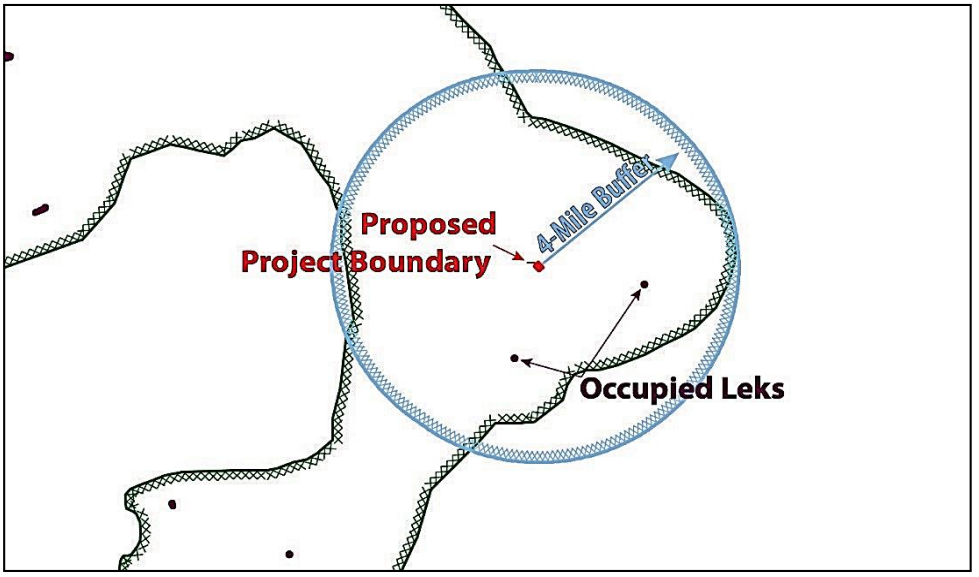
Step 2.2 –The proposal will be reviewed to determine whether it conforms with the Density and Disturbance Limitations. If the proposed activity occurs within a priority habitat management area (PHMA), evaluate whether the disturbance from the activity exceeds the limit on the amount of disturbance allowed within the activity or project area (Density/Disturbance Calculation Tool [DDCT] process). The maximum density of disruptive activities and surface disturbance allowed will be analyzed via the DDCT, and may be conducted by the Federal Land Management Agency on federal land or the project proponent on non-federal (private, state) land and must be reviewed by the Wyoming Game and Fish Department for compliance with Wyoming EO 2015-4 and accepted by the BLM as consistent with this RMP Amendment.

Maximum Density and Disturbance Process

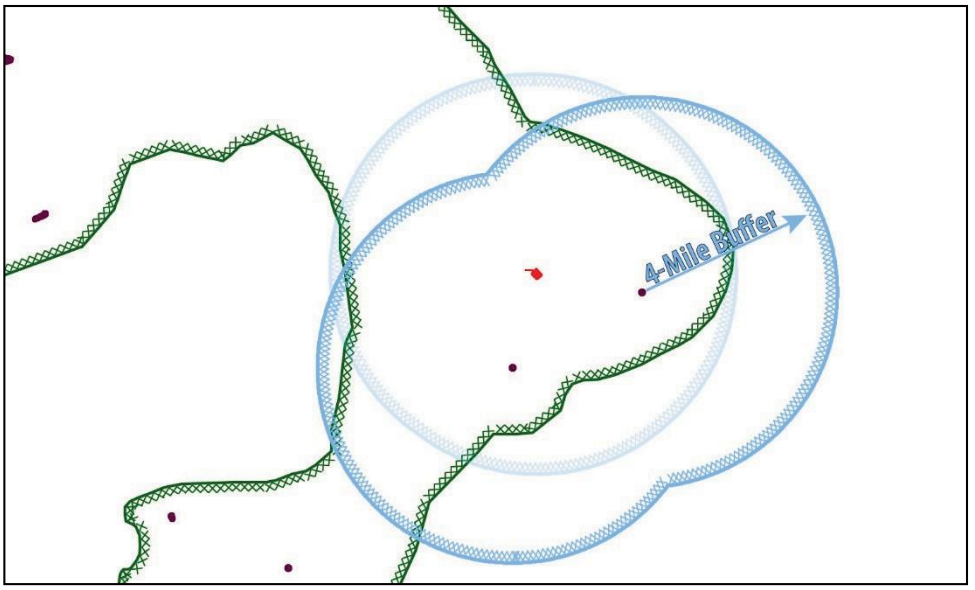
Density and Disturbance Calculation: The Density and Disturbance Calculation Tool, or DDCT (shown within this appendix as an example of the process but may be modified based on best available science and technology), is a spatially-based tool that calculates both the average density of disruptive activities and total surface disturbance within the area affected by the project, or DDCT assessment area. The DDCT assessment area is created based on buffers around proposed projects (first buffer) in protected sage-grouse core areas, and subsequent buffers around any occupied, core area leks within the first buffer. A four mile buffer is used to identify 75% of the sage-grouse use around a lek. All activities will be evaluated within the context of maximum allowable disturbance (disturbance percentages, location and number of disturbances) of suitable sage-grouse habitat within the DDCT assessment area. This tool allows for better siting of projects rather than averaging the density/disturbance calculation per section.

All lands within core area boundaries are considered suitable habitat unless documented. Mapped unsuitable habitat is treated neither as suitable habitat, nor disturbance, which results in the area being removed from the DDCT assessment area altogether.

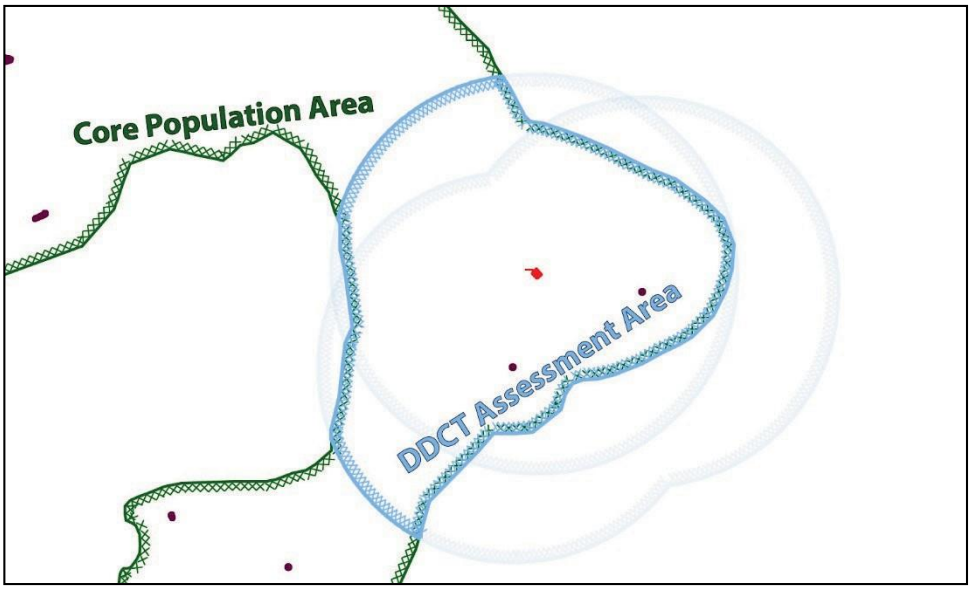
1. Density/Disturbance Calculation Tool (DDCT): Determine all occupied leks within a core population area that may be affected by the project by placing a 4 mile boundary around the project boundary (as defined by the proposed area of disturbance related to the project). All occupied leks located within the 4 mile boundary and within a core population area will be considered in this assessment.



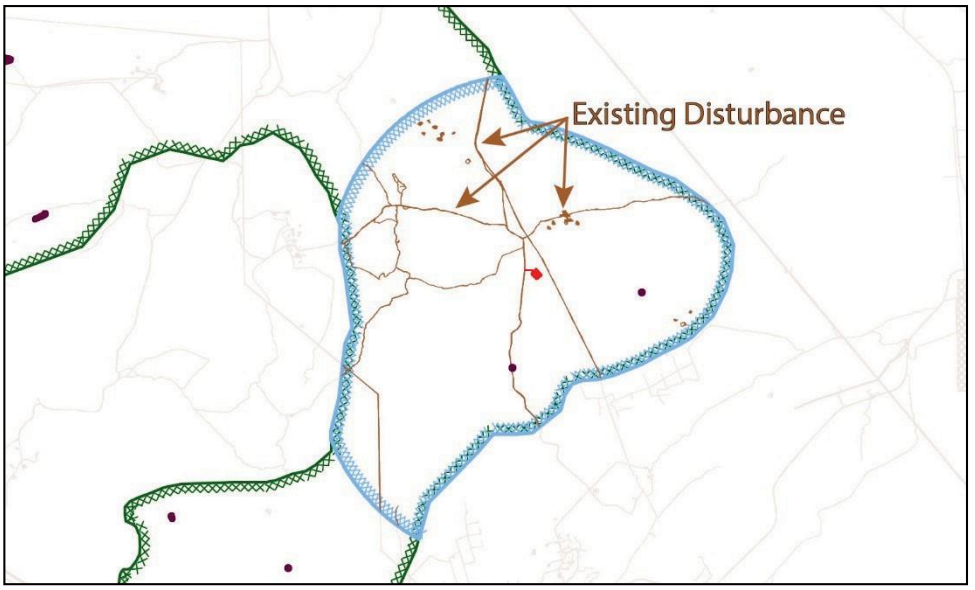
A four-mile boundary will then be placed around the perimeter of each of these lek(s).

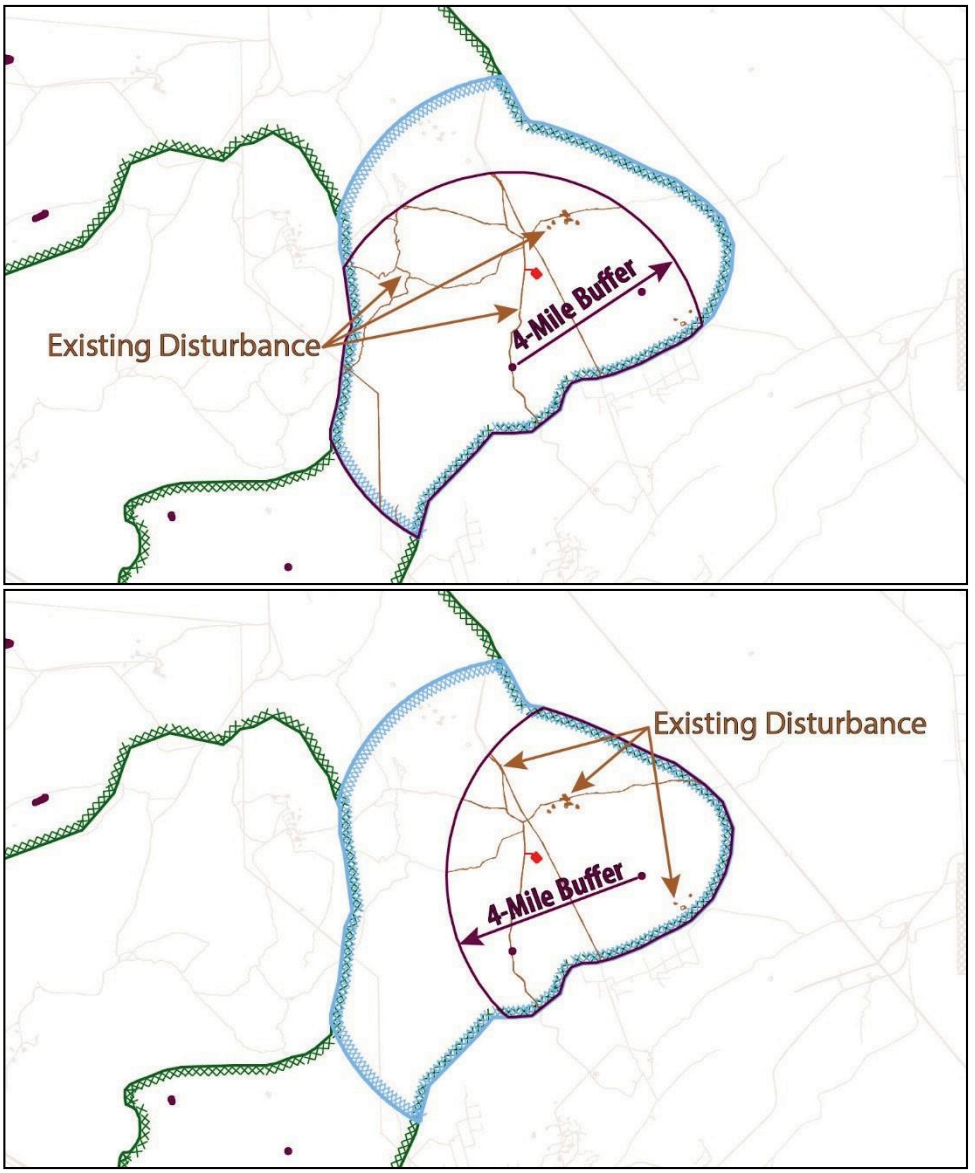


The core population area within the combined 4 mile buffer around both the leks and the project boundary creates the DDCT assessment area for each individual project.

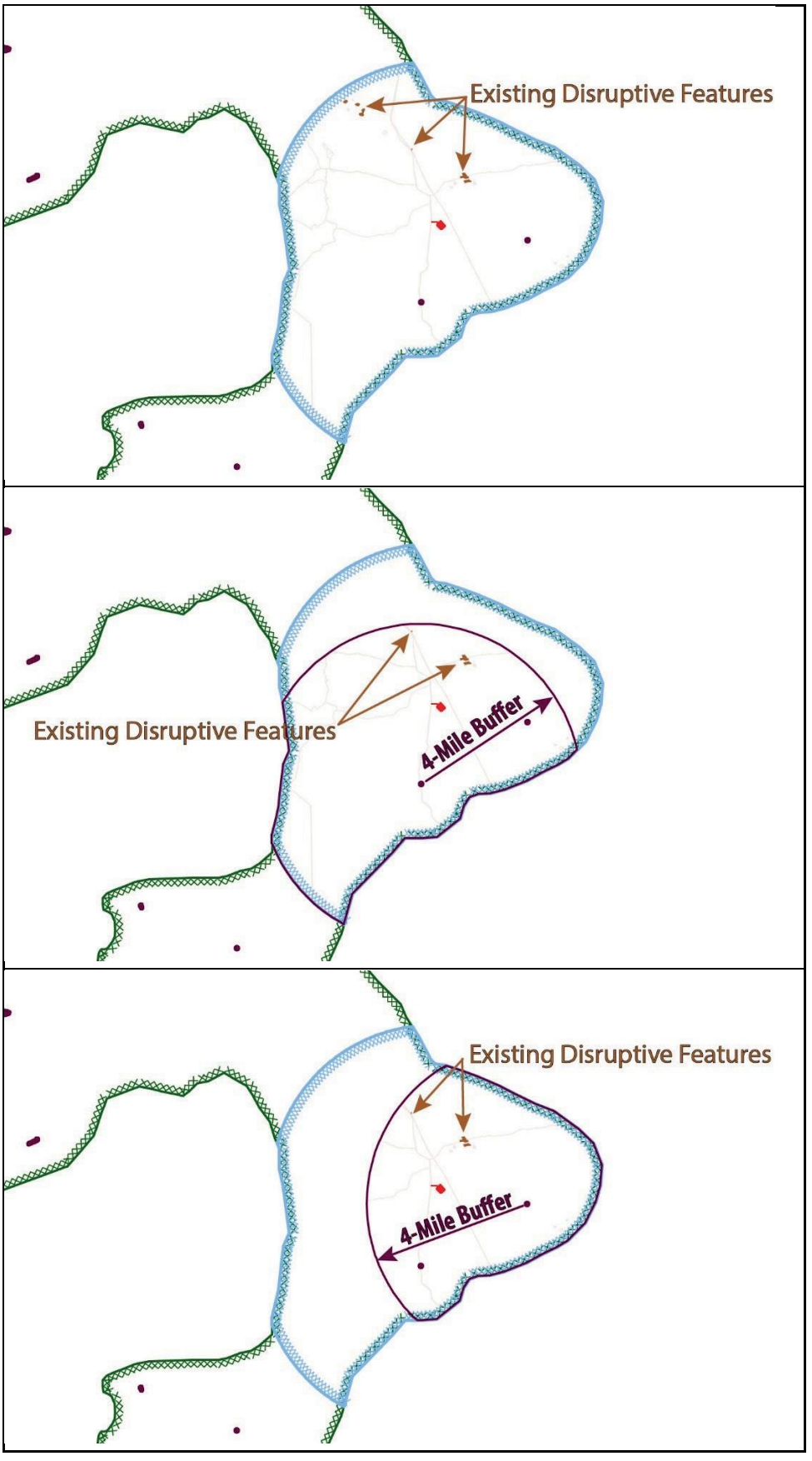


Disturbance will be analyzed for the DDCT assessment area as a whole and for each individual lek within the DDCT assessment area.





Density of disruptive features will be analyzed for the DDCT assessment area as a whole and for each individual lek within the DDCT assessment area.


Existing Disruptive Features
Existing Disruptive Features
4-Mile Buffer
Existing Disruptive Features
4-Mile Buffer

If there are no leks identified for this assessment within the 4 mile boundary around the project boundary, the DDCT assessment area will be that portion of the 4 mile project boundary within the core population area.

2. Density and Disturbance analysis: The total number of discrete disruptive activity features, as well as the total disturbance acres within the DDCT assessment area will be determined through an evaluation of:

    a. Existing disturbance (sage-grouse habitat that is disturbed due to existing anthropogenic activity and wildfire).

    b. Approved permits (that have approval for on the ground activity) not yet implemented.

    c. Validating digitized disturbance through on the ground evaluation.

The complete analysis package (DDCT results, mapbook, and Worksheet), and recommendations developed by consultation and review outlined herein will be forwarded to the appropriate permitting agency(s). WGFD recommendations will be included, as will other recommendations from project proponents and other appropriate agencies. Project proponent shall have access to all information used in developing recommendations. Where possible and when requested by the project proponent, state agencies shall provide the project proponent with potential development alternatives other than those contained in the project proposal.

If the permit for which a proponent has applied expires, another DDCT analysis is required before issuing a new permit. An additional DDCT is not required for permit extensions or renewals when no changes are being authorized. Any project will need to comply with the current Executive Order.

Step 2.3 – The BLM's goal for any new activity or development proposal within core areas is to provide consistent implementation of project proposals which meet the BLM's ARMPA goals and the population management objectives of the state. Activities would be consistent with the strategy where it can be sufficiently demonstrated that no undue harm to core area populations would be expected as a result of the proposed action and would not impact the statewide viability of the species. Published research suggests that impacts to sage-grouse leks associated primarily with infrastructure and energy development are discernible at a distance of at least 4 miles and that many leks within this radius have been extirpated as a direct result of development (Walker et al. 2007, Walker 2008). Research also suggests that an evaluation of habitats and sage-grouse populations that attend leks within an 11-mile radius from the project boundary in the context of "large" projects may be appropriate in order to consider all seasonal habitats that may be affected for birds that use the habitats associated with the proposal during some portion of the life-cycle of seasonally migratory sage-grouse (Connelly et al. 2000).

To determine the manner in which Greater Sage-Grouse may be impacted by proposed undertakings, the following will be reviewed in the site specific NEPA analysis to quantify the effects:

- Greater Sage-Grouse habitat delineation maps.

- Current science recommendations and potential amelioration with compensatory mitigation provided for in the Wyoming Greater Sage-Grouse Compensatory Mitigation Framework.

- The 'Base Line Environment Report' (USGS) which identifies areas of direct and indirect effect for various anthropogenic activities.

- Recommendations from the Wyoming Game and Fish Department through consultation with the agency or state wildlife agency biologist.

- Other methods, such as the DDCT analysis and Adaptive Management Working Group trigger analysis, needed to provide an accurate assessment of impacts.

If the proposal will not have a direct or indirect impact on either the habitat or population, document the findings in the NEPA and proceed with the appropriate process for review, decision and implementation of the project.

Step 3–Apply Avoidance and Minimization Measures to Comply with Sage-Grouse Goals and Objectives

The BLM will work jointly with the WGFD to evaluate projects and recommend avoidance and minimization measures. If the project can be relocated so as to not have an impact on sage-grouse and still achieve objectives of the proposal and the disturbance limitations, relocate the proposed activity and proceed with the appropriate process for review, decision and implementation (NEPA and Decision Record). This Step does not consider redesign of the project to reduce or eliminate direct and indirect impacts, but rather authorization of the project in a physical location that will not impact Greater Sage-Grouse.

If the preliminary review of the proposal concludes that there may be adverse impacts to sage-grouse habitat or populations in Step 2 and the project cannot be effectively relocated to avoid these impacts, proceed with the appropriate process for review, decision and implementation (NEPA and Decision Record) with the inclusion of appropriate avoidance and minimization requirements to further reduce or eliminate impacts to sage-grouse habitat and populations and achieve compliance with sage-grouse objectives. Avoidance and minimization measures could include design modifications of the proposal, site disturbance restoration, post project reclamation, etc. (see Appendix B). The BLM will continue to require avoidance, minimization, and other onsite measures to adequately conserve Greater Sage-Grouse and its habitat, while remaining committed to implementing beneficial habitat management actions to reduce the threats of fire and invasive species.

Step 4 – Apply State-required Compensatory Mitigation or Reject / Defer Proposal

If screening of the proposal has determined that direct and indirect impacts cannot be eliminated through avoidance or minimization, the BLM will cooperate with the State to determine appropriate project design and alignment with State policies and requirements, including those regarding compensatory mitigation. The WGFD will determine if the State requires or recommends any additional mitigation – including compensatory mitigation – under State regulations, policies, or programs related to the conservation of Greater Sage-Grouse.

The BLM will consider compensatory mitigation only as a component of compliance with a state mitigation plan, program, or authority, or when offered voluntarily by a project proponent. When the BLM is considering compensatory mitigation as a component of the project proponent's submission or based on a mitigation requirement from the State, the BLM's NEPA analysis will evaluate the need to avoid or minimize impacts of the proposed project and achieve the goals and objectives of this RMPA. The BLM will defer to the appropriate State authority to quantify habitat offsets, durability, and other aspects used to determine the State-recommended compensatory mitigation action.

The BLM will incorporate state required or recommended mitigation into the BLM's NEPA decision-making process, if the WGFD determines that compensatory mitigation is required to address impacts to GRSG habitat as a part of State policy or authorization, or if a proponent voluntarily offers mitigation.

Project-specific analysis will be necessary to determine how a compensatory mitigation proposal addresses impacts from a proposed action. The BLM will analyze whether the compensatory mitigation:

- achieves measurable outcomes for Greater Sage-Grouse habitat function on a landscape scale as determined by WGFD that are at least equal to the lost or degraded values in accordance with the Governor of Wyoming's Executive Order 2015-4.
- provides benefits that are in place for at least the duration of the impacts.
- accounts for a level of risk that the mitigation action may fail or not persist for the full duration of the impact.

The BLM will ensure mitigation outcomes are consistent with the State of Wyoming's mitigation strategy and principles outlined in this appendix.

Mitigation

General

In all Greater Sage-Grouse habitat, when authorizing third-party actions, the BLM will seek to achieve the planning-level Greater Sage-Grouse management goals and objectives through implementation of mitigation and management actions, consistent with valid existing rights and applicable law. Under this Plan Amendment, management would be consistent with the Greater Sage-Grouse goals and objectives, and in conformance with BLM Manual 6840, Special Status Species Management. In accordance with BLM Manual 6840, the BLM will undertake planning decisions, actions and authorizations "to minimize or eliminate threats affecting the status of [Greater Sage-Grouse] or to improve the condition of [Greater Sage-Grouse] habitat" across the planning area.

In Wyoming, the USFWS has found that "the core area strategy, if implemented by all landowners via regulatory mechanism, would provide adequate protection for sage-grouse and their habitats in the state." The BLM will implement actions consistent with the Wyoming Strategy (EO 2015-4). The BLM will continue to apply the mitigation hierarchy as described in the CEQ regulations at 40 CFR 1508.20; however, the BLM would focus on avoiding, minimizing, rectifying, and reducing impacts over time. Compensation, which involves replacing or providing substitute resources for the impacts, would be considered only when voluntarily offered by a proponent or when imposed by the State. The BLM commits to cooperating with the State to analyze applicant-proposed or state-imposed compensatory mitigation to offset residual impacts.

The BLM remains committed to achieving the planning-level management goals and objectives identified in this RMPA and the 2015 ARMPA by ensuring Greater Sage-Grouse habitat impacts are addressed through implementing mitigating actions consistent with the governing RMP. Accordingly, the BLM has coordinated with the State to develop a memorandum of agreement (MOA) to guide the application of the mitigation hierarchy and State required or voluntary compensatory mitigation actions for future project authorizations in Greater Sage-Grouse habitat on public lands. The BLM would not deny a proposed authorization in Greater Sage-Grouse habitat solely on the grounds that the proponent has not proposed or agreed to undertake voluntary compensatory mitigation. The MOA describes the State's policies, authorities, and programs for Greater Sage-Grouse conservation and the process regarding how the BLM would incorporate avoidance, minimization, and other recommendations from the State necessary to improve the condition of Greater Sage-Grouse habitat consistent with RMPA goals and objectives, in one or more of the NEPA analysis alternatives. The MOA would be implemented to provide an improvement to Greater Sage-Grouse habitat at a State level (as opposed to a WAFWA Management Zone or a Field Office), in collaboration with applicable partners (e.g., federal, tribal, and state agencies). Generally, and as described in the MOA, when the BLM receives applications for projects in Greater Sage-Grouse habitat, the BLM would ensure project design is aligned with State requirements and would ensure the proponent coordinates with the State to develop any additional mitigation—including compensatory mitigation—that the State may require in order to comply with State policies and programs for the conservation of Greater Sage-Grouse.

The BLM is relying on the State of Wyoming's mitigation framework, which, due to its provisions for durability and additionality, would still provide conservation gains and benefits consistent with the goals of this RMPA and the 2015 Plans. The implementation of compensatory mitigation actions would be directed by MOAs that describe how the BLM would align with State authorities and incorporated in the appropriate NEPA analysis subsequent to the Approved RMP Amendment. While the conservation benefit of compensatory mitigation may be limited when weighed against the threats to Greater Sage-Grouse, particularly in the Great Basin region where wildland fire remains a key threat, the BLM is committed to implementing state-imposed mitigation requirements to help minimize the impacts of anthropogenic disturbance and habitat fragmentation throughout the range of Greater Sage-Grouse. The BLM is not proposing any action that would preclude proponents from offering compensatory mitigation; it is clarifying the BLM's reliance on voluntary compensatory mitigation consistent with federal law.

COT Objective 2: Implement Targeted Habitat Management and Restoration

> *"Some sage-grouse populations warrant more than the amelioration of the impacts from stressors to maintain sage-grouse on the landscape. In these instances, and particularly with impacts resulting from wildfire, it may be critical to not only remove or reduce anthropogenic threats to these populations but additionally to improve population health through active habitat management (e.g. habitat restoration). This is particularly important for those populations that are essential to maintaining range-wide redundancy and representation." (COT report 2013)*

In many areas of Wyoming, amelioration of threats isn't enough. Activities must be taken to enhance the habitat for continued success of Greater Sage-Grouse. This objective identifies the areas where ARMPA will put forth the commitments for habitat restoration and enhancement.

The WGFD established local Greater Sage-Grouse working groups over 15 years ago. Each of these local working groups developed conservation plans which have served to guide conservation of Greater Sage-Grouse habitat at a local level. The management objectives for this federal land use plan were developed in coordination with the State of Wyoming, recognizing the ongoing work which has been done over the last 10 years in Wyoming as a result of the conservation efforts identified by each of the local working groups.

Upon completion of the planning process, with issuance of this Approved Plan and Record of Decision, subsequent implementation decisions will be put into effect by developing implementation (activity-level or project-specific) plans. These implementation decisions will be based upon the objectives identified in this Approved Plan and Record of Decision, and will be coordinated with local working groups.

COT Objective 3: Develop and Implement State and Federal Conservation Strategies and Associated Incentive-based Conservation Actions and Regulatory Mechanisms.

> *"To conserve sage-grouse and habitat redundancy, representation, and resilience, state and federal agencies, along with interested stakeholders within range of the sage-grouse should work together to develop a plan, including any necessary regulatory or legal tools (or use an existing plan, if appropriate) that includes clear mechanisms for addressing the threats to sage-grouse within PACs. Where consistent with state conservation plans, sage-grouse habitats outside of PACs should also be addressed. We recognize that threats can be ameliorated through a variety of tools within the purview of states and federal agencies, including incentive-based conservation actions or regulatory mechanisms. Federal land management agencies should work with states in developing adequate regulatory mechanisms. Federal land management agencies should also contribute to the incentive-based conservation and habitat restoration and rehabilitation efforts. In the development of conservation plans, entities (states, federal land management agencies, etc.) should coordinate with USFWS. This will ensure that the plans address the threats contributing to the 2010 warranted but precluded determination, and that conservation strategies will meaningfully contribute to future listing analyses." (COT report 2013)*

Implementation Working Groups

Implementation strategies for a landscape scale species requires coordination across multiple scales, as the work that is conducted at the local scale must be tracked and evaluated for overall success within core areas, across the state of Wyoming. As the Greater Sage-Grouse is formally managed by the State of Wyoming, and has a statewide strategy through Governor's Executive Order 2015-4, implementation must be evaluated at that scale. For this reason, Wyoming Plans will utilize both local and state-wide working groups, representing each of the scales at which implementation will be tracked.

State Level

The Sage-grouse Implementation Team (SGIT) has been established through Wyoming Legislature (Wyoming Statute 9-19-101(a)) to review data and make recommendations to the Governor of Wyoming regarding actions and funding to enhance and restore Greater Sage-Grouse habitats in Wyoming. Additionally, the SGIT is responsible for making recommendations to the Governor regarding regulatory actions necessary to maintain Greater Sage-Grouse populations and Greater Sage-Grouse habitats.

Adaptive Management Working Group (AMWG) has been established in consultation with the SGIT to provide appropriate guidance for agencies with the ability to affect sage-grouse populations and/or habitat through their permitting authority. The AMWG includes BLM, USFWS, and State of Wyoming.

Local Level

In 2000, a Statewide Working Group was established by the WGFD to develop and facilitate implementation of local conservation plans for the benefit of sage-grouse, their habitats, and whenever feasible, other species that use sagebrush habitats. This group prepared the Wyoming Greater Sage-Grouse Conservation Plan (Wyoming Sage-Grouse Working Group 2003) to provide coordinated management and direction across the state. In 2004, local Greater Sage-Grouse working groups were formed to develop and implement local conservation plans. Eight local working groups around Wyoming have completed conservation plans, many of which prioritize addressing past, present, and reasonably foreseeable threats at the state and local levels, and prescribe management actions for private landowners to improve Greater Sage-Grouse conservation at the local scale, consistent with Wyoming's Core Population Area Strategy.

Implementation Tracking

Because the State of Wyoming continues to retain management of the species, and through implementation of the Executive Order, BLM Wyoming will continue to coordinate tracking of populations, disturbance and conservation actions.

DDCT GIS for tracking disturbance
Population counts
Lek counts
Conservation actions

The BLM will provide data that can be integrated with other conservation efforts conducted by state and federal partners.

Public Involvement

All Activity Plan Working Group meetings where recommendations are made to the BLM will be open to the public, and will provide for specific and helpful public involvement.

The state sponsored LWG and SGIT meetings are advertised and open to the public.

COT Objective 4: Proactive Conservation Actions

> *"Proactive, incentive based, voluntary conservation actions (e.g. Candidate Conservation Agreements with Assurances, Natural Resources Conservation Service programs) should be developed and/or implemented by interested stakeholders and closely coordinated across the range of the species to ensure they are complimentary and address sage-grouse conservation needs and threats. These efforts need to receive full funding, including funding for necessary personnel." (COT report 2013)*

In addition to the conservation activities identified through implementation of the Resource Management Plan in coordination with the Local Working Group Conservation Plans, BLM will continue to partner with other agencies and stakeholders to identify conservation actions to benefit Greater Sage-Grouse habitat. Actions which may occur could include, but is not limited to Candidate Conservation Agreements (CCA) with accompanying Candidate Conservation Agreements with Assurances (CCAA), designation of conservation easements, habitat improvement projects, cooperative agreements, or several other options. For a more detailed list of Wyoming-based conservation activities and initiatives, consult the Wyoming Wildlife and Natural Resources Trust.

The BLM will work with partners and stakeholders to develop species-specific or ecosystem-based conservation strategies and will work cooperatively with other agencies, organizations, governments, and interested parties for the conservation of sensitive species and their habitats to meet agreed on species and habitat management goals. Cooperative efforts are important for conservation based on an ecosystem management approach and will improve efficiency by combining efforts and fostering collaborative working relationships.

COT Objective 5: Development of Monitoring Plans

> *"A robust range-wide monitoring program must be developed and implemented for sage-grouse conservation plans, which recognizes and incorporates individual state approaches. A monitoring program is necessary to track the success of conservation plans and proactive conservation activities. Without this information, the actual benefit of conservation activities cannot be measured and there is no capacity to adapt if current management actions are determined to be ineffective." (COT report 2013)*

The Greater Sage-Grouse Monitoring Framework

Introduction

The purpose of this Greater Sage-Grouse Monitoring Framework (hereafter, monitoring framework) is to describe the methods to monitor habitats and evaluate the implementation and effectiveness of the BLM planning strategy (BLM IM 2012-044) to conserve the species and its habitat. The regulations for the BLM (43 CFR 1610.4-9) require that land use plans establish intervals and standards, as appropriate, for monitoring and evaluations, based on the sensitivity of the resource to the decisions involved. Therefore, the BLM will use the methods described herein to collect monitoring data to evaluate implementation and effectiveness of the Greater Sage-Grouse (hereafter, sage-grouse) planning strategy and the conservation measures contained in land use plans. The type of monitoring data to be collected at the land use plan scale will be described in the monitoring plan, which will be developed after the signing of the ROD. For a summary of the frequency of reporting see Attachment A. Adaptive management will be informed by data collected at any and all scales.

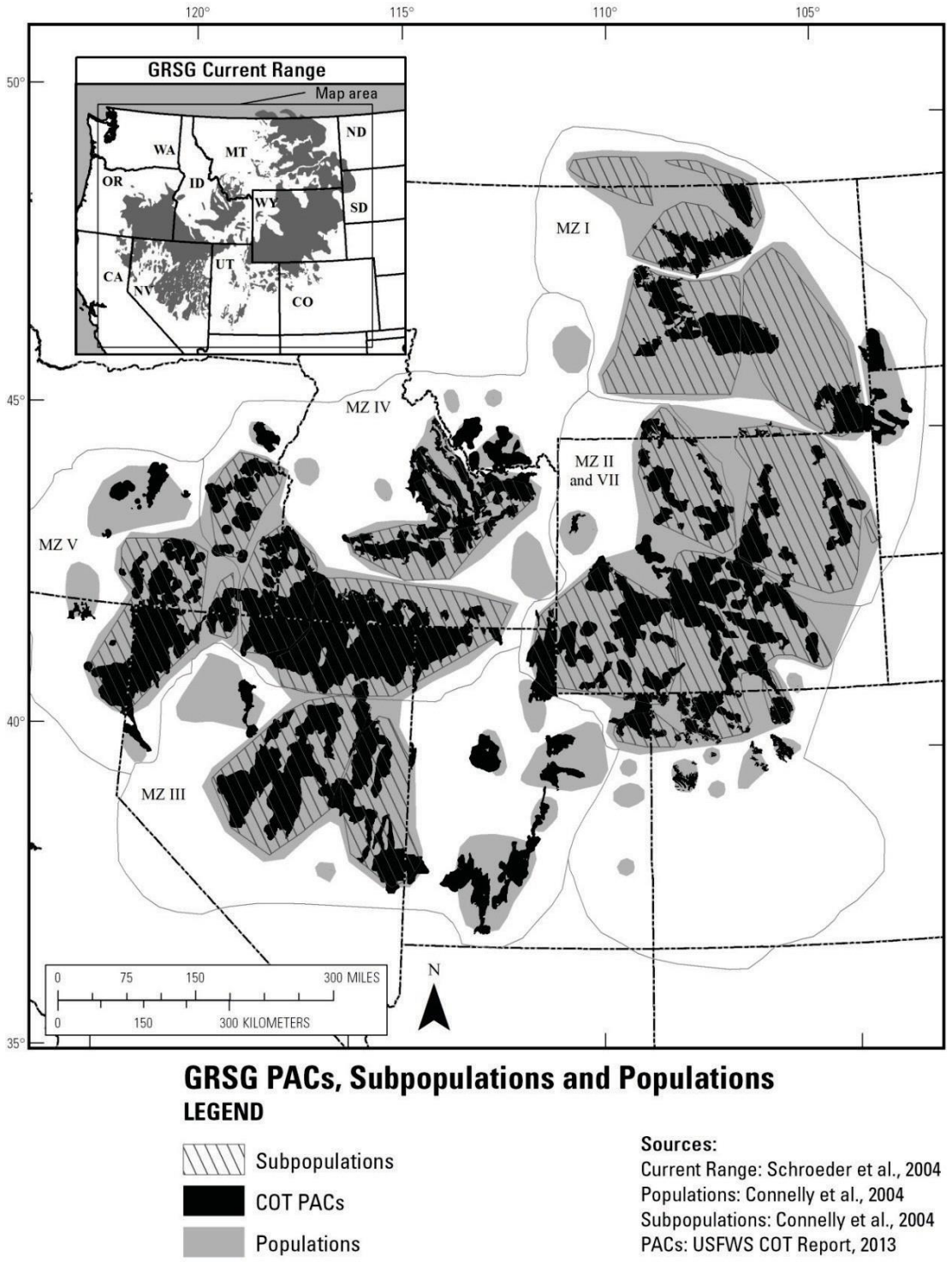
To ensure the BLM has the ability to make consistent assessments about sage-grouse habitats across the range of the species, this framework lays out the methodology for monitoring the implementation and evaluating the effectiveness of BLM actions to conserve the species and its habitat through monitoring that informs effectiveness at multiple scales. Monitoring efforts will include data for measurable quantitative indicators of sagebrush availability, anthropogenic disturbance levels, and sagebrush conditions. Implementation monitoring results will provide information to allow the BLM to evaluate the extent that decisions from the BLM RMP to conserve sage-grouse and its habitat have been implemented. Population monitoring information will be collected by state fish and wildlife agencies and will be incorporated into effectiveness monitoring as it is made available.

This multi-scale monitoring approach is necessary as sage-grouse are a landscape species and conservation is scale-dependent whereby conservation actions are implemented within seasonal habitats to benefit populations. The four orders of habitat selection (Johnson 1980) used in this monitoring framework are described by Connelly et al. (2003) and Stiver et al. (2014) as first order (broad scale), second order (mid-scale), third order (fine scale), and fourth order (site scale) to apply them to sage-grouse habitat selection. The various scales may show differences because of the methods used. The broad and mid-scale may provide a generalized direction, however the suitability baseline (pre-euro) is not considered an accurate baseline. The current baseline will provide better information on trends provided the data used in the analysis is sound. Based upon the management actions related to the BLM and Wyoming Sage-grouse Executive Order, the broad and mid-scale may greatly underestimate the impacts of the threats outlined in the COT report. Habitat selection and habitat use by sage-grouse occurs at multiple scales and is driven by multiple environmental and behavioral factors. Managing and monitoring sage-grouse habitats are complicated by the differences in habitat selection across the range and habitat utilization by individual birds within a given season. Therefore, the tendency to look at a single indicator of habitat suitability or only one scale limits the ability for managers to identify the threats to sage-grouse and to respond at the appropriate scale. For descriptions of these habitat suitability indicators for each scale, see the Sage-grouse Habitat Assessment Framework (HAF) (Stiver et al. *in press*).

Monitoring methods and indicators in this monitoring framework are derived from the current peer-reviewed science. Range wide best-available datasets for broad and mid-scale monitoring will be acquired. If these exiting datasets are not readily available or are inadequate, but are necessary to effectively inform the three

measurable quantitative indicators (sagebrush availability, anthropogenic disturbance levels, and sagebrush conditions), the BLM will strive to develop datasets or obtain information to fill these data gaps. Datasets that are not readily available to inform the fine and site scale indicators will be developed. These data will be used to generate monitoring reports at the appropriate and applicable geographic scales, boundaries and analysis units: across the range of sage-grouse as defined by Schroeder et al. (2004), and clipped by Western Association of Fish and Wildlife Agencies (WAFWA) Management Zone (MZ) (Stiver et al. 2006) boundaries and other areas as appropriate for size (e.g., populations based on Connelly et al. 2004; **Figure 1**). This broad and mid-scale monitoring data and analysis will provide context for ARMPA areas; states; Greater Sage-Grouse priority habitat, general habitat and other sage-grouse designated management areas; and PACs as defined in the Greater Sage-Grouse Conservation Objectives: Final Report (COT, U.S. Fish and Wildlife Service 2013). Throughout the remainder of the document, all of these areas will be referred to as "sage-grouse areas."

Figure 1. Map of Greater Sage-Grouse Range, Populations, Subpopulations and Priority Areas for Conservation as of 2013



This monitoring framework is divided into two sections. The broad- and mid-scale methods, described in the following section, provide a consistent approach across the range of the species to monitor implementation decisions and actions, mid-scale habitat attributes (e.g., sagebrush availability and habitat degradation), and population changes to determine the effectiveness of the planning strategy and management decisions. (See **Table 2**, Indicators for monitoring implementation of the national planning strategy, ARMPA decisions, sage-grouse habitat, and sage-grouse populations at the broad and mid scales.) For sage-grouse habitat at the fine

and site scales, this monitoring framework describes a consistent approach (e.g., indicators and methods) for monitoring sage-grouse seasonal habitats. Funding, support, and dedicated personnel for broad- and mid-scale monitoring will be renewed annually through the normal budget process. For an overview of BLM multiscale monitoring commitments, see Attachment A.

Table 2. Indicators for Monitoring Implementation of the Strategy, Decisions, Sage-grouse Habitat, and Sage-grouse Populations at the Broad and Mid-scales.

	Implementation	Habitat		Population (State Wildlife Agencies)
Geographic Scales		**Availability**	**Degradation**	**Demographics**
Broad Scale: From the range of sage-grouse to WAFWA Management Zones	BLM Planning Strategy goal and objectives	Distribution and amount of sagebrush within the range	Distribution and amount of energy, mining and infrastructure facilities	WAFWA Management Zone population trend
Mid-scale: From WAFWA Management Zone to populations.	An analysis of ARMPA decisions across the designated scale	Mid-scale habitat indicators (HAF 2014; **Table 3** e.g., percent of sagebrush per unit area)	Distribution and amount of energy, mining and infrastructure facilities (**Table 3**)	Individual population trend
Fine Scale: Pacs	A summary of DDCT actions related to BLM mineral and surface resources in conjunction with other ownerships	Areas that have greater than 5% sagebrush cover and non-habitat (unsuitable) that is less than 0.6miles from the suitable habitat.	Distribution and amount of anthropogenic disturbances and wildfire occurrences impacting specific PACs.	PAC Trends
Site Scale DDCT level	A summary of DDCT actions related to BLM mineral and surface resources.	The available occupied habitat using the DDCT process.	Distribution and amount of anthropogenic disturbances and wildfire occurrences impacting specific PACs.	Individual lek Trends
Broad Scale: From the range of sage-grouse to WAFWA Management Zones	BLM Planning Strategy goal and objectives	Distribution and amount of sagebrush within the range	Distribution and amount of energy, mining and infrastructure facilities	WAFWA Management Zone population trend
Mid-scale: From WAFWA Management Zone to populations. PACs	RMP decisions	Mid-scale habitat indicators (HAF 2014; **Table 3** e.g., percent of sagebrush per unit area)	Distribution and amount of energy, mining and infrastructure facilities (**Table 3**)	Individual population trend

Broad and Mid-Scales

First-order habitat selection, the broad scale, describes the physical or geographical range of a species. The first-order habitat of the sage-grouse is defined by populations of sage-grouse associated with sagebrush landscapes, based on Schroeder et al. 2004, and Connelly et al.

2004, and on population or habitat surveys since 2004. An intermediate scale between the broad and mid scales was delineated by WAFWA from floristic provinces within which similar environmental factors

influence vegetation communities. This scale is referred to as the WAFWA Sage-Grouse Management Zones (MZs). Although no indicators are specific to this scale, these MZs are biologically meaningful as reporting units.

Second-order habitat selection, the mid-scale, includes sage-grouse populations and PACs. The second order includes at least 40 discrete populations and subpopulations (Connelly et al. 2004). Populations range in area from 150 to 60,000 mi² and are nested within MZs. PACs range from 20 to 20,400 mi² and are nested within population areas.

Other mid-scale landscape indicators, such as patch size and number, patch connectivity, linkage areas, and landscape matrix and edge effects (Stiver et al. *in press*) will also be assessed. The methods used to calculate these metrics will be derived from existing literature (Knick et al. 2011, Leu and Hanser 2011, Knick and Hanser 2011).

Midscale indicators using the HAF can grossly underestimate the occupation of anthropogenic activities because of the use of 30m pixels. The HAF removes 'non-'habitat from the suitability availability. There are no parameters that are provided to protect adjacent suitable habitat from development on these non-habitat parcels, thus making the adjacent non-habitat a potential threat by indirect impacts.

The Wyoming BLM field offices will be actively participating in a fine and site scale monitoring that will more accurately reflect the impacts associated with direct and indirect effects of anthropogenic and wildfire impacts.

A. Implementation (Decision) Monitoring

Implementation monitoring is the process of tracking and documenting the implementation (or the progress toward implementation) of ARMPA decisions. The BLM will monitor implementation of project-level and/or site-specific actions and authorizations, with their associated conditions of approval/stipulations for sage-grouse, spatially (as appropriate) within Priority Habitat, General Habitat, and other sage-grouse designated management areas, at a minimum, for the Wyoming Greater Sage-Grouse ARMPA planning area. These actions and authorizations, as well as progress toward completing and implementing activity-level plans, will be monitored consistently across all planning units and will be reported to BLM headquarters annually, as well as reported to the State of Wyoming with numerical and spatial data twice a year, and a HQ summary report every 5 years, for the respective planning area. A national-level Greater Sage-Grouse Land Use Plan Decision Monitoring and Reporting Tool is being developed to describe how the BLM will consistently and systematically monitor and report implementation-level activity plans and implementation actions for all plans within the range of sage-grouse. A description of this tool for collection and reporting of tabular and spatially explicit data will be included in the Record of Decision or approved plan. The BLM will provide data that can be integrated with other conservation efforts conducted by state and federal partners.

B. Habitat (Vegetation) Monitoring

The U.S. Fish and Wildlife Service (USFWS), in its 2010 listing decision for the sage-grouse, identified 18 threats contributing to the destruction, modification, or curtailment of sage-grouse habitat or range (75 FR 13910 2010). The BLM will, therefore, monitor the relative extent of these threats that remove sagebrush, both spatially and temporally, on all lands within an analysis area, and will report on amount, pattern, and condition at the appropriate and applicable geographic scales and boundaries. These 18 threats have been aggregated into three broad- and mid-scale measures to account for whether the threat predominantly removes sagebrush or degrades habitat. (See **Table 3**, Relationship between the 18 threats and the three habitat disturbance measures for monitoring.) The three measures are:

1. Sagebrush Availability (percent of sagebrush per suitable unit area)
2. Habitat Degradation (percent of human activity per unit area)
3. Energy and Mining Density (facilities and locations per suitable unit area)

These three habitat disturbance measures will evaluate disturbance on all lands within priority habitat, regardless of land ownership. The direct area of influence will be assessed with the goal of accounting for actual removal of sagebrush on which sage-grouse depend (Connelly et al. 2000) and for habitat degradation as a surrogate for human activity. Measure 1 (sagebrush availability) examines where disturbances have removed plant communities that support sagebrush (or have broadly removed sagebrush from the landscape). Measure 1, therefore, monitors the change in sagebrush availability–or, specifically, where and how much of the sagebrush community is available on lands that can support sagebrush within the range of sage-grouse. The sagebrush community is defined as the ecological systems that have the capability of supporting sagebrush vegetation and seasonal sage-grouse habitats within the range of sage-grouse (see Section B.1., Sagebrush Availability). Measure 2 (see Section B.2., Habitat Degradation Monitoring) and Measure 3 (see Section B.3., Energy and Mining Density) focus on where habitat degradation is occurring within suitable sagebrush soils by using the footprint/area of direct disturbance and the number of facilities at the mid-scale to identify the relative amount of degradation per geographic area of interest and in areas that have the capability of supporting sagebrush and seasonal sage-grouse use. Measure 2 (habitat degradation) not only quantifies footprint/area of direct disturbance but also establishes a surrogate for those threats most likely to have ongoing activity. Because energy development and mining activities are typically the most intensive activities in sagebrush habitat, Measure 3 (the density of active energy development, production, and mining sites) will help identify areas of particular concern for such factors as noise, dust, traffic, etc. that degrade sage-grouse habitat.

Table 3. Relationship between the 18 Threats and the Three Habitat Disturbance Measures for Monitoring.

USFWS Listing Decision Threat	Sagebrush Availability	Habitat Degradation	Density of Energy and Mining
Agriculture	X		
Urbanization	X		
Wildfire	X		
Conifer encroachment	X		
Treatments	X		
Invasive Species	X		
Energy (oil and gas wells and development facilities)		X	X
Energy (coal mines)		X	X
Energy (wind towers)		X	X
Energy (solar fields)		X	X
Energy (geothermal)		X	X
Mining (active locatable, leasable, and salable developments)		X	X
Infrastructure (roads)		X	
Infrastructure (railroads)		X	
Infrastructure (power lines)		X	
Infrastructure (communication towers)		X	
Infrastructure (other vertical structures)		X	
Other developed rights of ways		X	

Data availability may preclude specific analysis of individual layers. See the detailed methodology for more information.

The methods to monitor disturbance found herein differ slightly from methods used in the Sage-Grouse Baseline Environmental Report (BER; Manier et al. 2013) that provided a baseline of datasets of disturbance

across jurisdictions. One difference is that, for some threats, the data in the BER were for federal lands only. In addition, threats were assessed individually in that report, using different assumptions from those in this monitoring framework about how to quantify the location and magnitude of threats. The methodology herein builds on the BER methodology and identifies datasets and procedures to utilize the best available data across the range of the sage-grouse and to formulate a consistent approach to quantify impact of the threats through time. This methodology also describes an approach to combine the threats and calculate the three measures.

B.1. Sagebrush Availability (Measure 1)

Sage-grouse populations have been found to be more resilient where a percentage of the landscape is maintained in sagebrush (Knick and Connelly 2011), which will be determined by sagebrush availability. Measure 1 has been divided into two sub-measures to describe sagebrush availability on the landscape:

Measure 1a: the current amount of sagebrush on the geographic area of interest, and
Measure 1b: the amount of sagebrush on the geographic area of interest compared with the amount of sagebrush the landscape of interest could ecologically support.

Measure 1a (the current amount of sagebrush on the landscape) will be calculated using this formula: [the existing updated sagebrush layer] divided by [the geographic area of interest]. The appropriate geographic areas of interest for sagebrush availability include the species' range, WAFWA MZs, populations, and PACs. In some cases these sage-grouse areas will need to be aggregated to provide an estimate of sagebrush availability with an acceptable level of accuracy.

Measure 1b (the amount of sagebrush for context within the geographic area of interest) will be calculated using this formula: [existing sagebrush divided by [pre-EuroAmerican settlement geographic extent of lands that could have supported sagebrush]. This measure will provide information to set the context for a given geographic area of interest during evaluations of monitoring data. The information could also be used to inform management options for restoration or mitigation and to inform effectiveness monitoring.

The sagebrush base layer for Measure 1 will be based on geospatial vegetation data adjusted for the threats listed in **Table 3**. The following subsections of this monitoring framework describe the methodology for determining both the current availability of sagebrush on the landscape and the context of the amount of sagebrush on the landscape at the broad and mid scales.

a. Establishing the Sagebrush Base Layer: The current geographic extent of sagebrush vegetation within the rangewide distribution of sage-grouse populations will be ascertained using the most recent version of the Existing Vegetation Type (EVT) layer in LANDFIRE (2013). LANDFIRE EVT was selected to serve as the sagebrush base layer for five reasons: 1) it is the only nationally consistent vegetation layer that has been updated multiple times since 2001; 2) the ecological systems classification within LANDFIRE EVT includes multiple sagebrush type classes that, when aggregated, provide a more accurate (compared with individual classes) and seamless sagebrush base layer across jurisdictional boundaries; 3) LANDFIRE performed a rigorous accuracy assessment from which to derive the rangewide uncertainty of the sagebrush base layer; 4) LANDFIRE is consistently used in several recent analyses of sagebrush habitats (Knick et al. 2011, Leu and Hanser 2011, Knick and Hanser 2011); and 5) LANDFIRE EVT can be compared against the geographic extent of lands that are believed to have had the capability of supporting sagebrush vegetation pre-EuroAmerican settlement [LANDFIRE Biophysical Setting (BpS)]. This fifth reason provides a reference point for understanding how much sagebrush currently remains in a defined geographic area of interest compared with how much sagebrush existed historically (Measure 1b). Therefore, the BLM has determined that LANDFIRE provides the best available data at broad and mid scales to serve as a sagebrush base layer for monitoring changes in the geographic extent of sagebrush. The BLM, in addition to aggregating the

sagebrush types into the sagebrush base layer, will aggregate the accuracy assessment reports from LANDFIRE to document the cumulative accuracy for the sagebrush base layer. The BLM-through its Assessment, Inventory, and Monitoring (AIM) program and, specifically, the BLM's landscape monitoring framework (Taylor et al. 2014)-will provide field data to the LANDFIRE program to support continuous quality improvements of the LANDFIRE EVT layer. The sagebrush layer based on LANDFIRE EVT will allow for the mid-scale estimation of the existing percent of sagebrush across a variety of reporting units. This sagebrush base layer will be adjusted by changes in land cover and successful restoration for future calculations of sagebrush availability (Measures 1a and 1b).

This layer will also be used to determine the trend in other landscape indicators, such as patch size and number, patch connectivity, linkage areas, and landscape matrix and edge effects (Stiver et al. *in press*). In the future, changes in sagebrush availability, generated annually, will be included in the sagebrush base layer. The landscape metrics will be recalculated to examine changes in pattern and abundance of sagebrush at the various geographic boundaries. This information will be included in effectiveness monitoring (See Section D., Effectiveness Monitoring).

Within the BLM, field office–wide existing vegetation classification mapping and inventories are available that provide a much finer level of data than what is provided through LANDFIRE. Where available, these finer-scale products will be useful for additional and complementary mid-scale indicators and local-scale analyses (Fine and Site Scales). The fact that these products are not available everywhere limits their utility for monitoring at the broad and mid-scale, where consistency of data products is necessary across broader geographies.

The sagebrush layer based on LANDFIRE EVT will allow for the mid-scale estimation of existing percent sagebrush across a variety of reporting units. This sagebrush base layer will be adjusted by changes in land cover and successful restoration for future calculations of sagebrush availability (Measures 1a and 1b).

This layer will be used to determine the trend in other landscape indicators, e.g. patch size and number, patch connectivity, linkage areas, and landscape matrix and edge effects (Stiver et al. in press). In the future, changes in sagebrush availability, generated bi-annually, will be included in the sagebrush base layer. The landscape metrics will be recalculated to examine changes in pattern and abundance of sagebrush at the various geographic boundaries. This information will be included in effectiveness monitoring (See Section D).

Data Sources for Establishing and Monitoring Sagebrush Availability

In much the same manner as how the LANDFIRE data was selected as the data source, described above, the criteria for selecting the datasets (**Table 4**) for establishing and monitoring the change in sagebrush availability, Measure 1, were threefold:

Nationally consistent dataset available across the range
Known level of confidence or accuracy in the dataset
Continual maintenance of dataset and known update interval

Table 4. Datasets for Establishing and Monitoring Changes in Sagebrush Availability

Dataset	Source	Update Interval	Most Recent Version Year	Use
BioPhysical Setting (BpS) v1.1	LANDFIRE	Static	2008	Denominator for Sagebrush Availability (1.b.)
Existing Vegetation Type (EVT) v1.2	LANDFIRE	Static	2010	Numerator for Sagebrush Availability

Dataset	Source	Update Interval	Most Recent Version Year	Use
Cropland Data Layer (CDL)	National Agricultural Statistics Service (NASS)	Annual	2012	Agricultural Updates; removes existing sagebrush from numerator of sagebrush availability
National Land Cover Dataset (NLCD) Percent Imperviousness	Multi-Resolution Land Characteristics Consortium (MRLC)	5 Year	2011 available in March 2014	Urban Area Updates; removes existing sagebrush from numerator of sagebrush availability
Fire Perimeters	GeoMac	Annual	2013	< 1,000 acres Fire updates; removes existing sagebrush from numerator of sagebrush availability
Burn Severity	Monitoring Trends in Burn Severity (MTBS)	Annual	2012 available in April 2014	> 1,000 acres Fire Updates; removes existing sagebrush from numerator of sagebrush availability except for unburned sagebrush islands

LANDFIRE Existing Vegetation Type (EVT) Version 1.2:

LANDFIRE EVT represents existing vegetation types on the landscape derived from remote sensing data. Initial mapping was conducted using imagery collected in approximately 2001. Since the initial mapping there have been two update efforts: version 1.1 represents changes before 2008, and version 1.2 reflects changes on the landscape before 2010. Version 1.2 will be used as the starting point to develop the sagebrush base layer.

Ecological systems from the LANDFIRE EVT to be used in the sagebrush base layer were determined by sage-grouse subject matter experts through the identification of the ecological systems that have the capability of supporting sagebrush vegetation and could provide suitable seasonal habitat for the sage-grouse (**Table 5**). Two additional vegetation types that are not ecological systems were added to the EVT and are *Artemisia tridentata* ssp. *vaseyana* Shrubland Alliance and *Quercus gambelii* Shrubland Alliance. These alliances have species composition directly related to the Rocky Mountain Lower Montane - Foothill Shrubland ecological system and the Rocky Mountain Gambel Oak-Mixed Montane Shrubland ecological system, both of which are ecological systems in LANDFIRE BpS. In LANDFIRE EVT however, in some map zones, the Rocky Mountain Lower Montane - Foothill Shrubland ecological system and the Rocky Mountain Gambel Oak-Mixed Montane Shrubland ecological system were named *Artemisia tridentata* ssp. *vaseyana* Shrubland Alliance and *Quercus gambelii* Shrubland Alliance respectively.

Table 5. Ecological Systems in BpS and EVT Capable of Supporting Sagebrush Vegetation and Could Provide Suitable Seasonal Habitat for Greater Sage-Grouse.

Ecological System	Sagebrush Vegetation that the Ecological System has the Capability to Produce
Colorado Plateau Mixed Low Sagebrush Shrubland	*Artemisia arbuscula* ssp. *longiloba* *Artemisia bigelovii* *Artemisia nova* *Artemisia frigida* *Artemisia tridentata* ssp. *wyomingensis*

Ecological System	Sagebrush Vegetation that the Ecological System has the Capability to Produce
Columbia Plateau Scabland Shrubland	*Artemisia rigida*
Great Basin Xeric Mixed Sagebrush Shrubland	*Artemisia arbuscula* ssp. *longicaulis* *Artemisia arbuscula* ssp. *longiloba* *Artemisia nova* *Artemisia tridentata* ssp. *wyomingensis*
Inter-Mountain Basins Big Sagebrush Shrubland	*Artemisia tridentata* ssp. *tridentata* *Artemisia tridentata* ssp. *xericensis* *Artemisia tridentata* ssp. *vaseyana* *Artemisia tridentata* ssp. *wyomingensis*
Inter-Mountain Basins Mixed Salt Desert Scrub	*Artemisia tridentata* ssp. *wyomingensis* *Artemisia spinescens*
Wyoming Basins Dwarf Sagebrush Shrubland and Steppe	*Artemisia arbuscula* ssp. *longiloba* *Artemisia nova* *Artemisia tridentata* ssp. *wyomingensis* *Artemisia tripartita* ssp. *rupicola*
Columbia Plateau Low Sagebrush Steppe	*Artemisia arbuscula* *Artemisia arbuscula* ssp. *longiloba* *Artemisia nova*
Inter-Mountain Basins Big Sagebrush Steppe	*Artemisia cana* ssp. *cana* *Artemisia tridentata* ssp. *tridentata* *Artemisia tridentata* ssp. *xericensis* *Artemisia tridentata* ssp. *wyomingensis* *Artemisia tripartita* ssp. *tripartita* *Artemisia frigida*
Inter-Mountain Basins Montane Sagebrush Steppe	*Artemisia tridentata* ssp. *vaseyana* *Artemisia tridentata* ssp. *wyomingensis* *Artemisia nova* *Artemisia arbuscula* *Artemisia tridentata* ssp. *spiciformis*
Northwestern Great Plains Mixed grass Prairie	*Artemisia cana* ssp. *cana* *Artemisia tridentata* ssp. *vaseyana* *Artemisia frigida*
Northwestern Great Plains Shrubland	*Artemisia cana* ssp. *cana* *Artemisia tridentata* ssp. *tridentata* *Artemisia tridentata* ssp. *wyomingensis*
Western Great Plains Sand Prairie	*Artemisia cana* ssp. *cana*
Western Great Plains Floodplain Systems	*Artemisia cana* ssp. *cana*
Columbia Plateau Steppe and Grassland	*Artemisia* spp.
Inter-Mountain Basins Semi-Desert Shrub-Steppe	*Artemisia tridentata* *Artemisia bigelovii* *Artemisia tridentata* ssp. *wyomingensis*
Rocky Mountain Lower Montane-Foothill Shrubland	*Artemisia nova* *Artemisia tridentata* *Artemisia frigida*

Ecological System	Sagebrush Vegetation that the Ecological System has the Capability to Produce
Rocky Mountain Gambel Oak-Mixed Montane Shrubland	*Artemisia tridentata*
Inter-Mountain Basins Curl-Leaf Mountain Mahogany Woodland and Shrubland	*Artemisia tridentata* ssp. *vaseyana* *Artemisia arbuscula* *Artemisia tridentata*
Artemisia tridentata ssp. *vaseyana* Shrubland Alliance (EVT only)	*Artemisia tridentata* ssp. *vaseyana*
Quercus gambelii Shrubland Alliance (EVT only)	*Artemisia tridentata*

Accuracy and Appropriate Use of LANDFIRE Datasets:

Because of concerns over the thematic accuracy of individual classes mapped by LANDFIRE, all ecological systems listed in **Table 5** will be merged into one value that represents the sagebrush base layer. With all ecological systems aggregated, the combined accuracy of the sagebrush base layer (EVT) will be much greater than if all categories were treated separately.

LANDFIRE performed the original accuracy assessment of their EVT product on a map zone basis. There are 20 LANDFIRE map zones that cover the historic range of sage-grouse as defined by Schroeder (2004). Attachment C lists the user and producer accuracies for the aggregated ecological systems that make up the sagebrush base layer and also defines user and producer accuracies. The aggregated sagebrush base layer for monitoring had producer accuracies ranging from 56.7% to 100% and user accuracies ranging from 57.1% to 85.7%.

LANDFIRE EVT data are not designed to be used at a local level. In reports of the percent sagebrush statistic for the various reporting units (Measure 1a), the uncertainty of the percent sagebrush will increase as the size of the reporting unit gets smaller. LANDFIRE data should never be used at the 30m pixel level (900m2 resolution of raster data) for any reporting. The smallest geographic extent for using the data to determine percent sagebrush is at the PAC level; for the smallest PACs, the initial percent sagebrush estimate will have greater uncertainties compared with the much larger PACs.

Agricultural Adjustments for the Sagebrush Base Layer: The dataset for the geographic extent of agricultural lands will come from the National Agricultural Statistics Service (NASS) Cropland Data Layer (CDL) (http://www.nass.usda.gov/research/Cropland/Release/index.htm). CDL data are generated annually, with estimated producer accuracies for "large area row crops ranging from the mid 80% to mid-90%," depending on the state (http://www.nass.usda.gov/research/Cropland/sarsfaqs2.htm#Section3_18.0). Specific information on accuracy may be found on the NASS metadata website (http://www.nass.usda.gov/research/Cropland/metadata/meta.htm). CDL provided the only dataset that matches the three criteria (nationally consistent, known level of accuracy, and periodically updated) for use in this monitoring framework and represents the best available agricultural lands mapping product.

The CDL data contain both agricultural classes and nonagricultural classes. For this effort, and in the baseline environmental report (Manier et al. 2013), nonagricultural classes were removed from the original dataset. The excluded classes are: Barren (65 & 131), Deciduous Forest (141), Developed/High Intensity (124), Developed/Low Intensity (122), Developed/Med Intensity (123), Developed/Open Space (121), Evergreen Forest (142), Grassland Herbaceous (171), Herbaceous Wetlands (195), Mixed Forest (143), Open Water (83 & 111), Other Hay/Non Alfalfa (37), Pasture/Hay (181), Pasture/Grass (62), Perennial Ice/Snow (112), Shrubland (64 & 152), Woody Wetlands (190).

The rule set for adjusting the sagebrush base layer for agricultural lands (and for updating the base layer for agricultural lands in the future) is that once an area is classified as agriculture in any year of the CDL, those

pixels will remain out of the sagebrush base layer even if a new version of the CDL classifies that pixel as one of the nonagricultural classes listed above. The assumption is that even though individual pixels may be classified as a nonagricultural class in any given year, the pixel has not necessarily been restored to a natural sagebrush community that would be included in **Table 5**. A further assumption is that once an area has moved into agricultural use, it is unlikely that the area would be restored to sagebrush. Should that occur, however, the method and criteria for adding pixels back into the sagebrush base layer would follow those found in the sagebrush restoration monitoring section of this monitoring framework

Urban Adjustments for the Sagebrush Base Layer

The National Land Cover Dataset (NLCD) Percent Imperviousness was selected as the best available dataset to be used for urban updates. These data are generated on a five-year cycle and specifically designed to support monitoring efforts. Other datasets were evaluated and lacked the spatial specificity that was captured in the NLCD product. Any new impervious pixel will be removed from the sagebrush base layer during the update process. Although the impervious surface layer includes a number of impervious pixels outside of urban areas, there are two reasons why this is acceptable for this process. First, an evaluation of national urban area datasets did not reveal a layer that could be confidently used in conjunction with the NLCD product to screen impervious pixels outside of urban zones because unincorporated urban areas were not being included thus leaving large chunks of urban pixels unaccounted for in this rule set. Secondly, experimentation with setting a threshold on the percent imperviousness layer that would isolate rural features proved to be unsuccessful. No combination of values could be identified that would result in the consistent ability to limit impervious pixels outside urban areas. Therefore, to ensure consistency in the monitoring estimates, it was determined to include all impervious pixels.

Fire Adjustments for the Sagebrush Base Layer:

Two datasets were selected for performing fire adjustments and updates: GeoMac fire perimeters and Monitoring Trends in Burn Severity (MTBS). An existing data standard in the BLM requires that all fires of more than 10 acres are to be reported to GeoMac; therefore, there will be many small fires of less than 10 acres that will not be accounted for in the adjustment and monitoring attributable to fire. Using fire perimeters from GeoMac, all sagebrush pixels falling within the perimeter of fires less than 1,000 acres will be used to adjust and monitor the sagebrush base layer.

For fires greater than 1,000 acres, MTBS was selected as a means to account for unburned sagebrush islands during the update process of the sagebrush base layer. The MTBS program (http://www.mtbs.gov) is an ongoing, multiyear project to map fire severity and fire perimeters consistently across the United States. One of the burn severity classes within MTBS is an unburned to low-severity class. This burn severity class will be used to represent unburned islands of sagebrush within the fire perimeter for the sagebrush base layer. Areas within the other severity classes within the fire perimeter will be removed from the base sagebrush layer during the update process. Not all wildfires, however, have the same impacts on the recovery of sagebrush habitat, depending largely on soil moisture and temperature regimes. For example, cooler, moister sagebrush habitat has a higher potential for recovery or, if needed, restoration than does the warmer, dryer sagebrush habitat. These cooler, moister areas will likely be detected as sagebrush in future updates to LANDFIRE.

Conifer Encroachment Adjustment for the Sagebrush Base Layer:

Conifer encroachment into sagebrush vegetation reduces the spatial extent of sage-grouse habitat (Davies et al. 2011, Baruch-Mordo et al. 2013). Conifer species that show propensity for encroaching into sagebrush vegetation resulting in sage-grouse habitat loss include various juniper species, such as Utah juniper (*Juniperus osteosperma*), western juniper (*Juniperus occidentalis*), Rocky Mountain juniper (*Juniperus scopulorum*), pinyon species, including singleleaf pinyon (*Pinus monophylla*) and pinyon pine (*Pinus edulis*), ponderosa pine (*Pinus ponderosa*), lodgepole pine (*Pinus contorta*), and Douglas fir (*Pseudotsuga menziesii*) (Gruell et al. 1986, Grove et al. 2005, Davies et al. 2011).

A rule set for conifer encroachment was developed to be used for determination of the existing sagebrush base layer. To capture the geographic extent of sagebrush that is likely to experience conifer encroachment,

ecological systems within LANDFIRE EVT version 1.2 (NatureServe 2011) were identified if they have the capability of supporting the conifer species (listed above) and have the capability of supporting sagebrush vegetation. Those ecological systems (**Table 6**) were deemed to be the plant communities with conifers most likely to encroach into sagebrush vegetation. Sagebrush vegetation was defined as including sagebrush species (Attachment B) that provide habitat for the Greater Sage-Grouse and are included in the Sage-Grouse Habitat Assessment Framework. An adjacency analysis was conducted to identify all sagebrush pixels that were directly adjacent to these conifer ecological systems and these immediately adjacent sagebrush pixels were removed from the sagebrush base layer.

Table 6. Ecological Systems with Conifers Most Likely to Encroach into Sagebrush Vegetation

EVT Ecological Systems	Coniferous Species and Sagebrush Vegetation that the Ecological System has the Capability to Produce
Colorado Plateau Pinyon-Juniper Woodland	*Pinus edulis* *Juniperus osteosperma* *Artemisia tridentata* *Artemisia arbuscula* *Artemisia nova* *Artemisia tridentata ssp. tridentata* *Artemisia tridentata ssp. wyomingensis* *Artemisia tridentata ssp. vaseyana* *Artemisia bigelovii* *Artemisia pygmaea*
Columbia Plateau Western Juniper Woodland and Savanna	*Juniperus occidentalis* *Pinus ponderosa* *Artemisia tridentata* *Artemisia arbuscula* *Artemisia rigida* *Artemisia tridentata ssp. vaseyana*
East Cascades Oak-Ponderosa Pine Forest and Woodland	*Pinus ponderosa* *Pseudotsuga menziesii* *Artemisia tridentata* *Artemisia nova*
Great Basin Pinyon-Juniper Woodland	*Pinus monophylla* *Juniperus osteosperma* *Artemisia arbuscula* *Artemisia nova* *Artemisia tridentata* *Artemisia tridentata ssp. vaseyana*
Northern Rocky Mountain Ponderosa Pine Woodland and Savanna	*Pinus ponderosa* *Artemisia tridentata* *Artemisia arbuscula* *Artemisia tridentata ssp. vaseyana*
Rocky Mountain Foothill Limber Pine-Juniper Woodland	*Juniperus osteosperma* *Juniperus scopulorum* *Artemisia nova* *Artemisia tridentata*

EVT Ecological Systems	Coniferous Species and Sagebrush Vegetation that the Ecological System has the Capability to Produce
Rocky Mountain Poor-Site Lodgepole Pine Forest	*Pinus contorta* *Pseudotsuga menziesii* *Pinus ponderosa* *Artemisia tridentata*
Southern Rocky Mountain Pinyon-Juniper Woodland	*Pinus edulis* *Juniperus monosperma* *Artemisia bigelovii* *Artemisia tridentata* *Artemisia tridentata ssp. wyomingensis* *Artemisia tridentata ssp.vaseyana*
Southern Rocky Mountain Ponderosa Pine Woodland	*Pinus ponderosa* *Pseudotsuga menziesii* *Pinus edulis* *Pinus contorta* *Juniperus spp.* *Artemisia nova* *Artemisia tridentata* *Artemisia arbuscula* *Artemisia tridentata ssp. vaseyana*

Invasive Annual Grasses Adjustments for the Sagebrush Base Layer: There are no invasive species datasets from 2010 to the present (beyond the LANDFIRE data) that meet the three criteria (nationally consistent, known level of accuracy, and periodically updated) for use in the determination of the sagebrush base layer. For a description of how invasive species land cover will be incorporated in the sagebrush base layer in the future, see Monitoring Sagebrush Availability.

Sagebrush Restoration Adjustments for the Sagebrush Base Layer: There are no datasets from 2010 to the present that could provide additions to the sagebrush base layer from restoration treatments that meet the three criteria (nationally consistent, known level of accuracy, and periodically updated); therefore, no adjustments were made to the sagebrush base layer calculated from the LANDFIRE EVT (version 1.2) attributable to restoration activities since 2010. Successful restoration treatments before 2010 are assumed to have been captured in the LANDFIRE refresh.

a. Monitoring Sagebrush Availability

Updating the Sagebrush Availability Sagebrush Base Layer

Sagebrush availability will be updated annually by incorporating changes to the sagebrush base layer attributable to agriculture, urbanization, and wildfire. The monitoring schedule for the existing sagebrush base layer updates is as follows:

2010 Existing Sagebrush Base Layer = [Sagebrush EVT] minus [2006 Imperviousness Layer] minus [2009 and 2010 CDL] minus [2009/10 GeoMac Fires < 1,000 acres] minus [2009/10 MTBS Fires excluding unburned sagebrush islands] minus [Conifer Encroachment Layer]

2012 Existing Sagebrush Update = [Base 2010 Existing Sagebrush Layer] minus [2011 Imperviousness Layer] minus [2011 and 2012 CDL] minus [2011/12 GeoMac Fires < 1,000 acres] minus [2011/12 MTBS Fires that are greater than 1,000 acres, excluding unburned sagebrush islands within the perimeter]

2013 and beyond Existing Sagebrush Updates = [Previous Existing Sagebrush Update Layer] minus [Imperviousness Layer (if new data are available)] minus [Next 2 years of CDL] minus [Next 2 years of GeoMac Fires < 1,000 acres] minus [Next 2 years MTBS Fires that are greater than 1,000 acres, excluding unburned sagebrush islands within the perimeter] plus [restoration/monitoring data provided by the field]

Sagebrush Restoration Updates

Restoration after fire, after agricultural conversion, after seedings of introduced grasses, or after treatments of pinyon pine and/or juniper, are examples of updates to the sagebrush base layer that can add sagebrush vegetation back in. When restoration has been determined to be successful through range wide, consistent, interagency fine and site-scale monitoring, the polygonal data will be used to add sagebrush pixels back into the broad and mid-scale sagebrush base layer.

Measure 1b – Context for the change in the amount of sagebrush in a landscape of interest

Measure 1b describes the amount of sagebrush on the landscape of interest compared with the amount of sagebrush the landscape of interest could ecologically support. Areas with the potential to support sagebrush were derived from the BpS data layer that describes sagebrush pre Euro-American settlement (biophysical setting (BpS) v1.2 of LANDFIRE). This measure (1b) will provide information during evaluations of monitoring data to set the context for a given geographic area of interest. The information could also be used to inform management options for restoration, mitigation and inform effectiveness monitoring.

The identification and spatial locations of natural plant communities (vegetation) that are believed to have existed on the landscape (BpS) were constructed based on an approximation of the historical (pre Euro-American settlement) disturbance regime and how the historical disturbance regime operated on the current biophysical environment. BpS is composed of map units which are based on NatureServe's (2011) terrestrial ecological systems classification.

The ecological systems within BpS used for this monitoring framework are those ecological systems that have the capability of supporting sagebrush vegetation and could provide seasonal habitat for the sage-grouse. These ecological systems are listed in **Table 5** with the exception of the *Artemisia tridentata* ssp. *vaseyana* Shrubland Alliance and the *Quercus gambelii* Shrubland Alliance. Ecological systems selected included sagebrush species or subspecies that are included in the Sage-Grouse Habitat Assessment Framework and are found in Attachment B.

Attributable to the lack of any reference data, the BpS layer does not have an associated accuracy assessment. Visual inspection, however, of the BpS data reveals inconsistencies in the labeling of pixels among LANDFIRE map zones. The reason for these inconsistencies between map zones are the decision rules used to map a given ecological system will vary between map zones based on different physical, biological, disturbance and atmospheric regimes of the region. This can result in artificial edges in the map that are an artifact of the mapping process. However, metrics will be calculated at broad spatial scales using BpS potential vegetation type, not small groupings or individual pixels, therefore, the magnitude of these observable errors in the BpS layer is minor compared with the size of the reporting units. Therefore, since BpS will be used to identify broad landscape patterns of dominant vegetation, these inconsistencies will only have a minor impact on the percent sagebrush availability calculation.

LANDFIRE BpS data are not designed to be used at a local level. In reporting the percent sagebrush statistic for the various reporting units, the uncertainty of the percent sagebrush will increase as the size of the reporting unit gets smaller. LANDFIRE data should never be used at the pixel level (30m2) for any reporting. The smallest geographic extent use of the data for this purpose is at the PAC level and for the smallest PACs the initial percent sagebrush remaining estimate will have greater uncertainties compared with the much larger PACs.

Tracking

BLM will analyze and monitor sagebrush availability (Measure 1) on a bi-annual basis and it will be used to inform effectiveness monitoring and initiate adaptive management actions as necessary. The 2010 estimate of sagebrush availability will serve as the base year and an updated estimate for 2012 will be reported in 2014 after all datasets become available. The 2012 estimate will capture changes attributable to fire, agriculture, and urban development. Subsequent updates will always include new fire and agricultural data and new urban data when available. Restoration data that meets criteria of adding sagebrush areas back into the sagebrush base layer will begin to be factored in as data allows. Attributable to data availability, there will be a two year lag (approximately) between when the estimate is generated and when the data used for the estimate becomes available (e.g., the 2014 sagebrush availability will be included in the 2016 estimate).

Future Plans

Geospatial data used to generate the sagebrush base layer will be available through BLM's EGIS Web Portal and Geospatial Gateway or through the authoritative data source. Legacy datasets will be preserved, so that trends may be calculated. Additionally, accuracy assessment data for all source datasets will be provided on the portal either spatially, where applicable, or through the metadata. Accuracy assessment information was deemed vital to share to help users understand the limitation of the sagebrush estimates and will be summarized spatially by map zone and included in the Portal.

LANDFIRE plans to begin a remapping effort in 2015. This remapping has the potential to greatly improve overall quality of the data products primarily through the use of higher quality remote sensing datasets. Additionally, BLM and the Multi-Resolution Land Characteristics Consortium (MRLC) are working to improve the accuracy of vegetation map products for broad and mid-scale analyses through the Grass/Shrub mapping effort in partnership with the MRLC. The Grass/Shrub mapping effort applies the Wyoming multi-scale sagebrush habitat methodology (Homer et al. 2009) to spatially depict fractional percent cover estimates for five components range and west-wide. These five components are percent cover of sagebrush vegetation, percent bare ground, percent herbaceous vegetation (grass and forbs combined), annual vegetation, and percent shrubs. One of the benefits of the design of these fractional cover maps is that they facilitate monitoring "within" class variation (e.g., examination of declining trend in sagebrush cover for individual pixels). This "within" class variation can serve as one indicator of sagebrush quality that cannot be derived from LANDFIRE's EVT information. The Grass/Shrub effort is not a substitute for fine scale monitoring, but will leverage fine scale data to support the validation of the mapping products. An evaluation will be conducted to determine if either dataset is of great enough quality to warrant replacing the existing sagebrush layers. The earliest possible date for this evaluation will not occur until 2018 or 2019 depending on data availability.

B.2. Habitat Degradation Monitoring (Measure 2)

The measure of habitat degradation will be calculated by combining the footprints of threats identified in **Table 3**. The footprint is defined as the direct area of influence of "active" energy and infrastructure; it is used as a surrogate for human activity. Although these analyses will try to summarize results at the aforementioned meaningful geographic areas of interest, some may be too small to report the metrics appropriately and may be combined (smaller populations, PACs within a population, etc.). Data sources for each threat are found in **Table 7**, Geospatial Data Sources for Habitat Degradation. Specific assumptions (inclusion criteria for data, width/area assumptions for point and line features, etc.) and methodology for each threat, and the combined measure, are detailed below. All datasets will be updated annually to monitor broad- and mid-scale year-to-year changes and to calculate trends in habitat degradation to inform adaptive management. A 5-year summary report will be provided to the USFWS.

a. Habitat Degradation Datasets and Assumptions

Energy (oil and gas wells and development facilities) **–** This dataset will compile information from three oil and gas databases: the proprietary IHS Enerdeq database, the BLM Automated Fluid Minerals Support System (AFMSS) database, and the proprietary Platts (a McGraw-Hill Financial Company) GIS Custom Data (hereafter, Platts) database of power plants. Point data from wells active within the last 10 years from IHS and

producing wells from AFMSS will be considered as a 5-acre (2.0ha) direct area of influence centered on the well point, as recommended by the BLM WO-300 (Minerals and Realty Management). Plugged and abandoned wells will be removed if the date of well abandonment was before the first day of the reporting year (i.e., for the 2015 reporting year, a well must have been plugged and abandoned by 12/31/2014 to be removed). Platts oil and gas power plants data (subset to operational power plants) will also be included as a 5-acre (2.0ha) direct area of influence.

Additional Measure: Reclaimed Energy-related Degradation. This dataset will include those wells that have been plugged and abandoned. This measure thereby attempts to measure energy-related degradation that has been reclaimed but not necessarily fully restored to sage-grouse habitat. This measure will establish a baseline by using wells that have been plugged and abandoned within the last 10 years from the IHS and AFMSS datasets. Time lags for lek attendance in response to infrastructure have been documented to be delayed 2–10 years from energy development activities (Harju et al. 2010). Reclamation actions may require 2 or more years from the Final Abandonment Notice. Sagebrush seedling establishment may take 6 or more years from the point of seeding, depending on such variables as annual precipitation, annual temperature, and soil type and depth (Pyke 2011). This 10-year period is conservative and assumes some level of habitat improvement 10 years after plugging. Research by Hemstrom et al. (2002), however, proposes an even longer period—more than 100 years—for recovery of sagebrush habitats, even with active restoration approaches. Direct area of influence will be considered 3 acres (1.2ha) (J. Perry, personal communication, February 12, 2014). This additional layer/measure could be used at the broad and mid-scale to identify areas where sagebrush habitat and/or potential sagebrush habitat is likely still degraded. This layer/measure could also be used where further investigation at the fine or site scale would be warranted to: 1) quantify the level of reclamation already conducted, and 2) evaluate the amount of restoration still required for sagebrush habitat recovery. At a particular level (e.g., population, PACs), these areas and the reclamation efforts/success could be used to inform reclamation standards associated with future developments. Once these areas have transitioned from reclamation standards to meeting restoration standards, they can be added back into the sagebrush availability layer using the same methodology as described for adding restoration treatment areas lost to wildfire and agriculture conversion (see Monitoring Sagebrush Restoration in Monitoring Sagebrush Availability). This dataset will be updated annually from the IHS dataset.

Energy (coal mines) **–** Currently, there is no comprehensive dataset available that identifies the footprint of active coal mining across all jurisdictions. Therefore, point and polygon datasets will be used each year to identify coal mining locations. Data sources will be identified and evaluated annually and will include at a minimum: BLM coal lease polygons, U.S. Energy Information Administration mine occurrence points, U.S. Office of Surface Mining Reclamation and Enforcement coal mining permit polygons (as available), and U.S. Geological Survey (USGS) Mineral Resources Data System mine occurrence points. These data will inform where active coal mining may be occurring. Additionally, coal power plant data from Platts power plants database (subset to operational power plants) will be included. Aerial imagery will then be used to digitize manually the active coal mining and coal power plants surface disturbance in or near these known occurrence areas. While the date of aerial imagery varies by scale, the most current data available from Esri and/or Google will be used to locate (generally at 1:50,000 and below) and digitize (generally at 1:10,000 and below) active coal mine and power plant direct area of influence. Coal mine location data source and imagery date will be documented for each digitized coal polygon at the time of creation. Subsurface facility locations (polygon or point location as available) will also be collected if available, included in density calculations, and added to the active surface activity layer as appropriate (if an actual direct area of influence can be located).

Energy (wind energy facilities) **–** This dataset will be a subset of the Federal Aviation Administration (FAA) Digital Obstacles point file. Points where "Type_" = "WINDMILL" will be included. Direct area of influence of these point features will be measured by converting to a polygon dataset as a direct area of influence of 3 acres (1.2ha) centered on each tower point. See the BLM's "Wind Energy Development Programmatic Environmental Impact Statement" (BLM 2005). Additionally, Platts power plants database will be used for transformer stations associated with wind energy sites (subset to operational power plants), also with a 3-acre (1.2ha) direct area of influence.

Energy (solar energy facilities) **–** This dataset will include solar plants as compiled with the Platts power plants database (subset to operational power plants). This database includes an attribute that indicates the operational capacity of each solar power plant. Total capacity at the power plant was based on ratings of the in-service unit(s), in megawatts. Direct area of influence polygons will be centered over each point feature representing 7.3ac (3.0ha) per megawatt of the stated operational capacity, per the report of the National Renewable Energy Laboratory (NREL), "Land-Use Requirements for Solar Power Plants in the United States" (Ong et al. 2013).

Energy (geothermal energy facilities) **–** This dataset will include geothermal wells in existence or under construction as compiled with the IHS wells database and power plants as compiled with the Platts database (subset to operational power plants). Direct area of influence of these point features will be measured by converting to a polygon dataset of 3 acres (1.2ha) centered on each well or power plant point.

Mining (active developments; locatable, leasable, salable) **–** This dataset will include active locatable mining locations as compiled with the proprietary InfoMine database. Aerial imagery will then be used to digitize manually the active mining surface disturbance in or near these known occurrence areas. While the date of aerial imagery varies by scale, the most current data available from Esri and/or Google will be used to locate (generally at 1:50,000 and below) and digitize (generally at 1:10,000 and below) active mine direct area of influence. Mine location data source and imagery date will be documented for each digitized polygon at the time of creation. Currently, there are no known compressive databases available for leasable or salable mining sites beyond coal mines. Other data sources will be evaluated and used as they are identified or as they become available. Point data may be converted to polygons to represent direct area of influence unless actual surface disturbance is available.

Infrastructure (roads) **–** This dataset will be compiled from the proprietary Esri StreetMap Premium for ArcGIS. Dataset features that will be used are: Interstate Highways, Major Roads, and Surface Streets to capture most paved and "crowned and ditched" roads while not including "two-track" and 4-wheel-drive routes. These minor roads, while not included in the broad- and mid-scale monitoring, may support a volume of traffic that can have deleterious effects on sage-grouse leks. It may be appropriate to consider the frequency and type of use of roads in a NEPA analysis for a proposed project. This fine- and site-scale analysis will require more site-specific data than is identified in this monitoring framework. The direct area of influence for roads will be represented by 240.2ft, 84.0ft, and 40.7ft (73.2m, 25.6m, and 12.4m) total widths centered on the line feature for Interstate Highways, Major Roads, and Surface Streets, respectively (Knick et al. 2011). The most current dataset will be used for each monitoring update. Note: This is a related but different dataset than what was used in BER (Manier et al. 2013). Individual BLM planning units may use different road layers for fine- and site-scale monitoring.

Infrastructure (railroads) **–** This dataset will be a compilation from the Federal Railroad Administration Rail Lines of the USA dataset. Non-abandoned rail lines will be used; abandoned rail lines will not be used. The direct are of influence for railroads will be represented by a 30.8ft (9.4m) total width (Knick et al. 2011) centered on the non-abandoned railroad line feature.

Infrastructure (power lines) **–** This line dataset will be derived from the proprietary Platts transmission lines database. Linear features in the dataset attributed as "buried" will be removed from the disturbance calculation. Only "In Service" lines will be used; "Proposed" lines will not be used. Direct area of influence will be determined by the kV designation: 1–199 kV (100ft/30.5m), 200–399 kV (150ft/45.7m), 400–699 kV (200ft/61.0m), and 700-or greater kV (250ft/76.2m) based on average right-of-way and structure widths, according to BLM WO-300 (Minerals and Realty Management).

Infrastructure (communication towers) **–** This point dataset will be compiled from the Federal Communications Commission (FCC) communication towers point file; all duplicate points will be removed. It will be converted to a polygon dataset by using a direct area of influence of 2.5 acres (1.0ha) centered on each communication tower point (Knick et al. 2011).

Infrastructure (other vertical structures) **–** This point dataset will be compiled from the FAA's Digital Obstacles point file. Points where "Type_" = "WINDMILL" will be removed. Duplicate points from the FCC communication towers point file will be removed. Remaining features will be converted to a polygon dataset using a direct area of influence of 2.5 acres (1.0ha) centered on each vertical structure point (Knick et al. 2011).

Other Developed Rights-of-Way **–** Currently, no additional data sources for other rights-of-way have been identified; roads, power lines, railroads, pipelines, and other known linear features are represented in the categories described above. The newly purchased IHS data do contain pipeline information; however, this database does not currently distinguish between above-ground and underground pipelines. If additional features representing human activities are identified, they will be added to monitoring reports using similar assumptions to those used with the threats described above.

b. Habitat Degradation Threat Combination and Calculation

The threats targeted for measuring human activity (**Table 3**) will be converted to direct area of influence polygons as described for each threat above. These threat polygon layers will be combined and features dissolved to create one overall polygon layer representing footprints of active human activity in the range of sage-grouse. Individual datasets, however, will be preserved to indicate which types of threats may be contributing to overall habitat degradation. This measure has been divided into three submeasures to describe habitat degradation on the landscape. Percentages will be calculated as follows:

Measure 2a. Footprint by geographic area of interest: Divide area of the active/direct footprint by the total area of the geographic area of interest (% disturbance in geographic area of interest).

Measure 2b. Active/direct footprint by historical sagebrush potential: Divide area of the active footprint that coincides with areas with historical sagebrush potential (BpS calculation from habitat availability) within a given geographic area of interest by the total area with sagebrush potential within the geographic area of interest (% disturbance on potential historical sagebrush in geographic area of interest).

Measure 2c. Active/direct footprint by current sagebrush: Divide area of the active footprint that coincides with areas of existing sagebrush (EVT calculation from habitat availability) within a given geographic area of interest by the total area that is current sagebrush within the geographic area of interest (% disturbance on current sagebrush in geographic area of interest).

Table 7. Geospatial Data Sources for Habitat Degradation (Measure 2)

Degradation Type	Subcategory	Data Source	Direct Area of Influence	Area Source
Energy (oil & gas)	Wells	IHS; BLM (AFMSS)	5.0ac (2.0ha)	BLM WO-300
	Power Plants	Platts (power plants)	5.0ac (2.0ha)	BLM WO-300
Energy (coal)	Mines	BLM; Forest Service; Office of Surface Mining Reclamation and Environment; USGS Mineral Resources Data System	Polygon area (digitized)	Esri/ Google Imagery
	Power Plants	Platts (power plants)	Polygon area (digitized)	Esri Imagery

Degradation Type	Subcategory	Data Source	Direct Area of Influence	Area Source
Energy (wind)	Wind Turbines	Federal Aviation Administration	3.0ac (1.2ha)	BLM WO-300
	Power Plants	Platts (power plants)	3.0ac (1.2ha)	BLM WO-300
Energy (solar)	Fields/Power Plants	Platts (power plants)	7.3ac (3.0 ha)/MW	NREL
Energy (geothermal)	Wells	IHS	3.0ac (1.2ha)	BLM WO-300
	Power Plants	Platts (power plants)	Polygon area (digitized)	Esri Imagery
Mining	Locatable Developments	InfoMine	Polygon area (digitized)	Esri Imagery
Infrastructure (roads)	Surface Streets (Minor Roads)	Esri StreetMap Premium	40.7 ft. (12.4m)	USGS
	Major Roads	Esri StreetMap Premium	84.0 ft. (25.6m)	USGS
	Interstate Highways	Esri StreetMap Premium	240.2 ft. (73.2m)	USGS
Infrastructure (railroads)	ActiveLines	Federal Railroad Administration	30.8 ft. (9.4m)	USGS
Infrastructure (powerlines)	1-199 kV Lines	Platts (transmission lines)	100 ft. (30.5 m)	BLM WO-300
	200-399 kV Lines	Platts (transmission lines)	150 ft. (45.7m)	BLM WO-300
	400-699 kV Lines	Platts (transmission lines)	200 ft. (61.0m)	BLM WO-300
	700+ kV Lines	Platts (transmission lines)	250 ft. (76.2m)	BLM WO-300
Infrastructure (communication	Towers	Federal Communications Commission	2.5 ac (1.0 ha)	BLM WO-300

B.3. Energy and Mining Density (Measure 3)

The measure of density of energy and mining will be calculated by combining the locations of energy and mining threats identified in **Table 3**. This measure will provide an estimate of the intensity of human activity or the intensity of habitat degradation. The number of energy facilities and mining locations will be summed and divided by the area of meaningful geographic areas of interest to calculate density of these activities. Data sources for each threat are found in **Table 7**. Specific assumptions (inclusion criteria for data, width/area assumptions for point and line features, etc.) and methodology for each threat, and the combined measure, are detailed below. All datasets will be updated annually to monitor broad- and mid-scale year-to-year changes and 5-year (or longer) trends in habitat degradation.

a. Energy and Mining Density Datasets and Assumptions

Energy (oil and gas wells and development facilities) (See Section B.2., Habitat Degradation Monitoring.)

Energy (coal mines) (See Section B.2., Habitat Degradation Monitoring.)

Energy (wind energy facilities) (See Section B.2., Habitat Degradation Monitoring.) ***Energy (solar energy facilities)*** (See Section B.2., Habitat Degradation Monitoring.) ***Energy (geothermal energy facilities)*** (See Section B.2., Habitat Degradation Monitoring.) ***Mining (active developments; locatable, leasable, salable)*** (See Section B.2., Habitat Degradation Monitoring.)

b. Energy and Mining Density Threat Combination and Calculation

Datasets for energy and mining will be collected in two primary forms: point locations (e.g., wells) and polygon areas (e.g., surface coal mining). The following rule set will be used to calculate density for meaningful geographic areas of interest including standard grids and per polygon:

1. Point locations will be preserved; no additional points will be removed beyond the methodology described above. Energy facilities in close proximity (an oil well close to a wind tower) will be retained.

2. Polygons will not be merged, or features further dissolved. Thus, overlapping facilities will be retained, such that each individual threat will be a separate polygon data input for the density calculation.

3. The analysis unit (polygon or 640-acre section in a grid) will be the basis for counting the number of mining or energy facilities per unit area. Within the analysis unit, all point features will be summed, and any individual polygons will be counted as one (e.g., a coal mine will be counted as one facility within population). Where polygon features overlap multiple units (polygons or pixels), the facility will be counted as one in each unit where the polygon occurs (e.g., a polygon crossing multiple 640-acre sections would be counted as one in each 640-acre section for a density per 640-acre-section calculation).

4. In methodologies with different-sized units (e.g., MZs, populations, etc.) raw facility counts will be converted to densities by dividing the raw facility counts by the total area of the unit. Typically this will be measured as facilities per 640 acres.

5. For uniform grids, raw facility counts will be reported. Typically this number will also be converted to facilities per 640 acres.

6. Reporting may include summaries beyond the simple ones above. Zonal statistics may be used to smooth smaller grids to help display and convey information about areas within meaningful geographic areas of interest that have high levels of energy and/or mining activity.

7. Additional statistics for each defined unit may also include adjusting the area to include only the area with the historical potential for sagebrush (BpS) or areas currently sagebrush (EVT).

Individual datasets and threat combination datasets for habitat degradation will be available through the BLM's EGIS web portal and geospatial gateway. Legacy datasets will be preserved so that trends may be calculated.

C. Population (Demographics) Monitoring

State wildlife management agencies are responsible for monitoring sage-grouse populations within their respective states. WAFWA will coordinate this collection of annual population data by state agencies. These data will be made available to the BLM according to the terms of the forthcoming Greater Sage-Grouse Population Monitoring Memorandum of Understanding (MOU) (2014) between WAFWA and the BLM. The MOU outlines a process, timeline, and responsibilities for regular data sharing of sage-grouse population and/or habitat information for the purposes of implementing sage-grouse ARMPA and subsequent effectiveness monitoring. Population areas were refined from the "Greater Sage-Grouse (*Centrocercus urophasianus*) Conservation Objectives: Final Report" (COT 2013) by individual state wildlife agencies to

create a consistent naming nomenclature for future data analyses. These population data will be used for analysis at the applicable scale to supplement habitat effectiveness monitoring of management actions and to inform the adaptive management responses.

D. Effectiveness Monitoring

Effectiveness monitoring will provide the data needed to evaluate BLM actions toward reaching the objective of the national planning strategy (BLM IM 2012-044) – to conserve sage-grouse populations and their habitat– and the objectives for the land use planning area. Effectiveness monitoring methods described here will encompass multiple larger scales, from areas as large as the WAFWA MZ to the scale of the ARMPA. Effectiveness data used for these larger-scale evaluations will include all lands in the area of interest, regardless of surface ownership/management, and will help inform where finer-scale evaluations are needed, such as population areas smaller than an RMP or PACs within an RMP (described in Fine and Site Scales). Data will also include the trend of disturbance within these areas of interest to inform the need to initiate adaptive management responses as described in the ARMPA.

The BLM will coordinate with the State of Wyoming in evaluating the compliance of all actions within a sage-grouse core area. Evaluation of current disturbance, disruptions and conservation actions within a SG core area will be conducted to determine if all entities are in compliance with their specific standards and whether or not it indeed has not caused declines of sage-grouse populations. This approach also helps focus scarce resources to areas experiencing habitat loss, degradation, or population declines, without excluding the possibility of concurrent, finer-scale evaluations as needed where habitat or population anomalies have been identified through some other means.

To determine the effectiveness of the sage-grouse national planning strategy, the BLM will evaluate the answers to the following questions and prepare a broad- and mid-scale effectiveness report:

1. Sagebrush Availability and Condition:

    a. What is the amount of sagebrush availability and the change in the amount and condition of sagebrush?

    b. What is the existing amount of sagebrush on the landscape and the change in the amount relative to the pre-EuroAmerican historical distribution of sagebrush (BpS)?

    c. What is the trend and condition of the indicators describing sagebrush characteristics important to sage-grouse?

2. Habitat Degradation and Intensity of Activities:

    a. What is the amount of habitat degradation and the change in that amount?

    b. What is the intensity of activities and the change in the intensity?

    c. What is the amount of reclaimed energy-related degradation and the change in the amount?

    d. What is the population estimation of sage-grouse and the change in the population estimation?

3. How is the BLM contributing to changes in the amount of sagebrush?

4. How is the BLM contributing to disturbance?

The compilation of broad- and mid-scale data (and population trends as available) into an effectiveness monitoring report will occur on a 5-year reporting schedule (see Attachment A), which may be accelerated to respond to critical emerging issues (in consultation with the USFWS and state wildlife agencies). In addition,

effectiveness monitoring results will be used to identify emerging issues and research needs and inform the BLM adaptive management strategy (Section 6 of this appendix).

To determine the effectiveness of the sage-grouse objectives of the land use plan, the BLM will evaluate the answers to the following questions and prepare a plan effectiveness report:

1. Is this plan meeting the sage-grouse habitat objectives?

2. Are sage-grouse areas within the ARMPA meeting, or making progress toward meeting, land health standards, including the Special Status Species/wildlife habitat standard?

3. Is the plan meeting the disturbance objective(s) within sage-grouse areas?

4. Are the sage-grouse populations within this plan boundary and within the sage-grouse areas increasing, stable, or declining?

The effectiveness monitoring report for this ARMPA will occur on a 5-year reporting schedule (see Attachment A) or more often if habitat or population anomalies indicate the need for an evaluation to facilitate adaptive management or respond to critical emerging issues. Data will be made available through the BLM's EGIS web portal and the geospatial gateway.

Methods

At the broad and mid scales (PACs and above) the BLM will summarize the vegetation, disturbance, and (when available) population data. Although the analysis will try to summarize results for PACs within each sage-grouse population, some populations may be too small to report the metrics appropriately and may need to be combined to provide an estimate with an acceptable level of accuracy. Otherwise, they will be flagged for more intensive monitoring by the appropriate landowner or agency. The BLM will then analyze monitoring data to detect the trend in the amount of sagebrush; the condition of the vegetation in the sage-grouse areas (MacKinnon et al. 2011); the trend in the amount of disturbance; the change in disturbed areas owing to successful restoration; and the amount of new disturbance the BLM has permitted. These data could be supplemented with population data (when available) to inform an understanding of the correlation between habitat and PACs within a population. This overall effectiveness evaluation must consider the lag effect response of populations to habitat changes (Garton et al. 2011).

Calculating Question 1, National Planning Strategy Effectiveness: The amount of sagebrush available in the large area of interest will use the information from Measure 1a (I.B.1., Sagebrush Availability) and calculate the change from the 2012 baseline to the end date of the reporting period. To calculate the change in the amount of sagebrush on the landscape to compare with the historical areas with potential to support sagebrush, the information from Measure 1b (I.B.1., Sagebrush Availability) will be used. To calculate the trend in the condition of sagebrush at the mid-scale, three sources of data will be used: the BLM's Grass/Shrub mapping effort (Future Plans in Section B.1., Sagebrush Availability); the results from the calculation of the landscape indicators, such as patch size (described below); and the BLM's Landscape Monitoring Framework (LMF) and sage-grouse intensification effort (also described below). The LMF and sage-grouse intensification effort data are collected in a statistical sampling framework that allows calculation of indicator values at multiple scales.

Beyond the importance of sagebrush availability to sage-grouse, the mix of sagebrush patches on the landscape at the broad and mid-scale provides the life requisite of space for sage-grouse dispersal needs (see the HAF). The configuration of sagebrush habitat patches and the land cover or land use between the habitat patches at the broad and mid scales also defines suitability. There are three significant habitat indicators that influence habitat use, dispersal, and movement across populations: the size and number of habitat patches, the connectivity of habitat patches (linkage areas), and habitat fragmentation (scope of unsuitable and non-habitats between habitat patches). The most appropriate commercial software to measure patch dynamics,

connectivity, and fragmentation at the broad and mid scales will be used, along with the same data layers derived for sagebrush availability.

The BLM initiated the LMF in 2011 in cooperation with the NRCS. The objective of the LMF effort is to provide unbiased estimates of vegetation and soil condition and trend using a statistically balanced sample design across BLM lands. Recognizing that sage-grouse populations are more resilient where the sagebrush plant community has certain characteristics unique to a particular life stage of sage-grouse (Knick and Connelly 2011, Stiver et al. in press), a group of sage-grouse habitat and sagebrush plant community subject matter experts identified those vegetation indicators collected at LMF sampling points that inform sage-grouse habitat needs. The experts represented the Agricultural Research Service, BLM, NRCS, USFWS, WAFWA, state wildlife agencies, and academia. The common indicators identified include: species composition, foliar cover, height of the tallest sagebrush and herbaceous plant, intercanopy gap, percent of invasive species, sagebrush shape, and bare ground. To increase the precision of estimates of sagebrush conditions within the range of sage-grouse, additional plot locations in occupied sage-grouse habitat (Sage-Grouse Intensification) were added in 2013. The common indicators are also collected on sampling locations in the NRCS National Resources Inventory Rangeland Resource Assessment (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/nra/nri/?&cid=stelprdb1041620).

The sage-grouse intensification baseline data will be collected over a 5-year period, and an annual sage-grouse intensification report will be prepared describing the status of the indicators. Beginning in year 6, the annual status report will be accompanied with a trend report, which will be available on an annual basis thereafter, contingent on continuation of the current monitoring budget. This information, in combination with the Grass/Shrub mapping information, the mid-scale habitat suitability indicator measures, and the sagebrush availability information will be used to answer Question 1 of the National Planning Strategy Effectiveness Report.

Calculating Question 2, National Planning Strategy Effectiveness: Evaluations of the amount of habitat degradation and the intensity of the activities in the area of interest will use the information from Measure 2 (Section B.2., Habitat Degradation Monitoring) and Measure 3 (Section B.3., Energy and Mining Density). The field office will collect data on the amount of reclaimed energy-related degradation on plugged and abandoned and oil/gas well sites. The data are expected to demonstrate that the reclaimed sites have yet to meet the habitat restoration objectives for sage-grouse habitat. This information, in combination with the amount of habitat degradation, will be used to answer Question 2 of the National Planning Strategy Effectiveness Report.

Calculating Question 3, National Planning Strategy Effectiveness: The change in sage-grouse estimated populations will be calculated from data provided by the state wildlife agencies, when available. This population data (Section C., Population [Demographics] Monitoring) will be used to answer Question 3 of the National Planning Strategy Effectiveness Report.

Calculating Question 4, National Planning Strategy Effectiveness: The estimated contribution by the BLM to the change in the amount of sagebrush in the area of interest will use the information from Measure 1a (Section B.1., Sagebrush Availability). This measure is derived from the national datasets that remove sagebrush (**Table 4**). To determine the relative contribution of BLM management, the current Surface Management Agency geospatial data layer will be used to differentiate the amount of change for each management agency for this measure in the geographic areas of interest. This information will be used to answer Question 4 of the National Planning Strategy Effectiveness Report.

Calculating Question 5, National Planning Strategy Effectiveness: The estimated contribution by the BLM to the change in the amount of disturbance in the area of interest will use the information from Measure 2a (Section B.2., Monitoring Habitat Degradation) and Measure 3 (Section B.3., Energy and Mining Density). These measures are all derived from the national disturbance datasets that degrade habitat (**Table 7**). To determine the relative contribution of BLM management, the current Surface Management Agency geospatial data layer will be used to differentiate the amount of change for each management agency for these two

measures in the geographic areas of interest. This information will be used to answer Question 5 of the National Planning Strategy Effectiveness Report.

Answers to the five questions for determining the effectiveness of the national planning strategy will identify areas that appear to be meeting the objectives of the strategy and will facilitate identification of population areas for more detailed analysis. Conceptually, if the broad-scale monitoring identifies increasing sagebrush availability and improving vegetation conditions, decreasing disturbance, and a stable or increasing population for the area of interest, there is evidence that the objectives of the national planning strategy to maintain populations and their habitats have been met. Conversely, where information indicates that sagebrush is decreasing and vegetation conditions are degrading, disturbance in sage-grouse areas is increasing, and/or populations are declining relative to the baseline, there is evidence that the objectives of the national planning strategy are not being achieved. Such a determination would likely result in a more detailed analysis and could be the basis for implementing more restrictive adaptive management measures.

With respect to the land use plan area, the BLM will summarize the vegetation, disturbance, and population data to determine if the ARMPA is meeting the plan objectives. Effectiveness information used for these evaluations includes BLM surface management areas and will help inform where finer-scale evaluations are needed, such as seasonal habitats, corridors, or linkage areas. Data will also include the trend of disturbance within the sage-grouse areas, which will inform the need to initiate adaptive management responses as described in the ARMPA.

Calculating Question 1, Land Use Plan Effectiveness: The condition of vegetation and the allotments meeting land health standards (as articulated in "BLM Handbook 4180-1, Rangeland Health Standards") in sage-grouse areas will be used to determine the ARMPA's effectiveness in meeting the vegetation objectives for sage-grouse habitat set forth in the plan. The field office/ranger district will be responsible for collecting this data. In order for this data to be consistent and comparable, common indicators, consistent methods, and an unbiased sampling framework will be implemented following the principles in the BLM's AIM strategy (Taylor et al. 2014; Toevs et al. 2011; MacKinnon et al. 2011), in the BLM's Technical Reference "Interpreting Indicators of Rangeland Health" (Pellant et al. 2005), and in the HAF (Stiver et al. in press) or other approved WAFWA MZ–consistent guidance to measure and monitor sage-grouse habitats. This information will be used to answer Question 1 of the Land Use Plan Effectiveness Report.

Calculating Question 2, Land Use Plan Effectiveness: Sage-grouse areas within the ARMPA that are achieving land health stands (or, if trend data are available, that are making progress toward achieving them)—particularly the Special Status Species/wildlife habitat land health standard—will be used to determine the ARMPA's effectiveness in achieving the habitat objectives set forth in the plan. Field offices will follow directions in "BLM Handbook 4180-1, Rangeland Health Standards," to ascertain if sage-grouse areas are achieving or making progress toward achieving land health standards. One of the recommended criteria for evaluating this land health standard is the HAF indicators.

Calculating Question 3, Land Use Plan Effectiveness: The amount of habitat disturbance in sage-grouse areas identified in the ARMPA will be used to determine the ARMPA's effectiveness in meeting the plan's disturbance objectives. National datasets can be used to calculate the amount of disturbance, but field office data will likely increase the accuracy of this estimate. This information will be used to answer Question 3 of the Land Use Plan Effectiveness Report.

Calculating Question 4, Land Use Plan Effectiveness: The change in estimated sage-grouse populations will be calculated from data provided by the state wildlife agencies, when available, and will be used to determine ARMPA effectiveness. This population data (Section C., Population [Demographics] Monitoring) will be used to answer Question 4 of the Land Use Plan Effectiveness Report.

Results of the effectiveness monitoring process for the ARMPA will be used to inform the need for finer-scale investigations, initiate adaptive management actions as described in the ARMPA, initiate causation determination, and/or determine if changes to management decisions are warranted. The measures used at the

broad and mid scales will provide a suite of characteristics for evaluating the effectiveness of the adaptive management strategy.

Fine and Site Scales

Fine-scale (third-order) habitat selected by sage-grouse is described as the physical and geographic area within home ranges during breeding, summer, and winter periods. At this level, habitat suitability monitoring should address factors that affect sage-grouse use of, and movements between, seasonal use areas. The habitat monitoring at the fine and site scale (fourth order) should focus on indicators to describe seasonal home ranges for sage-grouse associated with a lek or lek group within a population or subpopulation area. Fine- and site-scale monitoring will inform the ARMPA effectiveness monitoring (see Section D., Effectiveness Monitoring) and the hard and soft triggers identified in the ARMPA's adaptive management section.

The BLM will coordinate with the State of Wyoming to share conservation, disturbance and vegetation analysis data to provide a core by core evaluation to make necessary adjustments in activity, priorities and other actions.

Site-scale habitat selected by sage-grouse is described as the more detailed vegetation characteristics of seasonal habitats. Habitat suitability characteristics include canopy cover and height of sagebrush and the associated understory vegetation. They also include vegetation associated with riparian areas, wet meadows, and other mesic habitats adjacent to sagebrush that may support sage-grouse habitat needs during different stages in their annual cycle.

As described in the Conclusion, details and application of monitoring at the fine and site scales will be described in the implementation-level monitoring plan for the ARMPA. The need for fine- and site-scale-specific habitat monitoring will vary by area, depending on proposed projects, existing conditions, habitat variability, threats, and land health. Examples of fine- and site-scale monitoring include: habitat vegetation monitoring to assess current habitat conditions; monitoring and evaluation of the success of projects targeting sage-grouse habitat enhancement and/or restoration; and habitat disturbance monitoring to provide localized disturbance measures to inform proposed project review and potential mitigation for project impacts. Monitoring plans should incorporate the principles outlined in the BLM's AIM strategy (Toevs et al. 2011) and in "AIM-Monitoring: A Component of the Assessment, Inventory, and Monitoring Strategy" (Taylor et al. 2014). Approved monitoring methods are: "BLM Core Terrestrial Indicators and Methods" (MacKinnon et al. 2011); The BLM's Technical Reference "Interpreting Indicators of Rangeland Health" (Pellant et al. 2005); and, "Sage-Grouse Habitat Assessment Framework: Multiscale Assessment Tool" (Stiver et al. in press).

Other state-specific disturbance tracking models include: the BLM's Wyoming DDCT (http://ddct.wygisc.org/) and the BLM's White River Data Management System in development with the USGS. Population monitoring data (in cooperation with state wildlife agencies) should be included during evaluation of the effectiveness of actions taken at the fine and site scales.

Fine- and site-scale sage-grouse habitat suitability indicators for seasonal habitats are identified in the HAF. The HAF has incorporated the Connelly et al. (2000) sage-grouse guidelines as well as many of the core indicators in the AIM strategy (Toevs et al. 2011). There may be a need to develop adjustments to height and cover or other site suitability values described in the HAF; any such adjustments should be ecologically defensible. To foster consistency, however, adjustments to site suitability values at the local scale should be avoided unless there is strong, scientific justification for making those adjustments. That justification should be provided. WAFWA MZ adjustments must be supported by regional plant productivity and habitat data for the floristic province. If adjustments are made to the site-scale indicators, they must be made using data from the appropriate seasonal habitat designation (breeding/nesting, brood-rearing, winter) collected from sage-grouse studies found in the relevant area and peer-reviewed by the appropriate wildlife management agency(ies) and researchers.

When conducting land heath assessments, the BLM should follow, at a minimum, "Interpreting Indicators of Rangeland Health" (Pellant et. al. 2005) and the "BLM Core Terrestrial Indicators and Methods" (MacKinnon et al. 2011). For assessments being conducted in sage-grouse designated management areas, the BLM should collect additional data to inform the HAF indicators that have not been collected using the above methods. Implementation of the principles outlined in the AIM strategy will allow the data to be used to generate unbiased estimates of condition across the area of interest; facilitate consistent data collection and rollup analysis among management units; help provide consistent data to inform the classification and interpretation of imagery; and provide condition and trend of the indicators describing sagebrush characteristics important to sage-grouse habitat (see Section D., Effectiveness Monitoring).

Conclusion

This Greater Sage-Grouse Monitoring Framework was developed for all of the RMPs involved in the sage-grouse planning effort. As such, it describes the monitoring activities at the broad and mid scales and provides a guide for the BLM to collaborate with partners/other agencies to develop the ARMPA's specific monitoring plan.

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Attachment A: An Overview of Monitoring Commitments

	Broad and Mid scales					Fine and Site Scales
	Implement-ation	**Sagebrush Availability**	**Habitat Degradation**	**Population**	**Effectiveness**	
How will the data be used?	Tracking and documenting implement-ation of land use plan decisions and inform adaptive management	Tracking changes in land cover (sagebrush) and inform adaptive management	Tracking changes in disturbance (threats) to sage-grouse habitat and inform adaptive management	Tracking trends in sage- grouse populations (and/or leks; as determined by state wildlife agencies) and inform adaptive management	Characterizing the relationship among disturbance, implementation actions, and sagebrush metrics and inform adaptive management	Measuring seasonal habitat, connectivity at the fine scale, and habitat conditions at the site scale, calculating disturbance and inform adaptive management
Who is collecting the data?	BLM FO	NOC and NIFC	National data sets (NOC), BLM FOs	State wildlife agencies through WAFWA	Comes from other broad and mid-scale monitoring types, analyzed by the NOC	BLM FO and SO, (with partners) including disturbance
How often are the data collected, reported and made available to USFWS?	Collected and reported annually; summary every 5 years	Updated and changes reported annually; summary reports every 5 years	Collected and changes reported annually; summary reports every 5 years	State data reported annually per WAFWA MOU; summary reports every 5 years	Collected and reported every 5 years (coincident with ARMPA evaluations)	Collection and trend analysis ongoing, reported every 5 years or as needed to inform adaptive management
What is the spatial scale?	Summarized by ARMPA with flexibility for reporting by other units	Summarized by PACs (size dependent) with flexibility for reporting by other units	Summarized by PACs (size dependent) with flexibility for reporting by other units	Summarized by PACs (size dependent) with flexibility for reporting by other units	Summarized by MZ, and ARMPA with flexibility for reporting by other units (e.g., PAC)	Variable (e.g., projects and seasonal habitats)
What are the potential personnel and budget impacts?	Additional capacity or re-prioritization of ongoing monitoring work and budget realignment	At a minimum, current skills and capacity must be maintained; data mgmt. cost are TBD	At a minimum, current skills and capacity must be maintained; data mgmt. and data layer purchase cost are TBD	No additional personnel or budget impacts for BLM	Additional capacity or re-prioritization of ongoing monitoring work and budget realignment	Additional capacity or re-prioritization of ongoing monitoring work and budget realignment
Who has primary and secondary responsibili ties for reporting?	BLM FO & SO BLM Planning	NOC WO	NOC BLM SO & appropriate programs	WAFWA & state wildlife agencies BLM SO, NOC	Broad and mid-scale at the NOC, RMP at BLM SO	BLM FO, BLM SO

	Broad and Mid scales					Fine and Site Scales
	Implement-ation	**Sagebrush Availability**	**Habitat Degradation**	**Population**	**Effectiveness**	
What new processes/ tools are needed?	National implement-ation data sets and analysis tools	Updates to national land cover data	Data standards and roll-up methods for these data	Standards in population monitoring (WAFWA)	Reporting methodologies	Data standards data storage; and reporting

Attachment B - List of All Sagebrush Species and Subspecies Included in the Selection Criteria for Building the EVT and BPS Layers

Artemisia arbuscula subspecies longicaulis
Artemisia arbuscula subspecies longiloba
Artemisia bigelovii
Artemisia nova
Artemisia papposa
Artemisia pygmaea
Artemisia rigida
Artemisia spinescens
Artemisia tripartita subspecies rupicola
Artemisia tripartita subspecies tripartita
Tanacetum nuttallii
Artemisia cana subspecies bolanderi
Artemisia cana subspecies cana
Artemisia cana subspecies viscidula
Artemisia tridentata subspecies wyomingensis
Artemisia tridentata subspecies tridentata
Artemisia tridentata subspecies vaseyana
Artemisia tridentata subspecies spiciformis
Artemisia tridentata subspecies xericensis
Artemisia tridentata variety pauciflora
Artemisia frigida
Artemisia pedatifida

Attachment C – User and Producer Accuracies for Aggregated Ecological Systems within LANDFIRE Map Zones

LANDFIRE Map Zone Name	User Accuracy	Producer Accuracy	% of Map Zone within Historic Schroeder
Wyoming Basin	76.9%	90.9%	98.5%
Snake River Plain	68.8%	85.2%	98.4%
Missouri River Plateau	57.7%	100.0%	91.3%
Grand Coulee Basin of the Columbia Plateau	80.0%	80.0%	89.3%
Wyoming Highlands	75.3%	85.9%	88.1%
Western Great Basin	69.3%	75.4%	72.9%
Blue Mountain Region of the Columbia Plateau	85.7%	88.7%	72.7%
Eastern Great Basin	62.7%	80.0%	62.8%
Northwestern Great Plains	76.5%	92.9%	46.3%
Northern Rocky Mountains	72.5%	89.2%	42.5%
Utah High Plateaus	81.8%	78.3%	41.5%
Colorado Plateau	65.3%	76.2%	28.8%
Middle Rocky Mountains	78.6%	73.3%	26.4%
Cascade Mountain Range	57.1%	88.9%	17.3%
Sierra Nevada Mountain Range	0.0%	0.0%	12.3%
Northwestern Rocky Mountains	66.7%	60.0%	7.3%
Southern Rocky Mountains	58.6%	56.7%	7.0%
Northern Cascades	75.0%	75.0%	2.6%
Mogollon Rim	66.7%	100.0%	1.7%
Death Valley Basin	0.0%	0.0%	1.2%

There are two anomalous map zones with 0% user and producer accuracies, attributable to no available reference data for the ecological systems of interest.

User accuracy is a map-based accuracy that is computed by looking at the reference data for a class and determining the percentage of correct predictions for these samples. For example, if I select any sagebrush pixel on the classified map, what is the probability that I'll be standing in a sagebrush stand when I visit that pixel location in the field? Commission Error equates to including a pixel in a class when it should have been excluded (i.e., commission error = 1 – user's accuracy).

Producer accuracy is a reference-based accuracy that is computed by looking at the predictions produced for a class and determining the percentage of correct predictions. In other words, if I know that a particular area is sagebrush (I've been out on the ground to check), what is the probability that the digital map will correctly identify that pixel as sagebrush? Omission Error equates to excluding a pixel that should have been included in the class (i.e., omission error = 1 – producer's accuracy).

COT Objective 6: Prioritize, fund and implement research to address existing uncertainties

> *"Increased funding and support for key research projects that will address uncertainties associated with sage-grouse and sagebrush habitat management is essential. Effective amelioration of threats can only be accomplished if the mechanisms by which those threats are imposed on the redundancy, representation, and resilience of the species and its habitats are understood." (COT report 2013)*

In accordance with BLM policy, the Record of Decision and Approved Plan will establish intervals and standards for evaluations as part of the implementation strategy. Priorities will be established based on the identified threats in the planning area, the conservation objectives included as part of the Approved Plan, and any potential uncertainties associated with sage-grouse and associated habitat management. A part of this strategy will include development of a budget to accomplish each of the identified tasks and fund potential research topics to address any uncertainties.

As new science pertaining to sage-grouse and habitat is continuously evolving, refined management strategies may be necessary to ensure that BLM is utilizing the most current science, information, and data regarding sage-grouse. It is for this reason that BLM has collaborated with the State of Wyoming and USFWS to develop an adaptive management strategy as a part of the planning process.

Wyoming Greater Sage-Grouse Adaptive Management Plan

The Greater Sage-Grouse adaptive management plan provides a means of addressing and responding to unintended negative impacts to Greater Sage-Grouse and its habitat will be addressed before consequences become severe or irreversible. This adaptive management plan:

- Utilizes science based soft and hard adaptive management triggers,
- Addresses multiple scales of data, and
- Utilizes an adaptive management working group.

Adaptive Management Triggers

Adaptive management triggers are essential for identifying when potential management changes are needed in order to continue meeting Greater Sage-Grouse Conservation objectives. With respect to sage-grouse, all regulatory entities in Wyoming, including the BLM, use soft and hard triggers. Soft and hard triggers are focused on three metrics: 1) number of active leks, 2) acres of available habitat, and 3) population trends based on annual lek counts. The hard and soft trigger data will be analyzed as soon as it becomes available after the signing of the ROD and then at a minimum, analyzed annually thereafter.

Soft Triggers:

Soft triggers are indicators that management or specific activities may not be achieving the intended results of conservation action or that unanticipated changes to populations or habitats have occurred that have the potential to place habitats or populations at risk. The soft trigger is any deviation from normal trends in habitat or population in any given year. Metrics include, but are not limited to, annual lek counts, wing counts, aerial surveys, habitat monitoring, and DDCT evaluations. BLM field offices, with the assistance of their respective land and resource management plan implementation groups, local WGFD offices, and local sage-grouse working groups will evaluate the metrics with the Adaptive Management Working Group (AMWG) on an annual basis. For population metrics, normal population trends are calculated as the five-year running mean of annual population counts. The purpose of these strategies is to address localized Greater Sage-Grouse population and habitat changes by providing the framework in which management will

change if monitoring identifies negative population and habitat anomalies in order to avoid crossing a hard trigger threshold.

Hard Triggers:

Hard triggers are indicators that management is not achieving desired conservation results. Hard triggers would be considered a catastrophic indicator that the species is not responding to conservation actions, or that a larger-scale impact or set of impacts is having a negative effect.

Within the range of normal population variables (five-year running mean of annual population counts), hard triggers shall be determined to take effect when two of the three metrics exceeds 60% of normal variability for the area under management in a single year, or when any of the three metrics exceeds 40% of normal variability for a three year time period within a five-year range of analysis. A minimum of three consecutive years in a five-year period is used to determine trends (i.e., Y1-2-3, Y2-3-4, Y3-4-5).

Adaptive Management Response

Soft Triggers Response:

Soft triggers require immediate monitoring and surveillance to determine causal factors and may require curtailment of activities in the short- or long-term, as allowed by law. The project level adaptive management strategies will identify appropriate responses where the project's activities are identified as the causal factor. The management agency (BLM) and the AMWG will implement an appropriate response strategy to address causal factors not attributable to a specific project or to make adjustments at a larger regional or state-wide level.

Hard Trigger Response:

Upon determination that a hard trigger has been tripped, the BLM will immediately defer issuance of discretionary authorizations for new actions within the Biologically Significant Unit for a period of 90 days. In addition, within 14 days of a determination that a hard trigger has been tripped, the AMWG will convene to develop an interim response strategy and initiate an assessment to determine the causal factor or factors (hereafter called the causal factor assessment).

An interim response strategy will be developed, and implemented to the extent permitted by law, within 90 days of determination that a hard trigger has been tripped. The technical team will be consulted to identify the scope and scale of the interim strategy. Based on the recommendation of the AMWG, the BLM will implement an interim response strategy through an Instruction Memorandum or other management mechanisms to direct management until the causal factor(s) and appropriate response(s) can be determined. The interim response strategy will consist of appropriate management measures undertaken at the project stage, supported by the best available science, to address the specific metric which has been tripped and may include deferral of some activities as appropriate. Measures that were analyzed in this EIS and the COT, NTT reports, and NPT guidance will be reviewed in addition to current science to identify the most appropriate measures to be implemented as part of the interim response strategy. The BLM will comply with all applicable law in implementing such response(s), and, if applicable, will undertake a plan amendment or revision under BLM's planning regulations and policies.

Baseline sage-grouse population levels are established by pre-disturbance surveys, reference surveys and accounting for regional and statewide trends in population levels. Population counts in Wyoming are maintained by the WGFD. Estimates of population are determined based upon survey protocols determined by the WGFD, and are implemented consistently throughout the state. Population counts are tracked for individual leks and then calculated for each core area (PHMA).

Interim Strategy

An interim response strategy will be developed, and implemented to the extent permitted by law, within 90 days of determination that a hard trigger has been tripped. The technical team (see Implementation Groups below) will be consulted to identify the scope and scale of the interim strategy. Based on the recommendation of the AMWG, the BLM will implement an interim response strategy through an Instruction Memorandum or other management mechanisms to direct management until the causal factor(s) and appropriate response(s) can be determined. The interim response strategy will consist of appropriate management measures undertaken at the project stage, supported by the best available science, to address the specific metric which has been tripped and may include deferral of some activities as appropriate. Measures that were analyzed in this EIS and the COT, NTT reports, and NPT guidance will be reviewed in addition to current science to identify the most appropriate measures to be implemented as part of the interim response strategy. The BLM will comply with all applicable law in implementing such response(s), and, if applicable, will undertake a plan amendment or revision under BLM's planning regulations and policies.

The interim strategy will be implemented for the biologically significant unit (BSU), which, in Wyoming, is the core area, regardless of whether the core area crosses multiple planning boundaries. If it has been identified that more than one core area has the same hard triggers being tripped, or is trending towards triggers being tripped, the interim strategy will be implemented at the appropriate scale.

Causal Factor Assessment

The causal factor assessment will be completed within 180 days of determination that a hard trigger threshold has been crossed. Once the causal factor assessment is completed by the AMWG, the interim response strategy will be modified to adequately address the causal factors in consultation with the technical team. The AMWG would define a process to review and reverse adaptive management actions once the identified causal factor is resolved (e.g., returning to previous management once objectives of interim management strategy have been met). If a causal factor or factors cannot be identified, the interim response strategy shall stay in place until the cause can be determined and any new planning decision can be implemented.

EIS Level Projects

Each major project (EIS level) will include adaptive management strategies in support of the population management objectives for Greater Sage-Grouse set by the State of Wyoming, and will be consistent with the Wyoming Greater Sage-Grouse Adaptive Management Plan. These adaptive management strategies will be developed in partnership with the AMWG, WGFD, project proponents, partners, and stakeholders, incorporating the best available science.

Implementation Groups

Sage-Grouse Implementation Team

The State of Wyoming's strategy is implemented by the Sage-Grouse Implementation Team (SGIT), established by Executive Order in 2008 and codified in 2014 by the Wyoming Legislature (W.S. § 9-19-101). The SGIT is a Governor appointed body with representation by federal agencies (BLM, Forest Service, USFWS, and NRCS), state agencies (WGFD, Department of Agriculture, Department of Environmental Quality, Wildlife and Natural Resource Trust Fund, Oil and Gas Conservation Commission, and Office of State Lands and Investments), the Wyoming Legislature, county governments, energy developers, mining companies, landowners, and non- governmental organizations. The BLM, USFWS, NRCS and the Forest Service all have an equal role in the SGIT.

Land and Resource Management Plan – Implementation Teams

Land and Resource Management Plans are implemented through implementation teams. These implementation teams include cooperating agencies who participated in the development of this land use plan representing local, state, and federal agencies. These implementation teams will coordinate with the AMWG and others to evaluate metrics and management responses necessary to meet Greater Sage-Grouse conservation objectives within their planning area.

Adaptive Management Working Group and Technical Team

An Adaptive Management Working Group (AMWG) will be established in consultation with the SGIT to provide appropriate guidance for agencies with the ability to affect sage-grouse populations and/or habitat through their permitting authority. The AMWG will include BLM, Forest Service, USFWS, and State of Wyoming. The purpose of this group will be to initiate a response strategy should it be determined that a hard trigger has been tripped or if soft triggers are showing a trend across a region. A hard trigger may be tripped at any time, thus, upon identification of such event, current available population and habitat data will be reviewed by the AMWG with the assistance of a technical team comprised of agency biologists, scientists familiar with the Management Zone in question, and other individuals as appropriate (e.g., habitat managers, respective landowners, other appropriate representatives) to confirm that a hard trigger has been tripped. Upon verification of data showing that a hard trigger has been tripped, the AMWG will convene within 14 days.

The AMWG will review monitoring data which has been collected by the appropriate local sage-grouse working groups in conformance with data collection standards. This group will meet annually to review all data collected in the prior year regarding Greater Sage-Grouse populations and habitats. Monitoring data will have been analyzed (by WGFD for population based metrics (leks, wing counts, etc. and by land managers [BLM, Forest Service, State of Wyoming] for habitat based metrics [DDCT, etc.]) Should the monitoring data suggest a trend toward a soft or hard trigger being tripped, they will 1. Identify what metric is indicating that trend (population or habitat); and 2. Identify a technical team to review the data and compile a range of activities which may be causing the trend. Should review of the monitoring data identify that multiple soft triggers have been tripped in one core area, or the same triggers have been tripped across multiple core areas, the technical team will be tasked with verifying the scope and intensity of the trends.

Once the analysis of the trends has been completed by the technical team and reported back to the AMWG, the AMWG will make recommendations to the appropriate land managing agency regarding an interim adaptive management strategy to be implemented. Implementation will occur via the appropriate regulations and policy applicable for that agency. At that time, the State of Wyoming will conduct a review of the regulatory authority implementing the Sage-Grouse Core Area Strategy to determine if a State of Wyoming adaptive management strategy is warranted.

Upon review of the annual data by the AMWG and technical team, the State of Wyoming, as part of the AMWG, will contact neighboring states within the respective Management Zone to inform them of any findings. Should a hard trigger be tripped, the trigger which has been tripped and any recommended adaptive management strategy being implemented will be shared with the appropriate neighboring state(s). Should the need arise for implementation of a multi-state adaptive management strategy; the AMWG will coordinate to develop an effective response.

Small Leks

Small leks will be given separate consideration. Due to geographic variations a definition of "small" is not provided, rather determination of "small" will be made by the AMWG based upon recommendations of the scientific community. Generally, "small" is considered 10 or fewer males for a three year time period within a five-year range of analysis. If a trigger is hit based upon such a lek, then the adaptive management working

group will evaluate the site-specific circumstances and determine appropriate remedial action