DRAFT Supplemental Environmental Impact Statement, Greater Sage-Grouse 2020

2 Hard Looks, 2011-15 and 2017-19

143 alternatives considered in **18 EISs**

48,023 total pages of NEPA analysis

$16.9 million total cost

2,313 people attended

54 public meetings

326 partners and cooperators

Public Comments

8,512 unique scoping comments

15,885 substantive comments on draft EISs

Habitat Investments

Treatment and Restoration, ***2013–19***

$294 million **2.7 million acres**

2020, planned

$37 million **316,000 acres**

Another Hard Look, 2020

Utah

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Utah State Office
440 West 200 South, Suite 500
Salt Lake City, UT 84101-1434

FEB 1 1 2020

In Reply Refer To:
1610 (UT-935)

Dear Reader:

The Utah Draft Supplemental Environmental Impact Statement (EIS) for Greater Sage-Grouse is now available for your review and comment. This document is a draft supplement to the 2018 Utah Greater Sage-Grouse Proposed Resource Management Plan Amendment and Final EIS, which culminated in a Record of Decision in March 2019. The Bureau of Land Management (BLM) prepared this document in accordance with the National Environmental Policy Act of 1969, as amended; the Federal Land Policy and Management Act of 1976, as amended; implementing regulations; and other applicable laws and policy.

The planning area includes the BLM Vernal, Moab, Price, Richfield, Kanab, Cedar City, Fillmore, and Salt Lake Field Offices and the Grand Staircase-Escalante National Monument. The planning area covers approximately 48 million acres in 27 of Utah's 29 counties (all except Washington and San Juan). Within this area, approximately 2.5 million acres are mapped as containing Greater Sage-Grouse habitat on lands administered by the BLM. Additionally, the BLM administers approximately 1.5 million acres of subsurface federal mineral estate located beneath non-federal lands or National Forest System lands that are also mapped as containing Greater Sage-Grouse habitat.

The Management Alignment Alternative has been identified in the Draft Supplemental EIS as the preferred alternative. Identification of the preferred alternative does not indicate any commitments on the part of the BLM with regard to a final decision. In developing the Final Supplemental EIS, which is the next phase of the process, the decision maker may select various management actions from each of the alternatives analyzed in the Draft Supplemental EIS. This may be done to create a management strategy that best meets the needs of the resources and values in the area under the BLM multiple use and sustained yield mandate.

The BLM encourages the public to review and provide comments on the Draft Supplemental EIS. This document is available on the project website at: https://bit.ly/36uazln. Hard copies are also available for public review at BLM offices within the planning area. Public comments will be accepted for forty-five (45) calendar days following the Environmental Protection Agency's publication of its Notice of Availability in the *Federal Register*. The BLM can best utilize your comments and resource information submissions if received within the review period.

Written comments may be submitted as follows:

1. Written comments may be submitted electronically (preferred method) at: https://bit.ly/36uazln

2. Written comments may also be mailed, or delivered to:
   Bureau of Land Management
   Utah State Office
   Attn: Greater Sage-Grouse State Implementation Lead
   440 West 200 South, Suite 500
   Salt Lake City, Utah 84101-1434

To facilitate analysis of comments and information submitted, we encourage you to submit comments in an electronic format. Before including your address, phone number, e-mail address, or other personal identifying information in your comment, be advised that your entire comment - including your personal identifying information - may be made publicly available at any time. While you can ask us in your comment to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so.

Thank you for your continued interest in public land management. We appreciate the information and suggestions you are willing to contribute to this planning effort.

Sincerely,

Anita Bilbao
Acting State Director

Utah Greater Sage-Grouse
Draft Supplemental Environmental Impact Statement

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

Abstract: This draft supplemental environmental impact statement (DSEIS) has been prepared by the United States Department of the Interior (DOI), Bureau of Land Management (BLM). The DSEIS describes and analyzes the seven alternatives considered during the 2015 and 2019 Greater Sage-Grouse planning processes, BLM's consultation and coordination process with federal and state stakeholders, and the rigorous analysis completed to align BLM Greater Sage-Grouse management with the State of Utah's plans.

On October 16, 2019, the US District Court for the District of Idaho issued an order granting a motion for a preliminary injunction filed by Plaintiffs Western Watersheds Project, WildEarth Guardians, Center for Biological Diversity, and Prairie Hills Audubon Society. The court found that the Plaintiffs were likely to succeed on the merits of their claims that the BLM violated the National Environmental Policy Act (NEPA) when adopting the 2019 Greater Sage-Grouse plans. The BLM has prepared this DSEIS to review its previous NEPA analysis, clarify and augment it where necessary, and provide the public with additional opportunities to review and comment. The BLM's DSEIS, including any comments that the agency receives, will help the BLM determine whether its 2015 and 2019 land use planning and NEPA processes have sufficiently addressed Greater Sage-Grouse habitat conservation or whether the BLM should initiate a new land use planning process to consider additional alternatives or new information. To inform this decision that the BLM will make, it has prepared this DSEIS to address four specific issues: the range of alternatives, need to take a "hard look" at environmental impacts, cumulative effects analysis, and the BLM's approach to compensatory mitigation.

Review Period: Comments on the Utah Greater Sage-Grouse Draft Supplemental Environmental Impact Statement will be accepted for forty-five (45) calendar days following publication of the United States Environmental Protection Agency's Notice of Availability in the Federal Register

For further information, contact:

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APPENDIX

The appendices below from the 2015 ROD/ARMPA were modified as part of the Management Alignment Alternative. Those appendices are included here with the same letters as the 2015 ROD/ARMPA. Appendix C, Required Design Features, from the 2015 ROD/ARMPA were modified to remove required design features for GHMA as GHMA was longer be a management area under the Management Alignment Alternative. Similarly, Appendix D, Greater Sage-Grouse Monitoring Framework, was modified to remove reference to GHMA. Other appendices appearing absent are not modified.

The appendices below are new; they were not included in the 2015 ROD/ARMPA

ACRONYMS AND ABBREVIATIONS

	Full Phrase
ARMPA	approved resource management plan amendment
BLM	Bureau of Land Management
BMP	best management practice
BSU	biologically significant unit
CEQ	Council on Environmental Quality
COT	Conservation Objectives Team
CSU	controlled surface use
DOI	US Department of the Interior
EIS	environmental impact statement
FLMPA	Federal Land Management and Policy Act
GHMA	General Habitat Management Area
LUPA	Land Use Plan Amendment
MZ	management zone
NEPA	National Environmental Policy Act
NTT	National Technical Team
NSO	no surface occupancy
PHMA	Priority Habitat Management Area
RDF	required design feature
RMP	resource management plan
RMPA	resource management plan amendment
RNA	Resource Natural Area
ROD	record of decision
ROW	right of way
SO	Secretarial Order
TL	timing limitation
UDWR	Utah Division of Wildlife Resources
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey

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Executive Summary

ES.1 INTRODUCTION

Greater Sage-Grouse is a state-managed species that depends on sagebrush steppe ecosystems. These ecosystems are managed in partnership across its range by federal, state, and local authorities. State agencies responsible for fish and wildlife management possess broad responsibility for protecting and managing fish, wildlife, and plants within their borders, except where preempted by federal law. Similarly, the BLM has broad responsibilities to manage public lands and resources for the public's benefit. Approximately half of Greater Sage-Grouse habitat is managed by the BLM and Forest Service. State agencies are at the forefront of efforts to maintain healthy fish and wildlife populations and to conserve at-risk species. State-led efforts to conserve the species and its habitat date back to the 1950s. For the past two decades, state wildlife agencies, federal agencies, and many others in the range of the species have been collaborating to conserve Greater Sage-Grouse and its habitats. The BLM prepared this Draft Supplemental Environmental Impact Statement (DSEIS) to clarify analysis from the 2018 Final Environmental Impact Statement (2018 Final EIS) published as part of the 2019 Plan Amendment Process and subsequent Record of Decision. This DSEIS clarifies the range of alternatives analyzed, the range-wide nature of the analysis, and other aspects of the 2018 Final EIS where information was incorporated by reference from the 2015 Greater Sage-Grouse Land Use Plan Amendments.

In 2010, USFWS determined that listing the Greater Sage-Grouse under the Endangered Species Act of 1973 (ESA) was "warranted, but precluded" by other priorities. In its determination, the USFWS found there to be inadequate regulatory mechanisms to protect Greater Sage-Grouse and conserve its habitat. In response, the BLM, in coordination with the Forest Service, USFWS, and state agencies, developed a management strategy that included targeted Greater Sage-Grouse management actions. In 2015, the BLM and Forest Service adopted land use plan amendments and revisions to 98 BLM and Forest Service land use plans across ten western states. These planning decisions addressed, in part, threats to the Greater Sage-Grouse and its habitat. The amended land use plans govern the management of 67 million acres of Greater Sage-Grouse habitat on federal lands.

In September 2015, the USFWS determined that the Greater Sage-Grouse did not warrant listing under the ESA. The USFWS based its 2015 determination, in part, on the regulatory certainty provided by the conservation commitments and management actions in the federal planning decisions, as well as on other private, state, and federal conservation efforts.

The 2015 plans recommended that sagebrush focal areas (SFAs) be proposed for withdrawal from location and entry under the Mining Law of 1872. While the BLM later proposed to withdraw these areas, it canceled that proposed withdrawal on October 11, 2017. The BLM determined that the proposal to withdraw these areas was unreasonable in light of the data that showed that mining affected less than 0.1 percent of Greater Sage-Grouse across its occupied range.

On March 29, 2017, the Secretary of the Interior issued Secretary's Order 3349, *American Energy Independence*. It ordered DOI 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 Secretary's Order 3353 with a purpose of enhancing cooperation among eleven western states and the BLM in managing and conserving Greater Sage-Grouse. Secretary's Order 3353 directed an Interior Review Team, consisting of the BLM, the US Fish and Wildlife Service (USFWS), and US Geological Survey (USGS), to coordinate with the Greater Sage-Grouse Task Force. They also were directed to review the 2015 Greater Sage-Grouse plans and associated policies to identify provisions that may require modification, including opportunities to enhance consistency with individual state plans and better balance the BLM's multiple-use mission, as directed by Secretary's Order 3349.

On August 4, 2017, the Interior Review Team submitted its Report in Response to Secretary's Order 3353. The report the team recommended modifying the Greater Sage-Grouse plans and associated policies to better align with the individual state plans. On August 4, 2017, the Secretary issued a memo to the Deputy Secretary directing the BLM to implement the recommendations found in the report.

In the *Federal Register* of October 11, 2017, the BLM published the Notice of Intent to Amend Land Use Plans Regarding Greater Sage-Grouse Conservation and Prepare Associated Environment Impact Statements or Environmental Assessments.

The BLM continues to prioritize efforts to conserve Greater Sage-Grouse and restore sagebrush habitat, and increase the amount of acres treated in every Fiscal Year. In Fiscal Year 2018 approximately 530,000 acres were treated and BLM is currently working on more detailed metrics and data for these acres treated. Also, in Fiscal Year 2017 the BLM treated approximately 480,000 acres, for an increase of almost 100,000 acres over 2016 accomplishments. The Fiscal Year 2017 treatments included 185,000 acres of conifer removal; 65,000 acres of fuel breaks; 125,000 acres with invasive species treatments; 10,000 acres of habitat protection; and restored habitat on 94,000 acres of uplands and another 600 acres of riparian habitat. In 2018 and 2019, Utah conducted 95,466 and 88,788 acres, respectively, of habitat treatments.

The BLM is committed to working directly with local communities on sagebrush conservation efforts and to emulate the successes demonstrated by the Natural Resources Conservation Service (NRCS) through the Greater Sage-Grouse Initiative on private lands. These efforts include:

- an agreement with the Intermountain West Joint Venture to work with local cattlemen associations to improve sagebrush rangeland conditions through actions such as controlling invasive species, improving mesic areas, and removing invasive conifers;
- a Memorandum of Understanding between the BLM, NRCS, and the Forest Service resulting in development of a map that identifies areas where the agencies have ongoing restoration projects and opportunities for additional collaboration across land ownerships and associated landscapes;
- promoting a locally led collaborative conservation, the BLM, the USFWS, and the Geological Survey are collaborating with the Western Association of Fish and Wildlife Agencies as they lead the development and implementation of the Sagebrush Conservation Strategy;
- working with livestock permittees and stakeholders on "targeted grazing" to utilize grazing as a tool to create and maintain fuel breaks to manage the threats of wildfire and invasive species in or to Greater Sage-Grouse habitats; and,
- working to develop "outcome-based grazing" to provide greater flexibility for livestock permittees and land managers to meet habitat objectives as conditions on-the-ground change.

During the 2019 planning process's public scoping period, the BLM sought public comments on whether all, some, or none of the 2015 Greater Sage-Grouse plans should be amended, what issues should be considered, and if plans should be completed at the state level rather than at the national level. In addition, the BLM recognizes that the Greater Sage-Grouse is a state-managed species that depends on sagebrush steppe habitats managed in partnership by federal, state, and local authorities. Input from governors would weigh heavily when the BLM considers what management changes should be made and when ensuring consistency with the BLM's multiple-use mission.

Further, in the 2018 Draft EIS the BLM requested public comments on the BLM's approach to compensatory mitigation. In response to these comments and information supplied by the states about how to align with their compensatory mitigation laws and policies, the 2018 Final EIS clarified the BLM's approach to compensatory mitigation in its Proposed Plan Amendment. Through this Draft Supplemental EIS (DSEIS), the BLM now seeks additional comment from the public on compensatory mitigation.

This DSEIS also addresses and clarifies the BLM's reliance on scientific information, including how the BLM addresses the recommendation and objectives in the NTT and COT reports. The BLM, the USFWS, states and other federal agency partners prepared the NTT (2011) and the COT (2013) reports to identify rangewide Greater Sage-Grouse conservation objectives and conservation measures that would: inform the USFWS 2015 decision under the Endangered Species Act and for partners; and provide guidance for the BLM to consider through land use planning, which the BLM did in 2015 and 2019, and again in this DSEIS.

Further, at the time that the NTT and COT reports were being developed, the BLM, USFWS, and state agencies had not completely developed or established the robust regulatory programs to conserve Greater Sage-Grouse that exist today.

In 2015, the BLM developed an action alternative around the NTT report. In the 2018 Final EIS, the BLM incorporated this analysis by reference. The BLM also coordinated with the USFWS during the process culminating in the 2019 RODs to make sure that the conservation measures from the NTT and COT informed the management alignment alternative (**Appendix S-1).** Including the USFWS as a cooperating agency during the 2019 planning process ensured that BLM used the same materials and newest science that the USFWS uses and recommends for Greater Sage-Grouse management.

In 2018, the Environmental Protection Agency (EPA) provided comments on the Draft RMPAs/EISs. Specifically, they provided six comments on the Utah Draft RMPA/EIS, six comments on the Idaho Draft RMPA/EIS, seven comments on the Nevada/Northeast California Draft RMPA/EIS, three comments on the Wyoming Draft RMPA/EIS, six comments on the Oregon Draft RMPA/EIS, and five comments on the Colorado Draft RMPA/EIS. The EPAs comments include suggestions and questions regarding lek buffers, recent science, mitigation, adaptive management, and fluid minerals. The BLM responded to each of EPAs comments and made corrections and/or changes in the 2018 Final EISs. The complete EPA comment analysis can be found in the administrative record. This DSEIS also clarifies how the BLM considered comments, including those of other federal agencies and experts, when developing its 2019 planning decisions.

ES.2 PURPOSE OF AND NEED FOR ACTION

In the Federal Land Policy and Management Act (FLPMA), Congress provided the BLM with discretion and authority to manage public lands for multiple use and sustained yield and declared it the policy of the United States to, consistent with the laws governing the administration of the public lands, coordinate planning activities with the land use planning and management programs of other federal, state, and local governments. Further, FLPMA specifically provides that it neither enlarges nor diminishes the authority of the states in managing fish and wildlife. As the sovereign entities with the lead role in managing game species, including Greater Sage-Grouse, states play a critical role in conserving the Greater Sage-Grouse and its habitat.

In the 2019 Planning effort the BLM modified its approach to managing Greater Sage-Grouse habitat in land use plans by (1) enhancing cooperation and coordination with the State of Utah and tribes where applicable, (2) aligning with DOI and BLM policies that issued since 2015, and (3) incorporating updated local science, research and information to better align with Utah's Greater Sage-Grouse conservation plan, which goal is "to protect, maintain and increase sage-grouse populations and habitats" so as to "ensure that greater sage-grouse will remain 'not warranted' for listing under the Endangered Species Act (Utah Conservation Plan for Greater Sage-Grouse, 2019). The BLM achieved these goals while maintaining the vast majority of Greater Sage-Grouse protections it incorporated into its land use plans in 2015. By implementing these land use plan conservation measures and continuing to exercise its discretion to approve future project proposals under appropriate terms and conditions or deny them where appropriate, the BLM can adequately protect Greater Sage-Grouse and its habitat while meeting its general obligation under FLPMA to manage public lands under principles of multiple use and sustained yield.

On October 16, 2019, the US District Court for the District of Idaho issued an order granting a motion for a preliminary injunction filed by Plaintiffs Western Watersheds Project, WildEarth Guardians, Center for Biological Diversity, and Prairie Hills Audubon Society. The court found that the Plaintiffs were likely to succeed on the merits of their claims that the BLM violated the National Environmental Policy Act (NEPA) when adopting the 2019 Greater Sage-Grouse plans.

The BLM has prepared this DSEIS to review its previous NEPA analysis, clarify and augment it where necessary, and provide the public with additional opportunities to review and comment. The BLM's DSEIS, including any comments that the agency receives, will help the BLM determine whether its 2015 and 2019 land use planning and NEPA processes have sufficiently addressed Greater Sage-Grouse habitat conservation or whether the BLM should initiate a new land use planning process to consider additional alternatives or new information. To inform this decision that the BLM will make, it has prepared this DSEIS to address four specific issues: the range of alternatives, need to take a "hard look" at environmental impacts, cumulative effects analysis, and the BLM's approach to compensatory mitigation.

ES.3 ITEMS TO BE CLARIFIED IN THIS DSEIS

The items considered in this DSEIS are related to the analysis in the 2018 Final EIS. These items are:

- clarifying the range of alternatives (including how the BLM considered the full range of the 2015 alternatives in the 2019 planning process),

- taking a hard look and using the best available science (including clarified effects analysis, how the 2015 and 2019 Final EISs addressed the NTT and COT recommendations and conservation measures) (**Appendix 4)**,
- clarifying that the cumulative effects analysis was done at the range wide level and organized by WAFWA Management Zone (MZs) Updated language also highlights why WAFWA MZs were used,
- an updated Reasonably Foreseeable Future Actions.

ES.4 ANALYSIS CONCLUSIONS

The additional information provided in this SEIS do not change analytical conclusions from either the 2018 Proposed RMPA/Final EIS or the 2015 Proposed LUPA/Final EIS. See summary of environmental consequences from 2018 in Section ES.6 of the Proposed RMPA/Final EIS and from 2015 in Section 2.12 of the Proposed LUPA/Final EIS.

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Chapter 1. Purpose of and Need for Action

1.1 INTRODUCTION

Greater Sage-Grouse is a state-managed species that depends on sagebrush steppe ecosystems. These ecosystems are managed in partnership across its range by federal, state, tribal, local, and private authorities and input. State agencies responsible for fish and wildlife management possess broad responsibility for protecting and managing fish, wildlife, and plants within their borders, except where preempted by federal law. Similarly, the DOI has broad responsibilities to manage federal lands and resources for the public's benefit. On reservations, Native American tribes manage wildlife and their associated habitat. Approximately half of Greater Sage-Grouse habitat is managed by the Bureau of Land Management (BLM) and United States Forest Service (Forest Service).

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

In 2010, the United States Fish and Wildlife Service (USFWS) determined that listing the Greater Sage-Grouse under the Endangered Species Act of 1973 was "warranted but precluded" due to higher listing priority species. In part, the USFWS's 2010 determination was based on a review of the five ESA factors, wherein the USFWS concluded that a lack of regulatory mechanisms was a threat to the Greater Sage-Grouse. In response, the BLM, in coordination with the United States Department of Agriculture, developed a management strategy that included targeted Greater Sage-Grouse management actions. In September 2015, the agencies adopted land use plan amendments (LUPAs) and revisions to 98 BLM and Forest Service land use plans (LUPs) across ten western states. These LUPAs addressed, in part, threats to the Greater Sage-Grouse and its habitat. The amended LUPs govern the management of 67 million acres of Greater Sage-Grouse habitat on federally administered lands.

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

The BLM continues to prioritize efforts to conserve Greater Sage-Grouse and restore sagebrush habitat and increase the number of acres treated in every Fiscal Year. In Fiscal Year 2018 approximately 530,000 acres were treated and BLM is currently working on more detailed metrics and data for these acres treated. Also, in Fiscal Year 2017 the BLM treated approximately 480,000 acres, for an increase of almost 100,000 acres over 2016 accomplishments. The Fiscal Year 2017 treatments included 185,000 acres of conifer removal; 65,000 acres of fuel breaks; 125,000 acres with invasive species treatments; 10,000 acres of habitat protection; and restored habitat on 94,000 acres of uplands and another 600

acres of riparian habitat. In 2018 and 2019, Utah conducted 95,466 and 88,788 acres, respectively, of habitat treatments. (See **Table 3-6**).

The BLM is committed to working directly with local communities on sagebrush conservation efforts and to emulate the successes demonstrated by the Natural Resources Conservation Service (NRCS) through the Greater Sage-Grouse Initiative on private lands. These efforts include:

- an agreement with the Intermountain West Joint Venture to work with local cattlemen associations to improve sagebrush rangeland conditions through actions such as controlling invasive species, improving mesic areas, and removing invasive conifers;
- a Memorandum of Understanding between the BLM, NRCS, and the Forest Service resulting in development of a map that identifies areas where the agencies have ongoing restoration projects and opportunities for additional collaboration across land ownerships and associated landscapes;
- promoting a locally led collaborative conservation, the BLM, the USFWS, and the Geological Survey are collaborating with the Western Association of Fish and Wildlife Agencies as they lead the development and implementation of the Sagebrush Conservation Strategy;
- working with livestock permittees and stakeholders on "targeted grazing" to utilize grazing as a tool to create and maintain fuel breaks to manage the threats of wildfire and invasive species in or to Greater Sage-Grouse habitats; and,
- working to develop "outcome-based grazing" to provide greater flexibility for livestock permittees and land managers to meet habitat objectives as conditions on-the-ground change.

The plans recommended that sagebrush focal areas (SFAs) be proposed for withdrawal; however, the proposed withdrawal was cancelled on October 11, 2017, pursuant to 82 *Federal Register* 47248.

On March 29, 2017, the Secretary of the Interior (Secretary) issued Secretarial Order (SO) 3349, *American Energy Independence*. It ordered DOI 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 for the 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, the USFWS, and United States Geological Survey (USGS), to coordinate with the Sage-Grouse Task Force, which is comprised of representatives of the governors of each of the 11 states. They also were directed to review the 2015 Greater Sage-Grouse plans and associated policies to identify provisions that will maintain healthy Greater Sage-Grouse populations but may require modification to make the plans more consistent with the individual state plans and better balance the BLM's multiple-use mission as directed by SO 3349.

On August 4, 2017, the Interior Review Team submitted its Report in Response to Secretarial Order 3353. In this report, the team recommended modifying the Greater Sage-Grouse plans and associated policies to better align with the individual state plans and to meet the purpose of SO 3353. On August 4, 2017, the Secretary issued a memorandum to the Deputy Secretary directing the BLM to implement the recommendations found in the report.

On October 11, 2017, the BLM published the Notice of Intent to Amend Land Use Plans Regarding Greater Sage-Grouse Conservation and Prepare Associated Environment Impact Statements or Environmental Assessments in the *Federal Register* (*82 Federal Register 47248*).

During the public scoping period for the 2019 planning process, the BLM sought public comments on whether all, some, or none of the 2015 Greater Sage-Grouse plans should be amended, what issues should be considered, and if plans should be completed at the state level rather than at the national level. The BLM specifically sought public comment on SFA designations, mitigation standards, lek buffers, disturbance and density caps, habitat boundaries to reflect new information, and reversing adaptive manage response when the BLM determines that resource conditions no longer warrant those responses. In addition, the BLM recognizes that Greater Sage-Grouse is a state-managed species that depends on sagebrush steppe habitat managed in partnership by federal, state, tribal, and local authorities. Input from state governors would weigh heavily when the BLM considers what management changes should be analyzed while ensuring consistency with the BLM's multiple-use mission and state and local plans, to the maximum extent consistent with the Federal Land Policy and Management Act (FLPMA) and the purposes, policies, and programs of federal laws and regulations applicable to public lands.

After reviewing comments received during the public scoping period, the BLM proposed the Draft EIS on May 4, 2018 and ultimately issued the Final EIS on December 6, 2018. Through the notice and comment process, the BLM was able to accomplish the objectives set forth in SO 3353 and remedy inconsistencies that existed in the 2015 LUPAs. Below is a summary of some of the issues raised during the Draft EIS and addressed during the Final EIS.

Further, in The 2018 Draft EIS the BLM again requested public comments on a number of issues, including the BLM's approach to compensatory mitigation. In response to these comments and information supplied by the states about how to align with their compensatory mitigation laws and policies, the 2018 Final EIS clarified the BLM's approach to compensatory mitigation in its Proposed Plan Amendment. Through this Draft Supplemental EIS (DSEIS), the BLM now seeks additional comment from the public on compensatory mitigation.

The BLM prepared this DSEIS to review, clarify, augment the 2018 FEIS NEPA analysis, and provide the public with additional opportunities to review and comment. This DSEIS will address, in part, four specific issues: the range of alternatives (including those incorporated by reference), the need to take a "hard look" at environmental impacts, cumulative effects analysis, and the BLM's approach to compensatory mitigation. Further, This DSEIS also addresses and clarifies the BLM's reliance on scientific information, including how the BLM addresses the recommendation and objectives in the National Technical Team (NTT) and Conservation Objectives Team (COT) reports. The BLM, the USFWS, states and other federal agency partners prepared the NTT (2011) and the COT (2013) reports to identify rangewide Greater Sage-Grouse conservation objectives and conservation measures that would: inform the USFWS 2015 decision under the Endangered Species Act and for partners; and provide guidance for the BLM to consider through land use planning, which the BLM did in 2015 and 2019, and again in this DSEIS. The NTT and COT reports constituted starting points for the BLM to consider in at least one alternative to be considered through the NEPA and land use planning process. They are not compendiums that, standing alone, represent best available science. The NTT and COT reports do not address, or even attempt to address, how the implementation of their Greater Sage-

Grouse conservation measures would affect other uses of the public lands—such as recreation, fluid mineral development, mining, and livestock grazing. Moreover, the NTT and COT reports do not quantify, or even attempt to quantify, the Greater Sage-Grouse conservation benefits of each respective conservation measure.

At the time that the NTT and COT reports were being developed, the BLM, USFWS, and state agencies had not completely developed or established the robust regulatory programs to conserve Greater Sage-Grouse that exist today.

In 2015, the BLM developed an action alternative around the NTT report. In the 2018 Final EIS, the BLM incorporated this analysis by reference. The BLM also coordinated with USFWS during the process culminating in the 2019 RODs to make sure that the conservation measures from the NTT and COT informed the management alignment alternative (**Appendix S-1).** Including the USFWS as a cooperating agency during the 2019 planning process ensured that BLM used the same materials and newest science that the USFWS uses and recommends for Greater Sage-Grouse management.

In 2018, the Environmental Protection Agency (EPA) provided comments on the Draft RMPAs/EISs. Specifically, they provided six comments on the Utah Draft RMPA/EIS, six comments on the Idaho Draft RMPA/EIS, seven comments on the Nevada/Northeast California Draft RMPA/EIS, three comments on the Wyoming Draft RMPA/EIS, six comments on the Oregon Draft RMPA/EIS, and five comments on the Colorado Draft RMPA/EIS. The EPA's comments include suggestions and questions regarding lek buffers, recent science, mitigation, adaptive management, and fluid minerals. The BLM responded to each of EPA's comments and made corrections and/or changes in the 2018 Final EISs. The complete EPA comment analysis can be found in the administrative record. This DSEIS also clarifies how the BLM considered comments, including those of other federal agencies and experts, when developing its 2019 planning decisions **(Appendix 2)**.

1.2 PURPOSE OF AND NEED FOR ACTION

In the Federal Land Policy and Management Act (FLPMA), Congress provided the BLM with discretion and authority to manage public lands for multiple use and sustained yield and declared it the policy of the United States to, consistent with the laws governing the administration of the public lands, coordinate planning activities with the land use planning and management programs of other federal, state, and local governments. Further, FLPMA specifically provides that it neither enlarges nor diminishes the authority of the states in managing fish and wildlife. As the sovereign entities with the lead role in managing game species, including Greater Sage-Grouse, states play a critical role in conserving the Greater Sage-Grouse and its habitat.

In the 2019 Planning effort the BLM modified its approach to managing Greater Sage-Grouse habitat in land use plans by (1) enhancing cooperation and coordination with the State of Utah and tribes where applicable, (2) aligning with DOI and BLM policies issued since 2015, and (3) incorporating updated local science, research and information to better align with Utah's Greater Sage-Grouse conservation plan, whose goal is "to protect, maintain and increase sage-grouse populations and habitats" so as to "ensure that greater sage-grouse will remain 'not warranted' for listing under the Endangered Species Act (Utah Conservation Plan for Greater Sage-Grouse, 2019). The BLM achieved these goals while maintaining the vast majority of Greater Sage-Grouse protections it incorporated into its land use plans in 2015. By implementing these land use plan conservation measures and continuing to exercise its discretion to

approve future project proposals under appropriate terms and conditions or deny them where appropriate, the BLM can adequately protect Greater Sage-Grouse and its habitat while meeting its general obligation under FLPMA to manage public lands under principles of multiple use and sustained yield.

On October 16, 2019, the US District Court for the District of Idaho issued an order granting a motion for a preliminary injunction filed by Plaintiffs Western Watersheds Project, WildEarth Guardians, Center for Biological Diversity, and Prairie Hills Audubon Society. The court found that the Plaintiffs were likely to succeed on the merits of their claims that the BLM violated the National Environmental Policy Act (NEPA) when adopting the 2019 Greater Sage-Grouse plans.

The BLM has prepared this DSEIS to review its previous NEPA analysis, clarify and augment it where necessary, and provide the public with additional opportunities to review and comment. The BLM's DSEIS, including any comments that the agency receives, will help the BLM determine whether its 2015 and 2019 land use planning and NEPA processes have sufficiently addressed Greater Sage-Grouse habitat conservation or whether the BLM should initiate a new land use planning process to consider additional alternatives or new information. To inform this decision that the BLM will make, it has prepared this DSEIS to address four specific issues: the range of alternatives, need to take a "hard look" at environmental impacts, cumulative effects analysis, and the BLM's approach to compensatory mitigation.

1.3 PLANNING AREA AND CURRENT MANAGEMENT

The planning area includes all of the State of Utah, regardless of jurisdiction, except lands in Washington and San Juan Counties (see **Figure 1-1**, Utah Planning Area). **Table 1-1**, Land Management in the Utah Planning Area, identifies surface acres administered by federal agencies, state, tribal, and local governments and lands that are privately owned in the planning area. Greater Sage-Grouse habitat comprises only a portion of the planning area.

Table 1-1
Land Management in the Utah Planning Area

Surface Land Management	Total Surface Land Management Acres
BLM	20,367,500
Forest Service	7,390,200
Private	10,811,700
Indian reservation	1,141,000
USFWS	99,800
State	5,166,500
National Park Service	1,365,600
Bureau of Reclamation	3,900
Department of Defense	1,812,500
Total acres	**48,158,700**

Source: BLM GIS 2015

The RMPA/EIS decision area includes BLM-administered lands in Greater Sage-Grouse habitat management areas, including surface and split-estate lands with BLM-administered subsurface mineral rights. All decisions apply only to BLM-administered lands, including split-estate lands within Greater Sage-Grouse habitat management areas (the decision area).

The Greater Sage-Grouse management areas represent the local ranges of one or more Greater Sage-Grouse populations. These areas are non-contiguous, meaning they are often separated by natural geographic features/barriers or human development (**Figure 1-1**). In the 2015 Greater Sage-Grouse plan amendments, the decision area is further divided into priority habitat management areas (PHMA) and general habitat management areas (GHMA). PHMA and GHMA are defined as follows:

- PHMA—Areas prioritized for managing Greater Sage-Grouse populations (management is only applicable to actions on BLM-administered lands). These management areas include high-quality habitat, and may also include areas with poor or potential habitat, and nonhabitat. PHMA largely coincides with the State of Utah's Greater Sage-Grouse management areas (SGMA). In the SGMA, the State identified areas of seasonal habitat, nonhabitat, and opportunity areas, though management is focused on the habitat. PHMA are areas that include all the seasonal habitats for the corresponding Greater Sage-Grouse populations, including breeding, late brood-rearing, winter areas, and migration or connectivity corridors.
- GHMA—Areas identified in the 2015 Plan with mapped occupied habitat outside of PHMA (management is only applicable to actions on BLM-administered lands). The State of Utah's plan does not include maps or specific management for occupied habitat outside their SGMA.

The BLM's 2015 Greater Sage-Grouse plan amendments designated PHMA and GHMA as follows: (see **Table 1-2**).

Table 1-2
Acres of PHMA and GHMA in the Decision Area for the RMPA

	PHMA	GHMA
BLM-administered surface	2,079,900	440,100
BLM-administered mineral estate*	1,319,400	178,000

Source: BLM GIS 2015

*Acreage where the surface and mineral estates are owned or administered by separate entities. These acres show where the surface estate is not BLM administered (e.g., private, state, tribal, and United States Department of Agriculture, Forest Service) but that have a federal mineral estate administered by the BLM.

It is important to note that the State of Utah's maps used for occupied habitat are broad in nature, and were developed to identify the general areas of potential habitat where Greater Sage-Grouse may be found. The State's general maps, and by extension the BLM's PHMA maps, were developed with the intent that as decision-making in the mapped areas moves from broad considerations to application at more specific areas, information that is correspondingly more detailed should be reviewed to determine if a given area actually includes occupied Greater Sage-Grouse habitat.

There are 14 land use plans in Utah that were amended as part of the 2019 planning process:

- Vernal Resource Management Plan (2008)
- Price Resource Management Plan (2008)
- Richfield Resource Management Plan (2008)
- Kanab Resource Management Plan (2008)
- Grand Staircase-Escalante National Monument Management Plan (2000)

- Cedar/Beaver/Garfield/Antimony Resource Management Plan (1986)
- Pinyon Management Framework Plan (1978)
- Warm Springs Resource Management Plan (1987)
- House Range Resource Management Plan (1987)
- Pony Express Resource Management Plan (1990)
- Box Elder Resource Management Plan (1986)
- Randolph Management Framework Plan (1980)
- Park City Management Framework Plan (1975)
- Salt Lake District Isolated Tracts Planning Analysis (1985)

1.4 2019 AND ISSUES DEVELOPMENT

1.4.1 Issues and Related Resource Topics Identified Through Scoping as Part of the 2019 Planning Process

When deciding which issues to address related to the purpose and need, the BLM considers points of disagreement, debate, or dispute regarding an anticipated outcome from a proposed action. Issues are based on anticipated environmental impacts; as such, issues can help shape the proposal and alternatives. The BLM used internal, agency, and public scoping to identify issues to consider in the environmental analysis. A summary of the scoping process for the 2019 planning process is presented in Potential Amendments to Land Use Plans Regarding Greater Sage-Grouse Conservation Scoping Report (https://goo.gl/FopNgW). When determining whether to retain an issue for more detailed analysis in the 2018 RMPA/EIS, the interdisciplinary team considered, among other things, the following:

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

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

The sections below outline how issues raised during scoping for the 2019 planning process, as well as related resource topics, were considered in the 2018 RMPA/EIS. Generally, they fell into the following categories:

- Issues and related resource topics retained for further consideration in the 2018 RMPA/EIS—These were issues raised during scoping for which alternatives were developed to address the issues. In some cases, the resolutions in the alternatives were previously analyzed in the 2015

Final EIS. In other cases, additional analysis was needed in the 2018 RMPA/EIS. Because the issues were analyzed under resource topics in 2015, the resource topics corresponding with those retained for further analysis were also considered in the 2018 RMPA/EIS. Just like issues, they may have been analyzed in the 2015 Final EIS for those decisions included in the 2018 RMPA/EIS.

- Clarification of decisions in the 2015 Approved Resource Management Plan Amendments (ARMPA)—These were decisions or frameworks in the 2015 ARMPA that required clarification as to their application or implementation. No new analysis was required, as the intentions behind the decisions were analyzed in the 2015 Final EIS.
- Some issues and resource topics that were brought up during scoping were not carried forward for additional consideration or analysis in the 2018 RMPA/EIS—While some of these issues were considered in the 2018 RMPA/EIS, they did not require additional analysis because they were analyzed in the 2015 Final EIS. Others were not carried forward in the 2018 RMPA/EIS because they did not further the purpose of aligning with the State's conservation plan. Similar to issues, there were resource topics that were not retained for further analysis. This was because either they were not affected by the changes proposed in Chapter 2 of the 2018 RMPA/EIS or because the impact was analyzed in the 2015 Final EIS.

1.4.2 Issues and Related Resource Topics Retained for Further Consideration in this DSEIS

Based on the issues identified in **Table 1-3**, below, the resource topics that could be affected are as follows: Greater Sage-Grouse, air quality, soil resources, water resources, vegetation (including noxious weeds and riparian and wetlands), other special status species, fish and wildlife, wild horses and burros, cultural resources, visual resources, wildland fire management, lands with wilderness characteristics (not managed for their protection), livestock grazing/rangeland management, recreation, comprehensive travel and transportation management, lands and realty, renewable energy, leasable minerals (fluid, nonenergy, coal, oil shale, and tar sands), locatable minerals, mineral materials, social and economic conditions, and tribal interests. Therefore, these resource topics are carried forward for additional consideration and analysis.

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

Table 1-3
Issues and Related Resource Topics

Issues	Resource Topics Related to the Issues
Sagebrush Focal Area Designations/Withdrawal Recommendation • Do SFAs contribute to achieving conservation outcomes? • Relevance of this habitat designation in the absence of a withdrawal? • Does the designation and associated management align with the State's plan/strategy?	Greater Sage-Grouse, soil, water, vegetation, other special status species, fish and wildlife, cultural, wildland fire management, livestock grazing, fluid mineral leasing, locatable minerals, social and economic considerations, and tribal interests

Issues	Resource Topics Related to the Issues
Administering Disturbance and Density Caps • How should non-habitat portions of PHMA be accounted for when administering the disturbance cap? • How can local data on how Greater Sage-Grouse use the landscape in Utah inform the disturbance cap? • Can the disturbance and density caps be administered to incentivize avoidance of important Greater Sage-Grouse habitat without blanket constraints on energy and mineral development?	All, except for air quality, renewable energy, and oil shale and tar sands
Modifying Mitigation Strategy • What adjustments are needed to the mitigation strategy to align it with the State of Utah's Compensatory Mitigation Program? • What adjustments are needed to the mitigation strategy to align it with BLM policy contained in IM 2018-093 (Compensatory Mitigation), dated July 24, 2018?	Greater Sage-Grouse, vegetation, other special status species, fish and wildlife, lands and realty, leasable minerals (fluid, nonenergy, coal, oil shale, and tar sands), locatable minerals, mineral materials
Modifying Habitat Objectives • Are the objectives applicable to the ecological conditions and potential for areas throughout Utah? • Do the indicators align with the site-specific needs of the species? • How will local science be incorporated, recognizing differing ecological conditions and potential throughout the planning area?	Greater Sage-Grouse, vegetation, other special status species, fish and wildlife, wild horses and burros, and livestock grazing
Waivers, Exceptions, and Modifications for NSO Stipulations • Can development occur in portions of PHMA without impacting Greater Sage-Grouse and its habitat? • Change in requirements for the USFWS to approve waivers, exceptions, or modifications • Impact of oil and gas leasing on achieving Greater Sage-Grouse conservation outcomes	Greater Sage-Grouse, air, soil, water, vegetation, other special status species, fish and wildlife, wild horses and burros, cultural, visual resources, wildland fire management, wilderness characteristics, fluid mineral leasing, social and economic considerations, and tribal interests
General Habitat Management Areas in Utah • What management of Greater Sage-Grouse habitat outside of PHMA is necessary to balance conservation outcomes for Greater Sage-Grouse with local economic development opportunities? • Are any habitat designations warranted to achieve conservation outcomes beyond the State of Utah's 'Greater Sage-Grouse Management Area' designation?	All, except wild horses and burros, livestock grazing, recreation, and coal
Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA • Is management to protect Greater Sage-Grouse necessary in areas of non-habitat within PHMA? • Can conservation of Greater Sage-Grouse occur while considering opportunities for development within PHMA?	All, except Greater Sage-Grouse, livestock grazing, travel and transportation, and coal
Adaptive Management • How can adaptive management responses better focus on the factors causing the declines? • Identify the process for changing management if species has recovered from an action (or actions) that tripped a trigger • Identify a process for potentially removing an area from PHMA if recovery efforts fail	All

Issues	Resource Topics Related to the Issues
Prioritization of Mineral Leasing • Does the objective for prioritizing fluid mineral leasing outside PHMA and GHMA align with the state's Greater Sage-Grouse conservation strategy?	Greater Sage-Grouse, vegetation, other special status species, fish and wildlife
Land Disposal and Exchanges • Is retaining all lands managed as PHMA and GHMA always the only means of conserving Greater Sage-Grouse? • Can site-specific conditions surrounding potential land disposals or exchanges affect whether retention of public lands is the best management approach? • Increase flexibility in considering the benefit to disposing of Greater Sage-Grouse habitat where the public would benefit from such a transaction	Greater Sage-Grouse, vegetation, other special status species, fish and wildlife, wildland fire management, wilderness characteristics, land use and realty, oil shale and tar sands, and social and economic conditions
Managing Habitat to Manage Predation • Are there vegetation management measures that would reduce the threat of predation to Greater Sage-Grouse?	Greater Sage-Grouse, vegetation, special status species, and fish and wildlife
Burial of Transmission Lines • Is burial of every proposed transmission line or renewal, amendment, or reauthorization of existing transmission lines the best conservation approach for Greater Sage-Grouse? • Is prioritizing burial of transmission lines consistent with the state's conservation strategy?	Greater Sage-Grouse, soil resources, vegetation, other special status species, fish and wildlife, cultural resources, visual resources, wildland fire management, land use and realty, renewable energy, social and economic conditions, and tribal interests

1.4.3 Clarification of Planning Decisions in the 2015 ARMPA

The following issues with existing planning decisions were raised during scoping. These issues require clarification to the ARMPA language but, because they are clarifications and do not change management as intended or analyzed in the 2015 Final EIS, they do not require new analysis. The clarifying language for these planning decisions is displayed in this planning document to communicate how these issues are being addressed.

Clarifying Process for Modifying Habitat Management Area Boundaries

The PHMA boundaries were initially designated to align with the areas mapped as "habitat" within the State's 2013 SGMA; however, the State's SGMA boundaries were intended to be adjusted based on site-specific data. Similarly, the PHMA boundaries were intended to be able to be adjusted (increased or decreased) based on site-specific data to adequately capture Greater Sage-Grouse habitat needs to the corresponding Greater Sage-Grouse population, based on best available site-specific science and monitoring data. This was clearly described in language in the 2015 Final EIS, Section 2.7.4.

Clarifying Application of Lek Buffers

During scoping, an issue was raised questioning whether the lek buffers identified in the 2015 ARMPA were tools to analyze and reduce impacts or to preclude activities in the buffer area. The BLM's 2015 ARMPA provided direction to apply lek buffer-distances; however, the appendix describing how to apply the buffers is not consistent on whether they are a tool to "evaluate impacts to leks" or to "relocate [projects] outside the applicable lek buffer-distances." This process clarifies the inconsistency by aligning the buffer strategy with the BLM Utah's PHMA strategy, which is consistent with the State of Utah's

management approach. Like the state's SGMA, the BLM's PHMA was mapped to capture all seasonal habitats used by priority populations of Greater Sage-Grouse in the State, not just focus on breeding or nesting areas that are addressed by lek buffers. Because the clarifications in how lek buffers are applied are consistent with the strategies already contained in the 2015 ROD/ARMPA and analyzed in the 2015 Final EIS, no additional analysis is necessary.

The 2015 ARMPA appendix also includes language that "justifiable departures to decrease or increase from [the] distances, based on local data [and] best available science…may be appropriate for determining activity impacts." Since completion of the 2015 ROD/ARMPA, Utah State University has analyzed the relationships between power lines and nesting and brood-rearing hen data from Utah. Based on their analysis, the tall structures buffer is being decreased from 2.0 miles to 1.7 miles, consistent with the language already in the appendix. Because such adjustments were already provided for in the appendix, no additional analysis is necessary.

Clarifying Grazing Systems and Prioritization of Grazing Permits

The 2015 ARMPA includes several management actions in the livestock grazing section that duplicate existing agency regulations, policies, or management actions in other sections of the ARMPA. As such, these actions would continue to be implemented whether or not they appear in the land use plan. Additionally, these actions tend to address management on livestock grazing in general, rather than focusing on the threat to Greater Sage-Grouse from improper livestock grazing, which is the focus of the State's management and strategies. Because removing these actions does not change whether they are implemented via regulation, policy, or other management action, no new analysis is required.

Clarifying Management of Water Developments for Livestock

The second sentence of management action MA-LG-10 in the 2015 ROD/ARMPA could be interpreted as potentially impinging on the State's authority to manage water rights; however, the second sentence merely repeats the principle of the first sentence of this action with more specific details to a type of vegetation condition. So long as the first sentence is met, the second sentence's removal does not change any impacts, and increases alignment with the State's plans and strategies.

Clarifying the Role of the State of Utah and Counties with Respect to Travel Management Planning

An issue was raised in scoping to clarify the role of governmental parties in subsequent travel management efforts. Clarification of who needs to be included in coordination for implementation-level travel management planning does not have any on-the-ground impact, and therefore does not require new analysis.

Clarifying the Role of the BLM, State of Utah, and Counties with Respect to Predator Control

An issue was raised in scoping to clarify the role of governmental parties in predator control. Successful predator management requires coordination across a wide variety of state, county, and federal agencies with differing jurisdictions. The importance of such coordination was addressed in this RMPA/EIS as a clarification of language already present in the 2015 ARMPA. Clarification of the importance of such coordination does not have any on-the-ground impact, and therefore does not require new analysis.

Clarifying Management of Surface Coal Mining

Issues were raised during scoping regarding surface mining of coal in Greater Sage-Grouse habitat. Management Action MR-18 in the 2015 ARMPA included language that addressed this issue, but it became apparent through scoping that the language was not sufficiently clear. To address this confusion the language was modified to clarify the intent of the 2015 ARMPA. As this does not include a change in the actual decision, but merely a clarification to align with the intent of the 2015 ARMPA, no new impacts need to be analyzed.

Decisions that Require Analysis of Specific Alternatives during Implementation

An issue from scoping noted that several of the ARMPA actions did nothing more than direct analysis of specific alternatives during environmental review of site-level projects. Nothing in the State of Utah's plan directs blanket analysis of a given course of action without consideration of the issues and site-specific resource conditions. As such, requirements to analyze specific alternatives regardless of site-specific issues do not align with the State's plan or strategies. Because there is no impact associated with simply "considering" a future unknown action, there is no corresponding impact as a result of removing it from required consideration. Therefore no new impacts need to be analyzed. Any actual impacts of a given "considered" action would be determined during the site-specific NEPA effort and be based on the specific conditions in the given planning area.

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

Issues and Related Resource Topics not Carried Forward for Additional Analysis

Comments were raised regarding managing for target Greater Sage-Grouse population levels as an issue for consideration during scoping for the 2018 RMPA/EIS. The issue was not carried forward for detailed analysis because the BLM does not manage species populations, an authority that falls under the jurisdiction of the State of Utah and implemented by the Division of Wildlife Resources.

Because the following issues were analyzed in the 2015 Final EIS, and no significant new information had emerged, they did not require additional analysis in the 2018 RMPA/EIS and these related resource topics were dismissed from additional analysis. The types of impacts on these resources were described in the range of alternatives in the 2015 Final EIS. The impacts of implementing the alternatives in the 2018 RMPA/EIS were within the range of alternatives previously analyzed in 2015:

- Restrictions on rights-of-way (ROWs) and infrastructure
- ROW avoidance in PHMA and GHMA
- Varying stipulations applied to oil, gas, and, geothermal development
- Impacts of NSO stipulations on Greater Sage-Grouse habitat on land not administered by the BLM
- Numerical noise limitations in PHMA
- Contribution of disturbance caps toward Greater Sage-Grouse conservation objectives
- Required design features (RDFs)
- Vegetation treatments and wildfire response
- Habitat and plan effectiveness monitoring using tools such as the habitat assessment framework

The BLM evaluated the following issues as part of the 2015 Final EIS. For the same reasons they were dismissed in the 2015 Final EIS, they were not carried forward for detailed analysis in the 2018 RMPA/EIS (see Section 1.6.3 in the 2015 Final EIS):

- Greater Sage-Grouse hunting
- Predator control
- Military overflights of PHMA/GHMA

Resource Topics Not Carried Forward for Additional Analysis

The resource topics below are dismissed from detailed analysis. While these resource topics may have impacts related to Greater Sage-Grouse conservation that were analyzed in the 2015 Final EIS, they were dismissed from detailed analysis because they have no potentially significant impacts from actions proposed in the 2018 RMPA/EIS:

- Geology
- Paleontological resources
- Special designations (i.e., areas of critical environmental concern, wilderness, wilderness study areas, wild and scenic rivers, and national trails)
- Lands with wilderness characteristics managed for their protection (natural areas)

1.5 ITEMS TO BE CLARIFIED IN THIS DSEIS

The items considered in this DSEIS are related to the analysis in the 2018 Final EIS. These items are:

- clarifying the range of alternatives (including how the BLM considered the full range of the 2015 alternatives in the 2019 planning process),
- taking a hard look and using the best available science (including clarified effects analysis, how the 2015 and 2019 Final EISs addressed the NTT and COT recommendations and conservation measures) (**Appendix 4)**,
- clarifying that the cumulative effects analysis was done at the range wide level and organized by WAFWA Management Zone (MZs) Updated language also highlights why WAFWA MZs were used,
- an updated Reasonably Foreseeable Future Actions.

1.6 RELATIONSHIP TO OTHER POLICIES, PLANS, AND PROGRAMS

The BLM recognizes the importance of state, tribal, and local plans. The BLM will be consistent with or complementary to the management actions in these plans to the maximum extent consistent with FLPMA.

1.6.1 State Plans/Strategies

State plans and strategies considered during planning are the following:

- Governor's 10-year Strategic Energy Plan (2011)
- Uintah Basin Energy Zone (2015)
- Green River Energy Zone (2014)

- Utah Conservation Plan for Greater Sage-Grouse (2019)
- State of Utah Executive Order 2015/002 – Implementing the Utah Conservation Plan for Greater Sage-Grouse (2015)
- Utah Wildlife Action Plan (2015)
- State of Utah Administrative Code – R-634-003 – Compensatory Mitigation Program (2018)
- State of Utah Resource Management Plan (2018)

1.6.2 Tribal Plans/Strategies

The tribal plan and strategy considered during planning was the Uintah and Ouray Greater Sage-Grouse Conservation Ordinance (2013)

1.6.3 Local Plans

Local land use plans considered during planning are the following:

- Beaver County General Plan (1994) and Beaver County Resource Management Plan (RMP) (2017)
- Box Elder County General Plan (1998, as amended) and Box Elder County RMP (2017)
- Cache County Comprehensive Plan (1998) and Cache County RMP (2017)
- Carbon County Master Plan (1997) and Carbon County RMP (2017)
- Daggett County General Plan (2009) and Daggett County RMP (2017)
- Duchesne County General Plan and Duchesne County RMP (2017)
- Emery County General Plan (1996, as amended) and Emery County RMP (2017)
- Garfield County, Utah, General Plan (1995, as amended) and Garfield County RMP (2017)
- Grand County General Plan (2012) and Grand County RMP (2017)
- Iron County General Plan (1995, as amended) and the Iron County RMP (2017)
- Juab County General Plan and Juab County RMP (2017)
- Kane County, Utah, General Plan (1998, as amended) and Kane County RMP (2017)
- Millard County General Plan (2010) and Millard County RMP (2017)
- Morgan County General Plan (2010) and Morgan County RMP (2017)
- General Plan for Piute County (1994) and Piute County RMP (2017)
- Rich County Comprehensive Plan (1996) and Rich County RMP (2017)
- Sanpete County General Plan (2010, as amended) and Sanpete County RMP (2017)
- Sevier County General Plan (1998) and Sevier County RMP (2017)
- Eastern Summit County General Plan (2010) and Summit County RMP (2017)
- Tooele County General Plan (1995) and Tooele County RMP (2017)
- Uintah County Land Use Plan (2011) and Uintah County RMP (2017)
- Uinta County Comprehensive Plan (2011)
- Uinta County Conservation District Plan
- Utah County General Plan (2006) and Utah County RMP (2017)
- Wasatch County General Plan (2010) and Wasatch County RMP (2017)
- General Plan for Wayne County (1994) and Wayne County Public Lands RMP (2017)

1.6.4 Local Sage-Grouse Working Group Plans

- Castle Country Greater Sage-Grouse Local Conservation Plan (2006)
- West Box Elder Greater Sage-Grouse Local Working Group Conservation Plan (2007)
- Color Country Greater Sage-Grouse Local Conservation Plan (2008)
- Morgan-Summit Greater Sage-Grouse Local Conservation Plan (2006)
- Parker Mountain-Emery Greater Sage-Grouse Local Conservation Plan (2014)
- Rich County Coordinated Resource Management Greater Sage-Grouse Conservation Plan (2006)
- Southwest Desert Greater Sage-Grouse Local Conservation Plan (2007)
- Strawberry Valley Greater Sage-Grouse Local Conservation Plan (2006)
- Uinta Basin Greater Sage-Grouse Local Conservation Plan (2007)
- West Desert Greater Sage-Grouse Local Conservation Plan (2007)

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Chapter 2. Alternatives

2.1 Introduction

This chapter describes the seven alternatives considered during the 2019 planning process. The 2018 Draft RMPA/EIS analyzed in detail the No-Action Alternative and the Management Alignment Alternative, which was modified to be the Proposed Plan Amendment in the 2018 Proposed RMPA/Final EIS based on coordination with the State of Utah, input from other cooperating agencies and public comments, and alignment with BLM policies. In addition to the alternatives considered in detail, this chapter includes a description of alternatives considered but eliminated from detailed analysis.

The 2018 Draft RMPA/EIS expressly incorporated the full range of 2015 alternatives by reference, which were carried through the 2018 Proposed RMPA/Final EIS and subsequent 2019 Record of Decision. This DSEIS incorporates by reference, with additional detailed summaries, all 2015 alternatives, and is providing the public with an additional opportunity to review and comment on the full range of seven alternatives evaluated in the 2018 Proposed RMPA/Final EIS. The full range of alternatives considered in the 2018 Final EIS is both summarized and provided in detail in the three tables in **Section 2.5**. NEPA's implementing regulations require materials to be incorporated by reference when the effect will be to cut down on bulk without impeding agency and public review (40 CFR 1502. 21).

Components of Alternatives

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

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

2.2 Other Alternatives Considered

2.2.1 Varying Constraints on Land Uses and Development Activities

During scoping for the 2019 planning process, some commenters asked for increased or additional constraints on land uses and ground-disturbing activities to protect Greater Sage-Grouse habitat. These constraints were beyond those in the 2015 management plan.[1] Other commenters, in contrast, asked the BLM to consider eliminating or reducing constraints on land uses, or incorporating other flexibilities into the BLM's implementation of RMPs, in addition to those issues that were evaluated in the 2018

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

Management Alignment Alternative (adjusted to be the Proposed Plan Amendment). The BLM considered every scoping comment and, where appropriate, incorporated these issues into the 2018 Draft RMPA/EIS Management Alignment Alternative following coordination with the State. Because the purpose and need for the BLM's action in 2018, building off of the 2015 ROD/ARMPA, was to enhance cooperation with the states by seeking to better align the BLM's RMPs with individual state plans and/or conservation measures (e.g., Conservation Plan for Greater Sage-Grouse in Utah; Utah Executive Order EO/2015/002, Utah Sage-Grouse Compensatory Mitigation Program), the BLM carefully evaluated the State's evaluation of issues.

This 2019 planning process did not revisit every issue that the BLM evaluated in 2015, as the analysis from that document was still accurate. Instead, the BLM addressed refinements to the 2015 ROD/ARMPA decisions, consistent with the BLM's purpose and need for action. Accordingly, the 2018 Proposed RMPA/Final EIS had as its foundation in the comprehensive 2015 Final EIS and ROD/ARMPA, and incorporated all the alternatives from that process by reference—including the entire range of alternatives evaluated through the 2015 planning process:

- Alternative A (No-Action Alternative) would have retained the management goals, objectives and direction specified in the BLM RMPs and the Forest Service land and resource management plans effective prior to the 2015 ROD/ARMPA.
- Alternative B was based on the conservation measures developed by the National Technical Team planning effort in Washington Office IM 2012-044. As directed in the IM, the conservation measures developed by the National Technical Team must be considered and analyzed, as appropriate, through the land use planning process and NEPA by all BLM state and field offices that contain occupied Greater Sage-Grouse habitat. Most management actions included in Alternative B would have been applied to PHMA.
- Alternative C was based on a citizen groups' recommended alternative and was combined with Alternative F considered by Idaho, Nevada and Northeastern California, Montana, and Oregon. This alternative emphasized improvement and protection of habitat for Greater Sage-Grouse and was applied to all occupied Greater Sage-Grouse habitat. Alternative C would have limited commodity development in areas of occupied Greater Sage-Grouse habitat and would have closed or designated portions of the planning area as unavailable for some land uses.
- Alternative D, which was identified as the Preferred Alternative in the 2015 Utah Greater Sage-Grouse Draft LUPA/EIS, balanced opportunities to use and develop the planning area and protects Greater Sage-Grouse habitat based on scoping comments and input from Cooperating Agencies involved in the alternatives development process. Protective measures would have been applied to Greater Sage-Grouse habitat.
- Alternative E was based on management from the State of Utah's Conservation Plan for Greater Sage-Grouse in Utah. It incorporated guidance from specific State Conservation strategies and limited management to the State of Utah's Sage-Grouse Management Areas that included all seasonal habitats of the State's priority Greater Sage-Grouse populations.
- The Proposed LUPA in the 2015 Utah Greater Sage-Grouse Proposed LUPA/Final EIS incorporated guidance from specific State Conservation strategies, as well as additional management based on the National Technical Team recommendations. This alternative emphasized management of Greater Sage-Grouse seasonal habitats and maintaining habitat connectivity to support population objectives.

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

Further, additional constraints on land uses or development without a documented need would not meet the purpose of SO 3353. The BLM did not discover new information that would indicate the agency should increase the level of conservation, management, and protection to achieve its land use plan objective. As part of the consideration of whether to amend the 2015 Greater Sage-Grouse LUPs, the BLM partnered with the USGS to review the best available information published since January 2015, develop an annotated bibliography of that Greater Sage-Grouse science (Carter et al. 2018; see **Section 3.1**), and incorporate the information into this EIS. In addition, SO 3353 directs the BLM to promote habitat conservation, while contributing to economic growth and energy independence. As analyzed in the 2015 Final EIS, all of the previously analyzed alternatives, including one proposing constraints stricter than the current management plan, were predicted to result in a loss of development opportunities on public lands.

2.2.2 Making Priority Habitat Management Areas Identical to the State's Greater Sage-Grouse Management Areas

During alternatives development for the 2019 planning process, the interdisciplinary team considered strategies to improve alignment between the BLM's priority habitat management areas (PHMA) and the State of Utah's Greater Sage-Grouse management areas (SGMA). This included considering aligning PHMA with the 2013 SGMA boundaries, regardless of whether the SGMA was mapped as habitat, non-habitat, or opportunity area.

PHMA was developed to align with areas mapped as habitat in the 2013 SGMA to the greatest extent possible. If the BLM were to adopt an alternative with identical PHMA and SGMA boundaries, an unintended consequence would be that PHMA would include a significant amount of areas the State plan identified as non-habitat or opportunity areas; consequently, PHMA management prescriptions would apply to these non-habitat and opportunity areas, which would increase inconsistencies in management, compared with the State's plan. It would also be inconsistent with BLM planning direction that "when applying leasing restrictions, the least restrictive constraint to meet the resource protection objective should be used" (BLM-H-1601-1 - Land Use Planning Handbook, Appendix C, page 24). This alternative was eliminated from detailed analysis for reasons similar to those discussed in **Section 2.2.1** above.

In particular, the BLM's RMPs are the primary location for management actions to avoid or minimize impacts on Greater Sage-Grouse habitat. This includes land use allocations and stipulations for activities such as oil and gas leasing (e.g., no surface occupancy, controlled surface use) and consideration of rights-of-way (e.g., avoidance, exclusion). These allocations are necessary to align with the State's Greater Sage-Grouse management protocol that "avoidance of disturbance to habitat or birds by an activity is the preferred option" and to "avoid surface disturbance to the greatest degree possible" while "balancing the economic and social needs of the residents of Utah."

The interdisciplinary team determined the approach of matching PHMA and SGMA boundaries would not be consistent with BLM policies or increase alignment with the State's strategies, compared with

other potential adjustments considered in this chapter (e.g., exceptions for PHMA with areas of non-habitat and providing for boundary adjustments). Due to this, the approach was not analyzed in detail.

2.2.3 Use of Other Habitat Maps for PHMA Designation

During the scoping process for the 2019 planning process, some commenters included requests that the BLM use different habitat maps for use in designating PHMA. Some commenters requested expanding current PHMA to include all areas within 5 miles of any occupied lek, while some requested contracting it to only include areas that currently have sagebrush. An approach based on these comments was considered but eliminated from detailed analysis for the reasons discussed below.

- The request that any area within 5 miles of a lek be included as PHMA relied on one piece of literature that suggested that impacts from development may extend for 5 miles from occupied leks; however, based on a substantial review of literature regarding lek buffers, the USGS recognized "that because of variation in populations, habitats, development patterns, social context, and other factors, for a particular disturbance type, there is no single distance that is an appropriate buffer for all populations and habitats across the Greater Sage-Grouse range" (Manier et al. 2014). Additionally, making areas within 5 miles of occupied leks PHMA would increase disparity with the State's plan and strategies, which is not consistent with the purpose and need. Because of this, an alternative that automatically makes any area within 5 miles of occupied leks PHMA was not analyzed in detail.
- Some commenters requested that PHMA boundaries be adjusted to include only areas with sagebrush, including omitting areas that could be habitat with treatment. Mapping areas for PHMA as broader polygons is intended to encompass Greater Sage-Grouse habitats used throughout the year by known Greater Sage-Grouse populations. Peer-reviewed literature notes that Greater Sage-Grouse habitat can be described at four scales: a broad geographic range that defines the species distribution, populations/sub-populations, mosaics of seasonal habitats utilized by individuals, and the food and cover attributes at particular sites (see Appendix K of the 2015 ROD/ARMPA).
- PHMA are areas that meet some stage of the Greater Sage-Grouse life-cycle requirements, based on best available science. These broad habitat maps are necessary at the resource management plan-scale of planning in order to include a variety of important seasonal habitats and movement corridors that are spread across geographically diverse and naturally fragmented areas. Greater Sage-Grouse use multiple areas to meet seasonal habitat needs throughout the year and the resulting mosaic of habitats (e.g., winter, breeding, nesting, early brood-rearing, late brood-rearing, transitional, and movement corridor habitats) can encompass large areas. Broad habitat maps increase the likelihood that all seasonal habitats (including transition and movement corridors) are included. While areas of non-habitat, in and of themselves, may not provide direct habitat value for Greater Sage-Grouse (e.g., canyons, water bodies, and human disturbances), these areas may be crossed by birds when moving between seasonal habitats.

Further, the State of Utah has statutory responsibility to manage Greater Sage-Grouse. Where submitted information and strategies are inconsistent with those used by the State, the BLM has chosen to use the State of Utah's information based on their knowledge of and responsibility for the management of Greater Sage-Grouse. Using maps that limit PHMA to just sagebrush would increase disparity from the State's plan and strategies, which is not consistent with the purpose and need. For these reasons, an alternative that shrinks PHMA to just areas with sagebrush was not analyzed in detail.

2.2.4 County Greater Sage-Grouse Management Plans

During scoping for the 2019 planning process, some counties requested that Greater Sage-Grouse management be developed on a county-by-county basis to accommodate the differences in habitat and land uses. After review of the various county plans, it was determined an alternative specifically based on these plans not be analyzed in detail for two general reasons:

1) Aspects of some county plans are substantially similar to the State's plans and strategies. Consideration of a separate alternative for these aspects is unnecessary since alignment with the State's strategies is the purpose of this effort.
2) Some aspects of the county plans are substantially different from the State's plan and strategies. To the extent that the plans diverge, following those aspects of the county plans would not meet the purpose and need. Since the purpose of this planning effort is to increase alignment with the State strategies, aligning with different approaches would not be consistent with the purpose and need. Additionally, the BLM's planning regulations note that "where state and local government policies, plans, and programs differ, those of the higher authority will normally be followed" (43 CFR 1610.3-2(d)).

2.3 DESCRIPTION OF ALTERNATIVES IN THE 2018 PROPOSED RMPA/FINAL EIS

2.3.1 No-Action Alternative

Under the No-Action Alternative, the BLM would not change the management actions from the 2015 Utah Greater Sage-Grouse ROD/ARMPA. Greater Sage-Grouse habitat would continue to be managed under current management direction. Goals and objectives for BLM-administered lands and federal mineral estate would not change. Allowable uses and restrictions pertaining to such activities as mineral leasing and development, lands and realty, and livestock grazing would also remain the same. This alternative includes the designation of Sagebrush Focal Areas (SFAs), PHMA, and GHMA, with corresponding management for each type of area.

2.3.2 2018 Proposed RMPA/Final EIS Proposed Plan Amendment

The 2018 Proposed RMPA/Final EIS Proposed Plan Amendment was developed by modifying the 2018 Draft RMPA/EIS Management Alignment Alternative based on clarifications and modifications that resulted from coordination with the State of Utah, input from other cooperating agencies and public comments, and alignment with BLM policies. It was developed through coordination with the State of Utah and cooperating agencies to increase alignment with the State of Utah's Greater Sage-Grouse conservation plan and strategies and to support conservation outcomes for Greater Sage-Grouse.

The BLM continued to build upon the 2015 planning effort as envisioned in SO 3353 by collaborating with states to improve compatibility between federal management plans and other plans and programs at the state level, while ensuring consistency with the BLM's multiple use mission. This enhanced cooperation between the BLM and the Utah Governor's office would lead to improved management and coordination with the State across the range of Greater Sage-Grouse in Utah. The Proposed Plan Amendment focuses management on PHMA to protect the seasonal habitats that support over 95 percent of Greater Sage-Grouse populations in Utah, while removing the designation and management of GHMA. Additionally, PHMA management would be adjusted to maintain avoidance protections while allowing site-specific adjustments to account for the unique nature of habitat types and distribution throughout Utah.

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

Specific changes between the 2018 Draft RMPA/EIS Management Alignment Alternative and the Final EIS Proposed Plan Amendment are highlighted in gray in **Section 2.5** for ease of reference.

2.4 COMPARATIVE SUMMARY OF ALTERNATIVES

Table 2-1 summarizes and compares how management associated with issues changes between the No-Action Alternative and the 2018 Proposed Plan Amendment. In comparing these it is important to clarify that the land use allocations had not changed from those in the 2015 effort (e.g., right-of-way open/avoidance/exclusion, oil and gas open/controlled surface use/no surface occupancy/closed, and salable open/closed). Those allocations are the BLM's mechanism to avoid disturbance, consistent with the direction in the State's strategies to first avoid development; rather, the differences are the degree to which local information can be taken into account to determine if a more flexible approach can be applied that to consider development while not impacting Greater Sage-Grouse populations.

It is also critical to note that information in this table can be useful in helping the reader understand differences between the No-Action Alternative and the 2018 Proposed Plan Amendment; however, there are limitations. The reader is urged to use the information in this table as a quick reference but to read the detailed alternatives and analyses (**Section 2.5** and **Chapter 4**) to understand specific differences.

Table 2-1
Comparative Summary of Alternatives

2018 Final EIS Issue	2018 No-Action Alternative	2018 Proposed Plan Amendment
Sagebrush Focal Area Designations/Withdrawal Recommendation	• 181,100 acres of SFA • Recommended for withdrawal and prioritized for treatments/livestock permits	• 0 acres of SFA • Return to underlying management (usually PHMA) – no withdrawal
Administering the Disturbance and Density Caps	• No additional disturbance if an area has >3% disturbance or an average of >1 facility/640 acres	• If project design and site conditions indicate a project will improve habitat, exceedances of disturbance and density caps are allowed
Modifying Habitat Objectives	• Values based on standard vegetation data, differentiated by populations. • Adjustments can be made at the local level based on local science	• Objective values based on micro-site vegetation data combined with broad vegetation, climatic, and elevation data. • Adjustments can be made at the local level based on local science
Waivers, Exceptions, and Modifications (WEMs) for NSO Stipulations	• In SFA, no WEMs • In PHMA, only one lease exception and no waivers or modifications. • To grant the exception, the state, BLM, and Fish and Wildlife Service must all agree it will benefit Greater Sage-Grouse	• No SFA • Exception and modification in PHMA if the development is in non-habitat and doesn't indirectly impact habitat • Would still need to apply minimization measures (3%, noise, etc.) • Waiver if the area is no longer PHMA

2018 Final EIS Issue	2018 No-Action Alternative	2018 Proposed Plan Amendment
General Habitat Management Areas in Utah	• 448,600 acres of GHMA • Includes lek buffers, required design features, net conservation gain, habitat objectives, leasing prioritization • Management in place prior to the 2015 Plan Amendment would remain	• 0 acres of GHMA, and removing associated management • Management in place prior to the 2015 Plan Amendment would remain • Avoid indirect impacts on PHMA • Replace seasonal habitat developed outside PHMA by improving habitat in PHMA
Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA	• Non-habitat portions of GHMA can be developed without restriction, but not non-habitat portions of PHMA	• Non-habitat portions of PHMA can be developed if it does not indirectly impact habitat
Application of Lek Buffers	• Unclear whether buffers are to "assess and address impacts" or "not allow activities" within the buffer distances • Adjust buffers with local scientific data	• Clarifies that buffers are to "assess and address impacts" to maintain lek persistence • Adjust buffers with local scientific data
Adaptive Management	• Determine the cause of a decline after management changes have been made • If area recovers, another plan amendment would be needed to change management	• Determine cause of decline first, then apply specifically designed response • If area recovers, return to original management • If birds are no longer present, do not manage as PHMA anymore
Prioritization of Mineral Leasing	• In addition to NSO stipulations, prioritize oil and gas leasing outside of PHMA and GHMA	• Remove prioritization objective and rely on NSO stipulation and other measures to protect habitat
Land Disposal and Exchanges	• No disposals of PHMA or GHMA unless no impacts on Greater Sage-Grouse or habitat	• Can consider disposal of PHMA if the disposal will not compromise the distribution or abundance of the population
Predation	• Collaborate with applicable government entities to control predator populations	• Same as No-Action, plus support and encourage efforts to minimize impacts from predators • Remove trees with unoccupied corvid nests during habitat treatments
Burial of Transmission Lines	• Require burial of transmission lines unless "not technically feasible."	• Minimize and otherwise mitigate impacts from transmission lines, considering options that may include burial
Modifying Habitat Management Area Boundaries	• Adjust PHMA boundaries based on site-specific information	• Clarified that PHMA boundaries should be adjusted based on site-specific information
Modifying Mitigation Standard	• Projects must provide a net conservation gain for Greater Sage-Grouse	• The BLM would pursue improvement of Greater Sage-Grouse habitat in alignment with the State Management plan. • The BLM would cooperate with the State of Utah to analyze applicant-proposed or state-imposed compensatory mitigation to offset residual impacts. The BLM may authorize such actions consistent with NEPA analysis and the governing RMP.

2018 Final EIS Issue	2018 No-Action Alternative	2018 Proposed Plan Amendment
Clarifying Grazing Systems and Prioritization of Grazing Permits	• Repeats regulations, policies, and management actions from other sections	• Focuses specifically on identifying and minimizing improper livestock grazing • Removes actions that repeat regulations, policies, or management from other sections
Clarifying Management of Water Developments for Livestock	• Includes a sentence that could be interpreted as potentially impinging on the State's authority to manage water rights	• Removes the sentence and combines two water development actions into one for neutral or beneficial impacts on Greater Sage-Grouse
Clarifying the Role of the BLM, State of Utah, and Counties with Respect to Travel Management Planning	• Does not specifically direct engagement of state, local and tribal governments during implementation-level travel planning	• Adds language to clarify that offices should engage State, local and tribal governments
Clarifying Management of Surface Coal Mining	• Coal unsuitability will be determined when a lease is requested, but then declares that all PHMA is "essential habitat" for the purposes of the suitability criteria	• Clarifies that the unsuitability process will be conducted when a lease is requested based on site-specific information, including identification of "essential habitat"
Decisions that Require Analysis of Specific Alternatives during Implementation	• Includes several actions that direct consideration of specific alternatives during environmental reviews	• Removes direction to consider specific alternatives, instead allowing the NEPA process to identify alternatives based on site-specific issues

2.5 DETAILED DESCRIPTION OF ALTERNATIVES CONSIDERED DURING THE 2019 PLANNING PROCESS

BLM considered a range of alternatives when responding to Secretary's Order 3353 to enhance cooperation with Western States in the management and conservation of sage-grouse and its habitat. The BLM analyzed six alternatives in detail during the 2015 planning process and two alternatives during the 2019 planning process. BLM incorporated the 2015 alternatives by reference into the 2018 Final EISs for a total of seven alternatives evaluated in detail.

The following three tables illustrate the alternatives that the BLM considered during the 2019 land use planning effort. **Table 2-2** summarizes the alternatives that the BLM evaluated in detail during the 2019 planning effort, as well as alternatives that the BLM considered but did not analyze in detail in either the 2015 or the 2019 planning efforts.

Table 2-3 describes in detail the new alternatives developed during the 2019 planning effort to address the issues raised during scoping. Because the 2019 effort was focused on aligning BLM sage-grouse management with State plans, BLM focused on a narrower set of issues and therefore only two alternatives were analyzed in detail. However, that did not limit the BLM, which incorporated analysis from 2015 to consider all the alternatives considered in 2015.

Table 2-4 describes in detail the alternatives developed during the 2015 planning effort that were also considered in the most recent Greater Sage-Grouse land use planning process. **Table 2-4** is considerably longer than **Table 2-3** because the 2015 process addressed many more issues than the focused 2019 planning effort.

2.5.1 Summary of Alternatives Considered in the 2019 Planning Process

As an extension of the 2015 planning process, this planning effort builds upon and incorporates all the alternatives from both the 2015 and 2019 planning effort. **Table 2-2** summarizes all the alternatives that the BLM evaluated in detail during the 2019 planning effort, as well as alternatives that the BLM considered but did not analyze in detail in either the 2015 or the 2019 planning efforts.

Table 2-2
Alternatives Considered During the 2015 and 2019 Planning Processes

Utah Planning Document	Document Date	Alternative Title	Analysis Level	Alternative Description
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	Alternative A	Fully Analyzed	Alternative A was the No-Action Alternative, which would have retained the management goals, objectives and direction specified in the 14 BLM RMPs and the six Forest Service land and resource management plans effective prior to the 2015 ROD/ARMPA.
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	Alternative B	Fully Analyzed	Alternative B was based on the conservation measures developed by the National Technical Team planning effort in Washington Office IM 2012-044. As directed in the IM, the conservation measures developed by the National Technical Team must be considered and analyzed, as appropriate, through the land use planning process and NEPA by all BLM state and field offices that contain occupied Greater Sage-Grouse habitat. Most management actions included in Alternative B would have been applied to PHMA.
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	Alternative C	Fully Analyzed	Alternative C was based on a citizen groups' recommended alternative and was combined with Alternative F considered by Idaho, Nevada and Northeastern California, Montana, and Oregon. This alternative emphasized improvement and protection of habitat for Greater Sage-Grouse and was applied to all occupied Greater Sage-Grouse habitat. Alternative C would have limited commodity development in areas of occupied Greater Sage-Grouse habitat and would have closed or designated portions of the planning area as unavailable for some land uses.
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	Alternative D	Fully Analyzed	Alternative D, which was identified as the Preferred Alternative in the 2015 Utah Greater Sage-Grouse Draft LUPA/EIS, balanced opportunities to use and develop the planning area and protects Greater Sage-Grouse habitat based on scoping comments and input from Cooperating Agencies involved in the alternatives development process. Protective measures would have been applied to Greater Sage-Grouse habitat.

Utah Planning Document	Document Date	Alternative Title	Analysis Level	Alternative Description
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	Alternative E	Fully Analyzed	Alternative E was based on management from the State of Utah's Conservation Plan for Greater Sage-Grouse in Utah. It incorporated guidance from specific State Conservation strategies and limited management to the State of Utah's Sage-Grouse Management Areas that included all seasonal habitats of the State's priority Greater Sage-Grouse populations.
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	Proposed LUPA	Fully Analyzed	The Proposed LUPA in the 2015 Utah Greater Sage-Grouse Proposed LUPA/Final EIS incorporated guidance from specific State Conservation strategies, as well as additional management based on the National Technical Team recommendations. This alternative emphasized management of Greater Sage-Grouse seasonal habitats and maintaining habitat connectivity to support population objectives.
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	Increased Livestock Grazing	Considered; Not Analyzed in Detail	During scoping in 2011 there were requests to increase the amount of livestock grazing in Greater Sage-Grouse habitat. It was not carried forward because 1) there was a lack of peer-reviewed information to support increased livestock grazing as a method of enhancing or restoring habitat; 2) actual use within habitat on BLM-administered lands in the Utah is approximately 70 percent of permitted use, meaning increases in livestock grazing could occur under existing management based on habitat condition; and 3) Neither the State of Utah nor the BLM were able to identify a method for calculating an increase in AUMs at the planning level. See the 2015 Final EIS Section 2.11.1 for additional detail.
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	Make Greater Sage-Grouse Habitat Available for Oil Shale and Tar Sands Leasing	Considered; Not Analyzed in Detail	The BLM's *Approved Land Use Plan Amendments/Record of Decision for Allocation of Oil Shale and Tar Sands Resources on Lands Administered by the Bureau of Land Management in Colorado, Utah, and Wyoming and Final Environmental Impact Statement*, completed in March 2013, closed all mapped occupied Greater Sage-Grouse habitat on BLM-administered lands in Utah to oil shale and tar sands leasing and development, with the exception of approximately 2,123 acres. No alternative was considered to change that decision, because an alternative that would open Greater Sage-Grouse habitat would be inconsistent with the purpose and need to identify and incorporate conservation measures to conserve, enhance, and/or restore Greater Sage-Grouse habitat by reducing, eliminating, or minimizing threats to that habitat. See the 2015 Final EIS Section 2.11.2 for additional detail.

Utah Planning Document	Document Date	Alternative Title	Analysis Level	Alternative Description
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	Citizen Proposed Alternatives	Considered; Not Analyzed in Detail	Several scoping comments included input for potential alternatives. The BLM chose to combine information submitted by these interested public into one alternative (Alternative C). In addition, not all management actions proposed by interested public were brought forward for detailed analysis under Alternative C. Many of the management actions proposed by interested public were implementation-level decisions rather than planning-level decisions. Therefore, consideration of these management practices would be evaluated on a project-by-project basis. Other management actions proposed by interested public were eliminated from detailed analysis because they were ineffective (did not respond to the purpose and need) or speculative (did not resolve any issue or threat). See the 2015 Final EIS Section 2.11.3 for additional detail.
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	Adoption of the State of Utah's Greater Sage-Grouse Management Areas as PHMA for all Alternatives	Considered; Not Analyzed in Detail	In a letter received by the BLM on February 26, 2013, the State of Utah requested that the BLM and Forest Service use the areas identified as SGMAs in the State of Utah 2013 Greater Sage-Grouse Conservation Plan for all alternatives being considered in the land use planning process. This alternative was considered but eliminated from detailed analysis because the BLM, Forest Service, Fish and Wildlife Service (USFWS), and State of Utah had not reached agreement on which lands have the highest conservation value, or which lands are necessary to maintain or increase Greater Sage-Grouse populations. NEPA section 102(e) requires agencies to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." See the 2015 Final EIS Section 2.11.4 for additional detail.

Utah Planning Document	Document Date	Alternative Title	Analysis Level	Alternative Description
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	Use of Other Habitat Maps	Considered; Not Analyzed in Detail	Several counties participating as cooperating agencies requested that the BLM use different habitat maps that they developed as the baseline for analysis rather than the Utah Division of Wildlife Resource's occupied Greater Sage-Grouse habitat map or the State's SGMAs. An alternative based on county-provided habitat maps was considered but eliminated from detailed analysis since the State has jurisdiction by law and special expertise related to Greater Sage-Grouse, the habitat maps used were intentionally developed at a broad geographic scale to increase the likelihood that all seasonal habitats (including transition and movement corridors) are included. Inevitably such mapping approaches include a patchwork of habitats and non-habitats, but those could be addressed during the project-scale based on management that allows for modification of maps and even some decisions during plan implementation based on site-specific information. See the 2015 Final EIS Section 2.11.5 for additional detail.
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	County Greater Sage-Grouse Management Plans	Considered; Not Analyzed in Detail	Several counties who are cooperating agencies requested that an alternative based on the given county's draft or final Greater Sage-Grouse management plan be considered. After review of the various draft plans and one final plan, it was determined that these plans be dismissed from detailed analysis for two general reasons: 1) they were substantially similar to the state's plan, which was the basis for Alternative E1, or 2) they were not consistent with the purpose and need of the planning effort. See the 2015 Final EIS Section 2.11.6 for additional detail.
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	Conservation Objectives Team (COT) Report	Considered; Not Analyzed in Detail	The State of Utah commented that the BLM should consider an alternative which focuses on consistency with the COT report. An alternative based on the COT report was not analyzed in detail because all conservation measures and objectives identified in the COT report are considered within the range of alternatives. See the 2015 Final EIS Section 2.11.7 for additional detail.

Utah Planning Document	Document Date	Alternative Title	Analysis Level	Alternative Description
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	BLM Policies and Regulations	Considered; Not Analyzed in Detail	The State of Utah suggested that the BLM should consider an alternative based on BLM Manual 6840, Special Status Species Management, and rangeland health regulations, found at 43 CFR 4180.2. The BLM did not consider this alternative in detail because under all alternatives the BLM is required to comply with existing laws, rules regulations and policy (see Section 1.7.1, Planning Criteria [of the 2015 Final EIS]). In addition, as discussed in the USFWS listing decision, existing regulatory mechanisms, which includes compliance with these existing regulations and policies has not been sufficient to prevent Greater Sage-Grouse habitat loss or population declines. As such, an alternative based on compliance with BLM Manual 6840 and rangeland health regulations would substantially similar in design to the No Action Alternative. See the 2015 Final EIS Section 2.11.8 for additional detail.
Utah Greater Sage-Grouse Proposed LUPA/Final EIS	June 2015	USFWS-Listing Alternative	Considered; Not Analyzed in Detail	Comments provided through scoping requested analysis of an alternative based on the assumption that Greater Sage-Grouse become listed under the Endangered Species Act (ESA). This was outside the scope; the purpose and need of this plan amendment is to address inadequacy of regulatory mechanisms that were identified as one of the listing factors for Greater Sage-Grouse in the USFWS finding on the petition to list Greater Sage-Grouse. Although the potential listing of Greater Sage-Grouse would also include conservation measures identified by the USFWS, those conservation measures are not known at this time. Therefore, an alternative that includes USFWS-listing with associated conservation measures for Greater Sage-Grouse was not being analyzed in detail. See the 2015 Final EIS Section 2.11.9 for additional detail.
Utah Greater Sage-Grouse Draft Resource Management Plan Amendment and Environmental Impact Statement	May 2018	No Action	Fully Analyzed	The No Action would not amend the current RMPs amended by the Idaho and Montana Greater Sage-Grouse Resource Management Plan Amendment (2015 ROD/ARMPA). Greater Sage-Grouse habitat would continue to be managed under current management direction. Goals and objectives for BLM-administered lands and federal mineral estate would not change. Allowable uses and restrictions pertaining to activities such as mineral leasing and development, recreation, lands and realty, and livestock grazing would also remain the same.

Utah Planning Document	Document Date	Alternative Title	Analysis Level	Alternative Description
Utah Greater Sage-Grouse Draft Resource Management Plan Amendment and Environmental Impact Statement	May 2018	Management Alignment Alternative	Fully Analyzed	This alternative was derived through coordination with the State and cooperating agencies to better align with the Idaho Governor's conservation plan and to support conservation outcomes for Greater Sage- Grouse. The BLM continued to build upon the 2015 planning effort as envisioned in SO 3353 by collaborating with states and stakeholders to improve compatibility between federal management plans and other plans and programs at the state level, while ensuring consistency with the BLM's multiple use mission.
Utah Greater Sage-Grouse Draft Resource Management Plan Amendment and Environmental Impact Statement	May 2018	Making PHMA the same as the State's SGMAs	Considered; Not Analyzed in Detail	During alternatives development, the BLM considered aligning PHMA with the entire 2013 SGMA boundaries, regardless of whether the SGMA was mapped as habitat, non-habitat, or opportunity area. Remapping PHMA boundaries to include the 2013 SGMA areas mapped as non-habitat and opportunity areas would decrease alignment with the State's plan by applying the same level of management to non-habitat in SGMAs as is applied to areas of habitat. It would also be inconsistent with BLM planning direction that "when applying leasing restrictions, the least restrictive constraint to meet the resource protection objective should be used" (BLM-H-1601-1 - Land Use Planning Handbook, Appendix C, page 24). Because of this, this approach was not analyzed in detail. See the 2018 Draft EIS Section 2.2.2 for additional detail.
Utah Greater Sage-Grouse Draft Resource Management Plan Amendment and Environmental Impact Statement	May 2018	Use of Other Habitat Maps for PHMA Designation	Considered; Not Analyzed in Detail	During the scoping, some commenters requested that the BLM use different habitat maps for PHMA. Some commenters requested that PHMA be expanded to include areas within 5 miles of any occupied lek, while some requested contracting PHMA to only include areas that currently have sagebrush. The BLM considered these approaches but eliminated them from detailed analysis because 1) they applied arbitrary distances that don't reflect local habitat conditions; 2) they omit areas that could be habitat with treatment, subsequently requiring additional RMP amendments; and 3) using maps that limit PHMA to just sagebrush would increase disparity from the State's plan and strategies, which is not consistent with the purpose and need. For these reasons, these alternatives were not analyzed in detail. See the 2018 Draft EIS Section 2.2.3 for additional detail.

Utah Planning Document	Document Date	Alternative Title	Analysis Level	Alternative Description
Utah Greater Sage-Grouse Draft Resource Management Plan Amendment and Environmental Impact Statement	May 2018	County Greater Sage-Grouse Management Plans	Considered; Not Analyzed in Detail	As with the 2015 effort, during scoping on this process some counties requested that Greater Sage-Grouse management be developed on a county-by-county basis to accommodate the differences in habitat and land uses. This was also because several counties had completed County RMPs since the 2015 ARMPA. After review of the various county plans, it was determined an alternative specifically based on these plans not be analyzed in detail because 1) some county plans are substantially similar to the State's plans and strategies; and 2) some aspects of the county plans are substantially different from the State's plan and strategies, and since the purpose of this planning effort is to increase alignment with the State strategies, aligning with county-level approaches would not be consistent with the purpose and need. Additionally, the BLM's planning regulations note that "where state and local government policies, plans, and programs differ, those of the higher authority will normally be followed" (43 CFR 1610.3-2(d)). See the 2018 Draft EIS Section 2.2.4 for additional detail.

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2.5.2 Alternatives Specific to the 2018 Planning Process

Table 2-3 presents the No-Action Alternative (applicable actions from the 2015 ARMPA), the Management Alignment Alternative (from the 2018 Draft RMPA/EIS) and Proposed Plan Amendment (from the 2018 Proposed RMPA/Final EIS) side-by-side to facilitate a comparison of the changes that were considered. Changes made between the Draft EIS Management Alignment Alternative and the Final EIS Proposed Plan Amendment are highlighted in gray in the table for ease of reference.

The following points describe this section's format to help the reader cross-walk between the alternatives considered in the 2018 RMPAs/EISs and the 2015 Approved Resource Management Plan Amendment (2015 ARMPA):

- This process is driven by the issues identified during scoping; the table below is organized by the issues identified during the 2019 planning process. The management actions from the 2015 ARMPA that correspond to each issue are presented under the applicable issue header. Actions that correspond to more than one issue are repeated under the different issue headings.
- The table focuses on the differences between the No-Action Alternative, Management Alignment Alternative, and the Proposed Plan Amendment. Goals, objectives, and management actions from the 2015 ARMPA that would be the same in all the alternatives—indicating no recommended changes from the 2015 ARMPA—are not shown. As such, if there are portions of actions not present, or if there are numbered actions that appear to be missing, the entirety of the noted actions would continue in both alternatives and therefore will not result in a difference in impacts. **All actions not presented in the table are incorporated by reference from the 2015 ARMPA**.
- If the Proposed Plan Amendment includes a small change to a lengthy objective or management action, the application portions of the action that include the change are shown, but the remainder of the action for which there is no change is not repeated. In these instances, an ellipsis (…) is shown to indicate where the remainder of the unchanged action fits. The following text is also included to help the reader know where the remainder of the unchanged portions of the action are located: "Remainder of this action is unchanged from the 2015 ARMPA." **All unchanged portions of actions not presented in the table in their entirety are incorporated by reference from the 2015 ARMPA**.
- In some cells, "No Similar Action" is used to indicate that there is no similar goal, objective or action to the given alternative in comparison to the other alternative.

Table 2-3
Detailed Comparison of Alternatives Specific to the 2018 Final EIS

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
Issue: Sagebrush Focal Area Designations/Withdrawal Recommendation			
MA-SSS-2	Designate SFA as shown on Figure 2-1 (181,100 acres of BLM surface estate; 52,200 acres split-estate federal minerals). SFA will be managed as PHMA, with the following additional management: • Recommended for withdrawal from location and entry under the Mining Law of 1872 (as amended), subject to valid existing rights • Managed as NSO, without waiver, exception, or modification, for fluid mineral leasing Prioritized for vegetation management and conservation actions in these areas, including, but not limited to land health assessments, wild horse and burro management actions, review of livestock grazing permits/leases, and habitat restoration (see specific management sections).	No similar action. [No areas would be managed as SFA. Lands previously managed as SFA would be managed according to their underlying habitat management area designation.]	No similar action. [No areas would be managed as SFA. Lands previously managed as SFA would be managed according to their underlying habitat management area designation.]
Objective VEG-1	In SFA and PHMA, the desired condition… [Remainder of this action is unchanged from the 2015 ARMPA.]	In PHMA, the desired condition… [Remainder of this action is unchanged from the 2015 ARMPA.]	In PHMA, the desired condition… [Remainder of this action is unchanged from the 2015 ARMPA.]
MA-LG-6	…NEPA analysis for renewals and modifications of livestock grazing permits/leases that include lands within SFA and PHMA will…. [Remainder of this action is unchanged from the 2015 ARMPA.]	…NEPA analysis for renewals and modifications of livestock grazing permits/leases that include lands within PHMA would… [Remainder of this action is unchanged from the 2015 ARMPA.]	…NEPA analysis for renewals and modifications of livestock grazing permits/leases that include lands within PHMA would… [Remainder of this action is unchanged from the 2015 ARMPA.]
MA-LG-16	…Prioritize actions in SFA first, then PHMA…. [Remainder of this action is unchanged from the 2015 ARMPA.]	No similar action. [Prioritization sentence would be removed.]	No similar action. [Prioritization sentence would be removed.]
MA-MR-3	…In SFA, there will be no waivers, exceptions, or modifications. In the remainder of PHMA, no waivers or modifications to a fluid mineral lease no-surface-occupancy stipulation will be granted…. [Remainder of this action is unchanged from the 2015 ARMPA.]	No similar action. [As no SFAs would exist, this action would be removed.]	No similar action. [As no SFAs would exist, this action would be removed.]
MA-MR-12	SFA will be recommended for withdrawal from location and entry under the Mining Law of 1872 (as amended), subject to valid existing rights (Figure 2-5, Locatable Minerals [Appendix A] [of the 2015 Final EIS]).	No similar action. [As no SFAs would exist, this action would be removed.]	No similar action. [As no SFAs would exist, this action would be removed.]

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
MA-LR-11	SFA will be recommended for withdrawal from location and entry under the Mining Law of 1872 (as amended), subject to valid existing rights…. [Remainder of this action is unchanged from the 2015 ARMPA.]	No similar action. [As no SFAs would exist, this action would be removed.]	No similar action. [As no SFAs would exist, this action would be removed.]
Issue: Administering Disturbance and Density Caps			
MA-SSS-3B	B- Disturbance Cap In PHMA, manage discrete anthropogenic disturbances, whether temporary or permanent, so they cover less than 3 percent of 1) PHMA associated with a Greater Sage-Grouse population area and 2) within a proposed project analysis area. See Appendix E, Greater Sage-Grouse Disturbance Cap Guidance, [of the 2015 Final EIS] for additional information on implementing the disturbance cap, including what is and is not considered disturbance and how to calculate the proposed project analysis area. If the 3 percent anthropogenic disturbance cap is exceeded on all lands (regardless of land ownership) within Greater Sage-Grouse PHMA in any given population area (BSU), then no further discrete anthropogenic disturbances (subject to applicable laws and regulations, such as the Mining Law of 1872 [as amended], valid existing rights, etc.) will be permitted by the BLM within Greater Sage-Grouse PHMA in any given population area (BSU) until the disturbance has been reduced to less than the cap. If the 3 percent disturbance cap is exceeded on all lands (regardless of land ownership) within a proposed project analysis area in PHMA, then no further anthropogenic disturbance will be permitted by the BLM until disturbance in the proposed project analysis area has been reduced to maintain the area under the cap (subject to applicable laws and regulations, such as the Mining Law of 1872 [as amended], valid existing rights, etc.). Within designated utility corridors, the 3 percent disturbance cap may be exceeded at the project scale if the site specific NEPA analysis indicates that a net conservation gain to the species will be achieved. This exception is limited to projects which fulfill the use for which the corridors were designated (ex., transmission lines, pipelines) and the designated width of a corridor will not be exceeded as a result of any project co-location. An area with disturbance is not excluded from the 3 percent until it has been restored to provide Greater Sage-Grouse habitat. The objective of successful restoration is to provide for the needs of Greater Sage-Grouse, as evidenced by one of the following: • Vegetative cover is consistent with the Greater Sage-Grouse habitat objectives and the ecological site description (Objective SSS-3) or • Monitoring indicates the area is regularly used by Greater Sage-Grouse to sustain one or more seasonal habitat requirements (nesting, brood-rearing, winter) Final restoration success and approval for abandonment for disturbances will be subject to an interdisciplinary review of available monitoring data and final monitoring reports.	B- Disturbance Cap In PHMA, manage discrete anthropogenic disturbances so they cover less than 3 percent of 1) PHMA associated with a Greater Sage-Grouse population area and 2) within a proposed project analysis area. See Appendix E, Greater Sage-Grouse Disturbance Cap Guidance, [of the 2018 Draft EIS] for additional information on implementing the disturbance cap, including what is and is not considered disturbance and how to calculate the proposed project analysis area. If the 3 percent anthropogenic disturbance cap is exceeded on all lands (regardless of land ownership) within Greater Sage-Grouse PHMA in any given population area (BSU), then no further discrete anthropogenic disturbances (subject to applicable laws and regulations, such as the Mining Law of 1872 [as amended], valid existing rights, etc.) will be permitted by the BLM within Greater Sage-Grouse PHMA in any given population area (BSU) until the disturbance has been reduced to less than the cap. If the 3 percent disturbance cap is exceeded on all lands (regardless of land ownership) within a proposed project analysis area in PHMA, then no further anthropogenic disturbance will be permitted by the BLM until disturbance in the proposed project analysis area has been reduced to maintain the area under the cap (subject to applicable laws and regulations, such as the Mining Law of 1872 [as amended], valid existing rights, etc.). However, the 3 percent cap may be exceeded at either scale if a technical team determines that site-specific Greater Sage-Grouse habitat and population information, combined with project design elements (siting, minimization measures, and compensatory mitigation) indicates the project will improve the condition of Greater Sage-Grouse habitat within the proposed project analysis area. Factors considered by the team will include Greater Sage-Grouse abundance and trends, movement patterns, habitat amount and quality, extent and alignment of project disturbance, location and density of existing disturbance, project design options and other biological factors. Such exceptions to the 3 percent disturbance cap may be approved by the BLM Authorized Officer only with the concurrence of the State Director. The finding and recommendation shall be made by the technical team which should consist of, at least, a field biologist or other Greater Sage-Grouse expert, a biologist representing the State of Utah, and should include coordination with the appropriate State of Utah agency.	B- Disturbance Cap In PHMA, manage discrete anthropogenic disturbances so they cover less than 3 percent of 1) PHMA associated with a Greater Sage-Grouse population area and 2) within a proposed project analysis area. See Appendix E, Greater Sage-Grouse Disturbance Cap Guidance, [of the 2018 Final EIS] for additional information on implementing the disturbance cap, including what is and is not considered disturbance and how to calculate the proposed project analysis area. If the 3 percent disturbance cap is exceeded on all lands (regardless of land ownership) within Greater Sage-Grouse PHMA in any given population area (BSU) or within a proposed project analysis area in PHMA, then no further discrete anthropogenic disturbances (subject to applicable laws and regulations, such as the Mining Law of 1872 [as amended], valid existing rights, etc.) will be permitted by the BLM within Greater Sage-Grouse PHMA in any given population area (BSU) or the proposed project analysis area until the disturbance has been reduced to less than the cap. However, the 3 percent cap may be exceeded at either scale if a technical team determines that site-specific Greater Sage-Grouse habitat and population information, combined with project design elements indicates the project will improve the condition of Greater Sage-Grouse habitat within the proposed project analysis area or within the PHMA in the population area where the project is located. Factors considered by the team will include Greater Sage-Grouse abundance and trends, movement patterns, habitat amount and quality, extent and alignment of project disturbance, location and density of existing disturbance, project design options and other biological factors. Such exceptions to the 3 percent disturbance cap may be approved by the BLM Authorized Officer only with the concurrence of the State Director. The finding and recommendation shall be made by the technical team, which should consist of, at least, a BLM field biologist, other local Greater Sage-Grouse experts, and biologists and other representatives from the appropriate State of Utah agency. Within designated utility corridors, the 3 percent disturbance cap may be exceeded at the project scale if the site specific NEPA analysis indicates that doing so will improve the condition of Greater Sage-Grouse habitat in comparison to siting a project outside the designated corridor. This exception is limited to projects which fulfill the use for which the corridors were designated (ex., transmission lines, pipelines) and the designated width of a corridor will not be exceeded as a result of any project co-location.

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
MA-SSS-3B (*continued*)	(*see above*)	Within designated utility corridors, the 3 percent disturbance cap may be exceeded at the project scale if the site specific NEPA analysis indicates that doing so will improve the condition of Greater Sage-Grouse habitat in comparison to siting a project outside the designated corridor. This exception is limited to projects which fulfill the use for which the corridors were designated (ex., transmission lines, pipelines) and the designated width of a corridor will not be exceeded as a result of any project co-location. An area with disturbance within Greater Sage-Grouse habitat is not excluded from the 3 percent cap until it provides Greater Sage-Grouse habitat. The objective of successful restoration of disturbed occupied Greater Sage-Grouse habitat is to provide for the needs of Greater Sage-Grouse, which could be evidenced by one of the following: • Vegetative cover is consistent with the Greater Sage-Grouse habitat objectives and the ecological site description (Objective SSS-3) or • Monitoring indicates the area is regularly used by Greater Sage-Grouse to sustain one or more seasonal habitat requirements (nesting, brood-rearing, winter) Areas of PHMA that were not Greater Sage-Grouse habitat at project initiation would be excluded from the 3 percent cap calculation upon project completion and reclamation, as outlined in the applicable lease or permit. Final restoration success and approval for abandonment for disturbances will be subject to an interdisciplinary review of available monitoring data and final monitoring reports.	An area with disturbance within Greater Sage-Grouse habitat is not excluded from the 3 percent cap until it provides Greater Sage-Grouse habitat. The objective of successful restoration of disturbed Greater Sage-Grouse seasonal habitats is to provide for the needs of Greater Sage-Grouse, which could be evidenced by one of the following: • Vegetative cover is consistent with the Greater Sage-Grouse habitat objectives and the ecological site description (Objective SSS-3) or • Monitoring indicates the area is regularly used by Greater Sage-Grouse to sustain one or more seasonal habitat requirements (nesting, brood-rearing, winter) Include a schedule in project authorizations for monitoring the status of restoration efforts (e.g., areas of disturbance that meet the restoration criteria). Areas where disturbance would exceed 3% after project construction should include annual assessments to prioritize restoration efforts and determine what areas have been restored. Areas of PHMA that were not Greater Sage-Grouse habitat at project initiation would be excluded from the 3 percent cap calculation upon project completion and reclamation, as outlined in the applicable lease or permit. Final restoration success and approval for abandonment for disturbances will be subject to an interdisciplinary review of available monitoring data and final monitoring reports. Consider the likelihood of development of not-yet-constructed surface-disturbing activities—as defined in Table D.2 of the Monitoring Framework (Appendix D of the 2015 ROD/ARMPA)—under valid existing rights prior to authorizing new projects in PHMA.
MA-SSS-3C	C- Density of Energy/Mining Facilities Subject to applicable laws and regulations and valid existing rights, if the average density of one energy and mining facility per 640 acres (the density cap) is exceeded on all lands (regardless of land ownership) in PHMA within a proposed project analysis area, then no further disturbance from energy or mining facilities will be permitted by BLM: (1) until disturbance in the proposed project analysis area has been reduced to maintain the limit under the cap; or (2) unless the energy or mining facility is collocated into an existing disturbed area (subject to applicable laws and regulations, such as the Mining Law of 1872 [as amended], valid existing rights, etc.). Energy and mining facilities to which this action applies are: • Oil and gas wells and development facilities, • Coal mines, • Wind towers, • Solar fields, • Geothermal wells/developments, and • Active locatable, leasable, and saleable developments.	C- Density of Energy/Mining Facilities Subject to applicable laws and regulations and valid existing rights, if the average density of one energy and mining facility per 640 acres (the density cap) is exceeded on all lands (regardless of land ownership) in PHMA within a proposed project analysis area, then no further disturbance from energy or mining facilities will be permitted by BLM: (1) until disturbance in the proposed project analysis area has been reduced to maintain the limit under the cap; or (2) unless the energy or mining facility is collocated into an existing disturbed area (subject to applicable laws and regulations, such as the Mining Law of 1872 [as amended], valid existing rights, etc.); or (3) the process identified in MA-SSS-3B determines the project will improve the condition of Greater Sage-Grouse habitat through analysis of site-specific Greater Sage-Grouse habitat and population information and project design elements (siting, minimization measures, and compensatory mitigation). Energy and mining facilities to which this action applies are: • Oil and gas wells and development facilities • Coal mines • Wind towers • Solar fields • Geothermal wells/developments • Active locatable, leasable, and saleable developments	C- Density of Energy/Mining Facilities Subject to applicable laws and regulations and valid existing rights (e.g., mining claims under the Mining Law of 1872), if the average density of one energy and mining facility per 640 acres (the density cap) is exceeded on all lands (regardless of land ownership) in PHMA within a proposed project analysis area, then no further disturbance from energy or mining facilities will be permitted by BLM: (1) until disturbance in the proposed project analysis area has been reduced to maintain the limit under the cap; or (2) unless the energy or mining facility is collocated into an existing disturbed area (subject to applicable laws and regulations, such as the Mining Law of 1872 [as amended], valid existing rights, etc.); however, the density cap may be exceeded if a project is in non-habitat (see MA-SSS-1 language related to placement of development in non-habitat portions of PHMA), or if the process identified in MA-SSS-3B determines the project will improve the condition of Greater Sage-Grouse habitat at the proposed project analysis area or within the PHMA where the project is located through analysis of site-specific Greater Sage-Grouse habitat and population information and project design elements. Energy and mining facilities to which this action applies are: • Oil and gas wells and development facilities • Coal mines • Wind towers • Solar fields • Geothermal wells/developments • Active locatable, leasable, and saleable developments

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
Issue: Modifying Habitat Objectives			
Objective SSS-3	**Habitat Objectives for Greater Sage-Grouse**	**Habitat Objectives for Greater Sage-Grouse (See Map 3-4 for the Wasatch, Low, and Parker Habitat Clusters)**	**Habitat Objectives for Greater Sage-Grouse (See Figure 3-1 for the Low, Mid, and High Habitat Objective Zones)**

No-Action Alternative (from the 2015 ARMPA)

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

2018 Draft EIS Management Alignment Alternative

ATTRIBUTE	INDICATORS	DESIRED CONDITION
Breeding and Nesting (February 15–June 15)[1, 2, 3, 4, 5, 6]		
Lek Security	Proximity to conifers	Conifers are absent or uncommon on shrub/grassland ecological sites within 1.8 miles (approx. 3 kilometers) of occupied leks.[6, 7, 8]
	Proximity of sagebrush to leks	Has adjacent sagebrush cover.[6]
Cover	% of seasonal habitat meeting desired conditions	>80% of the mapped nesting habitat meets the recommended vegetation characteristics.[8], where appropriate (relative to ecological site potential, etc.)
	Sagebrush cover[9]	Wasatch: ≥14% Low: ≥ 7% Parker: ≥ 17%
	Total shrub cover[6, 8, 9]	Wasatch: ≥19% Low: ≥ 17% Parker: ≥ 22%
	Sagebrush Composition[9]	Wasatch: ≥83% Low: ≥ 36% Parker: ≥ 71%
	Sagebrush height[6, 8, 9]	Wasatch: ≥ 8.7 inches (22 cm) Low: ≥ 12 inches (30 cm) Parker: ≥ 5.5 inches (14 cm)
	Perennial grass cover (such as native bunchgrasses, rhizomatous grasses called for on applicable ecological site descriptions, or other perennial grasses that provide similar functionality)[6, 8, 9]	Wasatch: ≥ 8% Low: ≥ 5% Parker: ≥ 4%
	Perennial grass and forb height (includes residual grasses)[6, 8, 9]	Provide overhead and lateral concealment from predators.[11]
	Perennial forb canopy cover[6, 8, 9]	Wasatch: ≥ 4% Low: ≥ 2% Parker: ≥ 1%

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ATTRIBUTE	INDICATORS	DESIRED CONDITION
Breeding and Nesting (February 15–June 15)[1, 2, 3, 4, 5, 6]		
Lek Security	Proximity to conifers	Conifers are absent or uncommon on shrub/grassland ecological sites within 1.8 miles (approx. 3 kilometers) of occupied leks.[6, 7, 8]
	Proximity of sagebrush to leks	Has adjacent sagebrush cover.[6]
Cover	% of seasonal habitat meeting desired conditions	>80% of the mapped nesting habitat meets the recommended vegetation characteristics.[8], where appropriate (relative to ecological site potential, etc.)
	Sagebrush cover[9]	Low: ≥ 7% Mid: ≥ 18% High: ≥14%
	Total shrub cover[6, 8, 9]	Low: ≥ 17% Mid: ≥ 22% High: ≥19%
	Sagebrush Composition[9]	Low: ≥ 36% Mid: ≥ 71% High: ≥83%
	Shrub height[6, 8, 9]	Low: ≥ 12 inches (30 cm) Mid: ≥ 5.9 inches (15 cm) High: ≥ 9 inches (23 cm)
	Perennial grass cover (such as native bunchgrasses, rhizomatous grasses called for on applicable ecological site descriptions, or other perennial grasses that provide similar functionality)[6, 8, 9]	Low: ≥ 5% Mid: ≥ 4% High: ≥ 8%
	Perennial grass and forb height (includes residual grasses)[6, 8, 9]	Provide overhead and lateral concealment from predators.[11]
	Perennial forb canopy cover[6, 8, 9]	Low: ≥ 2% Mid: ≥ 1% High: ≥ 4%

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)		
Objective SSS-3 (*continued*)	**Brood-Rearing/Summer (April 15–August 15)[1]**		
	Cover	% of Seasonal habitat meeting desired condition	>40% of the mapped brood-rearing/summer habitat meets recommended habitat characteristics where appropriate (relative to ecological site potential, etc.)[8]
		Sagebrush cover[6, 8, 9]	>10%
		Total shrub cover[6, 8, 9]	10-25%: Box Elder, Bald Hills, Hamlin Valley, Panguitch, Rich, Parker Mountain, Uintah 10-30%: Carbon, Emery, Sheeprocks, Ibapah,
		Sagebrush height[6, 8, 9]	>12 inches (30 cm): Box Elder, Bald Hills, Hamlin Valley, Sheeprocks, Ibapah >10 inches (25 cm): Rich, Carbon, Emery, Uintah north of Highway 40 >8 inches (20 cm): Parker Mountain, Panguitch, Uintah south of Highway 40
		Perennial grass cover and forbs[6, 8, 9]	>15% (Grass: >10%; Forb: >5%): Box Elder, Rich, Sheeprocks, Ibapah, Parker Mountain, Panguitch, Uintah, Carbon, Emery >15% (Grass: >8%; Forb: >7%): Bald Hills, Hamlin Valley,
		Riparian areas/mesic meadows	Proper Functioning Condition
		Upland and riparian perennial forb availability	Preferred forbs are common with several preferred species present[6, 12]
	Winter (November 15–March 15)[1]		
	Cover and Food	% of seasonal habitat meeting desired conditions	>80% of the mapped wintering habitat meets winter habitat characteristics where appropriate (relative to ecological site, etc.). [8]
		Sagebrush cover above snow[6, 8,]	>10%
		Sagebrush height above snow[6, 8, 9, 13]	>10 inches (25 cm): Box Elder, Bald Hills, Hamlin Valley, Rich, Carbon, Emery, Sheeprocks, Ibapah, Uintah north of Highway 40 >8 inches (20 cm): Parker Mountain, Panguitch, Uintah south of Highway 40

[1] Specific dates will be based on site-specific conditions and may be modified due to documented local variations (e.g., higher/lower elevations) or annual climactic fluctuations (e.g., early/late spring and long and/or heavy winter), in coordination with the appropriate State of Utah agency.
[2] Utah Greater Sage-Grouse Working Group 2013
[3] Doherty 2008
[4] Doherty et al. 2010
[5] Holloran and Anderson 2005
[6] Stiver et al. 2015
[7] Baruch-Mordo et al. 2013
[8] Connelly et al. 2000
[9] Unpublished data, Utah Community-Based Conservation Program Greater Sage-grouse Statewide Database, Utah State University, Logan, Utah and Brigham Young

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Brood-Rearing/Summer (April 15–August 15)[1]		
Cover	% of Seasonal habitat meeting desired condition	>40% of the mapped brood-rearing/summer habitat meets recommended habitat characteristics[8] where appropriate (relative to ecological site potential, etc.)
	Sagebrush cover[6, 8, 9]	Wasatch: ≥ 17% Low: ≥ 4% Parker: ≥ 16%
	Total shrub cover[6, 8, 9]	Wasatch: ≥ 15% Low: ≥ 10% Parker: ≥ 19%
	Sagebrush Composition[9]	Wasatch: ≥ 77% Low: ≥ 28% Parker: ≥ 7%
	Sagebrush height[6, 8, 9]	Wasatch: ≥ 8 inches (20 cm) Low: ≥ 10.25 inches (26 cm) Parker: ≥ 4.3 inches (11 cm)
	Perennial grass cover[9]	Wasatch: ≥ 8% Low: ≥ 5% Parker: ≥ 6%
	Perennial forb cover[9]	Wasatch: ≥ 6% Low: ≥ 2% Parker: ≥ 2%
	Riparian areas/mesic meadows	Proper Functioning Condition
	Upland and riparian perennial forb availability	Preferred forbs are common with several preferred species present[6, 12]
Winter (November 15–March 15)[1]		
Cover and Food	% of seasonal habitat meeting desired conditions	>80% of the mapped wintering habitat meets winter habitat characteristics [8] where appropriate (relative to ecological site, etc.).
	Sagebrush cover above snow[6, 8,]	>10%
	Sagebrush height[9]	Wasatch: ≥ 8.7 inches (22 cm) Low: ≥ 12 inches (30 cm) Parker: ≥ 5.5 inches (14 cm)

[1] Specific dates will be based on site-specific conditions and may be modified due to documented local variations (e.g., higher/lower elevations) or annual climatic fluctuations (e.g., early/late spring and long and/or heavy winter), in coordination with the appropriate State of Utah agency.
[2] Utah Greater Sage-Grouse Working Group 2013
[3] Doherty 2008
[4] Doherty et al. 2010
[5] Holloran and Anderson 2005
[6] Stiver et al. 2015
[7] Baruch-Mordo et al. 2013
[8] Connelly et al. 2000
[9] Dahlgren, D., T. A. Messmer, B. A. Crabb, M. T. Kohl, S. N. Frey, E. Thacker, R. T. Larsen, and R. J. Baxter. (In Review). An empirical approach to refining Greater Sage-Grouse (*Centrocercus urophasianus*) breeding habitat guidelines. *Ecosphere*.
[11] Specific height requirements needed to meet the objective will be set at the time of assessments.
[12] Preferred forbs are listed in Stiver et al. 2015. Overall total forb cover may be greater than that of preferred forb cover, since not all forb species are listed as preferred.

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Brood-Rearing/Summer (April 15–August 15)[1]		
Cover	% of Seasonal habitat meeting desired condition	>40% of the mapped brood-rearing/summer habitat meets recommended habitat characteristics[8] where appropriate (relative to ecological site potential, etc.)
	Sagebrush cover[6, 8, 9]	Low: ≥ 4% Mid: ≥ 16% High: ≥ 15%
	Total shrub cover[6, 8, 9]	Low: ≥ 10% Mid: ≥ 19% High: ≥ 17%
	Sagebrush Composition[9]	Low: ≥ 28% Mid: ≥ 77% High: ≥ 77%
	Shrub height[6, 8, 9]	Low: ≥ 10.25 inches (26 cm) Mid: ≥ 4.3 inches (11 cm) High: ≥ 8 inches (20 cm)
	Perennial grass cover[9]	Low: ≥ 5% Mid: ≥ 6% High: ≥ 8%
	Perennial forb cover[9]	Low: ≥ 2% Mid: ≥ 2% High: ≥ 6%
	Riparian areas/mesic meadows	Proper Functioning Condition
	Upland and riparian perennial forb availability	Preferred forbs are common with several preferred species present[6, 12]
Winter (November 15–March 15)[1]		
Cover and Food	% of seasonal habitat meeting desired conditions	>80% of the mapped wintering habitat meets winter habitat characteristics [8] where appropriate (relative to ecological site, etc.).
	Sagebrush cover above snow[6, 8,]	>10%
	Shrub height[9]	Low: ≥ 12 inches (30 cm) Mid: ≥ 5.5 inches (14 cm) High: ≥ 8.7 inches (22 cm)

[1] Specific dates will be based on site-specific conditions and may be modified due to documented local variations (e.g., higher/lower elevations) or annual climatic fluctuations (e.g., early/late spring and long and/or heavy winter), in coordination with the appropriate State of Utah agency.
[2] Utah Greater Sage-Grouse Working Group 2013
[3] Doherty 2008
[4] Doherty et al. 2010
[5] Holloran and Anderson 2005
[6] Stiver et al. 2015
[7] Baruch-Mordo et al. 2013
[8] Connelly et al. 2000
[9] Dahlgren, D.K., T.A. Messmer, B.A. Crabb, M.T. Kohl, S.N. Frey, E.T. Thacker, R.T. Larsen, and R.J. Baxter. 2019. Sage-Grouse Breeding and Lage Brood-Rearing Habitat Guidelines in Utah. Wildlife Society Bulletin 1–14; DOI: 10.1002/wsb.1029 (Updated from 2018 Final EIS with 2019 publication numbers and citation)
[11] Specific height requirements needed to meet the objective will be set at the time of assessments.
[12] Preferred forbs are listed in Stiver et al. 2015. Overall total forb cover may be greater than that of preferred forb cover, since not all forb species are listed as preferred.

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
Objective SSS-3 (*continued*)	University, Provo, Utah. Summarization and analysis of nesting and brood-rearing habitat characteristics from data collected through Utah State University and Brigham Young University research efforts. Researchers located the nest and brood sites using radio-marked telemetry methods. Shortly after the site was used by the marked bird (after hatch or use by a brood), vegetation characteristics on the site were measured using the line intercept method for shrub canopy cover and Daubenmire frames for herbaceous cover. Researchers across the various study areas used methods that followed the guidelines identified in Connelly et al. (2003). [10] Sagebrush plants that are more tree or columnar shaped provide less protective cover near the ground than sagebrush plants with a spreading shape (Stiver et al. 2015 *In Press*). Some sagebrush plants are naturally columnar (e.g., Great Basin big sagebrush) and a natural part of the plant community; however, a predominance of columnar shape arising from animal impacts may warrant management investigation or adjustments at site-specific scales. [11] Specific height requirements needed to meet the objective will be set at the time of watershed assessments. [12] Preferred forbs are listed in Stiver et al. 2015 *In Press*. Overall total forb cover may be greater than that of preferred forb cover, since not all forb species are listed as preferred. [13] The height of sagebrush remaining above the snow depends upon snow depth in a particular year. Intent is to manage for tall, healthy sagebrush stands.	(*see above*)	(*see above*)
Issue: Waivers, Exceptions, and Modifications for NSO Stipulations			
MA-MR-3	<u>Unleased Areas within PHMA</u> PHMA will be designated as open to leasing fluid minerals, subject to NSO stipulations. In SFA, there will be no waivers, exceptions, or modifications. In the remainder of PHMA, no waivers or modifications to a fluid mineral lease no-surface-occupancy stipulation will be granted. The Authorized Officer may grant an exception to a fluid mineral lease no-surface-occupancy stipulation only where the proposed action: • Would not have direct, indirect, or cumulative effects on Greater Sage-Grouse or its habitat or • Is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel and would provide a clear conservation gain to Greater Sage-Grouse. Exceptions based on conservation gain (ii) may only be considered in (a) PHMA of mixed ownership where federal minerals underlie less than fifty percent of the total surface, or (b) areas of the public lands where the proposed exception is an alternative to an action occurring on a nearby parcel subject to a valid federal fluid mineral lease existing as of the date of this ARMPA. Exceptions based on conservation gain must also include measures, such as enforceable institutional controls and buffers, sufficient to allow the BLM to conclude that such benefits will endure for the duration of the proposed action's impacts. Any exceptions to this lease stipulation may be approved by the Authorized Officer only with the concurrence of the State Director. The Authorized Officer may not grant an exception unless the applicable state wildlife agency, the USFWS, and the BLM unanimously find that the proposed action satisfies (i) or (ii). Such finding shall initially be made by a team of one field biologist or other Greater Sage-Grouse expert from each respective agency. In the event the initial finding is not unanimous, the finding may be elevated to the appropriate BLM State Director, USFWS State Ecological Services Director, and state wildlife agency head for final resolution. In the event their finding is not unanimous, the exception will not be granted. Approved exceptions will be made publicly available at least quarterly.	<u>Unleased Areas within PHMA</u> PHMA will be designated as open to leasing fluid minerals, subject to NSO stipulations. Within PHMA seasonal habitat, as identified through an on-the-ground survey, the BLM Authorized Officer may grant an exception to a fluid mineral lease no surface occupancy stipulation only where the proposed action is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and development on the parcel in question would have less of an impact on Greater Sage-Grouse or its habitat than on nearby parcel. This exception must also include measures sufficient to allow the BLM to conclude that such benefits will endure for the duration of the proposed action's impacts Within PHMA opportunity areas or non-habitat, the BLM Authorized Officer may grant an exception to a fluid mineral lease no surface occupancy stipulation only where the proposed action: • Occurs in non-habitat that does not provide important connectivity between habitats • Does not impair the function of adjacent seasonal habitats or the life-history or behavioral needs of the Greater Sage-Grouse population from direct and indirect impacts due to project design (e.g., minimize sound, preclude tall structures, require perch deterrents), as demonstrated in the project's NEPA document • Is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and development on the parcel in question would have less of an impact on Greater Sage-Grouse or its habitat than on the nearby parcel The BLM Authorized Officer may grant a modification to a fluid mineral lease no surface occupancy stipulation only where an exception is granted, as described above, for the primary disturbance (e.g., well pad, compressor station). A modification to the no surface occupancy stipulation could be considered for the associated infrastructure related to the development that are not individually precluded by other Greater Sage-Grouse actions (e.g., roads, pipelines, power lines). While the no surface occupancy stipulation	<u>Unleased Areas within PHMA</u> PHMA will be designated as open to leasing fluid minerals, subject to NSO stipulations. Within PHMA, the BLM Authorized Officer may grant an exception to a fluid mineral lease NSO stipulation where the proposed action: • Occurs in non-habitat that does not provide important connectivity between habitat areas and the development would not cause indirect disturbance to or disruption of adjacent seasonal habitats that would impair their biological function of providing the life-history or behavioral needs of the Greater Sage-Grouse population due to project design (e.g., minimize sound, preclude tall structures, require perch deterrents), as demonstrated in the project's NEPA document; or • Is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and development on the parcel in question would have less of an impact on Greater Sage-Grouse or its habitat than on the nearby parcel; this exception must also include measures sufficient to allow the BLM to conclude that such benefits will endure for the duration of the proposed action's impacts. The BLM Authorized Officer may grant a modification to a fluid mineral lease no surface occupancy stipulation only where an exception is granted, as described above, for the primary disturbance (e.g., well pad, compressor station). A modification to the no surface occupancy stipulation could be considered for the associated infrastructure related to the development that are not individually precluded by other Greater Sage-Grouse actions (e.g., roads, pipelines, power lines). While the no surface occupancy stipulation could be modified for this infrastructure, it must still comply with other Greater Sage-Grouse management contained in MA-SSS-3. The BLM Authorized Officer may grant a waiver to a fluid mineral lease no surface occupancy stipulation if, through the appropriate planning process (i.e., maintenance, amendment) the area is no longer within PHMA. Approved exceptions will be made publicly available at least quarterly.

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
MA-MR-3 (*continued*)	In addition, any lease activities will apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs). Outside PHMA, portions of opportunity areas within 4 miles of a lek that is located in PHMA will be open for leasing with CSU stipulations (avoiding noise and tall structures that could affect adjacent Greater Sage-Grouse use of PHMA).	could be modified for this infrastructure, it must still comply with other Greater Sage-Grouse management contained in MA-SSS-3. The BLM Authorized Officer may grant a waiver to a fluid mineral lease no surface occupancy stipulation if, through the appropriate planning process (i.e., maintenance, amendment) the area is no longer within PHMA. Approved exceptions will be made publicly available at least quarterly. In addition, any lease activities will apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, seasonal restrictions, and RDFs), including if an exception to the NSO is granted. Outside PHMA, portions of opportunity areas within the buffer distances identified in Appendix B of a lek that is located in PHMA will be open for leasing with CSU stipulations (avoiding noise and tall structures that could affect adjacent Greater Sage-Grouse use of PHMA).	In addition, any lease activities will apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, seasonal restrictions, and RDFs), including if an exception to the NSO is granted. Outside PHMA, portions of opportunity areas within the buffer distances identified in Appendix B [of the 2018 Final EIS] of a lek that is located in PHMA will be open for leasing with CSU stipulations (avoiding noise and tall structures that could affect adjacent Greater Sage-Grouse use of PHMA).
Issue: General Habitat Management Areas in Utah			
Objective SSS-2	In all Greater Sage-Grouse habitat, manage activities… [Remainder of this action is unchanged from the 2015 ARMPA.]	In PHMA, manage activities… [Remainder of this action is unchanged from the 2015 ARMPA.]	In PHMA, manage activities… [Remainder of this action is unchanged from the 2015 ARMPA.]
Objective SSS-3	In all Greater Sage-Grouse habitat, where sagebrush… [Remainder of this action is unchanged from the 2015 ARMPA.]	In PHMA, where sagebrush… [Remainder of this action is unchanged from the 2015 ARMPA.]	In PHMA, where sagebrush… [Remainder of this action is unchanged from the 2015 ARMPA.]

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
MA-SSS-1	Identify PHMA and GHMA as follows (Figure 2-1, Habitat Management Areas [Appendix A, 2015 ROD/ARMPA Maps]):	Identify PHMA as follows (Figure 2-1, Habitat Management Areas [Appendix A, 2015 ROD/ARMPA Maps]):	Identify PHMA as follows (Figure 2-1, Habitat Management Areas [Appendix A, 2015 ROD/ARMPA Maps]):

Population Area	Acres					
	PHMA			GHMA		
	Total Surface[1]	BLM Surface[2]	Split Estate[3]	Total Surface[1]	BLM Surface[2]	Split Estate[3]
Uintah	566,800	263,200	140,800	991,500	294,200	81,700
Carbon [4]	260,100	43,500	124,200	198,700	82,800	19,200
Emery	85,500	100	84,000	11,400	0	9,700
Parker Mtn.	741,300	214,200	378,300	12,900	0	7,400
Panguitch	343,900	163,200	91,000	0	0	0
Bald Hills	326,400	259,400	5,200	21,200	8,300	1,200
Hamlin Valley	143,700	101,500	6,600	0	0	0
Sheeprocks	534,600	381,100	111,200	296,500	52,800	15,300
Ibapah	88,800	48,000	700	10,800	10,100	0
Box Elder	1,227,800	439,200	112,000	0	0	0
Rich	1,051,000	167,000	178,400	197,900	300	20,600
Lucerne	0	0	0	37,500	0	11,500
Strawberry	161,500	0	40,900	20,600	0	500
Statewide	*5,531,400*	*2,080,400*	*1,273,300*	*1,799,000*	*448,500*	*167,100*
% PHMA/ GHMA	*75%*	*80%*	*85%*	*25%*	*20%*	*15%*

[1] Acreage associated with total PHMA/GHMA polygon, regardless of land ownership.
[2] Acreage within PHMA/GHMA where the BLM has managerial authority on the surface estate.
[3] Acreage where the surface and mineral estates are owned or administered by separate entities. These acres show where the surface estate is not BLM (e.g., private, state, tribal, and Forest Service), but that have a federal mineral estate administered by the BLM. Most minerals decisions apply to the combination of the BLM surface and mineral estates.
[4] The 41,200 acres of National Forest System lands in the Anthro Mountain area would be managed as neither PHMA nor GHMA. These areas would be identified as "Anthro Mountain." In the BLM's RMPPA, these areas are considered split-estate, where the BLM administers the mineral estate.

Population Area	Acres		
	PHMA		
	Total Surface[1]	BLM Surface[2]	Split Estate[3]
Uintah	566,800	263,200	140,800
Carbon [4]	260,100	43,500	124,200
Emery	85,500	100	84,000
Parker Mtn.	741,300	214,200	378,300
Panguitch	343,900	163,200	91,000
Bald Hills	326,400	259,400	5,200
Hamlin Valley	143,700	101,500	6,600
Sheeprocks	534,600	381,100	111,200
Ibapah	88,800	48,000	700
Box Elder	1,227,800	439,200	195,800
Rich	1,015,400	167,000	153,700
Lucerne	0	0	0
Strawberry	161,500	0	40,900
Statewide[5]	*5,495,800*	*2,080,400*	*1,332,400*

[1] Acreage associated with total PHMA polygon, regardless of land ownership.
[2] Acreage within PHMA where the BLM has managerial authority on the surface estate.
[3] Acreage where the surface and mineral estates are owned or administered by separate entities. These acres show where the surface estate is not BLM (e.g., private, state, tribal, and Forest Service), but that have a federal mineral estate administered by the BLM. Most minerals decisions apply to the combination of the BLM surface and mineral estates.
[4] The 41,200 acres of National Forest System lands in the Anthro Mountain area would not be managed PHMA. These areas would be identified as "Anthro Mountain." In the BLM's RMPPA, these areas are considered split-estate, where the BLM administers the mineral estate.
[5] PHMA were mapped to exclude all incorporated towns/cities.

Population Area	Acres		
	PHMA		
	Total Surface[1]	BLM Surface[2]	Split Estate[3]
Uintah	566,800	263,200	140,800
Carbon [4]	260,100	43,500	124,200
Emery	85,500	100	84,000
Parker Mtn.	741,300	214,200	378,300
Panguitch	343,900	163,200	91,000
Bald Hills	326,400	259,400	5,200
Hamlin Valley	143,700	101,500	6,600
Sheeprocks	534,600	381,100	111,200
Ibapah	88,800	48,000	700
Box Elder	1,227,800	439,200	195,800
Rich	1,015,400	167,000	153,700
Lucerne	0	0	0
Strawberry	161,500	0	40,900
Statewide[5]	*5,495,800*	*2,080,400*	*1,332,400*

[1] Acreage associated with total PHMA polygon, regardless of land ownership.
[2] Acreage within PHMA where the BLM has managerial authority on the surface estate.
[3] Acreage where the surface and mineral estates are owned or administered by separate entities. These acres show where the surface estate is not BLM (e.g., private, state, tribal, and Forest Service), but that have a federal mineral estate administered by the BLM. Most minerals decisions apply to the combination of the BLM surface and mineral estates.
[4] The 41,200 acres of National Forest System lands in the Anthro Mountain area would not be managed PHMA. These areas would be identified as "Anthro Mountain." In the BLM's RMPPA, these areas are considered split-estate, where the BLM administers the mineral estate.
[5] PHMA were mapped to exclude all incorporated towns/cities.

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
MA-SSS-5	In GHMA, apply the following management to meet the objective of a net conservation gain for discretionary actions that can result in habitat loss and degradation: A- Existing Management: Implement Greater Sage-Grouse management actions included in the existing RMPs and project-specific mitigation measures associated with existing decisions. B- Net Conservation Gain: In all Greater Sage-Grouse habitat, in undertaking BLM management actions, and, consistent with valid existing rights and applicable law, in authorizing third-party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species, including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for impacts by applying beneficial mitigation actions. Exceptions to net conservation gain for Greater Sage-Grouse may be made for vegetation treatments to benefit Utah prairie dog. Mitigation will be conducted according to the mitigation framework contained in Appendix F [of the 2015 Final EIS]. C- Buffers: In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will apply the lek buffer-distances identified in the US Geological Survey Report Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review (Open File Report 2014-1239; Manier et al. 2014) in accordance with Appendix B [of the 2015 Final EIS]. D- Required Design Features/Best Management Practices: In GHMA, apply the fluid mineral RDFs that are associated with GHMA identified in Appendix C [of the 2015 Final EIS] when authorizing/permitting site-specific fluid mineral development activities/projects. The applicability and overall effectiveness of each RDF cannot be fully assessed until the project level when the project location and design are known. Because of site-specific circumstances, some RDFs may not apply to some projects and/or may require slight variations. All variations in RDFs will require that at least one of the following be demonstrated in the NEPA analysis associated with the project/activity: • A specific RDF is documented to not be applicable to the site-specific conditions of the project/activity (e.g. due to site limitations or engineering considerations). Economic considerations, such as increased costs, do not necessarily require that an RDF be varied or rendered inapplicable • An alternative RDF, 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	No similar action. [GHMA would not be designated.]	No similar action. [GHMA would not be designated.]

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
MA-SSS-6	Sage-Grouse Management Outside PHMA/GHMA Proposed projects within State of Utah Greater Sage-Grouse Management Areas (SGMA) and USFWS priority areas for conservation (PAC), as well as adjacent to PHMA outside these areas, will consider impacts on Greater Sage-Grouse and implement measures to mitigate impacts when preparing site-specific planning and environmental compliance documents. Outside of PHMA, prior to site-specific authorizations, the BLM will evaluate habitat conditions and may require surveys to determine if the project area contains Greater Sage-Grouse habitat (FLPMA, 43 United States Code (USC) 1701 Sec. 201 (a); BLM Manual 6840.04 D3; BLM-M-6840.04 E2). Surveys will be required prior to authorizing discrete anthropogenic disturbances within 4 miles of an occupied lek that is located in PHMA, but only in existing sagebrush. If an area is determined to be Greater Sage-Grouse habitat (e.g., nesting, brood-rearing, winter, transition), mitigation will be considered as part of the project level NEPA analysis and will be attached as conditions of approval to new discretionary actions, if deemed necessary to protect the habitat (BLM Manual 6840.04 D 5). Measures that may be considered include those identified in Appendix C [of the 2015 Final EIS]. Outside of PHMA, but within SGMA and PACs, avoid removal of sagebrush and minimize development that creates a physical barrier to Greater Sage-Grouse movement; these areas may be used by Greater Sage-Grouse to connect to other populations or seasonal habitat areas. Exceptions shall be made for vegetation treatments to benefit Utah prairie dog, where the landscape will be managed for both species. Outside of PHMA, but within SGMA and PACs, consider noise and permanent structure stipulations around leks. Outside PHMA, portions of State of Utah opportunity areas (see Final EIS Map 2.4) within 4 miles of a lek that is located in PHMA will be managed with the following allocations: • Fluid minerals will be open for leasing with CSU stipulations (noise and tall structures). • Lands ROWs, permits, and leases will be avoided, applying avoidance criteria for noise and tall structures. Do not site wind energy development in opportunity areas within 5 miles from occupied Greater Sage-Grouse leks that are in PHMA. Outside of PHMA, avoid and minimize effects from discrete anthropogenic disturbances in areas that have been treated with the intent of improving or creating new Greater Sage-Grouse habitat. Evaluate conditions in the treated area to determine if it is providing habitat for Greater Sage-Grouse and if additional measures are necessary to protect the habitat.	Sage-Grouse Management Outside PHMA Outside PHMA, implement Greater Sage-Grouse management actions included in the RMPs and project-specific mitigation measures associated with decisions that pre-dated the 2015 amendments. Proposed projects within State of Utah Greater Sage-Grouse Management Areas (SGMA) and USFWS priority areas for conservation (PAC), as well as adjacent to PHMA outside these areas, will consider impacts on Greater Sage-Grouse and may implement measures to mitigate impacts on Greater Sage-Grouse populations within adjacent PHMA when preparing site-specific planning and environmental compliance documents. Outside of PHMA, but within SGMAs and PACs, avoid removal of sagebrush and minimize development that creates a physical barrier to Greater Sage-Grouse movement; these areas may be used by Greater Sage-Grouse to connect to other populations or seasonal habitat areas. Exceptions shall be made for vegetation treatments to benefit Utah prairie dog, where the landscape will be managed for both species. Outside of PHMA, but within SGMAs and PACs, consider noise and permanent structure stipulations around leks. Outside PHMA, portions of State of Utah opportunity areas (see Final EIS Map 2.4), after analyzing the impacts of any allocations using the buffer distances identified in Appendix B [of the 2018 Draft EIS] of a lek that is located in PHMA will be managed with the following allocations: • Fluid minerals will be open for leasing with CSU stipulations (noise and tall structures). • Lands ROWs, permits, and leases will apply avoidance criteria for noise and tall structures. Avoid siting wind energy development in opportunity areas within the buffer distances identified in Appendix B [of the 2018 Draft EIS] from occupied Greater Sage-Grouse leks that are in PHMA, if the lek buffer analysis as identified in Appendix B shows that siting wind energy development in opportunity areas will impact lek persistence within PHMA. Outside of PHMA, avoid and minimize effects from discrete anthropogenic disturbances in areas that have been treated with the intent of improving or creating new Greater Sage-Grouse habitat. Evaluate conditions in the treated area to determine if it is providing habitat for Greater Sage-Grouse and if additional measures are necessary to protect the habitat. Outside of PHMA, provide that acres of occupied Greater Sage-Grouse habitat lost to habitat degradation actions (Appendix C, Table C.2 [of the 2018 Draft EIS]) are replaced by creating/improving Greater Sage-Grouse habitat within PHMA.	Sage-Grouse Management Outside PHMA Outside PHMA, implement Greater Sage-Grouse management actions included in the RMPs and project-specific mitigation measures associated with decisions that pre-dated the 2015 amendments. Proposed projects within State of Utah Greater Sage-Grouse Management Areas (SGMA) and USFWS priority areas for conservation (PAC), as well as adjacent to PHMA outside these areas, will consider impacts on Greater Sage-Grouse and may implement measures to mitigate impacts on Greater Sage-Grouse populations within adjacent PHMA when preparing site-specific planning and environmental compliance documents. Outside of PHMA, but within SGMA and PACs, avoid removal of sagebrush and minimize development that creates a physical barrier to Greater Sage-Grouse movement; these areas may be used by Greater Sage-Grouse to connect to other populations or seasonal habitat areas. Exceptions shall be made for vegetation treatments to benefit Utah prairie dog, where the landscape will be managed for both species. Outside of PHMA, but within SGMA and PACs, consider noise and permanent structure stipulations around leks. Outside PHMA, after analyzing the impacts using the buffer distances identified in Appendix B [of the 2018 Final EIS] from a lek that is located in PHMA, portions of State of Utah opportunity areas, will be managed with the following allocations: • Fluid minerals will be open for leasing with CSU stipulations (noise and tall structures). • Lands ROWs, permits, and leases will apply avoidance criteria for noise and tall structures. Avoid siting wind energy development in opportunity areas within the buffer distances identified in Appendix B [of the 2018 Final EIS] from occupied Greater Sage-Grouse leks that are in PHMA, if the lek buffer analysis as identified in Appendix B shows that siting wind energy development in opportunity areas will impact lek persistence within PHMA. Outside of PHMA, avoid and minimize effects from discrete anthropogenic disturbances in areas that have been treated with the intent of improving or creating new Greater Sage-Grouse habitat. Evaluate conditions in the treated area to determine if it is providing habitat for Greater Sage-Grouse and if additional measures are necessary to protect the habitat. Outside of PHMA, provide that acres of Greater Sage-Grouse seasonal habitat (based on best available maps, then confirmed to be regularly used by Greater Sage-Grouse to sustain one or more seasonal habitat requirements through coordination with the appropriate State of Utah agency and through on-the-ground information) that is lost to habitat degradation actions (Appendix C, Table C.2 of the 2015 ROD/ARMPA) are replaced by creating/improving Greater Sage-Grouse habitat within PHMA.

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
MA-FIRE-8	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 Wildland Fire Invasive Species Habitat Assessments described in Appendix H [of the 2015 Final EIS]. In GHMA or areas where treatment/seeding has occurred to improve habitat, prioritize suppression where wildfires threaten adjacent PHMA.	PHMA will be viewed as more valuable than non-PHMA when priorities are established. When suppression resources are widely available, maximum efforts will be placed on limiting fire growth outside and adjacent to PHMA polygons as well. These priority areas will be further refined following completion of the Greater Sage-Grouse Landscape Wildland Fire Invasive Species Habitat Assessments described in Appendix H [of the 2018 Draft EIS]. Outside PHMA or in areas where treatment/seeding has occurred to improve habitat, prioritize suppression where wildfires threaten adjacent PHMA.	PHMA will be viewed as more valuable than non-PHMA when priorities are established. When suppression resources are widely available, maximum efforts will be placed on limiting fire growth outside and adjacent to PHMA polygons as well. These priority areas will be further refined following completion of the Greater Sage-Grouse Landscape Wildland Fire Invasive Species Habitat Assessments described in Appendix H [of the 2018 Final EIS]. Outside PHMA or in areas where treatment/seeding has occurred to improve habitat, prioritize suppression where wildfires threaten adjacent PHMA.
MA-LG-1	PHMA and GHMA will be available… [Remainder of this action is unchanged from the 2015 ARMPA.]	No similar action. [Meaning the presence of Greater Sage-Grouse habitat management areas does not affect the determination of whether or not an area is available for livestock grazing or the active AUMs.]	No similar action. [Meaning the presence of Greater Sage-Grouse habitat management areas does not affect the determination of whether an area is available for livestock grazing or the active AUMs.]
MA-WHB-2	[Remainder of this action is unchanged from the 2015 ARMPA.]…The priorities for conducting assessments are: 1. HMA containing PHMA; 2. HMA containing only GHMA; 3. HMA containing sagebrush habitat outside of PHMA and GHMA mapped habitat; and 4. HMA without Greater Sage-Grouse habitat.	[Remainder of this action is unchanged from the 2015 ARMPA.]…The priorities for conducting assessments are: 1. HMAs containing PHMA; 2. HMAs containing sagebrush habitat outside of PHMA mapped habitat; and 3. HMAs without Greater Sage-Grouse habitat.	[Remainder of this action is unchanged from the 2015 ARMPA.]…The priorities for conducting assessments are: 1. HMA containing PHMA; 2. HMA containing sagebrush habitat outside of PHMA mapped habitat; and 3. HMA without Greater Sage-Grouse habitat.
MA-MR-1 Mineral Exploration	[Remainder of this action is unchanged from 2015 ARMPA]… In areas where leasing, permitting, etc. is still available, minerals exploration shall be subject to the pertinent management for discretionary activities in PHMA (MA-SSS-3) and GHMA (MA-SSS-5).	[Remainder of this action is unchanged from the 2015 ARMPA.]… In areas where leasing, permitting, etc. is still available, minerals exploration shall be subject to the pertinent management for discretionary activities in PHMA (MA-SSS-3).	[Remainder of this action is unchanged from the 2015 ARMPA.]… In areas where leasing, permitting, etc. is still available, minerals exploration shall be subject to the pertinent management for discretionary activities in PHMA (MA-SSS-3).
MA-MR-4 Unleased Federal Fluid Mineral Estate	<u>Unleased Areas within GHMA</u> Manage fluid mineral leasing in GHMA as follows (Figure 2-4): • Open to leasing, subject to standard stipulations: 188,600 acres • Open to leasing, subject to CSU and/or TL stipulations: 261,300 acres • Open to leasing, subject to NSO stipulations: 32,700 acres • Closed to leasing: 28,400 acres • Planning decision not mapped: 104,600 acres In GHMA, new development of fluid mineral leases could be considered if they apply the pertinent management for discretionary activities in GHMA identified in MA-SSS-5.	No similar action. [Since GHMA is not mapped there would be no polygons within which to calculate acres; however, because MA-SSS-5 did not include any allocations in the No-Action Alternative, none of the acres identified in the No-Action Alternative for MA-MR-4 would change.]	No similar action. [Since GHMA is not mapped there would be no polygons within which to calculate acres; however, because MA-SSS-5 did not include any allocations in the No-Action Alternative, none of the acres identified in the No-Action Alternative for MA-MR-4 would change.]
MA-MR-7 Leased Federal Fluid Mineral Estate	To the extent consistent with existing lease-rights, apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs) and in GHMA identified in MA-SSS-5 (i.e., mitigation, buffers, and RDFs).	To the extent consistent with existing lease-rights, apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs).	To the extent consistent with existing lease-rights, apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs).
MA-MR-12 Locatable Minerals	[Remainder of this action is unchanged from the 2015 ARMPA.]…To the extent allowable by law, work with claimants to voluntarily apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs) and in GHMA identified in MA-SSS-5 (i.e., mitigation and buffers).	[Remainder of this action is unchanged from the 2015 ARMPA.]…To the extent allowable by law, work with claimants to voluntarily apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs).	[Remainder of this action is unchanged from the 2015 ARMPA.]…To the extent allowable by law, work with claimants to voluntarily apply the pertinent management for discretionary activities in PHMA identified in MA-SSS-3 (e.g., mitigation, disturbance cap, minerals/energy density, buffers, seasonal restrictions, and RDFs).
MA-MR-14 Saleable Minerals	In GHMA, new mineral material developments can be considered if consistent with the pertinent management for discretionary activities described in MA-SSS-5.	No similar action.	No similar action.

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MA-MR-16 Non-Energy Leasable Minerals	In GHMA, manage nonenergy leasable minerals on federal lands and non-federal lands with federal mineral interests as follows (Figure 2-7): • Open to leasing consideration—587,400 acres • Closed to leasing—8,200 acres New leasing and development in GHMA can be considered if consistent with the pertinent management for discretionary activities described in MA-SSS-5.	No similar action. [Since GHMA is not mapped there would be no polygons within which to calculate acres; however, because MA-SSS-5 did not include any allocations in the No-Action Alternative, none of the acres identified in the No-Action Alternative for MA-MR-15 would change.]	No similar action. [Since GHMA is not mapped there would be no polygons within which to calculate acres; however, because MA-SSS-5 did not include any allocations in the No-Action Alternative, none of the acres identified in the No-Action Alternative for MA-MR-16 would change.]
MA-MR-20 Coal	New leasing for underground mining of coal in GHMA can be considered if consistent with the pertinent management for discretionary activities described in MA-SSS-5.	No similar action.	No similar action.
MA-MR-21 Coal	For coal mining operations on existing leases: In GHMA, new disturbances could be considered if consistent with the pertinent management for discretionary activities described in MA-SSS-5.	No similar action.	No similar action.
MA-MR-24 Mineral Split-Estate	Where the federal government manages the mineral estate in PHMA and GHMA... [Remainder of this action is unchanged from the 2015 ARMPA.] Where the federal government manages the surface and the mineral estate is in non-federal ownership in PHMA and GHMA…[Remainder of this action is unchanged from the 2015 ARMPA.]	Where the federal government manages the mineral estate in PHMA... [Remainder of this action is unchanged from the 2015 ARMPA.] Where the federal government manages the surface and the mineral estate is in non-federal ownership in PHMA…[Remainder of this action is unchanged from the 2015 ARMPA.]	Where the federal government manages the mineral estate in PHMA... [Remainder of this action is unchanged from the 2015 ARMPA.] Where the federal government manages the surface and the mineral estate is in non-federal ownership in PHMA…[Remainder of this action is unchanged from the 2015 ARMPA.]
MA-RE-1 Renewable Energy	Manage wind energy development in GHMA as follows: • Open—430,900 acres • Avoided—0 acres • Excluded—17,600 acres New wind ROW authorizations can be allowed in GHMA if they apply the pertinent management for discretionary activities identified in MA-SSS-5.	No similar action. [Since GHMA is not mapped there would be no polygons within which to calculate acres; however, because MA-SSS-5 did not include any allocations in the No-Action Alternative, none of the acres identified in the No-Action Alternative for MA-RE-1 would change.]	No similar action. [Since GHMA is not mapped there would be no polygons within which to calculate acres; however, because MA-SSS-5 did not include any allocations in the No-Action Alternative, none of the acres identified in the No-Action Alternative for MA-RE-1 would change.]
MA-LR-7 Rights-of-Way	In GHMA, manage ROWs, permits, and leases as follows (Figure 2-11): • Open—430,900 acres • Avoided—0 acres • Excluded—17,600 acres New ROWs (including permits and leases) authorizations will be allowed if they apply the pertinent management for discretionary activities in GHMA identified in MA-SSS-5.	No similar action. [Since GHMA is not mapped there would be no polygons within which to calculate acres; however, because MA-SSS-5 did not include any allocations in the No-Action Alternative, none of the acres identified in the No-Action Alternative for MA-LR-7 would change.]	No similar action. [Since GHMA is not mapped there would be no polygons within which to calculate acres; however, because MA-SSS-5 did not include any allocations in the No-Action Alternative, none of the acres identified in the No-Action Alternative for MA-LR-7 would change.]
MA-LR-8 Right-of-Way Corridors	In GHMA, retain 74,700 acres of designated ROW corridors as identified on Figure 2-10.	No similar action. [Since GHMA is not mapped there would be no polygons within which to calculate acres; however, because MA-SSS-5 did not include any designated corridors in the No-Action Alternative, none of the acres identified in the No-Action Alternative for MA-LR-8 would change.]	No similar action. [Since GHMA is not mapped there would be no polygons within which to calculate acres; however, because MA-SSS-5 did not include any designated corridors in the No-Action Alternative, none of the acres identified in the No-Action Alternative for MA-LR-8 would change.]
MA-LR-9 Land Tenure	Lands classified as PHMA and GHMA for Greater Sage-Grouse will be retained in federal management unless… [Remainder of this action is unchanged from the 2015 ARMPA.]	Lands classified as PHMA for Greater Sage-Grouse will be retained in federal management unless… [Remainder of this action is unchanged from the 2015 ARMPA.]	Lands classified as PHMA for Greater Sage-Grouse will be retained in federal management unless… [Remainder of this action is unchanged from the 2015 ARMPA.]
MA-LR-11 Recommended Withdrawal	[Remainder of this action is unchanged from the 2015 ARMPA.]…federal lands or non-federal lands with federal mineral interests within PHMA or GHMA that are not already withdrawn or recommended for withdrawal will be available for locatable mineral entry.	[Remainder of this action is unchanged from the 2015 ARMPA.]...federal lands or non-federal lands with federal mineral interests within PHMA that are not already withdrawn or recommended for withdrawal will be available for locatable mineral entry.	[Remainder of this action is unchanged from the 2015 ARMPA.]...federal lands or non-federal lands with federal mineral interests within PHMA that are not already withdrawn or recommended for withdrawal will be available for locatable mineral entry.

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MA-TTM-1 OHV Area Designations	Manage off-highway vehicle (OHV) use in Greater Sage-Grouse habitat as follows: • Open to cross-country use: 525 acres (one area each in Parker Mountain and Uintah Population Areas) • Limited to existing routes: 1,274,700 acres • Limited to designated routes: 1,220,500 acres • Closed: 33,200 acres	Manage off-highway vehicle (OHV) use in Greater Sage-Grouse habitat as follows: • Open to cross-country use: 525 acres in PHMA (one area each in Parker Mountain and Uintah Population Areas); two areas outside of PHMA in the Sheeprocks Population Area, associated with 5-Mile Pass (6,320 acres) and Little Sahara Sand Dunes 7,900 acres)) • Limited to existing routes: 1,260,500 acres • Limited to designated routes: 1,220,500 acres • Closed: 33,200 acres	Manage off-highway vehicle (OHV) use in Greater Sage-Grouse habitat as follows: • Open to cross-country use: 525 acres in PHMA (one area each in Parker Mountain and Uintah Population Areas); two areas outside of PHMA in the Sheeprocks Population Area, associated with 5-Mile Pass (6,320 acres) and Little Sahara Sand Dunes 7,900 acres)) • Limited to existing routes: 1,260,500 acres • Limited to designated routes: 1,220,500 acres • Closed: 33,200 acres
MA-TTM-2 OHV Area Designations	PHMA and GHMA that do not have designated routes in a Travel Management Plan will be managed as limited to existing routes until a Travel Management Plan designates routes (unless they are already designated as limited to designated routes or closed to OHV use).	PHMA that does not have designated routes in a Travel Management Plan will be managed as limited to existing routes until a Travel Management Plan designates routes (unless they are already designated as limited to designated routes or closed to OHV use). [Two areas that were GHMA previously will remain limited to existing routes, though they would no longer be GHMA: 7,400 acres in the Bald Hills area, and 13,500 acres in the Fillmore Field Office portions of Sheeprocks area, east of Highway 6. Two other areas of former GHMA would return to being open to cross-country use – 6,320 acres in the 5-Mile Pass area and 7,900 acres in the Little Sahara Recreation Area.]	PHMA that does not have designated routes in a Travel Management Plan will be managed as limited to existing routes until a Travel Management Plan designates routes (unless they are already designated as limited to designated routes or closed to OHV use). [Two areas that were GHMA previously will remain limited to existing routes, though they would no longer be GHMA: 7,400 acres in the Bald Hills area, and 13,500 acres in the Fillmore Field Office portions of Sheeprocks area, east of Highway 6. Two other areas of former GHMA would return to being open to cross-country use – 6,320 acres in the 5-Mile Pass area and 7,900 acres in the Little Sahara Recreation Area.]
MA-TTM-10 Temporary closures	In PHMA and GHMA, temporary closures will be considered in accordance with…[Remainder of this action is unchanged from the 2015 ARMPA.]	In PHMA, temporary closures will be considered in accordance with…[Remainder of this action is unchanged from the 2015 ARMPA.]	In PHMA, temporary closures will be considered in accordance with…[Remainder of this action is unchanged from the 2015 ARMPA.]
Issue: Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA			
MA-SSS-1	The PHMA and GHMA objectives and management actions would apply to existing sagebrush areas and areas with ecological sagebrush potential within the respective PHMA and GHMA polygons. In the mapped PHMA and GHMA there may be areas that lack the principle habitat components necessary for Greater Sage-Grouse, including but not limited to rock outcrops, alkaline flats, and pinyon-juniper ecological sites. These are areas that do not have existing sagebrush or ecological potential to contain sagebrush. These areas of non-habitat may be identified during site-specific project review by agency biologists, in discussion with the appropriate State of Utah agency. Because of the importance of PHMA to conserve, enhance and restore Greater Sage-Grouse and its habitat, objectives and management actions will apply to all the areas within the respective PHMA polygons. The GHMA objectives and management actions will apply to the areas of identified non-habitat within the GHMA polygons unless **all** the following conditions are met: • the non-habitat does not provide important connectivity between areas with existing or potential habitat; • all direct and indirect impacts that impair the function of adjacent seasonal habitats or the life-history or behavioral needs of the Greater Sage-Grouse population are eliminated through project design (e.g., minimize sound, preclude tall structures, require perch deterrents), as demonstrated in the project's NEPA document. Exceptions in non-habitat may be approved by the Authorized Officer, but only with the concurrence of one level of delegated authority above the Authorized Officer.	The PHMA objectives and management actions apply to ecological sites that currently provide Greater Sage-Grouse habitat within the respective PHMA polygons, as well as areas with ecological potential for Greater Sage-Grouse habitat that have not crossed an ecological threshold to a different stable non-Greater Sage-Grouse habitat vegetation community. Mapped PHMA may also include areas that lack the principle habitat components necessary for Greater Sage-Grouse, including but not limited to rock outcrops, alkaline flats, pinyon-juniper ecological sites, and areas that have crossed an ecological threshold to a different stable non-Greater Sage-Grouse habitat vegetation community (e.g., monoculture cheatgrass, pinyon/juniper woodland). These are areas that do not contain sagebrush or other vegetation necessary for the various Greater Sage-Grouse seasonal habitats. These areas of non-habitat may be identified during site-specific project review by agency biologists, in discussion with the appropriate State of Utah agency. The PHMA objectives and management actions will apply to the areas of identified non-habitat within the PHMA polygons unless **both** the following conditions are met: • the non-habitat does not provide important connectivity between occupied habitats; and • direct and indirect impacts that impair the function of adjacent seasonal habitats or the life-history or behavioral needs of the Greater Sage-Grouse population are eliminated through project design (e.g., minimize sound, preclude tall structures, require perch deterrents), as demonstrated in the project's NEPA document.	The PHMA objectives and management actions apply to ecological sites that currently provide Greater Sage-Grouse habitat within the respective PHMA polygons, as well as areas with ecological potential for Greater Sage-Grouse habitat that have not crossed an ecological threshold to a different stable non-Greater Sage-Grouse habitat vegetation community. Mapped PHMA may also include areas that lack the principle habitat components necessary for Greater Sage-Grouse, including but not limited to rock outcrops, alkaline flats, pinyon-juniper ecological sites, and areas that have crossed an ecological threshold to a different stable non-Greater Sage-Grouse habitat vegetation community, such as cheatgrass monocultures or pinyon/juniper woodlands (phase 3, absent sagebrush understory) (Chambers et al. 2014; Bestelmeyer et al. 2010; Bestelmeyer, et al. 2011). These are areas that do not contain sagebrush or other vegetation necessary for the various Greater Sage-Grouse seasonal habitats. These areas of non-habitat may be identified during site-specific project review by agency biologists, in discussion with the appropriate State of Utah agency. The PHMA objectives and management actions will apply to the areas of identified non-habitat within the PHMA polygons unless **both** the following conditions are met: • the non-habitat does not provide important connectivity between seasonal habitats; and • direct and indirect impacts on adjacent seasonal habitats (disturbance to or disruption of) that would impair their biological function of providing the life-history or behavioral needs of the Greater Sage-Grouse population are eliminated through project design (e.g., minimize sound, preclude tall structures, require perch deterrents), as demonstrated in the project's NEPA document.

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MA-SSS-1 (*continued*)	Any exception granted based on the above criteria would only apply to the specific project-level authorization. Proposed projects in the same area would need to undergo individual analysis to confirm the criteria are met prior to subsequent authorizations. Excepting a site-specific project from compliance with Greater Sage-Grouse management in an area of non-habitat would not change the boundaries of PHMA or GHMA.	Any exception granted based on the above criteria would only apply to the specific project-level authorization. Proposed projects in the same area would need to undergo individual analysis to confirm the criteria are met prior to subsequent authorizations. Excepting a site-specific project from compliance with Greater Sage-Grouse management in an area of non-habitat would not change the boundaries of PHMA.	Any exception granted based on the above criteria would only apply to the specific project-level authorization. Proposed projects in the same area would need to undergo individual analysis to confirm the criteria are met prior to subsequent authorizations. Excepting a site-specific project from compliance with Greater Sage-Grouse management in an area of non-habitat would not change the boundaries of PHMA.
Same language added to the following actions: MA-MR-6 (Leased Federal Fluid Mineral Estate) MA-MR-14 (Saleable Minerals) MA-MR-15 (Non-Energy Leasable Minerals)	No similar action	Inserted the following text into the actions noted to the left: (see MA-SSS-1 language related to placement of development in non-habitat portions of PHMA)	Inserted the following text into the actions noted to the left: (see MA-SSS-1 language related to placement of development in non-habitat portions of PHMA)
Issue: Application of Lek Buffers			
MA-SSS-3H	In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will apply the lek buffer-distances identified in the US Geological Survey Report Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review (Open File Report 2014-1239	In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will assess and address impacts within the lek buffer-distances identified in the US Geological Survey Report Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review (Open File Report 2014-1239	In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will assess and address impacts within the lek buffer-distances identified in the US Geological Survey Report Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review (Open File Report 2014-1239
MA-SSS-6	Outside PHMA, portions of State of Utah opportunity areas (see Final EIS Map 2.4) within 4 miles of a lek that is located in PHMA will be managed with the following allocations… [Remainder of this action is unchanged from the 2015 ARMPA.]	Outside PHMA, portions of State of Utah opportunity areas (see Final EIS Map 2.4), after analyzing the impacts of any allocations using the buffer distances identified in Appendix B [of the 2018 Draft EIS] of a lek that is located in PHMA will be managed with the following allocations… [Remainder of this action is unchanged from the 2015 ARMPA.]	Outside PHMA, after analyzing the impacts using the buffer distances identified in Appendix B [of the 2018 Final EIS] from a lek that is located in PHMA, portions of State of Utah opportunity areas will be managed with the following allocations… [Remainder of this action is unchanged from the 2015 ARMPA.]
MA-SSS-6	Do not site wind energy development in opportunity areas within 5 miles from occupied Greater Sage-Grouse leks that are in PHMA.	Avoid siting wind energy development in opportunity areas within the buffer distances identified in Appendix B [of the 2018 Draft EIS] from occupied Greater Sage-Grouse leks that are in PHMA, if the lek buffer analysis as identified in Appendix B shows that siting wind energy development in opportunity areas will impact lek persistence within PHMA.	Avoid siting wind energy development in opportunity areas within the buffer distances identified in Appendix B [of the 2018 Final EIS] from occupied Greater Sage-Grouse leks that are in PHMA, if the lek buffer analysis as identified in Appendix B shows that siting wind energy development in opportunity areas will impact lek persistence within PHMA.
MA-MR-3	Outside PHMA, portions of opportunity areas within 4 miles of a lek that is located in PHMA will be… [Remainder of this action is unchanged from the 2015 ARMPA.]	Outside PHMA, portions of opportunity areas within the buffer distances identified in Appendix B [of the 2018 Draft EIS] of a lek that is located in PHMA will be… [Remainder of this action is unchanged from the 2015 ARMPA.]	Outside PHMA, portions of opportunity areas within the buffer distances identified in Appendix B [of the 2018 Final EIS] of a lek that is located in PHMA will be… [Remainder of this action is unchanged from the 2015 ARMPA.]
MA-RE-1	Do not site wind energy development in opportunity areas within 5 miles from occupied Greater Sage-Grouse leks that are in PHMA.	Avoid siting wind energy development in opportunity areas within the buffer distances identified in Appendix B [of the 2018 Draft EIS] from occupied Greater Sage-Grouse leks that are in PHMA.	Avoid siting wind energy development in opportunity areas within the buffer distances identified in Appendix B from occupied Greater Sage-Grouse leks that are in PHMA.
Issue: Adaptive Management			
MA-SSS-7	Adaptive Management This plan establishes soft and hard triggers for both Greater Sage-Grouse populations and habitat. The specific triggers and additional detail on the management responses are identified in Appendix I, Adaptive Management [of the 2015 Final EIS]. 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. If monitoring indicates the soft trigger is met, the BLM will determine if there is a specific cause or causes that are contributing to the decline. If it is determined that the decline is related to a natural population variation, no specific management actions will be required. However, if BLM	Adaptive Management This plan establishes soft and hard triggers for both Greater Sage-Grouse populations and habitat. The specific triggers and additional detail on the management responses are identified in Appendix I, Adaptive Management [of the 2018 Draft EIS]. The hard and soft trigger data will be analyzed annually. If monitoring indicates the soft trigger is met, the BLM will review available and pertinent data, in coordination with Greater Sage-Grouse biologists from multiple agencies including the appropriate State of Utah agency, USFS, USFWS, and/or NRCS, to determine the causal factor(s) for the declines within six months of identifying that the trigger has been met. If it is determined that the decline is related to a natural population variation, no	Adaptive Management This plan establishes soft and hard triggers for both Greater Sage-Grouse populations and habitat. The specific triggers and additional detail on the management responses are identified in Appendix I, Adaptive Management [of the 2018 Final EIS]. The hard and soft trigger data will be analyzed annually. If monitoring indicates the soft trigger is met, the BLM will review available and pertinent data, in coordination with Greater Sage-Grouse biologists from multiple agencies including the appropriate State of Utah agency, USFS, USFWS, and/or NRCS, to determine the causal factor(s) for the declines within 6 months of identifying that the trigger has been met. If it is determined that the decline is related to a natural population variation, no specific management

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MA-SSS-7 (*continued*)	management actions are determined to cause or contribute to the decline, the BLM manager will apply measures within their implementation-level discretion to mitigate the decline of populations and/or habitats to the area where the trigger has been met. These measures will apply more conservative or restrictive implementation conservation conditions, terms, or decisions within the agencies' discretion to mitigate the decline of populations and/or habitats. If monitoring indicates the hard trigger is met, a set of specific management actions from the BLM Proposed Plan will immediately be replaced with or adjusted by different management actions in the area where the trigger has been met. Table I.1 of Appendix I [of the 2015 Final EIS] identifies the management actions from the BLM Proposed Plan, and the corresponding new management actions that will be immediately implemented to the specific area in the event a hard trigger is met. In addition to these specific changes, the BLM will review available and pertinent data for the area, in coordination Greater Sage-Grouse biologists from multiple agencies including the appropriate State of Utah agency, USFWS, and NRCS, to determine the causal factor(s) and implement a corrective strategy. The final strategy associated with a hard trigger being met will be the changes identified in Table I.1 of Appendix I, and may also include the need to further amend or revise the RMP to address the situation and modify management accordingly, for the area where the trigger was met.	specific management actions will be required; however, if BLM management actions are determined to cause or contribute to the decline, the BLM manager will apply measures within their implementation-level discretion to mitigate the decline of populations and/or habitats to the area where the trigger has been met. These measures will apply more conservative or restrictive implementation conservation conditions, terms, or decisions within the agencies' discretion to mitigate the decline of populations and/or habitats. If monitoring indicates the hard trigger is met, the BLM will review available and pertinent data, in coordination with Greater Sage-Grouse biologists from multiple agencies including the appropriate State of Utah agency, USFS, USFWS, and/or NRCS, to determine the causal factor(s) for the declines. The BLM and the team will also identify measures needed to address the causal factor(s) and develop a corrective strategy for the area where the trigger has been met. The corrective strategy would include the applicable changes identified in Table I.1 of Appendix I [of the 2018 Draft EIS] that address the causal factor, and could also include other management actions, which may require the need to amend the RMP to address the situation and modify management. If determining the causal factor and development of a corrective strategy is not completed within six months of documenting that the trigger has been met, all the plan level responses identified in Table 1.1 will be applied until the causal factor analysis is complete. Upon completion of the causal factor analysis any responses that do not address the causal factor(s) would be removed. In developing a corrective strategy, managers may select changes in management that are identified in Table I.1, Specific Management Responses that have already been analyzed for implementation. This table also identifies which decision from the BLM RMPA would be changed. The management identified in the corrective strategy would be implemented until ten-year population trends reflect natural fluctuations anticipated for the area. The BLM would determine the area reflects natural fluctuations in coordination with Greater Sage-Grouse biologists from multiple agencies including Forest Service, UDWR, USFWS, and/or NRCS. Upon determination, the management would revert to the RMPA. If all the leks in an area that has met a hard trigger are not active for ten years, becoming unoccupied by definition, the PHMA designation and all its associated management would be removed since there is no longer a Greater Sage-Grouse population for which management should be prioritized.	actions will be required; however, if BLM management actions are determined to cause or contribute to the decline, the BLM will work with the appropriate State of Utah agency and public land users to identify and apply management to slow down or stop the population decline. Such measures would be applied by the BLM manager within their implementation-level discretion to mitigate the decline of populations and/or habitats to the area where the trigger has been met. These measures will apply more conservative or restrictive implementation conservation conditions, terms, or decisions within the agencies' discretion to mitigate the decline of populations and/or habitats. Such measures could also include other management actions which may require the need to amend the RMP to address the situation and modify management. If monitoring indicates the hard trigger is met, the BLM will review available and pertinent data, in coordination with Greater Sage-Grouse biologists from multiple agencies including the appropriate State of Utah agency, USFS, USFWS, and/or NRCS, to determine the causal factor(s) for the declines. The BLM and the team will also identify measures needed to address the causal factor(s) and develop a corrective strategy for the area where the trigger has been met. The corrective strategy would include the applicable changes identified in Table I.1 of Appendix I [of the 2018 Final EIS] that address the causal factor, and could also include other management actions, which may require the need to amend the RMP to address the situation and modify management. If determining the causal factor and development of a corrective strategy is not completed within 6 months of documenting that the trigger has been met, all the plan level responses identified in Table 1.1 will be applied until the causal factor analysis is complete. Upon completion of the causal factor analysis any responses that do not address the causal factor(s) would be removed. In developing a corrective strategy, managers may select changes in management that are identified in Table I.1, Specific Management Responses that have already been analyzed for implementation. This table also identifies which decision from the BLM RMPA would be changed. The management identified in the corrective strategy would be implemented until ten-year population trends reflect natural fluctuations anticipated for the area. The BLM would determine the area reflects natural fluctuations in coordination with Greater Sage-Grouse biologists from multiple agencies including Forest Service, UDWR, USFWS, and/or NRCS. Upon determination, the management would revert to the RMPA. If all the leks in an area that has met a hard trigger are not active for ten years, becoming unoccupied by definition, the PHMA designation and all its associated management would be removed since there is no longer a Greater Sage-Grouse population for which management should be prioritized. For any area that has met a soft or hard trigger, the BLM, the appropriate State of Utah agency, and other members of the technical team will annually review monitoring data regarding population and habitat trends to verify that management actions implemented to mitigate declines are being successful. If monitoring indicates continued declines, the causal factor analysis will be reviewed, updated if needed, and applicable additional management would be identified and implemented.

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Issue: Prioritization of Mineral Leasing			
Objective MR-1	Priority will be given to leasing and development of fluid mineral resources, including geothermal, outside of PHMA and GHMA. When analyzing leasing and authorizing development of fluid mineral resources, including geothermal, in PHMA and GHMA, and subject to applicable stipulations for the conservation of 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 USC 226(p) and 43 CFR, Part 3162.3-1(h).	No similar objective.	No similar objective.
Issue: Land Disposal and Exchanges			
MA-MR-10	In PHMA, identify areas where acquisitions (including federal mineral rights) or conservation easements, will benefit Greater Sage-Grouse habitat.	No similar action.	No similar action.
MA-LR-9	Lands classified as PHMA and GHMA for Greater Sage-Grouse will be retained in federal management (Figure 2-12, Land Tenure [Appendix A] [of the 2015 Final EIS]) unless: (1) the agency can demonstrate that disposal of the lands, including land exchanges, will provide a net conservation gain to the Greater Sage-Grouse 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.	Lands classified as PHMA for Greater Sage-Grouse will be retained in federal management (Figure 2-12, Land Tenure [Appendix A] [of the 2018 Draft EIS]) unless: (1) the agency can demonstrate that disposal of the lands, including land exchanges, will improve the condition of Greater Sage-Grouse habitat or (2) the agency can demonstrate that the disposal of the lands, including land exchanges, will not compromise the persistence of Greater Sage-Grouse populations within a PHMA.	Lands classified as PHMA for Greater Sage-Grouse will be retained in federal management (Figure 2-12, Land Tenure [Appendix A] [of the 2018 Final EIS]) unless: (1) the agency can demonstrate that disposal of the lands, including land exchanges, will improve the condition of Greater Sage-Grouse habitat or (2) the agency can demonstrate that the disposal of the lands, including land exchanges, will not compromise the persistence of Greater Sage-Grouse populations within a PHMA.
Issue: Managing Habitats to Manage Predation			
MA-SSS-3D	No similar action.	When conducting habitat treatments, remove trees that have corvid nests that could impact PHMA nesting and brood-rearing habitat when in compliance with the Migratory Bird Treaty Act (e.g., when the nest is unoccupied and outside of migratory bird nesting season).	When conducting habitat treatments, remove trees that have corvid nests that could impact PHMA nesting and brood-rearing habitat when in compliance with the Migratory Bird Treaty Act (e.g., when the nest is unoccupied and outside of migratory bird nesting season).
MA-VEG-2	No similar action.	When conducting conifer treatments: Remove trees with corvid nests when in compliance with the Migratory Bird Treaty Act (e.g., when unoccupied and outside of migratory bird nesting season).	When conducting conifer treatments: Remove trees with corvid nests when in compliance with the Migratory Bird Treaty Act (e.g., when unoccupied and outside of migratory bird nesting season).
Issue: Burial of Transmission Lines			
MA-LR-2	In PHMA, high voltage transmission lines (100 kilovolt or greater) will be avoided if possible. If avoidance is not possible, they will be placed in designated corridors where technically feasible. Where not technically feasible, lines should be located adjacent to existing infrastructure, unless using a different alignment better minimizes impacts on Greater Sage-Grouse. New ROWs constructed adjacent to existing infrastructure will be constructed as close as technically feasible to existing infrastructure to limit disturbance to the smallest footprint. In PHMA outside of designated corridors, new transmission lines must be buried where technically feasible. Where burying transmission lines is not technically feasible: • new transmission lines must be located adjacent to existing infrastructure, unless using a different alignment better minimizes impacts on Greater Sage-Grouse; and • they will be subject to Greater Sage-Grouse ROW avoidance criteria described above.	In PHMA, high voltage transmission lines (100 kilovolt or greater) will be avoided if possible. If avoidance is not possible, they will be placed in designated corridors where technically feasible. Where not technically feasible, lines should be located adjacent to existing infrastructure, unless using a different alignment or construction method (e.g., burial) better minimizes impacts on Greater Sage-Grouse. New ROWs constructed adjacent to existing infrastructure will be constructed as close as technically feasible to existing infrastructure to limit disturbance to the smallest footprint.	In PHMA, high voltage transmission lines (100 kilovolt or greater) will be avoided if possible. If avoidance is not possible, they will be placed in designated corridors where technically feasible. Where not technically feasible, lines should be located adjacent to existing infrastructure, unless using a different alignment or construction method (e.g., burial) better minimizes impacts on Greater Sage-Grouse. New ROWs constructed adjacent to existing infrastructure will be constructed as close as technically feasible to existing infrastructure to limit disturbance to the smallest footprint.

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MA-LR-5	… In PHMA, during renewal, amendment or reauthorization of existing permits, work with existing ROW holders to mitigate impacts of existing ROW infrastructure. Where technically feasible, require ROW holders to bury or relocate existing power lines to minimize long-term impacts on Greater Sage-Grouse habitat. Where the potential long-term impacts of relocating or burying the line will be greater than the existing impacts, do not pursue the mitigation. If relocation or burying is not feasible or will result in severe short-term or greater long-term impacts on Greater Sage-Grouse habitat, incorporate additional terms and conditions in the ROW authorization for protection of Greater Sage-Grouse habitat. … [Remainder of this action is unchanged from the 2015 ARMPA.]	…In PHMA, during renewal, amendment or reauthorization of existing permits, work with existing ROW holders to mitigate impacts of existing ROW infrastructure on Greater Sage-Grouse (e.g., predator deterrents, maintenance schedules, relocation, burial, etc.). Where the potential long-term impacts of mitigation will be greater than the existing impacts, do not pursue the mitigation.… [Remainder of this action is unchanged from the 2015 ARMPA.]	…In PHMA, during renewal, amendment or reauthorization of existing permits, work with existing ROW holders to mitigate impacts of existing ROW infrastructure on Greater Sage-Grouse (e.g., predator deterrents, maintenance schedules, relocation, burial, etc.). Where the potential long-term impacts of mitigation will be greater than the existing impacts, do not pursue the mitigation.… [Remainder of this action is unchanged from the 2015 ARMPA.]
Issue: Modifying Habitat Management Area Boundaries			
MA-SSS-1	The BLM will apply these the goals, objectives, and management actions where the agency has discretion to implement them; the actions do not apply in areas where the BLM does not administer the surface or mineral estate. Minor adjustments to PHMA/GHMA external boundaries can be made if BLM biologists, in coordination with the appropriate State of Utah agency, determine site-specific conditions warrant such changes to more accurately depict existing or potential Greater Sage-Grouse habitat. The appropriate planning process (i.e., plan maintenance or plan amendment) will be used, as determined on a case-by-case basis considering site-specific issues. See additional information and protocol on adjusting occupied habitat and PHMA/GHMA boundaries in Appendix K, Greater Sage-Grouse Habitat Baseline and Habitat Update Protocol [of the 2015 Final EIS].	The BLM will apply these the goals, objectives, and management actions where the agency has discretion to implement them; the actions do not apply in areas where the BLM does not administer the surface or mineral estate. The PHMA boundaries are not intended to represent a survey-grade boundary and are not expected to be used exclusively at a project-level. In accordance with the adaptive management framework and existing law, regulation and policy, inventories will continue to be conducted to provide information on Greater Sage-Grouse habitat and distribution (FLPMA, 43 USC 1701 Sec. 201 (a), BLM Manual 6840 .04 D 3; BLM-M-6840 .04 E 2). Prior to considering proposed actions within PHMA, a field investigation should be conducted by a qualified biologist in collaboration with federal and state biologists. To this end, additional site-specific information associated with local surveys could result in a more precise delineation of habitat management areas. If in the review of a proposed action, there are discrepancies between the PHMA maps and the on-the-ground conditions, the on-the-ground information should be used to determine where the management would be applied. Minor adjustments to PHMA external boundaries (increases or decreases) can be made if BLM biologists, in coordination with the appropriate State of Utah agency, determine site-specific conditions warrant such changes to more accurately depict existing or potential Greater Sage-Grouse habitat. The appropriate planning process (i.e., plan maintenance or plan amendment) will be used, as determined on a case-by-case basis considering site-specific issues. See additional information and protocol on adjusting occupied habitat and PHMA boundaries in Appendix K, Greater Sage-Grouse Habitat Baseline and Habitat Update Protocol [of the 2018 Draft EIS].	The BLM will apply these the goals, objectives, and management actions where the agency has discretion to implement them; the actions do not apply in areas where the BLM does not administer the surface or mineral estate. The PHMA boundaries are not intended to represent a survey-grade boundary and are not expected to be used exclusively at a project-level. In accordance with the adaptive management framework and existing law, regulation and policy, inventories will continue to be conducted to provide information on Greater Sage-Grouse habitat and distribution (FLPMA, 43 USC 1701 Sec. 201 (a), BLM Manual 6840 .04 D 3; BLM-M-6840 .04 E 2). Prior to considering proposed actions within PHMA, a field investigation should be conducted by a qualified biologist in collaboration with federal and state biologists. To this end, additional site-specific information associated with local surveys could result in a more precise delineation of habitat management areas. If in the review of a proposed action, there are discrepancies between the PHMA maps and the on-the-ground conditions, the on-the-ground information should be used to determine where the management would be applied. Minor adjustments to PHMA external boundaries (increases or decreases) can be made if BLM biologists, in coordination with the appropriate State of Utah agency, determine site-specific conditions warrant such changes to more accurately depict existing or potential Greater Sage-Grouse habitat. The appropriate planning process (i.e., plan maintenance or plan amendment) will be used, as determined on a case-by-case basis considering site-specific issues. See additional information and protocol on adjusting seasonal habitat and PHMA boundaries in Appendix K, Greater Sage-Grouse Habitat Baseline and Habitat Update Protocol [of the 2018 Final EIS].
Issue: Modifying Mitigation Standard			
Objective SSS-2	In all Greater Sage-Grouse habitat, manage activities that result in habitat loss and degradation to provide a net conservation gain of Greater Sage-Grouse habitat. Exceptions to net conservation gain for Greater Sage-Grouse shall be made for vegetation treatments to benefit Utah prairie dog.	In PHMA, manage activities that result in habitat loss and degradation to improve the condition of Greater Sage-Grouse habitat. Exceptions to this mitigation standard for Greater Sage-Grouse shall be made for vegetation treatments to benefit Utah prairie dog.	In PHMA, manage activities that result in habitat loss and degradation to improve the condition of Greater Sage-Grouse habitat across the planning area. Exceptions to this mitigation standard for Greater Sage-Grouse shall be made for vegetation treatments to benefit Utah prairie dog.
MA-SSS-3A	A- Net Conservation Gain: In all Greater Sage-Grouse habitat, in undertaking BLM management actions, and, consistent with valid existing rights and applicable law, in authorizing third-party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that provides a net conservation gain to the species, including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for impacts by applying beneficial mitigation	A- Mitigation Strategy: In PHMA, when undertaking BLM management actions, and, consistent with valid existing rights and applicable law, when authorizing third-party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that improves the condition of Greater Sage-Grouse habitat, including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, or compensating for impacts by applying beneficial mitigation actions. Exceptions to this standard may be made for vegetation treatments to benefit Utah prairie dog.	A- Mitigation Strategy: In PHMA, when undertaking BLM management actions, and, consistent with valid existing rights and applicable law, when authorizing third-party actions that result in habitat loss and degradation, the BLM will achieve the planning-level Greater Sage-Grouse management goals and objectives through implementation of mitigation and management actions. Under this Proposed 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

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MA-SSS-3A (*continued*)	actions. Exceptions to net conservation gain for Greater Sage-Grouse shall be made for vegetation treatments to benefit Utah prairie dog. Mitigation will be conducted according to the mitigation framework contained in Appendix F, Mitigation Strategy: Utah Greater Sage-Grouse RMPA [of the 2015 ROD/ARMPA]. Consider the likelihood of development of not-yet-constructed surface-disturbing activities – as defined in Table D.2 of the Monitoring Framework (Appendix D [of the 2015 Final EIS]) − under valid existing rights prior to authorizing new projects in PHMA.	The BLM, in coordination with the State of Utah, will develop a Mitigation Strategy to guide the application of the mitigation approach and hierarchy. The Strategy should be based on the State-level Greater Sage-Grouse mitigation approach to the extent is it consistent with other agency regulations and policies. The BLM will include the avoidance, minimization, and compensatory recommendations from the Mitigation Strategy in one or more of the NEPA analysis alternatives, and the necessary measures needed to improve the condition of Greater Sage-Grouse habitat will be applied. The Mitigation Strategy will be implemented to provide an improvement to Greater Sage-Grouse habitat at a state level (as opposed to a WAFWA Management Zone, a Field Office, or a Forest), in collaboration with applicable partners (e.g., federal, tribal, and state agencies). Consider the likelihood of development of not-yet-constructed surface-disturbing activities – as defined in Table D.2 of the Monitoring Framework (Appendix D [of the 2018 Draft EIS])−under valid existing rights prior to authorizing new projects in PHMA.	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. Exceptions to this standard may be made for vegetation treatments to benefit Utah prairie dog. The BLM has determined that compensatory mitigation must be voluntary unless required by other applicable law other than FLPMA, while recognizing that State authorities may also require compensatory mitigation (IM 2018-093, *Compensatory Mitigation*, July 24, 2018). Therefore, consistent with valid existing rights and applicable law, when considering 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. Accordingly, before authorizing third-party actions that result in habitat loss and degradation in PHMA or State of Utah SGMAs, the BLM will complete the following steps: 1) Notify the appropriate State of Utah agency to determine if the State of Utah requires or recommends any additional mitigation – including compensatory mitigation – under State regulations, policies, or programs related to the conservation of Greater Sage-Grouse; 2) Recommend to the project proponent that it coordinate with the appropriate State of Utah agency to ensure it complies with all applicable State requirements relating to its proposal; 3) Consider the State's recommendations – if the State of Utah determines that there are unacceptable residual impacts on Greater Sage-Grouse or its habitat and compensatory mitigation is required as a part of State policy or authorization, or if a proponent voluntarily offers mitigation, the BLM will incorporate that mitigation into the BLM's NEPA and decision-making process; 4) The BLM will ensure mitigation outcomes are consistent with the State of Utah's mitigation strategy and principles outlined in the State's Conservation Plan for Greater Sage-Grouse, including, but not limited to: a) Creating, restoring and/or protecting functional habitat or habitat corridors to offset the impacts of unavoidable disturbance to Greater Sage-Grouse habitat, b) In most cases, compensatory mitigation projects should be completed before the project occurs, c) Compensatory mitigation projects should account for the risk that the mitigation may fail or not persist for the full duration of the project it is intended to offset, d) Compensatory mitigation projects should provide habitat that is in place for at least the duration of the project it is intended to offset. 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. 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 BLM will not deny a proposed authorization in Greater Sage-Grouse habitat solely on the grounds that the proponent has not proposed or agreed

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MA-SSS-3A (*continued*)	*(see above)*	*(see above)*	to undertake voluntary compensatory mitigation. In cases where waivers, exceptions, or modification may be granted for projects with a residual impact, voluntary compensatory mitigation consistent with the State's management goals can be one mechanism by which a proponent achieves the RMPA goals, objectives, and waiver, exception, or modification criteria. When a proponent volunteers compensatory mitigation as their chosen approach to address residual impacts, the BLM can incorporate those actions into the rationale used to grant a waiver, exception, or modification. The final decision to grant a waiver, exception, or modification will be based, in part, on criteria consistent with the State's Greater Sage-Grouse management plans and policies.
Issue: Changing Grazing Systems and Prioritization of Grazing Permits			
Objective SSS-4	Within PHMA, increase the amount and functionality of seasonal habitats by: Reducing the extent of annual grasslands.	Within PHMA, increase the amount and functionality of seasonal habitats by: Reducing the extent of invasive annual grasslands.	Within PHMA, increase the amount and functionality of seasonal habitats by: Reducing the extent of invasive annual grasslands.
MA-VEG-1	[Remainder of this action is unchanged from the 2015 ARMPA.]…treat areas to maintain and expand healthy Greater Sage-Grouse habitat (e.g., conifer encroachment areas and annual grasslands).	[Remainder of this action is unchanged from the 2015 ARMPA.]…treat areas to maintain and expand healthy Greater Sage-Grouse habitat (e.g., conifer encroachment areas and invasive annual grasslands).	[Remainder of this action is unchanged from the 2015 ARMPA.]…treat areas to maintain and expand healthy Greater Sage-Grouse habitat (e.g., conifer encroachment areas and invasive annual grasslands).
MA-LG-1	PHMA and GHMA will be available for livestock grazing (Figure 2-3, Livestock Grazing [Appendix A [of the 2015 Final EIS]). Active animal unit months (AUMs) for livestock grazing will be 329,521 on BLM lands…. [Remainder of this action is unchanged from the 2015 ARMPA.]	No similar action. [Meaning the presence of Greater Sage-Grouse habitat management areas does not affect the determination of whether or not an area is available for livestock grazing or the active AUMs.]	No similar action. [Meaning the presence of Greater Sage-Grouse habitat management areas does not affect the determination of whether an area is available for livestock grazing or the active AUMs.]
MA-LG-2	The BLM will prioritize (1) the review of grazing permits/leases, in particular to determine if modification is necessary prior to renewal, and (2) the processing of grazing permits/leases in SFA first followed by PHMA outside SFA. In setting workload priorities, precedence will be given to existing permits/leases in these areas not meeting Land Health Standards, with focus on those containing riparian areas, including wet meadows. The BLM may use other criteria for prioritization to respond to urgent natural resource concerns (ex., fire) and legal obligations.	No similar action.	No similar action.
MA-LG-3	In PHMA, consult, cooperate, and collaborate with other land owners and management agencies (e.g., private and SITLA) to develop plans which provide for landscape level approaches to habitat improvement. Manage unfenced private and SITLA lands within a grazing allotment that are under exchange of use agreements or percent public land use as a single unit that will have the same management as the public lands.	No similar action.	No similar action.
MA-LG-4	Evaluate Utah's Rangeland Health Standards and process grazing permits. Focus monitoring and management activities on allotments found not to be achieving Utah's Rangeland Health Standards where livestock grazing is identified as a causal factor and that have the best opportunities for conserving, enhancing or restoring habitat for Greater Sage-Grouse. Use ecological site descriptions and/or other appropriate information to determine the desired plant community within proper functioning ecological processes for conducting land health assessments to evaluate the achievement or non-achievement of rangeland health standards.	No similar action.	No similar action.
MA-LG-5	In PHMA and GHMA, conduct land health assessments that include indicators and measurements of structure, condition, composition, etc., of vegetation specific to achieving Greater Sage-Grouse habitat objectives (Objective SSS-3), including within wetlands and riparian areas. Prioritize land health assessments in SFA, followed by PHMA outside of the SFA. Conduct land health assessments at the watershed scale and use the Greater Sage-Grouse habitat objectives when assessing the applicable standard in Greater Sage-Grouse habitats.	No similar action.	No similar action.

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MA-LG-6	In PHMA, when livestock management practices are determined to not be compatible with meeting or making progress towards achievable habitat objectives following appropriate consultation, cooperating and coordination, implement changes in grazing management through grazing authorization modifications, or allotment management plan implementation. Potential modifications include, but are not limited to, changes in: • Season or timing of use; • Numbers of livestock; • Distribution of livestock use; • Duration and/or level of use; • Kind of livestock (e.g., cattle, sheep, horses, or goats); and • Grazing schedules (including rest or deferment). **Not in priority order* The NEPA analysis for renewals and modifications of livestock grazing permits/leases that include lands within SFA and PHMA will include specific management thresholds based on Table 2-2, Land Health Standards (43 CFR, Part 4180.2), and ecological site potential, and one or more defined responses that will allow the authorizing officer to make adjustments to livestock grazing that have already been subjected to NEPA analysis. Adjustments to meet seasonal Greater Sage-Grouse habitat requirements could include those items identified in the list above.	In PHMA, when an area is not meeting or making progress towards achievable habitat objectives and Land Health Standards and the causal factor is livestock grazing (i.e., improper livestock grazing), implement changes in grazing management through grazing authorization modifications, or allotment management plan implementation. Potential modifications include, but are not limited to, changes in: • Season or timing of use; • Numbers of livestock; • Distribution of livestock use; • Duration and/or level of use; • Kind of livestock (e.g., cattle, sheep, horses, or goats); and • Grazing schedules (including rest or deferment). *Not in priority order When improper livestock grazing is the causal factor for not meeting or making progress towards achievable habitat objectives and Land Health Standards, the NEPA analysis for renewals and modifications of livestock grazing permits/leases that include lands within PHMA will analyze multiple potential modifications (e.g., alternatives from the list above) that address the reasons for not meeting, allowing the authorizing officer to make adjustments to livestock grazing that have already been subjected to NEPA analysis. Adjustments to meet seasonal Greater Sage-Grouse habitat requirements could include those items identified in the list above.	In PHMA, when an area is not meeting or making progress towards achievable habitat objectives and Land Health Standards, and the causal factor is livestock grazing (i.e., improper livestock grazing), implement changes in grazing management through grazing authorization modifications, or allotment management plan implementation. Potential modifications include, but are not limited to, changes in: • Season or timing of use; • Numbers of livestock; • Distribution of livestock use; • Duration and/or level of use; • Kind of livestock (e.g., cattle, sheep, horses, or goats); and • Grazing schedules (including rest or deferment). **Not in priority order* When improper livestock grazing is the causal factor for not meeting or making progress towards achievable habitat objectives and Land Health Standards, the NEPA analysis for renewals and modifications of livestock grazing permits/leases that include lands within PHMA will analyze multiple potential modifications (e.g., alternatives from the list above) that address the reasons for not meeting, allowing the authorizing officer to make adjustments to livestock grazing that have already been subjected to NEPA analysis. Adjustments to meet seasonal Greater Sage-Grouse habitat requirements could include those items identified in the list above.
MA-LG-7	In PHMA, during drought periods, prioritize evaluating effects of the drought relative to Greater Sage-Grouse needs for food and cover. Initiate emergency management measures (e.g. delaying turnout, adjusting the amount and/or duration of livestock grazing, implement other terms of the permit) during times of drought to protect Greater Sage-Grouse habitat, in accordance with Instruction Memorandum 2013-094 (Resource Management During Drought), or other agency policies. Implement post-drought management to allow for vegetation recovery that meets Greater Sage-Grouse needs.	No similar action.	No similar action.
MA-LG-8	In PHMA, manage riparian areas and wet meadows for proper functioning condition.	No similar action.	No similar action.
MA-LG-9	In PHMA, assess livestock grazing in riparian and meadow complexes and ensure recovery or maintenance of appropriate vegetation and water quality. Where recovery or maintenance is not occurring, and the causal factor is livestock grazing, reduce pressure on riparian or wet meadow vegetation used by Greater Sage-Grouse in the summer by adjusting grazing management practices (e.g., use fencing/herding techniques, or changes in seasonal use or livestock distribution). Allotments within SFA, followed by those within PHMA, and focusing on those containing riparian areas, including wet meadows, will be prioritized for field checks to help ensure compliance with the terms and conditions of the grazing permits. Field checks could include monitoring for actual use, utilization, and use supervision.	No similar action.	No similar action.

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MA-LG-12	In PHMA, ensure that vegetation treatments conserve, enhance or restore Greater Sage-Grouse habitat (this includes treatments that benefit livestock).	No similar action.	No similar action.
MA-LG-13	In PHMA, evaluate the role of existing seedings that are currently composed of primarily introduced perennial grasses to determine if they should be restored to sagebrush or habitat of higher quality for Greater Sage-Grouse. If existing seedings provide value in conserving or enhancing Greater Sage-Grouse habitats, then no restoration will be necessary. Assess the compatibility of these seedings for Greater Sage-Grouse habitat during the land health assessments.	No similar action.	No similar action.
MA-LG-14	In PHMA, design new structural range improvements to have a neutral effect or conserve, enhance, or restore Greater Sage-Grouse habitat through an improved grazing management system relative to Greater Sage-Grouse objectives. Structural range improvements, in this context, include but are not limited to: cattle guards, fences, exclosures, corrals or other livestock handling structures; pipelines, troughs, storage tanks (including moveable tanks used in livestock water hauling), windmills, ponds/reservoirs, solar panels and spring developments. Potential for invasive species establishment or increase following construction must be considered in the project planning process and monitored and treated post-construction.	No similar action.	No similar action.
MA-LG-15	In PHMA, evaluate existing structural range improvements to make sure they have a neutral effect or conserve, enhance or restore Greater Sage-Grouse habitat.	No similar action.	No similar action.
MA-LG-17	In PHMA, monitor for and treat noxious weeds and treat invasive species where needed, associated with existing range improvements.	No similar action.	No similar action.
MA-LG-18	At the time a permittee or lessee voluntarily relinquishes a permit or lease, the BLM will consider whether the public lands where that permitted use was authorized should remain available for livestock grazing or be used for other resource management objectives, such as reserve common allotments or fire breaks. This does not apply to or impact grazing preference transfers, which are addressed in 43 CFR, Part 4110.2-3.	No similar action.	No similar action.
MA-VEG-3	In PHMA manage wet meadows to maintain a component of perennial forbs with diverse species richness relative to site potential (e.g., reference state) to facilitate brood rearing.	In PHMA manage riparian areas for proper functioning condition. In PHMA manage wet meadows to maintain a component of perennial forbs with diverse species richness relative to site potential (e.g., reference state) to facilitate brood rearing.	In PHMA manage riparian areas for proper functioning condition. In PHMA manage wet meadows to maintain a component of perennial forbs with diverse species richness relative to site potential (e.g., reference state) to facilitate brood rearing.
Issue: Clarifying Management of Water Developments for Livestock			
MA-LG-10	In PHMA, limit authorization of new water developments to projects that have a neutral effect or are beneficial to Greater Sage-Grouse habitat (such as by shifting livestock use away from critical areas). New developments that divert surface water must be designed to maintain riparian or wet meadow vegetation and hydrology to meet Greater Sage-Grouse needs.	In PHMA, limit authorization of new water developments to projects that have a neutral effect or are beneficial to Greater Sage-Grouse habitat (such as by shifting livestock use away from critical areas).	In PHMA, manage existing and new water developments to have a neutral or a beneficial effect to Greater Sage-Grouse habitat.
MA-LG-11	In PHMA, evaluate existing water developments (springs, seeps, etc., and their associated pipelines) to determine if modifications are necessary to maintain or improve riparian areas and Greater Sage-Grouse habitat. Make modifications where necessary, considering impacts on other water uses when such considerations are neutral or beneficial to Greater Sage-Grouse.	(Not mentioned in the Draft EIS)	No similar action.

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Issue: Clarifying the Role of the BLM, State of Utah and Counties with Respect to Travel Management Planning			
MA-TTM-3	During subsequent travel management planning, consultation "with interested user groups, federal, state, county, and local agencies, local landowners, and other parties in a manner that provides an opportunity for the public to express itself and have its views given consideration." Consequently, a public outreach plan to fully engage all interested stakeholders will be incorporated into future travel management plans.	During subsequent travel management planning, consultation "with interested user groups, federal, state, county, and local agencies, local landowners, and other parties in a manner that provides an opportunity for the public to express itself and have its views given consideration." Consequently, an outreach plan to fully engage all interested stakeholders, including state, local and tribal governments, will be incorporated into future travel management plans.	During subsequent travel management planning, consultation "with interested user groups, federal, state, county, and local agencies, local landowners, and other parties in a manner that provides an opportunity for the public to express itself and have its views given consideration." Consequently, an outreach plan to fully engage all interested stakeholders, including state, local and tribal governments, will be incorporated into future travel management plans.
Issue: Clarifying the Role of the BLM, State of Utah and Counties with Respect to Predator Control			
MA-SSS-3D	[Remainder of this action is unchanged from the 2015 ARMPA.]… Collaborate with applicable government entities to implement programs to control predator populations of Greater Sage-Grouse (e.g., ravens, red fox, badgers, and raccoons).	[Remainder of this action is unchanged from the 2015 ARMPA.]… Efforts by other agencies to minimize impacts from predators on the Greater Sage-Grouse should be supported and encouraged where needs have been documented. Collaborate with applicable government entities to implement programs to control predator populations of Greater Sage-Grouse (e.g., ravens, red fox, badgers, and raccoons).	[Remainder of this action is unchanged from the 2015 ARMPA.]… Efforts by other agencies to minimize impacts from predators on the Greater Sage-Grouse should be supported and encouraged where needs have been documented. Collaborate with applicable government entities to implement programs to control predator populations of Greater Sage-Grouse (e.g., ravens, red fox, badgers, and raccoons).
Issue: Clarifying Management of Surface Coal Mining			
MA-MR-18	<u>Leases Associated with Surface Mining</u> 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, Part 3461.5. PHMA is essential habitat for maintaining Greater Sage-Grouse for purposes of the suitability criteria set forth at 43 CFR, Part 3461.5(o)(1).	<u>Leases Associated with Surface Mining</u> 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, Part 3461.5. Coordination with the appropriate State of Utah agency and the determination of essential habitat for maintaining Greater Sage-Grouse for purposes of the suitability criteria set forth at 43 CFR, Part 3461.5(o)(1) will consider site-specific information associated with potential lease nomination areas as part of the unsuitability process identified above.	<u>Leases Associated with Surface Mining</u> 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, Part 3461.5. Coordination with the appropriate State of Utah agency and the determination of essential habitat for maintaining Greater Sage-Grouse for purposes of the suitability criteria set forth at 43 CFR, Part 3461.5(o)(1) will consider site-specific information associated with potential lease nomination areas as part of the unsuitability process identified above.
Issue: Decisions that Require Analysis of Specific Alternatives during Implementation			
MA-FIRE-3	Using an interdisciplinary approach, a full range of fuel reduction techniques will be available. Fuel reduction techniques such as conifer reduction, grazing, prescribed fire, chemical, biological, and mechanical treatments may be acceptable, given site-specific variables.	Using an interdisciplinary approach, a full range of fuel reduction techniques will be available. Fuel reduction techniques such as conifer reduction, targeted livestock grazing, prescribed fire, chemical, biological, and mechanical treatments may be acceptable, given site-specific variables.	Using an interdisciplinary approach, a full range of fuel reduction techniques will be available. Fuel reduction techniques such as conifer reduction, targeted livestock grazing, prescribed fire, chemical, biological, and mechanical treatments may be acceptable, given site-specific variables.
MA-FIRE-5	MA-FIRE-5: In PHMA, during fuels management project design, consider the use of targeted livestock grazing to strategically reduce fine fuels and, if used, implement grazing management that will accomplish this objective. If implementing targeted grazing, implement measures to minimize impacts on native perennial grasses.	No similar action.	No similar action.

2015 ARMPA Decision Number	No-Action Alternative (from the 2015 ARMPA)	2018 Draft EIS Management Alignment Alternative	2018 Final EIS Proposed Plan Amendment
MA-TTM-3	• During subsequent travel management planning, all routes will 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 will be considered for closure or considered for relocation outside of sensitive Greater Sage-Grouse habitat. • During subsequent travel planning, threats to Greater Sage-Grouse and their habitat will be considered when evaluating route designations and/or closures. • During subsequent travel management planning, routes that do not have a purpose or need will be considered for closure. • During subsequent travel management, planning, routes that are duplicative, parallel, or redundant will be considered for closure. • During subsequent travel management planning, seasonal restrictions on OHV use will be considered in important seasonal habitats where OHV use is a threat. During subsequent travel management planning, consider limiting over snow vehicles designed for use over snow and that runs on a track or tracks and/or a ski or skis, while in use over snow to designated routes or consider seasonal closures in Greater Sage-Grouse wintering areas from November 1 through March 31. • During subsequent travel management planning, routes not required for public access or recreation with a current administrative/agency purpose or need will be evaluated for administrative access only. • During subsequent travel management planning, consider prioritizing restoration of routes not designated in a Travel Management Plan. • During subsequent travel management plan implementation, consider using seed mixes or transplant techniques that will maintain or enhance Greater Sage-Grouse habitat when rehabilitating linear disturbances. • During subsequent travel management plan implementation, consider scheduling road maintenance to avoid disturbance during sensitive periods and times to the extent practicable. Consider using time of day limits (e.g., no use between 6:00 pm and 9:00 am) to reduce impacts on Greater Sage-Grouse during breeding periods.	No similar action.	No similar action.
MA-TTM-6	In PHMA, when considering upgrade of existing routes that will change route category (BLM route categories: road, primitive road, or trail) or capacity, consider the larger transportation network while providing for protection of Greater Sage-Grouse habitat.	No similar action. [Doesn't provide any different direction than MA-TTM-5.]	No similar action. [Doesn't provide any different direction than MA-TTM-5.]
MA-TTM-8	In PHMA, when reseeding roads, primitive roads and trails, use appropriate seed mixes and consider the use of transplanted sagebrush.	No similar action. [Selection of seed mix is already covered by MA-VEG-5 and MA-VEG-8.]	No similar action. [Selection of seed mix is already covered by MA-VEG-5 and MA-VEG-8.]

2.6 Alternatives Analyzed in Detail in the 2015 Final EIS and Carried Forward for Consideration in the 2019 Effort

Table 2-4 describes the alternatives analyzed in detail as part of the 2015 planning effort that were also considered in the 2019 planning process. The 2015 Proposed Plan was developed from this range of alternatives.

Table 2-4
Description of Alternatives Analyzed in Detail and Carried Forward for Consideration from the 2015 Final EIS

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Special Status Species – Greater Sage-Grouse Greater Sage-Grouse					
GOAL:					
With exception of the Uinta LRMP, goals have not been developed specifically for Greater Sage-Grouse. However, all LUPs include a goal to work with partners to protect, maintain, and enhance habitat for special status species.	Maintain and/or increase Greater Sage-Grouse abundance and distribution by conserving, enhancing or restoring the sagebrush ecosystem upon which populations depend in collaboration with other conservation partners.	Maintain and increase current Greater Sage-Grouse abundance and distribution by conserving, enhancing or restoring the sagebrush ecosystem.	Maintain and/or increase abundance and distribution of Greater Sage-Grouse by conserving, enhancing or restoring the sagebrush ecosystem upon which populations depend, in collaboration with other conservation partners.	Protect, maintain, improve and enhance Greater Sage-Grouse populations and habitats within the State of Utah established SGMAs.	Conserve, recover, 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 and National Forest System lands. 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 state, local, industry, permittee and conservation partners.
Objectives:					
In general, older plans do not include objectives specific to Greater Sage-Grouse. More recent plans (those completed after 2000) may include an objective to advance conservation of the Greater Sage-Grouse and Greater Sage-Grouse habitat, although a mechanism for achieving Greater Sage-Grouse specific objectives is infrequently identified.	Designate PHMA 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 Utah overlaps 4 WAFWA MZs: • MZ II – Wyoming Basins • MZ III – Southern Great Basin • MZ IV – Snake River Plain • MZ VII – Colorado Plateau Protect PHMA from anthropogenic disturbances that will reduce distribution or abundance of Greater Sage-Grouse.	Establish a system of sagebrush reserves to anchor recovery efforts by protecting the highest quality habitats.	Identify and protect PHMA from anthropogenic and natural disturbances that will reduce distribution or abundance of Greater Sage-Grouse.	Protect habitat which provides for the year-round life-cycle needs of the Greater Sage-Grouse. Sustain the best-of-the-best existing Greater Sage-Grouse populations. Perpetuate conditions necessary to ensure recruitment of a continuing population within the aggregate state population. Enhance or improve Greater Sage-Grouse habitat that has been impaired or altered through restoration or rehabilitation activities. Eliminate the threats facing the Greater Sage-Grouse while balancing the economic and social needs of the residents of Utah. Sustain the best-of-the-best existing Greater Sage-Grouse populations and increase populations through habitat restoration and rehabilitation.	Identify and prioritize opportunities for habitat enhancement and conservation within core areas based on threats and the ability to manage Greater Sage-Grouse Greater Sage-Grouse habitat.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Recently completed BLM plans include a management action to implement the most recent UDWR Strategic Management Plan for Sage-Grouse (UDWR 2002), the BLM National Sage Grouse Habitat Conservation Strategy, and recommendations from local Greater Sage-Grouse working groups, to protect, maintain, enhance, and restore Greater Sage-Grouse populations and habitat. A few plans including more detailed habitat objectives that include land cover.	To maintain or increase current populations of Greater Sage-Grouse, manage or restore PHMA so that at least 70 percent of the land cover provides adequate sagebrush habitat to meet Greater Sage-Grouse needs.	Restore and maintain sagebrush steppe to its ecological potential in Greater Sage-Grouse habitat.	Manage or restore PHMA so that at least 50 percent of the landscape (mapped occupied habitat within a population area) provides sagebrush cover to meet Greater Sage-Grouse needs. Within PHMA where sagebrush is the current or potential dominant vegetation type or is a primary species within the various states of the ESD – or comparable Forest Service methods, maintain or restore vegetation to provide habitat for lekking, nesting, brood rearing, winter, and transition areas. Desired cover percentages and heights for sagebrush, grasses, and forbs in seasonal habitats will be managed to meet habitat guidelines from scientific literature (e.g., Connelly et al. 2000 and Hagen et al. 2007), where such standards can be met. Adjustments from the guidelines may be made, but must be based on documented regional variation of habitat characteristics (e.g., sagebrush type, ecological site potential), quantitative data from population and habitat monitoring, and evaluation of local research.	Enhance an average of 25,000 acres of Greater Sage-Grouse habitat in SGMAs annually. Increase the total amount of Greater Sage-Grouse habitat acreage within and adjacent to SGMAs by an average of 50,000 acres per year, through management actions targeting Opportunity Areas.	Restore native (or desirable) plants and create landscape patterns which most benefit Greater Sage-Grouse. Write specific LUP objectives for vegetation that connects habitats and creates patterns that benefit Greater Sage-Grouse. Write specific vegetation management objectives relative to invasive annual grass spread and woody plant removal where these are of concern in Greater Sage-Grouse habitat. Consider management objectives in buffers around intact core areas that detect and rapidly respond to invasions in the buffer zones. Establish measurable objectives related to Greater Sage-Grouse habitat from baseline monitoring data, ESDs (or comparable Forest Service methods), or land health assessments/evaluations. Incorporate available site information collected using the Greater Sage-Grouse Habitat Assessment Framework or similar methods to evaluate existing resource conditions and to develop any necessary resource solutions. Incorporate management practices that will provide for maintenance and/or enhancement of 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) (Forest Service may use other methods).

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
No similar action.	No similar action.	Increase Greater Sage-Grouse populations to a level where they are viable and secure from local extirpation events, and eventually to a level that allows for an annual harvestable surplus.	No similar action.	Sustain an average male lek count of 4,100 males (based on a 10-year rolling average on a minimum of 200 monitored leks) in the SGMAs, and increase the population of males to an average of 5,000 (based on the same 10-year rolling average on a minimum of 200 monitored leks) within the SGMAs. Maintain viable populations within each SGMA. Ensure a path for birds to migrate within SGMAs on a seasonal basis, and ensure a long-term genetic connection between populations as needed. Should the population trends within a population area temporarily or permanently suffer from the effects of factors such as wildfire, management controls in the other SGMAs will be adjusted to achieve the other objectives listed above.	Enhance quality/suitable habitat to support the expansion of Greater Sage-Grouse populations on federally-administered lands within the planning areas. Manage Greater Sage-Grouse seasonal habitats and maintain habitat connectivity to support population objectives set by the WGFD.
Under current management, there are no designated GHMA.	Quantify and delineate GHMA for capability to provide connectivity among and between PHMA.	No similar action because all mapped occupied habitat would be PHMA	Delineate and manage mapped occupied Greater Sage-Grouse habitat outside PHMA as GHMA.	Greater Sage-Grouse habitat outside SGMAs would not be managed for the conservation of the species. No specific management actions are provided for this habitat.	No similar action.
All LUPs include a general commitment to coordinate management actions with state and local governments and non-governmental organizations.	No similar action.	No similar action.	Participate in local Greater Sage-Grouse conservation efforts (e.g., UDWR, NRCS, local working groups) to implement landscape-scale habitat conservation, to implement consistent management to benefit Greater Sage-Grouse, and to gather and use local research and monitoring to promote the conservation of Greater Sage-Grouse.	The State of Utah will coordinate the efforts of BLM, Forest Service, USFWS, state agencies, local government, and others to accomplish the purposes of this Plan. The State will convene a Working Group with membership including the Dept. of Natural Resources, Dept. of Agriculture and Food, State Institutional Trust Lands Administration, BLM, Forest Service, NRCS, USFWS, and others as needed. The Working Group will meet as often as needed to coordinate the implementation of the State Greater Sage-Grouse Plan (included in this alternative). The Working Group will initiate and coordinate the efforts of necessary technical teams to assure scientific and monitoring information is shared by all management agencies, and that efforts to achieve the necessary conservation goals are progressing.	In cooperation with local Greater Sage-Grouse working groups, partners and stakeholders, develop site-specific conservation strategies to maintain or enhance Greater Sage-Grouse habitats and habitat connectivity. Continue to support the development of statewide Greater Sage-Grouse seasonal habitat models for the State of Wyoming. Utilize Local Working Group plans, analyses, and other sources of information to guide development of conservation objectives for local management of Greater Sage-Grouse habitats.

Alternative A

Management Actions (BLM/Forest Service managed lands):

Acreage of mapped occupied Greater Sage-Grouse habitat is as follows:

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

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

No similar action.

Alternative B

Identify PHMA and GHMA as follows (Map 2.1):

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

No similar action.

Alternative C

Identify PHMA and GHMA as follows (Map 2.2):

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

No similar action.

Alternative D

Identify PHMA and GHMA as follows (Map 2.3):

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

Within the mapped PHMA and GHMA there may be areas that lack the principle habitat components necessary for Greater Sage-Grouse, including but not limited to rock outcrops, alkaline flats, pinyon-juniper ecological sites, or towns. These areas of non-habitat would be identified during site-specific project review by agency biologists, in discussion with the State of Utah and other agencies, as appropriate. Decisions associated with PHMA or GHMA would apply to areas with or ecologically capable of supporting Greater Sage-Grouse habitat. The decisions may be excepted if it can be shown that the action would occur in a non-habitat area and the following conditions are met:

- access through Greater Sage-Grouse habitat to the activity in the non-habitat area occurs only on existing routes, and no new roads, maintenance, or improvements

Alternative E1

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

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

Note: Though the State of Utah and BLM began their processes with Greater Sage-Grouse occupied habitat data from March 27, 2012, over the course of the State's process developing their SGMAs, several modifications were made to the occupied habitat boundaries. Though the BLM was provided various versions of the SGMA data, the changes to occupied habitat were not provided for use in this process. As a result, the combined acres of PHMA and GHMA for Alternatives B, C and D (which is the occupied habitat used throughout this EIS) differ from the combined acres of habitat within SGMAs and habitat outside SGMAs for Alternative E1.

Non-habitat areas within the SGMA include lands that do not contribute to the annual life-cycle of Greater Sage-Grouse. Effort has been made to minimize the amount of non-habitat within the SGMAs, but given the topographic, physiographic and land cover features within Utah and the scale and detail of mapping, the inclusion of some non-habitat was unavoidable.

No specific management provisions are proposed for non-habitat areas within the SGMAs, except to consider noise and permanent structure stipulations around a lek, and to note that, birds may fly over the non-habitat as they connect to other populations or seasonal habitat areas. (Corridors may or may not be included as habitat within the population area, depending on local conditions, topography,

Alternative E2

As new occupied Greater Sage-Grouse habitat is found or occurs either through additional inventories or expansion into previously un-occupied habitat, the agencies will incorporate these areas into the non-core category and manage them as such, until the earliest review occurs by the SGIT. At that time they will be considered for core status or will continue to be managed as non-core, and will be added to the statewide map at that time.

Include the collection of baseline data and outline post-project monitoring components into the project planning.

Contribute to actions that help to ground-truth the statewide Greater Sage-Grouse seasonal habitat models for the State of Wyoming.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			to roads would be required within Greater Sage-Grouse habitat, • no activity would be permitted or authorized if it would establish a valid existing right that would subsequently require construction of new routes within Greater Sage-Grouse habitat for access, • access to the activity for construction, maintenance, etc. would be required to avoid applicable Greater Sage-Grouse sensitive seasons (i.e., breeding, brood-rearing, winter) and time periods (2-hours before sunrise to 2-hours after sunrise near leks during breeding season), • the non-habitat does not provide important connectivity between habitats, • impacts on areas adjacent to PHMA can be reduced or eliminated (e.g., sound, tall structures). Proposed projects within population areas will consider impacts on Greater Sage-Grouse and potential mitigation measures when preparing site-specific planning and environmental compliance documents. <u>Additional Greater Sage-Grouse Habitat</u> Outside of mapped occupied habitat, prior to site-specific authorizations, the BLM or Forest Service would evaluate habitat conditions and may require surveys to determine if the project area contains Greater Sage-Grouse habitat (FLPMA, 43 USC 1701 Sec. 201 (a), BLM Manual 6840 .04 D 3; BLM-M-6840 .04 E 2). Surveys would be required prior to authorizing discrete anthropogenic disturbances within 4 miles of an occupied lek that is located in PHMA, but only in areas that ecologically could provide Greater Sage-Grouse habitat. If an area is determined to contribute to the Greater Sage-Grouse life-cycle, mitigation will be considered as part of the project level NEPA analysis (BLM Manual 6840 .04 D 5). Measures that may be considered include those identified in Appendices H, I, J, K, or L of the Draft LUPA/EIS. On National Forest System lands these areas will be analyzed at the site-specific level and will be covered in the specialist report and Biological Evaluation. Changes to maps and associated acreages would occur through the appropriate BLM and Forest Service planning processes (e.g.,	and other factors. Corridors are important to Greater Sage-Grouse, but may not require restrictions on human activity. As a general rule, it will be adequate to avoid removal of sagebrush and to minimize development that would create a physical barrier to Greater Sage-Grouse movement in these areas.) SGMAs should be reviewed annually through the coordination efforts of the Public Lands Policy Coordination Office. Review should include, for example, changes in the distribution of disturbance, the increases in habitat through enhancement or improvement, decreases in habitat through wildfire or other events, status of population numbers, and related items. Adjustments to SGMAs will be reviewed every 5 years, unless large-scale events such as wildfire, and successful annual events, such as habitat enhancement or improvement, necessitate a more frequent adjustment. Adjustments may include expansion or constriction of the external boundaries and a redrawing of the internal boundaries among habitat, non-habitat and opportunity areas.	The official Wyoming Greater Sage-Grouse lek database is maintained by the WGFD in accordance with Appendix 4B of the Umbrella Memorandum of Understanding between the WGFD and BLM (WGFD and BLM 1990). The action agencies will meet at least annually to coordinate and review the accuracy of data and incorporate the most up-to-date information. Ensure site-specific, measurable, conservation and mitigation objectives are included in project planning within Greater Sage-Grouse habitats.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			plan maintenance, simple plan amendments, etc.).		
Recently completed BLM plans include a management action to implement the most recent UDWR Strategic Management Plan for Sage-Grouse (UDWR 2002), the BLM National Sage Grouse Habitat Conservation Strategy, and recommendations from local Greater Sage-Grouse working groups, to protect, maintain, enhance, and restore Greater Sage-Grouse populations and habitat. A few plans (e.g., Vernal RMP, Uinta LRMP) including more detailed habitat objectives such as desired seral sage, percent canopy cover, or height. Other than the abovementioned decision, and basic planning allocations, management actions specific to Greater Sage-Grouse are not present in most LUPs.	Develop quantifiable habitat and population objectives with WAFWA and other conservation partners at the MZ and/or other appropriate scales. Develop a monitoring and adaptive management strategy to track whether these objectives are being met, and allow for revisions to management approaches if they are not.	No similar action.	Increase the amount and functionality of seasonal habitats within PHMA: • Maintain or increase canopy cover and average patch size of sagebrush in perennial grasslands unless there's conflict with other special status species (e.g., Utah prairie dog and black footed ferrets). • Maintain or increase the amount, condition and connectivity of seasonal habitats within, and where applicable, between population areas. • Protect and improve Greater Sage-Grouse migration/ movement corridors. • Reduce conifer encroachment within PHMA. • Maintain or improve understory (grass, forb) and/or riparian condition within breeding and late brood-rearing habitats. • Reduce the extent of annual grasslands adjacent to PHMA where objectives are not being met.	Enhance an average of 25,000 acres of Greater Sage-Grouse habitat in SGMAs annually. Increase Greater Sage-Grouse habitat acreage within and adjacent to SGMAs by an average of 50,000 acres per year, through management actions targeting Opportunity Areas. Manage activities within SGMAs based on a hierarchical protocol that provides as follows: 1. Avoidance of disturbance to habitat or birds by an activity is the preferred option; 2. Minimization of the disturbance is desired if the disturbance cannot be avoided in Greater Sage-Grouse habitat, with mitigation for the effects of the minimization decisions; and finally 3. Mitigation of the disturbance from an activity within Greater Sage-Grouse habitat is required if a disturbance cannot be avoided. Manage areas identified as SGMAs to avoid surface disturbance to the greatest degree possible. Coordinate with the UDWR when land use which may result in a disturbance is contemplated. All existing uses are explicitly recognized by this alternative and shall not be affected by the implementation of this alternative. The Greater Sage-Grouse conservation measures identified in the associated NEPA documents for each of these projects would continue to be implemented to protect Greater Sage-Grouse and its habitat. Provisions of this plan would not be added to the measures identified each specific project.	Work with project proponents, partners, and stakeholders to avoid or minimize impacts and/or implement direct mitigation (e.g. relocating disturbance, timing restrictions, etc.), and utilize BMPs and off-site compensatory mitigation where appropriate (Greater Sage-Grouse Wyoming Executive Orders 2011-05 and 2013-03 and BLM IM WY-2010-012, Policy Statement 3, page 7). The Forest Service will coordinate new recommendations, mitigation, and conservation measures applied for Greater Sage-Grouse with the WGFD and other appropriate agencies. These measures will be analyzed in site-specific NEPA documents, as necessary. Where applicable and technically feasible, apply BMPs as mandatory COAs within core Greater Sage-Grouse habitat for Fluid Minerals, travel management, Lands and Realty, Range Management, Wild Horse and Burro, Solid Minerals-Coal, Locatable Minerals, West Nile, mineral materials, nonenergy solid leasables, Vegetation Management, Fire and Fuels Management, and Noise. Use the Greater Sage-Grouse Habitat Assessment Framework or best available assessment tool (approved by the Responsible Official) when assessing or evaluating Greater Sage-Grouse habitats at multiple scales. Ranger District staff will work with project proponents (including those within Forest Service) to site their projects in locations that meet the purpose and need for their project, but have been determined to contain the least sensitive habitats whether inside or outside of core areas. Forest Service district offices, in coordination with WGFD and other partners, will establish monitoring protocols for Greater Sage-Grouse populations and habitat that will be incorporated into individual project approvals as appropriate and necessary. Small or in-house projects within core areas will

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
					also have a monitoring plan for Greater Sage-Grouse incorporated in the approval document.
No similar action.	Manage PHMA so that discrete anthropogenic disturbances (whether temporary or permanent) cover less than 3 percent of the total Greater Sage-Grouse habitat regardless of ownership. Anthropogenic features include but are not limited to paved highways, graded gravel roads, transmission lines, substations, wind turbines, oil and gas wells, geothermal wells and associated facilities, pipelines, landfills, homes, and mines. • In PHMA where the 3 percent disturbance threshold is already exceeded from any source, no further anthropogenic disturbances will be permitted by the BLM or the Forest Service until enough habitat has been restored to maintain the area under this threshold (subject to valid existing rights). • In this instance, an additional objective will be designated for the PHMA to prioritize and reclaim/restore anthropogenic disturbances so that 3 percent or less of the total PHMA area is disturbed within 10 years.	Limit discrete surface disturbance (whether temporary or permanent) in occupied Greater Sage-Grouse habitat to one instance per section regardless of ownership, with no more than 3 percent surface disturbance (or, where stipulated, implement the disturbance cap prescribed in the applicable state conservation plan, whichever is more protective). The 3 percent cap includes existing and all new initial disturbance to the landscape, interim mitigation and restoration efforts notwithstanding. Discrete disturbances include but are not limited to highways, roads, transmission lines, substations, wind turbines, oil and gas wells, heavily grazed areas, range developments, severely burned areas, pipelines, landfills, mines, fences (with a 100 foot buffer, each side), and water developments (with a 1,000 foot radius buffer), and vegetation treatment that reduces sagebrush cover. As additional research on the 3 percent cap becomes available, revise this prescription, as necessary, to conserve Greater Sage-Grouse. For an area to no longer be considered disturbed under the 3 percent cap, disturbances need to be restored/reclaimed, where technically and legally feasible (e.g., valid existing rights, split estate lands). The objective of long-term restoration/reclamation is to make areas with disturbance useable by Greater Sage-Grouse. For long-term restoration of PHMA with discrete surface disturbances to be considered successful, Greater Sage-Grouse must be documented to have used the area.	Protect PHMA from fragmentation by anthropogenic disturbances (whether temporary or permanent) that will reduce distribution or abundance of Greater Sage-Grouse by managing PHMA so that discrete anthropogenic disturbances cover less than 5 percent of the area within the PHMA used by a population of Greater Sage-Grouse, regardless of ownership. While the BLM and Forest Service do not have any regulatory authority to influence the amount of disturbance that will occur on state or private land, when determining whether development is appropriate on federal lands, disturbances on private and state lands will count towards the 5 percent disturbance cap. When considering implementation-level actions, the 5 percent disturbance calculation would include all discrete anthropogenic disturbances within a biologically based disturbance calculation area, which must be contained within the PHMA of a Greater Sage-Grouse population area. The disturbance calculation area would be identified during the site-specific project planning/NEPA phase, but the following would be taken into account when determining what would be included/excluded: • Existing developed agriculture lands should generally be excluded. • Areas in PHMA that have burned but have not recovered to the extent of being able to provide habitat for Greater Sage-Grouse should generally be excluded from the baseline disturbance calculation area for which the 5 percent is calculated (though the burned areas are still part of the PHMA), unless the proposed disturbance is within the burned area. (For example, a potential disturbance calculation area is 2,000 acres and does not have any existing disturbance, thereby allowing up to 100 acres of total disturbance. If 1,000 acres of the area burns, the calculation area should be adjusted to exclude the 1,000 burned acres, reducing potential disturbance in the remaining area to 50 acres. If the proposed disturbance is within the burned area, the calculation area should include the entire 2,000 acres, but the disturbance would still	The provisions of this alternative include, under certain circumstances, a general limit on new permanent disturbance of 5 percent of habitat on state or federally managed lands within any particular SGMA. The fundamental purpose of this provision is to limit the effects of a large amount of disturbance to the existing habitat or activities of the Greater Sage-Grouse. The cumulative calculation of permanent disturbance in any population area, and specific habitats within a population area, is the aggregate of the various project, land use, or natural event disturbances, as modified by the effects of rehabilitation, restoration or other mitigation actions. Many of the SGMAs extend into two or more counties. In such cases, the 5 percent limitation shall be apportioned to each county in proportion to the total amount of habitat within the larger area. Because of the highly discontinuous nature of Greater Sage-Grouse habitat in Utah, each of the SGMAs is a composite of habitat, non-habitat and opportunity areas. In many cases, it may be difficult to discern whether an existing dispersed use is part of habitat or non-habitat, and thereby make an accurate calculation of the base for the limitation calculation difficult to determine. As part of the implementation of this alternative, such issues should be brought to the interagency review effort coordinated by the Public Lands Policy Coordination Office to insure consistency in interpretation throughout the state. In addition, if it should become sufficiently apparent that an accurate determination of the base for the limitation calculation is not feasible, then the interagency coordination effort may propose and seek approval for an alternative measurement of, or technique to measure, the cumulative effects of disturbance. The area of permanent disturbance is the area within a spatial polygon defined by the outside limits of the actual disturbed area, plus the area outside of this polygon where	Inside core areas the density and disturbance goals include: • The Forest Service will consider and evaluate measures that limit or reduce the density of oil and gas or mining activities to no more than an average of 1 location per 640 acres across the Density Disturbance Calculation Tool; and to limit all surface disturbance (any program area) to no more than 5 percent of the core area landscape using the Density Disturbance Calculation Tool.

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			be limited to 50 acres.) However, just because the burned area could be excluded from the disturbance calculation area, any existing disturbances within the burned areas would still be counted against the disturbance cap of the revised disturbance calculation area. • Developed private lands that are no longer used by Greater Sage-Grouse (e.g., towns, airports, reservoirs) would be excluded. However, other dispersed disturbances would be considered disturbance (e.g., cabins, access roads, community pits, etc.). Discrete disturbances should be consolidated and localized as much as possible, though total areas with discrete disturbances cannot exceed 5 percent in the identified disturbance calculation area. This could result in small areas where existing and proposed disturbances exceed 5 percent if total disturbances in the identified disturbance calculation area equals or is less than 5 percent. Anthropogenic features include but are not limited to paved highways, graded gravel roads, transmission lines, substations, wind turbines, oil and gas wells, geothermal wells and associated facilities, pipelines, landfills, homes, and mines. In PHMA where the 5 percent disturbance threshold is already exceeded from any source, no further discrete anthropogenic disturbances will be permitted by the BLM or the Forest Service until enough habitat has been restored to maintain the area under this threshold (subject to valid existing rights). In these areas, reclaim and/or restore discrete anthropogenic disturbances, where technically and legally feasible, so that 5 percent or less of the disturbance calculation area is disturbed. <u>Restoration/Reclamation of Surface Disturbances:</u> An area with surface disturbance is not excluded from the 5 percent until it has been successfully reclaimed (short-term) and restored (long-term). The objective of long-term restoration/reclamation in PHMA is to provide for the needs of Greater Sage-Grouse. Providing habitat could include, but is not limited to restoring landforms and	effects of the project, based on the type of project, could be expected to cause a disturbance to Greater Sage-Grouse. Allowances must be made to include the temporal effects of any temporary disturbance, if any such effects are expected. The calculation of the spatial extent of each proposed project or land use, or the area of a natural event, such as wildfire, to be employed in this calculation, is defined as part of the definition of disturbance. The base upon which this calculation is made may be increased through successful rehabilitation or restoration of habitat, or other mitigation actions as appropriate.	<u>Restoration/Reclamation of Surface Disturbances:</u> Reclamation of surface disturbances in Greater Sage-Grouse habitats will be in accordance with the Wyoming Reclamation Policy and Forest Service Reclamation policy.

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			vegetative communities to reflect the potential for the given ecological site, as well as restoring hydrologic systems and other wildlife habitat components. To ensure that the long-term objective will be reached through human and natural processes, actions will be taken to ensure standards are met for soil site stability, hydrologic function, and integrity of the biotic communities. Specific restoration/reclamation objectives will be identified through the NEPA process, but for final restoration/reclamation to be judged successful within PHMA, all the following objectives must be met: • Areas where the landform has been altered (e.g., well pads, production facilities, roads, pipelines, utility corridors, etc.) have been re-contoured to blend in with adjacent undisturbed areas, approximating the original landform. • A self-sustaining, vigorous, diverse, native (or otherwise approved) plant community is established on the site, with a density sufficient to control erosion and invasive plants (e.g., cheatgrass, non-native thistles, knapweeds) and can reestablish wildlife habitat and/or forage production. At a minimum, the established plant community will consist of species included in the seed mix and/or desirable species occurring in the surrounding natural vegetation. Permanent vegetative cover will be determined successful when the percent cover of desirable perennial species is consistent with Greater Sage-Grouse habitat objectives and the ESD (or comparable Forest Service methods). Monitoring for restoration must extend for a reasonable time frame, considering ecological site potential and environmental conditions (e.g., drought). Plants must be resilient as evidenced by well-developed root systems and flowers; shrubs must be well established and not comprised mainly of seedlings that may not survive until the following year. • Erosion features are equal to or less than surrounding area and erosion control is sufficient so that water naturally infiltrates into the soil and gullying, headcutting, slumping, and deep or excessive rilling (greater than 3 inches) is not observed. • The site is free of State- or county-listed noxious weeds, anthropogenic debris and		

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			equipment, and contaminated soil. [Exception of site-specific requirement: Given that some weeds, such as cheatgrass, are common in portions of the planning area, it may not be possible to totally eliminate invasive species from the reclaimed area.] • Final reclamation success and approval for abandonment for disturbances caused by permitted activities will be subject to an interdisciplinary review of available monitoring data and final monitoring reports. Monitoring teams must consist of, at a minimum, a wildlife biologist, a rangeland management specialist, and another resource specialist (e.g., natural resources specialist) will evaluate the monitoring plan (from the NEPA or POD documents), and review the regular and final monitoring reports and provide the Authorized Officer with a recommendation as to whether or not objectives have been met. For non-permitted activities (e.g., reclamation of user created roads), successful restoration/reclamation occurs when the area meets the four criteria noted above, as determined by an interdisciplinary review of inventory/monitoring information.		
Most LUPs include a management action that prohibits surface disturbing or other disruptive within Greater Sage-Grouse breeding and nesting habitat within a certain distance and between certain dates. The protect buffers around leks vary from 0.5 miles and 3.1 miles. In general, recently completed plans include a larger protective buffer. Recently completed plans also include a management action that prohibits surface disturbing activity or disruptive activities during certain dates in winter habitat.	No similar action.	No similar action.	Do not allow discrete anthropogenic disturbances or activities disruptive to Greater Sage-Grouse (including scheduled maintenance activities) within PHMA in seasonal Greater Sage-Grouse habitats during the corresponding seasonal use periods, current authorized uses excepted: • In breeding and nesting habitat from Feb 15 – Jun 15 • In brood rearing habitat from Apr 15 – Jul 15 • In winter habitat from Nov 15 – Mar15 In addition, the following use requirements would be applied to discretionary activities within PHMA, as applicable: • the activity meets noise restrictions (noise at occupied leks does not exceed 10 decibels above ambient sound levels from 2 hours before to 2 hours after sunrise and sunset during breeding season); • the activity meets permanent (structure persists through subsequent breeding season) tall structure restrictions (a tall structure is any man-made structure that	Within SGMAs in seasonal Greater Sage-Grouse habitats during the corresponding seasonal use periods, avoid activities (construction, vehicle noise, etc.) that will disturb Greater Sage-Grouse use of the seasonal area by employing seasonal stipulations as follows: • In leks (for lek attendance or breeding) from Feb 15 – May 15. • In nesting or brood-rearing areas from Apr 1 – Aug 15. • In winter habitat from Nov 15 – Mar 15. Specific time and distance determinations for all these seasonal stipulations would be based on site-specific conditions for all these seasonal stipulations, in coordination with the local UDWR biologist. In addition, the following management provisions would be applied to the applicable areas within Greater Sage-Grouse habitat in SGMAs (Map 2.4): <u>Leks</u>	<u>Leks – core habitat</u> • Permanent surface occupancy and surface disturbing activities would be prohibited on or within a six tenths (0.6) mile radius of the perimeter of occupied Greater Sage-Grouse leks. • Temporary disruptive activity is restricted on or within a six tenths (0.6) mile radius of the perimeter of occupied Greater Sage-Grouse leks from March 15 – June 30. • Noise levels at the 0.6 mile perimeter of the lek, should not exceed 10 decibels above ambient noise from 6:00 pm to 8:00 am from March 15 – June 30. <u>Nesting/Early Brood-Rearing Habitat – core habitat</u> • Surface disturbing and/or disruptive activities are prohibited from March 15– June 30 within core areas regardless of distance from a lek and the suitability of the habitat. • Where credible data support different timeframes for this seasonal restriction,

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			has the potential to disrupt lekking or nesting birds by creating new perching/nesting opportunities and/or decrease the use of an area; a determination as to whether something is considered a tall structure would be determined based on local conditions such as vegetation or topography); and • environmental compliance documents associated with the activity analyze limitations to habitat fragmentation. Exceptions to the seasonal restrictions could be granted by the Authorized Officer under the following conditions: • if surveys determine that the lek is not active that year (based on UDWR lek survey protocol), and the proposed activity will not result in a permanent disturbance and will not take place beyond the season being excepted; • if surveys determine that the lek is no longer occupied, and the proposed activity will not take place beyond the season being excepted; • if the project plan and NEPA document demonstrate the project would not impair the function of seasonal habitat, life-history, or behavioral needs of Greater Sage-Grouse; • if the potential short-term impacts from vegetation treatment are off-set by long-term improvement to the quantity or quality of habitat (e.g., seedings, juniper reduction). Additionally, the Authorized Officer may modify the seasonal restrictions under the following conditions: • if portions of the area do not include habitat (lacking the principle habitat components of Greater Sage-Grouse habitat) or are outside the defined area, as determined by the BLM and Forest Service in discussion with the State of Utah, and indirect impacts would be mitigated; • if documented local variations (e.g., higher/lower elevations) or annual climactic fluctuations (e.g., early/late spring, long and/or heavy winter) reflect a need to change the given dates in order to better protect when Greater Sage-Grouse use a given area, and the proposed activity will	• Avoid disturbance within this area, if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance is not possible, use minimization as appropriate to the area. • If minimization is not sufficient, mitigation is required (see mitigation section). • New permanent disturbance, including structures, fences, and buildings, should not be located within the lek itself. • No permanent disturbance within 1 mile of the lek, unless it is not visible to the Greater Sage-Grouse using the lek. • Fences should not be located on or adjacent to leks where bird collisions would be expected to occur. If required, the construction of any fences near the lek should follow the standards identified in the NRCS fence collision risk tool (NRCS/CEAP Conservation Insight Publication "Applying the Sage Grouse Fence Collision Risk Tool to Reduce Bird Strikes"). • A disturbance outside the lek should not produce noise which rises more than 10 decibels above the background level at the edge of the lek during breeding season. • Implement time-of-day stipulations during the season when the lek is occupied (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise). <u>Nesting and Brood-Rearing Areas</u> • Avoid disturbance within these areas, if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance is not possible, use minimization as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic features to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation to provide food and shelter). • If minimization is not sufficient, mitigation is required (see mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting habitat within the SGMA.	dates may be expanded by up to 14 days prior to or subsequent to the above dates. <u>Winter Concentration Areas</u> • Surface disturbing and/or disruptive activities in Greater Sage-Grouse winter concentration areas are prohibited from December 1–March 14 to protect core populations of Greater Sage-Grouse that use these winter concentration habitats (independent of habitat suitability). Protection of additional areas of winter concentration that are not located within the current core area boundaries, may be necessary where winter concentration areas or important late brood-rearing areas are identified as supporting populations of Greater Sage-Grouse that attend leks within core areas. Appropriate seasonal timing restrictions and habitat protection measures must be considered and evaluated in all winter concentration areas habitats identified (independent of habitat suitability). <u>Noise</u> The Forest Service will work with proponents to limit project related noise where it would be expected to reduce functionality of habitats that support core area populations. The Forest Service will evaluate the potential for limitation of new noise sources on a case-by-case basis as appropriate. Forest Service's near-term goal is to limit noise sources that would be expected to negatively impact core area Greater Sage-Grouse populations and to continue to support the establishment of ambient baseline noise levels for occupied core area leks. As additional research and information emerges, specific new limitations appropriate to the type of projects being considered will be evaluated and appropriate limitations will be implemented where necessary to minimize potential for noise impacts on Greater Sage-Grouse core-area population behavioral cycles. As new research is completed, new specific limitations would be coordinated with the WGFD and partners.

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			not take place beyond the season being excepted.	• Employ noise stipulations which allow no more than 10-decibel rise above ambient noise levels at the edge of the lek. <u>Winter Habitat</u> • Avoid disturbance within the area, if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance is not possible, minimize as appropriate to the area. Minimization provisions include, for example, the location of development in habitat of least importance, of by locating development to take advantage of topographic screening. • If minimization is not sufficient, mitigation is required (see mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of the surface area of winter habitat within the SGMA. • Manage the area to maintain maximum amount of sagebrush, especially tall sagebrush, which would be available to Greater Sage-Grouse above snow during a severe winter. Tall sagebrush is capable of standing above heavier than normal snowfall. • Sagebrush treatment projects within this area need pre-approval by the appropriate regulatory agency in coordination with the UDWR. Sagebrush treatment projects within winter habitat should maintain 80 percent of the available habitat as tall sagebrush; 20 percent of the habitat can be managed for younger age classes, if appropriate. <u>Other Habitats</u> • Avoid disturbance in the area if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance is not possible, minimize as appropriate to the area. Minimization provisions include, for example, the location of development in habitat of least importance, or by locating development to take advantage of topographic screening. • If minimization is not sufficient, mitigation is required (see mitigation section). • Mitigation must produce lands capable of supporting Greater Sage-Grouse as habitat before the proposed disturbance	

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				occurs, though birds do not need to be using the mitigated area. The proponent of the disturbance must demonstrate that the mitigation conditions have been met. • Cumulative new permanent disturbance should not exceed 5 percent of the surface area of other habitat within the SGMA. • Manage the lands to avoid barriers to migration, if applicable.	
No similar action.	No similar action.	No similar action.	Apply standards for development activities within PHMA and GHMA to reduce opportunities for Greater Sage-Grouse predators, such as limiting food sources (trash reduction), nesting, cover, or perches. Apply actions specific to the predators of concern for the given Greater Sage-Grouse population (e.g., ravens, red fox, badgers, raccoons, raptors).	Eliminate or minimize external food sources for corvids, particularly dumps, waste transfer facilities, and road kill. Apply habitat management practices (e.g. grazing management, vegetation treatments) that decrease the effectiveness of predators.	The Forest Service will implement strategies and techniques in land management decisions that address predators shown to pose a threat to Greater Sage-Grouse. The Forest Service will support and encourage other agencies in their efforts to minimize impacts from predators on Greater Sage-Grouse where needs have been documented.
Under current management plans, there are no designated GHMA.	Conserve, enhance or restore GHMA and connectivity to promote movement and genetic diversity, with emphasis on those habitats occupied by Greater Sage-Grouse.	No similar action.	Conserve GHMA to maintain existing habitat and maintain connectivity between populations, or if necessary, to provide for opportunities to improve PHMA. Do not allow discrete anthropogenic disturbances or activities disruptive to Greater Sage-Grouse (including scheduled maintenance activities) within GHMA in seasonal Greater Sage-Grouse habitats during the corresponding seasonal use periods: • In breeding and nesting habitat from February 15 – June 15 • In brood rearing habitat from April 15 – July 15 • In winter habitat from November 15 – March 15 In addition, the following use requirements would be applied to discretionary activities within GHMA, as applicable: • the activity meets noise restrictions; • the activity meets permanent tall structure restrictions; and • environmental compliance documents associated with the activity consider how to limit habitat fragmentation. Exceptions to the seasonal restrictions could be granted Authorized Officer under the following conditions: • if surveys determine that the lek is not active that year (based on UDWR lek survey protocol), and the proposed activity	Greater Sage-Grouse habitat outside SGMAs would not be managed for the conservation of the species. No specific management actions are provided for this habitat.	<u>Leks – non-core habitat</u> Surface occupancy and surface disturbing activities would be prohibited or restricted on or within one- quarter (0.25) mile radius of the perimeter of occupied Greater Sage-Grouse leks. <u>Nesting/Early Brood-Rearing Habitat – non-core habitat</u> • Surface disturbing and/or disruptive activities are limited from March 15–June 30 to protect Greater Sage-Grouse nesting and early brood rearing habitats within 2 miles of the lek perimeter of any occupied lek located outside core areas. • Where credible data support different timeframes for this restriction, dates may be expanded by 14 days prior or subsequent to the above dates. <u>Winter Concentration Areas</u> • Protection of additional areas of winter concentration that are not located within the current core area boundaries, may be necessary where winter concentration areas or important late brood-rearing areas are identified as supporting populations of Greater Sage-Grouse that attend leks within core areas. Appropriate seasonal timing restrictions and habitat protection measures must be considered and evaluated in all winter concentration areas habitats identified (independent of habitat suitability).

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			will not take place beyond the season being excepted; • if surveys determine that the lek is no longer occupied, and the proposed activity will not take place beyond the season being excepted; • if the project plan and NEPA document demonstrate the project would not impair the function of seasonal habitat, life-history, or behavioral needs of Greater Sage-Grouse; • if the potential short-term impacts from the action are off-set by long-term improvement to the quantity or quality of habitat (e.g., seedings, juniper reduction). Additionally, the Authorized Officer may modify the seasonal restrictions under the following conditions: • if portions of the area do not include habitat (lacking the principle habitat components of Greater Sage-Grouse habitat) or are outside the current defined area, as determined by the BLM and Forest Service in discussion with the State of Utah, and indirect impacts would be mitigated; • if documented local variations (e.g., higher/lower elevations) or annual climactic fluctuations (e.g., early/late spring, long and/or heavy winter) reflect a need to change the given dates in order to better protect when Greater Sage-Grouse use a given area, and the proposed activity will not take place beyond the season being excepted. Application of the above use restrictions and meeting objectives within GHMA may be waived by the Authorized Officer if off-site mitigation is successfully completed in PHMA, following discussion with the BLM and Forest Service and the State of Utah. Even in situations where use restrictions are waived in GHMA, to avoid direct disturbance and/or mortality of birds, disturbances would not be approved during the sensitive seasons.		

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No opportunity areas identified in current management plans. Most LUPs contain objectives for maintaining improving, or restoring sagebrush plant communities. The level of detail varies depending on the age of the LUP. All LUPs address vegetation treatments for improvement of wildlife habitat overall or to provide increased forage for wildlife, livestock, and wild horses and burros. Recent plans may include management actions that purposely restore or enhance Greater Sage-Grouse habitat.	Assess GHMA to determine potential to replace lost PHMA caused by perturbations and/or disturbances and provide connectivity between PHMA. • These habitats should be given some priority over other GHMA that provide marginal or substandard Greater Sage-Grouse habitat. • Restore historical habitat functionality to support Greater Sage-Grouse populations guided by objectives to maintain or enhance connectivity. • Enhance GHMA such that population declines in one area are replaced elsewhere within the habitat.	Identify Greater Sage-Grouse restoration habitat and prioritize areas for implementation of restoration projects based on environmental variables that improve chances for project success. Restoration habitat is degraded or fragmented habitat that is currently unoccupied by Greater Sage-Grouse, but might be useful to the species if restored to its potential natural community. Prioritize areas for restoration based on their potential importance to Greater Sage-Grouse and the likelihood of successfully restoring sagebrush communities. Passive restoration is preferred for restoring these areas over active restoration methods.	Restore historical habitat to support Greater Sage-Grouse populations to maintain or enhance connectivity. Vegetation treatments may be applied to meet Greater Sage-Grouse habitat objectives and provide additional Greater Sage-Grouse habitat. Discrete anthropogenic disturbances should not be authorized in areas that have been previously treated with the intent of improving or creating new Greater Sage-Grouse habitat.	Opportunity areas are those portions of an SGMA that currently do not contribute to the life cycle of Greater Sage-Grouse but are areas where restoration or rehabilitation efforts can provide additional habitat when linked to existing Greater Sage-Grouse populations. Opportunity areas may be transformed into either habitat or non-habitat based upon natural events or management choices, and may be used to mitigate disturbance within habitat as appropriate. Opportunity areas may be employed to meet improvement, restoration, or rehabilitation goals, or as mitigation areas for disturbance within habitat. If this occurs, an opportunity area may become habitat and be managed as such, especially as part of the calculation for disturbance limitations. Alternatively, opportunity areas may be employed as the site for disturbances which are diverted from habitat, or other economic proposals not involving habitat, and become non-habitat. In either event, boundaries of the SGMA, or the land types within, should be adjusted accordingly.	Each office will develop landscape-scale restoration/ conservation strategies, including special management of seasonal habitats and connectivity zones outside of core areas, working with voluntary partners. These strategies must be coordinated and reconciled with adjoining management entities that share habitats or populations.
No similar action.	No similar action.	No similar action.	The use restrictions, stipulations, seasonal constraints, etc. included for Greater Sage-Grouse habitat are intended to be the initial and not the entirety of the protections. Project proponents and BLM and Forest Service offices should develop additional mitigation measures at the project level to address the site-specific issues and impacts associated with local effects of specific projects. The mitigation actions developed at the project level must be based on current scientific recommendations. Mitigation actions could include some or all of the following: • avoiding the impact altogether by not taking a certain action or parts of an action, • minimizing impacts by limiting the degree of magnitude of the action and its implementation, • repairing, rehabilitation, or restoring the affected area, • reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action, or • compensating for the impact by replacing or providing substitute resources or environments.	Mitigation actions are designed to create new habitat or ameliorate disturbances by the creation of or protection of other habitat. Mitigation for a disturbance must be shown to be effective in the time-frame of the activity, not at some future date. Effective mitigation does not require that birds are immediately present using the land, only that the habitat is capable of supporting birds as part of their yearly life-cycle. However mitigation should be performed in areas which have the highest likelihood of occupation by the species. The amount of mitigation, if required, should be calculated based on the effects generated within SGMAs. Prioritize areas for habitat improvement to make best use of mitigation funds. Mitigation for a disturbance should not necessarily be tied to reclamation efforts at the actual site of the disturbance. Mitigation may occur locally, elsewhere in the same population area, or in another population area, based on the location, which offers greater potential for enhancing Greater	Within core areas, when mitigation is required, the agencies in coordination with WGFD and partners would use the following mitigation hierarchy: in-kind and onsite mitigation as first priority or in-kind mitigation offsite mitigation as second priority. When additional offsite mitigation is necessary, conduct it within the same population area where the impact occurs if possible or, if that is not possible, within the same MZ per 2006 WAFWA Strategy as the impact.

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			Money for research or monitoring within PHMA will not be counted as mitigation. Mitigation includes actions that are designed to create new habitat or ameliorate disturbances by the creation of or protection of other habitat, either within the same population or in other areas of the State. The preference is that mitigation for impacts within PHMA will occur within the same population area of the impact. For off-site mitigation associated with mitigation of actions within GHMA, project proponents will work closely with the BLM and the State of Utah to identify PHMA where off-site mitigation could occur. The ratio for mitigation, either onsite or off-site, will be set at the project level and will depend on the type and quality of the habitat being affected and the nature of the action affecting the habitat. While mitigative exchange values will not be set in this planning process, they need to follow the guiding principles of not trading short-term gains for long-term losses. For compensatory mitigation (either onsite or off-site), actions should consider the type and quality of habitat being impacted by a project and the proportional impact a project will have the population. In turn, proposed mitigation actions should address the same type and quality of habitat that may be impacted (e.g., breeding, nesting, brood-rearing, wintering, transitional habitats). The value of the habitat may increase if the birds use the area for more than one time of the year, if it is relatively higher in quality, or if the type of habitat is a limiting factor for the local population. Similarly, mitigation should account for the proportional impact a project will have to a specific population (if a given project impacts 1 percent of wintering habitat versus 30 percent of the wintering habitat). Mitigation that trades impacts on areas that are meeting habitat objectives with creation of areas that do not meet habitat objectives, even in high offsetting ratios, will not be accepted. Mitigation does not require that birds are immediately present using the land, only that the habitat meets habitat objectives for grasses and forbs. However mitigation should be performed in areas which have the	Sage-Grouse populations, so long as the location of the mitigation does not result in the loss of resiliency, representation or redundancy of the species in Utah. The Public Lands Policy Coordination Office, with assistance from the UDWR, BLM, Forest Service, NRCS, Department of Natural Resources, Department of Agriculture and Food, and other entities, shall coordinate and oversee the creation and operation of a Greater Sage-Grouse Mitigation Bank in Utah. The operation of this Mitigation Bank will seek to rehabilitate or restore lands as habitat prior to need, as well as coordinate the mitigation for development or other effects upon the habitat of the Greater Sage-Grouse. Once operational, contributions to the Bank will be welcome. Mitigation may be required in nesting and brood-rearing areas, winter habitat, and other habitat. Examples of successful mitigation for various Greater Sage-Grouse habitat types include the following: <u>Leks</u> • Removal of trees on or adjacent to the lek. • Removal or marking of fences on or adjacent to the lek. • Employment of off-site mitigation (e.g., use of the concept of a mitigation bank, if appropriate). <u>Nesting and Brood-Rearing Areas</u> • Removal of trees to no more than 5 percent cover (the closer to 0 percent the better) and maintenance of at least 10 percent sagebrush cover. • Maintain forb cover greater than 10 percent and greater than 10 percent grass cover during nesting and brood-rearing season. • Maintain or improve wet meadows, when present. • Installation of green-strips or firebreaks to protect existing nesting habitat. • Employment of off-site mitigation (e.g., use of the concept of a mitigation bank, if appropriate). • Mitigation should be calculated at a minimum of a 4:1 ratio starting with the first acre disturbed.	

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			highest likelihood of occupation by the species.	<u>Winter Habitat</u> • Removal of trees to less than 5 percent cover (the closer to 0 percent the better) and maintenance of at least 10 percent sagebrush cover. • Installation of green-strips or firebreaks to protect existing winter habitat. • Employment of off-site mitigation (e.g., use of the concept of a mitigation bank, if appropriate). • Mitigation should be calculated at a 4:1 ratio starting with the first acre disturbed. <u>Other Habitats</u> • Removal of trees to less than 5 percent cover and maintenance of at least 10 percent sage brush cover. • Maintain forb cover greater than 10 percent and grass cover greater than 10 percent during nesting/brood-rearing season. • Maintain or improve wet meadows, when present. • Installation of green-strips or firebreaks to protect existing habitat. • Employment of off-site mitigation (e.g., use of the concept of a mitigation bank, if appropriate). • Mitigation should be calculated at a 1:1 ratio with first acre disturbed. Mitigation must produce lands capable of supporting Greater Sage-Grouse habitat before the proposed disturbance occurs, though birds do not need to be using the mitigated area. The proponent of the disturbance must demonstrate that the conditions have been met. Before mitigated areas are considered to be habitat within an SGMA, a preponderance of the evidence must indicate that Greater Sage-Grouse are occupying the mitigated area. Habitat altered by fire shall not be removed from SGMAs until rehabilitation or restoration of the burned areas is determined to be unsuccessful or not feasible.	

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Vegetation Management					
In most LUPs, either no priorities are established or prioritization is given to projects that benefit multiple resources (e.g., livestock, wildlife, wild horses and burros, special status species).	Prioritize implementation of restoration projects based on environmental variables that improve chances for project success in areas most likely to benefit Greater Sage-Grouse. Prioritize restoration in seasonal habitats that are thought to be limiting Greater Sage-Grouse distribution and/or abundance.	Prioritize implementation of restoration projects based on environmental variables that improve chances for project success in areas most likely to benefit Greater Sage-Grouse. Prioritize restoration in seasonal habitats that are thought to be limiting Greater Sage-Grouse distribution and/or abundance and where factors causing degradation have already been addressed.	Where necessary to meet habitat objectives, treat PHMA to maintain and expand healthy Greater Sage-Grouse habitat (e.g., conifer encroachment areas, areas with or at threat to be converted to annual grasslands, areas without a proper shrub/grass/forb composition for the applicable seasonal habitat and ecological site, fuel breaks, areas without a healthy mosaic of habitat types for the various Greater Sage-Grouse life stages). Prioritize implementation of restoration/treatment projects based on environmental variables that improve chances for project success in areas most likely to benefit Greater Sage-Grouse. Prioritize restoration in seasonal habitats that are identified as the limiting factor for Greater Sage-Grouse distribution and/or abundance. Use collaborative planning efforts to develop and implement habitat restoration projects. Expertise and ideas from entities such as local landowners, local Greater Sage-Grouse working groups, and other federal, state, county, and private organizations should be solicited and considered in development of restoration projects. Consider design features that will contribute to the most favorable conditions for success when planning and implementing restoration/vegetation treatment projects. Considerations should include: • Review of available plant species and their adaptation to the site when developing seed mixes. • The need to reduce non-native annual grass densities and competition through herbicide, targeted grazing, tillage, prescribed fire, etc. • Assessment of on-site vegetation to ascertain if enough desirable perennial vegetation exists to consider the use of passive restoration techniques. • Use of site preparation techniques that retain existing desirable vegetation. • Use of "mother plant" techniques or planting of satellite populations of desirable plants to serve as seed sources.	Protection of Greater Sage-Grouse habitat is the primary focus of conservation efforts, but many locations can be reclaimed or restored by active vegetation management actions. For example: • removal of encroaching conifers and other plant species may create new habitat or increase the carrying capacity of habitat and thereby expand Greater Sage-Grouse populations, or • the distribution of water into wet meadow areas may improve seasonal brood-rearing range and enhance Greater Sage-Grouse recruitment. Aggressively remove encroaching conifers and other plant species to expand Greater Sage-Grouse habitat where possible. Sagebrush treatment projects within nesting and winter habitat should be limited and require pre-approval by the appropriate regulatory agency in discussions with UDWR. Sagebrush treatment projects should maintain 80 percent of the available habitat as sagebrush within the project area; 20 percent of the habitat can be managed for younger age classes of sagebrush, if appropriate. These treatments are generally recommended only to improve brood-rearing habitat, but need to be carefully considered before use in winter and other habitat. Within SGMAs, Greater Sage-Grouse stipulations should take precedence over stipulations for other species if conflicts occur, if otherwise allowable by law. Design water developments to enhance mesic habitat for use by Greater Sage-Grouse and maintain adequate vegetation in wet meadows. Within SGMAs, Greater Sage-Grouse stipulations should take precedence over stipulations for other species if conflicts occur, if otherwise allowable by law.	Within core areas, prioritize implementation of restoration projects based on environmental variables that improve chances for project success in areas most likely to benefit Greater Sage-Grouse. Prioritize restoration in seasonal habitats that are thought to be limiting Greater Sage-Grouse distribution and/or abundance. Apply appropriate seasonal restrictions for implementing vegetation management treatments according to the type of seasonal habitats present in a core area. Vegetation treatments must include monitoring to determine achievement of objectives and their long-term success. In core areas, design and implement vegetation treatments with an emphasis on protecting existing sagebrush ecosystems and enhancing and protecting future sagebrush ecosystems. For vegetation treatments, refer to WGFD Protocols for Treating Sagebrush to Benefit Sage-Grouse (WGFD 2011a, as updated) and BLM IM 2013-128 (Sage-grouse Conservation Related to Wildland Fire and Fuels Management), or applicable Forest Service counterpart. These recommended protocols will be used in determining whether proposed treatment constitutes a "disturbance" that will contribute toward the 5 percent threshold for habitat maintenance or not. Additionally, these protocols will be used to determine whether the proposed treatment configuration would be expected to have neutral or beneficial impacts for core populations or if they represent additional habitat loss or fragmentation. Treatments to enhance sagebrush/grasslands habitat for Greater Sage-Grouse will be evaluated based upon habitat quality and the functionality/use of treated habitats post-treatment.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			• The need for post-treatment control of non-native annual grass and other invasive species.		
Most LUPs contain objectives for maintaining improving, or restoring sagebrush plant communities. The level of detail varies depending on the age of the LUP. All LUPs address vegetation treatments for improvement of wildlife habitat overall or to provide increased forage for wildlife, livestock, and wild horses and burros. Recently completed BLM plans include a management action to implement the most recent UDWR Strategic Management Plan for Sage-Grouse (UDWR 2002), the BLM National Sage Grouse Habitat Conservation Strategy. A few plans (e.g., Vernal RMP, Uinta LRMP) including more detailed habitat objectives such as desired seral sage, percent canopy cover, or height.	Include 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. Make meeting these objectives within PHMA the highest restoration priority.	Include Greater Sage-Grouse habitat objectives in habitat restoration projects. Make meeting these objectives within mapped occupied Greater Sage-Grouse habitat the highest restoration priority.	Include Greater Sage-Grouse habitat objectives in restoration/treatment projects within PHMA. There will be objectives for short-term and long-term habitat conditions, and they should include specific objectives for the establishment of sagebrush cover and height, as well as cover and heights for understory perennial grasses and forbs necessary for Greater Sage-Grouse seasonal habitats. The restoration/treatment objectives should take into consideration ecological site potential of the area(s) and the need for a mosaic of habitat conditions across the landscape. Make meeting the Greater Sage-Grouse objectives for the restoration/ treatment project one of the primary priorities for the project and subsequent land uses, recognizing that managing for other special status species may result in treatment objectives that may not meet Greater Sage-Grouse seasonal habitat objectives (e.g., winter habitat cover requirements vs. creation of Utah prairie dog habitat). Where Greater Sage-Grouse habitat overlaps with that of federally listed threatened or endangered species (e.g., Utah prairie dogs), assemble species-specific experts to develop conservation and recovery objectives and allow habitat treatments that will benefit both species.	No similar action.	Identify areas for vegetation restoration and/or identify restoration criteria that include State Greater Sage-Grouse conservation plans and appropriate local information.
All recent LUPs include management actions that promote use of native species where possible. Older plans typically do not include a similar management action.	Require use of native seeds for restoration based on availability, adaptation (ecological site potential), and probability of success. Where probability of success or adapted seed availability is low, non-native seeds may be used as long as they support Greater Sage-Grouse habitat objectives.	Same as Alternative B.	Prioritize the use of native seeds for restoration in PHMA based on availability, adaptation (ecological site potential), and probability of success. Where probability of success or adapted seed availability is low, desirable non-native seeds may be used as long as they support Greater Sage-Grouse habitat objectives. Re-establishment of appropriate sagebrush species/subspecies and important understory plants, relative to site potential, should be the principle objective for rehabilitation efforts.	No similar action.	Require use of native seeds for restoration unless the probability for success is low (desirable non-native seeds may be used as long as they meet Greater Sage-Grouse habitat objectives), and design restoration management to obtain long term persistence.
All LUPs, which are written in accordance with applicable program direction, include management actions that allow the administrating agency to make adjustments to livestock grazing, wild horse and burro management, and travel management on a case-by case basis following restoration activities.	Design post restoration management to ensure long term persistence and habitat objectives. This could include changes in livestock grazing management, wild horse and burro management and travel management, etc., to achieve and maintain the desired condition of the restoration effort that benefits Greater Sage-Grouse.	Same as Alternative B.	Same as Alternative B.	No similar action.	Identify areas for vegetation restoration and/or identify restoration criteria that include State Greater Sage-Grouse conservation plans and appropriate local information. Require use of native seeds for restoration unless the probability for success is low (desirable non-native seeds may be used as long as they meet Greater Sage-

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
					Grouse habitat objectives), and design restoration management to obtain long term persistence.
Allow commercial seed collection on a case-by-case basis.	No similar action.	No similar action.	Identify areas where commercial seed or live plant collection in PHMA could occur. Limit commercial collection to levels that ensure long-term maintenance of the Greater Sage-Grouse habitat objectives. Locations, species allowed for collection, and limits on the amounts to be collected will be developed on a case-by-case basis following environmental review of annual site-specific conditions. Commercial collection during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter) will include mitigation, developed to reflect the site-specific conditions on the ground, that could include, but is not necessarily limited to, restrictions on the timing and method of collection activities, limiting the number of individuals collecting, providing portions of collected seeds for use in local restoration projects, etc.	No similar action.	No similar action.
Most LUPs do not include a similar action. A few plans include management actions that encourage use of native species from local sources when possible.	Consider potential changes in climate when proposing restoration seedings when using native plants. Consider collection from the warmer component of the species current range when selecting native species.	Same as Alternative B.	Allow for seed collection and use in restoration/reclamation activities. Prioritize use of seed from areas as close as possible to where the seed will be used to capture local adaptations.	No similar action.	No similar action.
No similar action. Most LUPs do not include specific management actions related to seedings. Plans do include generic decisions that allow maintenance of existing range improvements, which includes maintenance of historical seedings. Recently completed LUPs promote use of native species when conducting restoration activities. This would include restoration projects conducted in areas that have perennial grass cover. Older plans do not include a similar management action.	Restore native (or desirable) plants and create landscape patterns which most benefit Greater Sage-Grouse.	Exotic seedings will be rehabbed, interseeded, or restored to recover sagebrush in areas to expand occupied habitats. Complete active restoration of crested wheatgrass seedings. This can be accomplished, following targeted restoration planning to expand, reconnect or recover habitats required by Greater Sage-Grouse by: • Inter-seeding sagebrush seed or seedlings. • Removal of crested wheatgrass through plowing while minimizing use of herbicides. Subsequent re-seeding with local native ecotypes. In all cases, local native plant ecotype seeds and seedlings must be used. Perform active restoration of cheatgrass infestation areas.	Diversify the perennial grass and forb components through additional seeding in areas where monotypic stands resulting from historical seedings (e.g., crested wheatgrass) have been recolonized by sagebrush.	No similar action.	Restore native plants and create landscape patterns that most benefit Greater Sage-Grouse, considering potential changes in climate.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
The practices found in Appendix H, Required Design Features for Fire and Fuels, of the Draft LUPA/EIS were provided as BMPs as part of BLM IM 2013-128 and the US Forest Service's July 3, 2013 Sage Grouse Conservation Methods 2013 letter. As such, they would be applied as BMPs to fuels and fire management action as a matter of compliance to BLM policy.	Follow the RDFs for fire and fuels (BLM IM 2013-128; see Appendix H of the Draft LUPA/EIS)	Same as Alternative B.	Follow the applicable and technically feasible RDFs and policies for fire and fuels outlined in Appendix H of the Draft LUPA/EIS.	Aggressively remove cheatgrass and other invasive species, and rehabilitate areas to provide additional habitat for Greater Sage-Grouse where possible.	Give priority for implementing specific Greater Sage-Grouse habitat restoration projects in annual grasslands first to sites which are adjacent to or surrounded by core areas. Annual grasslands are second priority for restoration when the sites not adjacent to core areas, but within 2 miles of core areas. The third priority for annual grasslands habitat restoration projects are sites beyond 2 miles of core areas. The intent is to focus restoration outward from existing, intact habitat.
Most LUPs contain objectives for maintaining improving, or restoring sagebrush plant communities. The level of detail varies depending on the age of the LUP. All LUPs address vegetation treatments for improvement of wildlife habitat overall or to provide increased forage for wildlife, livestock, and wild horses and burros. Recent LUPs may include management actions that purposely restore or enhance Greater Sage-Grouse habitat.	Make re-establishment of sagebrush cover and desirable understory plants (relative to ecological site potential) the highest priority for restoration efforts.	Composition, function, and structure of native vegetation communities will meet ESD (or the Forest Service equivalent) and will provide for healthy, resilient, and recovering Greater Sage-Grouse habitat components.	Desired cover percentages and heights for sagebrush, grasses, and forbs in seasonal habitats will be managed to meet habitat guidelines from scientific literature (e.g., Connelly et al. 2000, Hagen et al. 2007), where such can be met. Adjustments from the guidelines may be made, but must be based on documented regional variation of habitat characteristics (e.g., sagebrush type, ecological site potential), quantitative data from population and habitat monitoring, and evaluation of local research.	No similar action.	Make reestablishment of sagebrush cover and desirable understory plants the highest priority for restoration efforts
No similar action.	In fire prone areas where sagebrush seed is required for Greater Sage-Grouse habitat restoration, consider establishing seed harvest areas that are managed for seed production and are a priority for protection from outside disturbances.	Same as Alternative B.	No similar action.	No similar action.	Same as Alternative B.
No similar action.	No similar action.	Avoid sagebrush reduction/treatments to increase livestock or big game forage in occupied habitat and include plans to restore high-quality habitat in areas with invasive species.	No similar action.	No similar action.	No similar action.
Recently completed LUPs promote use of native species when conducting restoration activities.	Prioritize native seed allocation for use in Greater Sage-Grouse habitat in years when preferred native seed is in short supply. This may require reallocation of native seed from Emergency Stabilization and Rehabilitation (BLM) and/or Burn Area Emergency Rehabilitation (Forest Service) projects outside of PHMA to those inside it. Use of native plant seeds for Emergency Stabilization and Rehabilitation or Burn Area Emergency Rehabilitation seedings is required based on availability, adaptation (site potential), and probability of success (Richards et al. 1998). Where probability of success or native seed availability is low, non-native seeds may be used as long as they meet Greater Sage-Grouse habitat conservation objectives (Pyke 2011). Re-establishment of appropriate	Same as Alternative B.	Prioritize the use of native seeds for restoration in PHMA based on availability, adaptation (ecological site potential), and probability of success. Where probability of success or adapted seed availability is low, desirable non-native seeds may be used to meet Greater Sage-Grouse habitat objectives to trend toward restoring the fire regime. Re-establishment of appropriate sagebrush species/ subspecies and important understory plants, relative to site potential, shall be the principle objective for rehabilitation efforts.	Allow use of fire-retardant vegetation that will buffer areas of high quality Greater Sage-Grouse habitat from catastrophic fire.	Where probability of success or native seed availability is low or where there is a specific identified purpose that cannot be met with natives, (desirable non-native seeds may be used as long as they meet Greater Sage-Grouse habitat conservation objectives).

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	sagebrush species/subspecies and important understory plants, relative to site potential, shall be the highest priority for rehabilitation efforts.				
All LUPs, which are written in accordance with applicable program direction, include management actions that allow the administrating agency to make adjustments to livestock grazing, wild horse and burro management, and travel management on a case-by case basis following restoration activities.	Design post Emergency Stabilization and Rehabilitation/ Burn Area Emergency Rehabilitation management to ensure long term persistence of seeded or pre-burn native plants. This may require temporary or long-term changes in livestock grazing, wild horse and burro, and travel management, etc., to achieve and maintain the desired condition of Emergency Stabilization and Rehabilitation projects to benefit Greater Sage-Grouse (Eiswerth and Shonkwiler 2006).	Same as Alternative B.	Same as Alternative B. Monitor and control invasive vegetation post-wildfire for at least 3 years.	Immediate, proactive means to reduce or eliminate the spread of invasive species, particularly cheatgrass, after a wildfire, is a high priority.	Same as Alternative B.
No similar action.	Consider potential changes in climate (Miller et al. 2011) when proposing post-fire seedings using native plants. Consider seed collections from the warmer component within a species' current range for selection of native seed. (Kramer and Havens 2009).	Same as Alternative B.	No similar action.	No similar action.	Restore native plants and create landscape patterns that most benefit Greater Sage-Grouse, considering potential changes in climate.
No similar action.	No similar action.	Establish and strengthen networks with seed growers to assure availability of native seed for Emergency Stabilization and Rehabilitation projects.	No similar action.	No similar action.	No similar action.
No similar action.	No similar action.	Post fire recovery must include establishing adequately sized exclosures (free of livestock grazing) that can be used to assess recovery.	No similar action.	No similar action.	No similar action.
<u>Integrated Invasive Species Management</u> Implement noxious weed and invasive species control using integrated weed management actions per national guidance and local weed management plans in collaboration with state and federal agencies, affected counties, and adjoining private lands owners.	<u>Integrated Invasive Species Management</u> Integrated Vegetation Management would be used to control, suppress, and eradicate, where possible, noxious and invasive species per BLM Handbook H-1740-2 and Forest Service Manual 2080.	<u>Integrated Invasive Species Management</u> Same as Alternative B.	<u>Integrated Invasive Species Management</u> Same as Alternative B.	<u>Integrated Invasive Species Management</u> No similar action.	<u>Integrated Invasive Species Management</u> Same as Alternative B.
In most LUPs, either no priorities are established or prioritization is given to projects that benefit multiple resources (e.g., livestock, wildlife, wild horses and burros, special status species).	No similar action.	Develop and implement methods for prioritizing and restoring sagebrush steppe invaded by nonnative plants.	Same as Alternative C.	Aggressively respond to new infestations to keeping invasive species from spreading. Every effort should be made to identify and treat new infestations before they become larger problems. Additionally containment of known infestations in or near sagebrush habitats should be a high priority for all land management agencies.	No similar action.
No similar action.	No similar action.	In Greater Sage-Grouse habitat, ensure that soil cover and native herbaceous plants are at their ESD potential (or comparable Forest Service methods) to help protect against invasive plants.	No similar action.	No similar action.	No similar action.

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
No similar action.	No similar action.	No similar action.		No similar action.	No similar action.	Field offices/district offices may implement treatments within core areas where outbreaks of grasshopper or Mormon cricket populations are expected to rise above economic levels. Treatments must be conducted only following reduced agent-area treatments protocols. The Forest Service will work collaboratively with partners at the federal, state, and local levels to maintain and enhance Greater Sage-Grouse habitats in a manner consistent with the core population area strategy for conservation. Field offices/district offices are directed to utilize Wyoming Grasshopper and Mormon Cricket Control website as a resource for updated information when conducting analysis of grasshopper and Mormon cricket control in Greater Sage-Grouse habitats.
Wild Horses and Burros						
Manage wild horse and burro population levels within established AMLs to ensure a balance among wild horses, wildlife, livestock, and other resources.	Manage wild horse and burro population levels within established AMLs.	<u>Alt C1:</u> Same as Alternative B.	<u>Alt C2:</u> Associated with the reduction in livestock grazing, reduce wild horse AMLs by 25 percent for management areas that overlap mapped occupied Greater Sage-Grouse habitat to reduce grazing pressure on vegetation.	Same as Alternative B.	Same as Alternative A.	There are no Forest Service wild horse ranges in the Wyoming-Blacks Fork or Wyoming-Uinta population areas. As such, this section is not applicable to Alternative E2.
Prioritize wild horse/burro gathers based on monitoring data.	Prioritize wild horse/burro gathers in PHMA, unless removals are necessary in other areas to prevent catastrophic environmental issues, including herd health impacts.	Same as Alternative B.		Same as Alternative B.	Same as Alternative A.	This section is not applicable to Alternative E2.
Prepare or amend herd management plans on an as needed basis	Within PHMA, develop or amend herd management plans to incorporate Greater Sage-Grouse habitat objectives and management considerations for all BLM HMAs.	Same as Alternative B.		No similar action.	Same as Alternative A.	This section is not applicable to Alternative E2.
Periodically evaluate and make adjustments to AMLs based on monitoring data.	For all HMAs within PHMA, prioritize the evaluation of all AMLs based on indicators that address structure/condition/ composition of vegetation and measurements specific to achieving Greater Sage-Grouse habitat objectives.	No similar action.		Same as Alternative B.	Same as Alternative A.	This section is not applicable to Alternative E2.
No similar action.	Coordinate with other resources (e.g., range, wildlife, and riparian) to conduct land health assessments to determine existing	Same as Alternative B.		Same as Alternative B.	No similar action.	This section is not applicable to Alternative E2.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	structure/condition/ composition of vegetation within all BLM HMAs.				
No similar action.	When conducting NEPA analysis for wild horse/burro management activities, water developments or other rangeland improvements for wild horses in PHMA, address the direct and indirect effect on Greater Sage-Grouse populations and habitat. Implement any water developments or rangeland improvements using the criteria identified for domestic livestock identified above in PHMA.	Same as Alternative B.	When considering wild horse/burro management activities, water developments or other rangeland improvements for wild horses in PHMA, use the criteria identified for domestic livestock in PHMA.	No similar action.	This section is not applicable to Alternative E2.
Wildland Fire Management					
No similar action.	No similar action.	No similar action.	BLM and Forest Service planning units (Districts and Forests), in collaboration with the USFWS and relevant state agencies, would complete and maintain 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 would also be a collaborative effort with an interdisciplinary team to take into account other Greater Sage-Grouse priorities identified in this plan. Appendix M, Draft Greater Sage-Grouse Wildland Fire and Invasive Species Assessment, of the Draft LUPA/EIS describes a minimal framework example and suggested approach for this assessment. Implementation actions will be tiered to the Local (District/Forest) Greater Sage-Grouse Landscape Wildfire & Invasive Species Assessment, using best available science related to the conservation of Greater Sage-Grouse. In collaboration with USFWS and relevant state agencies, BLM/Forest Service planning units (Districts/Forests) would identify annual treatment needs for wildfire and invasive species management as identified in local unit level Landscape Wildfire and Invasive Species Assessments. Annual treatment needs would be coordinated across state/regional scales and across jurisdictional boundaries for long-term conservation of Greater Sage-Grouse.	Habitat loss due to fire and replacement of (burned) native vegetation by invasive plants is the single greatest threat to Greater Sage-Grouse in Utah. Create and implement a statewide fire agency agreement(s) that will eliminate jurisdictional boundaries and allow for immediate response to natural fire in Greater Sage-Grouse habitat within SGMAs. These should include fire suppression actions recommended locally, including, but not limited to: • first strike agreements that allow aggressive fire control on an all-land jurisdictional basis; • allocation of resources to maintain enhanced abilities of all fire agencies to combat ignitions in Greater Sage-Grouse habitat within SGMAs. • allocation of resources to immediately commence restoration of habitats impacted by wildfire by all responsible agencies; and • removal or establishment of waiver provisions for procedural barriers that may impact the ability of responsible agencies to respond to wildfire with effective reclamation or rehabilitation, such as federal raptor stipulations, cultural assessments, and the like.	Work collaboratively with partners at the State and local level to maintain and enhance Greater Sage-Grouse habitats in a manner consistent with the core population area strategy for conservation.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			Annually complete a review of landscape assessment implementation efforts with appropriate USFWS and state agency personnel.		
Fuels Management The practices found in Appendix H of the Draft LUPA/EIS were provided as BMPs as part of IM 2013-128 and the US Forest Service's July 3, 2013 Sage Grouse Conservation Methods 2013 letter. As such, they would be applied as BMPs to fuels and fire management action as a matter of compliance to BLM policy.	Fuels Management Implement as RDFs the measures identified in Appendix H of the Draft LUPA/EIS.	Fuels Management Same as Alternative B.	Fuels Management Follow the applicable and technically feasible RDFs for fuels management in Appendix H of the Draft LUPA/EIS.	Fuels Management No similar action.	Fuels Management Where applicable and technically feasible, apply BMPs as mandatory COAs within core areas for Vegetation Management and Fire and Fuels Management.
Design projects to minimize the size of wildfire and prevent the further loss of sagebrush. Existing LUPs typically do not include specific management decisions regarding implementation of fuels treatments in sagebrush habitat. In general, both prescribed fire and non-fire fuels treatments are allowed. Rest treated areas from grazing for two full growing seasons (per BLM policy).	In PHMA, design and implement fuels treatments with an emphasis on protecting existing sagebrush ecosystems. • Do not reduce sagebrush canopy cover to less than 15 percent unless a fuels management objective requires additional reduction in sagebrush cover to meet strategic protection of PHMA and conserve habitat quality for the species. • Closely evaluate the benefits of the fuel break against the additional loss of sagebrush cover in the environmental assessment process. • Apply appropriate seasonal restrictions for implementing fuels management treatments according to the type of seasonal habitats present in PHMA. • Allow no treatments in known winter range unless the treatments are designed to strategically reduce wildfire risk around or in the winter range and will maintain winter range habitat quality. • Do not use fire to treat sagebrush in less than 12-inch precipitation zones (e.g., Wyoming big sagebrush or other xeric sagebrush species; Connelly et al. 2000; Hagen et al. 2007; Beck et al. 2009). However, if as a last resort and after all other treatment opportunities have been explored and site specific variables allow, the use of prescribed fire for fuel breaks that would disrupt the fuel continuity across the landscape could be considered, in stands where cheatgrass is a very minor component in the understory. • Monitor and control invasive vegetation post-treatment. • Rest treated areas from grazing for two full growing seasons unless vegetation recovery dictates otherwise.	Design and implement fuels treatments with an emphasis on protecting existing sagebrush ecosystems. • Do not reduce sagebrush canopy cover to less than 15 percent unless a fuels management objective requires additional reduction in sagebrush cover to meet strategic protection of mapped occupied Greater Sage-Grouse habitat and conserve habitat quality for the species. • Closely evaluate the benefits of the fuel break against the additional loss of sagebrush cover in the assessment process. • Apply appropriate seasonal restrictions for implementing fuels management treatments according to the type of seasonal habitats present. • Allow no fuels treatments in known winter range unless the treatments are designed to strategically reduce wildfire risk around or in the winter range and will maintain winter range habitat quality. • Do not use fire to treat sagebrush in less than 12-inch precipitation zones (e.g., Wyoming big sagebrush or other xeric sagebrush species; Connelly et al. 2000; Hagen et al. 2007; Beck et al. 2009). However, if as a last resort and after all other treatment opportunities have been explored and site specific variables allow, the use of prescribed fire for fuel breaks that would disrupt the fuel continuity across the landscape could be considered, in stands where cheatgrass is a very minor component in the understory (Brown 1982). • Livestock grazing should be excluded from burned areas until woody and herbaceous plants achieve Greater Sage-Grouse habitat objectives.	Fuel treatments will be designed though an interdisciplinary process to expand, enhance, maintain, and protect Greater Sage-Grouse habitat. • Use green strips and/or fuel breaks, where appropriate, to protect seeding efforts from subsequent fire events. • In collaboration with USFWS and relevant state agencies, BLM/Forest Service planning units (Districts/Forests) with large blocks of Greater Sage-Grouse habitat will develop, using the assessment process described in Appendix M of the Draft LUPA/EIS, a fuels management strategy which considers an up-to-date fuels profile, LUP 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 strategy, planning units will consider the risk of increased habitat fragmentation from a proposed action versus the risk of large scale fragmentation posed by wildfires if the action is not taken. • Avoid constructing fuel breaks through large areas of intact Greater Sage-Grouse habitat. • When possible, locate fuel breaks along existing roads, ROWs, and other suitable topographic or natural features (e.g., areas devoid of vegetation, rock outcrops). • Using an interdisciplinary approach, a full range of fuel reduction techniques will be available. Fuel reduction techniques such as grazing, prescribed fire, chemical, biological and mechanical treatments are acceptable. • Allow the use of prescribed fire within PHMA if other treatment opportunities have been explored, where site specific	Habitat loss due to fire and replacement of (burned) native vegetation by invasive plants is the single greatest threat to Greater Sage-Grouse in Utah. While unscheduled fires may occur, response to fire can have a large impact on the severity of the effects, especially over time as rehabilitation or restoration continues. Implement the following: • Allow use of fire-retardant vegetation that will buffer areas of high quality Greater Sage-Grouse habitat from catastrophic fire. • Use prescriptive fire with caution in sagebrush habitat. The WAFWA has prepared information that explains the risks from using prescribed fire in xeric sagebrush habitats. • Prescribed fire should only be used at higher elevations and in a manner designed prescriptively to benefit Greater Sage-Grouse. • Conduct effective research into controlling fire size and protecting remaining Greater Sage-Grouse areas that are adjacent to high-risk cheatgrass areas. • Focus research efforts on effective reclamation and restoration of landscapes altered by wildfire. • Within winter habitat, manage to maintain maximum amount of sagebrush, especially tall sagebrush, which would be available to Greater Sage-Grouse above snow during a severe winter. Tall sagebrush is capable of standing above heavier than normal snowfall. • Sagebrush treatment projects within winter habitat need pre-approval by the appropriate regulatory agency in coordination with the UDWR. Sagebrush treatment projects within winter habitat	In core areas, design and implement vegetation and fuels treatments with an emphasis on protecting existing sagebrush ecosystems and enhancing and protecting future sagebrush ecosystems. For vegetation and fuels treatments, refer to WGFD Protocols for Treating Sagebrush to Benefit Sage-Grouse (WGFD 2011a, as updated) and BLM IM 2013-128 (Sage-grouse Conservation Related to Wildland Fire and Fuels Management), or applicable Forest Service counterpart. These recommended protocols will be used in determining whether proposed treatment constitutes a "disturbance" that will contribute toward the 5 percent threshold for habitat maintenance or not. Additionally, these protocols will be used to determine whether the proposed treatment configuration would be expected to have neutral or beneficial impacts for core populations or if they represent additional habitat loss or fragmentation. Treatments to enhance sagebrush/grasslands habitat for Greater Sage-Grouse will be evaluated based upon habitat quality and the functionality/use of treated habitats post-treatment. In addition to Alternative A, for fuels management, consider multiple tools for fuels reduction and analyze in NEPA compliance documentation before electing to implement prescribed fire in core areas. Avoid the use of prescribed fire in areas of Wyoming big sagebrush, other xeric sagebrush species, or where cheatgrass or other fire-invasive species occur and/or within areas of less than 12 inches of annual precipitation. Defer grazing on treated areas for two full growing seasons unless vegetation objectives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	• Require use of native seeds for fuels management treatment based on availability, adaptation (site potential), and probability of success (Richards et al. 1998). Where probability of success or native seed availability is low, non-native seeds may be used as long as they meet Greater Sage-Grouse habitat objectives (Pyke 2011). • Design post fuels management projects to ensure long term persistence of seeded or pre-treatment native plants. This may require temporary or long-term changes in livestock grazing management, wild horse and burro management, travel management, or other activities to achieve and maintain the desired condition of the fuels management project (Eiswerth and Shonkwiler 2006). • Design fuels management projects in PHMA to strategically and effectively reduce wildfire threats in the greatest area. This may require fuels treatments implemented in a more linear versus block design.	• Where burned Greater Sage-Grouse habitat cannot be fenced from other unburned habitat, the entire area (e.g., allotment/pasture) should be closed to grazing until recovered. • Design post fuels management projects to ensure long term persistence of seeded or pre-treatment native plants, including sagebrush. This may require temporary or long-term changes in livestock grazing management, wild horse and burro management, travel management, or other activities to achieve and maintain the desired condition of the fuels management project (Eiswerth and Shonkwiler 2006). • Mowing of grass will be used in any fuelbreak fuels reduction project (roadsides or other areas).	variables allow (will not likely result in long-term loss of sagebrush), and in areas where risk of conversion to exotic annual dominance is low and/or could be mitigated by chemical or other means. Prescribed fire in areas of low elevation Wyoming sagebrush would be avoided. • Prioritize the use of native seeds for fuels management treatment based on availability, adaptation (site potential), and probability of success. Where probability of success or native seed availability is low, desirable non-native seeds may be used to meet Greater Sage-Grouse habitat objectives to trend toward restoring the fire regime. When reseeding, use fire resistant native and desirable non-native species, as appropriate, to provide for fire breaks. • Upon project completion, monitor and manage fuels projects to ensure long-term success, including persistence of seeded species and/or other treatment components. Control invasive vegetation post-treatment. • Apply seasonal restrictions, as needed, for implementing fuels management treatments according to the type of seasonal habitats present. • Prior to conducting any fuels/habitat treatments in known winter range, work closely with the State of Utah to design the treatment to either strategically reduce wildfire risk around or in the winter range or to specifically maintain, increase, or enhance areas of vegetation to function as important winter range (for habitat associated with years of average snowfall and habitat for years with abnormally high snowfall amounts).	should maintain 80 percent of the available habitat as tall sagebrush; 20 percent of the habitat can be managed for younger age classes, if appropriate. • Coordinate the needs and efforts related to Greater Sage-Grouse with the State of Utah committee that was formed to develop a collaborative process to protect the health and welfare by reducing the size and frequency of catastrophic fires.	or vegetation recovery indicates a shorter or longer rest period is necessary based on vegetation monitoring results. In addition to Alternative A, restore and recover burned areas that are within core areas. The Forest Service will bring in Burn Area Emergency Rehabilitation teams who will work collaboratively with partners at the federal, state, and local level to maintain and enhance Greater Sage-Grouse habitats in a manner consistent with the core population area strategy for conservation. Conduct Density Disturbance Calculation Tool reviews in coordination with the WGFD - Habitat Protection Program located in Cheyenne at the WGFD headquarters. Areas within core habitat are high priority for restoration of Greater Sage-Grouse habitat beyond immediate response. Within core areas, design post fuels management projects to ensure long term persistence of seeded or pre-treatment native plants.
No similar action.	During fuels management project design, consider the utility of using livestock to strategically reduce fine fuels (Diamond et al. 2009), and 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.	No similar action.	During fuels management project design, consider the use of targeted livestock grazing to strategically reduce fine fuels and, if used, implement grazing management that will accomplish this objective. If implementing targeted grazing, implement measures to minimize impacts on native perennial grasses.	Consider the use of prescriptive grazing to specifically reduce fire size and intensity on all types of landownership, where appropriate. This could be particularly effective in areas where cheatgrass is encroaching on sagebrush habitat. This will require cooperation and coordination among different land managers and owners and livestock owners. In some cases feed supplementation and water hauling may need to be utilized to obtain the desired results.	No similar action.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Preparedness The practices found in Appendix H of the Draft LUPA/EIS were provided as BMPs as part of IM 2013-128 and the US Forest Service's July 3, 2013 Sage Grouse Conservation Methods 2013 letter. As such, they would be applied as BMPs to fuels and fire management action as a matter of compliance to BLM policy.	Preparedness Implement as RDFs the measures identified in Appendix H of the Draft LUPA/EIS.	Preparedness Same as Alternative B.	Preparedness Follow the applicable and technically feasible RDFs for fire and fuels management in Appendix H of the Draft LUPA/EIS. Implement a coordinated inter-agency approach to fire restrictions based upon National Fire Danger Rating System thresholds (fuel conditions, drought conditions and predicted weather patterns) for Greater Sage-Grouse habitat. Develop wildfire prevention plans that explain the resource value of Greater Sage-Grouse habitat and include fire prevention messages and actions to reduce human-caused ignitions.	Preparedness Create and implement a statewide fire agency agreement(s) that will eliminate jurisdictional boundaries and allow for immediate response to natural fire in Greater Sage-Grouse habitat within SGMAs. These should include fire suppression actions recommended locally, including, but not limited to: • first strike agreements that allow aggressive fire control on an all-land jurisdictional basis; • allocation of resources to maintain enhanced abilities of all fire agencies to combat ignitions in Greater Sage-Grouse habitat within SGMAs. • allocation of resources to immediately commence restoration of habitats impacted by wildfire by all responsible agencies; and • removal or establishment of waiver provisions for procedural barriers that may impact the ability of responsible agencies to respond to wildfire with effective reclamation or rehabilitation, such as federal raptor stipulations, cultural assessments, and the like.	Preparedness Where applicable and technically feasible, apply BMPs as mandatory COAs within core areas for Vegetation Management and Fire and Fuels Management.
Fire Management – (Suppression) The practices found in Appendix H of the Draft LUPA/EIS were provided as BMPs as part of IM 2013-128. As such, they would be applied as BMPs to fuels and fire management action as a matter of compliance to BLM policy.	Fire Management – (Suppression) Implement as RDFs the measures identified in Appendix H of the Draft LUPA/EIS.	Fire Management – (Suppression) Same as Alternative B.	Fire Management – (Suppression) Follow the applicable and technically feasible RDFs for fuels management in Appendix H of the Draft LUPA/EIS.	Fire Management – (Suppression) No similar action.	Fire Management – (Suppression) Where applicable and technically feasible, apply BMPs within core areas for Vegetation Management and Fire and Fuels Management.
Under current management there is no designated PHMA or GHMA. Prioritize fire suppression to protect human life and high value resources.	In PHMA, prioritize suppression, immediately after life and property, to conserve the habitat. In GHMA, prioritize suppression where wildfires threaten PHMA.	Same as Alternative B for PHMA. There is no GHMA in this alternative.	Fire fighter and public safety are the highest priority. Greater Sage-Grouse habitat will be prioritized commensurate with property values and other critical habitat to be protected, with the goal to restore, enhance, and maintain areas suitable for Greater Sage-Grouse. Within Greater Sage-Grouse habitat, PHMA are the highest priority for conservation and protection during fire operations and fuels management decision making. The PHMA will be viewed as more valuable than GHMA when priorities are established. When suppression resources are widely available, maximum efforts will be placed on limiting fire growth in GHMA polygons as well. These priority areas will be further refined following completion of the Greater Sage-Grouse Landscape Wildfire and Invasive Species	Fire by natural ignition should be addressed as a serious threat. Greater Sage-Grouse habitat outside of SGMAs would not be managed for the conservation of the species. No specific management actions are provided for this habitat.	In core areas, prioritize suppression, immediately after firefighter and public safety to conserve the habitat. Non-core areas would be assigned a priority commensurate with its importance in the local fire plan.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			Habitat Assessments described in Appendix M of the Draft LUPA/EIS. Limit placement of fire infrastructure (e.g., fire camps, helipads, etc.) in areas of solid sagebrush. In GHMA or areas where treatment/seeding has occurred to improve habitat, prioritize suppression where wildfires threaten adjacent PHMA.		
No similar action.	No similar action.	No similar action.	Within acceptable risk levels use a full range of fire management strategies and tactics, including the management of wildfires to achieve resource objectives, across the range of Greater Sage-Grouse habitat consistent with LUP direction. Conduct burn-out/backfiring operations in a manner that minimizes the loss of sagebrush when possible (e.g., rather than using established roads when creating anchor lines, consider using bulldozers to create anchor lines closer to the fire that decrease the size of burnout operations and loss of sagebrush).	No similar action.	No similar action.
Livestock Grazing/Range Management					
Continue to make Greater Sage-Grouse habitat available for livestock grazing. Active AUMs for livestock grazing would be 329,521 on BLM lands and 265,373 on National Forest System lands, though the number of AUMs on a permit may be adjusted during site-specific evaluations conducted during term permit renewals, allotment management plan development, or other appropriate implementation activity. Additionally, temporary adjustments can be made annually to livestock numbers, the number of AUMs, season of use, and other aspects of grazing within the terms and conditions of the permit based on the permittees livestock operation and/or an evaluation of a variety of forage and resource site-specific conditions.	Active AUMs for livestock grazing would be 329,521 on BLM lands and 265,373 on National Forest System lands. Permit and annual adjustments to those AUMs would be made consistent with regulation and the direction identified below.	<u>Alt C1:</u> Make mapped occupied Greater Sage-Grouse habitat unavailable to livestock grazing for the life of the plan. This would result in a reduction of up to 329,521 permitted AUMs on BLM lands and 265,373 permitted AUMs on National Forest System lands (if all allotments with any overlap with Greater Sage-Grouse habitat were closed in their entirety; closing just the portions of allotments within Greater Sage-Grouse habitats, if possible, could reduce this number).	<u>Alt C2:</u> Within allotments that overlap mapped occupied Greater Sage-Grouse habitat, reduce permitted AUMs by 131,808 permitted AUMs on BLM lands and 106,149 permitted AUMs on National Forest System lands. Reductions by allotment will occur by Field Office based on a review of the site-specific information (e.g., range condition, utilization levels, type and condition of Greater Sage-Grouse habitat). Based on the Field Office review, the reductions in AUMs would occur in allotments that overlap mapped	Continue to make Greater Sage-Grouse PHMA and GHMA available for livestock grazing. Active AUMs for livestock grazing would be 329,521 on BLM lands and 265,373 on National Forest System lands, though the number of AUMs on a permit may be adjusted during site-specific evaluations conducted during term permit renewals, allotment management plan development, or other appropriate implementation activity. Additionally, temporary adjustments can be made annually to livestock numbers, the number of AUMs, season of use, and other aspects of grazing within the terms and conditions of the permit based on the site specific resource and Greater Sage-Grouse habitat conditions as indicated by monitoring, or permittees' livestock operation.	Continue to make Greater Sage-Grouse habitat within and outside of SGMAs available for livestock grazing. Active AUMs for livestock grazing would be 329,521 on BLM lands and 265,373 on National Forest System lands. Existing grazing operations would utilize recognized rangeland BMPs to increase the necessary vegetation, and thereby increase the potential for nesting success and population recruitment Should site-specific concerns be raised about the effect of grazing upon Greater Sage-Grouse habitat, and such effects are documented over a sufficiently long time-frame, corrective management actions should be addressed through the application of BMPs, including consideration of those identified by the Department of Agriculture and Food's Grazing Improvement Program.	For those portions of the planning area in Wyoming, continue to make core and non-core areas available for livestock grazing. Active AUMs for livestock grazing would be included with the 265,373 AUMs on National Forest System lands noted for Alternative A, though the number of AUMs (head-months) on a permit may be adjusted during site-specific evaluations conducted during term permit renewals, allotment management plan development (or the Forest Service equivalent), or other appropriate implementation activity. Additionally, temporary adjustments can be made annually to livestock numbers, the number of AUMs, season of use, and other aspects of grazing within the terms and conditions of the permit based on the permittees livestock operation and/or an evaluation of a variety of forage and resource site-specific conditions. In determining appropriate management actions that will be considered, refer to the document, "Grazing Influence, Management, and Objective Development in Wyoming's Greater Sage-Grouse Habitat" (Cagney et al. 2010) for guidance. This peer reviewed

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
			occupied Greater Sage-Grouse habitat, whether partial reductions in active use or closing specific allotments. The reductions would be implemented during renewal of term grazing permits. The resulting AUMs available for permitting for livestock grazing would be 197,713 on BLM lands and 159,224 on National Forest System lands.			document is the result of a collaborative effort in Wyoming to ensure proper livestock grazing practices with Greater Sage-Grouse habitats. It is the culmination of efforts to gather and integrate current knowledge and practices regarding livestock grazing in respect to important Greater Sage-Grouse habitats within Wyoming. Wyoming Executive Order 2011-05 considers grazing activities compatible with Greater Sage-Grouse conservation. The State of Wyoming will collaborate with appropriate federal agencies in defining a framework for evaluating situations to determine if a causal relationship exists between improper grazing (by wildlife or wild horses or livestock) and Greater Sage-Grouse conservation objectives where conservation objectives are not being achieved on federal lands. The State of Wyoming will also collaborate with appropriate federal agencies on appropriate site based actions to achieve Greater Sage-Grouse conservation objectives within the framework. Monitoring data will at a minimum reflect 5 years of information, include rangeland health assessments and require conclusion or action to be based on 3 out of 5 years of data (Executive Order 2013-03).
No similar action.	Within PHMA, incorporate Greater Sage-Grouse habitat objectives and management considerations into all BLM and Forest Service grazing allotments through allotment management plans or permit renewals and/or Forest Service Annual Operating Instructions.	Alt C1: No similar action.	Alt C2: Same as Alternative B.	Same as Alternative B.	No similar action.	Ensure site-specific, measurable, conservation and mitigation objectives are included in project planning within core Greater Sage-Grouse habitats.
Consider adjustments to allotment boundaries that provide for single unit or landscape level grazing approaches to habitat improvement on a case-by-case basis.	In PHMA, work collaboratively on integrated ranch planning within Greater Sage-Grouse habitat so operations with deeded/BLM and/or Forest Service allotments can be planned as single units.	Alt C1: No similar action.	Alt C2: Same as Alternative B.	In PHMA, consult, cooperate, and collaborate with other land owners and management agencies (e.g., private and SITLA) to develop plans which provide for single unit or landscape level approaches to habitat improvement. In PHMA with unfenced private and SITLA lands within a grazing allotment that are under exchange of use agreements or percent public land use, manage the allotment as a single unit that will have the same management as the public lands.	No similar action.	Evaluate opportunities to coordinate management plans and strategies on multiple allotments where coordination under a single management plan/strategy would result in enhancing Greater Sage-Grouse populations or its habitat as determined in coordination with the State of Wyoming and the State wildlife agency.
Manage rangeland resources to maintain healthy, sustainable, rangeland ecosystems and to restore degraded rangelands in accordance with Utah's Standards for Rangeland Health or standards or guidelines	Prioritize completion of land health assessments (Forest Service may use other analyses) and processing grazing permits within PHMA. Focus this process on allotments that have the best opportunities for conserving, enhancing or restoring habitat	Alt C1: No similar action.	Alt C2: Same as Alternative B.	Evaluate Utah's Rangeland Health Standards (Forest Service may use other analyses) and process grazing permits within PHMA. Focus management activities on allotments found not to be achieving Utah's Rangeland Health Standards and that have the best	No similar action.	In cooperation, consultation, and coordination with permittees / lessees, cooperators, and stakeholders, including interested parties, develop and implement appropriate livestock grazing management actions to address the Wyoming Standards

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
established in individual Forest Service LRMPs. Monitor vegetation trends (including composition, cover, and age class), noxious weeds, riparian Proper Functioning Condition, etc. as part of the grazing management program. BLM plans do not contain grazing management decisions specific to conserving Greater Sage-Grouse habitat. Forest Service LUPs contain specific management actions for permitted livestock grazing that take in to consideration established habitat management objectives.	for Greater Sage-Grouse. Utilize BLM ESDs (or comparable Forest Service methods) to conduct land health assessments to determine if standards of range-land health are being met.			opportunities for conserving, enhancing or restoring habitat for Greater Sage-Grouse. When completing land health assessments, incorporate appropriate indicators and protocols to assess the condition of Greater Sage-Grouse habitat considering the objectives (e.g., percent cover and height of sagebrush, grasses, forbs, other shrubs, etc.) (Doherty et al. 2011). Use ESDs or Forest Service equivalent and/or other appropriate information, including Greater Sage-Grouse habitat objectives, as the basis to determine the desired plant community or other community within proper functioning ecological processes for conducting land health assessments to evaluate the achievement or non-achievement of rangeland health standards.		for Healthy Rangelands, improve forage for livestock, and enhance rangeland health. Consider the application of BMPs for the protection of Greater Sage-Grouse as terms and conditions of grazing permit/lease renewals. In areas where Wyoming Standards for Healthy Rangelands are not being met or are not making progress towards meeting standards, because of current livestock grazing management, modify existing permits or condition the issuance of new permits on the implementation of new grazing strategies to meet standards in accordance with grazing regulations. Apply appropriate BMPs as terms and conditions of the permit. Within core areas, incorporate Greater Sage-Grouse habitat objectives and management considerations into all Forest Service grazing allotments containing Greater Sage-Grouse habitat through allotment management plans or permit renewals. Consider the application of BMPs for the protection of Greater Sage-Grouse as terms and conditions of grazing permit/lease renewals. The Forest Service will collaborate with the State of Wyoming and appropriate federal agencies to develop appropriate conservation objectives. The Forest Service will collaborate with appropriate federal and State agencies, as directed under Governor Executive Order 2013-3.
No similar action.	In PHMA, conduct land health assessments that include (at a minimum) indicators and measurements of structure/condition/composition of vegetation specific to achieving 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.	<u>Alt C1:</u> No similar action.	<u>Alt C2:</u> Same as Alternative B.	Within PHMA where sagebrush is the current or potential dominant vegetation type or is a primary species within the various states of the ESD (or comparable Forest Service methods), maintain or restore vegetation to provide habitat for lekking, nesting, brood rearing, winter, and transition areas. Desired cover percentages and heights for sagebrush, grasses, and forbs in seasonal habitats will be managed to meet habitat guidelines from scientific literature (e.g., Connelly et al. 2000 and Hagen et al. 2007), where such standards can be met. Adjustments from the guidelines may be made, but must be based on documented regional variation of habitat characteristics (e.g., sagebrush type, ecological site potential), quantitative data from population and habitat monitoring, and evaluation of local research.	No similar action.	Implement direction from Executive Order 2013-03, as described in MA GRA-4.

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
No similar action.	Develop specific objectives to conserve, enhance or restore PHMA based on ESDs (or comparable Forest Service methods) and assessments (including within wetlands and riparian areas). If an effective grazing system that meets Greater Sage-Grouse habitat requirements is not already in place, analyze at least one alternative that conserves, restores or enhances Greater Sage-Grouse habitat in the NEPA document prepared for the permit renewal.	Alt C1: No similar action.	Alt C2: Develop specific objectives to conserve, enhance or restore occupied Greater Sage-Grouse habitat based on Greater Sage-Grouse habitat objectives (including within wetlands and riparian areas).	Same as Alternative B.	Consider Greater Sage-Grouse seasonal habitat requirements when managing sagebrush rangelands. Considerations to be taken into account include the following: Leks • Be cautious of man-made structures on lek sites. • Reduce shrub encroachment and maintain the "open" area that characterizes a typical lek site. • Identify the location of leks through discussions with UDWR biologists. Nesting/Early Brood-Rearing • Maintain and enhance the existing sagebrush/plant communities. • Manage these areas to increase herbaceous cover by sustaining a mosaic of sagebrush and open areas. • Avoid repeated, annual heavy use of these areas by implementing periodic rest and/or deferment periods during the critical growing season. Late Brood-Rearing • Avoid continuous (season-long) grazing of wet meadows and riparian habitats, especially under drought conditions when temperatures are high. Winter • Carefully manage levels of browsing or activities in sagebrush areas that constitute Greater Sage-Grouse habitat that would reduce Greater Sage-Grouse access to these areas for food and cover. • The potential impact of livestock grazing on winter habitat can be positive or negative depending on scale and location of use	Implement direction from Executive Order 2013-03, as described in MA GRA-4.

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
Consider changes to season of use on a case-by-case basis when resource conditions indicate that a change is needed.	No similar action.	Alt C1: No similar action.	Alt C2: Within Greater Sage-Grouse habitat, change season of use so that no grazing occurs during the growing season. Based on sub-regional climate variations, growing season will be determined on a permit-by-permit basis.	No similar action.	No similar action.	No similar action.
Consider range improvements and/or adjust permit terms and conditions on a case-by-case basis as necessary to meet land health standards or habitat objectives identified in individual LUPs. Changes may include, but are not limited to: 1. Rotation systems (e.g., rest rotation, deferred rotation) 2. Season or timing of use 3. Distribution of livestock use 4. Type of livestock 5. Class of livestock 6. Duration of grazing use and rest periods	In PHMA, manage for vegetation composition and structure consistent with ecological site potential and within the reference state to achieve Greater Sage-Grouse seasonal habitat objectives. Implement management actions (grazing decisions, Annual Operating Instructions [Forest Service only], allotment management plan development, or other agreements) to modify grazing management to meet seasonal Greater Sage-Grouse habitat requirements. Consider singly, or in combination, changes in: 1. Season or timing of use 2. Numbers of livestock (includes temporary non-use or livestock removal) 3. Distribution of livestock use; 4. Intensity of use 5. Type of livestock (e.g., cattle, sheep, horses, llamas, alpacas and goats)	Alt C1: No similar action.	Alt C2: In mapped occupied Greater Sage-Grouse habitat, manage for vegetation composition and structure consistent with ecological site potential and within the reference state to achieve Greater Sage-Grouse habitat objectives. Implement management actions (grazing decisions, allotment management plan/ conservation plan development, or other plans or agreements) to modify grazing management to meet seasonal Greater Sage-Grouse habitat requirements. Consider singly, or in combination, changes in: 1. Season, timing, and/or frequency of livestock use 2. Numbers/ AUMs of livestock (includes temporary non-	In PHMA, manage for vegetation composition and structure consistent with the objectives for Greater Sage-Grouse seasonal habitats, as described above. Develop and implement the terms and conditions needed to meet these objectives through the permit renewal process or other appropriate implementation action. In GHMA, consider Greater Sage-Grouse habitat objectives when making livestock grazing decisions. As necessary to meet land health standards and objectives for PHMA, implement management actions (e.g., allotment management plans, term permit renewals, grazing decisions, other agreements) to modify grazing management to meet seasonal Greater Sage-Grouse habitat objectives. Consider singly, or in combination, changes in the following: 1. Rotation systems (e.g., rest rotation, deferred rotation) 2. Season or timing of use 3. Distribution of livestock use; 4. Intensity of use (e.g., objectives for utilization or stubble height) 5. Type of livestock (e.g., cattle, sheep, horses, and goats), unless such a change conflicts with other species management 6. Class of livestock (e.g., yearlings vs. cow-calf pairs) 7. Duration of grazing use and rest periods	Address incompatible grazing strategies through established rangeland management practices consistent with the maintenance or enhancement of habitat. Carefully manage the "time," "timing," and "intensity" of grazing in sagebrush/ Greater Sage-Grouse habitats to provide for the seasonal needs of Greater Sage-Grouse. Specific prescriptions can be applied through more intensive management to address special needs or weak links in the biological year of Greater Sage-Grouse production. Where time controlled grazing is not an option, moderate use of occupied Greater Sage-Grouse habitats will usually leave mosaic or patchy areas where some plants are ungrazed. Managing for moderate utilization levels (40 percent) after the period of rapid vegetation growth may provide enough residual cover for Greater Sage-Grouse nesting and early brood-rearing the subsequent spring. Evaluation of Greater Sage-Grouse nesting and escape cover must be determined on a site-specific basis. Livestock operations with a small amount of nesting habitat should consider special management activities to protect nesting and early brood-rearing areas. Lighter use of areas may be warranted. In areas with large tracts of contiguous habitat, livestock producers should manage the vegetation on a rotational grazing basis, which may leave 10 - 20 percent of the area ungrazed periodically in combination with deferring or	Implement direction from Executive Order 2013-03, as described in MA GRA-4 Within core areas, manage for vegetation composition and structure that reflects ESD or other methods that reference site potential or comparable standard to achieve Greater Sage-Grouse and other resource objectives. Manage for vegetation composition and structure consistent with ecological site potential to achieve Greater Sage-Grouse seasonal habitat objectives. In determining appropriate management actions that will be considered, refer to the document, "Grazing Influence, Management, and Objective Development in Wyoming's Greater Sage-Grouse Habitat" (Cagney et al. 2010) for guidance. This peer reviewed document is the result of a collaborative effort in Wyoming to ensure proper livestock grazing practices with Greater Sage-Grouse habitats. It is the culmination of efforts to gather and integrate current knowledge and practices regarding livestock grazing in respect to important Greater Sage-Grouse habitats within Wyoming. Use the BLM policy in IM 2009-007 and BLM Handbook H-4180-1 and the equivalent Annual Operating Instructions for the Forest Service to evaluate land health standards achievement in Greater Sage-Grouse core habitats and, where not achieved, to determine if existing grazing management practices or levels of grazing use on public lands are causal factors in failing to achieve

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
			use or livestock removal) 3. Distribution of livestock use 4. Intensity of livestock use 5. Type of livestock (e.g., cattle, sheep, horses, llamas, alpacas and goats).		altering timing of grazing in other areas. In areas where Greater Sage-Grouse nesting is common, managing for moderate use of plant growth across the landscape would be appropriate. Well-managed ranches with comprehensive grazing strategies that include short-term or duration grazing, higher levels of use may be acceptable, provided these higher levels of use include rested vegetation in nearby areas.	the standards and conform with the guidelines, which through this process will identify appropriate actions to address non-achievement and non-conformance.
Livestock grazing program/policy direction allows the BLM/Forest Service to make changes to livestock grazing in response to drought conditions. Changes may include adjusting livestock numbers based on available forage or shortening the season of use.	During drought periods, prioritize evaluating effects of the drought in PHMA relative to their needs for food and cover. Since there is a lag in vegetation recovery following drought, ensure that post-drought management allows for vegetation recovery that meets Greater Sage-Grouse needs in PHMA.	Alt C1: No similar action.	Alt C2: During drought periods, prioritize evaluating effects of drought in Greater Sage-Grouse habitat areas relative to their biological needs, as well as drought effects on ungrazed reference areas. During severe or worse drought conditions, for allotments in Greater Sage-Grouse habitat that are not meeting or making progress toward meeting standard, prohibit livestock grazing. Since there is a lag in vegetation recovery following drought (Thurow and Taylor 1999; Cagney et al. 2010), ensure that post-drought management allows for vegetation recovery that meets Greater Sage-Grouse needs in Greater Sage-Grouse habitat areas based on Greater Sage-Grouse habitat objectives.	During drought periods, prioritize evaluating effects of the drought in PHMA relative to their needs for food and cover. Initiate emergency management measures (e.g. delaying turnout, adjusting the amount and/or duration of livestock grazing, implement other terms of the permit) during times of drought to protect Greater Sage-Grouse habitat, in accordance with the Resource Management During Drought Handbook (BLM Handbook 1730-1). Implement post-drought management to allow for vegetation recovery that meets Greater Sage-Grouse needs in PHMA.	No similar action.	In addition to Alternative A, if periods of drought occur, where appropriate, the Authorized Officer will evaluate the season of use and stocking rate and adjust through coordination with grazing permittee/lessee and annual billings processes.
Manage, maintain, protect, and restore riparian and wetland areas to the proper functioning condition.	Manage riparian areas and wet meadows for proper functioning condition (Forest Service: or other similar methodology) within PHMA.	Alt C1: No similar action.	Alt C2: Same as Alternative B.	Same as Alternative B.	Design water developments to enhance mesic habitat for use by Greater Sage-Grouse and maintain adequate vegetation in wet meadows. Within SGMAs, Greater Sage-Grouse stipulations should take	Same as Alternative A.

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
					precedence over stipulations for other species if conflicts occur, if otherwise allowable by law.	
Manage, maintain, protect, and restore riparian and wetland areas to the proper functioning condition (or Forest Service equivalent method).	Within PHMA and GHMA, manage wet meadows to maintain a component of perennial forbs with diverse species richness relative to site potential (e.g., reference state) to facilitate brood rearing. Also conserve or enhance these wet meadow complexes to maintain or increase amount of edge and cover within that edge to minimize elevated mortality during the late brood rearing period.	Alt C1: No similar action.	Alt C2: Within Greater Sage-Grouse habitats, manage wet meadows to maintain a component of perennial forbs with diverse species richness and productivity relative to site potential (e.g., reference state) to facilitate brood rearing. Also conserve or enhance these wet meadow complexes to maintain or increase the amount of edge and cover within that edge to minimize elevated mortality during the late brood-rearing period.	Same as Alternative B.	Design water developments to enhance mesic habitat for use by Greater Sage-Grouse and maintain adequate vegetation in wet meadows. Within SGMA, Greater Sage-Grouse stipulations should take precedence over stipulations for other species if conflicts occur, if otherwise allowable by law.	Same as Alternative A.
No similar action.	Where riparian areas and wet meadows meet proper functioning condition (Forest Service – or meet standards using other similar methodology), strive to attain reference state vegetation relative to the ESD.	Alt C1: No similar action.	Alt C2: Same as Alternative B.	No similar action.	Design water developments to enhance mesic habitat for use by Greater Sage-Grouse and maintain adequate vegetation in wet meadows. Within SGMAs, Greater Sage-Grouse stipulations should take precedence over stipulations for other species if conflicts occur, if otherwise allowable by law.	Consider the use of range improvement projects to maintain or enhance wet meadows.
Manage rangeland resources to maintain healthy, sustainable, rangeland ecosystems and to restore degraded rangelands in accordance with Utah's Standards for Rangeland Health or standards or guidelines established in individual Forest Service LRMPs. Rangeland health standards require that riparian areas be managed for proper functioning condition.	Within PHMA, reduce hot season grazing on riparian and meadow complexes to promote recovery or maintenance of appropriate vegetation and water quality. Utilize fencing/herding techniques or seasonal use or livestock distribution changes to reduce pressure on riparian or wet meadow vegetation used by Greater Sage-Grouse in the hot season (summer).	Alt C1: No similar action.	Alt C2: No similar action.	Within PHMA, assess livestock grazing in riparian and meadow complexes and ensure recovery or maintenance of appropriate vegetation and water quality. Where recovery or maintenance is not occurring and the causal factor is livestock grazing, reduce pressure on riparian or wet meadow vegetation used by Greater Sage-Grouse in the summer by adjusting grazing management practices (e.g., use fencing/herding techniques, or changes in seasonal use or livestock distribution).	Continue livestock grazing strategies that have proven effective in maintaining and enhancing Greater Sage-Grouse habitat, unless compelling and credible cause-and-effect evidence indicates a disturbance exists. Address incompatible grazing strategies through established rangeland management practices consistent with the maintenance or enhancement of habitat. Design water developments to enhance mesic habitat for use by Greater Sage-Grouse and maintain adequate vegetation in wet meadows. Within SGMAs, Greater Sage-Grouse stipulations should take precedence over stipulations for other species if conflicts occur, if otherwise allowable by law.	Same as Alternative A. If the causal factor of not meeting a standard is due to livestock grazing then follow Executive Order 2013-03.

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
Consider authorization of new water developments on a case-by-case basis taking into consideration impacts on other resources and resource values.	Authorize new water development for diversion from spring or seep source only when Greater Sage-Grouse habitat within PHMA would benefit from the development. This includes developing new water sources for livestock as part of an allotment management plan/ conservation plan to improve Greater Sage-Grouse habitat.	Alt C1: No similar action.	Alt C2: Authorize no new water developments for diversion from spring or seep sources within Greater Sage-Grouse habitat.	Limit authorization of new water developments within PHMA to projects that would have a neutral effect or be beneficial to Greater Sage-Grouse habitat (such as by shifting livestock use away from critical areas). New developments that divert surface water must be designed to maintain continuity of predevelopment riparian or wet meadow vegetation and hydrology.	Design water developments to enhance mesic habitat for use by Greater Sage-Grouse and maintain adequate vegetation in wet meadows. Within SGMAs, Greater Sage-Grouse stipulations should take precedence over stipulations for other species if conflicts occur, if otherwise allowable by law.	Continue to authorize water developments in core areas; evaluate all positives and negatives for both upland and riparian habitat. Plan and authorize range improvement projects on BLM and National Forest System lands in a way that maintains and/or improves Greater Sage-Grouse and its habitat within core areas. Analyze through a range of reasonable alternatives any direct, indirect, and cumulative effects of grazing on Greater Sage-Grouse and its habitats through the NEPA process.
Consider modifications to existing water developments on a case-by-case basis taking into consideration impacts on other resources.	Analyze springs, seeps and associated pipelines to determine if modifications are necessary to maintain the continuity of the predevelopment riparian area within PHMA. Make modifications where necessary, considering impacts on other water uses when such considerations are neutral or beneficial to Greater Sage-Grouse.	Alt C1: No similar action.	Alt C2: Analyze springs, seeps and associated water developments to determine if modifications are necessary to maintain the continuity of the predevelopment riparian area within Greater Sage-Grouse habitats. Make modifications where necessary, including dismantling water.	Within PHMA evaluate existing water developments (springs, seeps, etc., and their associated pipelines) to determine if modifications are necessary to maintain or improve riparian areas and Greater Sage-Grouse habitat. Make modifications where necessary, considering impacts on other water uses when such considerations are neutral or beneficial to Greater Sage-Grouse.	No similar action.	Evaluate existing water developments associated with springs and seeps and modify associated pipelines/structures to those developments having an impact on core areas.
Allow treatments that provide benefits for multiple resources. Additional forage will be appropriate to livestock, wild horses and burros (where applicable), and wildlife.	In PHMA, only allow treatments that conserve, enhance or restore Greater Sage-Grouse habitat (this includes treatments that benefit livestock as part of an allotment management plan/ conservation plan to improve Greater Sage-Grouse habitat).	Alt C1: No similar action.	Alt C2: Ensure that vegetation creates landscape patterns which most benefit Greater Sage-Grouse. Only allow treatments that are demonstrated to benefit Greater Sage-Grouse and retain sagebrush height and cover consistent with Greater Sage-Grouse habitat objectives (this includes treatments that benefit livestock as part of an allotment management plan/ conservation plan to improve Greater Sage-Grouse habitat). Defer grazing in Greater Sage-Grouse	In PHMA, ensure that vegetation and rangeland treatments conserve, enhance or restore Greater Sage-Grouse habitat (this includes treatments that benefit livestock).	No similar action.	For vegetation treatments in sagebrush within core areas, refer to WGFD Protocols for Treating Sagebrush to Benefit Sage-Grouse (WGFD 2011a, as updated) and IM 2013-128 (Sage-grouse Conservation Related to Wildland Fire and Fuels Management). These recommended protocols will be used in determining whether proposed treatment constitutes a "disturbance" that will contribute toward the 5 percent threshold for habitat maintenance or not. Additionally, these protocols will be used to determine whether the proposed treatment configuration would be expected to have neutral or beneficial impacts for core populations or if they represent additional habitat loss or fragmentation. Treatments to enhance sagebrush/grasslands habitat for Greater Sage-Grouse will be evaluated based upon habitat quality and the functionality/use of treated habitats post-treatment.

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
			habitat until monitoring indicates treatment and habitat objectives have been met. This may take more than 2 years.			Work collaboratively with partners at the State and local level to maintain and enhance Greater Sage-Grouse habitats in a manner consistent with the core population area strategy for conservation.
Most LUPs do not include specific management actions related to seedings. Plans do include generic decisions that allow maintenance of existing range improvements, which includes maintenance of historical seedings. Recently completed LUPs promote use of native species when conducting restoration activities. This would include restoration projects conducted in areas that have perennial grass cover. Older plans do not include a similar management action.	Evaluate the role of existing seedings that are currently composed of primarily introduced perennial grasses in and adjacent to PHMA to determine if they should be restored to sagebrush or habitat of higher quality for 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 PHMA, 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 the land health assessments.	<u>Alt C1:</u> No similar action.	<u>Alt C2:</u> Evaluate the role of existing seedings that are currently composed of primarily introduced perennial grasses in and 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.	Evaluate the role of existing seedings that are currently composed of primarily introduced perennial grasses in and adjacent to PHMA to determine if they should be restored to sagebrush or habitat of higher quality for Greater Sage-Grouse. If these 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.	No similar action.	No similar action.
Consider structural range improvements on a case-by-case basis to provide for livestock grazing while maintaining rangeland health.	In PHMA, design any new structural range improvements and location of supplements (salt or protein blocks) to conserve, enhance, or restore Greater Sage-Grouse habitat through an improved grazing management system relative to Greater Sage-Grouse objectives. Structural range improvements, in this context, include but are not limited to: cattleguards, fences, exclosures, corrals or other livestock handling structures; pipelines, troughs, storage tanks (including moveable tanks used in livestock water hauling), windmills, ponds/reservoirs, solar panels and spring developments. Potential for invasive species establishment or increase following construction must be considered in the project planning process and monitored and treated post-construction.	<u>Alt C1:</u> No similar action.	<u>Alt C2:</u> Avoid all new structural range developments and location of supplements (salt or protein blocks) in mapped occupied Greater Sage-Grouse habitat unless independent peer-reviewed studies show that the range improvement structure or nutrient supplement placement benefits Greater Sage-Grouse. Structural range developments,	In PHMA, design any new structural range improvements to conserve, enhance, or restore Greater Sage-Grouse habitat through an improved grazing management system relative to Greater Sage-Grouse objectives. Structural range improvements, in this context, include but are not limited to: cattleguards, fences, exclosures, corrals or other livestock handling structures; pipelines, troughs, storage tanks (including moveable tanks used in livestock water hauling), windmills, ponds/reservoirs, solar panels and spring developments. Potential for invasive species establishment or increase following construction must be considered in the project planning process and monitored and treated post-construction.	Locate livestock fences away from leks and employ the NRCS fence standards (see NRCS/CEAP Conservation Insight Publication "Applying the Sage Grouse Fence Collision Risk Tool to Reduce Bird Strikes.")	In core areas, continue to evaluate and modify when necessary, existing range improvement (e.g., fences, watering facilities) associated with grazing management operations for impacts on Greater Sage-Grouse and its habitat, while recognizing the importance of such structures and activities to meet, maintain or make progress towards meeting rangeland health standards or ESDs (or Forest Service equivalent).

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
			in this context, include but are not limited to cattleguards, fences, exclosures, corrals or other livestock handling structures; pipelines, troughs, storage tanks (including moveable tanks used in livestock water hauling), windmills, ponds/ reservoirs, solar panels and spring developments. Potential for invasive species establishment or increase following construction must be considered in the project planning process and monitored and treated post-construction. Consider the comparative cost of changing grazing management instead of constructing additional range developments.			
Consider modifications to existing structural range improvements on a case-by-case basis taking into consideration impacts on other resources.	In PHMA, evaluate existing structural range improvements and location of supplements (salt or protein blocks) to make sure they conserve, enhance or restore Greater Sage-Grouse habitat.	Alt C1: No similar action.	Alt C2: Same as Alternative B.	In PHMA, evaluate and assess the need to modify existing improvements to make sure they are neutral, conserve, enhance, or restore Greater Sage-Grouse habitat.	No similar action.	In core and non-core areas, continue to evaluate and modify when necessary, existing range improvements (e.g., fences, watering facilities) associated with grazing management operations for impacts on Greater Sage-Grouse and its habitat.
No similar action.	To reduce outright Greater Sage-Grouse strikes and mortality, remove, modify or mark fences in high risk areas within PHMA based on proximity to lek, lek size, and topography.	Alt C1: No similar action.	Alt C2: Remove, modify or mark fences in areas of moderate or high risk of Greater Sage-Grouse strikes within Greater Sage-Grouse habitat based on proximity to lek, lek size, and topography.	Same as Alternative B.	Fences should not be located on or adjacent to leks where bird collisions would be expected to occur. Employ NRCS fence collision risk tool (NRCS/CEAP Conservation Insight Publication "Applying the Sage Grouse Fence Collision Risk Tool to Reduce Bird Strikes").	In core and non-core, continue to evaluate and modify when necessary, existing range improvements (e.g., fences, watering facilities) associated with grazing management operations for impacts on Greater Sage-Grouse and its habitat.
Implement noxious weed and invasive species control using integrated weed management actions per national guidance and local weed management plans in collaboration with state and federal agencies,	In PHMA, monitor for, and treat invasive species associated with existing range improvements.	Alt C1: No similar action.	Alt C2: Same as Alternative B.	In PHMA, monitor for and treat noxious weeds and treat invasive species where needed, associated with existing range improvements.	Aggressively respond to new infestations to keeping invasive species from spreading. Every effort should be made to identify and treat new infestations before they become larger problems. Additionally containment of	Design all range projects in a manner that minimizes potential for invasive species establishment. Monitor for, and treat invasive species associated with existing range improvements

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
affected counties, and adjoining private lands owners.					known infestations in or near sagebrush habitats should be a high priority for all land management agencies.	
Consider voluntary relinquishment of grazing permits and preferences, in whole or in part, on a case-by-case basis.	Maintain retirement of grazing privileges as an option in PHMA when the current permittee is willing to retire grazing on all or part of an allotment. Analyze the impacts of no livestock use on wildfire and invasive species threats in evaluating retirement proposals.	Alt C1: No similar action.	Alt C2: Same as Alternative B.	Within PHMA, when grazing permits are offered for relinquishment, consider reassigning the available preference and forage allocation if the issuance of a grazing permit implements improved grazing management practices that will enhance and restore Greater Sage-Grouse habitat.	No similar action.	Within core areas, incorporate Greater Sage-Grouse habitat objectives and management considerations into all BLM and Forest Service grazing allotments through allotment management plans or permit renewals and/or Forest Service Annual Operating Instructions. When livestock grazing permits and/or grazing preference are voluntarily relinquished in portions of or all of an allotment, determine appropriate grazing management including consideration of closure to livestock grazing, based on soil, vegetation and other resources. Temporary use may be allowed in allotments where grazing preference has been relinquished or non –use warrants, to rest other allotments that include important Greater Sage-Grouse habitat.
No similar action.	No similar action.	Alt C1: No similar action.	Alt C2: Establish and maintain sufficiently large areas free of livestock as reference areas to aid in describing ecological site potential and as a measure of the comparative effects of livestock grazing—and relief from livestock grazing—on Greater Sage-Grouse populations.	No similar action.	No similar action.	No similar action.
No similar action.	No similar action.	Alt C1: No similar action.	Alt C2: Any vegetation treatment plan must include pretreatment data on wildlife and habitat condition, establish non-grazing exclosures, and include long-term monitoring where treated areas are monitored for at least 3 years before grazing returns. Continue monitoring for 5	No similar action.	No similar action.	No similar action.

Alternative A	Alternative B	Alternative C		Alternative D	Alternative E1	Alternative E2
			years after livestock are returned to the area, and compare to treated, ungrazed exclosures, as well as untreated areas.			
While most plans are silent on trailing decisions, some include language such as "encourage the avoidance of suitable habitats and known populations of all special status species during herding, trailing…"	No similar action.	No similar action.	No similar action.	No similar action.	No similar action.	Livestock trailing that is authorized through crossing permits will include a trailing plan that is designed to avoid sensitive areas and/or time periods for Greater Sage-Grouse. The plan will include specific routes and timeframes for trailing.
Recreation						

Consider BLM SRPs and Forest Service recreation SUPs on a case-by-case basis. Consider measures that will minimize impacts on important resources or resource values.	Only allow BLM SRPs and Forest Service recreation SUPs in PHMA that have neutral or beneficial effect on PHMA.	Only allow BLM SRPs and Forest Service recreation SUPs that have demonstrated neutral or beneficial affects to mapped occupied habitat areas.		Only allow BLM SRPs and Forest Service recreation SUPs in PHMA that have neutral or beneficial effect on PHMA.
				
				Evaluate existing SRPs/and Forest Service recreation SUPs for adverse effect on Greater Sage-Grouse and their habitat. Modify or cancel the permit, as appropriate and where possible to avoid or mitigate effects of habitat alterations or other physical disturbances to Greater Sage-Grouse (e.g., breeding, brood-rearing, migration patterns, or winter survival).
				
				Identify permit stipulations that require the permittee to implement any necessary habitat restoration activities after SRP events. Restoration activities must be consistent with Greater Sage-Grouse habitat objectives as determined by the BLM field office/National Forest in collaboration with the State of Utah.
					Limit or ameliorate impacts from recreation activities through the use of the following stipulations:
					• New permanent disturbance, including structures, fences, and buildings, should not be located within the occupied lek itself.
					• No permanent disturbance within 1 mile of an occupied lek, unless it is not visible to the Greater Sage-Grouse using the lek.
					• New permanent tall structures should not be located within 1 mile of the lek, if visible by the birds within the lek.
					• A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season.
					• Apply time-of-day stipulations when the lek is active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise)
					• Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats:
					  ○ On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding.
					  ○ In nesting and brood-rearing areas from Apr 1 – Aug 15.
					  ○ In winter habitat from Nov 15 – Mar 15.
					  ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist.
					• Avoid disturbance within SGMAs (nesting and brood-rearing areas, winter habitat, other habitat), if possible. Project proponents must demonstrate why avoidance is not possible.
						In addition to Alternative A, allow Forest Service recreation SUPs in core areas unless negative impacts on Greater Sage-Grouse cannot be adequately mitigated.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
				• If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation). • After minimization, mitigation is required (see mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting, winter, or other habitat, within SGMAs. • Manage SGMAs to avoid barriers to migration, if applicable.	
No similar action.	No similar action.	Seasonally prohibit camping and other nonmotorized recreation within 4 miles of occupied Greater Sage-Grouse leks.	No similar action.	No similar action.	No similar action.
Comprehensive Travel and Transportation Management					
Manage OHV use in Greater Sage-Grouse habitat as follows (Map 2.54, OHV Area Designations–Alternative A): • Open to cross-country use: 797,000 acres • Limited to existing routes: 437,400 acres • Limited to designated routes: 1,217,700 acres • Closed: 32,200 acres • No decision mapped: 15,100 acres • Forest Service: 814,400 acres (the Forest Service does not use similar OHV management categories. OHV use on National Forest Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process.)	Manage OHV use in Greater Sage-Grouse habitat as follows (Map 2.55, OHV Area Designations–Alternative B): • Open to cross-country use: 34,600 acres • Limited to existing routes: 1,213,500 acres • Limited to designated routes: 1,217,700 acres • Closed: 32,200 acres • No decision mapped: 1,400 acres • Forest Service: 814,400 acres (the Forest Service does not use similar OHV management categories. OHV use on National Forest Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process.)	Manage OHV use in Greater Sage-Grouse habitat as follows (Map 2.56, OHV Area Designations–Alternative C): • Open to cross-country use: 0 acres • Limited to existing routes: 1,016,700 acres • Limited to designated routes: 927,000 acres • Closed: 555,700 acres • No decision mapped: 0 acres • Forest Service: 814,400 acres (the Forest Service does not use similar OHV management categories. OHV use on National Forest Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process.)	Manage OHV use in Greater Sage-Grouse habitat as follows (Map 2.57, OHV Area Designations–Alternative D): • Open to cross-country use: 0 acres • Limited to existing routes: 1,249,500 acres • Limited to designated routes: 1,217,700 acres • Closed: 32,200 acres • No decision mapped: 0 acres • Forest Service: 814,400 acres (the Forest Service does not use similar OHV management categories. OHV use on National Forest Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process.)	Manage OHV use in Greater Sage-Grouse habitat as follows (Map 2.58, OHV Area Designations–Alternative E): • Open to cross-country use: 351,700 acres • Limited to existing routes: 888,000 acres • Limited to designated routes: 1,217,700 acres • Closed: 32,200 acres • No decision mapped: 9,800 acres • Forest Service: 814,400 acres (the Forest Service does not use similar OHV management categories. OHV use on National Forest Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process.)	All acres of the planning area in Wyoming are National Forest System lands. The Forest Service does not use similar OHV management categories to the BLM's. OHV use on National Forest System Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process. As such, all acres of the planning area within Wyoming are included in the Alternative E1 bullet that addresses the Forest Service.
Under current management, there are no PHMA. OHV use will be managed as identified in the area-designations above.	In PHMA, limit motorized travel to existing roads, primitive roads, and trails at a minimum, until such time as travel management planning is complete and routes are either designated or closed.	Same as Alternative B.	PHMA and GHMA that do not have designated routes in a Travel Management Plan would be managed at least as limited to existing routes (i.e., could maintain existing OHV closures) until a Travel Management Plan designates routes. PHMA that have undergone Travel Management Planning with route designation would be managed at least as limited to designated routes (i.e., would maintain existing OHV closures). In these areas, existing route designations would be reviewed and adjusted through future travel management planning efforts where impacts on Greater Sage-Grouse from route presence or use may exist.	SGMAs with nesting and winter habitat that do not have designated routes in a Travel Management Plan would be managed at least as limited to existing routes (i.e., could maintain existing OHV closures) until a Travel Management Plan designates routes. SGMAs with nesting and winter habitat that have undergone Travel Management Planning with route designation would be managed at least as limited to designated routes (i.e., could maintain existing OHV closures). In these areas, existing route designations would be reviewed and adjusted where impacts on Greater Sage-Grouse from route presence or use may exist.	All acres of the planning area in Wyoming are National Forest System lands. The Forest Service does not use similar OHV management categories to the BLM's. OHV use on National Forest System Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Under current management there are no designated PHMA. No similar action. Under current policy, the need for permanent or seasonal road closures is evaluated during travel management planning.	In PHMA, travel management should evaluate the need for permanent or seasonal road closures.	Close approximately 555,700 acres of mapped occupied habitat to OHV use. In addition, during implementation-level travel planning, consider additional route closures.	During implementation-level travel planning, threats to Greater Sage-Grouse and their habitat would be considered when evaluating route designations and/or closures.	No similar action.	No similar action.
Consider route and trail modifications (new or existing) on a case-by-case basis. Identify travel management areas and prioritize travel management planning in areas where it would provide the most resource benefit.	Complete activity level plans within 5 years of the ROD. During activity level planning, where appropriate, designate routes in PHMA with current administrative/agency purpose or need to administrative access only.	Same as Alternative B.	Complete transportation plans in accordance with National BLM Travel Management guidance, requiring the BLM to maintain a current action plan and planning schedule to most effectively target available resources. The following Greater Sage-Grouse population areas are Utah's top priority areas to designate comprehensive travel plans: • Sheeprocks • Bald Hills • Box Elder • Rich • Ibapah • Hamlin Valley	Counties should adopt and enforce travel management plans that include consideration for Greater Sage-Grouse.	All acres of the planning area in Wyoming are National Forest System lands. The Forest Service does not use similar OHV management categories to the BLM's. OHV use on National Forest System Lands within the planning area is limited to roads, trails, and areas that have been designated through a transportation planning process.
Under current management there are no designated PHMA. Consider route and trail modifications (new or existing) on a case-by-case basis using the designation criteria.	In PHMA, limit route construction to realignments of existing designated routes if that realignment has a minimal impact on Greater Sage-Grouse habitat, eliminates the need to construct a new road, or is necessary for motorist safety.	Limit route construction to realignments of existing designated routes if that realignment has a minimal impact on Greater Sage-Grouse habitat, eliminates the need to construct a new road, or is necessary for motorist safety. Mitigate any impacts on offset the loss of Greater Sage-Grouse habitat.	Travel systems would be managed with an emphasis on improving the sustainability of the travel network in a comprehensive manner to minimize impacts on Greater Sage-Grouse, maintain motorist safety, and prevent unauthorized cross country travel while meeting access needs. To do so, it may be necessary to improve portions of existing routes, close existing routes or create new routes that meet user group needs, thereby reducing the potential for pioneering unauthorized routes. The emphasis of the comprehensive travel and transportation planning within PHMA would be placed on having a neutral or positive effect on Greater Sage-Grouse habitat.	No similar action.	Construct roads to minimum design standards needed for production activities within core areas.
No similar action. Allow upgrades to existing roads on a case-by-case basis subject to site-specific environmental review.	In PHMA, allow no upgrading of existing routes that would change route category (road, primitive road, or trail) or capacity unless the upgrading would have minimal impact on Greater Sage-Grouse habitat, is necessary for motorist safety, or eliminates the need to construct a new road.	Allow no upgrading of existing routes that would change route category (road, primitive road, or trail) or capacity unless it is necessary for motorist safety, or eliminates the need to construct a new road. Any impacts shall be mitigated with methods that have been demonstrated to be effective to offset the loss of Greater Sage-Grouse habitat.	In PHMA, when considering upgrade of existing routes that would change route category (BLM route category: road, primitive road, or trail; Forest Service route category: level 1, level 2, or level 3) or capacity, consider the larger transportation network while providing for protection of Greater Sage-Grouse habitat.	No similar action.	Within core areas, allow no upgrading of existing routes that would change route category (BLM route category: road, primitive road, or trail; Forest Service route category: level 1, level 2, or level 3) or capacity unless the upgrading would have minimal impact on Greater Sage-Grouse in core areas, is necessary for motorist safety, or eliminates the need to construct a new road.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
All LUPs include management actions that encourage the administrating agency to follow BMPs that reduce or minimize the impacts of development, including use of existing roads where possible.	In PHMA, use existing roads, or realignments as described above to access valid existing rights that are not yet developed. If valid existing rights cannot be accessed via existing roads, then build any new road constructed to the absolute minimum standard necessary, and add the surface disturbance to the total disturbance in the PHMA. If that disturbance exceeds 3 percent for that area, then make additional, effective mitigation necessary to offset the resulting loss of Greater Sage-Grouse habitat.	Prohibit new road construction in mapped occupied Greater Sage-Grouse habitat within 4 miles of occupied Greater Sage-Grouse leks, and avoid new road construction in mapped occupied Greater Sage-Grouse habitat. In mapped occupied habitat, use existing roads, or realignments as described above to access valid existing rights that are not yet developed. If valid existing rights cannot be accessed via existing roads, then, following the 4-mile prohibition from leks, build any new road constructed to the absolute minimum standard necessary, and add the surface disturbance to the total disturbance in the PHMA. If that disturbance exceeds 3 percent for that area, then make additional, mitigation necessary to offset the resulting loss of Greater Sage-Grouse habitat.	In PHMA, use existing roads, or realignments as described above to access valid existing rights that are not yet developed. If valid existing rights cannot be accessed via existing roads, then build any new road constructed to the absolute minimum standard necessary, and add the surface disturbance to the total disturbance in the PHMA. Apply additional effective mitigation necessary to offset the resulting loss of Greater Sage-Grouse habitat. Plan for new routes in consideration of the larger transportation network objectives and needs while providing for protection of Greater Sage-Grouse habitat.	No similar action.	In core areas, limit route construction to realignments of existing designated routes if that realignment has a minimal impact on Greater Sage-Grouse habitat, eliminates the need to construct a new road, or is necessary for motorist safety. New primary and secondary roads would avoid areas within 1.9 miles of the perimeter of occupied Greater Sage-Grouse leks within core areas. Other new roads would avoid areas within 0.6-mile of the perimeter of occupied Greater Sage-Grouse leks within core areas.
No similar action. The need for restoration of linear disturbances (unauthorized routes) is identified during the implementation-level travel management process or on a case-by-case basis.	In PHMA, conduct restoration of roads, primitive roads and trails not designated in travel management plans. This also includes primitive route/roads that were not designated in WSAs and within lands with wilderness characteristics that have been selected for protection.	Same as Alternative B.	In PHMA, conduct restoration of roads, primitive roads and trails not designated for motorized or nonmotorized travel in travel management plans.	No similar action.	Within core areas, allow natural deterioration of roads or conduct restoration of roads, primitive roads and trails not designated in travel management plans. This also includes primitive route/roads that were not designated in WSAs and within lands with wilderness characteristics that have been selected to be managed to retain those characteristics for protection.
When reseeding roads, primitive roads and trails use appropriate seed mixes and consider the use of transplanted sagebrush.	When reseeding roads, primitive roads and trails in PHMA, use appropriate seed mixes and consider the use of transplanted sagebrush.	When reseeding closed roads, primitive roads and trails, use appropriate native seed mixes and require the use of transplanted sagebrush.	Same as Alternative B.	No similar action.	Within Greater Sage-Grouse habitats, when reseeding, use appropriate seed mixtures and consider the use of transplanted sagebrush.
No similar action.	No similar action.	No similar action.	No similar action.	Develop an educational process to advise OHV users of the potential for conflict with Greater Sage-Grouse.	No similar action.
Lands and Realty					
Manage BLM ROWs and Forest Service SUAs in Greater Sage-Grouse habitat as follows (Map 2.8, ROW Avoidance and Exclusion Areas–Alternative A): • Open: 3,219,000 acres • Avoided: 67,200 acres • Excluded: 27,600 acres Manage ROWs/SUAs outside of Greater Sage-Grouse habitat but in population areas as follows (Map 2.8): • Open: 2,344,400 acres • Avoided: 50,800 acres • Excluded: 74,900 acres	Manage BLM ROWs and Forest Service SUAs in Greater Sage-Grouse habitat as follows (Map 2.9, ROW Avoidance and Exclusion Areas–Alternative B): • Open: 0 acres • Avoided: 529,600 acres • Excluded: 2,784,200 acres Manage ROWs/SUAs outside of Greater Sage-Grouse habitat but in population areas the same as Alternative A.	Manage BLM ROWs and Forest Service SUAs in Greater Sage-Grouse habitat as follows (Map 2.10, ROW Avoidance and Exclusion Areas–Alternative C): • Open: 0 acres • Avoided: 0 acres • Excluded: 3,313,800 acres Manage ROWs/SUAs outside of Greater Sage-Grouse habitat but in population areas the same as Alternative A.	Manage BLM ROWs and Forest Service SUAs in Greater Sage-Grouse habitat as follows: <u>Above-Ground Linear ROWs/SUAs</u> (Map 2.11, Avoidance and Exclusion Areas for Above Ground Linear ROWs–Alternative D) • Open – 522,600 acres • Avoided – 1,368,900 acres • Excluded – 1,422,300 acres <u>Underground/Surface Linear ROWs/SUAs</u> (Map 2.12, Avoidance and Exclusion Areas for Surface and Underground ROWs–Alternative D) • Open – 532,000 acres • Avoided – 2,754,200 acres	Manage BLM ROWs and Forest Service SUAs in Greater Sage-Grouse habitat as follows (Map 2.14, ROW Avoidance and Exclusion Areas–Alternative E): • Open: 632,200 acres • Avoided: 2,654,000 acres • Excluded: 27,600 acres Manage ROWs/SUAs outside of Greater Sage-Grouse habitat but in population areas as follows (Map 2.14): • Open: 2,292,000 acres • Avoided: 103,200 acres Excluded: 74,900 acres	

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			• Excluded – 27,600 acres <u>Above-Ground Site-Type ROWs/SUAs (non-wind or solar)</u> (Map 2.13, Avoidance and Exclusion Areas for Above Ground Site Types–Alternative D) • Open – 531,900 acres • Avoided – 2,562,000 acres • Excluded – 219,900 acres Manage ROWs outside of Greater Sage-Grouse habitat but in population areas as follows: <u>Above-Ground Linear ROWs/SUAs</u> (Map 2.11) • Open – 1,925,900 acres • Avoided – 462,500 acres • Excluded – 81,700 acres <u>Underground/Surface Linear ROWs/SUAs</u> (Map 2.12) • Open – 2,337,000 acres • Avoided – 58,200 acres • Excluded – 74,900 acres <u>Above-Ground Site-Type ROWs/SUAs (non-wind or solar)</u> (Map 2.13) • Open – 2,337,100 acres • Avoided – 51,700 acres • Excluded – 81,300 acres		
No similar action.	<u>All ROWs/SUAs in PHMA</u> Make PHMA exclusion areas for new ROWs/SUAs.	<u>All ROWs/SUAs in PHMA</u> Mapped occupied Greater Sage-Grouse habitat areas shall be exclusion areas for new ROWs/SUAs.	<u>Above-Ground Linear ROWs/SUAs (e.g., transmission lines, distribution lines, telephone lines):</u> PHMA within 4 miles of an occupied lek, if the lek is located within PHMA, would be designated as an exclusion area for new above-ground linear ROWs/SUAs, unless there is a designated corridor present. PHMA beyond 4 miles of an occupied lek, if the lek is located within PHMA, would be designated as an avoidance area for new above-ground linear ROWs/SUAs. Development within the avoidance areas could occur if: • the Greater Sage-Grouse population trend within the disturbance calculation area is stable; • the development meets noise restrictions; • the development meets tall structure restrictions;	<u>All ROWs/SUAs in Habitat within SGMAs</u> Management stipulations and conditions should focus on mitigating direct disturbance during construction. Should new research demonstrate indirect impacts on Greater Sage-Grouse production, additional mitigation measures may be required. SGMAs would be designated as an avoidance area for new ROWs/SUAs. Apply stipulations as follows, as well as BMPs accepted by industry and state and federal agencies: • New permanent disturbance, including structures, fences, and buildings, should not be located within the occupied lek itself. • No permanent disturbance within 1 mile of an occupied lek, unless it is not visible to the Greater Sage-Grouse using the lek.	<u>All SUAs in Core Habitat</u> Greater Sage-Grouse core areas would be managed as an exclusion area for new SUAs.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			• the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); • mitigation is implemented to offset impacts on Greater Sage-Grouse and their habitats (see mitigation decision in the Greater Sage-Grouse section); and • the development does not exceed the 5 percent disturbance limit. Areas outside PHMA but within 1 mile of an occupied lek, if the lek is located within PHMA would be designated as an exclusion area for new above-ground linear ROWs/SUAs. Areas outside PHMA and between 1 and 4 miles of an occupied lek, if the lek is located within PHMA, would require surveys for Greater Sage-Grouse habitat in areas that ecologically could provide Greater Sage-Grouse habitat. If the area is determined to provide habitat that contributes to Greater Sage-Grouse life-cycle, the area would be designated as an exclusion area. If inventories do not identify Greater Sage-Grouse habitat, the area would be designated as an avoidance area (to address indirect impacts) for new ROWs/SUAs. Development within the avoidance areas could occur if: • the development meets noise restrictions; and • the development meets tall structure restrictions. <u>Above-Ground Site-Type ROWs/SUAs (not wind/solar) (e.g., communication towers, cell towers):</u> Areas outside PHMA but within 1 mile of an occupied lek that is located within PHMA would be designated as an exclusion area for new above-ground site-type ROWs/SUAs (excluding wind or solar). PHMA beyond 1 mile of an occupied lek, if the lek is located within PHMA, would be designated as an avoidance area for new above-ground site-type ROWs/SUAs. Development within the avoidance areas could occur if: • the development meets noise restrictions; • the development meets tall structure restrictions;	• A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season. • Apply time-of-day stipulations when the lek is active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise) • Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats: • On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. ○ In nesting and brood-rearing areas from Apr 1 – Aug 15. ○ In winter habitat from Nov 15 – Mar 15. ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist. • Avoid disturbance within SGMAs, if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation). • After minimization, mitigation is required (see mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting, winter, or other habitat, within the SGMAs. • Manage SGMAs to avoid barriers to migration, if applicable. Engage in reclamation efforts as projects are completed. Recognize that stipulations for other species (e.g. raptors) may impede the ability to effectively reclaim disturbed areas, and remove those barriers in order to achieve immediate and effective reclamation, if otherwise allowable by law.	

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			• the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); • mitigation is implemented to offset impacts on Greater Sage-Grouse and their habitats (see mitigation decision in the Greater Sage-Grouse section); and • the development does not exceed the 5 percent disturbance limit. Exceptions to the avoidance area could be granted by the Authorized Officer if the new ROW/SUA were constructed entirely within the footprint of an existing site-type ROW/SUA or an existing designated communication site, if the new development meets noise restrictions, and if the development does not occur during sensitive seasonal periods. <u>Underground/On-Ground ROWs/SUAs (e.g., buried and surface pipelines, roads)</u> PHMA would be designated as an avoidance area for new permanent underground and on-ground linear ROWs/SUAs. Development within the avoidance areas could occur if: • the Greater Sage-Grouse population trend within the disturbance calculation area is stable; • the long-term development meets noise restrictions; • there are no above ground structures or operational facilities associated with the ROW/SUA; • the construction of the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); • mitigation is implemented to offset impacts on Greater Sage-Grouse and their habitats (see mitigation decision in the Greater Sage-Grouse section); and • the surface disturbance from the development does not exceed the 5 percent disturbance limit.		
No similar action.	Consider the following exceptions: • Within designated ROW/SUA corridors encumbered by existing ROW/SUA authorizations: new ROWs may be collocated only if the entire footprint of the proposed project (including construction and staging), can be completed within the existing disturbance associated with the authorized ROWs/SUAs.	Consider the following exceptions: • In mapped occupied Greater Sage-Grouse habitat within 4 miles of active Greater Sage-Grouse leks, there would be no exceptions to the exclusion area, unless legally required. • In mapped occupied Greater Sage-Grouse habitat beyond 4 miles of active Greater	The BLM may grant new FLPMA Title 5 ROWs for existing roads within PHMA so long as the road would remain in the existing condition and same physical location (as is, where is), unless a realignment would benefit Greater Sage-Grouse. Seasonal restrictions (breeding and nesting, brood rearing, winter) would be placed on maintenance of new Title 5 ROWs to minimize disruption of Greater	For electrical transmission lines, and where feasible and consistent with federally required electrical separation standards, site new linear transmission features in existing corridors, or at a minimum, in concert with existing linear features in Greater Sage-Grouse habitat. Siting linear features accordingly shall be deemed to be mitigation for the siting of that linear feature.	Consider the following exceptions: Existing designated ROW/SUA corridors crossing core areas could be retained in the following circumstance: New SUAs may be issued in existing designated corridors for buried utilities with appropriate Greater Sage-Grouse seasonal timing constraints applied.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
	• Subject to valid, existing rights: where new ROWs/SUAs associated with valid existing rights are required, collocate new ROWs within existing ROWs or where it best minimizes Greater Sage-Grouse impacts. Use existing roads, or realignments as described above, to access valid existing rights that are not yet developed. If valid existing rights cannot be accessed via existing roads, then build any new road constructed to the absolute minimum standard necessary, and add the surface disturbance to the total disturbance in the PHMA. If that disturbance exceeds 3 percent for that area, then make additional effective mitigation necessary to offset the resulting loss of Greater Sage-Grouse.	Sage-Grouse leks, subject to valid, existing rights: where new ROWs/SUAs associated with valid existing rights are required, co-locate new ROWs within existing ROWs or where it best minimizes Greater Sage-Grouse impacts. Use existing roads, or realignments as described above, to access valid existing rights that are not yet developed. If valid existing rights cannot be accessed via existing roads, then build any new road constructed to the absolute minimum standard necessary, and add the surface disturbance to the total disturbance in the PHMA. If that disturbance exceeds 3 percent for that area, then make additional mitigation that has been demonstrated to be effective to offset the resulting loss of Greater Sage-Grouse habitat.	Sage-Grouse, subject to the exceptions noted in the Greater Sage-Grouse section. Where new ROWs/SUAs associated with valid existing rights are required within PHMA, collocate new ROWs as close as technically possible to existing ROWs or where it best minimizes Greater Sage-Grouse impacts. Use existing roads, or realignments as described above, to access valid existing rights within PHMA that are not yet developed. If valid existing rights cannot be accessed via existing roads, then build any new road constructed to the absolute minimum standard necessary, and add the surface disturbance to the total disturbance in the PHMA. If that disturbance exceeds 5 percent for that area, then make additional effective mitigation necessary to offset the resulting loss of Greater Sage-Grouse.	Mitigation for the direct effects of construction is still required.	
Designate ROW corridors within Greater Sage-Grouse habitat as identified on Map 2.16, Designated ROW Corridors–Alternative A (177,700 acres)	Designate ROW corridors as identified on Map 2.17, Designated ROW Corridors–Alternative B (130,200 acres). Undesignate ROW corridors that currently do not have any ROWs authorized in them (47,500 acres).	Undesignate all designated ROW corridors within Greater Sage-Grouse mapped occupied habitat as identified on Map 2.18, Designated ROW Corridors–Alternative C. New ROWs are excluded from Greater Sage-Grouse mapped occupied habitat.	Designate ROW corridors as identified on Map 2.19, Designated ROW Corridors–Alternative D : • Retain 89,400 acres of existing designated ROW corridor • Retain 48,400 acres of existing designated ROW corridor, but stipulate new developments be limited to underground use only • Undesignate 39,700 acres of existing designated ROW corridor • Designate 31,700 acres as new designated ROW corridor (where new corridors would be designated, there are existing lines or disturbance already in place) While new ROWs can be developed within designated ROW corridors, the preference is to avoid Greater Sage-Grouse habitat altogether. If this is not possible, development will be limited to the designated corridors. New designated corridors within PHMA will not exceed 3,500 feet in width. New above-ground ROWs within designated corridors will be constructed as close as technically feasible to existing above-ground lines to limit disturbance to the smallest footprint. Mitigation will be required for construction of new lines in designated corridors located in Greater Sage-Grouse habitat in PHMA.	No similar action.	Within Greater Sage-Grouse core areas new transmission projects would be considered where it can be demonstrated that declines in Greater Sage-Grouse populations could be avoided through project design and/or mitigation (e.g., raptor perch and nest deterrents). In conducting review of powerline transmission proposals, the use of the Framework for Greater Sage-Grouse Impacts Analysis for Interstate Transmission Lines or other appropriate documents, is necessary. New transmission projects would be allowed within 1/2 mile on either side of existing 115 kV or larger transmission lines creating a corridor no wider than 1 mile. Construction should occur between July 1 and March 14 (or between July 1 and November 30 in winter concentration areas).

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
No similar action.	Evaluate and take advantage of opportunities, to remove, bury, or modify existing power lines within PHMA.	Same as Alternative B.	During renewal, amendment, or reauthorization of existing permits, evaluate and where appropriate, work with existing ROW holders to modify existing power lines within PHMA to mitigate impacts of existing powerlines, taking into account the potential impacts of the mitigation (relocation, burying, etc.) with the existing impacts of the line.	No similar action.	Maintenance/replacement of existing structures would be allowed subject to valid and existing rights. Upgrades would be considered, subject to mandatory BMPs. Any new or replaced powerline or powerpole will be fitted with anti-perching devices.
All LUPs include management actions that require reclamation/restoration of disturbed areas that are no longer used in support of authorized actions.	Where existing leases or ROWs/SUAs have had some level of development (road, fence, well, etc.) and are no longer in use, reclaim the site by removing these features and restoring the habitat.	Same as Alternative B.	Same as Alternative B.	No similar action.	Same as Alternative B.
No similar action.	<u>All ROWs/SUAs:</u> Make GHMA "avoidance areas" for new ROWs/SUAs.	No similar action.	<u>All ROWs/SUAs:</u> GHMA within 1 mile of an occupied lek, if the lek is located within GHMA, would be designated as an avoidance area for new ROWs (Maps 2.11, Avoidance and Exclusion Areas for Above Ground Linear ROWs–Alternative D, Map 2.12 and Map 2.13). Development within the avoidance areas could occur if: • the development (during construction and after) meets noise restrictions; • the structures remaining after development meet tall structure restrictions; • mitigation is implemented to offset impacts on Greater Sage-Grouse and their habitats (see mitigation decision in the Greater Sage-Grouse section); and • the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter). GHMA within and beyond the 1 mile avoidance area would require discussion with the State of Utah during project implementation, and implementation of BMPs (e.g., anti-perch devices for raptors). The avoidance area could be waived, except for the seasonal restrictions, if off-site mitigation coordinated with BLM/Forest Service and the State of Utah is successfully completed in PHMA.	Greater Sage-Grouse habitat outside SGMAs would not be managed for the conservation of the species. No specific management actions are provided for this habitat.	<u>All SUAs:</u> Noncore areas would be managed as SUA avoidance areas for new SUAs, except for areas currently managed as SUA exclusion areas. Develop criteria that would be used to determine if a proposed SUA could be sited in an avoidance area or not.
Most LUPs include a management action that encourages placement of new ROWs in designated utility corridors and/or collocation of new ROWs adjacent to existing ROWs.	Where new ROWs/SUAs are necessary in GHMA, co-locate new ROWs/SUAs within existing ROWs/SUAs, where possible.	No similar action.	Same as Alternative B.	Greater Sage-Grouse habitat outside SGMAs would not be managed for the conservation of the species. No specific management actions are provided for this habitat.	Same as Alternative B.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Land Tenure (BLM land only): Make approximately 24,400 acres of land within in Greater Sage-Grouse habitat available for FLPMA Section 203 sale (Map 2.21, Land Tenure Adjustments–Alternative A). In order to be considered for any form of land tenure adjustment, all lands not specifically identified for disposal must meet criteria included in FLPMA and in each LUP.	Land Tenure (BLM land only): Retain public ownership of PHMA. Consider exceptions where there is mixed ownership, and land tenure adjustments would allow for additional or more contiguous federal ownership patterns within PHMA. Under PHMA with minority federal ownership, include an additional, effective mitigation agreement for any disposal of federal land. As a final preservation measure consideration should be given to pursuing a permanent conservation easement. For BLM lands, approximately 5,490 acres of GHMA would still be available for disposal through FLMPA Section 203 sale (Map 2.22, Land Tenure Adjustments–Alternative B).	Land Tenure (BLM land only): Same as Alternative B, without exceptions for disposal to consolidate ownership that would be beneficial to Greater Sage-Grouse. No BLM or National Forest System lands within mapped occupied habitat would be available for land tenure adjustments (Map 2.23, Land Tenure Adjustments–Alternative C).	Land Tenure (BLM land only): Retain public ownership of PHMA. Consider exceptions where there is mixed ownership, and land tenure adjustments would allow for additional or more contiguous federal ownership patterns within PHMA, so long as potential land tenure adjustments benefit Greater Sage-Grouse, and do not negatively impact other federally listed threatened or endangered species. Under PHMA with minority federal ownership, include an additional, effective mitigation agreement for any disposal of federal land. For BLM lands, approximately 5,540 acres of GHMA would still be available for disposal through FLMPA Section 203 sale (Map 2.24, Land Tenure Adjustments–Alternative D).	Land Tenure (BLM land only): No similar action.	Same as Alternative B, except no specific acreages would apply.
Most LUPs include a management action that allows for acquisition of lands that have important resource values including crucial wildlife habitat and land tenure adjustments to improve the manageability of public lands.	Where suitable conservation actions cannot be achieved in PHMA, seek to acquire state and private lands with intact federal mineral estate by donation, purchase or exchange in order to best conserve, enhance or restore Greater Sage-Grouse habitat.	Same as Alternative B.	Same as Alternative B.	No similar action.	Utilize Greater Sage-Grouse habitat requirements for acquisition within core areas.
Withdrawal: Recommend approximately 498,700 acres of federal lands and non-federal lands with federal mineral interests within Greater Sage-Grouse habitat for mineral withdrawal (Map 2.26, Locatable Mineral Withdrawals–Alternative A).	Withdrawal: Recommend federal lands and non-federal lands with federal mineral interests within PHMA for mineral withdrawal (3,650,900 acres of new Recommended withdrawals) (Map 2.27, Locatable Mineral Withdrawals–Alternative B).	Withdrawal: Recommend federal lands and non-federal lands with federal mineral interests within mapped occupied Greater Sage-Grouse habitat for mineral withdrawal (4,008,580 acres) (Map 2.28, Locatable Mineral Withdrawals–Alternative C).	Withdrawal: Do not recommend additional federal lands or non-federal lands with federal mineral interests within PHMA or GHMA for locatable mineral withdrawal.	Withdrawal: Same as Alternative D.	Withdrawal: Recommend withdrawal from mineral entry based on risk to the Greater Sage-Grouse and its habitat in core areas from conflicting locatable mineral potential and development, and the ability to meet the Density Disturbance Calculation Tool thresholds.
No similar action.	In PHMA, do not recommend withdrawal proposals not associated with mineral activity unless the land management is consistent with Greater Sage-Grouse conservation measures. (For example; in a recommended withdrawal for a military training range buffer area, manage the buffer area with Greater Sage-Grouse conservation measures.)	Do not approve withdrawal proposals not associated with mineral activity unless the land management is consistent with Greater Sage-Grouse conservation measures. (For example, in a recommended withdrawal for a military training range buffer area, manage the buffer area with Greater Sage-Grouse conservation measures that have been demonstrated to be effective, or according to the joint BLM-DOD management.)	No similar action.	No similar action.	Recommend withdrawal proposals not associated with mineral activity, assessing the need to protect Greater Sage-Grouse habitat versus the recommended withdrawal activity.
Wind Energy Development Evaluate wind energy development on a case-by-case basis, subject to other ROW/SUA management decisions. Manage ROWs/SUAs in Greater Sage-Grouse habitat as follows (Map 2.8): • Open: 3,219,000 acres • Avoided: 67,200 acres • Excluded: 27,600 acres	Wind Energy Development Make PHMA exclusion areas for new leases or ROWs/SUAs permits (2,781,700 acres) (Map 2.9).	Wind Energy Development Do not site wind energy development in mapped occupied Greater Sage-Grouse habitat (3,313,800 acres) (Map 2.10).	Wind Energy Development PHMA would be designated as exclusion areas for wind energy development (2,760,300 acres) (Map 2.30, Avoidance and Exclusion Areas for Wind Energy–Alternative D). Manage wind energy development in Greater Sage-Grouse habitat as follows (Map 2.30): • Open – 522,500 acres • Avoided – 9,400 acres	Wind Energy Development SGMAs would be available for wind energy development, though they would be designated as avoidance areas for wind energy development. Manage wind energy development in Greater Sage-Grouse habitat as follows (Map 2.14): • Open: 632,200 acres • Avoided: 2,654,000 acres	Wind Energy Development Acreages associated with the Wyoming-Uinta and Wyoming-Blacks Fork population areas are included in the acreages for Alternative E1, as avoidance areas with the stipulation on development as described below. Wind Energy development is not allowed inside core areas unless it can be sufficiently demonstrated that the development activity

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

Manage ROWs/SUAs outside of Greater Sage-Grouse habitat but in population areas as follows (Map 2.8
• Open: 2,344,400 acres
• Avoided: 50,800 acres
• Excluded: 74,900 acres
			• Excluded – 2,781,900 acres
			
			Manage wind energy development outside of Greater Sage-Grouse habitat but in population areas as follows (Map 2.30):
			Open – 1,925,200 acres
			• Avoided – 462,500 acres
			• Excluded – 82,400 acres
			
			Areas outside PHMA but within 1.0 mile of an occupied lek, if the lek is located within PHMA, would also be excluded from wind energy development.
			
			Areas outside PHMA but within 4 miles of an occupied lek located within PHMA (not including the 1.0 mile exclusion) would be designated as an avoidance area for wind energy development. Development within the avoidance areas can occur if:
			• the development meets noise restrictions; and
			• the development meets tall structure restrictions;
			
			Exclude wind energy development within 1.0 mile of an occupied lek located in GHMA, whether mapped occupied Greater Sage-Grouse habitat or not.
			
			The exclusion could be waived outside of GHMA if applicable seasonal restrictions are implemented (breeding and nesting, brood rearing, winter) and if off-site mitigation coordinated with BLM/Forest Service and the State of Utah is successfully completed in PHMA.
			
			Development within GHMA beyond the 1.0 mile exclusion area would require discussion with the State of Utah during project implementation, and implementation of BMPs, including potential off-site mitigation in PHMA.
				• Excluded: 27,600 acres
				
				Manage wind energy development outside of Greater Sage-Grouse habitat but in population areas as follows (Map 2.14):
				• Open: 2,292,000 acres
				• Avoided: 103,200 acres
				• Excluded: 74,900 acres
				
				Apply stipulations as follows, as well as BMPs accepted by industry and state and federal agencies:
				• New permanent disturbance, including structures, fences, and buildings, should not be located within the occupied lek itself.
				• No permanent disturbance within 1 mile of an occupied lek, unless it is not visible to the Greater Sage-Grouse using the lek.
				• A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season.
				• Apply time-of-day stipulations when the lek is active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise)
				• Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats:
				  ○ On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding.
				  ○ In nesting and brood-rearing areas from Apr 1 – Aug 15.
				  ○ In winter habitat from Nov 15 – Mar 15.
				  ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist.
				• Avoid disturbance within SGMAs, if possible. Project proponents must demonstrate why avoidance is not possible.
				• If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation).
					would not result in declines of core area populations. Sufficient demonstration of "no declines" should be coordinated with the WGFD and USFWS. Areas that are currently unavailable due to the need to protect sensitive resources would remain unavailable to wind energy development.
					
					Avoid the use of guy wires for turbines or MET tower supports within core areas. All existing and any new unavoidable guy wires should be marked with recommended bird deterrent devices.
					
					The siting of new temporary MET towers within core areas will be avoided within 2 miles of active Greater Sage-Grouse leks, unless they are out of the direct line of sight of the active lek.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
				• After minimization, mitigation is required (see mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting, winter, or other habitat, within the SGMA. • Manage SGMAs to avoid barriers to migration, if applicable. Engage in reclamation efforts as projects are completed. Recognize that stipulations for other species (e.g. raptors) may impede the ability to effectively reclaim disturbed areas, and remove those barriers in order to achieve immediate and effective reclamation, if otherwise allowable by law.	
No similar action.	No similar action.	Site wind energy development at least 5 miles from occupied Greater Sage-Grouse leks.	No similar action.	No similar action.	No similar action.
Mineral Development (applicable to all types of minerals and all minerals development activities)					
No similar action.	No similar action.	No similar action.	No similar action.	Within SGMAs, limit or ameliorate impacts through the use of the general stipulations identified in the Greater Sage-Grouse section. Engage in reclamation efforts as projects advance or are completed. Recognize that stipulations for other species (e.g. raptors) may impede the ability to effectively reclaim disturbed areas, and remove those barriers in order to achieve immediate and effective reclamation, if otherwise allowable by law. Prioritize areas for habitat improvement to make best use of mitigation funds.	No similar action.
Allow geophysical exploration in areas that are not closed to fluid mineral leasing. Geophysical exploration in Greater Sage-Grouse habitat shall be subject to seasonal restrictions discussed above.	Allow geophysical exploration within PHMA to obtain exploratory information for areas outside of and adjacent to PHMA. Allow geophysical operations only by helicopter-portable drilling methods and in accordance with seasonal timing restrictions and/or other restrictions that may apply.	No new geophysical exploration permits will be issued.	Allow geophysical exploration within mapped occupied Greater Sage-Grouse habitat areas to obtain exploratory information. Geophysical exploration shall be subject to seasonal restrictions that preclude activities in breeding, nesting, brood rearing and winter habitats during their season of use by Greater Sage-Grouse.	Allow geophysical exploration within SGMAs to obtain exploratory information. Geophysical exploration would be subject to the same seasonal (TL), NSO, and CSU stipulations as would be applied to leases within SGMAs.	In addition to Alternative A, geophysical exploration projects that are designed to minimize habitat fragmentation within core areas would be allowed, except were prohibited or restricted by existing LUP decisions.
Nonenergy Leasable Minerals					
Under current management there are no designated PHMA. Manage nonenergy leasable minerals on federal lands and non-federal lands with federal mineral interests within Greater Sage-Grouse habitat as follows (Map 2.33,	Close federal lands and non-federal lands with federal mineral interests within PHMA to nonenergy leasable mineral leasing. This includes not permitting any new leases to expand an existing mine.	Close federal lands and non-federal lands with federal mineral interests within mapped occupied Greater Sage-Grouse habitat to nonenergy leasable mineral leasing (4,008,580 acres) (Map 2.35, Non-Energy Solid Leasable Minerals–Alternative C). This	<u>Proposed Leases Associated with Surface Mining:</u> Manage nonenergy leasable minerals on federal lands and non-federal lands with federal mineral interests within Greater Sage-Grouse habitat as follows (Map 2.36, Non-	Manage nonenergy leasable minerals on federal lands and non-federal lands with federal mineral interests within Greater Sage-Grouse habitat as follows (Map 2.37, Non-Energy Solid Leasable Minerals–Alternative E):	Acreages associated with the Wyoming-Uinta and Wyoming-Blacks Fork population areas are included in the acreages for Alternative E1, though the stipulations on development will be as described below.

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

Non-Energy Solid Leasable Minerals–Alternative A):
• Open to Leasing Consideration – 3,870,080 acres
• Closed to Leasing – 138,500 acres
 	
Recent plans may apply stipulations identified for fluid mineral leasing to all surface disturbing activities. In addition, existing leases include other mitigation actions on a lease-by-lease basis. Reclamation of disturbed areas is also required under existing leases.
	Manage nonenergy leasable minerals on federal lands and non-federal lands with federal mineral interests within Greater Sage-Grouse habitat as follows (Map 2.34, Non-Energy Solid Leasable Minerals–Alternative B):
	• Open to Leasing Consideration – 667,280 acres
	• Closed to Leasing – 3,341,300 acres
		includes not permitting any new leases to expand an existing mine.	Energy Solid Leasable Minerals–Alternative D):
			• Open to Leasing Consideration – 705,680 acres
			• Closed to Leasing with Development by Surface Mining – 2,905,100 acres
			• Closed to All Leasing– 397,800 acres
			
			PHMA would be closed to new leasing or lease modification of surface nonenergy leasable minerals. This includes not issuing or modifying leases to expand existing mines that would result in surface mining.
			
			New or modified leases in areas outside PHMA and within 4 miles of an occupied lek located within PHMA would have use stipulations attached. Development within these areas could occur if:
			• the development meets noise restrictions both during development and after development; and
			• the structures remaining after development meet tall structure restrictions.
			
			GHMA within 1 mile of an occupied lek, if the lek is located within GHMA, would have no surface disturbance stipulations associated with leasing of surface nonenergy leasable minerals.
			
			<u>Leases Associated with Underground Mining:</u> Consider leasing PHMA for nonenergy leasable minerals that would be extracted through underground mining. Require the following stipulations, as applicable, as part of any new mining leases or lease modification for underground nonenergy mines:
			• Appurtenant facilities would not be placed within PHMA, where technically feasible.
			• If placement of facilities outside of PHMA is not technically feasible while still protecting Greater Sage-Grouse habitat, surface disturbances associated with the lease can be allowed if they meet the following criteria:
			• No surface facilities (e.g., mine entrances, vent shafts, etc.) would be located within 1 mile of an occupied lek that is located within PHMA.
			• the long-term development meets noise restrictions, including from supporting traffic along roads;
				• Open to Leasing Consideration – 3,870,080 acres
				• Closed to Leasing – 138,500 acres
				
				Consider leasing federal lands and non-federal lands with federal mineral interests within SGMAs for nonenergy leasable minerals. Limit or ameliorate impacts from mineral leasing and development through the use of the following stipulations:
				• New permanent disturbance, including structures, fences, and buildings, should not be located within the occupied lek itself.
				• No permanent disturbance within 1 mile of an occupied lek, unless it is not visible to the Greater Sage-Grouse using the lek.
				• New permanent tall structures should not be located within 1 mile of the lek, if visible by the birds within the lek.
				• A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season.
				• Apply time-of-day stipulations when the lek is active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise)
				• Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats:
				  ○ On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding.
				  ○ In nesting and brood-rearing areas from Apr 1 – Aug 15.
				  ○ In winter habitat from Nov 15 – Mar 15.
				  ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist.
				• Avoid disturbance within SGMAs (nesting and brood-rearing areas, winter habitat, other habitat), if possible. Project proponents must demonstrate why avoidance is not possible.
				• If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic to screen the disturbance, or
					In addition to Alternative A, core area would be open to new nonenergy leasing provided that the development of the lease would be consistent with the disturbance limitations as calculated by the Density Disturbance Calculation Tool and project implementation is developed with appropriate Greater Sage-Grouse protections / management strategies. Within project areas where the Density Disturbance Calculation Tool analysis is approved, modification of existing leases is allowed without additional, density analyses if the project is maintained within the original Density Disturbance Calculation Tool analysis area and Density Disturbance Calculation Tool disturbance acreage limits would be maintained through reclamation/restoration to suitable Greater Sage-Grouse habitat.

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			• restrictions on permanent tall structures are required to minimize increases in predation and area avoidance by Greater Sage-Grouse; • the construction of the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); avoidance periods and necessary mitigation may be dependent on site specific conditions and noise levels; • the surface disturbance from the development does not exceed the 5 percent disturbance limit; and • Additional mitigation methods applicable to the specific project are conducted, including off-site mitigation. If the above criteria cannot be met, do not grant new leases or modifications.	maintaining and enhancing wet meadow and riparian vegetation). • After minimization, mitigation is required (see mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting, winter, or other habitat, within SGMAs. • Manage SGMAs to avoid barriers to migration, if applicable. • Recognize that surface vents associated with underground mining are essential for human safety, and must be permitted under the provisions of this alternative.	
Under current management there are no designated GHMA. Recent plans may apply stipulations identified for fluid mineral leasing to all surface disturbing activities. In addition, existing leases include other mitigation actions on a lease-by-lease basis. Reclamation of disturbed areas is also required under existing leases.	No similar action.	No similar action.	Consider leasing GHMA for nonenergy leasable minerals that would be extracted through underground mining. Minimize surface-disturbing or disrupting activities (including operations and maintenance) where needed to reduce the impacts of human activities on Greater Sage-Grouse habitats. Use additional, onsite or off-site mitigation to offset impacts as technically appropriate (determined by local options/needs). Determine which measures are needed to protect GHMA during activity level planning, which may include applying the criteria identified for PHMA. The above stipulations may be waived if off-site mitigation coordinated with BLM/Forest Service and the State of Utah is successfully completed in PHMA.	Greater Sage-Grouse habitat outside SGMAs would not be managed for the conservation of the species. No specific management actions are provided for this habitat.	No similar action.
Recent plans may apply stipulations identified for fluid mineral leasing to all surface disturbing activities. In addition, existing leases include other mitigation actions on a lease-by-lease basis. Reclamation of disturbed areas is also required under existing leases.	No similar action.	No similar action.	Prospecting and exploration activities associated with nonenergy leasable minerals would be required to comply to the following criteria within PHMA: • Surface disturbance from the activity does not exceed the 5 percent disturbance limit; • The non-casual use activity does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); • Any facilities associated with prospecting activities will be removed before the next breeding season; and • Any disturbances will be reclaimed.	Prospecting and exploration activities associated with nonenergy leasable minerals would be required to comply with the same stipulations identified for leasing and development, above.	Exploration licenses and prospecting permits would be considered with appropriate mitigating measures (e.g., TLs, Density Disturbance Calculation Tool thresholds).

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No similar action. Individual LUPs may contain an appendix that outlines BMPs that are applied on a case-by-case basis.	For existing nonenergy leasable mineral leases in PHMA, in addition to the solid minerals RDFs (Appendix I, Best Management Practices for Locatable Minerals and Required Design Features for Other Solid Minerals, of the Draft LUPA/EIS), follow the same RDFs applied to Fluid Minerals (Appendix J, Required Design Features for Fluid Minerals, of the Draft LUPA/EIS), when wells are used for solution mining.	Same as Alternative B.	For existing nonenergy leasable mineral leases in PHMA, apply the applicable solid minerals RDFs (Appendix I of the Draft LUPA/EIS) and Fluid Minerals RDFs (Appendix J of the Draft LUPA/EIS) when permitting site-specific projects on the lease (e.g., wells used for solution mining), unless at least one of the following can be demonstrated in the NEPA analyses associated with the specific project: • A specific design feature is documented to not be applicable to the site-specific conditions of the project/activity; • A proposed design feature or BMP is determined to provide equal or better protection for Greater Sage-Grouse or its habitat; • Analyses conclude that following a specific feature will provide no more protection to Greater Sage-Grouse or its habitat than not following it, for the specific project being proposed.	No similar action.	Where applicable and technically feasible, apply BMPs as mandatory COAs within core areas for nonenergy solid leasables.
Coal					
<u>Leases Associated with Surface Mining:</u> Under current management there are no designated PHMA. Approximately 22,900 acres of mapped occupied Greater Sage-Grouse habitat is unacceptable for further consideration for leasing Map 2.39, Coal Suitability–Alternative A). For all other areas, upon receipt of a coal lease application in Greater Sage-Grouse habitat, the BLM will review criterion 15 set forth in 43 CFR 3461.5 to determine if the specific area being proposed for lease is suitable. If the BLM and the State of Utah "jointly agree" the federal lands do not contain Greater Sage-Grouse habitat that is "of high interest to the state and which are essential for maintaining [this] priority wildlife…species," the area shall be considered suitable for further coal leasing consideration. The determination would be that "all or certain stipulated methods of coal mining would not have a significant long-term impact" on the Greater Sage-Grouse. However, special conditions, conservation measures, and pre-project mitigation requirements that include successful criteria of habitat suitability and Greater Sage-Grouse occupancy could be required as	<u>Leases Associated with Surface Mining:</u> In PHMA, find unsuitable all surface mining of coal under the criteria set forth in 43 CFR 3461.5 (3,328,760 acres) (Map 2.40, Coal Suitability–Alternative B).	<u>Leases Associated with Surface Mining:</u> In mapped occupied habitat, find unsuitable all surface mining of coal under the criteria set forth in 43 CFR 3461.5 (4,008,580 acres) (Map 2.41, Coal Suitability–Alternative C).	<u>Leases Associated with Surface Mining:</u> No areas of Greater Sage-Grouse mapped occupied habitat would meet the unsuitability criterion 15. The 22,900 acres of mapped occupied Greater Sage-Grouse habitat that are currently unsuitable for surface mining of coal resources would continue to be unsuitable. The remainder of the mapped occupied Greater Sage-Grouse habitat would not be unsuitable for further consideration of coal leasing under surface mining methods. Where coal leasing that involves surface mining methods is considered in PHMA, apply the following stipulations: • new disturbance associated with the development does not result in total disturbance exceeding the 5 percent disturbance limit. • the development meets noise restrictions; • the development meets tall structure restrictions; • initial activity within the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); • where possible, the development is located adjacent to the footprint of existing disturbances; and • extraction or crushing operations do not occur in Greater Sage-Grouse habitat during seasonal restriction times; however,	<u>Leases Associated with Surface Mining:</u> SGMAs would be considered to be suitable for further coal leasing consideration. However, special conditions, conservation measures, and pre-project mitigation requirements that include successful criteria of habitat suitability and Greater Sage-Grouse occupancy could be required as identified during the leasing process to protect Greater Sage-Grouse habitat. Impacts on Greater Sage-Grouse within leasing areas would be limited or ameliorated through the use of the following stipulations: • New permanent disturbance, including structures, fences, and buildings, should not be located within the occupied lek itself. • No permanent disturbance within 1 mile of an occupied lek, unless it is not visible to the Greater Sage-Grouse using the lek. • New permanent tall structures should not be located within 1 mile of the lek, if visible by the birds within the lek. • A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season. • Apply time-of-day stipulations when the lek is active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise)	<u>Leases Associated with Surface Mining:</u> Upon receipt of a coal lease application on which underground mining methods that include associated surface uses and impacts in Greater Sage-Grouse core areas are foreseen, apply Criterion 15 and identify the area as suitable for further coal leasing consideration after consultation with the state and where applicable, surface management agency, to determine that all or certain stipulated methods of coal mining will not have a significant long-term impact on the Greater Sage-Grouse. Special conditions could be required as identified during the leasing process to protect Greater Sage-Grouse resources.

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identified during the leasing process to protect Greater Sage-Grouse habitat. If, upon receipt of a coal lease application, the BLM and the State of Utah "jointly agree" that the federal lands contain Greater Sage-Grouse habitat that is "of high interest to the state and which are essential for maintaining [this] priority wildlife…species," the area shall be considered unsuitable for further coal leasing consideration.			removal of material from existing stockpiles would be allowed.	• Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats: ○ On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. ○ In nesting and brood-rearing areas from Apr 1 – Aug 15. ○ In winter habitat from Nov 15 – Mar 15. ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist. • Avoid disturbance within SGMAs (nesting and brood-rearing areas, winter habitat, other habitat), if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation). • After minimization, mitigation is required (see mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting, winter, or other habitat, within SGMAs. • Manage SGMAs to avoid barriers to migration, if applicable.	
<u>Leases Associated with Underground Mining:</u> Under current management there are no designated PHMA. Most LUPs do not identify areas that are specifically closed to coal leasing. Some LUPs apply stipulations identified for fluid mineral leasing to all surface disturbing activities, others have coal-specific stipulations, or mineral specific standards and guidelines. Surface use stipulations may also be identified during site-specific NEPA, or be identified through Unsuitability Determination at 43 CFR 3461.	<u>Leases Associated with Underground Mining:</u> Grant no new mining leases unless all surface disturbances (appurtenant facilities) are placed outside of the PHMA.	<u>Leases Associated with Underground Mining:</u> Same as Alternative B.	<u>Leases Associated with Underground Mining:</u> Consider leasing PHMA for coal that would be extracted through <u>underground</u> mining. Require the following stipulations, as applicable, as part of any new mining leases or lease modification for <u>underground</u> coal mines: • Appurtenant facilities would not be placed within PHMA, where technically feasible. • If placement of facilities outside of PHMA is not technically feasible while still protecting Greater Sage-Grouse habitat, surface disturbances associated with the lease can be allowed if they meet the following criteria: ○ No surface facilities (e.g., mine entrances, vent shafts, etc.) would be located within	<u>Leases Associated with Underground Mining:</u> Consider leasing SGMAs for coal that would be extracted through underground mining. Impacts would be limited or ameliorated through adherence to the following stipulations: • New permanent disturbance, including structures, fences, and buildings, should not be located within the occupied lek itself. • No permanent disturbance within 1 mile of an occupied lek, unless it is not visible to the Greater Sage-Grouse using the lek. • New permanent tall structures should not be located within 1 mile of the lek, if visible by the birds within the lek.	<u>Leases Associated with Underground Mining:</u> Upon receipt of a coal lease application proposing underground mining methods that include surface operations and impacts within Greater Sage-Grouse core areas, apply Criterion 15 and identify the area as suitable for further coal leasing consideration after consultation with the state and where applicable, surface management agency, to determine that all or certain stipulated methods of coal mining will not have a significant long-term impact on the Greater Sage-Grouse. Stipulated methods may include (but not limited to) underground mining methods with no placement of surface facilities.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			1 mile of an occupied lek that is located within PHMA. ○ the long-term development meets noise restrictions, including from supporting traffic along roads; ○ restrictions on permanent tall structures are required to minimize increases in predation and area avoidance by Greater Sage-Grouse; ○ the construction of the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); avoidance periods and necessary mitigation may be dependent on site specific conditions and noise levels; ○ Surface disturbance from the development does not exceed the 5 percent disturbance limit; and ○ Additional mitigation methods applicable to the specific project are conducted, including off-site mitigation. If the above criteria cannot be met, do not grant new leases or modifications.	• A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season. • Apply time-of-day stipulations when the lek is active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise) • Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats: ○ On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. ○ In nesting and brood-rearing areas from Apr 1 – Aug 15. ○ In winter habitat from Nov 15 – Mar 15. ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist. • Avoid disturbance within SGMAs (nesting and brood-rearing areas, winter habitat, other habitat), if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation). • After minimization, mitigation is required (see mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting, winter, or other habitat, within SGMAs. • Manage SGMAs to avoid barriers to migration, if applicable. • Recognize that surface vents associated with underground mining are essential for human safety, and must be permitted under the provisions of this alternative.	Unsuitability is not applied to underground operations without surface impacts (43 CFR 3461.1). This would be consistent with BLM IM WY-2012-019, which says that the BLM will assess potential impacts on Greater Sage-Grouse through the NEPA process, and that the State regulatory agency would apply this mitigation, as well protective measures consistent with the State Policy for solid leasable mining action at the permitting stage.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Under current management there are no designated GHMA. Most LUPs do not identify areas that are specifically closed to coal leasing. Some LUPs apply stipulations identified for fluid mineral leasing to all surface disturbing activities, others have coal-specific stipulations, or minerals-specific standards and guidelines. Surface use stipulations may also be identified during site-specific NEPA, or be identified through Unsuitability Determination at 43 CFR 3461.	No similar action.	No similar action.	Consider leasing GHMA for coal that would be extracted through underground mining. Minimize surface-disturbing or disrupting activities (including operations and maintenance) where needed to reduce the impacts of human activities on Greater Sage-Grouse habitats. Use additional, onsite or off-site mitigation to offset impacts as technically appropriate (determined by local options/ needs). Determine which measures are needed to protect GHMA during activity level planning, which may include applying the criteria identified for PHMA. The above restrictions may be waived if off-site mitigation coordinated with BLM/Forest Service and the State of Utah is successfully completed in PHMA.	Greater Sage-Grouse habitat outside SGMAs would not be managed for the conservation of the species. No specific management actions are provided for this habitat.	No similar action.
Under current management there are no designated PHMA. Exploration activities are required to comply with season stipulations (i.e., brooding/nesting and winter) included in existing plans, where such exists.	No similar action.	No similar action.	Exploration activities within PHMA needed to meet data adequacy standards associated with potential coal leasing would be required to comply to the following criteria: • Surface disturbance from the activity does not exceed the 5 percent disturbance limit; • The activity does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); • Any facilities associated with exploration activities will be removed before the next breeding season; and • Any disturbances will be reclaimed.	Exploration activities within SGMAs would be required to comply with the same stipulations identified for leasing and development, above.	Coal exploration activities are allowed in Greater Sage-Grouse core areas if acceptable after density calculation with applicable stipulations.
No similar action.	For coal mining operations on existing leases: Underground mining: in PHMA, place any new appurtenant facilities outside of PHMA. Where new appurtenant facilities associated with the existing lease cannot be located outside the PHMA, collocate new facilities within existing disturbed areas. If this is not possible, then build any new appurtenant facilities to the absolute minimum standard necessary.	Same as Alternative B.	Same as Alternative B	No similar action.	Upon receipt of a coal lease application proposing underground mining methods that include surface operations and impacts within Greater Sage-Grouse core area, apply Criterion 15 and identify the area as suitable for further coal leasing consideration after consultation with the state and where applicable, surface management agency, to determine that all or certain stipulated methods of coal mining will not have a significant long-term impact on the Greater Sage-Grouse. Stipulated methods may include (but not limited to) underground mining methods with no placement of surface facilities. Unsuitability is not applied to underground operations without surface impacts (43 CFR 3461.1) This would be consistent with BLM IM WY-2012-019 says that BLM will assess potential impacts on Greater Sage-Grouse through the NEPA process, and that the State regulatory agency would apply this

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
					mitigation, as well protective measures consistent with the State Policy for solid leasable mining action at the permitting stage.
All LUPs include management actions based on specific program direction. These management actions require the BLM to consider measures that would reduce or eliminate impact of human activities during activity level planning.	For coal mining operations on existing leases: In GHMA, apply minimization of surface-disturbing or disrupting activities (including operations and maintenance) where needed to reduce the impacts of human activities on important seasonal Greater Sage-Grouse habitats. Apply these measures during activity level planning. Use additional, effective mitigation to offset impacts as appropriate (determined by local options/needs).	Same as Alternative B.	Same as Alternative B	Greater Sage-Grouse habitat outside SGMAs would not be managed for the conservation of the species. No specific management actions are provided for this habitat.	No similar action.
Locatable Minerals					
Under current management there are no designated PHMA. Approximately 498,700 acres of mapped occupied Greater Sage-Grouse habitat are recommended for withdrawal from mineral entry (Map 2.26).	In PHMA, recommend withdrawal from mineral entry based on risk to the Greater Sage-Grouse and its habitat from conflicting locatable mineral potential and development (3,650,900 acres) (Map 2.27). • Make any existing claims within the withdrawal area subject to validity exams or buy out. Include claims that have been subsequently determined to be null and void in the recommended withdrawal. • In plans of operations required prior to any proposed surface disturbing activities, include the following: ○ Additional, effective mitigation in perpetuity for conservation (In accordance with existing policy, BLM IM 2008-204). Example: purchase private land and mineral rights or severed federal mineral rights within the PHMA and deed to US Government). ○ Consider seasonal restrictions if deemed effective.	In mapped occupied habitat, recommend withdrawal from mineral entry based on risk to the Greater Sage-Grouse and its habitat from conflicting locatable mineral potential and development (4,008,580 acres) (Map 2.28). Everything else, same as Alternative B.	PHMA and GHMA that are not already withdrawn or recommended for withdrawal would be available for locatable mineral entry. To the extent allowable by law, work with claimants to apply the seasonal restrictions and use restrictions for PHMA and GHMA identified in the Greater Sage-Grouse section. To the extent consistent with the rights of a mining claimant under existing laws and regulations, limit surface disturbance from locatable mineral development in PHMA within leks, nesting habitat, and early brood-rearing habitat and as possible, limit surface disturbance to under the 5 percent disturbance limit, or provide for enhancement of PHMA through on-site and/or off-site mitigation. Regardless of whether agreements with the claimant incorporates the 5 percent disturbance limit, disturbance from locatable mineral development would be included as disturbance when calculating disturbance for other land uses.	Greater Sage-Grouse habitat within or outside of SGMAs that is not already withdrawn or recommended for withdrawal would be available for locatable mineral entry. To the extent allowable by laws and regulations and to the extent the claimant would be willing to apply the standards, impacts would be limited or ameliorated through the use of the following conservation measures: • New permanent disturbance, including structures, fences, and buildings, should not be located within the occupied lek itself. • No permanent disturbance within 1 mile of an occupied lek, unless it is not visible to the Greater Sage-Grouse using the lek. • New permanent tall structures should not be located within 1 mile of the lek, if visible by the birds within the lek. • A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season. • Apply time-of-day stipulations when the lek is active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise) • Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats: ○ On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding.	Recommend withdrawal from mineral entry based on risk to the Greater Sage-Grouse and its habitat in core areas from conflicting locatable mineral potential and development, and the ability to meet the Density Disturbance Calculation Tool thresholds. Operators may be requested to submit modifications to the accepted notice or approved plan of operations so that the operations minimally impact Greater Sage-Grouse core area habitats. The Authorized Officer may convey to the operator suggested conservation measures, based upon the notice or plan level operations and the geographic area of those operations [also called the project area which is defined in 43 CFR 3809.5]. These suggested conservation measures include measures that support the overall goals and objectives of the core population area strategy, though measures listed for protection of 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. 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

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
				○ In nesting and brood-rearing areas from Apr 1 – Aug 15. ○ In winter habitat from Nov 15 – Mar 15. ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist. • Avoid disturbance within SGMAs (nesting and brood-rearing areas, winter habitat, other habitat), if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation). • After minimization, mitigation is required (see mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting, winter, or other habitat, within SGMAs. • Manage SGMAs to avoid barriers to migration, if applicable. • Recognize that surface vents associated with underground mining are essential for human safety, and must be permitted under the provisions of this alternative.	modifications thereto] and 30 day completeness review of plans of operations [or modifications thereto], the proposed project area(s) where exploration, development, mining, access and reclamation would take place should be reviewed for overlap of Greater Sage-Grouse core areas in the corporate geographic information systems (GIS) database. If there is overlap, the BLM/Forest Service Authorized Officer may notify the operator of ways that they may minimize impacts on core area habitats and request the operator to amend its notice or plan to include such measures. The request to amend the submitted notice or plan of operations must make clear that the operator's compliance is not mandatory and that including such measures is not a requirement for completeness of either the notice or a plan of operations, nor is it a condition of acceptance of the notice or approval of the plan of operations. <u>Existing Notices and Approved Plans of Operations under 43 CFR 3809[2]:</u> For projects that overlap core areas, operators may be requested to submit modifications to the accepted notice or approved plan of operations so that the operations minimally impact core area habitats. The Authorized Officer may convey to the operator suggested conservation measures, based upon the notice or plan level operations and the geographic area of those operations [also called the project area which is defined in CFR 3809.5]. These suggested conservation measures include measures that support the overall goals and objectives of the core population area strategy may not be reasonable or applicable to the BLM's determination of whether the proposed operations will cause unnecessary or undue degradation under 43 CFR 3809.5. The request containing the suggested conservation measures must make clear that the operator's compliance is not mandatory. Notices or Plans of Operation, or modifications thereto, submitted following the issuance of this guidance: As part of the 15 day completeness review of notices [or

2 These regulations apply to the exploration and development of locatable minerals on placer claims and lode claims, as well as exploration on tunnel sites and mineral processing operations on mill sites. The location and maintenance of claims and sites are regulated under 43 CFR Subpart 3830.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
					modifications thereto] and 30 day completeness review of plans of operations [or modifications thereto], the proposed project area(s) where exploration, development, mining, access and reclamation would take place should be reviewed for overlap of Greater Sage-Grouse core areas in the corporate GIS database. If there is overlap, the BLM Authorized Officer may notify the operator of ways that they may minimize impacts on core area habitats and request the operator to amend its notice or plan to include such measures. The request to amend the submitted notice or plan of operations must make clear that the operator's compliance is not mandatory and that including such measures is not a requirement for completeness of either the notice or a plan of operations, nor is it a condition of acceptance of the notice or approval of the plan of operations.
No similar action.	BMPs outlined in Appendix I of the Draft LUPA/EIS would be applied as appropriate and to the extent allowable by law within PHMA.	Same as Alternative B.	Apply the BMPs identified in Appendix E (of the NTT report) (included as Appendix I of the Draft LUPA/EIS), to the extent allowable by law, unless at least one of the following can be demonstrated in the NEPA analyses associated with the specific project: • A specific design feature is documented to not be applicable to the site-specific conditions of the project/activity; • A proposed design feature or BMP is determined to provide equal or better protection for Greater Sage-Grouse or its habitat; • Analyses conclude that following a specific feature will provide no more protection to Greater Sage-Grouse or its habitat than not following it, for the specific project being proposed.	No similar action.	Where applicable and technically feasible, BMPs would be applied as appropriate and to the extent allowable by law within core Greater Sage-Grouse habitat for Locatable Minerals.
Mineral Materials					
Manage mineral materials in Greater Sage-Grouse habitat as follows (Map 2.42, Saleable Minerals Materials–Alternative A): • open to mineral materials development: 3,935,080 acres • closed to mineral materials development: 73,500 acres Some LUPs apply stipulations identified for fluid mineral leasing to all surface disturbing activities, others have mineral-specific standards and guidelines. Surface use restrictions may also be identified during site-specific NEPA.	Manage mineral materials in Greater Sage-Grouse habitat as follows (Map 2.43, Saleable Minerals Materials–Alternative B): • open to mineral materials development: 668,580 acres • closed to mineral materials development: 3,340,000 acres	Manage mineral materials in Greater Sage-Grouse habitat as follows (Map 2.44, Saleable Minerals Materials–Alternative C): • open to mineral materials development: 0 acres • closed to mineral materials development: 4,008,580 acres	Manage mineral materials in Greater Sage-Grouse habitat as follows (Map 2.45, Saleable Minerals Materials–Alternative D): • open to mineral materials development: 688,280 acres • closed to commercial mineral materials development, open to non-commercial: 2,967,500 acres • closed to mineral materials development: 352,800 acres	Manage mineral materials in Greater Sage-Grouse habitat as follows (Map 2.46, Saleable Minerals Materials–Alternative E): • open to mineral materials development: 3,935,080 acres • closed to mineral materials development: 73,500 acres	Acreages for mineral materials under Alternative E2 are reported under E1. The portions of the decision area specific to Wyoming are included in those acres, though the stipulations, as applicable, are derived from Alternative E2.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Same as previous decision.	Close PHMA to mineral material sales.	Close mapped occupied habitat to mineral material sales.	Areas, whether within mapped occupied habitat or not, within 1 mile of an occupied lek in either PHMA or GHMA would be closed new to mineral material development. PHMA beyond 1 mile of an occupied lek that is located within PHMA would be closed to commercial development of mineral materials. Non-commercial development of mineral materials (e.g., community pits, free-use permits) within PHMA beyond 1 mile of an occupied lek, if the lek is located within PHMA, could only occur if the following conditions are met: • the development meets noise restrictions; • the development meets tall structure restrictions; • initial activity within the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter); • new disturbance associated with the development does not result in total disturbance exceeding the 5 percent disturbance limit. • where possible, the development is located adjacent to the footprint of existing disturbances; and • extraction or crushing operations do not occur in Greater Sage-Grouse habitat during seasonal restriction times; however, removal of material from existing stockpiles would be allowed. • new developments are located within 0.25 mile of existing roads. Development of mineral materials within GHMA beyond 1 mile of an occupied lek, if the lek is located within GHMA, could occur if: • the development meets noise restrictions; • the development meets tall structure restrictions; • initial activity within the development does not occur during sensitive seasonal periods (i.e., breeding and nesting, brood rearing, winter). PHMA and GHMA beyond the 1 mile closures would require discussion with the State of Utah during project implementation,	SGMAs would be open to mineral materials. Impacts would be limited or ameliorated through the use of the following stipulations: • New permanent disturbance, including structures, fences, and buildings, should not be located within the occupied lek itself. • No permanent disturbance within 1 mile of an occupied lek, unless it is not visible to the Greater Sage-Grouse using the lek. • New permanent tall structures should not be located within 1 mile of the lek, if visible by the birds within the lek. • A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season. • Apply time-of-day stipulations when the lek is active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise) • Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats: ○ On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding. ○ In nesting and brood-rearing areas from Apr 1 – Aug 15. ○ In winter habitat from Nov 15 – Mar 15. ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist. • Avoid disturbance within SGMAs (nesting and brood-rearing areas, winter habitat, other habitat), if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation). • After minimization, mitigation is required (see mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of surface	Core areas would be open to mineral material exploration, sales, and free use permits, except in areas that are closed to leasing or NSO due to the need to protect other resources values. In core areas, locate, where possible, mineral material mining sites in or adjacent to existing disturbances to minimize number of disturbances, in order to not exceed the 1 site per 640 acres and Density Disturbance Calculation Tool 5 percent disturbance threshold. Mineral material extraction or crushing operations would be prohibited in core areas during seasonal restriction times; however, removal of material from existing stockpiles would be allowed.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			and implementation of BMPs (e.g., anti-perch devices for raptors, etc.). The stipulations within GHMA (closure or restrictions) could be waived, except for the seasonal stipulations, if off-site mitigation coordinated with the proponent, BLM/Forest Service and the State of Utah is successfully completed in PHMA.	area of nesting, winter, or other habitat, within SGMAs. • Manage SGMAs to avoid barriers to migration, if applicable.	
No similar action.	In PHMA, restore mineral materials pits no longer in use to meet Greater Sage-Grouse habitat conservation objectives.	Same as Alternative B.	No similar action.	No similar action.	Consider restoration of saleable mineral pits no longer in use to meet Greater Sage-Grouse habitat conservation objectives. Emphasis needs to be given to reclamation/restoration of core areas as a viable long term goal to improve the Greater Sage-Grouse habitat.
Fluid Minerals					
Manage fluid mineral leasing in Greater Sage-Grouse habitat as follows (Map 2.48, Fluid Minerals Leasing Categories–Alternative A): • open to leasing, subject to standard stipulations: 1,333,380 acres • open to leasing, subject to CSU and/or timing (TL) stipulations: 1,300,400 acres • open to leasing, subject to NSO stipulations: 483,500 acres • closed to leasing: 138,500 acres • no fluid minerals allocation: 187,000 acres • planning decision not mapped: 565,800 acres Manage fluid minerals outside of Greater Sage-Grouse habitat but in population areas as follows: • open to leasing, subject to standard stipulations: 893,100 acres • open to leasing, subject to CSU and/or TL stipulations: 580,700 acres • open to leasing, subject to NSO stipulations: 594,100 acres • closed to leasing: 196,800 acres • no fluid minerals allocation: 285,700 acres • planning decision not mapped: 234,500 acres	Manage fluid mineral leasing in Greater Sage-Grouse habitat as follows (Map 2.49, Fluid Minerals Leasing Categories–Alternative B): • open to leasing, subject to standard stipulations: 246,680 acres • open to leasing, subject to CSU and/or TL stipulations: 255,900 acres • open to leasing, subject to NSO stipulations: 24,400 acres • closed to leasing: 3,341,300 acres • no fluid minerals allocation: 43,400 acres • planning decision not mapped: 96,900 acres Manage fluid minerals outside of Greater Sage-Grouse habitat but in population areas the same as Alternative A.	Manage fluid mineral leasing in Greater Sage-Grouse habitat as follows (Map 2.50, Fluid Minerals Leasing Categories–Alternative C): • open to leasing, subject to standard stipulations: 0 acres • open to leasing, subject to CSU and/or TL stipulations: 0 acres • open to leasing, subject to NSO stipulations: 0 acres • closed to leasing: 3,821,580 acres • no fluid minerals allocation: 187,000 acres • planning decision not mapped: 0 acres Manage fluid minerals outside of Greater Sage-Grouse habitat but in population areas the same as Alternative A.	Manage fluid mineral leasing in Greater Sage-Grouse habitat as follows (Map 2.51, Fluid Minerals Leasing Categories–Alternative D): • open to leasing, subject to standard stipulations: 0 acres • open to leasing, subject to CSU and/or TL stipulations: 1,829,980 acres • open to leasing, subject to NSO stipulations: 1,853,100 acres • closed to leasing: 138,500 acres • no fluid minerals allocation: 187,000 acres • planning decision not mapped: 0 acres Manage fluid minerals outside of Greater Sage-Grouse habitat but in population areas as follows: • open to leasing, subject to standard stipulations: 761,100 acres • open to leasing, subject to CSU and/or TL stipulations: 765,300 acres • open to leasing, subject to NSO stipulations: 598,800 acres • closed to leasing: 196,800 acres • no fluid minerals allocation: 285,700 acres • planning decision not mapped: 177,200 acres	Manage fluid mineral leasing in Greater Sage-Grouse habitat as follows (Map 2.52, Fluid Minerals Leasing Categories–Alternative E): open to leasing, subject to standard stipulations: 247,200 acres • open to leasing, subject to CSU and/or TL stipulations: 2,637,580 acres • open to leasing, subject to NSO stipulations: 688,100 acres • closed to leasing: 138,500 acres • no fluid minerals allocation: 187,000 acres • planning decision not mapped: 110,200 acres Manage fluid minerals outside of Greater Sage-Grouse habitat but in population areas as follows: • open to leasing, subject to standard stipulations: 858,600 acres • open to leasing, subject to CSU and/or TL stipulations: 630,100 acres • open to leasing, subject to NSO stipulations: 594,100 acres • closed to leasing: 196,800 acres • no fluid minerals allocation: 285,700 acres • planning decision not mapped: 219,600 acres	Acreages for fluid minerals under Alternative E2 are reported under E1. The portions of the decision area specific to Wyoming are included in those acres, though the stipulations, as applicable, are derived from Alternative E2. Exceptions waivers, and modifications to lease stipulations, COAs, terms and conditions, etc. for Greater Sage-Grouse will continue to be considered on a case-by-case basis consistent with approved LUPs and other BLM/Forest Service policy and regulations as they relate to exceptions within Greater Sage-Grouse core and non-core areas.
Unleased Federal Fluid Mineral Estate					
<u>Unleased Areas within PHMA:</u> Under current management there are no designated PHMA. Fluid mineral leasing in Greater Sage-Grouse mapped occupied habitat will be managed as discussed above. Most LUPs include a management action that prohibits surface disturbing or other	<u>Unleased Areas within PHMA:</u> Close PHMA areas to fluid mineral leasing. Upon expiration or termination of existing leases, do not accept nominations/expressions of interest for parcels within PHMA.	<u>Unleased Areas within PHMA:</u> No new leases or permits will be issued in mapped occupied Greater Sage-Grouse habitat. Upon expiration or termination of existing leases, do not accept nominations/expressions of interest for parcels within mapped occupied habitat.	<u>Unleased Areas within PHMA:</u> Areas outside PHMA but within 1 mile of an occupied lek, if the lek is located within PHMA, would be open to leasing fluid minerals, subject to NSO stipulations. PHMA within 4 miles of an occupied lek, if the lek is located within PHMA, would be	<u>Unleased Areas within SGMAs Habitat:</u> SGMAs would be designated as open to oil and gas leasing subject to NSO and CSU stipulations (see list below) and the timing stipulations. Habitat within SGMAs would have no permanent disturbance (NSO stipulation)	<u>Unleased Areas within Core Areas:</u> Fluid mineral leasing would be allowed in core areas, except in areas that are unavailable for leasing due to the need to protect other sensitive resources (Map 2.52). Work with project proponents to site their projects in locations that minimize impacts

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

disruptive within Greater Sage-Grouse breeding and nesting habitat within a certain distance and between certain dates. The protect buffers around leks vary from 0.25 miles and 3.1 miles. In general, recently completed plans include a larger protective buffer.
 	
Recently completed plans also include a management action that prohibits surface disturbing activity or disruptive activities during certain dates in winter habitat.
			designated as open to oil and gas leasing subject to NSO stipulations (see Appendix K, Stipulations Associated with Land Use Authorizations, of the Draft LUPA/EIS for modifications, waivers, and exceptions).
			
			PHMA beyond 4 miles of an occupied lek, if the lek is located within PHMA, would be designated as open to oil and gas leasing subject to CSU stipulations (see list below) and the following timing stipulations:
			• Winter habitat from Nov 15 – Mar 15
			• Brood rearing habitat from Apr 15 – Jul 15
			• Breeding and nesting habitat from Feb 15 – Jun 15
			
			Where leasing/development is allowed within PHMA, development could occur if it adhered to the following CSU stipulations:
			• the development meets noise restrictions;
			• the development meets tall structure restrictions;
			• operators must submit a site-specific plan of development for roads, wells, pipelines and other infrastructure prior to any development being authorized; this plan should outline how development on the lease will limit habitat fragmentation; and
			• the development does not exceed the 5 percent disturbance limit.
			
			Areas outside PHMA and within 4 miles of an occupied lek, if the lek is located within PHMA, would be designated as open to oil and gas leasing subject to CSU stipulations. Development in these areas could occur if it adhered to the following CSU stipulations:
			• the development meets noise restrictions; and
			• the development meets tall structure restrictions.
			
			The RDFs identified in Appendix J of the Draft LUPA/EIS would be attached as lease notices to all new leases in PHMA and would be applied during the permitting process as COAs, unless at least one of the following can be demonstrated in the NEPA analyses associated with the specific project:
			• A specific design feature is documented to not be applicable to the site-specific conditions of the project/activity;
			• A proposed design feature or BMP is determined to provide equal or better
				within 1 mile of an occupied lek, if the lek is located with an SGMA, unless the disturbance is not visible to the Greater Sage-Grouse using the lek (see Appendix K of the Draft LUPA/EIS for modifications, waivers, and exceptions).
				
				Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats (specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist):
				• Winter habitat from Nov 15 – Mar 15.
				• Nesting and brood-rearing areas from Apr 1 – Aug 15.
				• On leks from Feb 15 – May 15
				
				Where leasing/development is allowed within SGMAs, impacts from development would be limited or ameliorated through the use of the following CSU stipulations:
				• New permanent disturbance, including structures, fences, and buildings, should not be located within the occupied lek itself.
				• New permanent tall structures should not be located within 1 mile of the lek, if visible by the birds within the lek.
				• A disturbance outside the lek should not produce noise which rises more than 10 decibels above the ambient (background) level at the edge of the lek during breeding season.
				• Apply time-of-day stipulations when the lek is active (e.g., no activity from 2-hours before sunrise to 2-hours after sunrise)
				• Avoid activities (construction, vehicle noise, etc.) in the following seasons and habitats:
				  ○ On leks from Feb 15 – May 15 to avoid activities that will disturb lek attendance or breeding.
				  ○ In nesting and brood-rearing areas from Apr 1 – Aug 15.
				  ○ In winter habitat from Nov 15 – Mar 15.
				  ○ Specific time and distance determinations for seasonal stipulations would be based on site-specific conditions, in coordination with the local UDWR biologist.
				• Avoid disturbance within SGMAs (nesting and brood-rearing areas, winter habitat,
					on sensitive resources. If the lease is partially or entirely within core areas, subject to topographic and other environmental constraints, require any development within core habitat to be placed in the area least harmful to Greater Sage-Grouse based on vegetation, topography, or other habitat features.
					
					Greater Sage-Grouse leks inside core areas, surface occupancy and surface disturbing activities would be prohibited on or within a six tenths (0.6) mile radius of the perimeter of occupied Greater Sage-Grouse leks. Additionally, disruptive activity is restricted on or within a six tenths (0.6) mile radius of the perimeter of occupied Greater Sage-Grouse leks from 6:00 pm to 8:00 am from March 1 – May 15, except for production/maintenance activities for existing permits. Noise levels at the 0.6 mile perimeter of the lek, should not exceed 10 decibels above ambient noise.
					
					Surface disturbing and/or disruptive activities are prohibited from March 15–June 30 within core areas, regardless of distance from a lek and the suitability of the habitat. Where credible data support different timeframes for this seasonal restriction, dates may be expanded by up to 14 days prior to or subsequent to the above dates.
					
					Within winter concentration areas, surface disturbing and/or disruptive activities in Greater Sage-Grouse winter concentration areas are prohibited from December 1– March 14 to protect priority populations of Greater Sage-Grouse that use these winter concentration habitats (independent of habitat suitability). Protection of additional areas of winter concentration that are not located within the current core area boundaries, may be necessary where winter concentration areas or important late brood-rearing areas are identified as supporting populations of Greater Sage-Grouse that attend leks within core areas. Appropriate seasonal timing restrictions and habitat protection measures must be considered and evaluated in all winter concentration areas habitats identified (independent of habitat suitability).

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			protection for Greater Sage-Grouse or its habitat; • Analyses conclude that following a specific feature will provide no more protection to Greater Sage-Grouse or its habitat than not following it, for the specific project being proposed. A minimum lease size of 640 contiguous acres of federal mineral estate would be applied within PHMA. Smaller parcels may be leased only when 640 contiguous acres of federal mineral estate is not available and leasing is necessary to remain in compliance with laws, regulations and policy; for example, to protect the federal mineral estate from drainage or to commit the federal mineral estate to unit or communitization agreements.	other habitat), if possible. Project proponents must demonstrate why avoidance is not possible. • If avoidance in SGMAs is not possible, minimize as appropriate to the area (e.g., try to minimize effects by locating development in habitat of the least importance, take advantage of topographic to screen the disturbance, or maintaining and enhancing wet meadow and riparian vegetation). • After minimization, mitigation is required (see mitigation section). • Cumulative new permanent disturbance should not exceed 5 percent of surface area of nesting, winter, or other habitat, within SGMAs. • Manage SGMAs to avoid barriers to migration, if applicable.	Work with proponents to limit project related noise where it would be expected to reduce functionality of habitats that support core area populations. Evaluate the potential for limitation of new noise sources on a case-by-case basis as appropriate. Forest Service's near-term goal is to limit noise sources that would be expected to negatively impact core area Greater Sage-Grouse populations and to continue to support the establishment of ambient baseline noise levels for occupied core area leks. As additional research and information emerges, specific new limitations appropriate to the type of projects being considered will be evaluated and appropriate limitations will be implemented where necessary to minimize potential for noise impacts on Greater Sage-Grouse core population behavioral cycles. A minimum lease size of 640 contiguous acres of federal mineral estate would be applied within core areas. Smaller parcels may be leased only when 640 contiguous acres of federal mineral estate is not available and leasing is necessary to remain in compliance with laws, regulations and policy; for example, to protect the federal mineral estate from drainage or to commit the federal mineral estate to unit or communitization agreements.
Under current management there are no designated GHMA. Fluid mineral leasing in Greater Sage-Grouse mapped occupied habitat will be managed as discussed above.	No similar action.	No GHMA are identified.	<u>Unleased Areas within GHMA:</u> Any areas, whether within mapped occupied Greater Sage-Grouse habitat or not, within 1 mile of an occupied lek, if the lek is located within GHMA, would be open to leasing fluid minerals, subject to NSO stipulations. GHMA beyond 1 mile of an occupied lek, if the lek is located within GHMA, would be designated as open to oil and gas leasing subject to CSU stipulations (see list below) and the following timing stipulations: • Winter habitat from Nov 15 – Mar 15 • Brood rearing habitat from Apr 15-Jul 15 • Breeding and nesting habitat from Feb 15-Jun 15 Where leasing/development is allowed within GHMA, development could occur if it adhered to the following CSU stipulations: • the development meets noise restrictions; and	Greater Sage-Grouse habitat outside SGMAs would not be managed for the conservation of the species. No specific management actions are provided for this habitat.	<u>Unleased Areas within Non-Core Areas:</u> Greater Sage-Grouse leks in non-core areas, surface occupancy and Surface occupancy and surface disturbing activities would be prohibited or restricted on or within a one-quarter (0.25) mile radius of the perimeter of occupied Greater Sage-Grouse leks. In nesting/early brood-rearing habitat in non-core areas, surface disturbing and/or disruptive activities are limited from March 15–June 30 to protect Greater Sage-Grouse nesting and early brood rearing habitats within 2 miles of the lek perimeter of any occupied lek located outside core areas. Where credible data support different timeframes for this restriction, dates may be expanded by 14 days prior or subsequent to the above dates.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			• the development meets tall structure restrictions. GHMA within and beyond the 1.0 mile NSO area would require collaboration with the State of Utah during project implementation, and implementation of BMPs (e.g., anti-perch devices for raptors). The RDFs identified in Appendix J of the Draft LUPA/EIS would be attached as lease notices to all new leases in GHMA and would be applied as COAs during the permitting process, unless at least one of the following can be demonstrated in the NEPA analyses associated with the specific project: • A specific design feature is documented to not be applicable to the site-specific conditions of the project/activity; • A proposed design feature or BMP is determined to provide equal or better protection for Greater Sage-Grouse or its habitat; • Analyses conclude that following a specific feature will provide no more protection to Greater Sage-Grouse or its habitat than not following it, for the specific project being proposed. The stipulations within GHMA (closure or restrictions) could be waived, except for the seasonal stipulations, if off-site mitigation coordinated with BLM/Forest Service and the State of Utah is successfully completed in PHMA.		
Leased Federal Fluid Mineral Estate					
No similar action.	In PHMA, apply the following conservation measures through RMP implementation decisions (e.g., approval of an APD, Sundry Notice, Master Development Plans, Surface Use Plan of Operations {Forest Service}, etc.) and upon completion of the environmental record of review (43 CFR 3162.5), including appropriate documentation of compliance with NEPA. In this process evaluate, among other things: 1. Whether the conservation measure is "reasonable" (43 CFR 3101.1-2) with the valid existing rights; and 2. Whether the action is in conformance with the approved LUP.	Apply the following conservation measures as COAs at the project and well permitting stages, and through RMP implementation decisions and upon completion of the environmental record of review (43 CFR § 3162.5), including appropriate documentation of compliance with NEPA. In this process evaluate, among other things: 1. Whether the conservation measure is "reasonable" (43 CFR § 3101.1-2) with the valid existing rights; and 2. Whether the action is in conformance with the approved LUP.	In PHMA, apply the following conservation measures through implementation decisions (e.g., approval of an APD, Sundry Notice, Master Development Plans, Surface Use Plan of Operations {Forest Service}, etc.) and upon completion of the environmental record of review (43 CFR 3162.5), including appropriate documentation of compliance with NEPA. In this process evaluate, among other things: 1. Whether the conservation measure is "reasonable" (43 CFR 3101.1-2) with the valid existing rights; and 2. Whether the action is in conformance with the approved LUP.	All existing uses are explicitly recognized by this alternative and shall not be affected by the implementation of this alternative. The Greater Sage-Grouse conservation measures identified in the associated NEPA documents for each of these projects would continue to be implemented to protect Greater Sage-Grouse and its habitat. Provisions of this plan would not be added to the measures identified each specific project.	Overall consideration shall be given to minimizing the impact on Greater Sage-Grouse through a project design that avoids, minimizes, reduces, rectifies, and/or adequately compensates for direct and indirect impacts on Greater Sage-Grouse habitat or use and includes applicable and technical COAs. Selection and application of these measures shall be based on current science and research on the effect on important breeding, nesting, brood-rearing, and wintering areas. For proposed operations in core areas, the 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,

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
					phases of development over time, offsite mitigation, and expected periods of use associated with the proposed project. Seasonal habitats or project features related to potential Greater Sage-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 evaluate, among other things: 1. Whether the conservation measure is "reasonable" (43 CFR 3101.1-2) and consistent with valid existing rights; 2. Whether the action is in conformance with the approved LUP; and the effectiveness of the proposed mitigation measures. In cases where federal oil and gas leases have been issued without adequate stipulations for the protection of Greater Sage-Grouse or their habitats being provided in the applicable LUP decision, as revised or amended, consider their inclusion as permit COAs when approving exploration and development activities through completion of the environmental record of review (43 CFR 3162.5), including appropriate documentation of compliance with NEPA.
No similar action. Measures that reduce or eliminate impacts on Greater Sage-Grouse are considered on a case-by-case basis during implementation-level planning.	Do not allow new surface occupancy on federal leases within PHMA, this includes winter concentration areas (Doherty et al. 2008; Carpenter et al. 2010) during any time of the year. Consider an exception: • If the lease is entirely within PHMA, apply a 4-mile NSO around the lek, and limit permitted disturbances to 1 per section with no more than 3 percent surface disturbance in that section. • If the entire lease is within the 4 mile lek perimeter, limit permitted disturbances to 1 per section with no more than 3 percent surface disturbance in that section. Require any development to be placed at the most distal part of the lease from the lek, or, depending on topography and other habitat aspects, in an area that is less demonstrably harmful to Greater Sage-Grouse.	Same as Alternative B.	Apply the 5 percent disturbance limitation for development within PHMA. Where Greater Sage-Grouse conservation opportunities exist, work in collaboration with operators in PHMA and GHMA to minimize habitat loss, fragmentation, and direct and indirect effect on Greater Sage-Grouse and habitat. Issue Written Orders of the Authorized Officer (43 CFR 3161.2) requiring reasonable protective measures consistent with the lease terms where necessary to avoid or minimize effect on Greater Sage-Grouse populations and habitat. In areas where Greater Sage-Grouse populations have been substantially diminished, and where few birds remain, include actions in the authorization (e.g., siting/designing infrastructure, hastened habitat restoration) that will minimize habitat	All existing uses are explicitly recognized by this alternative and shall not be affected by the implementation of this alternative. The Greater Sage-Grouse conservation measures identified in the associated NEPA documents for each of these projects would continue to be implemented to protect Greater Sage-Grouse and its habitat. Provisions of this plan would not be added to the measures identified each specific project.	Many Greater Sage-Grouse seasonal habitats within and outside of core areas are encumbered by valid existing rights, such as mineral leases or existing ROW. Fluid mineral leases often will include less stringent lease stipulations than the timing, distance, and density requirements identified for consideration in this policy. Agencies (BLM/Forest Service) will work with proponents holding valid existing leases that include less stringent lease stipulations than the timing, distance, and density restrictions described within this plan to ensure that measurable 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 population management objectives set by the WGFD, are included in all project proposals.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
			loss and promote restoration of habitat when development activities cease. In addition to considering opportunities for onsite mitigation, collaboration with project proponents to develop and consider implementing appropriate off-site mitigation that the BLM/Forest Service, collaborating with the respective state wildlife agency, determines would avoid or minimize habitat and population-level effects. Where possible, off-site mitigation should occur within the same population area where the impact is incurred. When developing such mitigation, consider compensating for the short-term and long-term direct and indirect loss of Greater Sage-Grouse and its habitat. For geophysical exploration activities, include seasonal TLs and RDFs as permit COAs to eliminate or minimize surface-disturbing and disruptive activities within nesting and brood-rearing habitat and winter concentration areas. Ensure authorizations under Onshore Oil and Gas Order No. 7 (Disposal of Produced Water) consider the potential impacts on Greater Sage-Grouse from West Nile virus and develop appropriate mitigation measures and apply RDFs (Appendix L, Required Design Features for Preventing West Nile Virus, of the Draft LUPA/EIS).		
Most LUPs include a management action that prohibits surface disturbing or other disruptive within Greater Sage-Grouse breeding and nesting habitat within a certain distance and between certain dates. The protect buffers around leks vary from 0.25 miles and 3.1 miles. In general, recently completed plans include a larger protective buffer. Recently completed plans also include a management action that prohibits surface disturbing activity or disruptive activities during certain dates in winter habitat.	Apply a seasonal restriction on exploratory drilling that prohibits surface-disturbing activities during the nesting and early brood-rearing season in all PHMA during this period.	Apply a seasonal restriction on exploratory drilling that prohibits surface-disturbing activities during the nesting and brood-rearing season in mapped occupied Greater Sage-Grouse habitat during this period. This seasonal restriction shall also apply to related activities that are disruptive to Greater Sage-Grouse, including vehicle traffic and other human presence.	Same as Alternative B.	Allow exploratory drilling within SGMAs, subject to the same seasonal, NSO and CSU stipulations as would be applied to leases within SGMAs.	Greater Sage-Grouse nesting/early brood-rearing habitat in core areas: • Surface disturbing and/or disruptive activities are prohibited from March 15–June 30 within core areas regardless of distance from a lek and the suitability of the habitat. Where credible data support different timeframes for this seasonal restriction, dates may be expanded by up to 14 days prior to or subsequent to the above dates.
No similar action.	Closely examine the applicability of categorical exclusions in PHMA. If extraordinary circumstances review is applicable, determine whether those circumstances exist.	Same as Alternative B.	No similar action.	No similar action.	Within core and non-core areas, BLM/Forest Service should closely examine the applicability of categorical exclusions. If extraordinary circumstances review is applicable, BLM/Forest Service should determine whether those circumstances exist.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
No similar action.	Complete Master Development Plans in lieu of APD-by-APD processing for all but wildcat wells.	Same as Alternative B.	Within PHMA, operators must submit a site-specific plan of development for roads, wells, pipelines and other infrastructure prior to any development being authorized. The BLM/Forest Service will evaluate the plan through the NEPA process.	No similar action.	Consider or encourage Master Development Plans for projects involving multiple proposed disturbances within a lease or core area.
No similar action.	When permitting APDs on existing leases that are not yet developed, the proposed surface disturbance cannot exceed 3 percent for that area. Consider an exception if: • Additional, effective mitigation is demonstrated to offset the resulting loss of Greater Sage-Grouse (see Objectives). o When necessary, conduct additional, effective mitigation in 1) PHMA or – less preferably – 2) GHMA (dependent upon the area-specific ability to increase Greater Sage-Grouse populations). o Conduct additional, effective mitigation first within the same population area where the impact is realized, and if not possible then conduct mitigation within the same MZ as the impact, per 2006 WAFWA Strategy (pg. 2-17).	When permitting APDs on existing leases that are not yet developed, the proposed surface disturbance cannot exceed 3 percent per section for that area. Consider an exception if: • Additional, effective mitigation is demonstrated to offset the resulting loss of Greater Sage-Grouse (see Objectives). o When necessary, conduct additional, effective mitigation in PHMA. o Conduct additional, effective mitigation first within the same population area where the impact is realized, and if not possible then conduct mitigation within the same MZ as the impact, per 2006 WAFWA Strategy (pg. 2-17).	When permitting APDs on existing leases that are not yet developed, the proposed surface disturbance cannot exceed 5 percent for that area. Consider an exception if: • Additional, effective mitigation is demonstrated to offset the resulting loss of Greater Sage-Grouse (see Objectives). o When necessary, conduct additional, effective mitigation in 1) PHMA or – less preferably – 2) GHMA (dependent upon the area-specific ability to increase Greater Sage-Grouse populations). o Conduct additional, effective mitigation prioritized first onsite where the impacts occurred, then within the disturbance calculation area, then within the same population area where the impact is realized, and if not possible then conduct mitigation within the same MZ as the impact, per 2006 WAFWA Strategy (pg. 2-17).	All existing uses are explicitly recognized by this alternative and shall not be affected by the implementation of this alternative. The Greater Sage-Grouse conservation measures identified in the associated NEPA documents for each of these projects would continue to be implemented to protect Greater Sage-Grouse and its habitat. Provisions of this plan would not be added to the measures identified each specific project.	Within core areas, when mitigation is required, the agencies in coordination with WGFD and partners would use the following mitigation hierarchy: in-kind and onsite mitigation as first priority or in-kind mitigation offsite mitigation as second priority. When additional offsite mitigation is necessary, conduct it within the same population area where the impact occurs if possible or, if that is not possible, within the same MZ per 2006 WAFWA Strategy as the impact.
No similar action. Current policy allows unitization to occur on a case-by-case basis.	Require unitization when deemed necessary for proper development and operation of an area (with strong oversight and monitoring) to minimize adverse impacts on Greater Sage-Grouse according to the Federal Lease Form, 3100-11, Sections 4 and 6.	Same as Alternative B.	Encourage unitization when deemed necessary for proper development and operation of an area (with strong oversight and monitoring) to minimize adverse impacts on Greater Sage-Grouse according to the Federal Lease Form, 3100-11, Sections 4 and 6.	No similar action.	Within core areas, encourage unitization as a means of minimizing adverse impacts on Greater Sage-Grouse to reduce fragmentation and surface disturbing and disruptive activities.
Most LUPs include a management action that allows for acquisition of lands that have important resource values including crucial wildlife habitat and land tenure adjustments to improve the manageability of public lands. In order to be considered for any form of land tenure adjustment, all lands not specifically identified for disposal must meet criteria included in the LUPs.	Identify areas where acquisitions (including federal mineral rights) or conservation easements, would benefit Greater Sage-Grouse habitat.	Same as Alternative B.	Same as Alternative B.	No similar action.	Same as Alternative B.
No similar action. Current policy provides for the establishment of reclamation bonds on a case-by-case basis.	For future actions, require a full reclamation bond specific to the site in accordance with 43 CFR 3104.2, 3104.3, 3104.5, and 36 CFR 228.109. Insure bonds are sufficient for costs relative to reclamation (Connelly et al. 2000 and Hagen et al. 2007) that would result in full restoration of the lands to the condition it was found prior to disturbance. Base the reclamation costs on the assumption that contractors will perform the work.	Same as Alternative B.	Same as Alternative B.	No similar action.	Require reclamation bond commensurate with the scope, scale, size of the project within core areas. Partial bonding may be appropriate depending on the above factors.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
No similar action. Individual LUPs may contain an appendix that outlines BMPs that are applied on a case-by-case basis.	Make applicable RDFs (see Appendix J of the Draft LUPA/EIS) mandatory as COAs within PHMA.	Same as Alternative B.	The RDFs identified in Appendix J of the Draft LUPA/EIS would be attached as mandatory COAs during development of a lease, unless at least one of the following can be demonstrated in the NEPA analyses associated with the specific project: • A specific design feature is documented to not be applicable to the site-specific conditions of the project/activity; • A proposed design feature or BMP is determined to provide equal or better protection for Greater Sage-Grouse or its habitat; • Analyses conclude that following a specific feature will provide no more protection to Greater Sage-Grouse or its habitat than not following it, for the specific project being proposed.	No similar action.	Where applicable and technically feasible, apply BMPs as mandatory COAs within core Greater Sage-Grouse habitat for Fluid Minerals, Lands and Realty, West Nile, and Noise.
No similar action.	No similar action.	Any oil, gas, geothermal activity will be conducted to maximize avoidance of impacts, based on evolving scientific knowledge of impacts.	No similar action.	No similar action.	No similar action.
Mineral Split-Estate					
Under current management, there are no PHMA. Decision included in current management plans apply to both federal surface and mineral estate.	Where the federal government owns the mineral estate in PHMA, and the surface is in non-federal ownership, apply the conservation measures applied on public lands.	Same as Alternative B.	Same as Alternative B.	Because the surface estate is the key to conservation of habitat, the Greater Sage-Grouse habitat has been mapped according to surface ownership. However, implementation of his alternative will have to accommodate the dominant nature of the mineral estate, and react accordingly.	Where the federal government owns the mineral estate, and the surface is non-federal ownership, apply the same Greater Sage-Grouse conservation measures as applied on public land, for core and non-core areas respectively, working cooperatively with permittees, lessees and other surface landowners.
No similar action. Under current management, there are no PHMA. Decision included in current management plans apply to both federal surface and mineral estate. Individual LUPs may contain an appendix that outlines BMPs that are applied on a case-by-case basis.	Where the federal government owns the surface, and the mineral estate is in non-federal ownership in PHMA, apply appropriate Fluid Mineral RDFs (see Appendix J of the Draft LUPA/EIS) to surface development.	Same as Alternative B.	Where the federal government owns the surface, and the mineral estate is in non-federal ownership in PHMA, the RDFs identified in Appendix J of the Draft LUPA/EIS would be applied to surface developments, unless at least one of the following can be demonstrated in the NEPA analyses associated with the specific project: • A specific design feature is documented to not be applicable to the site-specific conditions of the project/activity; • A proposed design feature or BMP is determined to provide equal or better protection for Greater Sage-Grouse or its habitat; • Analyses conclude that following a specific feature will provide no more protection to Greater Sage-Grouse or its habitat than not following it, for the specific project being proposed.	No similar action.	Where the federal government owns the surface, and the mineral estate is in non-federal ownership, apply the same Greater Sage-Grouse conservation measures as applied on public land, for core and non-core areas respectively. Working cooperatively with permittees, lessees and other surface landowners.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
Areas of Critical Environmental Concern (ACECs)					
No existing ACECs include Greater Sage-Grouse as a relevant and important value.	No similar action.	Designate and manage the following 15 areas (2,233,800) as ACECs (BLM) and Greater Sage-Grouse Zoological Areas (Forest Service) to function as sagebrush reserves to conserve Greater Sage-Grouse (Map 2.60, Potential ACECs and Zoological Areas–Alternative C): • Three Corners/Browns Park ○ **Total acres – 72,600** ○ BLM acres – 50,100 ○ Forest Service acres – 22,500 • Diamond Mountain ○ **Total acres – 139,500** ○ BLM acres – 110,300 ○ Forest Service acres – 29,200 • Little Mountain/Halfway Hollow ○ **Total acres – 74,900** ○ BLM acres – 60,700 ○ Forest Service acres – 14,200 • Blue Mountain ○ **Total acres – 18,900** ○ BLM acres – 18,900 ○ Forest Service acres – 0 • Emery ○ **Total acres – 11,500** ○ BLM acres – 0 ○ Forest Service acres – 11,500 • Parker Mountain ○ **Total acres – 350,500** ○ BLM acres – 201,800 ○ Forest Service acres – 148,700 • Southern Mountain Valleys ○ **Total acres – 171,300** ○ BLM acres – 105,300 ○ Forest Service acres – 66,000 • Buckskin Valley ○ **Total acres – 46,000** ○ BLM acres – 34,900 ○ Forest Service acres – 11,100 • Black Mountains ○ **Total acres – 256,800** ○ BLM acres – 256,800 ○ Forest Service acres – 0 • Southern Great Basin ○ **Total acres – 101,000** ○ BLM acres – 101,000 ○ Forest Service acres – 0 • Sheep Creek Mountains ○ **Total acres – 398,100** ○ BLM acres – 316,700 ○ Forest Service acres – 81,400 • Ibapah	No similar action.	No similar action.	No similar action.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E1	Alternative E2
		○ **Total acres – 47,000** ○ BLM acres – 47,000 ○ Forest Service acres – 0 • Box Elder/Grouse Creek ○ **Total acres – 364,100** ○ BLM acres – 364,100 ○ Forest Service acres – none in planning area • Rich County ○ **Total acres – 171,800** ○ BLM acres – 166,600 ○ Forest Service acres – 5,200 • Strawberry ○ **Total acres – 9,800** ○ BLM acres – 0 ○ Forest Service acres – 9,800			
No similar action.	No similar action.	Manage the relevant and important value (Greater Sage-Grouse habitat) for the 15 Greater Sage-Grouse ACECs/ Greater Sage-Grouse Zoological Areas as prescribed in this table above. In addition, implement the following management for these areas: • Manage the Greater Sage-Grouse ACECs/ Zoological Areas to minimize anthropogenic disturbances to Greater Sage-Grouse, consistent with valid existing rights. • Prioritize withdrawal from mineral location in the ACECs/Zoological Areas. Make any existing claims within the ACECs/Zoological Areas subject to validity patent examinations. • Require Plans of Operations for any Notice level locatable mineral development per 43 CFR 3809 regulations. • Prioritize the removal of unneeded infrastructure (including mining or ROW equipment, roads, range developments and fencing).	No similar action.	No similar action.	No similar action.

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Chapter 3. Affected Environment

3.1 INTRODUCTION

The purpose of this chapter is to describe the existing biological, physical, and socioeconomic characteristics of the planning area, including human uses that could be affected by implementing the alternatives described in **Chapter 2**. The affected environment provides the context for assessing the potential impacts described in **Chapter 4**. The resource topics in this chapter reflect those that are identified in **Table 1-3**, Issues and Related Resource Topics, as corresponding to an issue carried forward for detailed analysis in the 2019 planning process.

The BLM analyzed the management situation in full compliance with its regulations and policies. The BLM evaluated inventory and other data and information, partnering with USGS and coordinating extensively with States, to help provide a basis for formulating reasonable alternatives. The BLM described this process in its Report to the Secretary in response to SO 3353 (Aug. 4, 2017). Among other things, the Report describes how the BLM coordinated "with each State to gather information related to the [Secretary's] Order, including State-specific issues and potential options for actions with respect to the 2015 Greater Sage-Grouse Plans and Instruction Memorandums (IMs) to identify opportunities to promote consistency with State plans." (Report to the Secretary at 3.) This process overlapped to some degree with the BLM's scoping process, which also assisted the BLM in identifying the scope of issues to be addressed and significant issues, and with coordination with the States occurring after the Report.

The geographic extent of this environmental analysis is substantially similar to that in the 2015 Final EIS, with the exception of the portions of the 2015 planning area that were in Wyoming. Approximately 54,800 acres administered by the Ashley National Forest and 22,000 acres administered by the Uinta/Wasatch/Cache National Forest that extended into Wyoming are not part of the planning area for this process. Additionally, approximately 71,900 acres administered by the Sawtooth National Forest in Box Elder County are included in the planning area for this process that were part of the Idaho planning area in 2015.

The BLM acknowledges that there have been changes to the landscape since 2015; however, since the context of this analysis covers 2,520,000 acres of BLM-administered lands and 1,497,400 acres of federal mineral estate, the data collected consistently across the range indicate that the extent of these changes is relatively minimal. For example, BLM monitoring data collected using nationally available datasets and analyzed annually at the biologically significant unit (BSU) scale, as outlined in the Greater Sage-Grouse Monitoring Framework (Appendix D of the 2015 ROD/ARMPA), indicate that there has been a less than 1 percent range-wide overall increase in estimated disturbance from 2015 through 2017 on PHMA and IHMA (Idaho Important Habitat Management Area). Moreover, there has been a range-wide overall decrease of less than 1 percent range-wide from 2012 through 2015 in sagebrush availability in PHMA within BSUs.

The estimates of habitat management areas burned in 2016 and 2017 indicate an increase in potential habitat availability loss in portions of the range (largely outside of Utah) compared with previous fire

seasons; however, the acres lost do not necessarily affect monitored PHMA in BSUs. For this reason, burned acres are most influential at scales below which the environmental analysis has been conducted.

Based on available information, including the USGS reports described below, the BLM has concluded that the existing condition is not substantially different from that of 2015; therefore, the data and information presented in the 2015 Final EIS are incorporated into this RMPA/EIS.

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

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

USGS Reports

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

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

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

Multiscale Habitat Suitability and Mapping Tools

The science developed since 2015 corroborates previous knowledge about Greater Sage-Grouse habitat selection. Advances in modeling and mapping techniques at the landscape scale can help inform allocations and targeting of land management resources to benefit Greater Sage-Grouse conservation. Similar improvements at the site scale facilitate a better understanding of the relationship of grass height to nest success, which indicates the potential need for a reevaluation of the existing habitat objectives (Hanser et al. 2018, p. 2).

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

[1] Internet website: https://doi.org/10.3133/ofr20181008

Discrete Human Activities

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

Diffuse Activities

The science developed since 2015 does not appreciably change prior knowledge about diffuse activities, such as livestock grazing, predation, hunting, wild horses and burros, fences, recreation, and noise; however, some study authors questioned current assumptions, provided refinements, or corroborated existing understanding.

Studies have shown that the impacts of livestock grazing vary with grazing intensity and season. Predation from ravens can limit Greater Sage-Grouse populations in areas with overabundant predator numbers or degraded habitats. Applying predator control has potential short-term benefits in small, declining populations; however, reducing human subsidies (i.e., food sources resulting from human activities) may be necessary to generate long-term changes in raven numbers. This is because raven control has produced only short-term declines in local raven populations.

Finally, no new insights into the impacts of wild horses and burros, fence collision, recreation, or noise on Greater Sage-Grouse have been developed (Hanser et al. 2018, p. 2).

Fire and Invasive Species

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

Restoration Effectiveness

Since 2015, tools have been developed to help managers strategically place and design restoration treatments where they will have the greatest benefit for Greater Sage-Grouse. Studies conducted in Utah demonstrated that conifer removal benefited Greater Sage-Grouse through increased female survival and nest and brood success. Treatment method and site potential can affect posttreatment vegetation characteristics. Sagebrush manipulation treatments seemed to benefit Greater Sage-Grouse populations and brood-rearing habitat availability, but benefits may be limited to areas with high sagebrush cover at higher elevations and in mountain big sagebrush (*A. tridentata vaseyana*) communities. Studies indicate that Greater Sage-Grouse populations did not benefit from, or were negatively affected by, prescribed fire and mechanical sagebrush removal. (Hanser et al. 2018, p. 3)

Population Estimation and Genetics

The accuracy of estimating Greater Sage-Grouse populations has increased. This is because of improved sampling procedures used to complete count surveys at leks and the development of correction factors

for potential bias in lek count data. In addition, techniques have also improved to map Greater Sage-Grouse genetic structure at multiple spatial scales. These genetic data are used in statistical models to increase understanding of how landscape features and configuration affect gene flow. This understanding emphasizes the importance of maintaining connectivity between populations to ensure genetic diversity and distribution (Hanser et al. 2018, p. 3).

3.2 RESOURCES AFFECTED

In accordance with **Chapter 1**, **Section 1.4.1**, Issues and Related Resource Topics Identified Through Scoping, the following resources may experience potential impacts based on the alternatives considered in **Chapter 2**. **Table 3-1**, Affected Environment Information Incorporated by Reference, below, provides the location of baseline information for these resources and uses in the 2015 Final EIS, and where applicable, additional information contained in the Sagebrush Focal Area Withdrawal Draft EIS (BLM 2016).

Table 3-1
Affected Environment Information Incorporated by Reference

Resource Topic	Location of Baseline Information
Greater Sage-Grouse	Chapter 3, Section 3.3 (Special Status Species – Greater Sage-Grouse), page 3-4 in the 2015 Final EIS (BLM 2015) Chapter 3, Section 3.7.1 (Special Status Species), page 3-156 in the 2016 Draft EIS (BLM 2016) Additional information regarding Greater Sage-Grouse is included in **Section 3.3** of this chapter.
Air Quality	Chapter 3, Section 3.4, page 3-44 in the 2015 Final EIS (BLM 2015) Additional information regarding air quality is included in **Section 3.4** of this chapter.
Soil Resources	Chapter 3, Section 3.6, page 3-57 (BLM 2015)
Water Resources	Chapter 3, Section 3.7, page 3-60 (BLM 2015)
Vegetation (including Noxious Weeds; Riparian and Wetlands)	Chapter 3, Section 3.8, page 3-64 (BLM 2015) Chapter 3, Sections 3.6.2 (Vegetation Communities), page 3-133 and Section 3.6.3 (Invasive and Noxious Species), page 3-138 in the 2016 Draft EIS (BLM 2016) Additional information regarding vegetation is included in **Section 3.5** of this chapter.
Other Special Status Species	Chapter 3, Section 3.9, page 3-99 (BLM 2015) Chapter 3, Section 3.6.1 (Special Status Species), page 3-128 in the 2016 Draft EIS (BLM 2016) Additional information regarding other special status species is included in **Section 3.6** of this chapter.
Fish and Wildlife	Chapter 3, Section 3.10, page 3-127 (BLM 2015)
Wild Horses and Burros	Chapter 3, Section 3.11, page 3-142 (BLM 2015) Additional information regarding wild horses and burros is included in **Section 3.7** of this chapter.
Cultural Resources	Chapter 3, Section 3.12, page 3-147 (BLM 2015)
Visual Resources	Chapter 3, Section 3.13, page 3-150 (BLM 2015)

Resource Topic	Location of Baseline Information
Wildland Fire Management	Chapter 3, Section 3.14, page 3-154 (BLM 2015) Additional information regarding wildland fire management is included in **Section 3.8** of this chapter.
Wilderness Characteristics	Chapter 3, Section 3.15, page 3-163 (BLM 2015) is updated with information regarding wilderness characteristics in **Section 3.9** of this chapter.
Livestock Grazing/Range Management	Chapter 3, Section 3.16, page 3-165 (BLM 2015) Additional information regarding livestock grazing/range management is included in **Section 3.10** of this chapter.
Recreation	Chapter 3, Section 3.17, page 3-171 (BLM 2015) Additional information regarding recreation is included in **Section 3.11** of this chapter.
Comprehensive Travel and Transportation Management	Chapter 3, Section 3.18, page 3-177 (BLM 2015) Additional information regarding comprehensive travel and transportation management is included in **Section 3.12** of this chapter.
Lands and Realty	Chapter 3, Section 3.19, page 3-180 (BLM 2015) Additional information regarding lands and realty is included in **Section 3.13** of this chapter.
Renewable Energy	Chapter 3, Section 3.20, page 3-190 (BLM 2015) Additional information regarding renewable energy is included in **Section 3.14** of this chapter.
Leasable Minerals (Oil and Gas, Nonenergy Leasable Minerals, Coal, and Oil Shale and Tar Sands)	Chapter 3, Section 3.21.1 (oil and gas), page 3-200 (BLM 2015) Chapter 3, Section 3.21.2 (nonenergy Leasable Minerals), page 3-208 (BLM 2015) Chapter 3, Section 3.21.3 (coal), page 3-212 (BLM 2015) Chapter 3, Section 3.21.6 (oil shale and tar sands), page 3-217 (BLM-2015) Additional information regarding leasable minerals is included in **Section 3.15** of this chapter.
Locatable Minerals	Chapter 3, Section 3.21.4, page 3-215 (BLM 2015) Chapter 3, Section 3.4.3 (Mineral Resources), page 3-8 and Section 3.4.4 (Market Demand for Locatable Minerals), page 3-8 in the 2016 Draft EIS (BLM 2016)
Mineral Materials	Chapter 3, Section 3.21.5, page 3-216 (BLM 2015)
Social and Economic Conditions	Chapter 3, Section 3.23 (Social and Economic Conditions (Including Environmental Justice)), page 3-231 (BLM 2015) Chapter 3, Section 3.5 (Social and Economic Conditions), page 3-9, and specifically Section 3.5.17, Section 3.5.18, and Section 3.5.19 in the 2016 Draft EIS (BLM 2016) Additional information regarding social and economic conditions is included in **Section 3.16** of this chapter.
Tribal Interests	Chapter 3, Section 3.24, , page 3-267 (BLM 2015)

3.3 GREATER SAGE-GROUSE

Existing conditions for Greater Sage-Grouse in the planning area are described in the 2015 Final EIS in Section 3.3 (Special Status Species – Greater Sage-Grouse, pages 3-4 through 3-44), as well as in the 2016 Sagebrush Focal Areas Withdrawal Draft EIS in Section 3.7.1 (Special Status Species - pages 3-156 through 3-165). This section identifies additions or changes in research and data, specific to the planning area, which has become available in the last 3 years.

Based on the Fish and Wildlife Service's 2015 listing determination, Greater Sage-Grouse is no longer a candidate species for listing; it remains, however, a BLM Utah sensitive species and under Utah law it is classified as an upland game species managed by the UDWR. The State of Utah's 2015 Wildlife Action Plan identifies the Greater Sage-Grouse as an S3 (on a 1–5 scale).

3.3.1 Greater Sage-Grouse Population Trends

As of 2017, there are 366 occupied Greater Sage-Grouse leks in Utah. Long-term population trends were calculated for the 12 population areas using the past 20 years of data in coordination with the Utah Division of Wildlife Resources and are presented in **Table 3-2**, Greater Sage-Grouse Population Trends for Areas in Utah. These trends were calculated for PHMA and General Habitat Management Areas (GHMA) (as identified in the 2015 Approved RMP Amendment) to allow comparisons between the two types of management area designations statewide.

Natural fluctuations over time are known to occur in Greater Sage-Grouse populations. In Utah, the populations tend to show a cyclic pattern over a roughly 10-year time frame. As such, short-term population trends are less important than long-term population trends; however, the Utah Division of Wildlife Resources, the BLM, and the Forest Service also monitor short-term trends using the adaptive management triggers identified in **Appendix I**. These triggers include monitoring trends in males per lek on key "trend leks," as well as comparing very short-term year-to-year population fluctuations. The triggers are designed to identify emerging trends at their earliest stages and include monitoring for potentially different population trends (e.g., long-term gradual declines, sharp drops larger than natural levels, and substantial drops multiple years in a row with little to no increase between). Based on population monitoring data for the 2015–2016 and 2016–2017 years, only the Sheeprocks area has met any of the soft or hard adaptive management triggers. Analysis of the adaptive management data for 2018–2019 can be found below in Section 3.3.2.

Monitoring associated with the adaptive management triggers demonstrates that short-term trends (between 1 and 10 years) are within the range of anticipated natural variability for all Greater Sage-Grouse populations throughout the state. The exception is the Sheeprocks area, where corrective management has been applied. **Table 3-2** demonstrates that, when looking beyond the short-term variability associated with natural population fluctuations, long-term trends indicate that the known population of Greater Sage-Grouse in Utah has been increasing over the last 20 years (approximately two complete population cycles).

Table 3-2
Greater Sage-Grouse Population Trends for Areas in Utah

Population Area	Occupied Leks—2017		Average Males per Lek—2017		Male Count on Leks—2017		20-Year Linear Regression Slope on Male Counts (Birds Added/Lost per Year)	
	PHMA	GHMA[G]	PHMA	GHMA	PHMA	GHMA	PHMA	GHMA
Bald Hills	14	0	10.2	N/A	133	0	7.4	N/A
Box Elder	71	0	17.8	N/A	710	41[E]	0.7	N/A
Carbon	25	0	16.7	N/A	333	0	13.2	N/A[A]
Emery	5	0	14.6	N/A	73	0	3.5	N/A
Hamlin Valley	7	0	15.0	N/A	90	0	-0.7	N/A
Ibapah	4	0	14.5	N/A	29	0	0.4	N/A
Panguitch	21	0	25.1	N/A	476	0	10.8	N/A
Parker Mountain	54	0	20.8	N/A	897	0	18.4	N/A
Rich	60	7	20.9	15.5	626	62	1.3	4.8[C]
Sheeprocks	6	3[F]	9.3	4.5[F]	28	9[F]	-3.7	1.1[B, F]
Strawberry	9	0	21.5	N/A	86	0	5.5	N/A
Uintah	68	12	12.9	21.8	722	87	30.5	-0.3
Statewide[D]	344	22	17.4	18.1	4,203	199	87.3	7.8

Notes (information for this table provided by the Division of Wildlife Resources)
Occupied lek: A lek that has been active during at least one strutting season within the last 10 years
Number of occupied leks: The number of leks classified as occupied as of the 2017 lek count by UDWR.
Average males per lek: sum of high counts from leks with counts >= 1 in 2017 divided by the number of leks with >=1 male counted. Includes counts from new (undetermined) leks.
Male count on lek: Sum of high male Counts for the 2017 season. Includes counts from new (undetermined) leks.

[A] Single counts in 1998, 1999, 2000, 2002, 2004 only. No meaningful regression possible
[B] Occupied leks in these areas of the Sheeprocks were found in 2002 and 2008. Biased trend estimate.
[C] 8 leks in Rich GHMA found in 2002. Biased trend estimate.
[D] Statewide includes all counts within PHMA or GHMA. Including undetermined leks for regression, average males per lek and total count. Undetermined leks are not counted in number of occupied leks (see definition of occupied above).
[E] Total count includes one undetermined lek found in 2017.
[F] Sheeprocks leks identified as in GHMA are currently in PHMA because of an adaptive management response. The Sheeprocks leks noted in this table as PHMA were in PHMA in the 2015 ROD/ARMPA. Monitoring on those leks met the criteria for a hard trigger, resulting in the leks in portions of the Sheeprocks GHMA being changed to PHMA. Numbers are presented separately to track potentially different trends.
[G] See **Appendix 3** for maps depicting how leks are distributed in GHMA, including in relation to land ownership and administration.

3.3.2 Adaptive Management

The 2015 Approved RMP Amendment establishes soft and hard triggers for Greater Sage-Grouse habitat and populations (see MA-SSS-7). After evaluating the triggers for 2016 and 2017, eleven of the twelve Greater Sage-Grouse population areas have not met any of the triggers. The Sheeprocks area met the hard trigger and a soft trigger in 2016. The soft trigger criteria met was a population Lambda of less than 1 in 4 consecutive years (2013–2016). The hard trigger criteria met was a population Lambda of less than 1 in 8 of a 10-year period (2008–2017). Both triggers reflect a long-term population decline in the Sheeprocks PHMA. A state-led collaborative effort by the West Desert Greater Sage-Grouse Local Working Group identified the potential causes of the population declines as predation and reductions in habitat availability due to fire, conifer encroachment, and invasive annual weeds. In addition, the BLM, in coordination with an interagency team of biologists and the local working group, is

evaluating data to document if there are other causes that may be contributing to the decline. Preliminary actions by state and federal agencies have sought to address these threats, including the BLM applying the measures identified in the 2015 Approved RMP Amendment.

The major difference in management when meeting the adaptive management trigger was the change to the Sheeprock's PHMA to align with the boundaries mapped in Alternative B in the 2015 Final EIS. This resulted in 111,900 acres that were mapped as GHMA in the Proposed Plan being changed to be managed as PHMA, with all the corresponding management. Of the changed acres, only 53,900 (48 percent) are BLM-administered lands. The remainder are private (39,300 acres) or state (18,700 acres) lands.

In 2018 the UDWR, the Governor's Public Land Policy Coordinating Office (PLPCO), and the BLM met to review population monitoring data for the 12 Greater Sage-Grouse management areas in Utah (identified as PHMA for the BLM and Sage-Grouse Management Areas for the State). Population numbers were reviewed against the Utah BLM's 2015 ARMPA adaptive management decision process (**Appendix I**). Based on the review, no population criteria were met to initiate an adaptive management response.

In 2019 a population soft trigger for the Parker population was met. Spring of 2019 had higher snow-pack than normal, and snow persisted later into the spring than an average year. Greater Sage-Grouse leks across the state were difficult to visit or totally inaccessible due to this late snow persistence. Several leks were not counted or counted as soon as accessible, which was outside of the lekking season. Due to this counting discrepancy the BLM, United States Forest Service, and the UDWR determined that it would be inappropriate to act on this soft trigger met under the identified conditions, electing rather to wait one more year to assess population numbers.

During the 2018 and 2019 meetings data associated with the adaptive management habitat triggers were also reviewed. In 2018, the Box Elder and Strawberry populations both met the criteria for a habitat soft trigger. In 2019, the Box Elder, Strawberry, and Bald Hills populations also met the criteria for a habitat soft trigger. These criteria were met due to the occurrence of wildfires in these population areas. Emergency stabilization and rehabilitation treatments were conducted in these populations on BLM-administered lands in coordination with UDWR. These treatments are expected to assist with recovery of habitat in these populations. Monitoring is being also being conducted to track recovery success and identify areas where stabilization or rehabilitation objectives are not met, which could trigger re-treatment under the Burned Area Rehabilitation program.

3.3.3 Greater Sage-Grouse Interim Seasonal Habitat Models

In 2017, an interagency effort to prepare maps of seasonal Greater Sage-Grouse habitat in Utah produced three maps of modeled seasonal habitats. These habitat maps were developed using a database of hundreds of lek locations paired with over 20,000 very high frequency (VHF) radio telemetry locations from Greater Sage-Grouse statewide. The resulting models were created using a method where 85 percent of the Greater Sage-Grouse VHF seasonal locations were captured within the habitat management areas, then the habitat conditions associated with those locations were identified throughout the state. It is important to note that these maps do not reflect occupied seasonal habitats (as identified by UDWR), but areas with vegetation characteristics similar to areas where the VHF locations were located; therefore, these models may not reflect every acre of seasonal habitat used by a given population, but they do identify areas of potential seasonal habitats.

The results of this modeling are presented in **Figure 3-2**, Utah Greater Sage-Grouse Breeding Habitat, **Figure 3-3**, Utah Greater Sage-Grouse Summer Habitat, and **Figure 3-4**, Utah Greater Sage-Grouse Winter Habitat. Acreages for these seasonal habitats are presented for PHMA and GHMA in **Table 3-3**. Breeding habitat is defined as areas used for lekking, nesting, and early brood-rearing from March 1 – June 14. Summer habitat is defined as areas used for brood-rearing from June 15 – August 31. Winter habitat is defined as areas used from November 1–February 29. For additional information on modeling methods, outcomes, and future efforts refer to the 2017 Annual Report for Utah's Greater Sage-Grouse Local Working Groups (Messmer et al. 2018).

Table 3-3
Modeled Seasonal Habitat Acres in PHMA and GHMA

Population Area	Modeled Breeding		Modeled Summer		Modeled Winter	
	PHMA	GHMA	PHMA	GHMA	PHMA	GHMA
Bald Hills	85,600	100	201,700	200	187,300	3,600
Box Elder	769,300	0	581,000	0	740,000	0
Carbon	98,000	0	171,700	24,500	188,300	53,500
Emery	34,700	0	30,800	0	10,700	0
Hamlin Valley	94,400	0	67,600	0	102,000	0
Ibapah	28,800	0	38,100	0	48,600	3,700
Panguitch	125,500	0	127,200	0	172,700	0
Parker Mountain	421,900	0	279,500	2,300	425,100	2,400
Rich	575,800	47,000	656,600	40,000	662,700	45,600
Sheeprocks	106,100	0	232,500	0	387,000	3,000
Strawberry	81,500	5,500	99,800	10,800	12,400	16,500
Uintah	344,900	177,600	316,800	315,800	407,100	399,500

Note: There is substantial overlap in seasonal habitat acres/areas, therefore these are not a sum of total modeled habitat. See **Appendix 3** for maps of where the overlapping seasonal habitats intersect with GHMA.

The models and their associated maps are a preliminary step in a process to improve seasonal mapping throughout Utah. These preliminary models and maps will be updated as additional location data is collected. Currently, an interagency state-wide data collection effort is underway to increase knowledge of how Greater Sage-Grouse populations use the fragmented landscapes throughout Utah; data from this effort will be used to refine the seasonal habitat models and maps. The 2017 seasonal models will be updated using data from global positioning system (GPS) transmitters that are fitted onto individual birds. To date, nearly 350 GPS transmitters have been deployed on Greater Sage-Grouse individuals statewide.

Compared to the labor-intensive process of collecting location data from VHF transmitters, the GPS transmitters collect 5 to 10 locations per day throughout the year eliminating the need for staff to physically locate the signal. This will result in over 1 million data points by 2019 that depict how Greater Sage-Grouse move and use different areas on a seasonal basis. This collaborative data collection effort will allow for increased information on seasonal habitat types used by Greater Sage-Grouse and will be used to refine seasonal habitat models and maps for Utah (Messmer et al. 2018).

3.3.4 Greater Sage-Grouse Seasonal Habitat Guidelines

A study by Dahlgren et al. (2019) develops habitat guidelines for Greater Sage-Grouse in Utah based on local Greater Sage-Grouse locations, differentiated by environmental variations. Their study pairs micro-

site vegetation data (percent shrub cover, shrub height, forb cover, forb height, grass cover, grass height, and percent sagebrush composition) and Greater Sage-Grouse presence to spatial data such as climate, landscape vegetation maps, and elevation to formulate empirically-based habitat guidelines for Utah. The results of this study identified three distinct zones of Greater Sage-Grouse habitat conditions named Low, Mid, and High (see **Figure 3-1**, Utah Greater Sage-Grouse Habitat Objective Zones). For each zone they provide habitat guidelines for percent cover and heights of: sagebrush, shrub, grass, and forbs. According to Dahlgren et al., Greater Sage-Grouse "in Utah selected sites with sparser and lower vegetation conditions than Connelly et al.'s (2000) guidelines."

3.3.5 Anthropogenic Disturbance

Anthropogenic disturbance was discussed in relation to Greater Sage-Grouse populations in the 2015 Final EIS (Section 3.3.5 – Conditions in Population Areas) and in Appendix L (Baseline Disturbance Inventory) of that document. That baseline inventory used a combination of data sources collected at multiple scales, from national-scale data sets to digitized disturbance of mining sites using aerial imagery. Since 2015, the disturbance inventory has been refined in several areas, specifically focusing on PHMA and areas where activities that needed to align with the disturbance cap were proposed. Anthropogenic disturbance has incrementally increased in some areas as a result of updating data sources and implementing projects; however, the more common effect over the last 3 years was that as disturbance data was refined with on-the-ground knowledge, the actual amount of disturbance using site-specific information was less than the amount identified from the coarser-scale data due to the removal of disturbances that were being double counted or not accounting for restored areas.

Another common correction during field verification was that the standard buffer-distance associated with linear features (e.g., roads) was usually larger in the estimated calculation than the actual disturbance footprint. Based on the current disturbance inventory maintained by the BLM Utah, no PHMA in any of the population areas has disturbance that is greater than 1.5 percent (see **Table 3-4**).

In addition to refining the disturbance inventory in portions of the planning area, implementing the disturbance cap over the last 3 years has provided valuable information related to its on-the-ground effect of protecting Greater Sage-Grouse habitat. As noted in **Section 1.3**, PHMA in Utah were specifically designed to include more than just the areas of high-quality sagebrush types.

Because of the interspersed nature of habitat, non-habitat, and potential habitat in Utah's PHMA, it became evident that applying a static disturbance cap was resulting in missed opportunities to improve habitat conditions for local populations. While calculating disturbance for some projects, the BLM determined that after applying avoidance and minimization measures, remaining disturbance to habitat could have been offset by well-designed habitat improvement projects. Such projects could have created habitat for local Greater Sage-Grouse populations, replacing habitat that would have been lost to the proposed disturbances. Lessons learned from these on-the-ground experiences have been incorporated into the development of the Proposed Plan Amendment.

Table 3-4
Inventoried Disturbance in Greater Sage-Grouse Habitat Management Areas

Population Area	PHMA			GHMA*		
	Total Acres	Disturbance Acres	Percent Disturbance	Total Acres	Disturbance Acres	Percent Disturbance
Bald Hills	326,400	3,765	1.2%	21,200	427	2.0%
Box Elder	1,227,800	4,059	0.3%	0	0	-
Carbon	259,400	3,548	1.4%	198,600	3,238	1.6%
Emery	80,500	358	0.4%	11,400	126	1.1%
Hamlin Valley	143,700	1,071	0.7%	0	0	-
Ibapah	88,800	455	0.5%	10,800	81	0.8%
Panguitch	343,900	3,953	1.1%	37,500	144	0.4%
Parker Mountain	741,300	5,757	0.8%	0	62	-
Rich	1,015,400	6,039	0.6%	197,900	1,485	0.8%
Sheeprocks	646,600	4,322	0.7%	184,500	1,940	1.1%
Strawberry	161,500	646	0.4%	20,600	52	0.3%
Uintah	565,600	5,403	1.0%	989,400	12,529	1.3%
Statewide	5,600,900	39,376	0.7%	1,671,900	20,084	1.2%

Note: * - See **Appendix 3** for maps of disturbance in GHMA areas.

3.4 AIR QUALITY

Existing conditions for air quality in the planning area are described in the 2015 Final EIS in Section 3.4 (Air Quality, page 3-44). This section identifies additions or changes which are applicable to the analysis and decision-making process.

On October 26, 2015, the Environmental Protection Agency (EPA) issued a Final Rule adjusting the National Ambient Air Quality Standard (NAAQS) for ozone (O_3) from 75 parts per million to 70 parts per million. This results in a change in the cited NAAQS noted on page 3-45 and 3-48 (Table 3.5) in the 2015 Final EIS. This does not change whether there were exceedances, as presented in Table 3.5 of the 2015 Final EIS, nor does it change the conclusions of the impact analysis for air quality. Table 3.5 of the 2015 Final EIS has been updated with data from 2014–2017, and is included below as **Table 3-5**.

On December 20, 2017, the EPA sent Utah Governor Gary Herbert a letter responding to the state's recommendations in relation to designating Nonattainment areas for ozone in the state. In their letter, the EPA noted the following:

> "After considering Utah's September 29, 2016 ozone designation recommendations, which were based on 2013-2015 air quality data, as well as other relevant technical information (including 2014-2016 air quality data), the EPA intends to designate Salt Lake and Davis Counties as Nonattainment for ozone. Additionally, the EPA intends to designate portions of Weber, Tooele, Utah, Uintah, and Duchesne, Counties (including both state and tribal land) as Nonattainment for ozone."

In August 2018 the EPA designated portions of Duchesne and Uintah Counties as nonattainment for ozone. Additionally, all federal actions in nonattainment areas, including those on BLM-administered lands, must comply with General Conformity Rules under the Clean Air Act to demonstrate that the

Table 3-5
Air Quality Monitoring Values in Utah

Pollutant	Averaging Time	2014	2015	2016	2017	4-Year Average	NAAQS	Percent of NAAQS[3]
8600 West 24000 North Portage Monitor Site, Box Elder County								
Ozone	8-hour[1]	0.061 ppm	0.067 ppm	0.051 ppm	0.063 ppm	0.061 ppm	0.070 ppm	86%
Monitor Site 2 Miles South of Ouray and South of the White and Green River Confluence, Uintah County								
Ozone	8-hour[1]	0.079 ppm	0.068 ppm	0.096 ppm	0.065 ppm	0.077 ppm	0.070 ppm	109%
Nitrogen Dioxide	1-hour	29 ppb	23 ppb	20 ppb	16 ppb	22 ppb	100 ppb	20%
Monitor Site 2 Miles West of Redwash Atop Deadman's Bench, Uintah County								
Ozone	8-hour[1]	0.064 ppm	0.067 ppm	0.083 ppm	0.076 ppm	0.073 ppm	0.070 ppm	108%
Nitrogen Dioxide	1-hour[2]	19 ppb	21 ppb	20 ppb	14 ppb	19 ppb	100 ppb	18%

Source: EPA 2015b

*Exceptional events have been excluded
ppb: parts per billion
ppm: parts per million

(1) Fourth Highest Annual Daily Maximum 8-hour ozone concentration
(2) 98th percentile of 1-hour daily maximum concentrations
(3) Most recent 3-year average (20015 to 2017) percent of NAAQS

action conforms with state or federal implementation plans. A 1-year grace period for conformity determinations is allowed for newly designated nonattainment areas, beginning August 2019 for the Uinta Basin nonattainment area. Air regulatory agencies have 36 months to meet the NAAQS or to develop an implementation plan to bring the area back into compliance with the standard.

The BLM is participating in the Uinta Basin Ozone Working Group, which includes tribal and government decision-makers, stakeholders, and other experts. The mission of the Uinta Basin Ozone Working Group is to prevent a moderate nonattainment designation in 2021, by identifying economically and effective measures at reducing ozone pollution in the Uinta Basin. Over time the problem-solving efforts of the Uinta Basin Ozone Working Group and implementation plans will help improve air quality in the nonattainment areas.

3.5 VEGETATION (INCLUDING NOXIOUS WEEDS, RIPARIAN AND WETLANDS)

Existing conditions for vegetation in the planning area are described in the 2015 Final EIS in Section 3.8 (Vegetation, page 3-64), as well as in the 2016 Draft EIS (BLM 2016), Chapter 3, Sections 3.6.2 (Vegetation Communities – page 3-133) and Section 3.6.3 (Invasive and Noxious Species – page 3-138). This section identifies additions or changes which are applicable to the analysis and decision-making process.

In the 2015 Greater Sage-Grouse ARMPA the BLM committed to "increase the amount and functionality of seasonal habitats" (Objective SSS-4) by implementing vegetation and fuels treatments (see also MA-SSS-VEG-1, MA-SSS-VEG-2, MA-SSS-VEG-3, MA-SSS-VEG-4, and MA-FIRE-3). Consistent with this management, the BLM has continued to implement projects to restore or improve Greater Sage-Grouse habitat. **Table 3-6** identifies the treatments conducted in the past 5 years in Utah specifically to manage for Greater Sage-Grouse. These projects are developed at the local level and are designed to improve the resistance and resilience of sagebrush habitats. Many of these projects are implemented through the State of Utah's Watershed Restoration Initiative partnership.

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

Fiscal Year	Conifer Removal	Fuel Breaks	Invasive Species Removal	Habitat Protection	Habitat Restoration	Total
2013	8,463	805	1,502	538	5,073	16,381
2014	32,255	2,902	0	2,439	19,626	57,222
2015	16,505	4,150		1,494	10,148	32,297
2016	53,566	0	480	3,108	16,617	73,771
2017	51,219	2,001	10,391	24,991	1,800	90,402
2018	68,270	200	2,836	2,203	21,937	95,446
2019	58,194	0	10,119	0	20,475	88,788
Total	**162,008**	**9,858**	**12,373**	**32,570**	**53,264**	**270,073**

Source: National Fuels Reporting Operations Reporting System (NFPORS)

As the BLM has implemented its 2015 ROD/ARMPA, project proponents have contributed funds to the Watershed Restoration Initiative to help complete portions of some of these projects to be able to document that their individual projects meet the net conservation gain mitigation strategy. While important, none of those inputs have been a deciding factor for whether a project could be implemented

or not; the largest financial contributors to completion of these habitat improvement projects has been the BLM and the State of Utah.

It is also critical to note that the acreages noted in **Table 3-6** are applicable only to BLM-administered lands. Additional treatments are conducted by private landowners on their own lands, either through their own means or through contacts with the Natural Resources Conservation Service, by the State of Utah on State and SITLA lands, and by the Forest Service. Treatments on the other lands are often coordinated through the State-run Watershed Restoration Initiative and Local Working Groups.

As noted in the table, the majority of treated acres relate to removal of encroaching conifer and restoring habitat. These treatments are intended to improve the condition of and connectivity between habitat patches. There are approximately 7.3 million acres mapped as PHMA and GHMA in Utah. According to state-wide LANDFIRE vegetation data reflecting existing vegetation, there are 3.1 million acres (approximately 41 percent) of these areas that are associated with vegetation communities that do not include sagebrush as either the dominant vegetation type or as a primary component species. The PHMA boundaries were drawn at a broad scale; thus, they include interspersed areas of habitat and non-habitat (see **Appendix K**). Most of the areas of non-habitat are predominantly small tracts of vegetation that could be used for transitional zones or that could be affected by public land uses, in concert with adjacent tracts of habitat. However, some of these non-habitat areas in PHMA are so large that they are unlikely to provide habitat for Greater Sage-Grouse populations.

3.6 OTHER SPECIAL STATUS SPECIES

Existing conditions for other special status species in the planning area are described in the 2015 Final EIS in Section 3.9 (Other Special Status Species, page 3-99), as well as in the 2016 Draft EIS (BLM 2016), Chapter 3, Sections 3.6.1 (Special Status Species - page 3-128). This section identifies changes which are applicable to the analysis and decision-making process.

Table 3.33 in the 2015 Final EIS, the following species are no longer federally listed as threatened, endangered, proposed, petitioned, and candidate plant and animal species in the planning area:

- Greater Sage-Grouse
- Coral Pink Sand Dunes tiger beetle
- Least chub
- Boreal toad
- Goose Creek milk-vetch
- Graham's beardtongue
- White River beardtongue (penstemon)

3.7 WILD HORSES AND BURROS

Existing conditions for wild horses and burros in the planning area are described in the 2015 Final EIS in Section 3.11 (Wild Horses and Burros, page 3-142). This section identifies changes which are applicable to the analysis and decision-making process.

The acreage associated with the 19 herd management areas presented in Table 3.42 in the 2015 Final EIS are still accurate, however, the current size estimates have changed. **Table 3-7** displays the 2018

population estimates in comparison to appropriate management level by each herd management area. In addition, the table shows the last date a gather was conducted on the given herd management areas.

Table 3-7
Wild Horses and Burros Population Levels

Herd Management Area	Upper Appropriate Management Level		Current Herd Size (2019 Estimate)		Last Gather (month/year)	Greater Sage-Grouse Population Area
	Horses	Burros	Horses	Burros		
Bible Spring	60	0	44	0	Aug-18	Hamlin Valley
Canyon Lands	0	100	0	164	Aug-88	N/A
Cedar Mountain	390	0	548	0	Jul-18	N/A
Chloride Canyon	30	0	112	0	Nov-18	N/A
Chokecherry	30	0	278	0	Jan-11	Hamlin Valley
Confusion	115	0	415	0	Sep-10	N/A
Conger	80	0	206	0	Dec-17	N/A
Four Mile	60	0	50	0	Aug-18	Hamlin Valley
Frisco	60	0	173	0	Jan-17	N/A
Kingtop	40	0	4	0	Aug-00	N/A
Mount Elinor	25	0	154	0	Jan-11	N/A
Muddy Creek	125	0	76	0	Sep-18	N/A
North Hills	36	0	140	0	Dec-10	N/A
Onaqui Mountain	210	0	510	0	Feb-12	Sheeprocks
Range Creek	125	0	282	0	Jul-18	Carbon
Sinbad	0	70	0	175	Apr-16	N/A
Sulphur	250	0	994	0	Aug-18	Hamlin Valley
Swasey	100	0	601	0	Feb-13	N/A
Tilly Creek	50	0	192	0	Feb-18	Hamlin Valley
Total	**1,786**	**170**	**4,779**	**339**	**N/A**	**N/A**

3.8 WILDLAND FIRE MANAGEMENT

Existing conditions associated with wildland fire in the planning area are described in the 2015 Final EIS in Section 3.14 (Wildland Fire Management, page 3-154). Ongoing efforts for fuel treatments are described in Executive Order 13855, *Promoting Active Management of America's Forests, Rangelands, and other Federal Lands to Improve Conditions and Reduce Wildfire Risk* (December 21, 2018), and Secretary's Order 3372, *Reducing Wildlife Risks on Department of Interior Land through Active Management* (January 2, 2019), which provide direction to the BLM to address wildfire prevention and suppression, which the BLM has implemented by setting ambitious fuel treatment targets to protect and restore sagebrush ecosystems. This section identifies changes which are applicable to the analysis and decision-making process.

The geographic extent of fire and fuels analysis is the same as that of the 2015 Final EIS. The BLM acknowledges that there have been changes in vegetation modified by fires and fuels since the 2015 Final EIS. Habitat loss to fire and fuels was covered in the 2015 EIS. Fire and fuels reductions have and continue to occur.

From 2015-2019 there have been 233 additional wildfires that have burned approximately 181,159 acres of Greater Sage-Grouse PHMA and GHMA (see **Table 3-8** and **Table 3-9**). Nearly 73 percent of the wildfires were fully suppressed before they reached 10 acres in size.

Table 3-8
Wildfires in Greater Sage-Grouse Habitat Management Areas (2015–2019)

Size Class	PHMA		GHMA	
	Number of Fires	Population Areas Affected	Number of Fires	Population Areas Affected
A - 0 to .25 acres	81	Bald Hills, Box Elder, Carbon, Emery, Hamlin, Panguitch, Parker, Rich, Sheeprocks, Strawberry, Uintah	32	Carbon, Rich, Sheeprocks, Strawberry, Uintah
B - .26 to 9.9 acres	38	Bald Hills, Box Elder, Emery, Panguitch, Parker, Rich, Sheeprocks, Strawberry, Uintah	19	Carbon, Rich, Sheeprocks, Uintah
C – 10 to 99 acres	18	Bald Hills, Box Elder, Carbon, Rich, Sheeprocks, Uintah	10	Carbon, Sheeprocks, Uintah
D – 100 to 299 acres	9	Box Elder, Rich, Sheeprocks, Strawberry	1	Unitah
E – 300 to 999 acres	8	Parker, Rich, Sheeprocks, Box Elder, Uintah	3	Emery, Carbon, Sheeprocks
F – 1000 to 4999 acres	8	Parker, Sheeprocks, Box Elder, Uintah	0	N/A
G – 5000+ acres	6	Box Elder, Bald Hills, Rich, Strawberry	0	N/A
Total	**168**		**65**	

Source: BLM GIS Data

Table 3-9
Acres of Wildfire in PHMA and GHMA (2015–2019)

Population Area	PHMA	GHMA	Total
Bald Hills	18,817	0	18,817
Box Elder	100,218	0	100,218
Carbon	0	511	511
Emery	325	399	724
Hamlin Valley	0	0	0
Ibapah	0	0	0
Panguitch	9,192	0	9,192
Parker Mountain	10,810	0	10,810
Rich	9,345	0	9,345
Sheeprocks	12,473	439	12,912
Strawberry	15,034	0	15,034
Uintah	533	3,063	3,596
Total	**176,747**	**4,412**	**181,159**

Source: BLM GIS Data

From 2015-2017, approximately 380,704 acres in Greater Sage-Grouse habitat management areas have been treated to improve habitat for the species. Since the BLM's 2015 plan amendment was completed for Utah, more acres in Greater Sage-Grouse habitat management areas have been treated with the goal of improving/creating habitat than has been lost to wildfire. Based on published accounts in Utah, treated

areas can be quickly used by Greater Sage-Grouse as habitat, and can improve Greater Sage-Grouse vital rates (Sandford et al. 2017; Sandford et al. 2015).

3.9 WILDERNESS CHARACTERISTICS

Inventories for wilderness characteristics noted below were conducted between 1999 and the present and reflect the most up-to-date lands with wilderness characteristics baseline information for this planning area. In addition to the inventories conducted for the purposes of land use planning, lands with wilderness characteristics inventories will be updated for site-specific project environmental analyses that are conducted in the planning area to determine if a project will have impacts on lands with wilderness characteristics identified through previous or updated inventory efforts.

There are 52 units totaling 197,240 acres of BLM-administered lands in PHMA or GHMA outside of wilderness and WSAs that have been inventoried and found to have wilderness characteristics. Of those, 13 units totaling 52,240 acres are natural areas[2] managed for wilderness characteristics protection in the Greater Sage-Grouse Uintah Population Area (e.g., some land uses are restricted or prohibited under the Vernal RMP). The remaining 145,000 acres in 39 units are lands with wilderness characteristics where the BLM has made a determination not to apply specific management to protect the wilderness characteristics or are areas where no determination has yet been made in an RMP (see 2015 Final EIS Map 3.15-1). **Table 3-10** summarizes natural areas that overlap mapped PHMA habitat. GHMA habitat does not overlap any identified lands with wilderness characteristics that are managed to protect those characteristics (natural areas). **Tables 3-11** and **3-12** summarize lands with wilderness characteristics that overlap PHMA and GHMA, respectively.

Table 3-10
Natural Areas Overlapping PHMA

Natural Area	Acres Overlapping PHMA	Population Area
Bourdette Draw	6,231	Uintah
Bull Canyon	2,473	Uintah
Cold Spring Mountain	4,553	Uintah
Daniels Canyon	2,115	Uintah
Dead Horse Pass	886	Uintah
Diamond Breaks	507	Uintah
Diamond Mountain	24,469	Uintah
Lower Flaming Gorge	1,812	Uintah
Moonshine Draw	3,679	Uintah
Mountain Home	3,071	Uintah
Stuntz Draw	1,986	Uintah
Vivas Cake Hill	121	Uintah
Wild Mountain	336	Uintah

[2] In Utah, natural areas are lands with wilderness characteristics outside of WSAs that are identified in approved RMPs to be managed to maintain, preserve and protect those characteristics. This is an effort to recognize these discretionary decisions with a better, simpler reference. Wilderness Areas and WSAs are formal designations that are managed in a prescribed manner. To avoid confusing these official designations with discretionary decisions, the BLM Utah uses this term to distinguish between formal designations (e.g., Wilderness Areas) and a discretionary management category (i.e., natural areas).

Table 3-11
Lands with Wilderness Characteristics Overlapping PHMA

Lands with Wilderness Characteristics Unit	Acres Overlapping PHMA	Population Area
Cold Spring Draw West	1,005	Carbon
Cottonwood Ridge	3,089	Carbon
Currant Canyon	465	Carbon
Deep Creek Mountains	1,521	Ibapah
Desolation Canyon	1,414	Carbon
Granite Peak	194	Bald Hills
Hamlin	468	Hamlin Valley
Indian Swale	3,662	Carbon
Limestone Cliffs Ext	180	Parker
Lion Peak	6,045	Sheeprocks
Needle Mountain	1,305	Hamlin Valley
Paradise Mountain	139	Hamlin Valley
Phonolite Hill	76	Parker
Pilot Range	36,617	Box Elder
Pole Canyon	2,220	Parker
Sheep Canyon	105	Carbon
South Horn Mtn. Unit B	28	Emery
South Wah	1,725	Hamlin Valley
Split Mountain Benches	282	Uintah
Steamboat Mountain	2	Hamlin Valley
Tolivers #2	1,257	Uintah
Upper Kanab Creek	814	Panguitch
Wildcat Knolls Ext.	37	Emery

Table 3-12
Lands with Wilderness Characteristics Overlapping GHMA

Lands with Wilderness Characteristics Unit	Acres Overlapping GHMA	Greater Sage-Grouse Population
Archy Bench_A	1,395	Uintah
Badlands Cliffs	4,009	Carbon
Cold Spring Draw East	2,306	Carbon
Cold Spring Draw West	4,127	Carbon
Cottonwood Ridge	2,958	Carbon
Cripple Cowboy	1,245	Uintah
Currant Canyon	2,073	Carbon
Deep Creek Mountains	159	Ibapah
Desolation Canyon	9,801	Carbon
Duck Rock	51	Uintah
Flume Canyon	1	Uintah
Hideout Canyon	79	Uintah
Indian Swale	1,569	Carbon
Jack Canyon	1,222	Carbon
Lower Bitter Creek	252	Uintah
Mexico Point	290	Uintah
Pete's Wash	450	Carbon
Sheep Canyon	1,439	Carbon
Sheep Wash	395	Carbon
Sweet Water	2,495	Uintah
Westwater Creek	414	Uintah
White River	705	Uintah
Wolf Point	3,835	Uintah

3.10 LIVESTOCK GRAZING/RANGE MANAGEMENT

The existing condition of livestock grazing in the planning area is described in the 2015 Final EIS in Section 3.16 (pgs. 3-165 through 3-171). Since 2015, BLM has continued to manage livestock according to the grazing regulations (C.F.R. 4100) and the direction in the various RMPs. In general, the existing conditions of livestock grazing in Utah remain the same as described in the 2015 Final EIS. BLM has continued to issue grazing permit renewals consistent with the regulation and in conformance with the RMPs, including the management in the 2015 ROD/ARMPA.

3.11 RECREATION

The existing condition of recreation in the planning area is described in the 2015 Final EIS in Section 3.17 (pgs. 3-171 through 3-177). In general, recreation activities and levels in Utah remains the same as described in the 2015 EIS. BLM Utah has continued to issue special recreation permits at levels commensurate with the 2015 numbers. Special recreation permits authorized since 2015 have been in conformance with the actions in the 2015 amendment, resulting in neutral effects on Greater Sage-Grouse and its habitat.

Panguitch Population Area

On December 4, 2017, portions of the Grand Staircase-Escalante National Monument were modified by Proclamation 9682. Prior to the modification, approximately 5,860 acres of PHMA in the Panguitch Population Area overlapped the monument. After the modification, approximately 1,900 acres of PHMA overlap the monument boundaries. Given the dispersed nature of the recreation in the area of overlap it is not anticipated that the reduction will substantively change the nature or level of recreation on the acres of PHMA that no longer overlap the monument.

Sheeprocks Population Area

Due to the broad-scale nature of the state-wide habitat mapping efforts, portions of the GHMA identified in 2015 overlapped areas previously designated as open for cross-country OHV use. Portions of the Five Mile Pass area were designated as open to cross-country OHV use through a land use plan amendment that was completed in 1992. Since that time, the Five Mile Pass area has provided an important destination for motorized recreation. A portion of the designated open area was changed to limited as part of the 2015 amendment, creating a managerial conflict with an area recognized as a destination recreation resource for over 20 years.

Similarly, the Little Sahara Recreation Area was designated as open to cross-country OHV use in the sandy areas associated with the large dune complex. Like Five Mile Pass, this area is a recognized and well-known destination for motorized recreation and has been since before completion of the House Range Resource Area Resource Management Plan in 1987. Due to mapping in the 2015 Greater Sage-Grouse effort, small portions around the periphery of the designated recreation area were mapped as GHMA and OHV use was limited to existing routes. The 2015 amendment that changed the OHV area designation to "limited to existing routes" created a managerial conflict for this designated recreation area.

3.12 COMPREHENSIVE TRAVEL AND TRANSPORTATION MANAGEMENT

The existing condition of the travel and transportation network in the planning area is described in the 2015 Final EIS in Section 3.18 (pgs. 3-177 through 3-180). The language in the 2015 Final EIS is still applicable, with the following changes and information available since 2015.

Table 3.62 of the 2015 Final EIS displays OHV designations; those were changed as part of the September 2015 ROD/ARMPA. The updated acres are in MA-TTM-1 in the 2015 ROD/ARMPA, and are also shown in **Chapter 2** of this RMPA/EIS under MA-TTM-1 for the No Action Alternative. These area designations related to the conflicts identified in the recreation section above for the Five Mile Pass and Little Sahara areas.

Another change since the 2015 Final EIS was initiation of several travel management processes throughout the State of Utah, including several that overlap portions of both PHMA and GHMA in the Carbon, Uintah, and Sheeprocks areas. These implementation-level planning processes will address route designations and consideration of the travel network in areas that overlaps PHMA and some GHMA.

3.13 LANDS AND REALTY

The existing condition of Lands and Realty in the planning area is described in the 2015 Final EIS in Section 3.19 (Lands and Realty, pgs. 3-180 thru 3-190). The lands and realty program is essentially the

same as was described in the 2015 Final EIS and the program's impacts on Greater Sage-Grouse are also essentially the same. Land use authorization requests are customer driven. Within the planning area most authorizations processed are primarily for roads, electric distribution lines, small buried fiber optic lines, and communications sites. Occasionally ROWs are sought for major transmission lines (e.g., 500 kV electric transmission), large-scale pipeline projects, and other similar infrastructure to transport resources through the state.

Since 2015, several site-specific lands and realty actions have been completed while conforming to the avoidance, minimization (e.g., disturbance cap, tall structure, required design features, etc.), and compensation management in the 2015 ROD/ARMPA. This has included installing new local distribution power lines, adding new communication infrastructure to existing developed communication sites, development of pipelines that are aligned with existing disturbance and development of fiber-optic lines.

Additionally, two large interstate transmission line projects have been approved, both of which transverse a portion of both PHMA and GHMA. Construction has not yet begun on the TransWest Express Transmission Project. A description of the impacts of these projects on Greater Sage-Grouse is available in the associated environmental documents for each project. A smaller (138 kV) intrastate transmission line in southern Utah was approved during development of the 2015 ROD/ARMPA and construction is nearing completion.

Several sections of the 2015 Final EIS Chapter 3 for lands and realty displays land management decisions that predated completion of the 2015 ROD/ARMPA (e.g., avoidance and exclusion areas, number and acres of designated right-of-way corridors). Those numbers were changed as part of the September 2015 ROD/ARMPA. The updated acres are in the corresponding sections of the 2015 ROD/ARMPA.

3.14 RENEWABLE ENERGY

The existing condition of renewable energy in the planning area is described in the 2015 Final EIS in Section 3.20 (Renewable Energy, pgs. 3-190 thru 3-199). Similar to lands and realty, land use authorization requests for renewable energy projects are generally customer driven. The renewable energy program is essentially the same as was described in the 2015 Final EIS based on the generally low potential for renewable energy development on Greater Sage-Grouse habitat in the state. One new project since 2015 relates to a potential lease of an area north of the Bald Hills population for solar development. The consideration of that project is concurrent with this planning effort.

3.15 LEASABLE MINERALS (OIL AND GAS, NONENERGY LEASABLE MINERALS, COAL, AND OIL SHALE AND TAR SANDS)

Development of mineral resources has continued since 2015, largely focusing on maintaining existing operations while in some instances beginning the exploratory studies for expansion of existing operations. As a resource whose development is largely controlled by market demand, there has not been substantial changes in demand for leasable minerals since 2015. Based on these minimal changes, the existing conditions are essentially the same as described in the 2015 EIS.

3.15.1 Oil and Gas

Information related to mineral potential has not changed since the 2015 Final EIS. That information can be found in the 2015 Final EIS in Chapter 3, Section 3.21.1 in a series of tables applicable to the decision area, as well as four Greater Sage-Grouse population areas with high oil and gas development potential. Tables that

include oil and gas leasing categories and the acres of existing leases, leases held by production, and number of wells are updated below (**Tables 3-13** through **3-22**). The text surrounding the various tables is either repetitive of the table's content, or still describes the area's situation. The status of some designated Federal oil and gas units has changed since the 2018 Final EIS. Because of this, some leases that were held by production due to association with the designated unit were then evaluated on their own status rather than that of the unit, resulting in the lease expiring. As a result, the tables below have been updated to reflect the most up to date information on leases in PHMA and GHMA.

Table 3-13
Oil and Gas Federal Activity in the Decision Area (as of March 2019)

	PHMA	GHMA	Decision Area
Existing Oil and Gas Leases (acres)	106,599	304,864	411,463
Leases Held by Production (acres)	24704	170,302	195,006
Percent Held by Production	23%	56%	47%
Number of Existing Wells	224	869	1,093

Source: BLM 2019

Table 3-14
Oil and Gas Leasing Categories in the Decision Area

Category	PHMA	GHMA	Decision Area
Open to leasing, subject to standard terms and conditions	0	188,600	188,600
CSU and/or TL	0	261,300	261,300
NSO	3,023,700	28,600	3,052,300
Closed to Leasing	100,400	27,800	128,200

Source: BLM 2015 (ARMPA data sets)

Table 3-15
Oil and Gas Federal Leases and Wells in the Uintah Population Area (as of March 2019)

	PHMA	GHMA	Decision Area
Existing Oil and Gas Leases (acres)	50165	254,100	304,265
Leases Held by Production (acres)	8,985	137,882	146,867
Percent Held by Production	18%	54%	48%
Number of Existing Wells	54	552	606

Source: BLM 2019

Table 3-16
Oil and Gas Leasing Categories in the Uintah Population Area

Category	PHMA	GHMA	Decision Area
Open to leasing, subject to standard terms and conditions	0	104,000	104,000
CSU and/or TL	0	206,200	206,200
NSO	341,100	6,300	347,400
Closed to Leasing	56,400	12,400	68,800

Source: BLM 2015 (ARMPA data sets)

Table 3-17
Oil and Gas Federal Leases and Wells in the Carbon Population Area (as of March 2019)

	PHMA	GHMA	Decision Area
Existing Oil and Gas Leases (acres)	13,981	45,021	59,002
Leases Held by Production (acres)	12,940	29,490	42,430
Percent Held by Production	93%	66%	72%
Number of Existing Wells	158	317	475

Source: BLM 2019

Table 3-18
Oil and Gas Leasing Categories in the Carbon Population Area

Category	PHMA	GHMA	Decision Area
Open to leasing, subject to standard terms and conditions	0	22,500	22,500
CSU and/or TL	0	43,300	43,300
NSO	154,100	9,300	163,400
Closed to Leasing	5,900	15,300	21,200

Source: BLM 2015 (ARMPA data sets)

Table 3-19
Oil and Gas Federal Leases and Wells in the Emery Population Area (as of March 2019)

	PHMA	GHMA	Decision Area
Existing Oil and Gas Leases (acres)	12,252	2,928	15,180
Leases Held by Production (acres)	648	2,928	3,576
Percent Held by Production	5%	100%	24%
Number of Existing Wells	2	0	2

Source: BLM 2019

Table 3-20
Oil and Gas Leasing Categories in the Emery Population Area

Category	PHMA	GHMA	Decision Area
Open to leasing, subject to standard terms and conditions	0	7,900	7,900
CSU and/or TL	0	50	50
NSO	84,000	1,600	85,600
Closed to Leasing	0	0	0

Source: BLM 2015 (ARMPA data sets)

Table 3-21
Oil and Gas Federal Leases and Wells in the Rich Population Area
(as of March 2019)

	PHMA	GHMA	Decision Area
Existing Oil and Gas Leases (acres)	18,274	0	18,274
Leases Held by Production (acres)	2,116	0	2,116
Percent Held by Production	12%	-	12%
Number of Existing Wells	10	0	10

Source: BLM 2019

Table 3-22
Oil and Gas Leasing Categories in the Rich Population Area

Category	PHMA	GHMA	Decision Area
Open to leasing, subject to standard terms and conditions	0	0	0
CSU and/or TL	0	300	300
NSO	328,800	200	329,000
Closed to Leasing	0	0	0

Source: BLM 2015 (ARMPA data sets)

In addition to the updated oil and gas leasing categories, leases and wells, the 2015 Final EIS refers to the levels of reasonably foreseeable development associated with implementation of the 2015 Final EIS No action alternative (see 2015 Final EIS Section 3.21.7 on page 3.218). Because Alternative A (no action) was not selected in 2015, those numbers do not reflect the reasonably foreseeable development scenario given existing management in the 2015 ROD/ARMPA. The correct reasonably foreseeable development scenario for the 2015 Final EIS Proposed Plan is in Appendix R of that document. For this planning process, the reader is referred to Table R.1, Table R.2, and Table R.7 in the 2015 Final EIS Appendix R.

3.15.2 Nonenergy Leasable Minerals

Information related to mineral potential has generally not changed since completion of the 2015 Final EIS and can be found in Section 3.21.2 on page 3-208. A reference to a current leaseholder for a phosphate mine in PHMA is no longer accurate, since the company JR Simplot has changed its name to Simplot Phosphates LLC. This change, while making the document more accurate, does not change the existing environment and its relationship to the impact analysis.

Two aspects related to phosphate leasing were not specifically addressed in the 2015 Final EIS that have been raised during public comment on the 2018 Draft RMPA/EIS: fringe acreage leases and prospecting permits.

Page 3-208 of the 2015 Final EIS defines a fringe acreage lease, but the language stops short of noting the regulatory rights the holder of existing federal leases or mineral rights on adjacent private lands has to obtain the rights to such lands via a fringe acreage lease or a lease modification (43 CFR 3510.11). Such regulations would be considered in combination with management in the 2015 ROD/ARMPA, as amended by this planning process, when considering future requests for leases.

Page 3-208 of the 2015 Final EIS also addresses a preference right lease as a variety of a noncompetitive lease associated with a prospecting permit. As noted in the Mineral Leasing Act, Section 9(b), if the results of a prospecting permit are able to demonstrate that "valuable deposits of phosphate have been discovered within the area covered by his permit, the permittee shall be entitled to a lease for any or all of the land embraced in the prospecting permit."

As noted on page 3-211 of the 2015 Final EIS, there are pending prospecting permit applications in PHMA. All these prospecting permits are outside the Ashley-Brush Creek Known Phosphate Leasing Area, and most of the acreage is east of and beyond the areas with mapped high, moderate, or low phosphate development potential. In addition, the areas with pending prospecting permits overlap or are within 1 mile of 12 occupied Greater Sage-Grouse leks (approximately 39 percent of occupied leks in the Diamond Mountain proper area). The pending permits also bisect areas with nine occupied leks to the south and 10 occupied leks to the north or east. Finally, the prospecting permits are in an area where mining techniques (surface vs. underground) that would be used are unclear, based on the amount of overburden and considering the existing phosphate mining methods in the region and more broadly in the United States.

3.15.3 Coal

Information related to mineral potential has generally not changed since completion of the 2015 Final EIS, and can be found in Section 3.21.3 on page 3-212. One change since the 2015 Final EIS is the removal of portions of the Grand Staircase-Escalante National Monument. The 2015 Final EIS notes that coal inside the monument boundaries is unacceptable for coal leasing. While the December 2017 proclamation may reduce the size of the monument's boundaries, the specific management of those areas has not been determined and can therefore not be reported here.

3.15.4 Oil Shale and Tar Sands

Information related to mineral potential has not changed substantively since completion of the 2015 Final EIS, and can be found in Section 3.21.6 on page 3-217. An environmental document has been prepared to consider various rights-of-way across BLM-administered land in association with a potential oil shale project on private property.

3.15.5 Locatable Minerals

Existing conditions were described in the 2015 Final EIS in section 3.21.4 pages 3-215 through 3-216. Since FY2016 there has been an increase in the number of mining claims located in the State of Utah. The majority of those mining claims are located outside PHMA and GHMA, though there were two concentrations of new claims in the Sheeprocks area, with one concentration in the northeast GHMA portion and one in the southwest PHMA portion. In addition, since the completion of the 2015 Final EIS, thirteen locatable mineral notices have been accepted and four plans of operations authorized; however, only one notice is within either PHMA or GHMA, situated on the eastern edge PHMA in the Sheeprocks area.

3.16 Social and Economic Conditions

The Socioeconomic conditions within the planning area are described in the 2015 Final EIS in Section 3.23 (Social and Economic Conditions (Including Environmental Justice), pgs. 3-321 through thru 3-267). Social and economic conditions are further identified in the Draft EIS for the Sagebrush Focal Area

withdrawal in 2016, Chapter 3, Section 3.5 (Social and Economic Conditions), page 3-9, and specifically Section 3.5.17, Section 3.5.18, and Section 3.5.19.

BLM-administered lands provide a range of goods and services that benefit society in a variety of ways. Some of these goods and services, such as timber and minerals, are bought and sold in markets, and hence have a readily observed economic value (as documented in the sections above); others have a less clear connection to market activity, even though society derives benefits from them. In some cases, goods and services have both a market and a nonmarket component value to society. The socioeconomic conditions in Utah are essentially the same as described in the 2015 EIS, with the following changes.

Since 2015, all counties in Utah have prepared county-specific RMPs to identify the county's vision for management of public lands within their borders. This updates information on page 3-241 of the 2015 Final EIS Chapter 3. These plans are recognized and named in **Chapter 1**.

The 2015 Final EIS assumed that the federal portion of the Alton coalfield would start production on federal minerals in 2016 (see page 3-255). This did not occur and the environmental review of the lease nomination is not complete.

Since 2015, there have been some changes in market conditions with respect to demand and prices of major mineral commodities that are commonly extracted in Utah. Prices for crude oil have risen to some degree, although prices for natural gas have remained fairly steady at a low level. In addition to these market factors, normal fluctuations in the prices of other commodities such as gold and other minerals will continue to play a role in the degree to which new exploration, development, and production will occur in Utah. The most up-to-date, detailed statistics

Chapter 4. Environmental Consequences

4.1 Introduction

This chapter presents the anticipated direct, indirect, and cumulative impacts on the environment from implementing the alternatives in **Chapter 2**. The purpose of this chapter is to describe to the decision-maker and the public the differences between the entire range of alternatives considered in 2018, including the 2018 Draft Plan (Management Alignment Alternative), the 2018 Proposed Plan Amendment, as well as the range of alternatives incorporated by reference from the 2015 plan amendments. It is meant to clarify that Greater Sage-Grouse management was comprehensively analyzed in 2018 through multiple NEPA and planning processes.

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

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

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

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

This SEIS describes more explicitly the full range of alternatives that the BLM has evaluated, summarizing each action alternative contained in the 2015 and 2018 EISs.

4.2 Analytical Assumptions

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

The following general assumptions apply to all resource categories:

- Sufficient funding and personnel would be available for implementing the final decision
- Implementation-level actions necessary to execute the RMP-level decisions in this RMPA/EIS would be subject to further environmental review, including that under NEPA
- Direct and indirect impacts of implementing the RMPA would primarily occur on public lands administered by the BLM in the planning area, though environmental effects may also affect

adjacent non-BLM-administered lands; as noted in **Chapter 1**, the management actions apply only to BLM-administered public lands and mineral estates (minerals-related actions only)

- The BLM would carry out appropriate maintenance for the functional capability of all developments
- The discussion of impacts is based on best available data; Knowledge of the planning area and decision area and professional judgment, based on observation and analysis of conditions and responses in similar areas, are used for environmental impacts where data are limited
- Restrictions, such as siting and design features, would apply, where appropriate, to surface-disturbing activities associated with land use authorizations and permits issued on BLM-administered lands and federal mineral estate
- GIS data have been used in developing acreage calculations and to generate the figures in **Appendix A**
  - Calculations depend on the quality and availability of data
  - Acreage figures and other numbers are approximate projections for comparison and analysis only; readers should not infer that they reflect exact measurements or precise calculations
  - In the absence of quantitative data, best professional judgment was used
- Impacts were sometimes described using ranges of potential impacts, or they were described qualitatively, when appropriate

Analytical assumptions and indicators specific to individual resources and resource uses are the same as those identified in the methods of analysis section for each resource/use in the 2015 Final EIS. Assumptions or indicators specific to this analysis, if any, are presented under the applicable resources/resource uses sections below.

4.3 General Method for Analyzing Impacts

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

Type of impact—Impacts are characterized using the indicators described at the beginning of each resource impact section. The presentation of impacts for key planning issues is intended to provide the BLM decision-maker and reader with an understanding of the multiple use trade-offs associated with each alternative. Unless otherwise noted, the indicators used in this analysis correspond to the same indicators identified for resources and uses in the 2015 Final EIS.

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

The geographic extent of this environmental analysis is substantially similar to that in the 2015 Final EIS, with the exception of the portions of the 2015 planning area that were in Wyoming. Approximately 54,800 acres administered by the Ashely National Forest and 22,000 acres administered by the Uinta/Wasatch/Cache National Forest that extended into Wyoming are not part of the planning area for this process. Additionally, approximately 71,900 acres administered by the Sawtooth National Forest in

Box Elder County are included in the planning area for this process that were part of the Idaho planning area in 2015. This is a net decrease of approximately 4,900 acres (less than 0.01 percent of the planning area, and 0.12 percent of the decision area).

Additionally, as a result of implementing the adaptive management triggers, 111,900 acres (2 percent of all PHMA) changed from GHMA to PHMA compared with the 2015 Final EIS. Of this, only 53,900 acres are administered by the BLM (1.6 percent of PHMA on BLM-administered lands).

Because of these changes, acreage presented in this Draft EIS may not align with those in the 2015 Final EIS; however, given the small degree of change, the planning and decision area impacts described in the 2015 Final EIS are not different. Differences in potential site-level impacts will be called out as necessary.

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

Intensity—Rather than categorizing impacts with qualitative statements (e.g., major, moderate, or minor), this analysis describe the impact and its anticipated duration and context. Quantitative data is used to provide additional detail where possible.

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

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

Irreversible and irretrievable commitment of resources is discussed in **Section 4.8**, Irreversible and Irretrievable Commitment of Resources. Irreversible commitments of resources result from actions in which resources are considered permanently changed; irretrievable commitments of resources result from actions in which resources are considered permanently lost.

4.4 INCOMPLETE OR UNAVAILABLE INFORMATION

The CEQ established implementing regulations for NEPA, requiring that a federal agency identify relevant information that may be incomplete or unavailable for evaluating reasonably foreseeable significant adverse impacts in an EIS (40 CFR 1502.22). If the information is essential to a reasoned choice among alternatives, it must be included or addressed in an EIS, unless the cost of obtaining such information is exorbitant. Knowledge and information is, and would always be, incomplete, particularly with infinitely complex ecosystems considered at various scales.

The best available information pertinent to the decisions to be made was used in developing the RMPA/EIS. The BLM and Forest Service have made a considerable effort to acquire and convert

resource data into digital format for use in the RMPA/EIS, both from the BLM and Forest Service themselves and from outside sources.

Under the FLPMA, the inventory of public land resources is ongoing and continuously updated; however, certain information was unavailable for use in developing the RMPA/EIS. This was because inventories either had not been conducted or were not complete. Some of the major types of data that are incomplete or unavailable are the following:

- Comprehensive planning area-wide inventory of wildlife and special status species occurrence and condition
- GIS data used for disturbance calculations on private lands
- A comprehensive inventory of sagebrush lands, which meet the guidelines as recommended by the scientific community. This information is not monitored on a statewide level.
- Site-specific surveys of cultural and paleontological resources

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

In addition, some impacts could not be quantified, given the proposed management actions. Where there was this gap, impacts were projected in qualitative terms or, in some instances, were described as unknown. Subsequent site-specific project-level analyses would provide the opportunity to collect and examine site-specific inventory data to determine appropriate application of LUP-level guidance. In addition, the BLM and other agencies in the planning area continue to update and refine information used to implement this plan.

4.5 IMPACTS FROM THE 2018 PROPOSED RMPA/FINAL EIS NO-ACTION ALTERNATIVE

The impacts of the 2018 Proposed RMPA/Final EIS No-Action Alternative, or current management, were analyzed as the Proposed Plan in the 2015 Final EIS, and no new information had been identified that would invalidate or change the results of the existing analysis; therefore, impacts from implementing the 2018 Proposed RMPA/Final EIS No-Action Alternative were substantially the same as those analyzed in the 2015 Final EIS, and were incorporated into the 2018 RMPA/EIS by reference.

Table 4-1 shows where the description of the impacts of the 2018 Proposed RMPA/Final EIS No-Action Alternative can be found in the 2015 Final EIS, as well as the 2016 Sagebrush Focal Area Draft EIS (BLM 2016). The table is organized by issue, with rows for each resource topic related to the issue.

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

Issue	Related Resource Topic	Location
Sagebrush Focal Area Designations/Withdrawal Recommendation	Greater Sage-Grouse	Chapter 4, Section 4.3.7 (Special Status Species – Greater Sage-Grouse, Proposed Plans), page 4-113
	Soil Resources	Chapter 4, Section 4.6.2 (Soil Resources, Alternatives Analysis), page 4-147
	Water Resources	Chapter 4, Section 4.7.2 (Water Resources, Alternatives Analysis), page 4-151
	Vegetation (including Noxious weeds; Riparian and Wetlands)	Chapter 4, Section 4.8.7 (Vegetation, Proposed Plans), page 4-168
	Other Special Status Species	Chapter 4, Section 4.9.2 (Other Special Status Species, Alternatives Analysis), page 4-172
	Fish and Wildlife	Chapter 4, Section 4.10.2 (Fish and Wildlife, Alternatives Analysis), page 4-184
	Cultural Resources	Chapter 4, Section 4.12.2 (Cultural Resources, Alternatives Analysis), page 4-200
	Wildland Fire Management	Chapter 4, Section 4.14.7 (Wildland Fire Management, Proposed Plans), page 4-218
	Livestock Grazing/ Range Management	Chapter 4, Section 4.16.7 (Livestock Grazing/Range Management, Proposed Plans), page 4-246
	Leasable Minerals	Chapter 4, Section 4.21.1 (Oil and Gas, Proposed Plans), page 4-313
	Locatable Minerals	Chapter 4, Section 4.21.4 (Locatable Minerals, Proposed Plans), page 4-352 Further, based on analysis presented in Section 4.2 (Geology and Mineral Resources) of the 2016 Sagebrush Focal Area Draft EIS, withdrawal would not lead to any reduction of mining opportunities compared with not withdrawing.
	Social and Economic Conditions	Chapter 4, Section 4.23 (Social and Economic Impacts (Including Environmental Justice)), page 4-372 Further, based on analysis presented in Section 4.3.8 (Economic and Social Impacts in Utah) of the 2016 Sagebrush Focal Area Draft EIS, withdrawal would not lead to any broad economic impacts.
	Tribal Interests	Chapter 4, Section 4.24.2 (Tribal Interests), page 4-405
Administering Disturbance and Density Caps	Greater Sage-Grouse	Chapter 4, Section 4.3.7 (Special Status Species – Greater Sage-Grouse, Proposed Plans), page 4-113
	Soil Resources	Chapter 4, Section 4.6.2 (Soil Resources, Alternatives Analysis), page 4-147
	Water Resources	Chapter 4, Section 4.7.2 (Water Resources, Alternatives Analysis), page 4-151
	Vegetation (including Noxious weeds; Riparian and Wetlands)	Chapter 4, Section 4.8.7 (Vegetation, Proposed Plans), page 4-168
	Other Special Status Species	Chapter 4, Section 4.9.2 (Other Special Status Species, Alternatives Analysis), page 4-172

Issue	Related Resource Topic	Location
Administering Disturbance and Density Caps *(cont'd)*	Fish and Wildlife	Chapter 4, Section 4.10.2 (Fish and Wildlife, Alternatives Analysis), page 4-184
	Wild Horses and Burros	Chapter 4, Section 4.11.2 (Wild Horses and Burros, Alternatives Analysis), page 4-196
	Cultural Resources	Chapter 4, Section 4.12.2 (Cultural Resources, Alternatives Analysis), page 4-200
	Visual Resources	Chapter 4, Section 4.13.2 (Visual Resources, Alternatives Analysis), page 4-203
	Wildland Fire Management	Chapter 4, Section 4.14.7 (Wildland Fire Management, Proposed Plans), page 4-218
	Lands with Wilderness Characteristics	Chapter 4, Section 4.15.2 (Wilderness Characteristics, Alternatives Analysis), page 4-222
	Livestock Grazing/ Range Management	Chapter 4, Section 4.16.7 (Livestock Grazing/Range Management, Proposed Plans), page 4-246
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	Comprehensive Travel and Transportation Management	Chapter 4, Section 4.18.2 (Comprehensive Travel and Transportation Management, Alternatives Analysis), page 4-256
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Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA	Air Quality	Chapter 4, Section 4.4.2 (Air Quality, Alternatives Analysis), page 4-136
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Issue	Related Resource Topic	Location
Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA *(cont'd)*	Fish and Wildlife	Chapter 4, Section 4.10.2 (Fish and Wildlife, Alternatives Analysis), page 4-184
	Wild Horses and Burros	Chapter 4, Section 4.11.2 (Wild Horses and Burros, Alternatives Analysis), page 4-196
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Adaptive Management *(cont'd)*	Wildland Fire Management	Chapter 4, Section 4.14.7 (Wildland Fire Management, Proposed Plans), page 4-218
	Lands with Wilderness Characteristics	Chapter 4, Section 4.15.2 (Wilderness Characteristics, Alternatives Analysis), page 4-222
	Livestock Grazing/ Range Management	Chapter 4, Section 4.16.7 (Livestock Grazing/Range Management, Proposed Plans), page 4-246
	Recreation	Chapter 4, Section 4.17.2 (Recreation, Alternatives Analysis), page 4-253
	Comprehensive Travel and Transportation Management	Chapter 4, Section 4.18.2 (Comprehensive Travel and Transportation Management, Alternatives Analysis), page 4-256
	Lands and Realty	Chapter 4, Section 4.19.7 (Lands and Realty, Proposed Plans), page 4-271
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Issue	Related Resource Topic	Location
Land Disposal and Exchanges *(cont'd)*	Lands and Realty	Chapter 4, Section 4.19.7 (Lands and Realty, Proposed Plans), page 4-271
	Leasable Minerals	Chapter 4, Section 4.21.6 (Oil Shale and Tar Sands, Proposed Plans), page 4-366
	Social and Economic Conditions	Chapter 4, Section 4.23 (Social and Economic Impacts (Including Environmental Justice)), page 4-372
Managing Habitat to Manage Predation	Greater Sage-Grouse	Chapter 4, Section 4.3.7 (Special Status Species – Greater Sage-Grouse, Proposed Plans), page 4-113
	Vegetation	Chapter 4, Section 4.8.7 (Vegetation, Proposed Plans), page 4-168
	Other Special Status Species	Chapter 4, Section 4.9.2 (Other Special Status Species, Alternatives Analysis), page 4-172
	Fish and Wildlife	Chapter 4, Section 4.10.2 (Fish and Wildlife, Alternatives Analysis), page 4-184
Burial of Transmission Lines	Greater Sage-Grouse	Chapter 4, Section 4.3.7 (Special Status Species – Greater Sage-Grouse, Proposed Plans), page 4-113
	Soil Resources	Chapter 4, Section 4.6.2 (Soil Resources, Alternatives Analysis), page 4-147
	Vegetation (including Noxious weeds; Riparian and Wetlands)	Chapter 4, Section 4.8.7 (Vegetation, Proposed Plans), page 4-168
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Table 4-2 is a summary of the environmental consequences of the 2015 alternatives that were incorporated by reference into the 2019 planning effort and considered throughout the process. **Table 4-3**, presents a comparison summary of impacts from management actions proposed for the alternatives considered in 2015.

Table 4-2
Summary of Environmental Consequences

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	*E2: Wyoming*	
Special Status Species – Greater Sage-Grouse						
New ROWs could cause additional fragmentation to Greater Sage-Grouse habitat, habitat loss, and functional loss of the habitat, especially in areas adjacent to above-ground and site-type ROWs.	PHMA would be managed as ROW exclusion. Therefore, Greater Sage-Grouse habitat fragmentation, direct and indirect habitat loss, habitat degradation, and habitat disturbance from new ROWs in PHMA would be eliminated. New ROWs could be located in existing designated corridors within the footprint of existing disturbance. Concentrating disturbance into already disturbed area would prevent further habitat fragmentation and habitat loss. GHMA would be managed as ROW avoidance. ROWs would only be allowed when there are no other alternatives. Fragmentation and degradation could occur in GHMA when new ROWs are constructed.	All Greater Sage-Grouse habitat would be managed as ROW exclusion; therefore, no further habitat fragmentation, indirect or direct loss, or habitat degradation would occur.	Restrictions on new ROWs would reduce Greater Sage-Grouse habitat fragmentation and direct and indirect habitat loss. In PHMA, the impacts on the lek and nesting and brood-rearing habitats would decrease by excluding above-ground linear ROWs within 4 miles of a lek. New above-ground ROWs would be limited to existing above-ground corridors. The impacts would be concentrated in one area. GHMA would be managed as ROW avoidance. ROWs would only be allowed when there are no other alternatives and under specific circumstances. Fragmentation and degradation could occur in GHMA when new ROWs are constructed.	Implementation of ROW stipulations would protect leks by reducing impacts on leks and seasonal habitats during important periods of time. Where feasible, electrical transmission lines would be sited together in a corridor or in areas where there are already existing linear disturbances to lessen the direct disturbance of Greater Sage-Grouse habitat in SGMAs.	The core Greater Sage-Grouse habitat would be managed as ROW exclusion or new ROWs can be collocated with existing disturbance. Concentrating disturbance into already disturbed area would prevent further Greater Sage-Grouse habitat fragmentation and habitat loss.	PHMA would be managed as ROW avoidance. Where avoidance is not possible, additional stipulations would apply. Large pipelines and transmission lines would only be located in existing corridors. These measures would protect all lekking and most nesting, early brooding habitat; minimize and mitigate loss and division of other seasonal habitat; and minimize disruption and displacement of Greater Sage-Grouse. GHMA would be open to new ROWs. Conservation measures would be applied as COAs. Lek buffers would protect lekking and some nesting, early brooding habitat. Fragmentation and degradation of habitat could occur where new ROWs are constructed.
Some Greater Sage-Grouse habitat is open to cross-country motorized travel. Cross-country travel and new route creation can result in habitat fragmentation, degradation, and loss.	In PHMA, habitat loss and fragmentation would be reduced by limiting travel to existing or designated routes. The habitat disturbance limitation of 3 percent would apply for new roads associated with valid existing rights. Not allowing upgrades of existing roads would also limit disturbance and degradation within Greater Sage-Grouse habitat. Routes would be evaluated for seasonal closure to reduce functional loss of habitat and habitat degradation from routes in important habitats. GHMA would be designated as per the travel management plan in the current planning document.	Impacts from roads are the same as Alternative B, except decisions would be applied to all occupied Greater Sage-Grouse habitat. Also no new routes would be allowed within 4 miles of a lek which would reduce impacts on nesting and early brood-rearing habitat.	All Greater Sage-Grouse habitat would be protected from loss and fragmentation caused by route proliferation by limiting travel to existing or designated routes. The habitat disturbance limitation of 5 percent would apply for new roads associated with valid existing rights. Upgrades of existing roads would protect Greater Sage-Grouse habitat while considering the needs of the larger transportation network. Travel systems would be managed with an emphasis on improving the sustainability of the travel network in a comprehensive manner to minimize impacts on Greater Sage-Grouse.	Nesting and winter habitat would be managed as limited to existing routes. This would limit fragmentation and habitat loss in important seasonal habitats, though it would leave over 350,000 acres open to cross-country use which could result in some habitat fragmentation, degradation and loss in approximately 10 percent of Greater Sage-Grouse habitat.	All federal lands in the Utah Sub-region planning area located in State of Wyoming are National Forest System lands. The Forest Service addresses impacts on Greater Sage-Grouse from roads through implementation-level travel management plans.	Impacts would be similar to alternatives B and D. In PHMA, habitat loss and fragmentation would be reduced by limiting travel to existing or designated routes. The 3 percent disturbance cap (5 percent on National Forest System lands in the Wyoming portion of the planning area) would apply to new roads associated with valid existing rights. Routes would be evaluated for seasonal closure to reduce loss and degradation of habitat. The overall travel network would be managed to minimize impacts on Greater Sage-Grouse. Stipulations would apply to new road ROWs. This includes a 3.1 mile lek buffer that would protect most lekking, nesting, and early brooding habitat. The lek buffer is 0.6 miles in PHMA and 0.25 miles in GHMA on National Forest System lands in the Wyoming portion of the planning area.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	***E2: Wyoming***	
Impacts on Greater Sage-Grouse from existing fences would continue.	The direct loss of Greater Sage-Grouse would be reduced by removing, modifying or marking fences in high risk areas within PHMA.	Under Alternative C1, the lack of livestock grazing and presence of ACECs with management to remove unneeded infrastructure would decrease the number of fences in Greater Sage-Grouse habitat. Under Alternative C2, impacts would be the similar to those described under Alternative B, but would be applied in areas where fences pose both high and moderate risks, so there would likely be less of impacts on Greater Sage-Grouse. In addition, there would be no new construction of range improvements including fences, therefore, less impacts from infrastructure development would occur.	Impacts from fences are the same as described for Alternative B.	New fences would generally not be located on or adjacent to leks where bird collisions would be expected to occur. Impacts from existing fences would be reduced by applying NRCS fence collision risk tool.	Impacts on Greater Sage-Grouse within core habitat would be reduced if the fence is found to be problematic for Greater Sage-Grouse.	Impacts would be similar to Alternative B and D. New fences would not be allowed within 1.2 miles of leks reducing bird collisions. The lek buffer is 0.6 miles in PHMA and 0.25 miles in GHMA on National Forest System lands in the Wyoming portion of the planning area.
Various fluid mineral stipulations apply, with protective buffers around leks ranging from 0.25-mile to 3.1 miles. In general, recently completed plans include a larger protective buffer. Recently completed plans also include a management action that prohibits surface disturbing activities or disruptive activities during certain dates in seasonal habitats. Surface disturbance estimated for this alternative (based on the RFD) is 16,285 acres. Continued impacts on Greater Sage-Grouse are anticipated such as habitat loss, fragmentation, disturbance to the birds and habitat degradation due to the variability and uncertainty of the application of restrictions.	PHMA would be closed to new fluid mineral leasing, eliminating habitat loss, degradation, and fragmentation. Development of existing leases in PHMA would still cause fragmentation, direct and indirect habitat loss, disruption of Greater Sage-Grouse, and degradation of habitat. The majority of the development would occur on existing leases. The amount of estimated disturbance would be 8,912 acres. RDFs would reduce the effects of development. Disturbance would be clustered on the landscape and would be limited to 3 percent per section on average. This would reduce habitat loss and fragmentation.	Impacts from fluid minerals are same as Alternative B, except a larger geographical area would be closed to leasing. The total amount of estimated disturbance would be 7,386 acres.	With the application of a 4-mile NSO around leks in PHMA and limitations on disturbance and seasonal stipulations in the remainder of PHMA, impacts from new leases on Greater Sage-Grouse nesting and early brood-rearing habitat would be reduced or eliminated. Impacts from development of existing leases would be similar to that described for Alternative B. The amount of estimated disturbance would be 9,302 acres.	SGMAs would include NSO within 1 mile of a lek and CSU/TL stipulations beyond that may reduce the impact on leks and seasonal habitats. The impacts on important habitat may be reduced to some degree under this alternative complete avoidance of impacts, but direct impacts from development may still occur if avoidance were not possible. In these cases, minimization and mitigation would reduce impacts and could result in additional habitat. Surface disturbance is the same as Alternative A. Existing leases are not affected by this alternative. Because the 5 percent disturbance limitation does not include existing disturbances, disturbance could occur at levels that have been shown to negatively affect long-term maintenance of population.	With an NSO within 0.6-mile of a lek and a CSU/TL in nesting and early brood-rearing habitat, impacts on the lek and seasonal habitat (such as direct habitat loss, fragmentation, and disruption to Greater Sage-Grouse) would continue. Estimated surface disturbance is the same as Alternative A.	Impacts would be similar to Alternative B. PHMA would be NSO to new fluid mineral leasing, eliminating habitat loss, degradation, and fragmentation except on National Forest System lands in the Wyoming portion of the planning area where PHMA would open to new fluid mineral leasing with major/moderate constraints. Development of existing leases in PHMA would still cause fragmentation, direct and indirect habitat loss, disruption of Greater Sage-Grouse, and degradation of habitat. To the extent practical, conservation measures would be applied as COAs. The amount of estimated disturbance would be 9,218 acres.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	*E2: Wyoming*	
Continued impacts from solid mineral mining on Greater Sage-Grouse are anticipated such as habitat loss, fragmentation, disturbance to the Greater Sage-Grouse, and habitat degradation due to the variability of restrictions. There is no surface disturbance limitation recommendation included in this alternative.	PHMA would be determined unsuitable for surface coal mining, recommended withdrawal from locatable mineral entry, closed to mineral material disposal, and closed to nonenergy mineral leasing. Therefore, impacts from new minerals development in PHMA would be eliminated. Development of existing leases would result in habitat loss and fragmentation. Application of surface disturbance thresholds and RDFs would reduce impacts on Greater Sage-Grouse.	Impacts from solid minerals are the same as Alternative B except decisions would be applied to a larger geographical area (all occupied habitat).	Greater Sage-Grouse habitat would not be unsuitable for surface coal mining, and would be open to locatable mineral entry. PHMA would be closed to commercial mineral material disposal but open to noncommercial, free use beyond 1 mile of leks. PHMA would be open to underground mining of nonenergy leasable minerals but closed to surface mining. Stipulations placed on the type, amount, timing, and location of mining would reduce the likelihood for habitat fragmentation and loss in important seasonal habitats. In general, no disturbance would be allowed within 1 mile of a lek, which would protect some nesting and early-brood rearing habitat. Development of existing leases would result in habitat loss and fragmentation. Application of surface disturbance thresholds and RDFs would reduce impacts on Greater Sage-Grouse.	Greater Sage-Grouse habitat would not be unsuitable for surface coal mining, and would be open to locatable mineral entry, mineral material disposal, and nonenergy leasable minerals development. Stipulations would be applied to new leases. Seasonal stipulations would protect Greater Sage-Grouse during important seasons. The implementation of other temporal and spatial restrictions may lessen some of the impacts of mining. Since the 5 percent disturbance limitation does not include existing disturbances, disturbance could occur at levels that have been shown to negatively affect long-term maintenance of Greater Sage-Grouse populations.	Within core habitat, there is a 0.6-mile lek NSO stipulation that would protect the lek to a certain degree, and there is a 0.25-mile lek NSO stipulation outside of core habitat. There are also restrictions on seasonal habitats outside of the lek buffers that would provide some protection. In general, mining activities could continue and could cause habitat loss, degradation, and fragmentation.	PHMA would be closed to mineral materials sales and nonenergy leasable minerals except on National Forest System lands in the Wyoming portion of the planning area. SFA would be withdrawn from locatable mineral entry, the remainder of PHMA would remain open. Coal suitability determinations would be made on a case-by-case basis. Conservation measures would apply to all new mineral development activities. Closures would eliminate impacts from new mineral development in PHMA. In GHMA conservations measures would protect most lekking, nesting, early brooding habitat; minimize and mitigate loss and division of other seasonal habitat; and minimize disruption and displacement of Greater Sage-Grouse. Development of existing leases would result in habitat loss and fragmentation. Application of conservation measures, to the extent practical, would reduce impacts on Greater Sage-Grouse.
Most Greater Sage-Grouse habitat is open to wind development. In areas with high development potential, continued impacts on Greater Sage-Grouse, such as habitat loss and fragmentation, are anticipated.	Wind development would be excluded in PHMA under this alternative. Therefore, impacts such as habitat loss, degradation, and disturbance to Greater Sage-Grouse would be eliminated. There are no restrictions for GHMA under this alternative; however, there is also not high wind energy potential in GHMA.	Impacts from wind development are the same as Alternative B; however, under this alternative, all Greater Sage-Grouse habitat would be excluded from wind development; thus more habitat protected.	Impacts from wind development would be similar to Alternative B because all PHMA would be excluded from wind development; however, there would be additional protection because the area outside of PHMA but within 4 miles of a lek in PHMA would be managed as an avoidance area in order to reduce the indirect impacts from development. Direct habitat loss would be lessened in GHMA with the restriction to wind development within 1 mile of a lek.	Greater Sage-Grouse habitat within SGMAs would be an avoidance area from wind development. Protections would be afforded to the lek itself and within a 1-mile viewshed of the lek. Time-of-day stipulations and seasonal stipulations would assist in limiting some of the impacts on Greater Sage-Grouse, such as habitat loss and disturbance to GSRG during important times of the year.	Wind development is excluded in core habitat. Therefore impacts such as habitat loss, degradation, and disturbance to Greater Sage-Grouse would be eliminated.	On National Forest System lands in the Wyoming portion of the planning area, impacts from wind development would be less than Alternative A because wind energy development would be avoided in PHMA. In addition, the lek buffer of 0.6 miles in PHMA on National Forest System lands in the Wyoming portion of the planning area would further restrict such development. In the reminder of the planning area, impacts from wind development would be similar to Alternative B and D; however, there would be additional protection because no wind development would be allowed within 5 miles of occupied leks in PHMA. In GHMA, impacts would be less than under Alternatives B or D because additional conservation measures would be applied as COAs. These measures include a 3.1 mile lek buffer on energy developments. The lek buffer is 0.25 miles in GHMA on National Forest System lands in the Wyoming portion of the planning area.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	*E2: Wyoming*	
Varied fuels treatment options would continue.	Impacts such as habitat degradation and habitat loss from fuels treatments would be reduced because there would be no treatments in winter habitat, no prescribed fire in areas with less than 12 inches precipitation, and all projects would use native seeds. Habitat loss would decrease because of the restrictions on fuels management treatments and disruption of Greater Sage-Grouse would decrease with the treatments occurring outside of important seasons. Wildfire suppression efforts would be prioritized very high in Greater Sage-Grouse habitat. Following best practices will also limit impacts from firefighting activities. Requiring native seed and designing fuels treatments for long-term success would reduce the long-term impact of the short-term habitat loss and not have a negative long-term population impact.	Impacts are similar to Alternative B, except all occupied Greater Sage-Grouse habitat is PHMA. In addition, relies more on passive restoration efforts to indirectly reduce the risk of wildfires. Restores anthropogenic disturbance such as nonnative seeding, fences, and areas affected by livestock grazing.	Habitat loss would be reduced from the implementation of a system of fuel breaks. Fuel treatments would reduce impacts since they would need to be designed with the emphasis to maintain, protect, and expand sagebrush. Prescribed fire would not be allowed unless it is shown that noxious weeds will not be spread. Winter habitat loss would be limited by restricting when treatments could occur in these areas. Wildfire suppression planning would lessen the risk for habitat loss from wildfire. The emphasis on use of native seed or desirable plants would lessen the long-term habitat loss to GSRG habitat.	Prescribed fire would only be allowed if other treatments options have been explored, where site specific variables allow, and in areas where risk of conversion to exotic annual dominance is low and/or could be mitigate. Prescribed fire in area of low elevation Wyoming big sagebrush would be avoided. Changes in prescribed fire management would reduce the risk of fire escape or wild fire in Greater Sage-Grouse habitat. Implementation of a statewide fire agency agreement could decrease habitat loss be increasing response time to wildfires. Loss of winter habitat would be limited to approximately 20 percent. Therefore, 80 percent of the winter habitat would not be impacted by treatments, and Greater Sage-Grouse would be able to access that habitat in the winter.	Habitat loss would be reduced when prescribed fire actions are limited and Greater Sage-Grouse habitat is prioritized for suppression.	Management actions considered and impacts would be similar to Alternative D. The primary difference is that the Proposed Plans include quantifiable treatment objectives designed to meet vegetation objectives (70 percent of lands capable of producing sagebrush have 10 to 30 percent sagebrush canopy cover). Treatment of annual grasses and conifers as aimed under the Proposed Plans would further reduce the amount of fire.
Emergency Stabilization and Rehabilitation plans can help ameliorate the threat of invasive annuals and strategic wild and fire suppression can provide long-term protection to intact native vegetation, thereby preventing the spread and conversion to invasive annuals. Invasive annuals would continue to be introduced and spread as a result of ongoing vehicle traffic in and out of the planning area, recreational activities, wildlife, improper livestock grazing, fire, and surface-disturbing activities (energy and infrastructure).	Impacts on Greater Sage-Grouse habitats would be minimized by controlling, suppressing, and eradicating noxious and invasive weeds. Since this alternative would limit anthropogenic disturbance to 3 percent, this would likely limit the invasive annuals introduced. Native seed would be required for restoration efforts and the use of BMPs for fire and fuels treatments. Use of native species could reduce habitat degradation and loss from invasive species. On the other hand, native species may be unable to out-compete annual cheatgrass.	Impacts from invasive weeds are the same as Alternative B, except this alternative would also prioritize restoring sagebrush steppe invaded by nonnative plants, further reducing habitat degradation and loss from invasive species. In addition, passive restoration would result in decreasing the rate and scale of minimizing invasive species compared to other action alternatives. Local native plant ecotype seeds and seedlings would be used to restore treated habitats. It could take longer for these habitats to recover and could be a loss of habitat for a certain amount of time.	Impacts from invasive weeds are similar to Alternative B, except the disturbance limitation would be 5 percent instead of 3 percent. Disturbance thresholds would limit the invasive annuals introduced.	Agencies would be required to aggressively respond to new infestations to keeping invasive species from spreading, identify, and treat new infestations before they become larger problems, and contain known infestations of weeds in or near sagebrush habitats.	Giving priority for implementing specific Greater Sage-Grouse habitat restoration projects in annual grasslands would help degraded habitat be reclaimed to support sustainable Greater Sage-Grouse over the long-term.	Impacts would be similar to those described under Alternatives B and D. Similar to Alternative B, disturbance would be limited to 3 percent (5 percent on National Forest System lands in the Wyoming portion of the planning area). Limiting the amount of development would limit opportunities for introduction and spread of invasive species. Similar to Alternative D, native seeds would primarily be used for restoration; however, desirable nonnative species could be used where the probability of success for native species is low.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	***E2: Wyoming***	
Varying degrees of existing habitat objectives are identified for maintenance, improvement, and restoration of sagebrush communities. The objectives provide for improvements to wildlife habitat or to increase available forage for wildlife, livestock, and wild horses, which would also have varying benefits and impacts on Greater Sage-Grouse. There is no set standard for treatment in Greater Sage-Grouse habitat.	Prioritizing sagebrush restoration in seasonal habitats would reduce degradation, habitat loss, and fragmentation for Greater Sage-Grouse.	Passive sagebrush restoration is preferred for restoring these areas over active restoration methods.	Prioritizing sagebrush restoration in seasonal habitats plus reducing conifer encroachment in PHMA would improve and expand Greater Sage-Grouse habitat in these areas.	Aggressively removing encroaching conifers and other plant species would expand Greater Sage-Grouse habitat where possible, which in many instances would benefit GSRG and would decrease habitat degradation and habitat loss.	Following the guidelines in WGFD *Protocols for Treating Sagebrush to Benefit Sage-Grouse* would benefit Greater Sage-Grouse.	The Proposed Plans, similar to Alternative E, include quantifiable treatment objectives. These objectives are designed to ensure that 70 percent of lands capable of producing sagebrush have 10 to 30 percent sagebrush canopy cover. Except on National Forest System lands in the Wyoming portion of the planning area, within 0.6 miles of a lek include an objective of reducing conifer, where technically feasible, to less than 5 percent canopy cover. These measures would improve and expand Greater Sage-Grouse habitat.
Impacts on Greater Sage-Grouse vary on each allotment since there is no set direction to specifically consider Greater Sage-Grouse in grazing decisions. There could be localized to generalized landscape scale degradation to Greater Sage-Grouse habitat from grazing. Structural range improvements are considered on a case-by-case basis while maintaining rangeland health which could lead to Greater Sage-Grouse habitat degradation with the introduction of invasive species in some areas. Wild horses would be managed within AMLs, which could still affect site-specific areas of GSRG habitat.	Rangeland would be managed for vegetation composition and structure consistent with ecological site potential and within the reference state to achieve Greater Sage-Grouse seasonal habitat guideline contained in Connelly et al. 2000 and Hagen et al. 2007. Greater Sage-Grouse habitat would move towards the structural components needed for Greater Sage-Grouse life cycle needs. Structural range improvements must conserve, maintain, enhance or restore Greater Sage-Grouse habitat through improved grazing management system. Water development would need to be neutral or beneficial to Greater Sage-Grouse. Wild horses would be managed similar to Alternative A.	Alternative C1 would make BLM-administered and National Forest System lands unavailable to livestock grazing, which could improve ground cover, leaving more grass and forbs. However, there would be associated changes in wildfire potential and invasive species risks. Alternative C2 requires a substantial reduction in livestock grazing. Some allotments would have a decrease in AUMs and some would be closed if deemed necessary upon review. The potential for short-term habitat impacts would be lessened by changing the season of grazing to outside of the growing season. Structural range improvements would be avoided to evade introduction of invasive species that would degrade GSRG habitat. No new water developments would be authorized and existing water developments that are harmful to Greater Sage-Grouse could be dismantled. A reduction of wild horse AMLs by 25 percent would also benefit the Greater Sage-Grouse by leaving more residual vegetation for cover.	Desired cover percentages and heights for sagebrush, grasses and forbs in seasonal habitats will be managed to achieve habitat guidelines from scientific literature (e.g., Connelly et al. 2000 and Hagen et al. 2007) or local scientific literature and conditions, if applicable. Greater Sage-Grouse habitat would move towards the structural components needed for all Greater Sage-Grouse life cycle needs.	Livestock grazing would continue using BMPs that could help decrease any potential degradation to Greater Sage-Grouse nesting success and population recruitment. Repeated, annual heavy use during critical growing seasons and avoidance of season-long grazing on wet meadows and riparian areas would be avoided. This would decrease the impact on GSRG nesting and brood-rearing habitat. The use of special grazing systems and utilization level monitoring in nesting and brood-rearing habitat would also reduce the likelihood of degradation of Greater Sage-Grouse habitat. Water developments would enhance or maintain Greater Sage-Grouse mesic habitat. Range improvement structures would avoid the lek. Habitat degradation would be limited by aggressively responding to new infestations to keep invasive species from spreading if they were to occur with	Following the practices outlined in *Grazing Influence, Management, and Objective Development in Wyoming's Greater Sage-Grouse Habitat* would reduce habitat degradation. Existing impacts from wild horses would continue.	Impacts would be similar to alternatives B and D, except the Proposed Plans include more detailed vegetation management objectives or grazing guidelines by seasonal habitat that take into consideration local ecology. The inclusion of more specific objectives creates additional parameters that could increase the amount of certainty when considering on the ground actions.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
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				structural range improvements. Wild horses would be managed the same as Alternative A.		
Cross-country motorized travel could result in a loss of Greater Sage-Grouse habitat. Recreation, including motorized, could cause Greater Sage-Grouse displacement, habitat degradation, and effective habitat loss (e.g., vegetation trampling and soil erosion, and introduction or spread of invasive species and noxious weeds).	There would be no cross-country travel in PHMA. This would eliminate route proliferation and new direct disturbance of Greater Sage-Grouse habitat. Recreation, including motorized, could cause Greater Sage-Grouse displacement, habitat degradation, and effective habitat loss. Recreational permits would only be issued in PHMA that have neutral or beneficial effects; therefore, long-term degradation, disruption or loss of Greater Sage-Grouse habitat is unlikely to occur.	Impacts from recreation would be similar to those described under Alternative B except in PHMA camping and other nonmotorized recreation would be prohibited during certain seasons within 4 miles of a lek. In addition, there would be no new route construction within 4 miles of a lek. These decisions would reduce disturbance to nesting and brood-rearing Greater Sage-Grouse and their habitat.	All Greater Sage-Grouse habitat would be protected from loss and fragmentation by limiting travel to existing or designated routes. Impacts from recreational permits would be the same as those described for Alternative B. Impacts from other types of recreation, including recreation at developed recreation sites and dispersed recreation would be the same as those described under Alternative A.	Impacts on nesting and winter habitats would be decreased because routes would be limited in these areas. Route proliferation could continue in the other Greater Sage-Grouse habitats that are open to cross-country travel. Permitted recreation activities would have some restrictions that would likely reduce direct disturbance to GSRG and their habitat but would not change the overall amount of habitat degradation or habitat loss in the area. Disperse recreation and developed recreation sites would have impacts similar to Alternative A.	The Forest Service would address impacts on Greater Sage-Grouse from roads through future implementation-level travel management plans. SUAs would be allowed so long as impacts on Greater Sage-Grouse can be mitigated. Dispersed and developed recreation would result in similar impacts as described for Alternative A.	Impacts from recreation would be similar to Alternative B and D. On National Forest System lands in the Wyoming portion of the planning area SRPs that could disrupt Greater Sage-Grouse would be not allowed in all PHMA and within 2 miles of occupied leks in GHMA. In the remainder of the planning area, disruptive SRPs would not be allowed within 0.25 miles of occupied leks. This would reduce Greater Sage-Grouse from potential noise disruptions when Greater Sage-Grouse are on the lek.
Most LUPs include a management action that allows for acquisition of lands that have important resource values including Greater Sage-Grouse. Land tenure adjustments could result in consistent management across the landscape. Some lands with Greater Sage-Grouse habitat are identified for disposal. Typically these lands are located near the existing urbanized area where there are mixed land ownership patterns, which makes it difficult to manage for specific purposes including Greater Sage-Grouse protection.	PHMA would be retained in public ownership unless habitat in areas of mixed ownership could be consolidated with areas of PHMA with more contiguous federal ownership patterns so the public land management agencies could manage on a landscape scale. Because Greater Sage-Grouse is a landscape species, large contiguous tracts of land with management focusing on protection of Greater Sage-Grouse habitat would benefit both the species and its habitat.	Land tenure adjustments similar to Alternative B, However, there would be no option to consolidate ownership into areas where consistent management could benefit Greater Sage-Grouse.	Impacts from land tenure adjustments the same as Alternative B, except there could be some instances where Greater Sage-Grouse habitat could be disposed of to benefit other federally listed species.	No decisions related to land tenure adjustments, so impacts would be the same as what is already in the existing LUPs (Alternative A).	Impacts from land tenure adjustments is the same as described under Alternative B.	Impacts from land tenure adjustments would be the same as under Alternative D.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* / *E2: Wyoming*	Proposed Plans
Air Quality					
Alternative A would result in a continuation of current impacts on air quality and would provide fewer protections than any of the action alternatives.	Alternative B would result in restrictions on activities that emit air pollutants as compared with the continuation of existing management under Alternative A. Indirect adverse impacts would result from restrictions on power line development in Uinta Basin and restrictions on mineral material development that resulted in longer haul distances.	Alternative C places the greatest level of restrictions on actions that would emit air pollutants compared with the other alternatives, and consequently could be expected to have the smallest impact on air quality. Alternative C could be expected to result in the largest change in air quality as compared to current conditions. Indirect adverse impacts would be similar to Alternative B.	Similar to Alternative B, Alternative D would result in restrictions on activities that emit air pollutants as compared with the continuation of existing management under Alternative A. Indirect adverse impacts would be similar to Alternative B.	Alternative E would have the fewest restrictions of the action alternatives and consequently could be expected to result in the smallest change in air quality as compared to current conditions.	The Proposed Plans would result in restrictions on activities that emit air pollutants as compared with continuation of existing management under Alternative A. Indirect adverse impacts would be similar to Alternative B.
Climate Change					
Alternative A would result in a continuation of current impacts on climate change and would provide fewer protections than any of the action alternatives.	Alternative B would result in greater restrictions on activities that emit GHGs as compared with the continuation of existing management under Alternative A.	Alternative C places the greatest level of restrictions on actions that would generate GHGs out of all the alternatives, and consequently could be expected to contribute the least to climate change.	Similar to Alternative B, Alternative D would result in greater restrictions on activities that emit GHGs as compared with the continuation of existing management under Alternative A.	Alternative E would result in fewer restrictions on activities that emit GHGs. Alternative E would have a great potential to reduce the carbon storing capacity of pinyon-juniper in the planning area, as this alternative would emphasize removal of encroaching pinyon-juniper to a greater extent than the other alternatives that seek to limit encroachment.	The Proposed Plans greatly restricts GHG generating actions, but to a slightly lesser extent than Alternatives B or Alternative C. The Proposed Plans would have the greatest potential to reduce carbon-storage capacity, as management would emphasize removal of encroaching pinyon-juniper to a greater extent than the other alternatives that seek to limit encroachment. Consequently, this alternative could be expected to result in the smallest improvements in carbon storage as compared to current conditions.
Soil Resources					
Alternative A would result in a continuation of current impacts on soil resources and would provide fewer protections than any of the action alternatives.	Alternative B would result in greater restrictions on compaction and erosion activities as compared with continuation of existing management under Alternative A.	Alternative C would result in the greatest restrictions on soil-disturbing activities, including livestock grazing, road construction, coal and fluid mineral leasing and development, and ROW development. This would result in the greatest protections of any alternative for soil conditions in the planning area. On the contrary, Alternative C emphasizes passive restoration over active restoration. This could increase potential for soil loss or degradation in areas where there is limited vegetative ground cover.	Similar to Alternative B, Alternative D would result in greater restrictions to surface disturbing activities that may result in impacts on soil resources.	Alternative E would result in the fewest restrictions of the action alternatives and protections for soil resources would be less stringent and widespread.	Similar to Alternative B, the Proposed Plans would result in greater restrictions to surface disturbing activities that may result in impacts on soil resources.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* / *E2: Wyoming*	Proposed Plans
Water Resources					
Alternative A would result in a continuation of current impacts on water resources and would provide fewer protections than any of the action alternatives.	Alternative B would result in greater restrictions on human activities as compared with the continuation of existing management, including such measures as reductions in acres available for livestock grazing, designation of ROW exclusion areas, and closure to mineral leasing and development. Implementation of this alternative would potentially result in overall improvements in water quality across the planning area. Since water consuming activities would be restricted, the action alternatives are all also likely to result in increased storage of water in the landscape. Restrictions would improve the likelihood of more waters meeting fully supporting beneficial uses and increase or maintain the level of stream miles meeting state and federal water quality standards and designated beneficial uses. This alternative is likely to protect, if not improve and restore, water sources for Greater Sage-Grouse, and are also likely to decrease the presence of mosquito breeding habitat.	Alternative C would result in the greatest restrictions on surface-disturbing activities, including livestock grazing, road construction, coal and fluid mineral leasing and development, and ROW development. This would result in the greatest protections of any alternative for water conditions in the planning area.	Impacts would be similar to those under Alternative B.	Alternative E would result in the fewest restrictions of the action alternatives and protections for water resources would be less stringent and widespread.	Similar to Alternative B, the Proposed Plans would result in greater restrictions to surface disturbing activities that may result in impacts on water resources.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* / *E2: Wyoming*	Proposed Plans
Vegetation (Including Noxious Weeds; Riparian Areas and Wetlands)					
In general, Alternative A provides only general direction to preserve and improve vegetation communities (as opposed to a strategic landscape-level approach). This could result in a number of impacts on vegetation, including vegetation removal, fragmentation of vegetation communities, loss of habitat for pollinators, and conversion of areas to an earlier seral stage, which could change vegetation community succession and reduce the extent of native plant communities. The remaining vegetation could have reduced vigor or productivity due to mechanical damage, soil compaction, and dust. Soil compaction would inhibit natural revegetation in areas without active reclamation efforts and would reduce plant vigor, making plants more susceptible to disease, drought, or insect attack.	The BLM and Forest Service would manage lands to conserve, enhance, and restore sagebrush ecosystems and would designate PHMA and GHMA within which management would be applied. Direct protection of sagebrush habitat to support Greater Sage-Grouse would limit or modify uses in this habitat type, improving the acreage and condition of desired vegetation communities. Use restrictions would reduce damage to native vegetation communities and individual native plant species in areas that are important for regional vegetation diversity and quality. Likewise, use restrictions would minimize loss of connectivity and would be more likely to retain existing age class distribution within these specific areas. Use restrictions could also minimize the spread of invasive species by limiting human activities that cause soil disturbance or seed introductions.	The BLM and Forest Service would manage lands to conserve, enhance, and restore sagebrush ecosystems and would designate PHMA within which management would be applied. Management and associated impacts would be largely similar to that described for Alternative B, though with more stringent guidance and restrictive management.	The BLM and Forest Service would manage lands to conserve, enhance and restore sagebrush ecosystems and would designate PHMA and GHMA within which management would be applied. Management and impacts would be similar to Alternative B, though Alternative D would incorporate more flexibility and adaptive management to account for sub-regional conditions.	The BLM and Forest Service would manage lands to protect, maintain, improve, and enhance sagebrush ecosystems and would designate Greater Sage-Grouse habitat in SGMAs/core areas within which management would be applied. Management and impacts would be similar to Alternative D, though Alternative E would require less stringent use restrictions and would designate the least amount of Greater Sage-Grouse habitat in SGMAs/core areas when compared to the other alternatives. As a result, although the types of impacts would be similar, there would be fewer improvements in vegetation conditions as compared to Alternative D.	The BLM and Forest Service would manage lands to conserve, enhance and restore sagebrush ecosystems and would designate SFA, PHMA, and GHMA within which management would be applied. Management and impacts would be similar to Alternative B, though the Proposed Plans would incorporate more flexibility and adaptive management to account for sub-regional conditions. Applying NSO stipulations on 3.2 million acres could push fluid mineral development on to adjacent non-Greater Sage-Grouse habitat, thereby protecting vegetation in Greater Sage-Grouse habitat, but impacting adjacent vegetation due to development outside of Greater Sage-Grouse habitat. Alternative D and the Proposed Plans would provide the most comprehensive habitat restoration and vegetation management policies. In the short-term, vegetation treatment and habitat restoration efforts may result in early seral conditions; however, long-term benefits to vegetation condition would result.
Other Special Status Species					
Alternative A would result in a continuation of current impacts on other special status species and would provide fewer protections than any of the action alternatives.	Alternatives B and C and the Proposed Plans would provide the greatest quantity of habitat protection in PHMA from human disturbance activities by imposing a 3 percent disturbance cap. Fluid mineral leasing closures on 3.3 million acres of unleased fluid mineral areas could make it uneconomical to develop the small remaining pockets of non- Greater Sage-Grouse habitat or adjacent private land in checkerboard ownership areas. Special status species in these areas would be unlikely to be affected from habitat loss, habitat degradation, or direct disturbance associated with fluid mineral development. In other areas, fluid mineral development could be pushed onto adjacent lands potentially causing more impacts on	In general, actions proposed under Alternative C would provide the greatest protections for other special status species which occupy Greater Sage-Grouse habitat. Alternatives B and C would provide the greatest quantity of habitat protection in PHMA from human disturbance activities by imposing a 3 percent disturbance cap in PHMA. Under Alternative C, however, disturbance would be collocated where possible. Concentrating smaller areas of impacts into larger, less diffuse clusters would increase the quality of protected habitat by reducing the potential for habitat fragmentation. Prohibiting any new future fluid mineral leases or permits in	A 5 percent disturbance cap would be imposed in PHMA, resulting in more disturbances (e.g., habitat fragmentation, loss of habitat, etc.) to special status species habitat than under Alternatives B or C or the Proposed Plans. Applying NSO stipulations on 1.8 million acres could push fluid mineral development on to adjacent non-Greater Sage-Grouse habitat, thereby protecting other special status species in Greater Sage-Grouse habitat, but harming those that could be impacted by development outside of Greater Sage-Grouse habitat. Small areas of GHMA overlap with Utah prairie dog complexes within the Bald Hills and Panguitch population areas, and fewer habitat protections would be provided in these GHMA, making this	A 5 percent disturbance cap would be imposed in Greater Sage-Grouse habitat in SGMAs/core areas, resulting in more disturbances (e.g., habitat fragmentation, loss of habitat, etc.) to special status species habitat than under Alternatives B or C or the Proposed Plans. Applying NSO stipulations on 483,500 acres could push fluid mineral development on to adjacent non- Greater Sage-Grouse habitat, thereby protecting other special status species in Greater Sage-Grouse habitat, but harming those that could be impacted by development outside of Greater Sage-Grouse habitat.	Impacts from the 3 percent disturbance cap (5 percent on National Forest System lands in the Wyoming portion of the planning area) would be similar to those described for Alternative B. Applying NSO stipulations on 3.2 million acres could push fluid mineral development on to adjacent non-Greater Sage-Grouse habitat, thereby protecting other special status species in Greater Sage-Grouse habitat, but harming those that could be impacted by development outside of Greater Sage-Grouse habitat. Alternative D and the Proposed Plans would provide the most comprehensive habitat restoration and vegetation management policies of all the proposed actions for increasing Greater Sage-Grouse habitat. In the short-term, vegetation treatment and removal efforts of species near riparian areas within

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	*E2: Wyoming*	
	special status species via habitat loss and fragmentation.	Greater Sage-Grouse habitat (over 3.8 million acres) would provide the most habitat protection of any alternative from fluid mineral leasing and development. However, these closures could make it economical to develop the small remaining pockets of non-Greater Sage-Grouse habitat or adjacent private land in checkerboard ownership areas. Special status species in these areas would be affected by resultant habitat loss, habitat degradation, or direct disturbance associated with fluid mineral development.	species' habitat more susceptible to loss and/or fragmentation. Alternative D and the Proposed Plans would provide the most comprehensive habitat restoration and vegetation management policies of all the proposed actions for increasing Greater Sage-Grouse habitat. In the short-term, vegetation treatment and removal efforts of species near riparian areas within Greater Sage-Grouse habitat may result in increased sediment, removal of shade trees, and alter other important habitat features for sensitive fish and riparian species that occur within Greater Sage-Grouse habitat. These policies may increase habitat in the short-term for those special status species that rely on early seral sagebrush habitat, such as Utah prairie dog.			Greater Sage-Grouse habitat may result in increased sediment, removal of shade trees, and alter other important habitat features for sensitive fish and riparian species that occur within Greater Sage-Grouse habitat. These actions may increase habitat in the short-term for those special status species that rely on early seral sagebrush habitat, such as Utah prairie dog.
Fish and Wildlife						
Alternative A would result in a continuation of current impacts on fish and wildlife and would provide fewer protections than any of the action alternatives.	Alternatives B and C would provide the greatest quantity of habitat protection in PHMA from human disturbance activities by imposing a 3 percent disturbance cap. Fluid mineral leasing closures on 3.3 million acres of unleased fluid mineral areas could make it uneconomical to develop the small remaining pockets of non- Greater Sage-Grouse habitat or adjacent private land in checkerboard ownership areas. Fish and wildlife species in these areas would be unlikely to be affected from habitat loss, habitat degradation, or direct disturbance associated with fluid mineral development. In other areas, fluid mineral development could be pushed onto adjacent lands potentially causing more impacts on fish and wildlife via habitat loss and fragmentation.	In general, actions proposed under Alternative C would provide the greatest protections for other fish and wildlife which occupy Greater Sage-Grouse habitat. Alternatives B and C would provide the greatest quantity of habitat protection in PHMA from human disturbance activities by imposing a 3 percent disturbance cap in PHMA. Under Alternative C, however, disturbance would be collocated where possible. Concentrating smaller areas of impacts into larger, less diffuse clusters would increase the quality of protected habitat by reducing the potential for habitat fragmentation. Prohibiting any new future fluid mineral leases or permits in Greater Sage-Grouse habitat (over 3.8 million acres) would provide the most habitat protection of any alternative from fluid mineral leasing and development. However, these closures could make it economical to develop the small remaining pockets of non-Greater Sage-Grouse habitat or	A 5 percent disturbance cap would be imposed in PHMA, resulting in more disturbances (e.g., habitat fragmentation, loss of habitat, etc.) to habitat than under Alternatives B or C or the Proposed Plans. Applying NSO stipulations on 1.8 million acres could push fluid mineral development on to adjacent non-Greater Sage-Grouse habitat, thereby protecting fish and wildlife species in Greater Sage-Grouse habitat, but harming those that could be impacted by development outside of Greater Sage-Grouse habitat. Alternative D and the Proposed Plans would provide the most comprehensive habitat restoration and vegetation management policies of all the proposed actions for increasing Greater Sage-Grouse habitat. In the short-term, vegetation treatment and removal of nondesirable species near riparian areas within Greater Sage-Grouse habitat may result in increased sediment, removal of shade trees, and alter other important habitat features for fish and riparian species that occur within Greater Sage-Grouse habitat.	A 5 percent disturbance cap would be imposed in Greater Sage-Grouse habitat in SGMAs/core areas, resulting in more disturbances (e.g., habitat fragmentation, loss of habitat, etc.) to habitat than under Alternatives B or C or the Proposed Plans. Applying NSO stipulations on 483,500 acres could push fluid mineral development on to adjacent non- Greater Sage-Grouse habitat, thereby protecting other wildlife species in Greater Sage-Grouse habitat, but harming those that could be impacted by development outside of Greater Sage-Grouse habitat.		Impacts from the 3 percent disturbance cap (5 percent on National Forest System lands in the Wyoming portion of the planning area) would be similar to those described for Alternative B. Applying NSO stipulations on 3.2 million acres could push fluid mineral development on to adjacent non-Greater Sage-Grouse habitat, thereby protecting other wildlife species in Greater Sage-Grouse habitat, but harming those that could be impacted by development outside of Greater Sage-Grouse habitat. Alternative D and the Proposed Plans would provide the most comprehensive habitat restoration and vegetation management policies of all the proposed actions for increasing Greater Sage-Grouse habitat. In the short-term, vegetation treatment and removal efforts of species near riparian areas within Greater Sage-Grouse habitat may result in increased sediment, removal of shade trees, and alter other important habitat features for migratory birds, fish, and wildlife species that use riparian habitats within the range of Greater Sage-Grouse.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	*E2: Wyoming*	
		adjacent private land in checkerboard ownership areas. Fish and wildlife in these areas would be affected by resultant habitat loss, habitat degradation, or direct disturbance associated with fluid mineral development. Some big game populations that occur within the areas closed to grazing under Alternatives C1 and C2 may trend upwards due to the increased availability of forage. However, wildlife species in the population areas where livestock grazing is eliminated would not be able to access range water improvements. This may reduce the viability or of species that depend on water developments. There would be less of an impact on browsing species (e.g., mule deer) as a result of changes to livestock grazing practices. Big game habitat, including crucial winter and fawning/calving habitat, that occur within PHMA would receive the most protection under Alternative C, allowing populations to potentially increase. While land use restrictions being considered under alternative C would benefit wildlife, some management actions being considered could negatively impact wildlife. For example, under Alternative C, a focus would be placed on passive restoration. This could limit the ability of the BLM and Forest Service to improve wildlife habitat for other species.	Although these efforts would increase the availability of habitat for those fish and wildlife species that use Greater Sage-Grouse habitat, those species which occur in pinyon-juniper habitat would have reduced available habitat over the long-term. The proposed habitat restoration and vegetation management policies would develop habitat conservation objectives that would increase habitat quality for fish and wildlife as well as Greater Sage-Grouse.			Habitat restoration and vegetation management under Alternative D and the Proposed Plans may result in increased beneficial impacts on big game and other wildlife species that inhabit Greater Sage-Grouse habitat through improvements in winter and fawning/calving habitat.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* / *E2: Wyoming*	Proposed Plans
Wild Horses and Burros					
All adjustments to HMAs, herd management plans and priorities of gathers would continue to be based on monitoring data. As a result, impacts on wild horses would continue to depend on the site-specific conditions as reported in monitoring data.	Alternative B would potentially result in indirect, long-term changes to wild horse and burro management should objectives for Greater Sage-Grouse habitat not align with management objectives for wild horse management. In many cases, however, management actions to improve Greater Sage-Grouse habitat would also improve wild horse rangeland conditions (for example, conifer removal and noxious weed control would improve forage conditions for wild horse and burros).	Direct impacts would occur in wild horse and burro management under Alternative C2 and indirect, long-term changes to wild horse and burro management could occur in both C1 and C2 should objectives for Greater Sage-Grouse habitat not align with management objectives for wild horse management. In many cases, however, management actions to improve Greater Sage-Grouse habitat would also improve wild horse rangeland conditions (for example, conifer removal and noxious weed control would improve forage conditions for wild horse and burros). Alternative C1 would be most protective of wild horses and burros because it proposed the most restrictions on resources uses. Under Alternative C2, AMLs would be directly reduced by 25 percent for HMAs within PHMA. This would result in a reduction of AMLs for the Chokecherry, Onaqui Mountain, Range Creek, Sulphur, and Tilly Creek HMAs. As a result, costs of wild horse and burro management would increase, due to a need for additional horse gathers for removal and/or fertility treatment.	Alternative D would potentially result in indirect, long-term changes to wild horse and burro management should objectives for Greater Sage-Grouse habitat not align with management objectives for wild horse management. In many cases, however, management actions to improve Greater Sage-Grouse habitat would also improve wild horse rangeland conditions (for example, conifer removal and noxious weed control would improve forage conditions for wild horse and burros). There would be further reduction of disturbance of wild horse and burros from management actions limiting other resource uses in opportunity habitat.	Many management actions would include site specific and seasonal variations based on the type of Greater Sage-Grouse habitat (i.e. breeding, winter, distance to leks, etc.) where they are proposed. As a result, the level to which surface disturbing activities would be reduced in each HMAs would depend on the Greater Sage-Grouse habitat category for each HMA. There are no wild horse and burros on National Forest System lands in Wyoming that are included in the Utah planning area.	The Proposed Plans would potentially result in indirect, long-term changes to wild horse and burro management should objectives for Greater Sage-Grouse habitat not align with management objectives for wild horse management. In many cases, however, management actions to improve Greater Sage-Grouse habitat would also improve wild horse rangeland conditions in the long-term. For example, conifer removal and noxious weed control as identified in the VDDT approach or the prioritization for treatment/restoration projects as identified in the FIAT assessment approach would improve forage conditions for wild horse and burros. There would be further reduction of disturbance and harassment of wild horse and burros in the five HMAs that fall within occupied Greater Sage-Grouse habitat where disturbance is restricted. Restricting land uses in PHMA could push development to areas outside of occupied Greater Sage-Grouse habitat, however, thus increasing disturbance and harassment of wild horses and burros in HMAs outside of PHMA. Placing a cap on anthropogenic disturbance within PHMA under the Proposed Plans would place an additional restriction on development in HMAs, which would limit forage degradation and reduce harassment of WHB. Implementing the Greater Sage-Grouse mitigation strategy and monitoring framework responses under the Proposed Plans would ensure that this increased level of protection of Greater Sage-Grouse habitat and indirectly forage and water resources for WHB would be maintained.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	*E2: Wyoming*	
Cultural Resources						
The BLM and Forest Service would continue to follow 36 CFR 800, Section 106 and BLM-Utah's statewide programmatic agreement when addressing federal undertakings; therefore, adverse effects on cultural resources would be appropriately mitigated. Alternative A would result in a continuation of current impacts on cultural resources and would provide fewer additional protections than any of the action alternatives. Actions that involve surface disturbing activities, such as the vegetation management and habitat restoration treatments, ROW development and construction, fire/fuels treatments, minerals development (including fluid, locatable, and saleable minerals) would have potential direct and indirect impacts on cultural resources, including damaging, destroying, and/or displacing artifacts and features, and construction of modern features out of character with a historic setting.	All action alternatives would provide some degree of indirect protection to cultural resources. Actions that provide protections for Greater Sage-Grouse or its habitat by limiting access into areas or excluding surface disturbing activities would indirectly protect cultural resources by preventing actions that cause disturbance or destruction of cultural resources and their settings. Measures to protect Greater Sage-Grouse include protective designations and stipulations and restrictions on surface and vehicle use that would protect cultural resources from effects due to surface disturbance, erosion, effects on setting and access leading to vandalism, inadvertent damage, and unauthorized collection of cultural resources. However, these protective measures could inhibit Native American cultural uses in some areas. Alternative B would provide more indirect protection to cultural resources than under Alternative A through management actions such as those listed above.	By providing the greatest restrictions on surface disturbing activities, Alternative C would indirectly protect cultural resources more than any other alternative but also inhibit Native American cultural uses in some areas.	Similar to Alternative B, Alternative D would provide indirect protection to cultural resources by limiting access into areas or excluding surface disturbing activities that could otherwise cause disturbance or destruction of cultural resources and their settings.	Alternative E would have the fewest restrictions on access and surface disturbing activities out of all the action alternatives and consequently could be expected to provide the least indirect protection to cultural resources out of the action alternatives. However, this could result in fewer restrictions on Native American cultural uses than under the other action alternatives.		Similar to Alternative B, the Proposed Plans would provide indirect protection to cultural resources by limiting access into areas or excluding surface disturbing activities that could otherwise cause disturbance or destruction of cultural resources and their settings.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* / *E2: Wyoming*	Proposed Plans
Visual Resources					
There would continue to be 102,500 acres of ROW exclusion and 177,700 acres of designated utility corridors. As a result, new utility corridor development, particularly electrical transmission lines, would impact visual quality through the placement of large vertical transmission line structures and associated ground disturbance. Fluid mineral development and surface mining would also impact visual quality through surface modifications and mining equipment.	The BLM and Forest Service would manage 2,784,200 acres of occupied habitat as ROW exclusion and would retain 130,200 acres of designated corridors. The remaining 529,600 acres of occupied habitat would be ROW avoidance areas. Additionally, 3,341,300 acres of occupied habitat would be closed to fluid mineral development and 3,328,760 acres unsuitable for surface mining. Management actions that would reduce new human modifications within Greater Sage-Grouse habitat, would result in little to no impact on visual resources.	Alternative C would result in the fewest alterations to visual resources when compared to Alternative A. All designated utility corridors in PHMA would be undesignated and all areas within PHMA (3,313,800 acres) would be ROW exclusion. BLM would manage 87 percent (3,821,580 acres) of PHMA as closed to fluid minerals and 4,008,580 acres (including 694,780 acres of mineral split estate) as unsuitable for surface mining. Prohibitions on new human modifications in PHMA would result in no impact on visual resources.	The BLM and Forest Service would manage ROW development based on the type of development. Refer to **Table 2.3** for a comparison of agency management of ROW development by type. In particular, above-ground linear infrastructure would be excluded on 1,422,300 acres and avoided on 1,368,900 acres of occupied habitat. No areas in occupied habitat would be open to fluid mineral leasing; however, 3,383,080 acres would be available for fluid mineral leasing with either CSU/TL (1,829,980 acres) or NSO (1,853,100 acres) stipulations. Since Alternative D would result in greater restrictions on new human modifications to the landscape in comparison to Alternative A, BLM management under Alternative D would reduce impacts on visual resources.	Impacts on visual resources would be similar to Alternative A, but would include additional management actions to avoid or minimize new human modifications. Agency management would maintain 177,700 acres of designated corridors and manage 27,600 acres as ROW exclusion. However, the BLM and Forest Service would manage 2,654,000 acres in occupied habitat as ROW avoidance. Impacts from mineral development would be similar to Alternative A, with the exception that CSU/TL for fluid mineral leasing would apply to 2,842,180 acres of occupied habitat. Since Alternative E would result in only slightly greater restrictions on new human modifications to the landscape in comparison to Alternative A, there would be the potential for impacts on visual resources.	Compared to Alternative A, the Proposed Plans would minimize future surface disturbing activities (e.g., ROW and mineral development) if at all possible within PHMA and GHMA. Specific restrictions would be managed based on the type of development. Refer to **Table 2.3**, for a comparison of management of ROW development by type. Above-ground linear infrastructure would be excluded on 28,100 acres and avoided on 2,764,800 acres of PHMA and GHMA, with an additional 165,500 acres of avoidance adjacent to PHMA while 3.2 million would be open to fluid mineral leasing subject to NSO stipulations. Sagebrush habitat objectives to restore and maintain desirable landscapes to support Greater Sage-Grouse populations would result in greater restrictions on new human modifications to the landscape thereby reducing impacts on visual resources.
Wildland Fire Management					
Due to the flexibility in management of prescribed and wildland fires and lack of specific areas prioritized for protection, fire suppression costs are likely to be the lowest in Alternative A. As described in detail below, restriction on resource uses in the area would be limited, resulting in a higher chance for human-caused ignition in Greater Sage-Grouse habitat as compared to action alternatives. Management actions for energy and minerals and ROWs would generally be the least restrictive of any alternative, therefore resulting in the highest risk of human-caused ignition from development. There would continue to be a total of 329,521 permitted AUMs on BLM-administered lands and 265,373 AUMs permitted on National Forest System lands. Livestock grazing would continue to	Long-term frequency and intensity of wildland fire, as measured by fire regime condition class (FRCC), could be similar to historic conditions because post fuel and restoration management would be designed to ensure long-term persistence of seeded or pre-burn native plants. Greater Sage-Grouse management in PHMA would focus on fire suppression and limitations on fuels treatments, resulting in higher level of protection from wildland fire, but reduced wildland fire and fuels management options. Managing PHMA so that discrete anthropogenic disturbances cover less than 3 percent of the total PHMA regardless of ownership would decrease the chance of human-caused ignition in PHMA. Land use restrictions would result in less human activity, which would in turn reduce opportunity for human-cause ignitions.	Impacts from fire management would be similar to those described under Alternative B. However, restricting fuels treatments on all PHMA and prioritizing protection of occupied Greater Sage-Grouse habitat would increase the cost of suppression. In addition, there would be increased risk to firefighter safety due to the larger firefighting organization that would be required to provide the increased level of protection. Impacts from Greater Sage-Grouse management would be similar in nature to those described in Alternative B, but increased restrictions on surface-disturbing activities would further reduce opportunities for human-caused ignitions in Greater Sage-Grouse habitat. Managing PHMA so that discrete anthropogenic disturbances cover less than 3 percent of the total PHMA regardless of ownership	Additional fuels treatments and other habitat treatments would be permitted with an emphasis on maintaining, protecting, and expanding sagebrush ecosystems in PHMA and opportunity habitat. This would result in a long-term reduction in the risk of high intensity fire in these areas Impacts from Greater Sage-Grouse management would be similar in nature to those described in Alternative B, but an added emphasis on region-specific habitat needs, as well as variations in requirements for specific Greater Sage-Grouse habitat types, would result in more site-specific fire management options. When compared to Alternative A, the risk of human-caused ignitions in this area would be reduced due to the 5 percent disturbance cap in PHMA. Land use restrictions would result in less human activity, which would in turn reduce opportunity for human-cause ignitions.	Impacts from wildland fire management would be similar in nature to those described in Alternative B, but the emphasis on fire suppression in Greater Sage-Grouse habitat under Alternative E would require use of additional suppression resources, as described under Alternative B, and as such it is anticipated that suppression costs would be increased as compared to alternative A. Impacts from Greater Sage-Grouse management would be similar to those described under Alternative B, except that this alternative would allow for greater use of fuels treatments, providing more flexibility for wildfire management. Impacts from mineral development would be similar to those described in Alternative B. Greater Sage-Grouse seasonal habitat requirements would be considered when managing sagebrush rangelands for livestock grazing, resulting in more site specific variation in management and related variation in fuel levels and size, extent and occurrence of fire. Active vegetation treatments would be allowed under certain circumstances to improve sagebrush habitat. Where treatments occurred, fuels levels would be reduced and risk of high intensity fire decreased and size and extent of fire likely decreased. In particular, aggressive removal of cheat grass would reduce the risk of high intensity fire.	Management actions in the Proposed Plans and related impacts would be similar to those described in Alternative B and D but with the addition of more specific objectives for Greater Sage-Grouse habitat type and refined protocols for developing site specific management. These actions would result in a reduction in FRCC shift in Greater Sage-Grouse habitat and a trend towards more historic frequency and intensity of wildfire. Greater Sage-Grouse management would be similar to those described under Alternative B and D with the addition of specific indicators and desired conditions for Greater Sage-Grouse habitat type and treatment objectives in PHMA, resulting in the reduction of annual invasive grasses and a trend towards FRCC desired historic conditions. Impacts from mineral and energy development and ROW development would be similar to Alternative D. Anthropogenic disturbance cap, mitigation for net conservation gain, and

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
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result in the reduction in fuels and the associated risk of wildland fire. Potential for vehicle-caused ignition would continue in the 797,000 acres of BLM-administered lands open to cross-country motorized travel, with reduced risk in the 437,400 acres of BLM-administered lands limited to existing routes and 1,217,700 acres limited to designated routes. Proposed allocations for motorized travel on National Forest Lands within the planning area would be the same across all alternatives, resulting in the same potential for vehicle-caused ignitions under each alternative.	In addition, managing or restoring PHMA so that at least 70 percent of the land cover provides adequate sagebrush habitat to meet Greater Sage-Grouse needs would promote a shift towards historic FRCC in sagebrush ecosystems. Should development in other parts of the decision areas increase as a result of restrictions in PHMA, there is potential for a greater chance of human-caused ignition and shift away from historic FRCC in these areas. Restrictions on mineral development in PHMA (e.g., closure to nonenergy mineral leases, finding PHMA unsuitable to surface coal development, recommended for mineral withdrawal, and closure to mineral material sales and new fluid mineral leases) would reduce opportunities for human-caused ignitions. Limiting the types of range improvements allowed in PHMA would decrease opportunities for human-caused ignitions during construction or maintenance. Limiting motorized travel in PHMA to existing roads and trails until travel management planning is complete, as well as limiting road upgrades or new roads in this area, would reduce the risk of human-caused ignition in PHMA on BLM-administered lands.	would decrease the chance of human-caused ignition in PHMA. Land use restrictions would result in less human activity, which would in turn reduce opportunity for human-cause ignitions. Under Alternative C1, no livestock grazing would be permitted within occupied Greater Sage-Grouse habitat. As a result, fine fuels would increase throughout occupied habitat and size, intensity, and occurrence of fire would increase. Under Alternative C2, impacts would be similar to those described for Alternative C1, but fire risk would be reduced in scale due to the allowance of limited grazing. Impacts from motorized travel would be similar to those described in Alternative B, but the risk of vehicle-caused ignition in this alternative would be further decreased due to the closure of all occupied habitat to cross-county motorized travel.	In addition, limitations on disturbance in specific habitat areas during specific time frames would reduce the chance of human-caused ignition in these areas, particularly when timing limitations apply during fire season. Impacts from mineral development would be similar to those described in Alternative B. Focusing livestock grazing management on allotments with the best opportunities for conserving, enhancing, or restoring habitat for Greater Sage-Grouse would result in an improvement in habitat and a return to historic FRCC in the long term. Prioritizing travel management planning in the Sheeprocks, Bald Hills, Box Elder, Rich, Ibapah, and Hamlin Valley areas would reduce the risk of human-caused ignition in these areas.	Limiting motorized travel to existing or designated routes within Greater Sage-Grouse habitat in SGMAs/core areas with nesting and winter habitat would reduce the risk of vehicle-caused ignitions in these areas.		conservation measures implemented such as RDFs and lek buffers would further minimize human-caused ignition. Management actions and related impacts from vegetation and fire management would be similar to Alternatives B and D, but with added emphasis on sub-regional specific habitat needs. Inclusion of the Fire and Invasives Assessment Tool (**Appendix K**) would allow for more accurate assessment of site specific conditions and more effective prioritization of fire management resources, reducing the size and intensity of wildland fires, and trend towards desired FRCC conditions for Greater Sage-Grouse habitat in the long term. Added measures for fuels treatment effectiveness and post fire rehabilitation activities and monitoring, such as requirements for burn plans, would increase both fuels management planning and post fire rehabilitation costs, but would increase effectiveness of treatments. Total acres available for grazing and permitted AUMs would be the same as described for Alternative D. However, there could be impacts (reductions in AUMs) on an allotment scale as permit renewal and related management changes were implemented. The level and intensity of impacts would vary on a site-specific basis. Review and processing of grazing permits/leases in SFA and PHMA would help to improve and protect habitat quality in SFA and PHMA, likely reducing the spread of invasive grasses and related fire risk. Limiting OHV travel in PHMA and GHMA to existing roads and trails, as well as temporary closures, would reduce the risk of human-caused ignition.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* / *E2: Wyoming*	Proposed Plans
Wilderness Characteristics					
Where surface-disturbing activities are not precluded, lands with wilderness characteristics would continue to be at risk of diminished wilderness characteristics if future activities are permitted in those areas.	Alternative B would apply similar management to PHMA as under Alternative C, and impacts would be the same in these areas. However, because fewer acres would be managed as PHMA under Alternative B, there is less potential for wilderness characteristics to be maintained on all 86,100 acres. Where lands with wilderness characteristics overlap GHMA, restrictions on surface-disturbing activities could be applied to permits at the project phase to protect Greater Sage-Grouse and its habitat; however, lands with wilderness characteristics could be at risk if surface-disturbing activities are not precluded.	Overall, management under Alternative C would have the greatest potential to maintain lands with characteristics. PHMA (i.e., all occupied habitat) would be recommended for withdrawal from locatable mineral entry. These types of activities and associated development can reduce the size of lands with wilderness characteristics and can impair the apparent naturalness of the area and the feeling of solitude. Precluding these types of activities would help protect wilderness characteristics on 86,100 acres of lands with wilderness characteristics. New disturbances would only result from vegetation or fuels treatments or wildland fire.	The majority of lands with wilderness characteristics fall within PHMA. In general, most types of surface-disturbing activities would be allowed with stipulations, design features, or BMPs. Although stipulations, design features, and BMPs could mitigate some impacts on wilderness characteristics, any long-term disturbance would likely result in the loss of the wilderness characteristics.	No surface-disturbing activities would be outright precluded, so risks to lands with wilderness characteristics would be greater than under Alternatives B, C, and D. During project-level permitting, considerations to protect Greater Sage-Grouse and its habitat could provide incidental protection to lands with wilderness characteristics by minimizing habitat disturbance and possibly avoiding certain areas altogether, depending upon the project. Where lands with wilderness characteristics overlap Greater Sage-Grouse habitat outside of SGMAs/noncore areas, impacts would be similar to those described for Alternative A because there would be no specific management in place to protect Greater Sage-Grouse and its habitat. As such, management would be at least as protective of lands with wilderness characteristics as Alternative A.	The majority of lands with wilderness characteristics would be closed to such surface-disturbing activities as nonenergy mineral leasing and mineral material disposal. They would also be either closed to fluid mineral leasing or open subject to NSO stipulations and exclusion areas for wind energy development and avoidance areas for other types of ROWs. Where surface-disturbing activities are allowed, RDFs could mitigate some impacts on wilderness characteristics. Because disturbance under the Proposed Plans would be mitigated in the long term, there would be no long-term impacts on wilderness characteristics. Compared with the action alternatives, impacts from the Proposed Plans would be similar to Alternative B, though fewer activities would be outright precluded under the Proposed Plans than under Alternative B.
Livestock Grazing/Range Management					
In general, Alternative A would be the least restrictive on alternative resource uses, including livestock grazing. Permittees would continue to have a range of management options to support grazing operations. Special provisions for Greater Sage-Grouse protection would continue to be limited. The nature and intensity of impacts on grazing management would depend on site specific restrictions in place under current LUPs, but is likely to be lower than other alternatives. Approximately 27,600 acres within Greater Sage-Grouse habitat are classified as ROW exclusion areas for new ROW development. Outside of occupied habitat in population areas, there is an additional 74,900 acres of ROW exclusion areas. Indirect impacts on livestock from development would be reduced where areas available for livestock grazing overlap these	Acres available for grazing and permitted AUMs would not be directly changed by management actions. PHMA would be managed so that at least 70 percent of the land cover provides adequate sagebrush habitat to meet Greater Sage-Grouse needs. Where cover requirements do not meet forage objectives for livestock grazing, this would result in the need to modify grazing practices with increased costs for permittees. Consideration of Greater Sage-Grouse habitat objectives and management would be would be required in grazing management in PHMA and incorporated into all grazing allotments through allotment management plans or permit renewals or Forest Service NEPA processes. As a result, impacts (e.g., changes in livestock management, such as deferring or shortening grazing periods, adding range improvements, excluding grazing	Under Alternative C1, grazing would be eliminated from all allotments completely or partially within occupied habitat. Under Alternative C2, grazing would be reduced within allotments intersecting occupied habitat. Making areas unavailable for grazing and restrictions would impact permittees' current seasonal rotations or other management strategies that utilize both federal and private lands. The elimination of permitted grazing in PHMA under Alternative C1 may result in permittees going out of business, with impacts on both individual permittees as well as local communities as a whole. Additional details of the economic impacts are discussed in the Social and Economic Impacts (Including Environmental Justice) section of Chapter 4. Under Alternative C2, site specific closure of allotments would be	Impacts would be similar to those described under Alternative B. No direct changes would occur to permitted AUMS or acres available for grazing. However, many grazing management actions would be determined at the BLM District or Forest Service unit level in order to emphasize management appropriate for local vegetation communities and Greater Sage-Grouse habitats rather than at the planning unit scale. As a result, impacts on range management would vary across the decision area. A moderate decline in permitted grazing would be anticipated over time as grazing permits are modified to incorporate Greater Sage-Grouse objectives at renewal or allotment analysis. Collaboration with the state should decrease conflicts in standards and provide a location appropriate framework, assisting permittees ability to adopt these standards and reducing impacts. PHMA and opportunity habitat would be prioritized for restoration and vegetation	Impacts would be similar to those described under Alternative B. No direct changes would occur to permitted AUMS or acres available for grazing. However, Alternative E would allow for greater flexibility in management options, limiting impacts on range management. Changes could be required to grazing timing and intensity to meet Greater Sage-Grouse habitat requirements, with the potential for some increased time and costs to permittees as compared to Alternative A. However, however, due to the increased flexibility in management actions under this alternative, permittees would have more options to address Greater Sage-Grouse habitat requirements and impacts on range management would be limited. A 5 percent disturbance cap in Greater Sage-Grouse habitat in SGMAs/core areas would result in decreased indirect disturbance on livestock grazing from other land uses such as mineral development and roads. However, the ability to construct range improvements may be limited in some instances by these requirements. Compared to Alternative A, additional year-round or seasonal limitations on mineral development would result in fewer disturbances there these limitations apply. Limiting motorized travel to existing or designated routes within Greater Sage-Grouse habitat in SGMAs/core areas with nesting and winter habitat would reduce disturbance of	Impacts would be similar to those described under Alternatives B and D. No direct changes would occur to permitted AUMs or acres available to grazing. Greater Sage-Grouse habitat objectives would be incorporated into grazing allotments through allotment management plans or permit renewals, or Forest Service NEPA processes, with consideration for local objectives. A moderate decline in permitted grazing is anticipated over time as permits are modified to meet objectives. Adjustments to grazing management or authorized grazing use level would be tailored to achieve Land Health Standards and specific management thresholds based on Greater Sage-Grouse Habitat Objectives. Modifications to grazing systems could be required to meet seasonal habitat objectives, increasing costs to lessees and permittees. Impacts would occur on an allotment scale as permit renewal and related management changes were implemented. The level and intensity of impacts would vary on a site specific

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
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areas. Some additional limitations on disturbance from development could occur in ROW avoidance areas. Alternative A is the least restrictive on energy and mineral development of all alternatives. As a result, indirect impacts including spread of noxious weeds and disturbance of livestock would be the greatest under this alternative. Conflicts between livestock grazing and OHV use are most likely to continue to occur in the 797,000 acres of BLM-administered lands open to cross-county travel on BLM-administered lands and to a lesser extent on the 437,400 acres of BLM-administered lands limited to existing routes.	from riparian areas, establishing riparian pastures, and increasing livestock herding) would occur over time at a site specific level as measures are incorporated into individual allotments. Land Health assessment and permit renewals would be prioritized in PHMA, therefore there is potential for further degradation of lands outside of PHMA that are not meeting land health standards or desired conditions. A 3 percent disturbance cap in PHMA would result in decreased indirect disturbance on livestock grazing from other land uses such as mineral development and roads. However, the ability to construct range improvements may be limited in some instances by these requirements. Classifying PHMA as ROW exclusion would eliminate conflicts from future ROW development. PHMA would be recommended for withdrawal from mineral entry for locatable minerals, closed to mineral materials removal, and closed to new leasing for fluid minerals. For currently leased parcels, NSO stipulations would be applied in PHMA. As a result, indirect disturbance of livestock from mineral development would be minimized in PHMA.	determined when an allotment is analyzed as described in Alternative B. Impacts of closing allotments would be similar to those described in Alternative B. In areas where grazing is permitted, management would be similar to that described in Alternative B with the addition of other protective measures for Greater Sage-Grouse habitat (such as prohibition of grazing during the growing season, prohibition on new water developments and avoidance of structural range improvements). Beneficial or adverse impacts on range management from other resource uses (e.g., ROW or fluid mineral development) would be diminished in scale and intensity because of the elimination (Alternative C1) or curtailment (Alternative C2) of grazing in all allotments intersecting occupied habitat.	treatments. In most cases, treatment (e.g., conifer removal, etc.) would improve forage conditions in the long term. A 5 percent disturbance cap in PHMA would result in decreased indirect disturbance on livestock grazing from other land uses such as mineral development and roads. However, the ability to construct range improvements may be limited in some instances by these requirements. Compared to Alternative A, additional restrictions and stipulations on energy and mineral development would be applied for seasonal habitat requirements as well as areas adjacent to leks in PHMA, GHMA, and opportunity habitat. As a result, disturbance to livestock grazing could be reduced in these areas. Motorized travel in PHMA would be limited to existing routes at minimum and road restoration would be prioritized. As a result, long-term disturbance to livestock is likely to be reduced, particularly in PHMA and in those population areas prioritized for travel management planning.	livestock from cross-country travel in these areas. However, the ability to access livestock or structural range improvements may be reduced.		basis. Monitoring of site conditions and the adaptive management strategy may result in adjustments to livestock grazing to achieve objectives outside of the permit renewal cycle. Voluntary relinquishments of grazing privileges would be permitted and may result in some reduction of overall available AUMs with potential economic impacts. PHMA would be prioritized for restoration and vegetation treatments and specific vegetation objectives would be established for Greater Sage-Grouse seasonal habitat. Impacts could occur should treatments for Greater Sage-Grouse not match with vegetation objectives for livestock grazing; however, in most cases, treatments (e.g., conifer removal) would improve forage conditions in the long term. Conservation measures including a 3 percent disturbance cap (5 percent on National Forest System lands in the Wyoming portion of the planning area) in PHMA, limitations on development in buffers around leks and RFDs would result in decreased indirect disturbance on livestock grazing from other land uses such as mineral development and roads. Prohibitions on new structural improvements could limit the ability of permittees to effectively distribute livestock resulting in increases in time and costs to permittees and potentially the ability to full use of permitted AUMs. Although these constraints could increase the amount of time permittees spend to manage livestock, it should allow sufficient flexibility that permittees could continue to utilize structural range improvements to effectively distribute livestock. Compared to Alternative A, additional restrictions and stipulations on energy and mineral development would be applied reducing indirect disturbance of livestock and livestock forage. Restrictions on cross-county travel and limitation of PHMA and GHMA to existing routes would reduce disturbance

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* / *E2: Wyoming*	Proposed Plans
					to livestock. Temporary closures would further reduce disturbance livestock but have the potential to impact ability of permittees to access allotments and livestock.
Recreation					
The BLM and Forest Service would continue to manage recreation uses as identified in existing planning documents. The BLM and Forest Service would continue to review and approve recreation permits on a case-by-case basis, which would continue to meet current demand.	The BLM and Forest Service would only approve recreation permits in PHMA that have a neutral or beneficial effect on PHMA. As a result, some types of permitted activities (e.g., OHV races) that could negatively affect Greater Sage-Grouse habitat may be impacted under Alternative B. This would result in a reduction in the number and type of permits issued in the decision area and would result in fewer opportunities to engage in the types of events and activities affected.	Alternative C contains the most restrictions on recreational activities. For example, Alternative C would seasonally prohibit camping and other nonmotorized recreation within 4 miles of active leks. This would result in temporary reductions in recreational opportunities and decrease the area available for recreational opportunities such as camping, mountain biking, and hiking. Alternative C also contains the greatest restrictions on coal leasing, ROWs, fluid mineral leasing, and livestock grazing. These restrictions generally reduce the potential for conflict with recreational activities and settings.	Impacts would be the same as Alternative B, with the exception that the BLM and Forest Service would also evaluate existing recreation permits and modify or cancel those that are determined to have adverse effects on Greater Sage-Grouse habitat. In addition to restrictions on future activities and events, Alternative D would result in a loss of opportunities to continue engaging in current activities and events if they are found to have adverse effects on Greater Sage-Grouse habitat. Alternative D proposes several restrictions on surface-disturbing activities related to coal leasing, ROWs, fluid mineral leasing, and livestock grazing. These restrictions would affect recreation as described under Alternative C, although across a smaller portion of the decision area.	Permanent, seasonal, and time-of-day limitations on activities within 1 mile of occupied leks would be implemented if the activity disrupts Greater Sage-Grouse nesting and brood-rearing. This would result in temporary (or permanent) loss of recreational opportunities, particularly for activities that generate noise or result in surface disturbance.	Impacts would be similar to those under Alternative D, except that there would be additional restrictions on recreation facilities in PHMA, possibly leading to a partial inability to fulfill long-term recreation opportunities in those areas.
Comprehensive Travel and Transportation Management					
Areas currently designated as open to cross-country OHV use would continue to be managed as such. There would be no new restrictions related to Greater Sage-Grouse habitat management and no change in current levels of access under Alternative A.	The BLM and Forest Service would limit motorized travel to existing roads and trails in PHMA. This would reduce cross-country access in those portions of PHMA that were previously managed as open for cross-country travel. Applications for the upgrading or realignment of existing routes would be required to meet certain design, location, and mitigation criteria intended to protect Greater Sage-Grouse habitat. These requirements may preclude the construction of some new routes, but would be unlikely to reduce access across the decision area.	Alternative C would result in the greatest reduction in access when compared to Alternative A. For example, Alternative C would prohibit motorized cross-country travel in all Greater Sage-Grouse habitat areas. Additionally, in PHMA, new road construction within 4 miles of active leks would be prohibited. These actions would result in site-specific losses of opportunity for motorized travel and future route construction and improved access.	Areas in PHMA that currently do not have designated routes would be designated in a Travel Management Plan. This would reduce cross-country access in those areas that were previously managed as open for cross-country travel.	Areas of Greater Sage-Grouse habitat in SGMAs/core areas with nesting and winter habitat that do not have designated routes in a Travel Management Plan would be designated as limited to existing routes. This would reduce cross-country access in those areas, but would occur across a smaller area than under Alternatives B or D.	Impacts would be similar to those under Alternative D, except that allocating 525 acres open to cross-country OHV use (one area each in the Parker Mountain and Uintah Population Areas) would preserve this type of access in the long-term. There would be slight (approximately one percent) differences in the number of acres allocated as limited to existing routes, limited to designated routes, and closed to OHV use, and, as a result, the impacts from these allocations would be similar to those under Alternative D.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* / *E2: Wyoming*	Proposed Plans
Lands and Realty					
ROW avoidance and exclusion restrictions would not prevent the BLM or Forest Service from accommodating future demand for ROW development within the planning area. Since less than 1 percent of Greater Sage-Grouse habitat would be managed as ROW exclusion, the BLM and Forest Service lands and realty programs would be able to accommodate new ROW development associated with mineral activity. Therefore, little to no impacts on lands and realty from mineral development would occur under Alternative A. Existing transportation routes would continue to provide motorized access to ROW infrastructure and communication sites for construction and maintenance with no additional impacts on lands and realty from travel and transportation management.	Managing PHMA as ROW exclusion would prevent the BLM and Forest Service from accommodating new ROW development in those areas. With a continuing demand for new ROWs in the planning area, including major inter- and intra-state electrical transmission and gas pipeline ROW developments would be diverted to adjacent nonfederal lands or prevented altogether. Development on adjacent lands could result in direct and indirect impacts on Greater Sage-Grouse populations and habitat (e.g. vehicle traffic on roads crossing BLM-administered and National Forest System lands), especially if the development is within close proximity to Greater Sage-Grouse habitat on BLM-administered or National Forest System lands. Within exclusion areas, BLM and Forest Service would only consider new ROW authorizations where the proposed infrastructure, including construction and staging during construction, could be collocated entirely within the footprint of an existing ROW. BLM and Forest Service would require collocation in GHMA where possible. Impacts on the lands and realty program under Alternative B would include the need to locate proposed facilities outside exclusion areas or within existing ROWs, which limits the BLM's ability to accommodate the demand for new infrastructure development, including any wind energy development. Prohibitions on new mineral development would decrease the number of ROW applications received by the BLM and Forest Service for roads, distribution lines, and related infrastructure necessary to support mineral activity. This impact would be especially notable east of Wasatch front where coal development potential is high.	Neither the BLM nor Forest Service would authorize new ROW development in occupied habitat. Therefore, Alternative C would further reduce opportunities for renewable energy, communication facilities, gas pipelines, fiber optic cables, electrical transmission lines, and similar ROW development from occurring in the planning area. There is a continuing demand for these ROWs in the planning area to meet energy and communication needs outside the planning area; Alternative C would prevent the BLM and Forest Service lands and realty program from meeting those needs. Impacts from mineral development would be the same as Alternative B. with the exception that all PHMA (4,008,580 acres) would be recommended for withdrawal from locatable mineral entry, meaning there would be a larger area with less demand for ROW infrastructure. BLM management would prohibit new road construction within 4 miles of active leks. Because of the density of active lek sites, new road construction would be limited throughout many areas in PHMA. Limitations on new road construction would limit the BLM's and Forest Service's ability to authorize new road ROW applications in PHMA.	Lands and Realty management under Alternative D would impact the BLM and Forest Service lands and realty programs by reducing the BLM and Forest Service's ability to authorize above-ground linear ROWs, such as electrical transmission lines, on 51 percent of PHMA. On the remaining 49 percent of PHMA, additional stipulations for the development of electrical transmission lines could result in denial of projects that cannot meet ROW grant requirements for the protection of Greater Sage-Grouse habitat. Alternative D could also result in an increase in the number of underground ROW applications received as ROW applicants seek opportunities to place ROW infrastructure in areas otherwise excluded for above-ground infrastructure. Impacts from mineral development would be similar to Alternative B, with the exceptions that underground coal mining would be allowed in Greater Sage-Grouse habitat with stipulations specifically related to surface disturbance; new mineral development in PHMA would place a demand on the lands and realty program through the need for new or modified ROW authorizations. Impacts from travel management would be the same as those described above under Alternative B.	Stipulations associated with ROW avoidance areas under Alternative E would limit the BLM and Forest Service's ability to accommodate the demand for new infrastructure development in Greater Sage-Grouse habitat. With demand for new ROWs in the planning area, including major inter- and intra-state electrical transmission and gas pipeline ROW developments, expected to continue and increase over time, new ROW development would be diverted to adjacent nonfederal lands or would not occur at all. If new ROW development could not be feasibly developed, the result would be reduced energy and communication opportunities to meet growing demand. While the amount of land available for mineral development would be the same as under Alternative A, stipulations could reduce the number and distribution of ROW applications associated with new mineral development projects. Impacts from travel management would be the same as those described above under Alternative B.	Under the Proposed Plans, the BLM and Forest Service would manage for ROW development based on the type of ROW (e.g., major or minor; linear or site) and location within the planning area. New major ROWs, leases, and permits (except for roads) would only be allowed in PHMA where the proposal could demonstrate a net conservation gain to Greater Sage-Grouse habitat and application of RDFs and other Greater Sage-Grouse conservation strategies (e.g., tall structure limitations and buffering from leks) intended to reduce impacts on Greater Sage-Grouse habitat. The Proposed Plans could increase the number of ROWs proposed to be underground; however, RDFs and siting specifications could promote more collocated development, especially in existing corridors. Impacts from mineral development and travel management would be the same as Alternative D. Impacts from a 3 percent disturbance cap (5 percent on National Forest System lands in the Wyoming portion of the planning area) could result in direct and indirect long-term impacts where BSUs or project areas exceed the cap and ROWs become excluded.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* / *E2: Wyoming*	Proposed Plans
	Limitations on new road construction and the incorporation of supplemental mitigation requirements could make certain areas impractical for new ROW development.				
Renewable Energy					
Under Alternative A, zero acres of lands with "Good" or better wind potential would be managed as ROW exclusion or avoidance areas. As a result, applications in these areas would likely continue to be accepted by the BLM with few restrictions. However, if, Greater Sage-Grouse becomes a federally listed species, the Section 7 Consultation process would be likely to result in substantial project constraints. All of the acres of high geothermal potential would continue to be open without restrictions or stipulations. However, there is still very little reasonably foreseeable development within the planning area. The limited resource potential and historic interest in wind and geothermal development reduces the magnitude of short- and long-term direct and indirect impacts on renewable energy.	Under Alternative B, 12,600 acres considered to have "Good" or better wind potential would be managed as ROW exclusion areas and, as a result, 7 percent reduction in the amount of developable windy lands across the State of Utah would be unavailable for development. Under Alternative B, an additional 22,900 acres considered to have "Good" or better wind potential would be managed as ROW avoidance areas and, as a result, an additional 12 percent of the developable windy lands across the State of Utah would be subject to restrictions on development. Under Alternative B, 136,170 acres would be closed to geothermal leasing, including 8,050 acres of high potential and 118,500 acres of moderate potential lands. Implementation of Alternative B would result in the closure of 83 percent of all high potential geothermal lands to leasing within the decision area that were open under Alternative A. This closure would continue to directly impact the fluid minerals program by prohibiting the development of geothermal energy on portions of federal mineral estate. Geothermal operations would be limited in their choice of project locations and may be forced to develop in areas that are challenging to access or have less economic resources because more ideal areas could be closed to leasing. This could raise the cost of geothermal development in the planning area and could result in operators moving to nearby private	Under Alternative C, 35,500 acres considered to have "Good" or better wind potential would be managed as ROW exclusion areas and would not be open for ROW applications and, as a result, 19 percent reduction in the amount of developable windy lands across the State of Utah would be unavailable for development. Under Alternative C, 186,700 acres would be closed to geothermal leasing, including 9,700 acres of high potential and 166,800 acres of moderate potential lands. Implementation of Alternative C would result in the closure of 100 percent of all high and moderate potential geothermal lands to leasing within the decision area, likely eliminating geothermal energy development in the decision area. The overall magnitude of impacts due to limited resource potential and commercial interest in development would be the same as Alternative A.	Impacts on wind energy from ROW exclusion management would be the same as under Alternative B. CSU and TL stipulations would be applied to all 9,720 acres of lands with high potential for geothermal energy. In addition all 29,600 acres of lands with moderate potential would be subject to NSO stipulations. As a result, geothermal operations would be limited in their choice of project locations and may be forced to develop in areas that are challenging to access or have less economic resources because more ideal areas could be closed to leasing. This could raise the cost of geothermal development in the planning area and could result in operators moving to nearby private or state minerals that are open to leasing. The overall magnitude of impacts due to limited resource potential and commercial interest in development would be the same as Alternative A.	Under Alternative E, 12,600 acres considered to have "Good" or better wind potential would be managed as ROW avoidance areas and, as a result, 7 percent of the developable windy lands across the State of Utah would be subject to restrictions on development. No additional acres of high or moderate potential would be closed to geothermal leasing as compared to Alternative A. NSO stipulations would be removed from 20 acres of moderate potential lands under Alternative E. There would also be an additional 8,100 acres of high potential lands and an additional 94,000 acres of moderate potential land that would be subject to CSU and TL stipulations, resulting in limitations on geothermal energy development in these areas. Existing leases would remain valid through their term but could not be renewed, resulting in a long-term loss of geothermal energy development opportunities. The overall magnitude of impacts due to limited resource potential and commercial interest in development would be the same as Alternative A.	Impacts on wind energy from ROW exclusion management (avoidance management on National Forest System lands in the Wyoming portion of the planning area) would be similar to Alternative D; with the exception that wind energy would be further discouraged in GHMA due to RDFs, lek buffers, and mitigation requirements. Under the Proposed Plans, 120,600 acres of high and moderate geothermal development potential areas acres would be subject to NSO stipulations with waivers, exceptions, and modifications. Fewer acres would be closed compared to Alternative A. NSO stipulations, combined with RDFs, CSU stipulations, and TLs would limit geothermal development opportunities and may force development in areas that are challenging to access or have less economic resources. This could raise the cost of geothermal development in the planning area and could result in operators moving to nearby private or state minerals that are open to leasing. The overall magnitude of impacts due to limited resource potential and commercial interest in development would be the same as Alternative A.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* / *E2: Wyoming*	Proposed Plans
	or state minerals that are open to leasing. The overall magnitude of impacts due to limited resource potential and commercial interest in development would be the same as Alternative A.				
Minerals					
Fluid Minerals					
Under Alternative A, 3,219,000 acres (97 percent) of BLM-administered and National Forest System surface within the decision area would continue to be open to ROW location. However, wherever there was overlap between federal oil and gas leases and the 94,800 acres (3 percent) of BLM-administered and National Forest System surface in the decision area that would continue to be managed as ROW avoidance or exclusion under this alternative, the fluid minerals program could be indirectly impacted by the resulting limits on the available means for transporting fluid minerals to processing facilities and markets. Under Alternative A, 31,600 acres with high development potential (5 percent of the federal mineral estate with high development potential) would remain closed to oil and gas leasing. Acres closed in this category would have the greatest impact on the fluid minerals program by prohibiting the development of oil and gas on portions of federal mineral estate with high potential for oil and gas development. In areas closed to leasing (totaling 138,500 acres of federal mineral estate for this alternative), oil and gas operations would be restricted in their choice of project locations and may be forced to develop in areas that are challenging to access or have less economic resources because more ideal areas could be closed to leasing. This could raise the cost of fluid mineral development in the	Because all PHMA would be closed to fluid mineral leasing under Alternative B, managing areas as ROW exclusion in PHMA would have no impact on fluid minerals. All federal mineral estate within PHMA (3,328,800 acres or 83 percent of the federal mineral estate decision area) would be closed to oil and gas leasing. These closures would include 407,100 acres with high potential (32 percent of the high potential acres in the decision area). Closure of these acres would directly impact the fluid minerals program in the manner described under Alternative A. However, because the acreage closed would increase under Alternative B, the magnitude of these impacts would also increase. Existing leases would remain valid through their term but could not be renewed, resulting in further long-term restrictions on the development of fluid mineral resources. Conservation measures in addition to RDFs would be applied as COAs to existing leases on 540,600 acres of PHMA overlying federal mineral estate, 213,000 acres of which are held by production. Application of these requirements through COAs would impact fluid mineral operations by increasing costs if it resulted in the application of additional requirements and/or use of more expensive technology (such as remote monitoring systems) than would otherwise have been used by operators. To avoid these costs,	Because the entire decision area would be closed to fluid mineral leasing under Alternative C, managing areas as ROW exclusion would have no impact on fluid minerals. All federal mineral estate in the decision area (4,008,600 acres) would be closed to oil and gas leasing. Closure of these acres would directly impact the fluid minerals program in the manner described under Alternative A; however, because Alternative C would close the most acres out of any alternative, the magnitude of these impacts would also increase. Management actions applicable to existing leases under Alternative C would be similar to those under Alternative B, but they would apply to 561,800 acres of existing leases on federal mineral estate (all existing leases in the decision area). In addition to applying the restrictive management under Alternative B to more acres, Alternative C would call for COAs implementing seasonal restrictions on vehicle traffic and human presence associated with exploratory drilling. This alternative also would limit new surface disturbance on existing leases to 3 percent per section, with some exceptions. Impacts of these operating and siting restrictions would be the same type as those described under Alternative B, although the magnitude of the impacts would increase.	All BLM-administered and National Forest System surfaces within PHMA not already managed as ROW exclusion would be managed as ROW avoidance for surface and underground linear ROWs (including pipelines and roads). As a result, 2,754,200 acres (83 percent) of BLM-administered and National Forest System surface in the decision area would be managed as ROW avoidance for these types of ROWs, and 27,600 acres (less than 1 percent) would be managed as ROW exclusion. Oil and gas leases beneath BLM-administered and National Forest System surface in PHMA would be indirectly impacted in the manner described under Alternative A; however because all BLM-administered and National Forest System surface would be managed as either ROW avoidance or ROW exclusion under Alternative D, the magnitude of impacts would increase. The BLM and Forest Service would apply a buffer system to manage oil and gas development in and adjacent to occupied habitat. Under this system, leks would be surrounded by buffers of varying sizes in which NSO and/or CSU/TL stipulations would apply. In addition, CSU and/or TL stipulations would apply to all areas within occupied habitat that are outside a lek buffer. The buffer system would result in application of these restrictions to some areas outside but adjacent to occupied habitat. Application of these surface disturbance restrictions, TLs, and other operating standards would limit the siting, design, and operations of oil and gas development projects in the manner described under Alternative A; however, because these restrictions and standards would be applied throughout	All BLM-administered and National Forest System surface within Greater Sage-Grouse habitat in SGMAs/core areas not already managed as ROW exclusion would be managed as ROW avoidance. As a result, 2,654,000 acres (80 percent) of BLM-administered and National Forest System surface in the decision area would be managed as ROW avoidance, and 27,600 acres (1 percent) would be managed as ROW exclusion. Oil and gas leases beneath BLM-administered and National Forest System surface in Greater Sage-Grouse habitat in SGMAs/core areas would be indirectly impacted in the manner described under Alternative A; however, because the acres managed as ROW avoidance would increase compared with Alternative A, the magnitude of these impacts would increase. All federal mineral estate within Greater Sage-Grouse habitat in SGMAs/core areas (3,262,500 acres or 81 percent of the decision area) would be subject to CSU stipulations and TLs. Application of these stipulations would limit the siting, design, and operations of oil and gas development projects in the manner described under Alternative A; however, because these stipulations would be applied throughout the decision area under Alternative E, the magnitude of the impacts would increase.	For lands managed according to the BLM and Forest Service-Utah Proposed Plans, all acres in PHMA would be either closed to leasing or open subject to NSO stipulations, therefore no oil and gas activities on future leases within these areas would require new ROWs. Therefore, managing PHMA as ROW avoidance would not impact new leases. Existing leases in PHMA would be impacted as described under Alternative A. However, because more acres would be managed as ROW avoidance under these Proposed Plans, and because additional restrictions would be applied to any ROW development that was allowed in PHMA or GHMA, impacts would increase. For lands managed according to the Forest Service-Wyoming Proposed Plan, timing and distance limitations would be increased to include prohibiting surface occupancy and disruptive activities within 0.6 miles of occupied leks and density limitations of 1 location per 640 acres and a 5 percent disturbance cap would reduce and limit mineral activity compared to Alternative A. All federal mineral estate within PHMA (3,258,300 acres or 80 percent of the federal mineral estate decision area) would be open to oil and gas leasing subject to NSO stipulations. These stipulations would apply to 347,800 acres with high potential (44 percent of the high potential acres in the decision area). Federal fluid minerals in area subject to NSO stipulations could be leased, but the leaseholder/operator would have to use offsite methods such as directional or horizontal drilling to access mineral resources that have high potential for oil

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	*E2: Wyoming*	
planning area and could result in operators moving to nearby private or state minerals that are open to leasing.	operators may move to nearby state or private minerals, resulting in lost royalties for the BLM and Forest Service.		the decision area under Alternative D, the magnitude of the impacts would increase. These impacts would be mitigated in GHMA where off-site mitigation could allow operators to waive the applicable stipulations.			and gas development. The area where directional and horizontal drilling can be effectively used is limited, meaning some minerals may be inaccessible in areas where an NSO stipulation covers a large area or where no leasing is allowed on surrounding lands. Because the acreage subject to NSO stipulations would increase by six times compared with Alternative A, the magnitude of these impacts would also increase under the Proposed Plans. Application of the 3 percent disturbance cap (5 percent on National Forest System lands in the Wyoming portion of the planning area) in PHMA could impact both new and existing fluid mineral activities by preventing or restricting new surface development. In PHMA, the density of energy and mining facilities would be limited to one energy/mining facility per 640 acres. When calculated at the project level, this requirement would push developers to consolidate facilities and, where technically feasible, directionally or horizontally drill from outside of Greater Sage-Grouse habitat. Application of lek buffers in GHMA could impact new and existing fluid mineral activities by restricting new surface development. Impacts of applying RDFs would be similar in nature and magnitude to Alternative D.
Nonenergy Leasables						
Under Alternative A, 3,870,080 acres (97 percent) of federal mineral estate in the decision area would remain open to leasing consideration, and 138,500 acres (3 percent) would remain closed to prospecting and leasing. Management actions that close areas to nonenergy leasable mineral prospecting and leasing would directly impact nonenergy leasable minerals by reducing the area available for prospecting and leasing. If the most lucrative resources were closed to prospecting and leasing, developers	Under Alternative B, 3,341,300 acres or 83 percent of the federal mineral estate decision area (including all federal mineral estate in PHMA) would be closed to prospecting and leasing. Management under this alternative would close 24 times more federal mineral estate to nonenergy leasable mineral prospecting and leasing than management under Alternative A. Closing areas to nonenergy mineral prospecting and leasing would result in the same type of impacts as those described under Alternative A, but over a larger area.	All federal mineral estate in the federal mineral estate decision area (4,008,600 acres) would be closed to prospecting and leasing. This alternative would close the most acres out of all the alternatives. Closing areas to nonenergy mineral prospecting and leasing would result in the same type of impacts as those described under Alternative A, but over a larger area.	Like Alternative A, under Alternative D, 138,500 acres (3 percent) of federal mineral estate in the decision area would be closed to nonenergy leasable mineral prospecting and leasing. Another 2,905,100 acres (73 percent) of federal mineral estate within PHMA and within 1 mile of leks in GHMA would be closed to leasing for development by surface mining but would be open to leasing for development by underground mining. Closing areas to nonenergy mineral leasing for development by surface mining could increase costs of development by requiring developers to	Nonenergy leasable mineral allocations under Alternative E would be the same as those under Alternative A and would result in the same impacts. New leases in Greater Sage-Grouse habitat in SGMAs/core areas, including leases for commercial prospecting, would be subject to limitations on siting, disturbance (including a 5 percent disturbance cap), tall structures, noise, and timing of development activities. Impacts of these limitations would be the same type as those described for RDFs under Alternative B.		Impacts of closing PHMA to nonenergy mineral leasing in the BLM and Forest Service-Utah portions of the planning area would be similar to those under Alternative B. Impacts would be mitigated because new leases adjacent to existing operations would be allowed, but these new leases would be subject to a disturbance cap, lek buffers, and RDFs. Impacts of these restrictions would be similar to those under Alternatives B and D. PHMA is not closed to nonenergy leasable minerals on National Forest System lands in the Wyoming portion of the planning area.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* / *E2: Wyoming*	Proposed Plans
may have to prospect and extract resources that are not as lucrative, thus decreasing profit. Nonenergy leasable mineral development operations may also move to nearby private or state minerals containing nonenergy leasable mineral resources within Greater Sage-Grouse habitat. This change would result in lost royalties for the BLM and Forest Service.	Existing federal nonenergy leasable mineral leases in the 3,328,800 acres of federal mineral estate in PHMA would be subject to RDFs, which would limit surface disturbance, vehicle use, siting, and design of mineral development operations in addition to imposing reclamation requirements. Application of RDFs would increase costs of nonenergy leasable development if it delayed resource development or resulted in the use of more expensive technology or less efficient development than would otherwise have been used.		use more expensive or less efficient underground mining methods.		
Coal					
There would continue to be 3,982,800 acres, or 99 percent of the decision area acceptable for leasing and suitable for surface mining. Management of 1 percent of the decision area as unacceptable for leasing would continue to preclude development of some coal resources. Continuing to apply disturbance buffers and seasonal TLs on surface disturbing and disruptive activities in portions of Greater Sage-Grouse breeding, nesting, and winter habitat would directly impact development of coal resources by limiting the siting, design, timing, and operations of coal development projects. This, in turn, could delay resource development and require operators to use more costly development methods than they otherwise might have used.	Under Alternative B, 3,328,800 acres (83 percent of the decision area), including all federal mineral estate in PHMA, would be managed as unsuitable for surface mining. This closure to surface mining would include 161,400 acres with high coal development potential (87 percent of federal mineral estate with high coal potential in the decision area). Management of areas as unsuitable for surface mining would preclude development of surface coal resources in the Alton area. Where possible depending on coal resources and geology, coal operations may relocate to nearby state, county, and private minerals. However, state, county, and private mineral resources are often fragmented and limited in extent. Underground coal mining would be allowed to occur in all PHMA; however, restrictions on surface disturbing appurtenant facilities could deter new leasing.	Under Alternative C, 4,008,600 acres of federal mineral estate (100 percent of the decision area) would be managed as unsuitable for surface mining. This closure to surface mining would include 185,500 acres with high development potential (100 percent of high potential federal mineral estate in the decision area). Management of areas as unsuitable for surface mining would have the same type of impacts as those described under Alternative B, but occurring over a larger area. Underground coal mining would be allowed to occur in all PHMA; however, restrictions on surface disturbing appurtenant facilities could deter new leasing.	Like Alternative A, the 3,982,800 acres (99 percent) of federal mineral estate in the decision area that is acceptable for leasing consideration would be suitable for surface mining. Additional areas could be determined to be unsuitable for surface mining after site-specific review in the same manner described under Alternative A. New leases for surface mining in PHMA would be subject to limitations on noise, structure height, and timing of activities, as well as mitigation requirements and a 5-percent disturbance cap. These limitations would increase costs of coal development and could create development delays due to limits on the timing of activities. New and existing leases for underground mining in PHMA would be required to avoid surface disturbance or, if such avoidance is not technically feasible, limit predator perching opportunities, noise, and timing of activities such as construction and vehicle noise. Additional mitigation would also be required. These limitations would increase costs of coal development and could create development delays due to limits on the timing of activities. Exploration activities would also be subject to limitations on surface disturbance and timing of activities, which would increase costs and delays. Underground coal mining would be allowed to occur in all PHMA. Some restrictions would be placed on	Like Alternative A, the 3,982,800 acres (99 percent) of federal mineral estate in the decision area that is acceptable for leasing consideration would be suitable for surface mining. All new surface and underground leases, as well as exploration activities, on the 3,262,500 acres of federal mineral estate in Greater Sage-Grouse habitat in SGMAs/core areas (81 percent of the decision area) would be subject to limitations on siting, disturbance, noise, and timing of activities. Mitigation may also be required. These limitations and requirements would have the same type of impacts as those described under Alternative D. Underground coal mining would be allowed to occur in all PHMA. Some restrictions would be placed on development of appurtenant facilities to protect Greater Sage-Grouse.	Like Alternative A, the 3,982,800 acres (99 percent) of federal mineral estate in the decision area that is acceptable for leasing consideration would be suitable for surface mining. Additional areas could be determined to be unsuitable for surface mining after site-specific review in the same manner described under Alternative A. Measures to protect Greater Sage-Grouse and its habitat (disturbance cap, lek buffers, net conservation gain requirements, and restrictions on noise and season) could affect the feasibility of new underground coal leases or the expansion of existing underground operations (e.g., increased costs and development delays due to limits on the timing of activities) but would not preclude them. In the Panguitch Population Area where surface mining occurs, the aforementioned measures to protect Greater Sage-Grouse and its habitat would affect surface coal production.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* / *E2: Wyoming*	Proposed Plans
			development of appurtenant facilities to protect Greater Sage-Grouse.		
Locatable Minerals					
Under Alternative A, 28,000 acres (8 percent) of federal mineral estate with high potential would remain withdrawn, and an additional 40 acres (less than 1 percent) with high potential would continue to be recommended for withdrawal. Approximately 334,000 acres (92 percent) of federal mineral estate with high potential in the decision area would remain open to locatable mineral entry. Withdrawal or closure of an area to mining development eliminates the ability to access and extract the mineral resources in that area under new claims. This represents an impact on the potential discovery, development, and use of those resources by decreasing the availability of mineral resources. In addition, validity exams must be completed on all existing claims in withdrawn areas. The need for these exams adds costs and delays for the BLM, Forest Service, and claimant. This alternative would be the least restrictive to locatable minerals because a larger percentage of the decision area would be open to locatable mineral entry and no additional restrictions would be applied to mining operations.	Under Alternative B, 287,600 acres (79 percent) of federal mineral estate with high potential in the decision area (including all PHMA) would be recommended for withdrawal, compared with 40 acres under Alternative A. The large increase in areas recommended for withdrawal under this alternative compared with Alternative A would increase the development delays and costs of validity exams on the BLM, Forest Service, or claimant described under Alternative A. Additional BMPs would be applied to the extent consistent with the rights of a mining claimant for existing operations within PHMA whenever those operations are modified. These BMPs could increase the cost of locatable mineral development.	Under Alternative C, 334,000 acres (92 percent) of federal mineral estate with high potential in the decision area would be recommended for withdrawal, compared with 40 acres under Alternative A. The remainder of the high potential acres in the decision area would already be withdrawn. Impacts from these actions would be the same type as those described under Alternative A, however, total withdrawals (including lands currently withdrawn) under this alternative would increase as compared to Alternative A, thereby further limiting opportunities for locatable mineral development in the decision area. Like Alternative B, additional BMPs would be applied to the extent consistent with the rights of a mining claimant for existing operations within PHMA whenever these operations are modified. These BMPs could increase the cost of locatable mineral development.	Like Alternative A, 498,100 acres (12 percent) of federal mineral estate in the decision area would remain withdrawn from location under the Mining Law of 1872, as amended, and an additional 600 acres (less than 1 percent) would be recommended for withdrawal. Impacts from these actions would be the same as those described under Alternative A. Like Alternative B, additional restrictions and BMPs for locatable minerals may apply in PHMA and GHMA. To the extent practicable, surface disturbance could be limited to under the 5 percent disturbance limit, and enhancements of PHMA through on-site and/or off-site mitigation could be requested. These limits and mitigation measures could increase the costs of locatable mineral development compared with Alternative A, but not to the extent that locatable mineral development subject to such limits and mitigation measures would no longer be practicable.	Like Alternative A, 498,100 acres (12 percent) of federal mineral estate would remain withdrawn from location under the Mining Law of 1872, as amended, and an additional 600 acres (less than 1 percent) would continue to be recommended for withdrawal. Impacts from these actions would be the same as those described under Alternative A. Similar to Alternative D, Alternative E would propose additional restrictions for locatable minerals that may apply in Greater Sage-Grouse habitat in SGMAs/core areas. These limits and mitigation measures could increase the costs of locatable mineral development compared with Alternative A, but not to the extent that locatable mineral development subject to such limits and mitigation measures would no longer be practicable.	Under the Proposed Plans, 235,000 acres (65 percent) of federal mineral estate with high potential in the decision area would be recommended for withdrawal, compared with 40 acres under Alternative A. Impacts from these actions would be the same type as those described under Alternative A, however, total withdrawals (including lands currently withdrawn) under this alternative would increase as compared to Alternative A, thereby further limiting opportunities for locatable mineral development in the decision area. Like Alternative B, additional surface disturbance limitations would be applied to the extent consistent with the rights of a mining claimant for existing operations within PHMA whenever these operations are modified. These RDFs could increase the cost of locatable mineral development.
Saleable Minerals (Mineral Materials)					
Approximately 73,500 acres (2 percent) of federal mineral estate within the decision area would remain closed to mineral material disposal. This would include 21,800 acres (2 percent) of federal mineral estate with mineral material occurrence in the decision area. Closing these areas to mineral material disposal would result in pits relocating nearby to meet demand for road maintenance and other needs. If demand for mineral materials could not be met by pits	Approximately 3,340,000 acres of federal mineral estate in PHMA (83 percent of the federal mineral estate decision area) would be closed to mineral material disposal. This includes 1,140,000 acres with mineral material occurrence (87 percent of federal mineral estate with mineral material occurrence in the decision area). The types of impacts from these closures would be the same as those discussed under Alternative A; however, because 24 times more acres of	Approximately 4,008,600 acres of federal mineral estate (the entire federal mineral estate decision area) would be closed to mineral material disposal. This includes all acres with mineral material occurrence in the decision area. The types of impacts from these closures would be the same as those discussed under Alternative A; however, because 39 times more acres of federal mineral estate with mineral material occurrence would be closed under	The BLM and Forest Service would prohibit mineral material disposal within 1 mile of leks and would close all PHMA to commercial mineral material disposal. Under this alternative, 2,967,500 acres (74 percent) of federal mineral estate within the decision area would be closed to commercial mineral material disposal but open to noncommercial mineral material disposal. This includes 1,030,900 acres with mineral material occurrence (79 percent of federal mineral estate with mineral material occurrence in the decision area). Noncommercial mineral	All federal mineral estate not closed to mineral material disposal under Alternative A would remain open (3,932,200 acres, or 98 percent of the decision area), including 1,325,600 acres with mineral material occurrence. Additional restrictions would apply to the 3,262,500 acres of federal mineral estate within Greater Sage-Grouse habitat in SGMAs/core areas (81 percent of the decision area), including maximum cumulative new permanent disturbance from mineral materials development of no more than 5 percent of Greater Sage-Grouse habitat in SGMAs/core areas in each population area. Impacts of these restrictions on mineral material development would be the same type as those described under Alternative D.	For lands managed according to the BLM and Forest Service-Utah Proposed Plans, all federal mineral estate in PHMA would be closed to mineral material disposal. This includes 1,196,900 acres with mineral material occurrence (89 percent of federal mineral estate with mineral material occurrence in the decision area). The types of impacts from these closures would be the same as those discussed under Alternative A; however, because 55 times more acres of federal mineral estate with mineral material occurrence would be closed under the Proposed

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* / *E2: Wyoming*	Proposed Plans
operated on federal lands, pits would move onto private or state lands. If no mineral materials occurred near closed areas, developers would have to transport them to construction sites from further away, which would alter the location of mineral materials development and increase transportation costs associated with that development.	federal mineral estate with mineral material occurrence would be closed under Alternative B, the magnitude of these impacts would increase. In PHMA, mineral material pits no longer in use would be restored to meet Greater Sage-Grouse habitat conservation objectives. Requiring reclamation of mineral material pits no longer in use could increase costs on developers if additional reclamation beyond that required under Alternative A were necessary to meet the specific objectives related to Greater Sage-Grouse habitat and if the BLM and Forest Service required the developers to pay for the reclamation.	Alternative C, the magnitude of these impacts would increase. Any mineral material development within occupied habitat would occur on private or state minerals. Mineral material pits no longer in use in PHMA would be restored in the same fashion as that described under Alternative B; however, because all of the decision area would be designated as PHMA under Alternative C, this management action would apply to more acres.	material development would be allowed in these areas with restrictions on siting, disturbance, noise, structure, height, and timing. These types of restrictions would increase costs of mineral material development if they resulted in the use of more expensive technology or less efficient development methods. Closing acres to commercial mineral material development would prevent large-scale commercial operations while allowing county and community operations, which are generally smaller scale. Additionally, 352,800 acres of federal mineral estate within PHMA (9 percent of the decision area) would be closed to both commercial and noncommercial mineral material disposal, 103,200 acres of which have mineral material occurrence (8 percent of federal mineral estate with mineral material occurrence in the decision area). Impacts of these closures would be the same type as those described under Alternative A; however, because 3 times more acres of federal mineral estate would be closed to mineral materials disposal under this alternative, the magnitude of those impacts would increase.		Plans, the magnitude of these impacts would increase. Impacts would be somewhat mitigated because new free use permits and expansion of existing pits would be allowed, subject to restrictions. PHMA is not closed to mineral material disposal on National Forest System lands in the Wyoming portion of the planning area. In GHMA, lek buffer distances to protect Greater Sage-Grouse and their habitat would restrict development and could possibly push it to less desirable locations or require compensatory mitigation but would not prohibit such activities.
Oil Shale and Tar Sands					
Under Alternative A, no disturbance cap would be applied to anthropogenic disturbance in Greater Sage-Grouse habitat. Therefore, oil shale and tar sands development could continue to occur subject to stipulations and other restrictions applied in the Vernal RMP (for the White River Oil Shale Preference Right Lease Area) and site-specific NEPA analyses. If exclusion or avoidance areas are near the White River Oil Shale Preference Right Lease Area or the pending lease in the Asphalt Ridge Special Tar Sands Area, there could be indirect impacts resulting from the limits on the available means for accessing and transporting oil shale and tar sands to processing facilities and markets. Impacts would be	Similar to Alternative A, there would be no impacts on oil shale and tar sands development from the disturbance cap under Alternative B. There could be indirect impacts resulting from the limits on access and the available means for transporting oil shale and tar sands to processing facilities and markets. Impacts would be mitigated where new ROWs could be collocated within existing ROWs to satisfy valid existing rights.	Under Alternative C, approximately 2,320 acres of the White River Oil Shale Preference Right Lease Area and all 2,120 acres of the pending federal lease within the Asphalt Ridge Special Tar Sands Area would be subject to a 3 percent cap, which would include fire. The Uintah Population Area, where the White River Oil Shale Preference Right Lease Area is located, is currently just under the 3 percent disturbance cap. New development could push the area over the cap and reduce opportunities for new surface disturbance in this portion of the Preference Right Lease Area until areas are reclaimed to the point where disturbance is below the threshold.	Similar to Alternative A, there would be no impacts on oil shale and tar sands development from the disturbance cap under Alternative D. Areas within one mile of an occupied lek surrounding the White River Oil Shale Preference Right Lease Area and the pending federal lease within the Asphalt Ridge Special Tar Sands Area would be managed as ROW avoidance. Impacts of this management would be similar to those under Alternative B, but fewer acres would be affected. Overall, impacts would increase compared with Alternative A.	Impacts under Alternative E would be the same as those under Alternative A.	Similar to Alternative A, there would be no impacts on oil shale and tar sands development from the disturbance cap under the Proposed Plans. However, oil shale and tar sands development in GHMA would be subject to RDFs, lek buffers, and net conservation gain requirements, which could impact oil shale and tar sands development by restricting new surface development. ROW development surrounding the leases would also be subject to these restrictions.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* / *E2: Wyoming*	Proposed Plans
mitigated where new ROWs could be collocated within existing ROWs to satisfy valid existing rights.		Impacts on existing leases would be the same type as those described under Alternative B; however, the magnitude of impacts could be more severe because new ROWs would not be permitted in areas surrounding the pending tar sands lease and in areas surrounding 2,320 acres of the White River Oil Shale Preference Right Lease Area.			
Special Designations					
Areas of Critical Environmental Concern					
Sagebrush habitat is the only relevant and important value identified for the 15 potential ACECs and Zoological Areas proposed for designation under Alternative C. Refer to the summary of impacts for Special Status Species – Greater Sage-Grouse, and Vegetation (Including Noxious Weeds; Riparian and Wetlands), for detailed analyses of sagebrush management in the decision area, including the areas encompassing these 15 proposed ACECs and Zoological Areas.					
The BLM would continue to manage the seven designated ACECs within Greater Sage-Grouse occupied habitat to protect the identified relevant and important values. Current management would continue protecting the values. None of the identified relevant and important values is Greater Sage-Grouse.	Nearly all new surface-disturbing activities in ACECs would be precluded. Adopting more restrictive management of surface-disturbing activities would be complementary to the protection of the relevant and important values of the existing ACECs. Therefore, in general, Alternative B could enhance the relevant and important values of the existing ACECs to a greater extent than Alternative A. In all cases, the relevant and important values would be protected from irreparable damage.	Impacts would be similar to those under Alternative B. However, because all occupied Greater Sage-Grouse habitat would be managed as PHMA, restrictions would be in place for all existing ACECs.	Surface-disturbing activities in ACECs would be allowed with stipulations, RDFs, or BMPs. However, where current management is more restrictive than what is proposed in this alternative, current management would continue to apply. As a result, this alternative would be at least as restrictive as current management. In all cases, the relevant and important values would be protected from irreparable damage.	Impacts would be the same as described under Alternative D.	Where ACECs overlap restrictions on surface-disturbing activities, impacts would be similar to Alternative B. Where surface-disturbing activities are allowed in ACECs, stipulations or RDFs would apply to mitigate the impacts of the activities. As with Alternative D, where current management is more restrictive than the Proposed Plans, current management would continue to apply. As a result, the Proposed Plans would be at least as restrictive as current management. In all cases, the relevant and important values would be protected from irreparable damage.
Wilderness Study Areas					
Due to the requirement that any activity in WSAs meet the nonimpairment standard, implementing management proposed in the various alternatives would not impair wilderness characteristics. Management to protect Greater Sage-Grouse could enhance naturalness, or, at a minimum, be complementary to management in WSAs. However, this would not vary greatly between the alternatives.	Impacts would be the same as described under Alternative A.	Impacts would be the same as described under Alternative A.	Impacts would be the same as described under Alternative A.	Impacts would be the same as described under Alternative A.	Impacts would be the same as described under Alternative A.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E		Proposed Plans
				E1: Utah	*E2: Wyoming*	
Other Special Designations (National Historic Trails)						
The BLM and Forest Service would continue to manage the California, Old Spanish, and Pony Express National Historic Trails in accordance with direction in approved LUPs; BLM Manual 6250, National Scenic and Historic Trail Administration; BLM Manual 6280, Management of National Scenic and Historic Trails and Trails Under Study or Recommended as Suitable for Congressional Designation; and the existing comprehensive plan for the California and Pony Express National Historic Trails (National Park Service 1999). A comprehensive plan for the Old Spanish National Historic Trail is being developed jointly by the BLM and National Park Service. New policy addressing the management of National Historic Trails was issued by the BLM in 2012. The BLM will manage National Historic Trail resources, qualities, values, and associated settings, and the primary use or uses in accordance with the direction provided in BLM Manual 6280. This policy will be adhered to during any site-specific project NEPA analyses that are conducted in the decision area.	There would be restrictions on surface-disturbing activities in PHMA and GHMA to protect Greater Sage-Grouse. Restrictions would preclude nearly all new surface-disturbing activities. Implementing such restrictions would be complimentary to the protection of national historic trails.	Impacts would be the same as described under Alternative B.	Surface-disturbing activities would be allowed with stipulations, design features, or BMPs. Because management proposed under this alternative would not apply in instances where current management is more restrictive, managing for Greater Sage-Grouse would, at a minimum, provide similar management to Alternative A. Where more stringent restrictions on surface-disturbing activities would apply than under Alternative A, implementing such restrictions would be complimentary to the protection of national historic trails.	Impacts would be the same as described under Alternative D.		Where national trails overlap restrictions on surface-disturbing activities, impacts would be similar to Alternative B. Where surface-disturbing activities are allowed in national historic trail corridors, stipulations or RDFs would apply to mitigate the impacts of the activities. As with Alternative D, where current management is more restrictive than the Proposed Plans, current management would continue to apply. Implementing additional restrictions on surface-disturbing activities would be complimentary to the protection of national historic trails.

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E *E1: Utah* / *E2: Wyoming*	Proposed Plans
Social and Economic Impacts (Including Environmental Justice)					
Current employment and earnings trends in the primary study area would not be affected. Lowest nonmarket values associated with Greater Sage-Grouse. Current trends in tax revenues in the primary study area would not be affected. Current trends in population growth and demand for housing and public services would not be affected. Alternative most favorable to business interests. No environmental justice impacts.	Employment in the primary study area would be reduced by an estimated 0.4 percent of the current employment and earnings would be reduced by an estimated 0.6 percent of current earnings when compared to Alternative A. Impacts on nonmarket values associated with Greater Sage-Grouse between Alternatives A and C. Tax revenues in the primary study area would be lower than under Alternative A but higher than under Alternative C. Impacts on population growth would be between those of Alternatives A and C No environmental justice impacts.	Employment in the primary study area would be reduced by an estimated 0.7 (C2) to 0.8 (C1) percent of the current employment and earnings would be reduced by an estimated 1.0 (C2) to 1.1 (C1) percent of current earnings when compared to Alternative A. Adverse effect on nonmarket values associated with livestock grazing when compared to Alternatives A, B, D, and E, and the Proposed Plans; positive effect on nonmarket values associated with Greater Sage-Grouse. Tax revenues in the primary study area would be lower than under alternatives A, B, D, or E or the Proposed Plans. Potential adverse impact on capacity of some communities to attract and retain population. Alternative most favorable to conservation interests. No environmental justice impacts.	Employment and earnings in the primary study area would be reduced by an estimated less than 0.1 percent of the current employment and earnings when compared to Alternative A. Nonmarket values associated with Greater Sage-Grouse greater than A or E but lower than B or C. Tax revenues would be lower than under Alternative A but higher than under alternative B. Impacts on population growth would be between those of Alternatives A and B. No environmental justice impacts.	Impact on employment and earnings in the primary study area would be the same as under Alternative A. Nonmarket values associated with Greater Sage-Grouse greater than A but lower than B, C or D. Impact on tax revenues in the primary study area would be the same as under Alternative A. Impact on population growth in the primary study area would be the same as under Alternative A. No environmental justice impacts.	Impact on employment and earnings would be a reduction of an estimated 0.1 percent of the current employment and earnings when compared to Alternative A. Nonmarket values associated with Greater Sage-Grouse greater than A, D or E but lower than B or C. As Alternative D, tax revenues would be lower than under Alternative A but higher than under alternative B. Impacts on population growth would be between those of Alternatives B and D. No environmental justice impacts.
Tribal Interests					
Under all alternatives, the BLM would continue to manage BLM-administered lands in a manner that accommodates Native American religious traditions, practices, and beliefs as guided by directives contained in BLM Manual 8120, American Indian Religious Freedom Act (42 USC 1996), Native American Graves Protection and Repatriation Act (25 USC 3001), Executive Order 13007 (Indian Sacred Sites), and Executive Order 13084 (Tribal Consultation), and Secretarial Order 3317, DOI Policy on Consultation with Indian Tribes (December 1, 2011). The Forest Service would also continue to manage National Forest System lands as guided by Forest Service Manual 1500 (External Relations) and Forest Service Handbook 1509 (American Indian and Alaska Native Relations). All alternatives allow for the appropriate tribal governments to consult on a case-by-case basis on undertakings on BLM-administered and National Forest System lands that could affect Native American concerns. The BLM and Forest Service would continue to identify, protect, and preserve tribal assets, treaty rights, sacred/religious sites, or special use areas through site- and project-specific modification or mitigation on a case-by-case or project-by-project consultation basis.					

4.6 IMPACTS FROM THE PROPOSED PLAN AMENDMENT

Table 4-3, below, is organized by issue, like **Table 4-1**, and summarizes if and how an action in the Proposed Plan Amendment was previously analyzed in either the 2015 Final EIS or 2016 Draft EIS. The table also identifies if any issue was not sufficiently analyzed and needs further analysis in this RMPA/EIS. If issues require further analysis, the remainder of **Section 4.6**, below, provides that additional information.

Table 4-3
Proposed Plan Amendment Issues Already Analyzed in the 2015 Final EIS and 2016 Draft EIS

Proposed Plan Amendment	How Considered in 2015 Final EIS and 2016 Draft EIS
Sagebrush Focal Area Designations/Withdrawal Recommendations	Neither Alternative D nor Alternative E1 included the presence of SFAs with the corresponding management (recommendation for withdrawal, no exceptions to NSO, prioritization; see page 2-206, and 2-217). In addition, both Alternative D and Alternative E1 considered exceptions beyond what was considered for SFAs or under the Proposed Plan, allowing consideration of development if there were no impacts on Greater Sage-Grouse or if impacts were minimized (see 2015 Final EIS Appendix H). Further, the 2016 Sagebrush Focal Area Draft EIS included analysis for not moving forward with a withdrawal. As noted on page 4-53 of the 2016 Draft EIS, "no future mines are projected to be developed in the proposed Utah withdrawal areas during the 20-year period of the proposed withdrawal if a withdrawal is not implemented. Based on the projection that there would not be any future mines developed in the Utah withdrawal area, even if a withdrawal is not implemented, there would not be any economic or tangible social impacts from future mining operations in the Utah socioeconomic analysis area." Applicable analyses from the 2015 Final EIS and 2016 Draft EIS explain the impacts from these actions, and are incorporated by reference. No additional analysis of the recommended SFA withdrawal is needed. Analysis is included below to analyze the effects of removing the other management associated with SFAs.
Administering Disturbance and Density Caps	The 2015 Final EIS Alternatives B, C (page 2-95) and Proposed Plan analyze the 3 percent disturbance cap (page 2-17 and 2-18), and Alternative E1 considers a 5 percent disturbance cap (page 2-95). While the potential protective effects of the cap from the 2015 Final EIS will continue in the Management Alignment Alternative, the exception language present in the 2018 RMPA/EIS was not considered in the 2015 Final EIS. None of the 2015 Final EIS alternatives considered including an exception that allows for development to exceed the cap if the project, based on location and design features, improves the condition of Greater Sage-Grouse habitat.

Proposed Plan Amendment	How Considered in 2015 Final EIS and 2016 Draft EIS
Modifying Mitigation Strategy	The 2015 Final EIS discloses impacts on a variety of resources from applying a mitigation strategy designed to achieve a net conservation gain; it mentions that phrase over 64 times when describing impacts from the 2015 Proposed Plan. The 2015 Final EIS analysis for Alternative E1 discloses impacts from applying a mitigation ratio of 4:1. The 2015 Final EIS analysis for the No-Action Alternative also discloses impacts from not requiring any mitigation. Finally, the 2015 Final EIS includes substantial modeling and analysis of the BLM's commitment to implement vegetation treatments and their effect on Greater Sage-Grouse habitat and the habitat of other species. The effects of vegetation/habitat treatments on Greater Sage-Grouse, vegetation, fish and wildlife, or other special status species would not vary based on why a treatment was conducted. There is no difference in effect if those treatments were completed as a proactive effort as committed to by the BLM in the 2015 ARMPA or in response to the requirement for projects to demonstrate a net conservation gain. The changes to the mitigation strategy in the Proposed Plan Amendment do not adjust whether habitat will be improved, but it changes who is responsible for habitat improvement (the BLM, rather than project proponent). The principles associated with the mitigation strategy (habitat improvement) and the corresponding impacts are consistent with the language in the No-Action Alternative (net conservation gain); therefore, the effects are sufficiently described and incorporated from the 2015 Final EIS. The analysis for the Proposed Plan Amendment below focuses on the effects of changing how Greater Sage-Grouse habitat will be improved.
Modifying Habitat Objectives	Alternative D includes an objective to "maintain or restore vegetation to provide habitat for lekking, nesting, brood rearing, winter, and transition areas" and specifies that the "desired cover percentages and heights for sagebrush, grasses, and forbs in seasonal habitats will be managed to meet habitat guidelines from scientific literature (e.g., Connelly et al. 2000 and Hagen et al. 2007), where such standards can be met" (page 2-85 and 2-86). It goes on to note that "adjustments from the guidelines may be made, but must be based on documented regional variation of habitat characteristics (e.g., sagebrush type, ecological site potential), quantitative data from population and habitat monitoring, and evaluation of local research" (page 2-86). Applicable analyses from the 2015 Final EIS explain the impacts from these actions (see 2015 Final EIS at 4-115 and 4-132 – 4-133), and are incorporated by reference. No additional analysis is needed.
Waivers, Exceptions, and Modifications for NSO Stipulations	In the 2015 Final EIS, Alternatives A, D, E and the Proposed Plan analyzed waivers, exceptions, and modifications on NSO stipulations. In these instances, it is disclosed that oil and gas may be developed if it would reduce impacts on Greater Sage-Grouse. Applicable analyses from the 2015 Final EIS explain the impacts from these actions, and are incorporated by reference. Specific changes in management related to removal of GHMA under the Proposed Plan Amendment may warrant analysis for specific resources/resource uses. As applicable, such impacts are considered in detail in this chapter.

Proposed Plan Amendment	How Considered in 2015 Final EIS and 2016 Draft EIS
General Habitat Management Areas in Utah	In the 2015 Final EIS neither Alternative A nor Alternative E1 included management for areas that are GHMA in the current No-Action Alternative. Under both alternatives the areas would be managed by the land use plan actions that pre-date the 2015 amendments, and included analysis to that effect. Additionally, while Alternative D considered some minimization measures, it also included an exception that no management would apply to GHMA if "off-site mitigation is successfully completed in PHMA, following discussion with the BLM and Forest Service and the State of Utah" (2015 Final EIS page 2-113). Applicable analyses from the 2015 Final EIS explain the impacts from these actions, and are incorporated by reference. Specific changes in management related to removal of GHMA under the Proposed Plan Amendment may warrant analysis for specific resources/resource uses. As applicable, such impacts are considered in detail in this chapter.
Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA	The 2015 Final EIS, as part of the Proposed Plan, analyzed this management action, which allowed for exceptions to the application of the Greater Sage-Grouse objectives and actions in areas that lack the "principle habitat components necessary for Greater Sage-Grouse" (page 2-17); however, in the Record of Decision the PHMA component of this action was removed, which is why the No-Action Alternative does not include this exception for PHMA. Nonetheless, the 2015 Final EIS analysis associated with this action is still applicable to consideration of this issue in the Proposed Plan Amendment. Similarly, Alternative D in 2015 considered an action to except decisions associated with PHMA if it were demonstrated that the action was in non-habitat and met specific criteria (page 2-90). Finally, Alternative E1 in 2015 included language that "effort has been made to minimize the amount of non-habitat within the Sage-Grouse Management Areas (SGMAs), but given the topographic, physiographic and land cover features within Utah and the scale and detail of mapping, the inclusion of some non-habitat was unavoidable." It went on to note that "no specific management provisions are proposed for non-habitat areas within the SGMAs, except to consider noise and permanent structure stipulations around a lek, and to note that, birds may fly over the non-habitat as they connect to other populations or seasonal habitat areas" (p. 2-90). The 2015 Final EIS analysis included the effects of this language, which is similar to that being considered in the Proposed Plan Amendment. The analysis from the 2015 Final EIS explains the impacts from these actions, and is incorporated by reference. No additional analysis is needed.

Proposed Plan Amendment	How Considered in 2015 Final EIS and 2016 Draft EIS
Adaptive Management	Management changes as a result of meeting an adaptive management hard trigger were considered and analyzed in the 2015 Final EIS. While management to remove these "hard wired" changes from adaptive management were not considered in 2015, the impacts from such were analyzed in the 2015 Final EIS: If the 10-year population trend for an area that has met a hard trigger reflects the natural fluctuations of a self-sustaining population, hard trigger management would be removed and the RMPA actions would be restored. Existing RMPA actions have already been analyzed in the 2015 Final EIS; therefore, no additional analysis is necessary. If all the leks in an area that have met a hard trigger are not active for 10 years, indicating no occupied leks, the PHMA designation and all its associated management would be removed since there is no longer a Greater Sage-Grouse population for which management should be prioritized. In this instance, the removal of PHMA would revert management to Alternative A, as considered and analyzed in the 2015 Final EIS; therefore, no additional analysis is necessary. Because all impacts from the adaptive management actions considered in this process were already considered in one of the alternatives already analyzed, no additional analysis is necessary to describe impacts from the potential "un-triggers."
Prioritization of Mineral Leasing	In 2015, Alternatives A, B, C, D, and E (including the State's plan, Alternative E1) did not evaluate an objective that prioritized leasing and development outside of PHMA and GHMA; therefore, the change proposed in the Proposed Plan Amendment was considered in 2015, and the analysis can be found in Chapter 4 of that EIS. No additional analysis is necessary.
Land Disposal and Exchanges	The BLM develops most RMPs to guide management of land over 20 or more years. The Secretary's policy is, generally, not to dispose of public lands. However, for long term planning purposes, the situation may arise, especially in areas where public land tracts are isolated and difficult to manage, where it is useful for BLM to identify these areas as suitable for leaving public ownership. Any decision regarding whether or not to dispose of a particular parcel under any particular authority, whether by sale under section 203 of FLPMA; exchange under section 206 of FLPMA; or patent under the Recreation and Public Purposes Act of 1926, as amended, for instance, would require site-specific consideration and analysis, including, but not limited to considerations of access, popular recreational uses, the existence of cultural resources or habitat for species, and whether or not such a parcel, isolated from the rest of the public lands, might be better suited for private ownership. Section 203 of FLPMA specifies that BLM may only sell a tract of public land under section 203 if the tract is identified through the land use planning process, pursuant to section 202 of FLPMA, as meeting one or more of the disposal criteria listed in section 203. The RMP determination that a particular tract meets one or more of the criteria for disposal through sale does not necessarily mean the BLM will sell or dispose of the land by another means. Rather, the process for disposing of public lands under FLPMA Section 203 (Sales) or Section 206 (Exchanges) or any other authority is a lengthy multi-decisional process requiring comprehensive site-specific analysis, and cadastral, cultural and

Proposed Plan Amendment	How Considered in 2015 Final EIS and 2016 Draft EIS
	other resource surveys, when necessary, prior to the sale or disposition of a tract of public land. The BLM bases the determination whether a tract meets one or more of the section 203 disposal criteria on its ongoing inventory of all public lands and their resources conducted pursuant to section 201 of FLPMA. The requirement under section 203 that this determination be made through land use planning is consistent with the section 202 requirement to manage public lands under land use plans, where these represent a broader scope, longer-term approach to management of public lands in an entire planning area that takes into account a wide variety of possible uses of the public lands. The 2015 Final EIS Alternative A includes management that "in order to be considered for any form of land tenure adjustment, all lands not specifically identified for disposal must meet criteria included in FLPMA and in each LUP" (page 2-186). It also included analysis that "lands with sensitive species (including Greater Sage-Grouse) would not be disposed of unless there was a net benefit for Greater Sage-Grouse" (4-54). This management is substantially similar to that considered in the Proposed Plan Amendment, and the effects would not differ from those already identified in the 2015 Final EIS for Alternative A. While the impacts from the proposed changes to land disposal and exchanges are addressed, specific impacts on resources/resource uses, as applicable, will be considered in detail in this chapter.
Managing Habitat to Manage Predation	Allowing the removal of corvid nests was not considered in 2015, although Alternative A was silent on the issue. This chapter analyses the impacts of this action.
Burial of Transmission Lines	Alternative E1 (based on the State's Plan) did not include requirements for burial of transmission lines. The proposal in the Proposed Plan Amendment to not require burial of power lines was considered within the range of the 2015 Final EIS and analysis can be found in the Chapter 4 analysis of that document.

4.6.1 Impacts on Greater Sage-Grouse

The methods and assumptions regarding analysis of impacts on Greater Sage-Grouse are the same as those used in the 2015 Final EIS, Section 4.3.1 (pages 4-6 through 4-10). The resulting analysis describes impacts from the range of alternatives in the 2015 Final EIS, inclusive of Sections 4.3.2 through 4.3.7 (pages 4-10 through 4-135). This establishes a substantial baseline of impacts from the breadth of issues considered in the 2015 Final EIS, including most of the issues addressed in this RMPA/EIS. The assumption, indicators, and analyses are incorporated by reference and will serve as the base of analytical descriptions from which this analysis is drawn.

Administering Disturbance and Density Caps

The Proposed Plan Amendment includes a cap on disturbance and on density of energy/mining facilities in PHMA, similar to the No-Action Alternative (see **Table E.1**, **Appendix E**). In both alternatives, disturbance at the project and BSU scales must be managed to stay under 3 percent, as well as the density of energy and mining facilities must remain under one facility per 640 acres, on average. These caps would minimize disturbance in PHMA, managing for a habitat with levels of development that research supports is necessary to maintain Greater Sage-Grouse leks.

However, the Proposed Plan Amendment builds flexibility into the analysis by allowing exceedances of caps if certain conditions are met. For example, if site-specific information (e.g., habitat condition, Greater Sage-Grouse use of the area) combined with project design information (i.e., project siting, minimization measures, or voluntary mitigation) indicate the project will improve the condition of Greater Sage-Grouse habitat, the caps can be exceeded. The ability to exceed the disturbance and density caps could result in loss and degradation of site-specific Greater Sage-Grouse habitat and impacts on local grouse populations. Projects that would likely be precluded under the No-Action Alternative could proceed under the Proposed Plan Amendment; however, exceedances to the caps would only be allowed if site-level analysis indicates the project, in combination with all voluntary and required design features, will improve the condition of Greater Sage-Grouse habitat.

There is a risk that allowing this exceedance could result in the loss of a specific type of habitat that mitigation may not address because it does not require compensation for the exact same habitat value. Consequently, under the Proposed Plan Amendment it is possible that while the required habitat improvement will occur, it may not address the loss of a specific habitat type. This may result in a long-term impact on Greater Sage-Grouse in the project area.

In summary, allowing exceedances to the caps may result in local impacts on Greater Sage-Grouse if a specific limiting habitat type is disproportionately affected; however, project design features, which may include voluntary mitigation, would need to fully replace the value of the impacted area. The determination of what design features would be necessary to achieve that exception criteria depends on site-specific issues that would be analyzed in project-specific environmental reviews.

The interspersed nature of habitat, non-habitat, and potential habitat in Utah results in instances where voluntary habitat improvements could benefit a specific population more than staying under the 3 percent cap. Such improvements could be a component of design features applied to allow for more disturbance, meeting the exception criteria contained in the Proposed Plan Amendment. Greater Sage-Grouse in Utah are limited by habitat availability, and increasing habitat could provide a population-level benefit to Greater Sage-Grouse use of an area.

Modifying Mitigation Strategy

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 the public lands. Consistent with that determination and with BLM IM 2018-093, *Compensatory Mitigation*, the Proposed Plan Amendment clarifies how voluntary compensatory mitigation or a state mitigation requirement or recommendation should be considered in the management of Greater Sage-Grouse habitat. This clarification simply aligns the Proposed Plan Amendment with BLM policy and the scope of compensatory mitigation authority expressly provided by FLPMA. Any analysis of compensatory mitigation relating to future projects is speculative at this level of land use planning; therefore, analysis of compensatory mitigation is more appropriate for future project-specific NEPA. In other words, it is speculative to assume the impacts from voluntary compensatory mitigation at the planning level without knowing the frequency with which project proponents will proffer voluntary actions. The applicability and overall effectiveness of voluntary actions cannot be fully assessed until the project level when the specific location, design and impacts are known.

However, the effects of the changes to compensatory mitigation in the Proposed Plan will be nominal, in part, because the BLM will continue to ensure consistency of its actions and authorizations with the land use planning level goals and objectives of the Proposed Plans. In the 2015 Greater Sage-Grouse ARMPA the BLM committed to "increase the amount and functionality of seasonal habitats" (Objective SSS-4) by implementing vegetation and fuels treatments (see also MA-SSS-VEG-1, 2, 3 and 4, and MA-FIRE-3). The implementation of compensatory mitigation actions, if applied, will be directed by MOAs that describe how the BLM will align with State authorities and incorporated in the appropriate NEPA analysis during implementation. While the conservation benefit of compensatory mitigation may be limited when weighed against the threats to Greater Sage-Grouse, particularly in the Great Basin portion of the planning area where wildland fire remains a key threat, the BLM is committed to implementing state mitigation requirement or recommendation to help minimize the impacts of anthropogenic disturbance and habitat fragmentation throughout the planning area and the range of Greater Sage-Grouse.

Further, as noted in **Section 3.5**, the BLM committed to implementing beneficial habitat management actions to reduce the threats of fire and invasive species to Greater Sage-Grouse as part of the 2015 ARMPA. Because those actions were consistent with the State's management approach, no changes to them are considered in this effort as, as noted in **Chapter 2**, they are not shown in this EIS. However, the effect of those actions is evident in the habitat treatments described in Table 3-6. The BLM has committed resources to habitat restoration and has treated 1.4 million acres of Greater Sage-Grouse habitat range-wide over the past 5 years. In the federal government's fiscal year 2018 specifically, the BLM funded approximately $29 million in Greater Sage-Grouse management actions resulting in approximately 500,000 acres of treated habitat rangewide. The BLM expects to invest nearly $17 million in fiscal year 2019 through the implementation of habitat management projects.

In 2015, the USFWS determined Greater Sage-Grouse was "not warranted" for listing under the Endangered Species Act. The USFWS found that BLM's 2015 land use plans were adequate regulatory mechanisms and that the species no longer warranted listing under the Act. At the time of that decision, USFWS acknowledged the RMP requirements that compensatory mitigation achieve a net gain standard. 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.

In PHMA, when undertaking BLM management actions, and consistent with valid existing rights and applicable law, when authorizing third-party actions that result in habitat loss and degradation, the BLM will achieve the planning-level Greater Sage-Grouse management goals and objectives through implementation of mitigation and management actions identified in this RMPA. This includes the BLM's planning objective to improve habitat conditions and connectivity through implementation of vegetation treatments. Under this Proposed Plan Amendment, management would be consistent with the Greater Sage-Grouse goals and objectives that are unchanged from the 2015 ARMPA, 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.

Based on the existing levels of habitat loss from wildfire and development throughout the planning area, the level of habitat improvements identified in **Chapter 3** since 2015 have resulted in an improvement

to Greater Sage-Grouse habitat throughout the planning area. This trend is anticipated to continue, due to the combination of monitoring, treatment success and plan evaluations, the continued application of habitat improvements by the BLM, and likely some improvements voluntarily conducted by third parties. While individual project proponents will no longer be personally responsible to improve habitat in order to obtain an authorization for use of public lands, the effects of habitat improvements that were described in the 2015 Final EIS would continue to increase the quantity and quality of habitat and improve population distribution and vital rates.

Modifying Habitat Objectives

Changes in the habitat objectives table found in Objective SSS-3 are based on an evaluation of Greater Sage-Grouse habitat preferences informed by data collected throughout Utah. The proposed changes to the desired conditions in the habitat objectives table are outlined to better reflect vegetation structure and composition found in vegetation communities that support Greater Sage-Grouse habitat in Utah, as well as adjust the indicators and values to reflect a starting point that is based on the best available data based on local habitat conditions. The resulting three zones (Low, Mid, and High; see **Chapter 3**, **Section 3.3.4** and Map 3-1) provide a starting point for Greater Sage-Grouse habitat management that is more attuned to the varied vegetation communities providing Greater Sage-Grouse habitat throughout Utah. These changes will have beneficial impacts on management and Greater Sage-Grouse habitat because the indicators and values more accurately reflect vegetation characteristics in Utah as informed by site-specific information that has been updated using local science.

Waivers, Exceptions, and Modifications for NSO Stipulations

As noted in **Table 4-2**, multiple alternatives considered exceptions to oil and gas stipulations. The Proposed Plan Amendment alters the exception from the No-Action Alternative in two ways: first it applies it to areas without habitat (site-scale documentation), and second, it does not require that the State of Utah and the USFWS concur to its use. While exception of the NSO stipulation in PHMA would allow surface development, the BLM is required by regulation to either document that the factors leading to the stipulation have changed (e.g., no Greater Sage-Grouse habitat) or that the proposed operations would not cause unacceptable impacts (43 CFR 3101.1-4). In areas with site-scale habitat, such an exception would only be allowed if it was to prevent damage to higher value Greater Sage-Grouse habitat on adjacent non-public lands. In areas with site-scale non-habitat, the exception could only be approved if the primary disturbance (e.g., well pad, compressor station) did not impair adjacent seasonal habitats from direct and indirect impacts from the project.

While allowing the possibility for an exception introduces the potential for an impact not present in the No-Action Alternative, the criteria that must be met prior to approving an exception would either result in the exception not being granted, or in subsequent development having a low potential for impacts. Further, if the exception to the NSO stipulation is granted, and subsequent development would be subject to other minimization measures contained in MA-SSS-3, more assurances would be provided that resulting developments would not likely impact Greater Sage-Grouse or their habitats.

The Proposed Plan Amendment also adds a modification to the NSO stipulation that could result in some site-specific impacts on Greater Sage-Grouse or their habitat. The modification would allow operators to place infrastructure (e.g., roads, pipelines, and power lines) associated with their primary disturbance (e.g., well pad and compressor station) in PHMA without adhering to the NSO stipulation, but applying the minimization and mitigation measures in MA-SSS-3 (e.g., disturbance cap, tall structures,

noise, seasonal, buffers, etc.). The construction of such associated infrastructure would remove vegetation associated with habitat, increase predation opportunities on Greater Sage-Grouse and potentially displace birds. The modification was added to the Proposed Plan Amendment because in its absence, an operator could still obtain rights-of-way for such infrastructure. To avoid inconsistency in management (i.e., avoiding ROWs but precluding supporting oil and gas infrastructure), the modification was included, but only if the primary disturbance (e.g., well pad, compressor station, etc.) was granted an exception.

The Proposed Plan Amendment also included a waiver for the NSO stipulation; however, there would be no impact on Greater Sage-Grouse from the waiver, as it would be applied only if the area was removed from PHMA management, based on evaluation of site-specific data.

Sagebrush Focal Area Designations/Withdrawal Recommendations

As noted in Table 4-3, impacts to Greater Sage-Grouse from not recommending SFAs for mineral withdrawal is addressed in the 2015 Final EIS and the 2016 Draft EIS, and are incorporated by reference. SFAs also included an NSO stipulation for fluid mineral leasing with no waiver, exception or modification, and were prioritized for vegetation management and conservation actions, including but not limited to conducting land health assessments, wild horse and burro actions, reviewing livestock grazing permits, and habitat restoration.

Though no SFAs would be designated in the Proposed Plan Amendment, the PHMA within the SFAs would still be managed as PHMA with all the corresponding management. This includes requiring an NSO stipulation on all oil and gas leasing to avoid impacts from fluid mineral development. However, different from the No Action Alternative, the NSO stipulation in PHMA includes the potential to consider an exception, waiver or modification. It is critical to note that providing for such consideration does not mean development would be allowed to occur anywhere in PHMA. As required by regulation, the BLM can consider a such exceptions, waivers, or modification to lease stipulations only if "proposed operations would not cause unacceptable impacts" (43 CFR 3101.1-4). The Proposed Plan Amendment specifies the conditions that must be documented in order for an authorized officer to consider granting requests for waivers, modifications, or exceptions (see MA-MR-3). The impacts from this language is disclosed in the preceding section. Because of the stringent criteria that must be documented prior to considering granting exceptions, waivers, or modifications to the NSO stipulation, combined with other minimization measures that are required even if such action are granted, allowing consideration of exceptions, waivers or modifications in areas that used to be SFAs would not expose the habitat or associated Greater Sage-Grouse populations to the loss of habitat functionality.

The No Action Alternative also prioritized grazing permit renewals, vegetation management, and other conservation actions in SFA over all other PHMA. Because SFAs included areas where large populations of Greater Sage-Grouse coincided with relatively consolidated public lands, these areas already contained habitat characteristics that supported Greater Sage-Grouse needs. By prioritizing staff time and budget resources to areas with higher habitat quantity and quality, areas with marginal habitat characteristics could continue to degrade over time, becoming less and less suitable until they no longer provide the necessary components. Such a management focus would emphasize protecting the perceived best habitats to the exclusion of improving and creating habitat. By removing the prioritization of conservation efforts from the perceived best habitats, the Proposed Plan Amendment would enable managers to evaluate local ecological conditions and the presence of threats and focus resources in

areas to meet land health standards and improve vegetation characteristics to meet, or move towards meeting Greater Sage-Grouse habitat objectives. In the long term, prioritizing efforts in areas that need improvement, such as areas that are not meeting land health standards, will improve the quality and amount of habitat available for Greater Sage-Grouse populations.

General Habitat Management Areas in Utah

As noted on **Figure 2-1a**, there are several areas of GHMA throughout Utah in the No-Action Alternative. The GHMA in the Morgan and Summit County areas is predominantly on private lands; the GHMA between Vernal and Strawberry Reservoir (noted as South Slope Uintah in the 2015 Final EIS Chapter 3) is tribal and private lands. The areas of GHMA in the Uintah Population Area are separated into three small subpopulations, described in Chapter 3 of the 2015 Final EIS as Deadman's Bench, East Bench and Book Cliffs, and Halfway Hollow. None of the other GHMA in Utah includes any leks, and is generally comprised of poor quality habitat on the periphery of larger PHMA. See **Appendix 3** for a summary of each GHMA in Utah, the composition of its ownership (BLM-administered versus non-BLM-administered), the presence of disturbances, and connectivity issues.

Under the Proposed Plan Amendment, the GHMA designation would be removed with all its corresponding management actions from the 2015 plan amendments. These management actions, including lek buffers, required design features, fluid mineral leasing prioritization, and habitat objectives, provide a hierarchy of potential conditions to minimize effects while still allowing for development in GHMA. Notably, however, under the No-Action Alternative, where GHMA remain, development would still be allowed following this hierarchy of conditions. Under the Proposed Plan Amendment, the removal of GHMA and their associated management actions would likely incentivize development in areas formally identified as GHMA. The long-term effect of incentivizing under the Proposed Plan Amendment is not anticipated to be different than the development that would eventually be allowed under the No-Action Alternative, as noted below.

Under the No-Action Alternative development could still occur in GHMA. As analyzed in the 2015 Final EIS, "despite the…[Greater Sage-Grouse] conservation measures, leasing and development in these areas could result in human alteration, direct loss, and fragmentation of seasonal [Greater Sage-Grouse] habitats, which, in most cases, have already been fragmented by mineral development activities. Fragmentation could further limit the amount of usable habitat available for the small and declining population of [Greater Sage-Grouse] that occupy this area [GHMA]" (2015 Final EIS, page 4-119).

Although GHMA remains a part of the No-Action Alternative, the potential decline of Greater Sage-Grouse in GHMA exists; thus, whether or not GHMA and its associated management is present, the impacts from the two alternatives would be the same in the long term, though the Proposed Plan Amendment could likely accelerate the effect on resources in the former GHMA. This is because it incentivizes development in these areas over PHMA. Because 95 percent of Utah's Greater Sage-Grouse populations are supported by habitat in PHMA, there would be no significant effect of accelerating the impacts on the small populations in former GHMA that contain 5 percent of Utah's Greater Sage-Grouse populations and just 0.25 percent of the populations range-wide.

In addition, the Proposed Plan Amendment provides that the BLM would replace occupied habitat outside PHMA that is lost to development by creating or improving habitat inside PHMA. Conversely,

under the No-Action Alternative, mitigation is required to demonstrate a net conservation gain to compensate for development in GHMA, whether inside or outside GHMA.

Comparing 20-year trends, PHMA adds 79.5 more birds every year on average than what is added in GHMA. Assuming stable long-term trends statewide, it would take approximately 2.5 years for the population growth in PHMA to replace the potential loss of Greater Sage-Grouse populations in GHMA. In short, PHMA provides better habitat and better opportunity for the Greater Sage-Grouse; thus, while it appears that the loss of GHMA protections would have impacts on Greater Sage-Grouse, due to the Proposed Plan Amendment's focus on PHMA, and the BLM's commitment to create/improve habitat within PHMA, these factors likely minimize the potential harms from removing the GHMA classification. It is important to note that it is not anticipated that Greater Sage-Grouse populations in GHMA would be eliminated, but this demonstrates that Greater Sage-Grouse populations in Utah would not result in a long-term decline due to the removal of GHMA.

The BLM's commitment to replacing lost occupied Greater Sage-Grouse habitat in former GHMA by creating or improving PHMA could collectively increase or improve the quality of the PHMA over time. As the amount of development increases in former GHMA, the lack of local mitigation could accelerate the declines in Greater Sage-Grouse populations as available habitat that is not affected by disturbance shrinks.

Of the 366 known occupied leks in Utah, 94 percent of these leks are in PHMA. Only 8 of the 22 leks in GHMA are in areas affected by BLM management, with the other 14 in areas predominantly owned by tribal or private entities. With this alignment, the BLM would prioritize habitat management areas that encompass nearly 96 percent of the actual Greater Sage-Grouse, based on 2017 data.

As described in the analysis for Alternative E in the 2015 Final EIS, not including specific management for GHMA could result in localized Greater Sage-Grouse habitat loss, and continued population decreases. These areas on public lands are naturally fragmented, and various human developments (e.g., roads, transmission lines, and oil and gas development) have further isolated and impacted these habitats and their associated populations. The changes in management in the Proposed Plan Amendment would continue, if not accelerate these effects; however, as described above, the conservation value of these areas to the persistence and growth of Greater Sage-Grouse populations in Utah is marginal when compared with the habitat values and growth trends of populations in PHMA.

The overall Greater Sage-Grouse goal to "maintain and/or increase Greater Sage-Grouse abundance and distribution by conserving, enhancing or restoring the sagebrush ecosystem upon which populations depend in collaboration with other conservation partners" would be met under the Proposed Plan Amendment (Goal SSS-1 – 2015 ROD/ARMPA). While some areas outside of PHMA would likely see continued population decreases, the BLM's commitment to replace habitat in PHMA as compensation for development in former GHMA will meet the goal of "maintaining and/or increasing Greater Sage-Grouse abundance" because PHMA growth trends are more than 11 times higher than GHMA.

Finally, with the removal of GHMA, two small areas in the Sheeprocks area would be managed as available for cross-country OHV use. Approximately 6,320 acres in the 5 Mile Pass area in GHMA on the northeastern portion of Sheeprocks, and 7,900 acres in the Little Sahara Sand Dunes area in GHMA on the southern portion of the Sheeprocks population and would be managed as available for cross-country OHV use. As noted in **Chapter 3**, both these areas are destination-based OHV riding areas,

and both were open for more than 25 years prior to the 2015 ROD/ARMPA action to limit use in these areas to existing routes. The acres in both areas are directly adjacent to other areas that are also available to cross-country OHV use, and were originally part of the same open areas prior to 2015. The 2015 Final EIS notes that "habitat loss could occur associated with cross-country OHV use" (2015 Final EIS page 4-52). However, a review of GPS tracking data for Greater Sage-Grouse in the Sheeprocks area indicates that none of the collared birds (a sub-sample of the total population) used the areas proposed to be made available to cross-country use again (Chelak and Messmer 2017). Due to the long-term use in both of these areas prior to 2015, these areas have likely already experienced the habitat losses, so this change is not anticipated to result in impacts on Greater Sage-Grouse or its habitat.

Prioritization of Mineral Leasing

The Proposed Plan Amendment proposes to remove the fluid mineral leasing prioritization objective that prioritizes leasing outside of PHMA and GHMA. This was considered in Alternatives A, B, C, D, and E in the 2015 Final EIS where no similar objective was included; however, the 2015 Final EIS, where mineral leasing prioritization was part of the Proposed Plan (what is now the No-Action Alternative), focused its analysis on the no surface occupancy allocation decision that resulted from the objective. It determined that prioritizing leasing outside of Greater Sage-Grouse habitat would not preclude leasing in PHMA.

At most, the prioritization objective could potentially result in temporarily deferring a parcel in PHMA from leasing to a later sale, but only in instances of large lease sales where staff capacity would be incapable of analyzing all the nominated parcels. Because the mineral leasing prioritization objective provides no certain or durable protection to PHMA, its removal would not increase threats, since the no surface occupancy stipulation is still in effect.

Land Disposal and Exchanges

The No-Action Alternative would retain both PHMA and GHMA unless a net gain to Greater Sage-Grouse could be documented. The Proposed Plan Amendment also manages PHMA for retention, but former GHMA would be available for disposal according to the local land use plans. Additionally, prior to a disposal of public lands in PHMA, the environmental review would need to document that the land tenure adjustment would not compromise the persistence of the Greater Sage-Grouse population in the PHMA. This change could result in areas of Greater Sage-Grouse habitat in both PHMA and former GHMA no longer being administered according to the management actions from this amendment.

The impact of this change could affect smaller pieces of habitat within a PHMA, but would maintain enough of the seasonal habitats to maintain population persistence. Land disposals and exchanges within PHMA that would compromise the persistence of the PHMA's population would not be authorized. While there could be site-specific impacts, the likelihood for population-level impacts in PHMA would be low due to requirement to not dispose of lands that would threaten the persistence of the population. Former GHMA could be affected to a greater degree, as no limitation on size or impact would exist regarding their potential disposal.

Managing Habitat to Manage Predation

Removing corvid nests during habitat treatments in PHMA, including removing the trees on which they are built and adjacent trees, could reduce predation pressures by reducing corvid nesting opportunities. While breeding corvids will simply seek new nesting opportunities in the next nesting season, reducing

existing nests and adjacent nesting opportunities in PHMA could reduce opportunities for corvids to have easy access to Greater Sage-Grouse nesting habitat. While generally applicable statewide, the magnitude of this impact would depend on predation rates at the local Greater Sage-Grouse population level.

Burial of Transmission Lines

The No-Action Alternative requires that new transmission lines be buried where technically feasible. The 2015 Final EIS notes that "burying power lines in Greater Sage-Grouse habitat would avoid Greater Sage-Grouse predator perching or nesting opportunities, Greater Sage-Grouse avoidance of aboveground power lines, and Greater Sage-Grouse collisions with power lines" (2015 Final EIS page 4-32). It goes on to note that burying transmission lines would also result in ground disturbance during construction and maintenance and may result in large, permanent displacement of excavated soil and subsequent issues with reestablishing native vegetation. The Proposed Plan Amendment proposes to remove the requirement to bury transmission lines where technically feasible and provides increased flexibility to consider site-specific impacts and minimization options. This change in management could result in both positive and negative impacts on Greater Sage-Grouse, depending on threats in local populations.

Constructing transmission lines above-ground could increase predator perches, which may lead to increased take of Greater Sage-Grouse and their nests; however, impacts of predator perches would be minimized by conforming with right-of-way avoidance allocations, application of tall structure restrictions in PHMA, use of perch deterrents on poles, and micro-siting lines to avoid important Greater Sage-Grouse leks and adjacent seasonal habitats. Constructing transmission lines above the ground could also maintain more habitat than the burial of lines because it offers more protection for sensitive habitat areas. Removal of sagebrush and associated vegetation would be avoided with placement of surface lines, which minimizes habitat disturbance and the potential for invasive/noxious weeds. The specific impacts of this change in management would depend on site-specific conditions, but the removal of the requirement would allow interdisciplinary teams and local managers to evaluate site-scale impacts and minimize impacts at the project level, providing the flexibility to make the best decision for the local Greater Sage-Grouse population and their habitat.

4.6.2 Impacts on Air Quality

Impacts on air quality are described in the 2015 Final EIS in Section 4.4 (pages 4-135 to 4-137). Air quality is identified as a resource that would primarily have indirect, beneficial impacts from the implementation of most Greater Sage-Grouse conservation measures, although some adverse impacts from the different plan alternatives were discussed. As protective measures increase for Greater Sage-Grouse, related reductions in development would help maintain air quality. The 2015 Final EIS discussed positive and negative impacts from livestock grazing, travel, mineral extraction, wildland fires, and construction activities. No changes are expected to the air impacts analysis contained in the 2015 Final EIS; however, some discussion related to the potential new ozone non-attainment areas and reverting OHV areas back to open for cross-country use as they relate to air quality is provided.

In 2018 the EPA officially designated Salt Lake and Davis Counties, as well as portions of Weber, Tooele, Uintah and Duchesne Counties, as non-attainment for ozone. BLM-managed Greater Sage-Grouse areas are included in the Uintah County non-attainment area, while non-attainment areas in other counties do not overlap BLM-managed Greater Sage-Grouse habitat. Monitoring data found in Table 3.5 and in the

2015 Final EIS (page 3-48) show that ozone measurements have frequently exceeded the current ozone NAAQS value, and changes from attainment to non-attainment will likely not change the air impacts analysis described in 2015.

General Habitat Management Areas in Utah

Two areas in the Sheeprocks Population Area associated with the 5 Mile Pass and Little Sahara Sand Dunes OHV areas would revert to open for cross-country OHV use. Pollution from OHVs includes fugitive dust and NAAQS controlled pollutants. Areas now designated as open to cross-country OHV use are adjacent to existing OHV recreation areas, and no additional air pollution emissions are expected from those that already occur. Additionally, these areas were open to cross-country OHV use before the 2015 Final EIS amendments and impacts on air would be similar to those analyzed in the 2015 Final EIS No-Action Alternative.

4.6.3 Impacts to Climate Change

Impacts on climate change from the 2015 ARMPA are described in the 2015 Final EIS in section 4.5 (Pages 4-137 to 4-147). The changes made in the Proposed Plan Amendment would not change the analysis or conclusions from the 2015 Final EIS. Greenhouse gas–generating actions would be limited in PHMA due to stipulations to protect Greater Sage-Grouse habitat. However, some greenhouse generating activities could still be considered. As described below in Section 4.6.11, the Reasonable Foreseeable Development for Oil and Gas would not change compared to that in the No Action Alternative, and effects on carbon storage capacity would still be as analyzed in the 2015 Final EIS with management still placing the same emphasis on habitat restoration and conservation which would result in removal of encroaching invasive pinyon-juniper.

4.6.4 Impacts on Soil Resources

General Habitat Management Areas in Utah

Under the Proposed Plan Amendment, former GHMA would be removed and would revert back to land management objectives as outlined in pre-existing (before 2015) resource management plans. This action would result in two areas (14,220 acres) in former GHMA that were limited to existing routes in the 2015 Final EIS that would return to being available to cross-country OHV use. This action may have some adverse impacts on soils (especially sensitive soils) from increased disturbance and compaction. This action may enable the spread of invasive and nonnative plant species, which may also impact soils negatively. The impacts from soil compaction and disturbance are outlined in the 2015 Final EIS in Chapter 4, Section 4.6.

4.6.5 Impacts on Vegetation (Including Noxious Weeds, Riparian Areas, and Wetlands)

Impacts on vegetation resources from anthropogenic activities have been disclosed in detail in the Vegetation section (Chapter 4, Section 4.8) in the 2015 Final EIS; however, the Proposed Plan Amendment includes some additional impacts on vegetation resources that may occur from the proposed changes.

General Habitat Management Areas in Utah

Removal of approximately 448,600 acres of former GHMA and reverting to pre-2015 management could allow projects in these areas to proceed more quickly without Greater Sage-Grouse specific conservation measures and management objectives for vegetation. Proposed projects in former GHMA

would be allowed by the BLM as long as the project has no indirect impacts on vegetation in PHMA. The BLM would mitigate for disturbance in former GHMA by improving habitat inside of PHMA for Greater Sage-Grouse.

Vegetation resources may be affected on various levels by allowing more disturbance and anthropogenic activities in former GHMA. More disturbance could lead to increased amounts of invasive and noxious vegetation as well as degraded shrub and herbaceous vegetation communities. Indirect impacts from increases in invasive and noxious vegetation may lead to loss of energy flow, hydrologic function, and soil stability which could lead to further degradation of vegetation communities. As the amount of development increases in former GHMA, the consecutive effects of mitigating disturbances in PHMA could mount and could possibly affect the functionality of some vegetation communities.

Site-specific planning and other management from local resource management plans, and adhering to the land health standards, would reduce negative impacts on vegetation resources in former GHMA with the use of best management practices and other project mitigation design features.

Waivers, Exceptions, and Modifications for NSO Stipulations

The Proposed Plan Amendment would allow exceptions to surface occupancy restrictions in mapped PHMA. Areas in PHMA where this would be allowed would lack the principle habitat components necessary (e.g., a combination of sagebrush, grasses, and forbs) for Greater Sage-Grouse. These areas could also be areas that have crossed ecological threshold(s) to non-Greater Sage-Grouse habitat vegetation communities (e.g., monoculture cheatgrass and pinyon/juniper woodlands). Impacts from projects in PHMA non-habitat areas would likely have minimal impacts on vegetation resources, as the vegetation would already be in a non-desirable condition and would likely be unoccupied by Greater Sage-Grouse. Minimization measures would still be applied to projects in PHMA to limit the effects of disturbances (e.g., 3 percent disturbance cap and noise).

Disturbance Caps

The 2015 Final EIS analyzed the impacts from the BLM prohibiting discrete anthropogenic activities that cause disturbance beyond the 3 percent cap in PHMA. The Proposed Plan Amendment would allow the 3 percent cap to be exceeded if a technical team determines the project, in concert with all its design features, will improve the condition of Greater Sage-Grouse habitat. This action would allow projects to exceed the disturbance cap; however, in so doing, it could result in voluntary habitat improvement projects that could change vegetation conditions in the project area to shift away from a vegetation community more dominated by trees to one more dominated by grasses and shrubs, which is conducive to Greater Sage-Grouse habitat. If the exception is voluntarily sought, it would likely result in treatments that would shift vegetation communities to earlier seral classes. This would come about by meeting habitat objectives designed for Greater Sage-Grouse habitat at the project site scale even though the 3 percent cap would be exceeded.

Modifying Mitigation Strategy

Maintaining a mitigation strategy in PHMA that leads to a planning area-wide improvement of Greater Sage-Grouse habitat would manage for vegetation communities that are generally more dominated by grasses and shrubs than by trees. While each individual project proponent would no longer be required to increase habitat in order to obtain an authorization for use of public lands, the effects of habitat improvements that were described in the 2015 Final EIS would continue to be achieved: namely,

increasing the quantity and quality of sage-steppe vegetation communities in early- to mid-seral condition.

Prioritization of Mineral Leasing

Removing the prioritization objective for PHMA and GHMA would not directly impact vegetation because prioritization doesn't permit or preclude leasing in PHMA. The no surface occupancy stipulations and conservation measures in place for PHMA would protect the continuity of sagebrush communities; however, the prioritization objective could potentially result in temporarily deferring a parcel in PHMA from leasing to a later sale, but only in instances of large lease sales where staff capacity would be incapable to analyzing all the nominated parcels. In an area with poor vegetation conditions or high levels of disturbance, such a delay could provide time for vegetation conditions to improve before new developments are implemented.

4.6.6 Impacts on Other Special Status Species

Administering Disturbance and Density Caps

Allowing exceedances to the disturbance and density caps in PHMA could affect special status species by a reduced level of protection of habitat from disturbance. These disturbance impacts may increase by allowing exceptions to the disturbance cap, especially within areas of non-sagebrush, therefore impacting habitat for special status species that use these non-sagebrush habitat types; however, exceptions to the disturbance and density cap may also benefit some species with habitats that overlap Greater Sage-Grouse. This would be due to the increased potential for voluntary habitat projects, which could improve habitat conditions through vegetation treatments.

Modifying Mitigation Strategy

Maintaining a mitigation strategy in PHMA that leads to a planning area-wide improvement of Greater Sage-Grouse habitat would manage for vegetation communities that are generally more dominated by grasses and shrubs than by trees. While each individual project proponent would no longer be required to increase habitat in order to obtain an authorization for use of public lands, the effects of habitat improvements that were described in the 2015 Final EIS would continue to be achieved: namely, increasing the quantity and quality of sage-steppe vegetation communities in early- to mid-seral condition. This would increase habitats for special status species with habitats that overlap that of Greater Sage-Grouse; however, it would also generally decrease habitat availability for special status species that are not sage dependent.

Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA

Development in non-habitat portions of PHMA may increase impacts on certain special status species whose habitat requirements do not overlap sagebrush areas. Adjacent non-sagebrush habitats could see an increase in development and disturbance when trying to avoid and minimize disturbance to sagebrush habitats. Species that use sagebrush systems would see no change to impacts compared with the No-Action Alternative because no exception would be granted, as sagebrush within PHMA is habitat.

Prioritization of Mineral Leasing

Removing the prioritization objective for PHMA and GHMA would not directly impact special status species because prioritization doesn't permit or preclude leasing in PHMA. The no surface occupancy stipulations and conservation measures in place for PHMA would protect sagebrush habitats, which

could also maintain special status species using these habitat types; however, the prioritization objective could potentially result in temporarily deferring a parcel in PHMA from leasing to a later sale, but only in instances of large lease sales where staff capacity would be incapable to analyzing all the nominated parcels. In an area with poor habitat conditions or high levels of disturbance, such a delay could provide time for habitat improvement before new developments are implemented.

Managing Habitat to Manage Predation

The Proposed Plan Amendment provides opportunity to remove trees that have corvid nests that could impact PHMA nesting habitat. Special status wildlife that may experience predation and harassment by corvids would benefit from removal of trees with corvid nests that overlap PHMA nesting habitat. Ravens have been observed in association with Utah prairie dog colonies. Young prairie dogs are likely an opportunistic food source for ravens and crows as they emerge from the burrows. Young prairie dogs are likely easier to carry away and also do not run as fast as adults or respond to alarm calls as quickly (Hoogland et al. 2006).

Efforts by other agencies to minimize impacts from predators on Greater Sage-Grouse would also likely benefit other special status animals, such as Utah prairie dog and black-footed ferret, that overlap Greater Sage-Grouse habitat. The 2012 Revised Utah Prairie Dog Recovery Plan states that normal levels of predation are not considered a threat for healthy Utah prairie dogs and that healthy populations can likely sustain normal predator pressures without adverse impacts on population structures. Predation is more likely to have adverse impacts on Utah prairie dogs in unnaturally fragmented colonies or at new translocation sites (US Fish and Wildlife Service 2012).

4.6.7 Impacts on Fish and Wildlife

Wildlife habitat conditions within the decision area are directly linked to vegetation conditions, water quality and quantity, and progression toward land health standards as described in Section 4.10.2 of the 2015 EIS (BLM 2015, page 4-184).

General Habitat Management Areas in Utah

Removal of GHMA acres would result in management returning to that described under Alternative A in the 2015 Final EIS. Removal of the GHMA and associated management may reduce some indirect protection for big game habitat, including crucial winter and fawning/calving habitat that occur within mapped GHMA. Impacts on big game are considered negligible because big game use a variety of habitat types beyond sagebrush. Additionally, the GHMA is not the only management for these areas, but is merely complimentary to management of habitat under applicable RMPs and according to BLM Rangeland Health Standards. Removing the GHMA minimization measures that, as noted above would not preclude development, would not likely result in additional impacts that are not already addressed by management of crucial habitats in existing land use plans.

The offsite mitigation in PHMA to replace impacted habitat in occupied Greater Sage-Grouse habitat outside of PHMA may not always benefit the same other wildlife species that were impacted at the disturbed site. While it could lead to a local improvement for species in the area of treatment, especially those that rely on sagebrush habitats, it could also result in an unmitigated loss in the quantity and quality of habitat at the location of the impact. As the amount of development increases in the Greater Sage-Grouse habitat outside PHMA, the impact from disturbances mitigated in PHMA would mount and could affect the use patterns of wildlife in those areas.

Administering Disturbance and Density Caps

Allowing exceedances to the disturbance and density caps in PHMA could affect wildlife by a reduced level of protection for habitat from disturbance. These disturbance impacts may increase by allowing exceptions to the disturbance cap, especially within areas of non-sagebrush, therefore impacting wildlife species that use these other habitat types (e.g., pinyon-juniper woodlands and pinyon jays); however, exceptions to the disturbance and density cap may also benefit some wildlife species with habitats that overlap with Greater Sage-Grouse. This would come about by improving habitat conditions through the increased potential for voluntary vegetation treatments.

Modifying Mitigation Strategy

Maintaining a mitigation strategy in PHMA that leads to a planning area-wide improvement of Greater Sage-Grouse habitat would manage for vegetation communities that are generally more dominated by grasses and shrubs than by trees. While each individual project proponent would no longer be required to increase habitat in order to obtain an authorization for use of public lands, the effects of habitat improvements that were described in the 2015 Final EIS would continue to be achieved: namely, increasing the quantity and quality of sage-steppe vegetation communities in early- to mid-seral condition. This would increase habitats for wildlife species with habitats that overlap that of Greater Sage-Grouse; however, it would also generally decrease habitat availability for wildlife species or seasonal habitats of species that are not sage dependent.

Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA

Allowing placement of developments in non-habitat portions of PHMA may increase impacts on certain wildlife and migratory birds whose habitat requirements do not overlap sagebrush areas. Adjacent non-sagebrush habitats could see an increase in development and disturbance when trying to avoid and minimize disturbance to sagebrush communities.

Managing Habitat to Manage Predation

The removal of corvid nest structures, including their trees, in PHMA habitat treatments may impact migratory birds by directly removing nesting structures and cover. Although this may negatively impact tree nesting migratory birds, there could be a benefit to ground and shrub nesting migratory birds due to reduced predation potential from corvids and raptors. These impacts, however, are site specific and would be analyzed in detail at the project scale.

Prioritization of Mineral Leasing

Removing the prioritization objective for PHMA and GHMA would not directly impact wildlife because prioritization doesn't permit or preclude leasing in PHMA. The no surface occupancy stipulations and conservation measures in place for PHMA would protect sagebrush habitats, which could also benefit wildlife species using these habitat types; however, the prioritization could possibly delay when a given parcel is offered for lease or subsequently developed. In an area with poor habitat conditions or high levels of disturbance, such a delay could provide time for vegetation conditions to improve before new developments are implemented.

Burial of Transmission Lines

The Proposed Plan Amendment proposes to remove the requirement to consider burying transmission lines (except when not technically feasible) and allow increased flexibility to consider site-specific

impacts and minimization options. This action could lead to a minor negative effect on migratory birds by increasing predator perches from unburied lines that may lead to increased take of migratory birds and their nests by raptors and corvids; however, impacts of predator perches could be minimized on a site-scale by use of perch deterrents on poles. There could be beneficial impacts on big game and migratory bird habitat by not burying transmission lines because it offers more protection for sensitive habitat areas. Removal of sagebrush and associated vegetation can be avoided with placement of surface lines, which minimizes habitat disturbance and potential for weeds.

4.6.8 Impacts on Cultural Resources

Modifying General Habitat Management Areas

The Proposed Plan Amendment would remove GHMA and its management. In the 2015 amendments, OHV area designations in GHMA were changed from cross-country use for OHVs to "limited" to existing routes. In the Proposed Plan Amendment, two areas (14,220 acres) outside of PHMA at 5 Mile Pass and Little Sahara Sand Dunes areas would revert back to being available to cross-country use for OHVs. All other GHMA that switched from available to cross-country use to being limited to existing routes would remain as limited. The previous analysis in the 2015 Final EIS is clear that restrictions on surface and vehicle use would protect cultural resources from impacts due to surface disturbance, erosion, effects on setting and access leading to vandalism, inadvertent damage, and unauthorized collection of cultural resources; however, the impacts from returning to an open OHV use area may cause impacts on cultural resources, as described in Chapter 4 in the 2015 Final EIS (see Section 4.12, page 4-199 to 4-202).

4.6.9 Impacts on Lands and Realty

Administering Disturbance and Density Caps

The Proposed Plan Amendment could decrease impacts on lands and realty projects by allowing site-specific Greater Sage-Grouse habitat analysis and population information, as well as proponent-developed project design elements, to be considered on a project-specific basis. If those voluntary measures were to improve Greater Sage-Grouse habitat, both the disturbance and density caps could be exceeded, allowing for more flexibility to allow consideration of infrastructure projects. Rather than lands and realty projects being precluded entirely if the cap is met, there is an option to exceed the cap by proponents developing measures that improve Greater Sage-Grouse habitat. This would provide more opportunities for lands and realty projects to move forward within PHMA.

Modifying Mitigation Strategy

The mitigation strategy in the Proposed Plan Amendment would no longer require proponents to provide for compensatory mitigation on a project-by-project basis to show a net conservation gain. While the strategy is still substantially similar ("improve the condition of Greater Sage-Grouse habitat"), it would be achieved by the totality of Greater Sage-Grouse management actions applied by the BLM. Not requiring proponents to pay for vegetation and habitat treatments could decrease project costs, providing more opportunities for lands and realty projects to move forward in PHMA; however, during project design, the BLM would consider voluntary compensatory mitigation actions as a component of compliance with the State of Utah law, statute, or policy or when offered voluntarily by a project proponent. If such mitigation were volunteered, impacts would be the same as those described under the No-Action Alternative; however, determining which projects would apply such measures would be made on a project-by-project basis.

Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA

Allowing exceptions to avoidance and minimization measures in PHMA if the area is non-habitat and indirect impacts wouldn't occur could decrease impacts on lands and realty. Allowing development in areas of non-habitat inside the PHMA could allow for more flexibility to allow consideration of projects if they meet the described criteria. Rather than lands and realty projects being precluded due to minimization measures, projects could seek locations within PHMA that would avoid habitat, thereby enabling development if documentation of no indirect impacts could be completed. This would provide more opportunities for lands and realty projects to move forward within PHMA.

Modifying General Habitat Management Areas

Removing GHMA would also lessen impacts on lands and realty as the area requiring Greater Sage-Grouse plan compliance for infrastructure projects will be reduced accordingly. This may allow some projects to move forward with fewer permitting restrictions as compared with the No-Action Alternative, however the change in impacts would likely be minor since the area that will be relieved of permitting restrictions is minimal.

Land Disposal and Exchanges

The changes in criteria for disposal and exchange of federal land would allow more lands to be considered for disposal without net conservation gain or requirements not to impact any Greater Sage-Grouse or its habitat. This would result in greater management flexibility to consider disposal and exchange of lands that may already have limited manageability due to being isolated tracts with limited access or control. The increased flexibility may also benefit other resources as additional lands with limited benefit to Greater Sage-Grouse could now be exchanged for lands that may have a higher benefit to other resources; however, the overall change in impacts would likely be minimal since the amount of lands affected by the change in criteria is minor.

4.6.10 Impacts on Renewable Energy

Administering Disturbance and Density Caps

The Proposed Plan Amendment, specifically changes in MA SSS-3B that allow site-specific Greater Sage-Grouse habitat analysis and population information and project design elements to be considered on a project-specific basis, could potentially lessen impacts on renewable energy as it would allow for more flexibility to allow infrastructure projects that exceed the disturbance cap if they meet the described criteria. This would have little impact on renewable energy development because PHMA would still be closed to commercial wind and solar development unless the project meets the exception criteria identified in MA-SSS-1.

Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA

Allowing exceptions to avoidance and minimization measures in PHMA if the area is non-habitat and indirect impacts wouldn't occur could decrease impacts on renewable energy projects. Allowing development in areas of non-habitat inside the PHMA would allow for more flexibility to allow consideration of projects if they meet the described criteria. Rather than renewable energy projects being precluded due to closures, projects could seek locations within PHMA that would avoid habitat and indirect impacts, thereby enabling development if documentation of no indirect impacts could be completed. The likelihood that commercial renewable energy development could find an area large enough in PHMA to avoid all habitat as well as indirect impacts would be low.

Modifying General Habitat Management Areas

Removing GHMA would also likely reduce impacts on renewable energy as the area requiring Greater Sage-Grouse plan compliance for infrastructure projects will be reduced accordingly. This may allow some projects to move forward with fewer permitting restrictions as compared with the No-Action Alternative; however, the change in impacts would likely be minor since the area of high potential renewable energy resources that will be relieved of permitting restrictions is minimal.

4.6.11 Impacts on Fluid Minerals

The BLM Utah reviewed the reasonably foreseeable development scenario, Appendix R of the 2015 Final EIS, and addressed changes in potential oil and gas exploration and development. The assumptions used in this section to adequately project future development take into account both direct and indirect impacts of removing minimization measures that may limit development desirability of former GHMA. The direct factors include increasing exceptions for no surface occupancy stipulations on new leases for oil and gas development, while the indirect included the removal of minimization measures that were applied as lease notices, such as disturbance caps, buffers, required design features, and net conservation gain mitigation requirements in both PHMA and GHMA. This section will briefly cover previous assumptions and methods used for projecting future oil and gas activity in Greater Sage-Grouse occupied habitat in the 13 population areas, and how new modifications will alter these previous projections.

All baseline data from the reasonably foreseeable development scenarios by population areas in the reasonably foreseeable development scenario are assumed to remain the same. Baseline scenarios were based on criteria including past and present oil and gas exploration and development activity within and near Greater Sage-Grouse occupied habitat, existing oil and gas leases, expressions of interest submitted by industry, exploration and development trends, locations of seismic surveys, existing infrastructure, and commodity prices.

Of the 13 population areas, 8 were projected to have minimal or no future oil and gas development, "minimal" meaning equivalent or less than four projected wells by 2030. These population areas were Ibapah, Box Elder, Lucerne, Hamlin Valley, Bald Hills, Panguitch, Parker Mountain, and Sheeprocks. Of the remaining five population areas, three (Rich, Emery, and Strawberry) were projected to have moderate development, and only two (Carbon and Uintah) were anticipated to have significant development on federal minerals. The baseline for these population areas (2015 Final EIS, Appendix R) has been kept the same in assumptions for the following reasons:

- Less than 2 years have passed since the reasonably foreseeable development scenario, meaning minimal changes would factor into the historical data.
- Only three (Carbon, Uintah, and Rich) of the population areas would have oil and gas development, if any, that would significantly change projections.
- This review is meant to be a supplement to the previous reasonably foreseeable development scenario and not a complete revision; it makes projections only to 2030.

The 2015 Final EIS reasonably foreseeable development scenario reviewed the development of Alternatives B, C, D, and E and a Proposed Plan, each with different stipulations on oil and gas development. These stipulations took into account PHMA and GHMA and the requirements applicable to these areas, such as no surface occupancy (NSO), controlled surface use (CSU), and timing limitations

(TL). The current changes being considered in this RMPA/EIS include removing all minimization measures and compensatory mitigation requirements applicable to GHMA as identified in the 2015 Proposed Plan. In the 2015 RMP, PHMA and GHMA management was anticipated to deter future oil and gas development for the following reasons:

- Minimization measures such as required design features (RDFs), application of lek buffers that encouraged development beyond 3.1 miles (both in PHMA and GHMA), mitigation requirements (both in PHMA and GHMA), noise and structure restrictions (in PHMA), surface disturbance caps (in PHMA), and density and seasonal restrictions (in PHMA) that were expected to discourage future development due to implementation cost; however, in the 2015 Final EIS reasonably foreseeable development scenario it is assumed that any cost of the RDFs for wells outside of the PHMA were already included in the estimated drilling and completion; therefore, removing these measures from application in former GHMA would have no change on the projected costs for oil and gas development in the RMP.
- PHMA and GHMA are categorized as either closed or open with stipulations. In the 2015 Proposed Plan there were approximately 30,000 acres in GHMA that are closed to fluid mineral leasing due to reasons other than Greater Sage-Grouse. As such, all closed GHMA were also closed under the 2015 Alternative A; therefore, the closed lands would remain closed to oil and gas leasing.
- Areas that are open with major stipulations (no surface occupancy) in GHMA are required to have buffer zones from leks. Areas within the vicinity of leks either have major (no surface occupancy), moderate (controlled surface use or timing limitation), or standard stipulations. These areas are minimal and are still open to oil and gas leasing under certain circumstances. The factor affecting future development in these areas is the cost associated with design features. These costs have already been addressed in the first bulleted item, above. PHMA will remain closed or open, with major stipulations.

The eight population areas with minimal or no future fluid mineral development potential will not be affected by the changes in GHMA because their historical development and production has been so low that no additional leases will cause significant development or impact. Furthermore, most restricted areas within these population areas are PHMA, rather than GHMA. Emery and Rich population areas, which have moderate development potential, contain PHMA and minimal GHMA with standard stipulations, and will therefore have the same projected development potential.

The Strawberry, Carbon, and Uintah population areas contain lands closed, open with major stipulations, open with moderate stipulations, and open with standard stipulations; however, Strawberry and Carbon areas contain much lower amounts of these lands than Uintah. The effects of development that could be factored into these areas would be minimal due to factors addressed in the previous paragraph. Although the Uintah population area will no longer have GHMA, most of this area remains open with moderate to standard stipulations. Since this land is mostly open to leasing already (even with GHMA), it would only be the cost of minimization measures and net conservation gain requirements that may deter development operations; however, as previously stated, it is assumed that any cost of the RDFs for wells outside of the PHMA are already included in the estimated drilling and completion costs.

The assumption taken in this section for all population areas in the Proposed Plan Amendment is that minimal or no development impact through the opening of GHMA is expected. This assumption takes

into account both direct and indirect impacts of removing minimization measures that may limit development desirability of GHMA. It is concluded that minimal development change would occur for the following reasons:

- Most of the restricted area is PHMA, and is still applicable in the current assumptions.
- Most GHMA is still open for leasing with moderate to standard stipulations.
- All costs that could have been applicable to stipulations were not factored into GHMA in the original reasonably foreseeable development scenario.
- The 30,000 acres that are currently closed to new leasing within GHMA would remain closed to leasing.

Although there would be minimal development change throughout all of the population areas, removing GHMA and its minimization measures, as well as adding waivers, exceptions, and modifications to the NSO stipulation in PHMA, would possibly allow operators access to more acreage within Greater Sage-Grouse population areas and reduce administrative impediments to development. The only change may be that operators could find a location within PHMA but not within Greater Sage-Grouse habitat (that meets the exception, modification or waiver criteria) to drill a well that is closer to target and would not have to horizontally or laterally drill to reach their target. This would save time and resources for the operator and decrease well pad sizes, in most cases, which is better for other resources.

The allowance for proponents to voluntarily seek an exception to the density and disturbance caps would be assessed on a site- and project-specific basis. Obtaining the exception requires showing the project design features, combined with local topographic conditions and Greater Sage-Grouse use patterns, indicate that despite the increased disturbance there would be a benefit to the Greater Sage-Grouse population. Because of the number of site- and project-dependent issues, the effect of this action, aside from added flexibility for project proponents to explore, would be based on site-specific details and project proposals.

The BLM commits to cooperating with the State of Utah to analyze applicant-proposed or state required or recommended compensatory mitigation to offset residual impacts. The BLM may authorize such actions consistent with NEPA analysis and the governing RMP. Additionally, not requiring lessees to pay for vegetation and habitat treatments to achieve a net conservation gain could decrease project costs, providing more opportunities for fluid mineral projects to move forward; however, during project design, the BLM would consider voluntary compensatory mitigation actions as a component of compliance with the State of Utah law, statute, or policy, or when offered voluntarily by a project proponent. If such mitigation were volunteered, impacts would be the same as those described under the No-Action Alternative; however, determining which projects would have such measures applied would be made on a project-by-project basis.

Given the above, impacts on oil and gas from the Proposed Plan Amendment on the number of oil and gas well pads anticipated would be the same as the 2015 Final EIS Proposed Plan. The Oil and Gas Reasonably Foreseeable Development Scenario for Greater Sage-Grouse Occupied Habitat in Utah Sub-Region (Appendix R of the 2015 Final EIS) is incorporated by reference. Specifically, Table R.1 (Predicted Number of Wells Drilled by Alternative in Each Population Area and County), R.2 (Predicted Number of Producing Wells by Alternative in Each Population Area and County), and R.7 (Estimated Surface

Disturbance: Proposed Plan) describe anticipated levels and development and the related estimated amount of disturbance from the Proposed Plan Amendment.

4.6.12 Impacts on Nonenergy Leasable Minerals, Coal, Locatable Minerals, Mineral Materials, and Oil Shale and Tar Sands

For the purpose of clarifying impact analysis in this document, the status of a fringe acreage lease in relation to the 2015 ARMPA allocations is addressed here. While the PHMA land use allocation for nonenergy minerals remains closed, there is a consideration that leases could be considered next to existing operations (see 2015 ROD/ARMPA MA-MR-15). Though PHMA is noted as closed, unmined nonenergy mineral leases, including phosphate leases, have valid existing rights to which this allocation does not apply. Specifically, as noted in the 2015 Final EIS, page 4-385, there would be sufficient reserves on private lands and on existing federal phosphate leases to keep the current operation in production through the analysis horizon.

In addition, the nonenergy mineral allocation itself specifically provides for alignment with the BLM's minerals regulations. These regulations note that those lands adjoining federal phosphate leases or the mineral rights on adjacent private lands may be leased noncompetitively through a fringe acreage lease or be added to the existing federal lease via a lease modification (43 CFR 3510.11). Such additions could be considered under existing management for MA-MR-15 that provides for leasing nonenergy leasable minerals "contiguous with an existing operation" if the new lease "applies the pertinent management for discretionary activities in PHMA identified in MA-SSS-3." As such, fringe leases and modifications to existing leases would be allowed under both the No-Action Alternative and the Proposed Plan Amendment in alignment with federal regulations; however, management necessary to meet the goals of maintaining or increasing Greater Sage-Grouse abundance and distribution (see 2015 ROD/ARMPA, Goal SSS-1) would not allow new leases or developments that are not contiguous with existing operations.

Administering Disturbance and Density Caps

While the No-Action Alternative provides for development next to existing operations for nonenergy leasable minerals and mineral materials, the analysis determined that PHMA minimization measures, such as mitigation, disturbance cap, density cap, buffers, seasonal restrictions, and RDFs, would preclude most development. The primary measure that was anticipated to preclude development of nonenergy minerals, mineral materials, and coal in PHMA was the disturbance and density caps applied at the project scale. Because there is no exception to the caps under the No-Action Alternative, no new or expanded mineral operations are anticipated. Allowing an exceedance to the disturbance and density caps based on site-specific habitat condition, population information, and proponent-volunteered project design elements could allow mineral development to proceed in areas that might otherwise have been precluded by the No-Action Alternative. Allowing consideration or proposed developments that could exceed the 3 percent disturbance cap or density cap provides the ability to potentially avoid precluding leasing/permitting, development, or consideration of associated infrastructure. However, authorizing the exceedances to the disturbance and density caps would only be allowed if voluntarily developed minimization or mitigation improves Greater Sage-Grouse habitat. As such, while there is more flexibility and projects may no longer be precluded by the caps, proponents with potential developments may still need to evaluate Greater Sage-Grouse conditions or propose habitat improvement projects. While projects may not be precluded by the caps, voluntarily applying the criteria could result in

additional costs to implement mitigating measures. This could increase project costs and could make a proposed project uneconomical.

Under the Proposed Plan Amendment, to the extent consistent with the rights of a mining claimant under existing laws and regulations, the BLM would work with locatable minerals claimants to apply the disturbance cap and minerals/energy density cap in PHMA; however, under the Mining Law of 1872, as amended, the BLM does not have authority to require such mitigation measures. As such, impacts on existing locatable mineral operations from these additional mitigation measures would be minimal.

Modifying Mitigation Strategy

The mitigation strategy in the Proposed Plan Amendment would no longer require proponents to provide for compensatory mitigation on a project-by-project basis to show a net conservation gain. To align this planning effort with the BLM's compensatory mitigation policy (IM 2018-093), the Proposed Plan Amendment clarifies that 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. While the strategy is still substantially similar ("improve the condition of Greater Sage-Grouse habitat"), it would be achieved by the totality of Greater Sage-Grouse management actions applied by the BLM.

The BLM commits to cooperating with the State of Utah to analyze applicant-proposed or state required or recommended compensatory mitigation to offset residual impacts. BLM may authorize such actions consistent with NEPA analysis and the governing RMP. Not requiring proponents to pay for vegetation and habitat treatments could decrease project costs, providing more opportunities for mineral development projects to move forward in PHMA and former GHMA; however, during project design, the BLM would consider voluntary, compensatory, mitigation actions as a component of compliance with the State of Utah law, statute, or policy, or when offered voluntarily by a project proponent. If such mitigation were volunteered, impacts would be the same as those described under the No-Action Alternative. Determining which projects will apply such measures would be made on a project-by-project basis.

Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA

Allowing exceptions to avoidance and minimization measures in PHMA if the area is non-habitat and indirect impacts would not occur could allow consideration of leasing/permitting and development for mineral operations. Allowing development in areas of non-habitat inside the PHMA could allow for more flexibility to allow consideration of projects if they meet the described criteria. The potential for this exception to allow larger mineral developments would be low given the small likelihood that a large development would fit entirely within an area of non-habitat in PHMA and still not have any indirect impacts would be low. For large projects in this situation, the potential effect of this added flexibility is likely low.

Modifying General Habitat Management Areas

Removing GHMA would decrease impediments to mineral development, as the area requiring Greater Sage-Grouse plan compliance for infrastructure projects would be reduced accordingly. This would allow some projects to move forward with fewer restrictions as compared with the No-Action Alternative.

Land Disposal and Exchanges

The changes in criteria for disposal and exchange of federal land would allow more lands to be considered for disposal without net conservation gain or requirements not to impact any Greater Sage-Grouse or its habitat. This could improve management flexibility to consider disposal and exchange of lands that may already have limited manageability due to being isolated tracts with limited access or control. The increased flexibility may also benefit other resources as additional lands with limited benefit to Greater Sage-Grouse could now be exchanged for lands that may have a higher benefit to other resources; however, the overall change in impacts would likely be minimal since the amount of lands affected by the change in criteria is minor.

4.6.13 Impacts on Social and Economic Conditions

Implementation of the Proposed Plan Amendment would be expected to result in the following socioeconomic impacts, which are secondary to changes in resource and management conditions.

Administering Disturbance and Density Caps

Allowing an exceedance of the 3 percent disturbance and density caps could increase opportunities for development within PHMA if an area was close to meeting one of the caps. Should this occur, it is anticipated that there could be increased economic activity and, possibly, positive economic impacts at the local, regional, state, or national level. Exclusion of non-occupied PHMA from this classification could potentially result in increased development activities in the future and, in turn could result in positive economic impacts. This provision could also potentially open up additional opportunities for siting of energy or mining facilities, resulting in positive changes in economic indicators.

Modifying Mitigation Strategy

The BLM commits to cooperating with the State of Utah to analyze applicant-proposed or state required or recommended compensatory mitigation to offset residual impacts. BLM may authorize such actions consistent with NEPA analysis and the governing RMP. No longer requiring proponents to provide for compensatory mitigation on a project-by-project basis to show a net conservation gain could decrease project costs, providing more opportunities for lands and mineral development projects to move forward in PHMA and former GHMA; however, during project design, the BLM would consider voluntary compensatory mitigation actions as a component of compliance with the State of Utah law, statute, or policy, or when offered voluntarily by a project proponent. If such mitigation were volunteered, impacts would be the same as those described under the No-Action Alternative; however, determining which projects would apply such measures would be made on a project-by-project basis.

General Habitat Management Areas in Utah

Changes in Greater Sage-Grouse management outside of PHMA have the potential to reduce costs of exploration and development of multiple types of energy, mineral, and other land use resources. These include solid, fluid, locatable, saleable, and leasable (both energy- and nonenergy-related) minerals. To the extent that such costs are reduced, entities operating within the affected area could see an increase in competitiveness and profitability over time, although this result would be expected to be marginal.

No social or economic impact is anticipated as a secondary impact resulting from changes in opening areas to cross-country OHV use. The areas proposed to be made available for cross-country use are components of larger areas where such use is already available. In addition, the areas proposed to be

made available were available for over 20 years prior to the 2015 change to limited. As such, no change in overall OHV-related and other recreation-related spending patterns or social and economic activity are expected to occur by making the areas available to cross-country use again.

Land Disposal and Exchanges

Increased potential for disposal and/or exchange of BLM-managed federal lands in PHMA and Greater Sage-Grouse habitat outside of PHMA could possibly result in expanded economic opportunities in the affected location. The specific economic impact in each case would depend on the type of development that would occur as a result of the change in land ownership. Possible land uses include use for county and municipal physical facilities, commercial or residential development, and/or recreational use.

4.6.14 Impacts on Other Resources

After reviewing the proposed changes in the Proposed Plan Amendment, interdisciplinary team members identified which actions could affect each resource or resource use. After identifying potential impacts, team members reviewed the 2015 Final EIS to determine if the potentially significant impacts from the proposed changes were already addressed in the existing analysis. As described above, impacts associated with most of the changes were already analyzed. For the following resources and uses, there were no new significant impacts from the actions considered in **Chapter 2** beyond those already addressed in the 2015 Final EIS:

- Water Resources
- Wild Horses and Burros
- Visual Resources
- Wildland Fire Management
- Lands with Wilderness Characteristics
- Livestock Grazing/Range Management
- Recreation
- Comprehensive Travel and Transportation Management
- Tribal Interests

Management changes associated with the following issues could result in development being moved around on the landscape (into areas of non-Greater Sage-Grouse habitat) or expedited in its implementation (not increased, but implemented more quickly):

- General Habitat Management Areas in Utah
- Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA
- Waivers, Exceptions, and Modifications for NSO Stipulations
- Sagebrush Focal Areas Designations/Withdrawal Recommendations
- Administering the Disturbance and Density Caps
- Burial of Transmission Lines

Changes in management resulting from consideration of the above list of issues could result in a change in the potential for development to occur in PHMA or former GHMA. This could include a change in

where the development could occur (e.g., in non-habitat portions of PHMA, in former GHMA, or anywhere in PHMA due to exceedances in the disturbance or density cap). The change could also include the rate at which it occurs (development in GHMA occurring more quickly under the Proposed Plan Amendment, compared with the No-Action Alternative, due to removal of some minimization measures and compensation requirements). In all of these instances, the impact analysis in the 2015 Final EIS addressed the effects of similar actions on the list of resources above. Those effects are substantially similar to the impacts from the changes considered in the Proposed Plan Amendment.

At the state-wide context, the fact that impacts could occur is what the analyses addresses, not the more site-specific context of when or where development may occur. The conclusion of the interdisciplinary team member's evaluation of the recommended changes was that the existing 2015 Final EIS accurately described the anticipated impacts for the resources listed above. For these resources, there would be no additional impacts from the proposed changes in the Proposed Plan Amendment than what is described in the corresponding section of the 2015 Final EIS. For these resources, analysis is incorporated by reference as there will be no new impacts that haven't already been addressed in the 2015 Final EIS.

4.7 CUMULATIVE IMPACTS

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

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

This RMPA/EIS incorporates by reference the analysis in the 2015 Final EISs and the 2016 SFA Withdrawal Draft EIS, which comprehensively analyzed the cumulative impacts associated with these planning decisions under consideration in that process. The 2015 EISs, and to some degree the 2016 SFA EIS evaluated the cumulative impacts associated with the No-Action Alternative in this RMPA/EIS. The Proposed Plan Amendment's effects are effectively within the range of effects analyzed by the 2015 and 2016 EISs. The 2015 Final EISs are quite recent, and the BLM has determined that conditions in the Utah planning area have not changed significantly based, in part, on the USGS science review (see **Chapter 3**), as well as the BLM's review of additional past, present, and reasonably foreseeable actions in 2018.

Conditions on public land also have changed little since the 2015 Final EISs, and to the extent that there have been new actions or developments, the impacts associated with those actions or developments are

in line with the projections in the 2015 Final EISs regarding reasonably foreseeable actions and effects. Additionally, changes that have occurred on a smaller level, like wildfires, received prompt responses. Since the nature and context of the cumulative effects scenario has not appreciably changed since 2015, and the 2015 analysis covered the entire range of the Greater Sage-Grouse, the BLM's consideration of cumulative effects in the 2015 Final EISs adequately addresses most, if not all, of the planning decisions to be made through this planning effort.

While the cumulative impacts analysis in the 2015 Final EISs thus offers a comprehensive foundation for this planning effort, the BLM is improving upon that analysis by integrating additional quantitative analysis specific to this planning effort. The purpose of this additional analysis is to facilitate a comparison of allocation decisions between the No-Action Alternative and Proposed Plan Amendment at scales beyond the individual planning areas associated with the 2018 amendment process. Our analysis focuses on the relevant changes in habitat delineations and allocation decisions each BLM state office is proposing and how those changes may impact our understanding of cumulative effects at the Management Zone (MZ) scale.

Conservation and management partners sought to work in advance of the 2015 USFWS listing decision to develop conservation objectives for the Greater Sage-Grouse that could help direct conservation and management actions for the species. Upon further review of the best available science and commercial information, the USFWS concluded in 2010 that the Greater Sage-Grouse warranted protection under the Endangered Species Act. Two factors leading to the decision to list the species as "warranted but precluded" were threats to habitat and the inadequacy of existing regulatory mechanisms. In 2012, at the request of Utah's Greater Sage-Grouse Task Force (SGTF), state and federal representatives produced a report that identified the most significant areas for Greater Sage-Grouse conservation, the principal threats within those areas, and the degree to which such threats need to be reduced or ameliorated to conserve the Greater Sage-Grouse so that it would not be in danger of extinction or likely to become so in the foreseeable future.

A principal component of Greater Sage-Grouse management is the implementation of mitigation actions to ameliorate the threats and impacts on Greater Sage-Grouse and its habitats. In 2015, the USFWS determined Greater Sage-Grouse was "not warranted" for listing under the ESA. The USFWS found that BLM's 2015 land use plans were adequate regulatory mechanisms and that the species no longer warranted listing under the Act. At the time of that decision, the USFWS acknowledged the RMP requirements that compensatory mitigation achieve a net gain standard. 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.

While the BLM has more than 90 RMPs, 9 strategies, and 45 agreements in active use that contain or address compensatory mitigation, the BLM has identified only limited implementation of compensatory mitigation consistent with the 2015 Greater Sage-Grouse Plans. Using data gathered in 2017, the BLM identified 13 Greater Sage-Grouse projects across 5 BLM states with a mandatory compensatory mitigation component or net gain standard implemented between October 2008 and June 2017. The most common compensatory actions used by the BLM in those cases were habitat restoration, habitat improvements, rangeland improvements, and invasive species control – actions consistent with the BLM's own investment in management action described previously. In many cases, it is still too soon in

the implementation of these mitigation actions to measure the effectiveness or degree of benefit each action provides.

Anecdotally, the existing conservation credit systems, banks, and exchanges designed to offset impacts to Greater Sage-Grouse or its habitat have had mixed success. The BLM is aware of three mitigation banks (one commercial bank agreement in Wyoming and two single-user bank agreements with mining companies in Nevada) and one exchange system in Colorado specific to Greater Sage-Grouse currently in operation. However, the BLM does not have access to data or information that would further assess the relative benefit provided by these systems.

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 the public lands. Consistent with that determination and with BLM IM 2018-093, Compensatory Mitigation, the Proposed Plan Amendment clarifies how voluntary compensatory mitigation or a state mitigation requirement or recommendation should be considered in the management of Greater Sage-Grouse habitat. This clarification aligns the Proposed Plan Amendment with BLM policy and the scope of compensatory mitigation authority expressly provided by FLPMA. Any analysis of compensatory mitigation relating to future projects is speculative at this level of land use planning; therefore, analysis of compensatory mitigation is more appropriate for future project-specific NEPA. In other words, the applicability and overall effectiveness of voluntary actions cannot be fully assessed until the project level when the specific location, design, and impacts are known.

In PHMA within the planning area, and in all designated Greater Sage-Grouse habitats outside the planning area, the BLM will ensure both mitigation and management actions that achieve the planning-level management goals and objectives identified in this RMPA. The BLM has a variety of tools available to effectively achieve those management goals such as restoration projects and habitat improvements.

The BLM will continue plan effectiveness monitoring to provide the data needed to evaluate BLM actions toward reaching the goals and objectives set forth in the RMPAs. Effectiveness monitoring methods will encompass multiple larger scales, from areas as large as the Western Association of Fish and Wildlife Agencies (WAFWA) MZ to the scale of this RMPA. Effectiveness data used for these larger-scale evaluations will include all lands in the area of interest, regardless of surface management, and will help inform where finer-scale evaluations are needed.

Currently BLM has six state-specific RMPA efforts that are all aligning mitigation with their relevant State authorities. All of the Proposed Plan Amendments modify the existing standard for compensatory mitigation but maintain that the BLM will pursue conservation efforts as a broader planning goal and objective. Cumulatively, if the BLM is implementing planning decisions across the broader range, such actions would preclude any cumulative impacts from modifying the mitigation standard at the project level.

The BLM has updated certain data that it collected and evaluated in the 2015 Final EIS concerning the 2015 plan allocation decisions to reflect maintenance-related changes, adaptive management responses, and refined source data. The BLM used these data to represent the No-Action Alternative for the current plan analysis. The BLM also identified 2015 data which are not subject to change in any alternatives associated with the 2018 planning process. These data were carried forward as the alternative allocation decision data. The BLM was also able to provide allocation decision data

representing changes included in the 2018 Draft EIS alternatives, which were then used in the comparative analysis.

The BLM analyzed cumulative effects at two levels in the 2019 planning process. Each state analyzed cumulative effects across the Greater Sage-Grouse range by considering, across each state, reasonably foreseeable future actions and their effects in every WAFWA management zone (excluding WAFWA Zone VI). Each state further analyzed cumulative effects at the WAFWA management zone level for their state. See Section 4.7.1 and **Table 1** in **Appendix 1** for the range-wide analysis, which addresses the cumulative effects from reasonably foreseeable future actions across all WAFWA management zones, including those that do not connect directly to Utah. See Utah's WAFWA management zone analysis in Sections 4.7.3, 4.7.4, 4.7.5, and 4.7.6 below. Both analyses use WAFWA Management Zones. Utah's WAFWA Zone analysis included Zones II/VII, III, and IV that include all or portions of Wyoming, Colorado, Montana, California, Nevada, Oregon, and Idaho (**Figure 4-1**).

4.7.1 Range-wide Cumulative Effects Analysis – Greater Sage-Grouse

The 2015 ROD/ARMPA is the No-Action Alternative in this DSEIS and was part of the cumulative impact analysis for Greater Sage-Grouse at the WAFWA zone scale in the 2015 Final EIS (see **Table 4-3**). Additionally, the cumulative impacts anticipated from the Management Alignment Alternative and the Proposed Plan presented in this DSEIS are entirely within the range of effects analyzed by the 2015 Final EIS. While the analysis for the 2015 Final EIS is quite recent, the BLM has reviewed conditions in Utah to verify that they have not changed significantly. Conditions on BLM-administered lands have changed little since the 2015 Final EIS, and to the extent that there have been new actions or developments, the impacts associated with those actions or developments are in line with the projections in the 2015 Final EIS regarding reasonably foreseeable future actions and effects.

The BLM's assessment that conditions and cumulative impacts have not changed significantly is based, in part, on the USGS science review (see **Chapter 3**) and the BLM's review of additional past, present, and reasonably foreseeable actions in 2018. Since the nature and context of the cumulative effects scenario have not appreciably changed since 2015, and the 2015 plans included analysis by WAFWA MZ across the entire range of the Greater Sage-Grouse, the cumulative effects analysis in the 2015 Final EIS applies to this planning effort and provides a foundation for the BLM to identify any additional cumulative impacts.

The remainder of this chapter and related appendices includes additional quantitative analysis using the existing cumulative impacts across the range and integrating additional quantitative analysis specific to this planning effort to provide a comprehensive range-wide view of cumulative impacts. The purpose of this additional analysis is to facilitate a comparison of allocation decisions between the No-Action and Management Alignment (Proposed Plan Amendment) Alternatives at scales beyond the individual planning areas associated with the 2018 amendment process. The analysis focuses on the relevant changes in habitat delineations and allocation decisions each BLM state office is proposing and how those changes may affect the understanding of cumulative effects at the WAFWA MZ scale across the range of Greater Sage-Grouse.

Under the Management Alignment Alternative (Proposed Plan Amendment), the recommendation to withdraw sagebrush focal areas (SFA) from location and entry under the Mining Law of 1872 would be removed, as the EIS process considering the proposed withdrawal was canceled on October 11, 2017. In

its 2016 SFA Withdrawal EIS, the BLM quantified the possible adverse effects from locatable mineral exploration and mining on the approximately 10 million acres of SFAs proposed for withdrawal, finding that they would be limited to approximately 9,000 acres rangewide of surface disturbance over 20 years, with approximately 0.58 percent of Greater Sage-Grouse male birds possibly affected per year. The other action alternatives evaluated in the 2016 SFA Withdrawal Draft EIS similarly demonstrated negligible benefit of the proposed withdrawal to Greater Sage-Grouse and its habitat.[1]

The cumulative effects of implementing the Management Alignment Alternative (Proposed Plan Amendment) are as described in the 2016 SFA Withdrawal Draft EIS, under the No-Action Alternative, in which SFAs are not carried forward for withdrawal. Greater Sage-Grouse would not be affected as a result of the removal of the recommendation to withdraw SFAs from location and entry under the Mining Law of 1872, as the recommendation itself does not have any on-the-ground effects. Conservation benefits of a future withdrawal would be negligible, as documented in the 2016 SFA Withdrawal Draft EIS and as explained above; therefore, there would be negligible cumulative impacts associated with the decision to remove the SFA designation. The direct and indirect impact analysis specifically enumerates how each BLM allocation decision to apply NSO stipulations and waivers, exceptions, or modifications overlaps with the SFA designation.

4.7.2 Why use WAFWA Management Zones?

The Western Association of Fish and Wildlife Agencies (WAFWA) represents state and provincial fish and wildlife agencies and supports sound resource management and building partnerships to conserve wildlife for the use and benefit of all citizens, now and in the future. The BLM is analyzing habitats and allocation decisions at the scale of the six WAFWA delineated Greater Sage-Grouse MZs within which the plan amendments are occurring to enable the decision maker to understand the impacts on Greater Sage-Grouse at a biologically meaningful scale (see **Figure 1** in **Appendix 1**). The MZs were delineated based on floristic provinces (identified by Connelly et al. 2004) within which the vegetative communities comprising Greater Sage-Grouse habitat as well as the Greater Sage-Grouse populations are responding similarly to environmental factors and management decisions (Stiver et.al. 2006). The cumulative effects analysis area for Greater Sage-Grouse extends beyond a state, political, or planning area boundary to reflect the WAFWA MZs because they encompass areas with similar issues, threats, and vegetative conditions important Greater Sage-Grouse habitat management. Each suite of threats to specific Greater Sage-Grouse populations have been identified in the COT report, 2015 Regional RODs, and the Listing Decision. The 2015 Regional RODs identify how planning level allocation decisions address the identified threats to populations, which are aggregated in this analysis by MZs. The threats vary geographically and may have more or less impact on Greater Sage-Grouse and its habitat in some parts of the MZs, depending on such factors as climate, land use patterns, and topography. The map below identifies the WAFWA MZs and Greater Sage-Grouse population areas.

Table 4-4 shows the resource and location of applicable cumulative effects analysis from 2015 Final EIS. Unless otherwise addressed in this chapter, the cumulative effects of the alternatives analyzed in this

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

Proposed RMPA/Final EIS are covered by the 2015 Final EIS and the 2016 SFA Withdrawal Draft EIS. This includes the incremental impacts across the range of BLM- and Forest Service-administered lands being amended in concurrent plan amendment efforts. See the 2015 Final EIS for additional information.

The sum of past, present, and reasonably foreseeable actions listed in **Appendix I** represent cumulative effects across the range of Greater Sage-Grouse habitat and management areas. These effects are important to consider for future management of the species as a whole and are not solely being analyzed at the local or state level.

Table 4-4
Cumulative Effects Analysis Incorporated by Reference

Resource Topic	Location of Cumulative Effects Analysis
Greater Sage-Grouse	Chapter 5, Section 5.4 of the 2015 Final EIS and Chapter 4, Section 4.5.9 of the 2016 SFA Withdrawal Draft EIS. Additional information regarding Greater Sage-Grouse is included in Chapter 4, Section 4.5 of this RMPA/EIS.
Air Quality	Chapter 5, Section 5.5 of the 2015 Final EIS. Additional information regarding air quality is included in **Chapter 4**, **Section 4.6** of this RMPA/EIS.
Soil Resources	Chapter 5, Section 5.7 of the 2015 Final EIS. Additional information regarding soil resources are included in **Chapter 4**, **Section 4.7** of this RMPA/EIS.
Water Resources	Chapter 5, Section 5.8 of the 2015 Final EIS.
Vegetation (including Noxious Weeds; Riparian and Wetlands)	Chapter 5, Section 5.9 of the 2015 Final EIS. Additional information regarding vegetation is included in **Chapter 4**, **Section 4.8** of this RMPA/EIS.
Other Special Status Species	Chapter 5, Section 5.10 of the 2015 Final EIS. Additional information regarding other special status species are included in **Chapter 4**, **Section 4.9** of this RMPA/EIS.
Fish and Wildlife	Chapter 5, Section 5.11 of the 2015 Final EIS. Additional information regarding fish and wildlife is included in **Chapter 4**, **Section 4.10** of this RMPA/EIS.
Wild Horses and Burros	Chapter 5, Section 5.12 of the 2015 Final EIS.
Cultural Resources	Chapter 5, Section 5.13 of the 2015 Final EIS. Additional information regarding cultural resources is included in **Chapter 4**, **Section 4.11** of this RMPA/EIS.
Visual Resources	Chapter 5, Section 5.14 of the 2015 Final EIS.
Wildland Fire Management	Chapter 5, Section 5.15 of the 2015 Final EIS.
Wilderness Characteristics	Chapter 5, Section 5.16 of the 2015 Final EIS.
Livestock Grazing/Range Management	Chapter 5, Section 5.17 of the 2015 Final EIS.
Recreation	Chapter 5, Section 5.18 of the 2015 Final EIS.
Comprehensive Travel and Transportation Management	Chapter 5, Section 5.19 of the 2015 Final EIS.
Lands and Realty	Chapter 5, Section 5.20 of the 2015 Final EIS. Additional information regarding lands and realty is included in **Chapter 4**, **Section 4.12** of this RMPA/EIS.
Renewable Energy	Chapter 5, Section 5.21 of the 2015 Final EIS. Additional information regarding renewable energy is included in **Chapter 4**, **Section 4.13** of this RMPA/EIS.

Resource Topic	Location of Cumulative Effects Analysis
Leasable Minerals (Oil and Gas, Non-energy Leasable Minerals, Coal, and Oil Shale and Tar Sands)	Chapter 5, Sections 5.22.1-3 & 5.22.6 of the 2015 Final EIS. Additional information regarding leasable minerals is included in **Chapter 4**, **Section 4.14.1-2** of this RMPA/EIS.
Locatable Minerals	Chapter 5, Section 5.22.4 of the 2015 Final EIS and Chapter 4, Section 4.2.9 of the 2016 SFA Withdrawal Draft EIS. Additional information regarding locatable mineral is included in **Chapter 4**, **Section 4.14.2** of this RMPA/EIS.
Mineral Materials	Chapter 5, Section 5.22.5 of the 2015 Final EIS. Additional information regarding mineral materials is included in **Chapter 4**, **Section 4.14.2** of this RMPA/EIS.
Social and Economic Conditions	Chapter 5, Section 5.24 of the 2015 Final EIS and Chapter 4, Section 4.3.13 of the 2016 SFA Withdrawal Draft EIS. Additional information regarding social and economic conditions is included in **Chapter 4**, **Section 4.15** of this RMPA/EIS.
Tribal Interests	Chapter 5, Section 5.25 of the 2015 Final EIS.

This section also describes the threats to Greater Sage-Grouse and its habitat. The magnitude of change between the No-Action Alternative and Proposed Plan Amendments, by decision, is represented in pie charts and tables within this section and in **Appendix 1**. Those effects, in addition to synthesizing the plan decisions and comparing the current condition to the condition that will be in effect when the proposed plans are finalized, allow for a comparison of the change in management direction within MZs and across planning regions.

The habitat fragmentation and disturbance from energy development and mining, including associated infrastructure (e.g., roads, railroads, power lines, pipelines – see **Table E-1** in **Appendix E**) remain the greatest threat to Greater Sage-Grouse in the Rocky Mountain region; the levels of development are within the range of projected wildland fire analyzed in the 2015 Final EIS. Wildfire threat remains a concern in the area as well and is the greatest threat to Greater Sage-Grouse in the Great Basin region. Between 2008 and 2018, wildfires burned an average of 900,000 acres per year in Greater Sage-Grouse habitat management areas range-wide[2]; this is within the range of projected wildland fire analyzed in the 2015 Final EIS.

The BLM has committed resources to habitat restoration and rangewide has treated 1.4 million acres of Greater Sage-Grouse habitat range-wide over the past five years. The interagency (including BLM) WAFWA-led Wildfire and Invasive Species Working Group reviewed recent information for their May 2018 Gap Report Update to the Wildfire and Invasive Plant Species in the Sagebrush Biome: Challenges that hinder current and future management and protection report. They found that all of the original challenges related to control and reduction of the invasive annual grass/fire cycle were still relevant (policy, fiscal and science challenges) as well as pointing to three new gaps involving program capacity, resource specialists, and developing guidelines on drought and climate adaption to manage sagebrush ecosystems.

The increased flexibility proposed in these amendments can allow for responsible development of other uses in Greater Sage-Grouse habitat and may reduce costs to proponents but is not expected to result

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

in a large increase in development proposals on public land. Similarly, the increased protections from the 2015 Final EIS have not resulted in a large decrease in ROW applications or an increase in rejected applications; therefore, the changes proposed under the Proposed Plan Amendment are not expected to result in large changes to the rate of development across the range, or in its economy.

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

4.7.3 Cumulative Effects on Greater Sage-Grouse: Management Zone I

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

MZ I encompasses portions of Wyoming, Montana, North Dakota, and South Dakota. Montana is currently not undergoing a plan amendment process; therefore, none of the proposed changes described in this section apply to Greater Sage-Grouse in Montana. Under the Proposed Plan Amendment in WAFWA MZ I, PHMA and GHMA designations would not change from those identified in the No-Action Alternative. In addition, no changes in allocations are proposed in either of the planning areas in this MZ. Approximately 16 percent of the planning area across MZ I is designated as PHMA, and 38 percent is GHMA. Future adjustments to PHMA and GHMA in MZ I would be based on best available science and to align with the respective states' delineations for Greater Sage-Grouse habitat.

Wyoming's current planning effort, and Montana's existing plans, incorporate management flexibility to allow for site specific adjustments to land use plan authorizations for adaptive management strategies, livestock grazing management, and other proposed land uses. The use and application of compensatory mitigation in the planning area would follow the respective State plans, resulting in greater consistency across the MZ. For these actions, cumulative impacts on Greater Sage-Grouse habitat and populations across MZ I would be consistent with those impacts described in the 2015 Final EISs for the then Proposed Plan Amendments.

The currently Proposed Plan Amendment changes from the No-Action Alternative are minor, and still maintain prescriptive management for Greater Sage-Grouse habitat across the MZ for surface disturbing activities. Disturbance from energy development, mining, and infrastructure, as well as the resulting habitat fragmentation, remain the greatest threat to Greater Sage-Grouse in the Rocky Mountain Region. Because the land use prescriptions and allocations are not proposed for change in Wyoming's land use plan amendment, there would be no additional cumulative impact on Greater Sage-Grouse populations or habitat within MZ I.

A summary of potential cumulative impacts by proposed management action is presented below.

Impacts on Greater Sage-Grouse as a result of surface disturbance would likely be greater where development and disturbance is more intense and in areas where development overlaps sensitive habitats. The degree of impact would depend on the timing of development activities and whether the amount of development activity and disruption outpaces successful reclamation and revegetation efforts in disturbed areas. Increased flexibility for updating Greater Sage-Grouse habitat management areas across MZ I would not result in any additive impacts on Greater Sage-Grouse and could result in beneficial impacts as a result of consistent management across the zone.

Any future modifications of habitat management areas would be documented using the appropriate level of NEPA that would, as applicable, provide analysis regarding any potential impacts; however, because the underlying habitat management area allocations and the respective restrictions on those allocations put in place to conserve Greater Sage-Grouse would not change, and any proposed updates would reflect the most recent knowledge concerning Greater Sage-Grouse habitat use and distribution, there would be no appreciable additive impact from the implementation of this aspect on Greater Sage-Grouse habitat or population.

Under the BLM's Wyoming Management Alignment Alternative, the recommendation to withdraw SFAs from location and entry under the Mining Law of 1872 would be removed, as the EIS process considering the proposed withdrawal was canceled on October 11, 2017. In its 2016 SFA Withdrawal EIS, the BLM quantified the possible adverse effects from locatable mineral exploration and mining on the approximately 10 million acres of SFAs proposed for withdrawal, finding that they would be limited to approximately 9,000 acres of surface disturbance over 20 years, with approximately 0.58 percent of Greater Sage-Grouse male birds affected per year.

Approximately 99 percent of GHMA and PHMA habitat in MZ I is open to livestock grazing, and this is not proposed for change in Wyoming's proposed land use plan amendment; Montana is also not proposing any changes to livestock management at this time. Therefore, no additional cumulative impacts beyond those identified in the 2015 Final EISs are anticipated. In general, livestock can influence habitat by modifying plant biomass, plant height and cover, and plant species composition. As a result, livestock grazing could cause changes in habitat; changes in plant composition could occur in varying degrees and could change vegetative structure, affecting cover for nesting birds. However, grazing can be used to reduce fuel loads and reduce the risk of wildfire and can also be managed to reduce the spread of invasive grasses.

Much of the landscape in MZ I is adapted to withstand grazing disturbance, having been grazed by bison before the West was settled. In addition, the BLM has applied Standards for Rangeland Health since 1997 in order to enhance sustainable livestock grazing and wildlife habitat while protecting watersheds and riparian ecosystems. Under proposed management in MZ I, the BLM would be able to adjust forage levels to meet rangeland health standards based on site-specific information that would inform livestock management decisions.

While the Proposed land use plan amendment in Wyoming would remove the Greater Sage-Grouse specific language Management Action 4 (see Table 2-1, Permit Renewals, of the Wyoming Proposed RMPA/Final EIS), the wildlife/special status species standards are emphasized. As Greater Sage-Grouse

would continue to be considered at the implementation level with site-specific analysis, following management prescriptions analyzed in the 2014 and 2015 Final EISs, no additive impact of this change is anticipated.

Adaptive Management, Mitigation, and Prioritization of Leasing

Similarly, no appreciable additive impacts are anticipated from Wyoming establishing a process whereby adaptive management actions are reviewed and reversed once the identified causal factor is resolved. This process would ensure that the BLM is using the best available science and decision support tools to guide management at the appropriate spatial scale, thus improving the BLM's assessment and response to ever-changing conditions that could affect Greater Sage-Grouse populations and/or habitat, as well as ensuring that once causal factors are resolved, management reverts to pre-adaptive management actions. Because any specific response to tripping a hard or soft trigger would be based on the causal factors responsible, presuming a specific response to unknown future conditions would be speculative at best and not reasonably foreseeable.

As Montana is not proposing to change any part of its adaptive management process, and Wyoming did not identify any additional direct or indirect impacts as a result of this proposed change, there are no additional cumulative impacts associated with the proposed changes to adaptive management implementation.

Under the Proposed Plan Amendment in Wyoming, language would be added to clarify how implementation-level decisions would be guided regarding mitigation and prioritization of fluid mineral leasing to better align with state conservation plans and management strategies. As identified in the direct and indirect effects section of this Final EIS, impacts on Greater Sage-Grouse would be minor as a result of these changes and could include localized detrimental impacts in some areas and beneficial impacts in others, but would not affect Greater Sage-Grouse conservation. As a result, there would be no appreciable additive impact from the implementation of these clarifications on Greater Sage-Grouse habitat or population across MZ I.

BLM's proposed land use plan amendments in MZ I are also unlikely to preclude the reasonably foreseeable actions listed in **Appendix I** from proceeding. Some small, localized populations may be at continued risk due to reasonably foreseeable infrastructure and energy development projects over the next 20 years, when combined with unplanned events such as wildfires, drought, and associated decline in Greater Sage-Grouse habitat quality; however, the proposed plan amendments retain conservation measures that would be applied consistent with State management plans, and continued proactive habitat restoration efforts being completed by private, local, state, and federal partners across the MZ, to adequately conserve and manage Greater Sage-Grouse habitat.

4.7.4 Cumulative Effects on Greater Sage-Grouse: Management Zone II/VII

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

MZ s II/VII encompass portions of Wyoming, Colorado, Utah, Montana, and Idaho. Under the Proposed Plan Amendment in this MZ, PHMA would decrease by 1 percent and GHMA would decrease by 1 percent, compared to the acreage values in the No-Action Alternative. The proposed change in Greater Sage-Grouse habitat management area acres reflects changes in Utah, where PHMA would be reduced

by approximately 35,000 acres and GHMA (826,000 acres) would be removed in an effort to align with the SGMA identified by the State of Utah.

In Idaho, approximately 50,000 acres would change from PHMA to Important Habitat Management Area (IHMA) for population monitoring purposes as a result of a tripped adaptive management trigger; however, the habitat would continue to be managed as PHMA, which results in no net change to overall acreages included in the habitat management areas. Across this MZ, no other modifications to habitat management areas are currently proposed. Montana is currently not undergoing a plan amendment process; therefore, none of the proposed changes described in this section apply to Greater Sage-Grouse in Montana.

In Colorado, in the no action alternative, PHMA within one mile of active leks is closed to leasing. The proposed action would open one mile of active leks to leasing, subject to NSO with restrictive criteria for waivers, exceptions, and modifications. Although that allocation change would make additional acres available to leasing, the impact on Greater Sage-Grouse is likely to be minimal because surface disturbance, fragmentation, and indirect habitat loss would not be expected to increase due to restrictions on surface disturbance. Additionally, better coordination with the State provides more of an all-lands approach that, due to multiple jurisdictions with regulatory authority over land and mineral ownership, may result in better protections for Greater Sage-Grouse and Greater Sage-Grouse habitat.

For the remainder of the planning areas within MZ II/VII, land use plan allocations tied to HMAs did not change between the No-Action Alternative and the Proposed Plan Amendment.

The decrease in PHMA and GHMA as a result of better alignment with the State of Utah's Greater Sage-Grouse management plan between the No-Action Alternative and the Proposed Plan Amendment would have negligible to minimal impacts on Greater Sage-Grouse and its habitat in the context of the entire MZ. The reduction of PHMA was associated with timbered mountains that do not include Greater Sage-Grouse habitat. The removal of GHMA in MZ II/VII effects populations where the BLM has very little decision space (surface or mineral estates) or areas with very small populations that are already heavily impacted by existing oil and gas development resulting in infrastructure at a density above what science has indicated Greater Sage-Grouse will persist. Additionally, the relevant distribution of land use plan allocations associated with these HMA changes would not significantly change (0–3 percent; see **Appendix I**). Additionally, because Utah provides habitat for approximately 5 percent of the Greater Sage-Grouse population range-wide, and GHMA in Utah comprises only approximately 5 percent of the birds in Utah, removal of GHMA in Utah would only affect 0.25 percent of the range-wide Greater Sage-Grouse population. Given the small number of birds affected and the existing habitat conditions in GHMA (not administered by the BLM, already impacted by existing development, or small and isolated patches with little history of occupancy by local biologists), removing GHMA in Utah will not result in cumulative effects to Greater Sage-Grouse populations range-wide.

The planning efforts being undertaken in this MZ would incorporate management flexibility in Colorado, Utah, and Idaho plans that would allow exceptions to allocation decisions similar to flexibility already in the Wyoming and Montana plans. These changes would allow for site-specific adjustments for land use authorizations based on site conditions. In addition, there would be adjustments to existing adaptive management strategies for all plans in this MZ. Within this MZ, all plans would remove the recommendation to withdraw SFAs from location and entry under the 1872 Mining Law would make slight adjustments to habitat objectives, and Colorado and Idaho plans would identify new exceptions to

seasonal timing restrictions to provide for consideration of site-specific conditions already present in the Utah, Wyoming and Montana plans.

Despite these actions, cumulative impacts on Greater Sage-Grouse populations and habitat across MZ II/VII would be consistent with those impacts identified in the 2015 Final EISs for the then proposed plan amendments. The currently Proposed Plan Amendments changes from the No-Action Alternative would be minor. Disturbance from energy development, mining, and infrastructure, as well as the resulting habitat fragmentation, remain the greatest threat to Greater Sage-Grouse in the Rocky Mountain Region. Because the land use prescriptions within designated habitat management areas and the allocations associated with those habitat management areas are not being proposed for change in any plan in MZ II/VII, there would be no additional cumulative impacts on Greater Sage-Grouse across this MZ.

A summary of potential cumulative impacts by proposed management action is presented below.

Impacts on Greater Sage-Grouse as a result of surface disturbance would likely be greater where development and disturbance is more intense and in areas where development overlaps sensitive habitats. The degree of impact would depend on the timing of development activities and whether the amount of development activity and disruption outpaces successful reclamation and revegetation efforts in disturbed areas. Increased flexibility for updating habitat management areas across MZ II/VII would not result in any additive impacts on Greater Sage-Grouse and could result in beneficial impacts as a result of consistent management across the zone.

Future modifications of habitat management areas would be documented using the appropriate level of NEPA that would, as applicable, provide analysis regarding any potential impacts; however, because the underlying habitat management area allocations and the respective restrictions on those allocations put in place to conserve Greater Sage-Grouse would not change, and any proposed updates would reflect the most recent knowledge concerning Greater Sage-Grouse habitat use and distribution, there would be no appreciable additive impact from the implementation of this aspect on Greater Sage-Grouse habitat or population.

The allocation exception process would be updated in Colorado, Utah, and Idaho to simplify the various exemptions contained in the 2015 Final EIS. While the availability of exceptions to land use plan allocations attached to PHMA and GHMA could increase the possibility of leasing, permitting, or ground-disturbing activities within a given habitat management area, the established criteria would ensure that projects are either in unsuitable Greater Sage-Grouse habitat; do not result in direct, indirect, or cumulative impacts on Greater Sage-Grouse; benefit Greater Sage-Grouse or its habitat; or can be offset, with the exception of those needed for public health and safety; therefore, there would be no appreciable additive impact from the implementation of this action on Greater Sage-Grouse or the resources/uses analyzed herein, as compared with the No-Action Alternative.

In MZ II/VII, approximately 216,000 acres of PHMA in Wyoming and 164,000 acres of PHMA in Utah were recommended for withdrawal from location and entry under the 1872 Mining Law in the current RMPs. This recommendation, if implemented through a future separate withdrawal action supported by its own NEPA, would apply to approximately 3 percent of the MZ. The proposed change to the withdrawal recommendation itself would not have any on-the-ground effects, and the conservation

benefits of a future withdrawal would be minimal, as documented in the 2016 SFA Withdrawal Draft EIS and as explained above.

Approximately 99 percent of GHMA and PHMA in MZ II/VII is open to livestock grazing; this is not proposed for change in any states' land use plan amendments; therefore, no additional cumulative impacts beyond those identified in the 2015 Final EISs are anticipated. In general, livestock can influence habitat by modifying plant biomass, plant height and cover, and plant species composition. Improper livestock grazing could cause changes in habitat; changes in plant composition could occur in varying degrees and could change vegetative structure, affecting cover for nesting birds; however, proper grazing can be used to reduce fuel loads and reduce the risk of wildfire and can also be managed to reduce the spread of invasive grasses. Specific impacts on Greater Sage-Grouse habitat from livestock grazing are incorporated by reference from the 2015 Final EIS. All ongoing planning efforts in MZ II/VII would make slight adjustments to habitat objectives, and, in Wyoming and Utah, would provide for more flexibility for making site-specific adjustments to livestock grazing management if the site-specific monitoring indicated adjustments were necessary.

Under the proposed land use plan amendments, language would be added to clarify how some implementation level decisions, including mitigation, prioritization of fluid mineral leasing, disturbance caps, and clarification of RDFs would be guided to better align with state conservation plans and management strategies. As identified in the direct and indirect effects section of this Final EIS, impacts on Greater Sage-Grouse would be minor as a result of these changes and could include localized detrimental impacts in some areas and beneficial impacts in others, but would not cumulatively compromise Greater Sage-Grouse conservation efforts throughout the individual states. As a result, there would be no appreciable additive impact from the implementation of these clarifications on Greater Sage-Grouse habitat or population across this MZ.

Similarly, no appreciable additive impacts are anticipated from updating the adaptive management process as described in the Proposed Plan Amendments. In Wyoming and Utah, this process would be updated at the implementation level to ensure that adaptive management actions are reviewed and reversed once the identified causal factor is resolved. In all states in this MZ, this update would ensure that the BLM is using the best available science and decision support tools to guide management at the appropriate spatial scale, thus improving the BLM's assessment and response to ever-changing conditions that could affect Greater Sage-Grouse populations and/or habitat. Because any specific response to tripping a hard or soft trigger would be based on the causal factors responsible, presuming a specific response to unknown future conditions would be speculative and not reasonably foreseeable.

In Idaho, removal of the project disturbance cap would not result in any changes to allocation decisions; rather, it would allow the BLM to cluster development in PHMA and IHMA only after meeting the anthropogenic disturbance screening criteria and the disturbance development criteria. Lek buffer modifications would also not result in any allocation changes. Some lek buffers would be increased as a result of the proposed land use plan amendment, but, in some cases, the lek buffers may be smaller than those identified in the No-Action Alternative; however, the existing disturbance screening criteria and the disturbance development criteria would highly restrict development activities in both PHMA and IHMA; therefore, the changes in lek buffers sizes would have no additive effect.

BLM's proposed land use plan amendments in MZ II/VII are also unlikely to preclude the reasonably foreseeable actions listed in **Appendix I** from proceeding. Some small, localized populations may be at

continued risk due to reasonably foreseeable infrastructure and energy development projects over the next 20 years, when combined with unplanned events such as wildfires, drought, and associated decline in Greater Sage-Grouse habitat quality; however, the proposed plan amendments retain conservation measures that would be applied consistent with State management plans, and continued proactive habitat restoration efforts being completed by private, local, state, and federal partners across the MZ, to adequately conserve and maintain Greater Sage-Grouse habitat.

4.7.5 Cumulative Effects on Greater Sage-Grouse: Management Zone III

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

This area encompasses portions of California, Nevada, and Utah. Under the Proposed Plan Amendments in Nevada and Northeastern California and Utah, PHMA would decrease by 1 percent, GHMA would decrease by 2 percent, and for Nevada and Northeastern California only, Occupied Habitat Management Area (OHMA) would decrease by 2 percent, as compared to the acreages identified in the No-Action Alternative. The proposed change in habitat management area acres between the No-Action Alternative and the Proposed Plan Amendment in Nevada and Northeastern California is based on adjustments made to habitat modeling used to delineate habitat management areas and improve alignment with the State of Nevada's delineations for habitat management areas, which the State of Nevada adopted by in December 2015. In Utah, GHMA (approximately 860,000 acres) was removed in the Proposed Plan Amendment in an effort to align with the SGMAs identified by the State of Utah. None of the GHMA removed in MZ III includes any leks, and is largely comprised of areas not administered by the BLM, areas already impacted by existing development, or areas that contain small and isolated patches of habitat with little to no history of recent occupancy by local biologists. Additionally, because Utah provides habitat for approximately 5 percent of the Greater Sage-Grouse population range-wide, and GHMA in Utah comprises only approximately 5 percent of the birds in Utah, removal of GHMA in Utah would only affect 0.25 percent of the range-wide Greater Sage-Grouse population. Given the small number of birds affected and the existing habitat conditions in the GHMA, removing GHMA in Utah will not result in cumulative effects to Greater Sage-Grouse populations range-wide.

Following this habitat management area modification, planning-level allocation decisions have also been adjusted in the Proposed Plan Amendments to reflect the distribution of habitat in Nevada/Northeastern California.

In both planning areas within this MZ, land use plan allocations tied to habitat management areas did not change between the alternatives. The decrease in PHMA, GHMA, and OHMA within WAFWA MZ III between the No-Action Alternative and the Proposed Plan Amendment would therefore have negligible-to-minimal impacts on Greater Sage-Grouse and its habitat in the context of the entire MZ, as the relevant distribution of land use plan allocations associated with these habitat management areas is not significantly changing (only an overall 0-3 percent decrease, see **Appendix 1**).

Both planning efforts' Proposed Plan Amendments in MZ III incorporate management flexibility that would allow exceptions to allocation decisions within PHMA, GHMA, OHMA in Nevada and Northeastern California, and in both planning areas, would allow for site specific adjustments for land use authorizations and adjustments to existing adaptive management strategies. Under both sets of Proposed Plan Amendments, the BLM would remove the recommendation to withdraw SFAs from

location and entry under the Mining Law of 1872, make slight adjustments to habitat objectives, and identify new exceptions to seasonal timing restrictions.

The cumulative impacts of these proposed changes to Greater Sage-Grouse populations across MZ III would be consistent with the cumulative impacts analyzed and disclosed in the 2015 Final EISs. Moreover, these proposed changes, which focus on anthropogenic disturbances, would have only a minor or limited effect on efforts to manage and conserve Greater Sage-Grouse in this MZ, where wildfire, invasive plants, and conifer encroachment are the greater threats to the Greater Sage-Grouse and its habitat.

BLM's Proposed Plan Amendments in the MZ are also unlikely to preclude the reasonably foreseeable actions listed in **Appendix I** from proceeding. Some small, localized populations may be at continued risk due to the reasonably foreseeable future infrastructure and energy development projects over the next 20 years, when combined with unplanned events such as wildfires, drought, and associated decline in Greater Sage-Grouse habitat quality; however, the Proposed Plan Amendments retain conservation measures in combination with continued proactive habitat restoration efforts being completed by private, local, state, and federal partners across the MZ to adequately conserve and maintain Greater Sage-Grouse habitat.

A summary of potential cumulative impacts by proposed management action is presented below.

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

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

Under the Proposed Plan Amendment, the allocation exception process would be updated to simplify the various exemptions contained in the 2015 Final EIS. While the availability of exceptions to land use plan allocations attached to PHMA and GHMA could increase the possibility of leasing, permitting, or ground-disturbing activities within a given habitat management area, the established criteria would ensure that projects are either in unsuitable Greater Sage-Grouse habitat; do not result in direct, indirect, or cumulative impacts on Greater Sage-Grouse; or can be offset, with the exception of those needed for public health and safety; therefore, there would be no appreciable additive impact from the implementation of this action on Greater Sage-Grouse or the resources and uses analyzed herein, as compared with the No-Action Alternative.

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

4.7.6 Cumulative Effects on Greater Sage-Grouse: Management Zone IV

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

MZ IV encompasses portions of Idaho, Nevada, Montana, Oregon, Utah, and a small portion of Wyoming. Under the Proposed Plan Amendment PHMA would decrease by 2 percent, IHMA would decrease by 0 percent, GHMA would decrease by 0 percent, and OHMA would decrease by 1 percent, as compared to the acreage identified in the No-Action Alternative. The proposed change in habitat management area acres between the No-Action Alternative and the Proposed Plan Amendment in Nevada is based on adjustments made to habitat modeling used to delineate the habitat management areas and to improve alignment with the State of Nevada's delineations for habitat management areas. In Idaho, minor proposed changes in habitat management areas are based on cleaning up habitat mapping errors, removing non-Greater Sage-Grouse habitat that is being managed as PHMA as a result of SFA designation in the 2015 ARMPA, and reallocating an area of PHMA to IHMA because there was no historic lek routes in the PHMA polygon. This made it impossible to apply the adaptive management framework in that polygon. Habitat management areas are not proposed to change in Wyoming, Utah, or Oregon in MZ IV.

The direct and indirect effects of proposed management changes in the Wyoming, Idaho, Utah, Nevada, and Oregon are disclosed in each state's Final EIS. Change in allocation decisions is a better indicator to determine how changes across a MZ will affect Greater Sage-Grouse populations; therefore, this cumulative effects analysis relied on changes in planning allocations as the metric to measure cumulative effects in MZ IV.

In all planning areas within MZ IV, land use plan allocations tied to habitat management areas would not change between the No-Action Alternative and Proposed Plan Amendments. The decrease in PHMA, GHMA, and OHMA within WAFWA MZ IV between the No-Action Alternative and the Proposed Plan Amendment would therefore have negligible to minimal impacts on Greater Sage-Grouse and its habitat in the context of the entire MZ, as the relevant distribution of land use plan allocations associated with these habitat management areas is not significantly changing (0–2 percent, see **Appendix 1**).

Each planning efforts' Proposed Plan Amendment MZ IV incorporates management flexibility that would allow exceptions to allocation decisions within habitat management areas and would allow for site specific adjustments for land use authorizations and adjustments to existing adaptive management strategies. Under all Proposed Plan Amendments, the BLM would remove the recommendation to withdraw SFAs from location and entry under the Mining Law of 1872, make slight adjustments to habitat objectives, and identify new exceptions to seasonal timing restrictions. The cumulative impacts of these proposed changes to Greater Sage-Grouse populations across MZ IV would be consistent with cumulative impacts described in the 2015 Final EIS. Moreover, these proposed changes, which focus on anthropogenic disturbances, would have only a minor or limited effect on efforts to manage and

conserve Greater Sage-Grouse in these MZ s, where wildfire, invasive plants, and conifer encroachment are greater threats to the grouse and its habitats.

BLM's Proposed Plan Amendments in the MZ are also unlikely to preclude the reasonably foreseeable actions listed in **Appendix I** from proceeding. Some small, localized populations may be at continued risk due to reasonably foreseeable future infrastructure and energy development projects over the next 20 years, when combined with unplanned events such as wildfires, drought, and associated decline in Greater Sage-Grouse habitat quality; however, the Proposed Plan Amendments retain conservation measures in combination with continued proactive habitat restoration efforts being completed by private, local, state, and federal partners across the MZ to adequately conserve and manage Greater Sage-Grouse habitats.

A summary of potential cumulative impacts by proposed management action is presented below.

The proposed plans vary from state to state as does each state contribution to MZ IV. Montana is not engaging in an amendment process therefore they will not be contributing to any cumulative effects. Wyoming only has approximately 4,000 acres of PHMA and ~20,000 Acres of GHMA within MZ IV making their potential contribution to cumulative effects within the ~80 million acre MZ IV negligible.

The portion of Utah that is within MZ IV is an isolated area with little or no development potential for fluid minerals and is predominantly used for livestock grazing. The reasonably foreseeable development scenario for the area predicts zero wells. The changes proposed in Utah's proposed plan would have no additive effect Greater Sage-Grouse habitats within MZ IV.

The Oregon RMPA would change access on 21,959 acres in all or portions of key Research Natural Areas from unavailable to grazing to available for grazing. No other States within MZ IV are proposing changes to grazing allocation decisions. This change would not add measurably to other actions occurring within the approximately 80 million-acre MZ IV.

The area of MZ that includes Utah is extremely isolated. The dominate use is grazing. Grazing management will follow rangeland health standards and changes to **Table 2-2** that incorporate local science that will benefit Greater Sage-Grouse and ensure that grazing management is conducted properly and would not add cumulatively to Greater Sage-Grouse effects. The area continues to be a ROW avoidance area and is closed to wind energy development. The reasonably foreseeable development scenario for the area predicts zero wells so the change to limited exceptions, waivers, and modifications are moot. The changes proposed in Utah's proposed plan would not add measurably to other actions occurring within the approximately 80 million-acre MZ IV.

Nevada's proposed plan would revise the habitat management area boundaries to incorporate the best available science (Coates et al. 2016), but would not change the allocations associated with each habitat management area. Nevada would also update their adaptive management process to ensure that the BLM is utilizing the best available science and decision support tools to guide management at the appropriate spatial scale. These changes would not measurably to other actions occurring in MZ IV.

In Idaho, removal of the project disturbance cap would not result in any changes to allocation decisions; rather, it would allow the BLM to cluster development in PHMA and IHMA only after meeting the

anthropogenic disturbance screening criteria and the disturbance development criteria. Lek buffer modifications would also not result in any allocation changes. Some lek buffers would be increased as a result of the proposed land use plan amendment, but, in some cases, the lek buffers may be smaller than those identified in the No-Action Alternative; however, the existing disturbance screening criteria and the disturbance development criteria would ensure that impacts from development activities in both PHMA and IHMA would not result in a net loss to Greater Sage-Grouse habitat.

Within MZ IV Oregon would retain their SFA designations while Idaho and Nevada would remove SFA designations. Under the proposed plan in Idaho and Nevada the NSO without waivers, modifications, and exceptions (WEMs) would change to NSO with limited exceptions. The exception criteria could ensure that projects are either in unsuitable Greater Sage-Grouse habitat; do not result in direct, indirect, or cumulative impacts on Greater Sage-Grouse; or can be offset, with the exception of those needed for public health and safety; therefore, there would be no appreciable additive impact from the implementation of this action on Greater Sage-Grouse or the resources/uses analyzed herein, as compared with the No-Action Alternative.

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

4.7.7 Cumulative Effects on Greater Sage-Grouse: Management Zone V

In addition to the analysis in the 2015 Final EIS in **Table 4-4**, other anticipated incremental impacts are discussed below in association with planning issues being analyzed in this RMPA/EIS. All changes in the extent of habitat management areas and areas recommended for withdrawal within the MZ occur under the Nevada/Northeastern California amendment. The Oregon amendment did not propose any changes in the extent of habitat management areas (PHMA and GHMA). Oregon removed the recommendation for a withdrawal in the SFA under a plan maintenance action in May 2018, prior to the start of this amendment process. That action resulted in no difference between the No-Action Alternative and the Management Alignment alternatives in terms of withdrawals.

Under the Proposed Plan Amendments in Nevada and Northeastern California and Oregon PHMA would decrease by 1 percent, GHMA would decrease by 2 percent, and for Nevada and Northeastern California only, OHMA would decrease by 2 percent, as compared to the acreages identified in the No-Action Alternative. The proposed change in habitat management area acres between the No-Action Alternative and the Proposed Plan Amendment in Nevada and Northeastern California is based on adjustments made to habitat modeling used to delineate habitat management areas and improve alignment with the State of Nevada's delineations for habitat management areas, which the State of Nevada adopted by in December 2015.

Following this habitat management area modification, planning level allocation decisions have also been adjusted to reflect the distribution of habitat in Nevada/Northeastern California. Future adjustments to habitat management areas in Nevada/Northeastern California would be based on best available science and to align with the respective states' delineations for Greater Sage-Grouse habitat.

In Oregon, the only proposed decision under the Management Alignment Alternative (Proposed Plan Amendment) would retain livestock grazing within key Research Natural Areas. The Management Alignment Alternative would result in allowing livestock grazing on 21,959 acres within the State of Oregon/project area. In the context of the entire MZ, this change would have negligible to no effects on Greater Sage-Grouse populations. Well-managed grazing practices are compatible with sagebrush ecosystems and Greater Sage-Grouse persistence.

A summary of potential cumulative impacts by proposed management action is presented below.

Under the Nevada/Northeastern California amendment, the Management Alignment alternative (Proposed Plan Amendment) would increase PHMA by less than 1 percent, decrease GHMA by 1 percent and decrease OHMA by 2 percent. This change in habitat management area acres between the No-Action Alternative and Proposed Plan Amendments would be the result of improved habitat modeling used to delineate habitat management areas (best available science) and to align with the State of Nevada's delineations for habitat management areas (adopted by the State of Nevada in December 2015). Following this habitat area modification, planning level allocation decisions have also been adjusted to reflect the distribution of habitat in Nevada/Northeastern California.

The Management Alignment alternative (Proposed Plan Amendment) for Nevada/Northeastern California would also remove the recommendation for a withdrawal in the SFAs; allow exceptions to allocation decisions within PHMA, GHMA, OHMA; modify the existing adaptive management strategy; make slight adjustments to habitat objectives; and identify new exceptions to seasonal timing restrictions. Removing the recommendation to withdraw SFAs from mineral development would result in a 3 percent decrease of acres recommended for withdrawal (see **Appendix 1**), the largest percent allocation change between the alternatives within the MZ. From these actions, cumulative impacts on Greater Sage-Grouse populations across MZ V would be consistent with those impacts described in the 2015 Final EIS for the then Proposed Plan Amendments because the Management Alignment Alternatives (Proposed Plan Amendments) changes from the No-Action Alternative are minor and deal largely with anthropogenic disturbances. The greatest threats to populations in this MZ would remain wildfire, invasive plants, and conifer encroachment.

The decreases in GHMA and OHMA within WAFWA MZ V between the No-Action Alternative and Management Alignment Alternative (Proposed Plan Amendment) would therefore have negligible to no effect on Greater Sage-Grouse populations and their habitat in the context of the entire MZ, as the relevant distribution of land use plan allocations associated with these habitat management areas would result in an estimated 2.5 to 3 percent decrease, all from Nevada and Northeastern California (see **Appendix 1**).

BLM's Proposed Plan Amendments in MZ V are unlikely to preclude the reasonably foreseeable actions listed in **Appendix 1** from proceeding. Overall, the Proposed Plan Amendments retain conservation measures in combination with continued proactive habitat restoration efforts being completed by private, local, state, and federal partners across the MZ; however, smaller populations, particularly those at the edge of the species range, would remain at highest risk of extirpation (Aldridge et al. 2008; Garton et al. 2011), which the reasonably foreseeable actions may exacerbate as unplanned events such as wildfires, drought, and other natural disturbances lead to declines in Greater Sage-Grouse habitat quality.

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

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

Under the Management Alignment Alternative, the allocation exception process would be updated to simplify the various exemptions contained in the 2015 Final EIS. While the availability of exceptions to land use plan allocations attached to PHMA and GHMA could increase the possibility of leasing, permitting, or ground-disturbing activities within a given habitat management area, the established criteria would ensure that projects are either in unsuitable Greater Sage-Grouse habitat; do not result in direct, indirect, or cumulative impacts on Greater Sage-Grouse; or can be offset, with the exception of those needed for public health and safety; therefore, there would be no appreciable additive impact from the implementation of this action on Greater Sage-Grouse or the resources/uses analyzed herein, as compared with the No-Action Alternative.

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

4.8 Irreversible and Irretrievable Commitment of Resources

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

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

4.9 Unavoidable Adverse Impacts

Section 102(C) of the NEPA requires disclosure of any adverse environmental impacts that could not be avoided should the proposal be implemented. Unavoidable adverse impacts are those that remain following the implementation of mitigation measures, or impacts for which there are no mitigation

measures. Some unavoidable adverse impacts happen from implementing the RMPA/EIS; others are a result of public use of BLM-administered lands in the planning area.

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

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

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

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

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

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

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

Section 102(C) of NEPA requires a discussion of the relationship between local, short-term uses of human environment and the maintenance and enhancement of long-term productivity of resources. As described in the introduction to this chapter, short term is defined as anticipated to occur within the

first 5 years of implementation of the activity and long term as lasting beyond 5 years to the end of or beyond the life of this RMPA/EIS.

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

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

ROWs and the short-term use of Greater Sage-Grouse habitat for energy and mineral development could impair the long-term productivity of Greater Sage-Grouse and its habitat and that of other species. This would occur by displacing species from primary habitats and removing components of these habitats that might not be restored for 20 years or longer. These short-term uses could also affect the long-term sustainability of some special status species. The potential for these impacts, however, would be minimal under both the No-Action Alternative and the Proposed Plan Amendment.

The short-term resource uses associated with mineral development (oil and gas seismic exploration, natural gas test well drilling, and the noise associated with these activities) would have adverse impacts on the long-term productivity of Greater Sage-Grouse and its habitat. This would be the case if these resource uses were to infringe on Greater Sage-Grouse seasonal habitats such as nesting, brood-rearing, and winter habitats. These activities, though short-term individually, could have collective long-term impacts on Greater Sage-Grouse and its habitat if they were to increase in the long term.

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Chapter 5. Consultation and Coordination

5.1 Public Involvement During the 2019 NEPA Process

5.1.1 Public Comments on the 2019 DSEIS

BLM will accept comments on this DSEIS for 45 days after the NOA publishes in the *Federal Register*.

5.1.2 Future Opportunities for Public Involvement on the SFEIS

After receiving comments on the DSEIS, and making any appropriate updates, the BLM will publish a Notice of Availability in the *Federal Register* to notify the public of the availability of the SFEIS.

5.2 American Indian Tribal Consultation

Various federal laws require the BLM to consult with American Indian tribes when it prepared the 2018 Final EIS and proposed plan amendments and the 2019 ROD. While the BLM welcomes comments from any interested tribe on this DSEIS, the BLM has not initiated additional government-to-government consultation at this time because this DSEIS clarifies and updates the BLM's NEPA analysis in the 2018 Final EIS, while providing for additional opportunities for public review and comment.

Further, during the 2019 planning process, the BLM reached out to the potentially affected Native American tribes and organizations with interests in the planning area (listed below) by mail requesting government-to-government consultation.

- White Mesa Ute Tribe
- Skull Valley Band of Goshute Indians
- Paiute Indian Tribe of Utah
- Southern Ute
- Ute Indian Tribe
- Northwest Band of Shoshone
- Ute Mountain Ute Tribe
- Confederated Tribe of the Goshute Indian Reservation
- Navajo Utah Commission
- Kaibab Band of Paiute Indians
- Navajo Nation
- Hopi Tribe
- Shoshone - Bannock Tribes
- Te-Moak Western Shoshone
- Eastern Shoshone

The Utah BLM also reached out directly to those tribes that expressed interest in the 2015 Greater Sage-Grouse planning process, since this effort is associated with the 2015 effort. The Utah BLM met with representatives from the Paiute Indian Tribe of Utah in December 2017 and April and June 2018 to invite them to consult with the Utah BLM and to keep them updated on the status of the plan amendment. Similarly, the Utah BLM met with the Ute Indian Tribe in January, April, and October 2018 for the same purposes. In March 2018, the Idaho BLM met with the Shoshone Bannock Tribe's resource staff to invite them to consult and to update them on the status of the plan amendment, including the

Utah effort. In March and May 2018, the Utah BLM met with representatives from the Confederated Tribe of the Goshute Indian Reservation.

5.3 LIST OF DSEIS PREPARERS

An interdisciplinary team of staff from the BLM, in collaboration with Environmental Management and Planning Solutions, Inc. prepared the DSEIS.

Name	Role/Responsibility
Ryan Hathaway	Team Lead
Quincy Bahr	NEPA/Planning Specialist
Tyler Nelson	Geospatial Ecologist
Jared Reese	Wildlife Biologist
Mellissa R. Wood	Greater Sage-Grouse State Implementation Lead

Glossary

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

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

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

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

Biologically significant unit (BSU). A geographical/spatial area that includes Greater Sage-Grouse priority habitat management areas that is used as the basis for comparative calculations to support evaluation of changes to habitat. In Utah, each BSU correlates to the priority habitat management area within a population area.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Priority habitat management areas (PHMA). Areas prioritized for managing Greater Sage-Grouse populations (management is only applicable to actions on BLM-administered lands). These management areas include high-quality habitat, and may also include areas with poor or potential habitat, and nonhabitat. PHMA largely coincides with the State of Utah's Sage-Grouse management areas (SGMA). Within the SGMA, the State identified areas of seasonal habitat, nonhabitat, and opportunity areas, though management is focused on the habitat. PHMA include areas that include all the seasonal habitats for the corresponding Greater Sage-Grouse populations, including breeding, late brood-rearing, winter areas, and migration or connectivity corridors.

Required design features (RDFs). Means, measures, or practices intended to reduce or avoid adverse environmental impacts. A suite of features that would establish the minimum specifications for certain activities (i.e., water developments, mineral development, and fire and fuels management) and mitigate adverse impacts. These design features would be required to provide a greater level of regulatory certainty than through implementation of best management practices. In general, the design features are accepted practices that are known to be effective when implemented properly at the project level.

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

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

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

Stipulation (oil and gas). A provision that modifies standard oil and gas lease terms and conditions in order to protect other resource values or land uses and is attached to and made a part of the lease. Typical lease stipulations include no surface occupancy, timing limitations, and controlled surface use. Lease stipulations are developed through the land use planning process.

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

Index

Appendix A

Maps

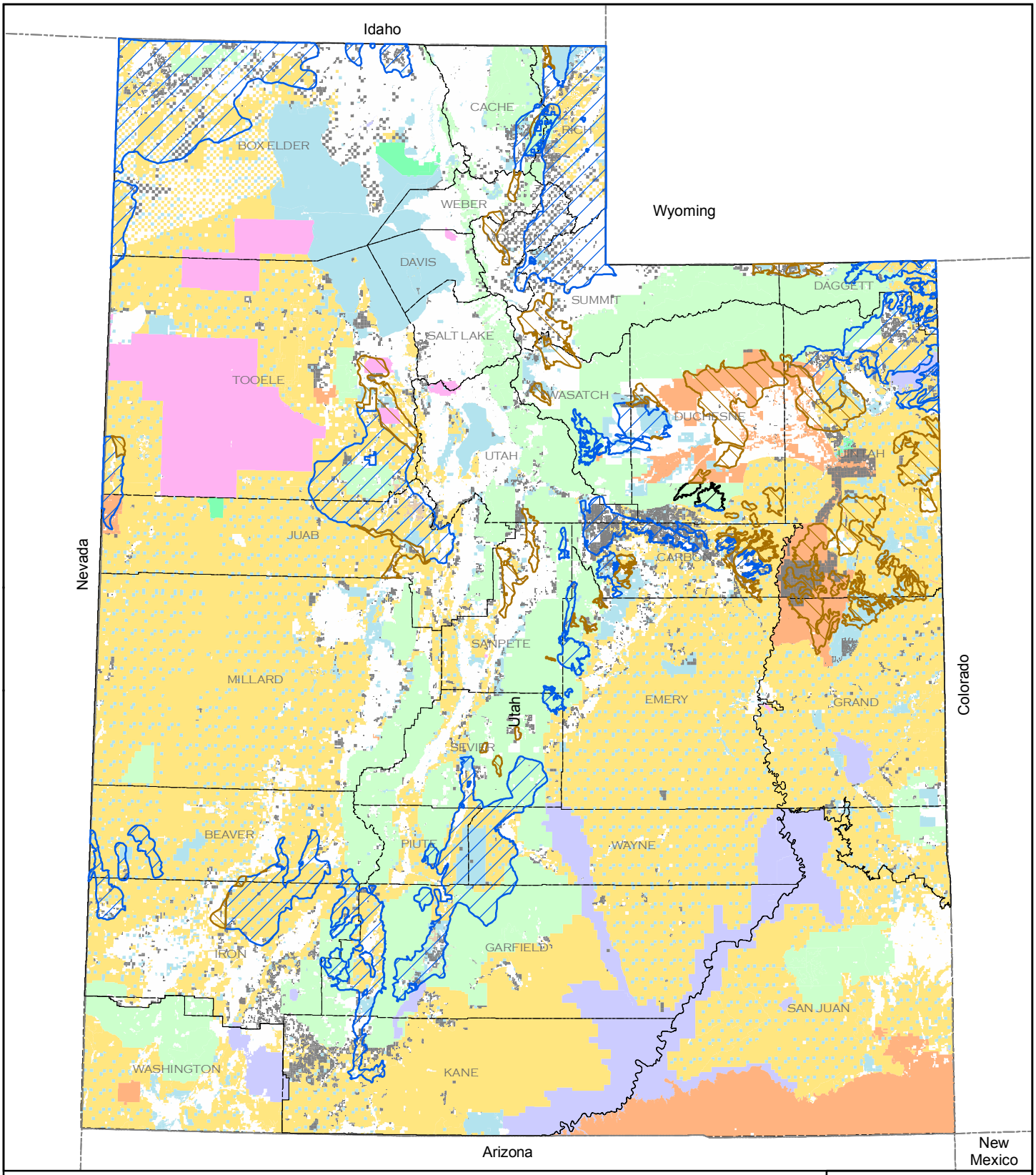


Figure 1-1: Utah Planning/Habitat Areas, Surface Management and Sub-Surface Estate

- Bureau of Land Management
- National Park Service
- US Forest Service
- Indian Reservation
- US Fish & Wildlife
- Department of Defense
- Other Federal
- State/Local
- Private/Other
- Non Federal Surface, Federal Sub-surface
- Anthro Mountain (AM)
- General Habitat Management
- Priority Habitat Management
- Planning Area
- State Boundary
- County Boundary

N W E S

0 20 40 Miles

Map Area

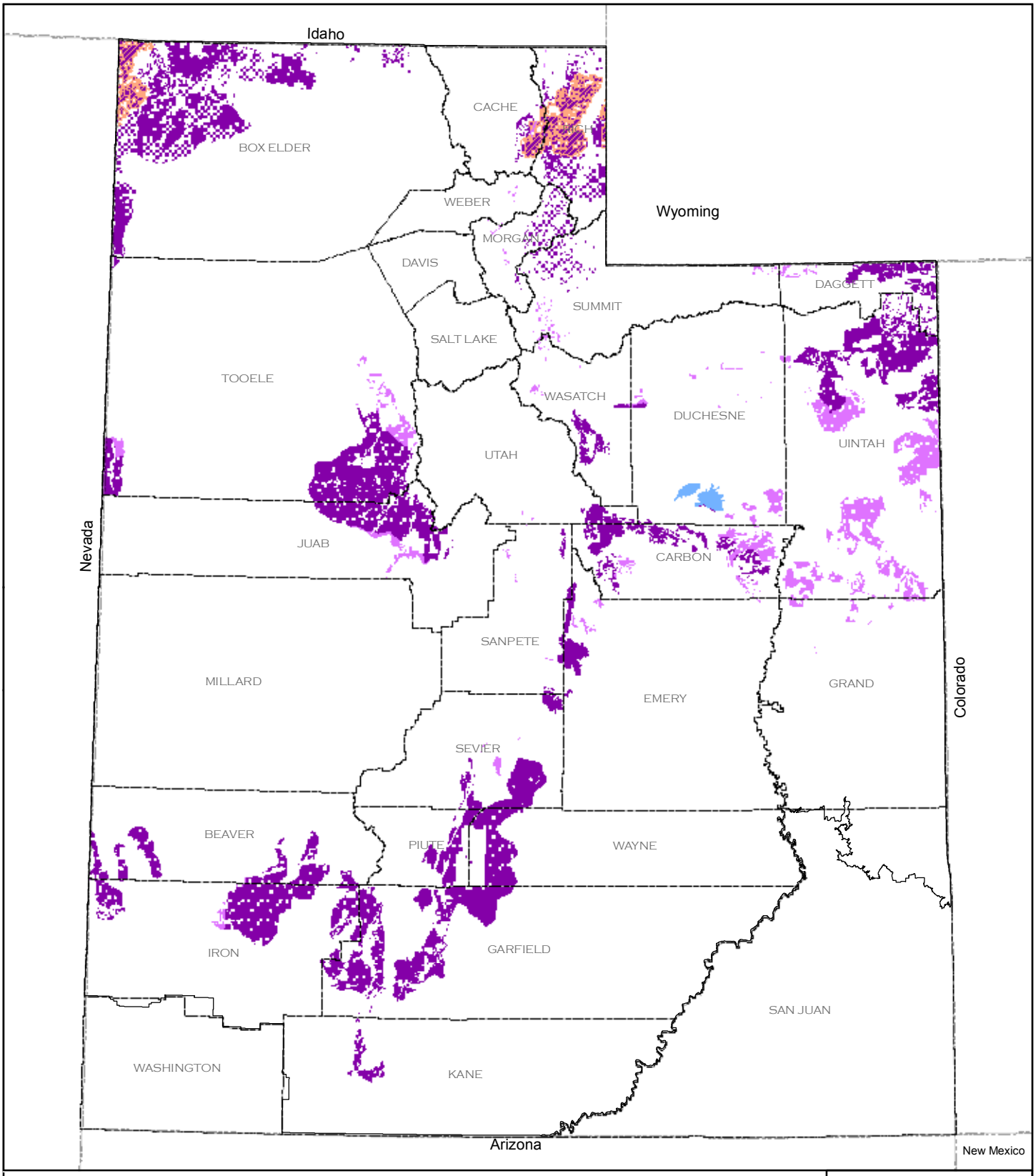


Figure 2-1a: Utah Habitat Management Areas - No-Action Alternative

- Sagebrush Focal Areas
- Priority Habitat Management Areas
- General Habitat Management Areas
- Anthro Mountain (AM)
- Planning Area
- State Boundary
- County Boundary

N W E S

0 20 40 Miles

Map Area

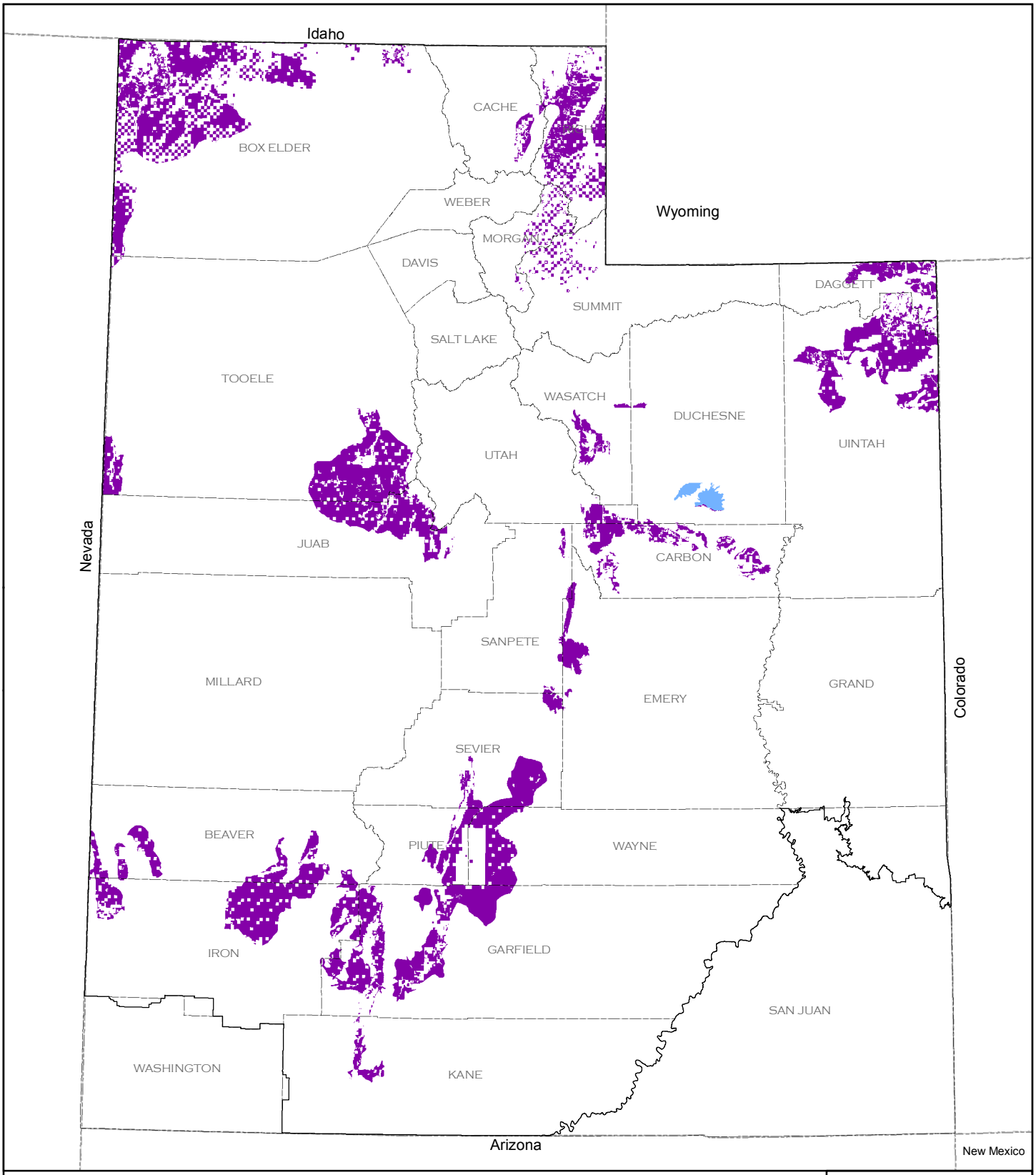


Figure 2-1b: Utah Habitat Management Areas - Management Alignment Alternative

Priority Habitat Management Areas
Anthro Mountain (AM)
Planning Area Boundary
State Boundary
County Boundary

N
W
E
S

0 20 40 Miles

Map Area

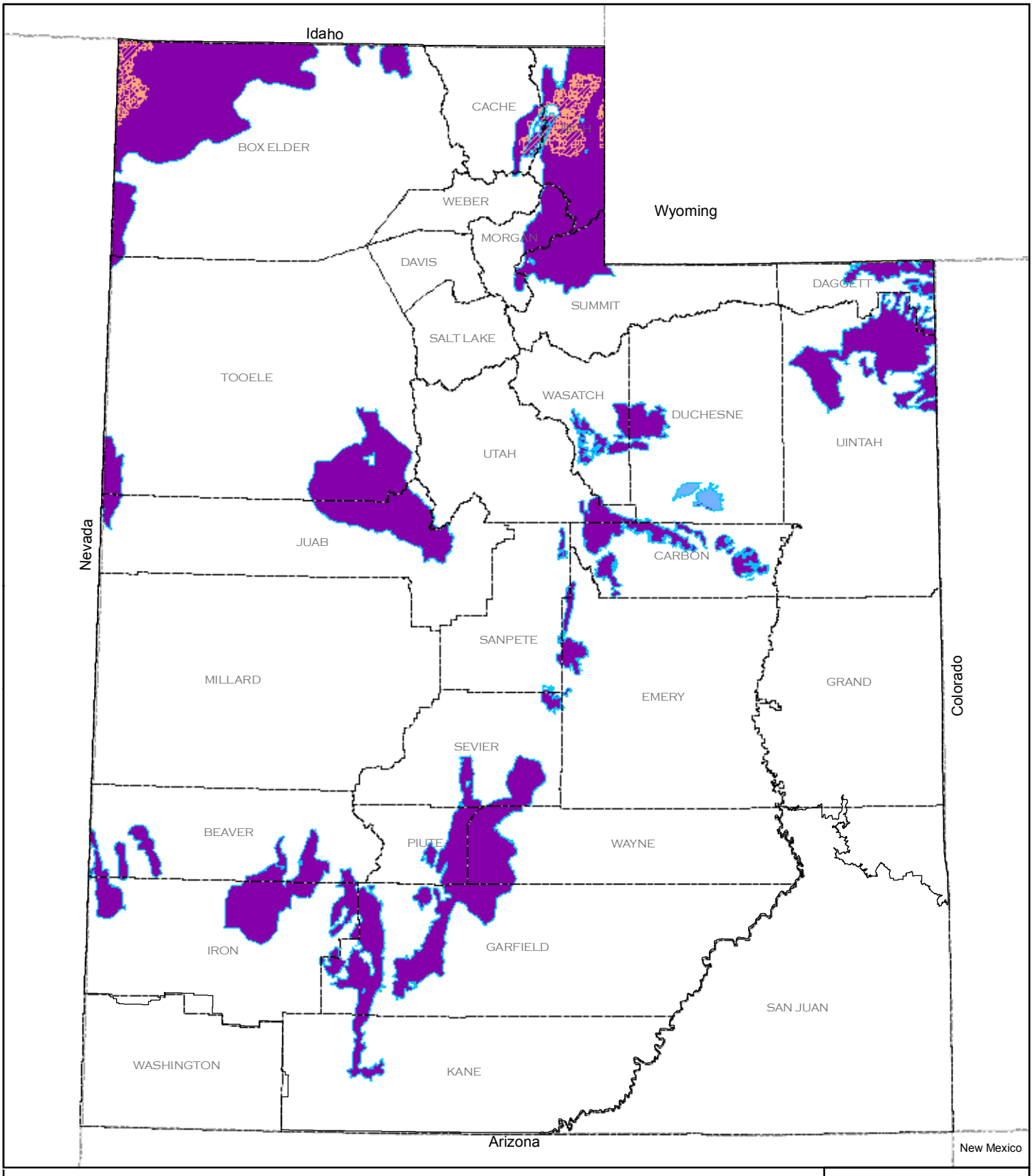


Figure 2-2a: Utah GRSG Biologically Significant Units and Priority Habitat Management Areas - No-Action Alternative

- Sagebrush Focal Areas
- Priority Habitat Management Areas
- Anthro Mountain (AM)
- Planning Area
- State Boundary
- County Boundary

N W E S

0 20 40 Miles

Map Area

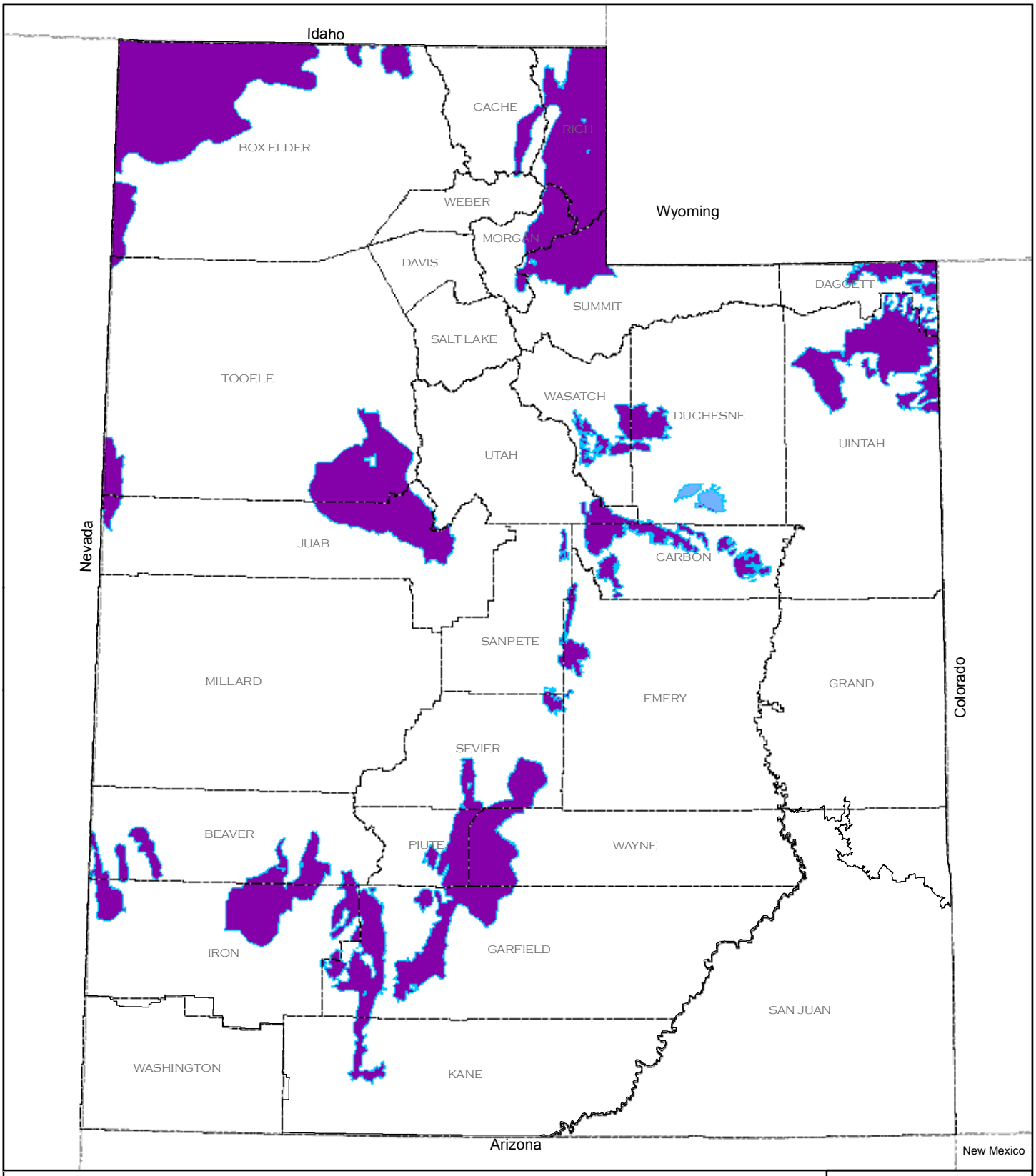


Figure 2-2b: Utah GRSG Biologically Significant Units and Priority Habitat Management Areas - Management Alignment Alternative

Priority Habitat Management Areas
Anthro Mountain (AM)
Planning Area
State Boundary
County Boundary

N
W
E
S

0 20 40 Miles

Map Area

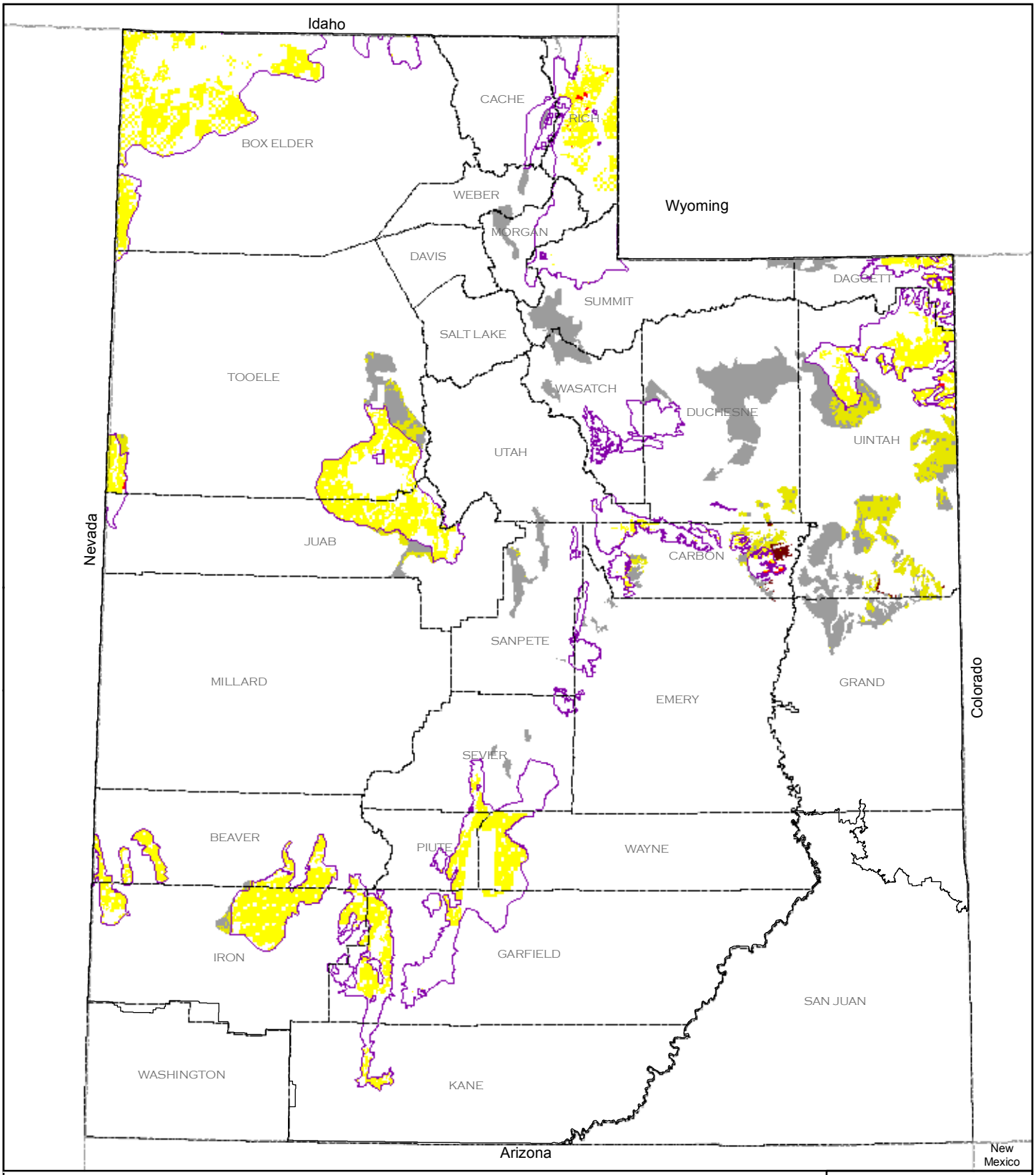


Figure 2-13a: Utah Trails and Travel Management - No Action Alternative

PHMA / GHMA

- Outside of BLM Decision Area
- Closed
- Limited
- Open
- Planning Area Boundary
- State Boundary
- County Boundary

N W E S

0 20 40 Miles

Map Area

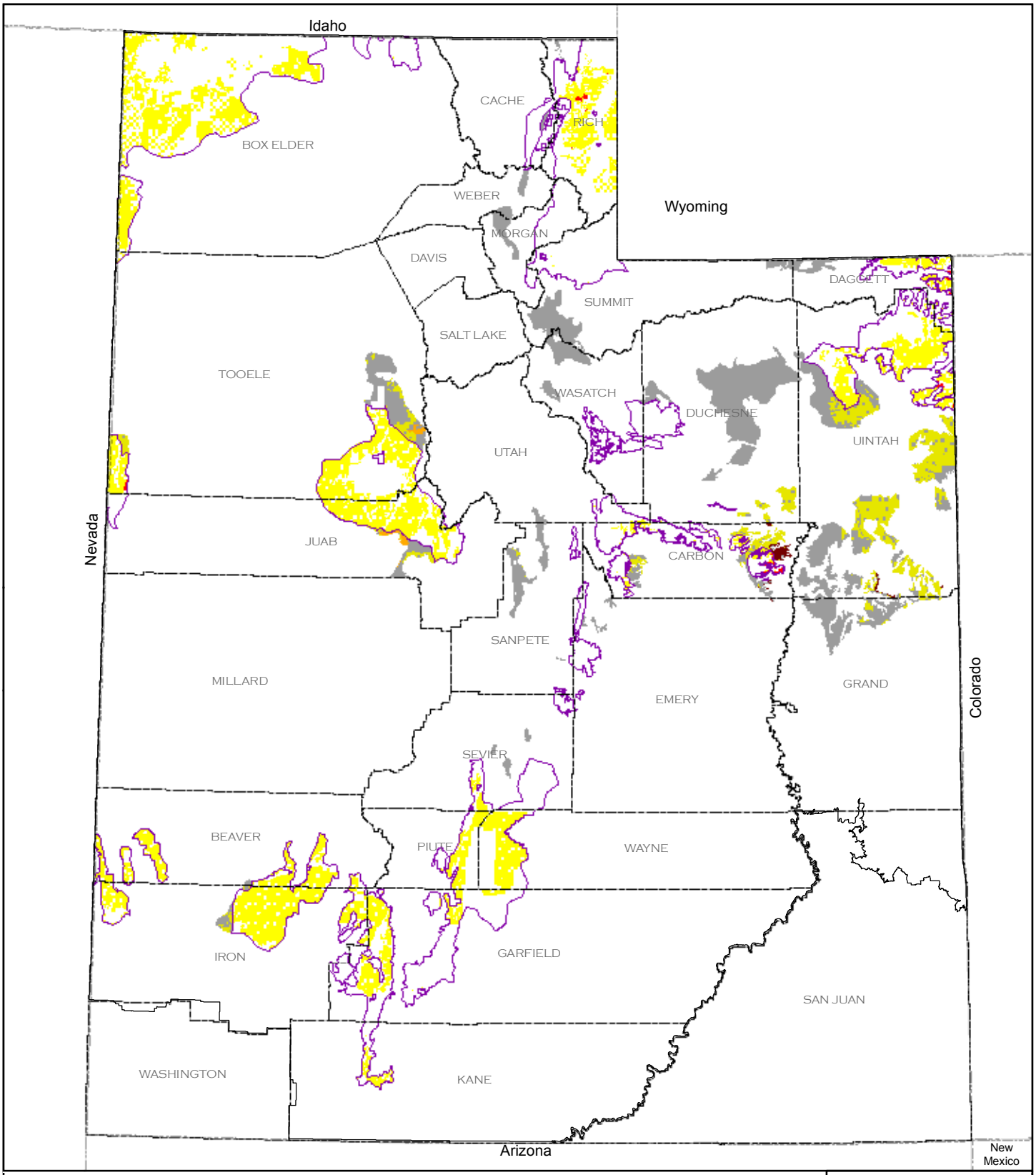


Figure 2-13b: Utah Trails and Travel Management - Management Alignment Alternative

PHMA / GHMA

- Outside of BLM Decision Area
- Closed
- Limited
- Open

- Planning Area Boundary
- State Boundary
- County Boundary

N W E S

0 20 40 Miles

Map Area

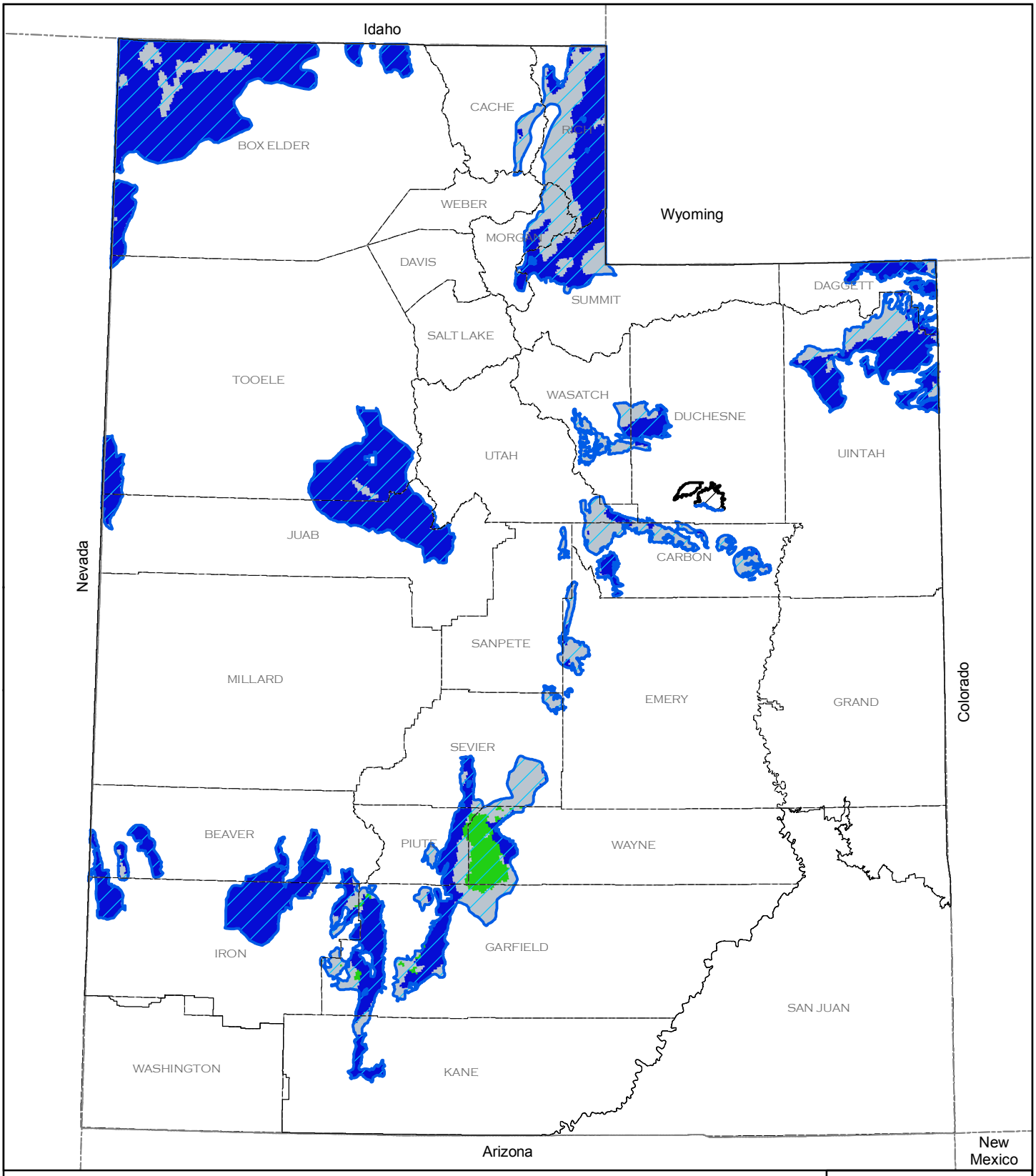


Figure 3-1: Utah Greater Sage-Grouse Habitat Objective Zones

Anthro Mountain (AM)
Priority Habitat Management Areas
Planning Area Boundary
State Boundary
County Boundary
High
Mid
Low

N
W
E
S

0 20 40 Miles

Map Area

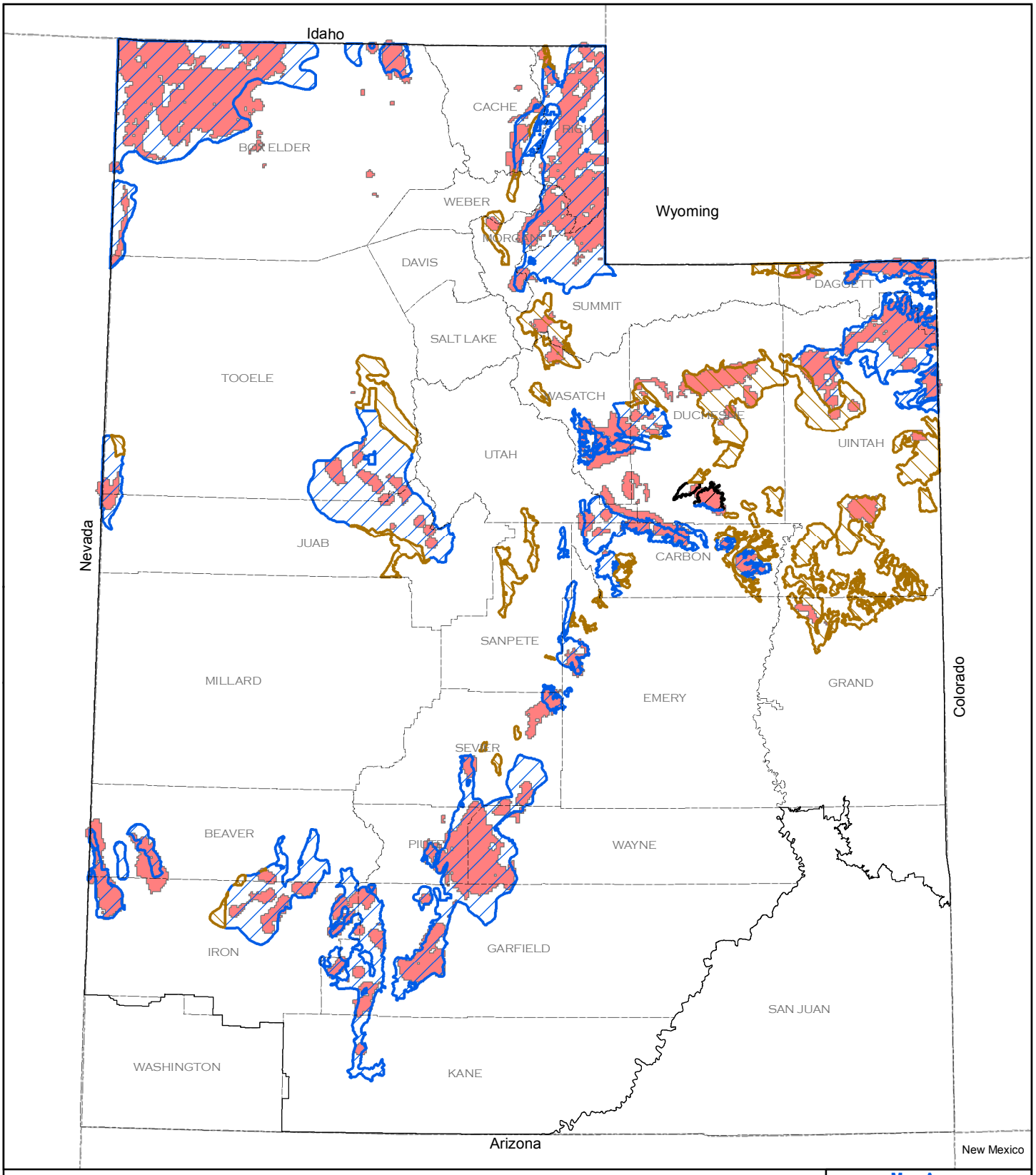


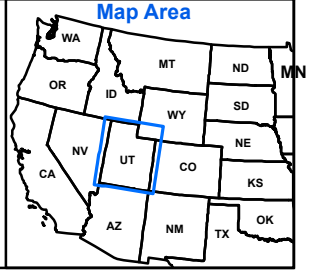
Figure 3-2: Utah Greater Sage-Grouse Breeding Habitat

Breeding
Anthro Mountain (AM)
General Habitat Management Areas
Priority Habitat Management Areas
Planning Area Boundary
State Boundary
County Boundary

N
W
E
S

0 20 40 Miles

Map Area



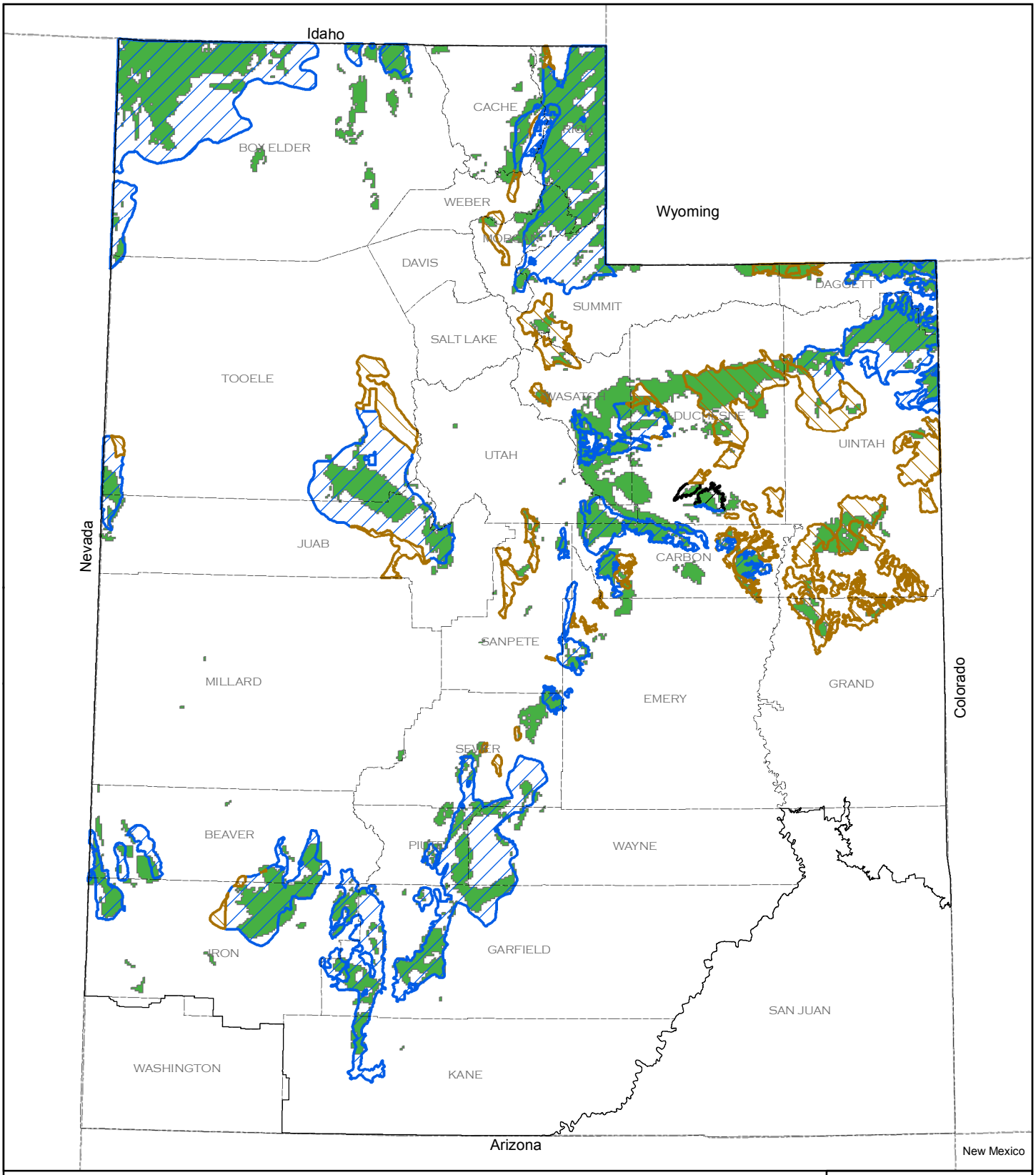


Figure 3-3: Utah Greater Sage-Grouse Summer Habitat

Summer

Anthro Mountain (AM)

General Habitat Management Areas

Priority Habitat Management Areas

Planning Area Boundary

State Boundary

County Boundary

N

W E

S

0 20 40 Miles

Map Area

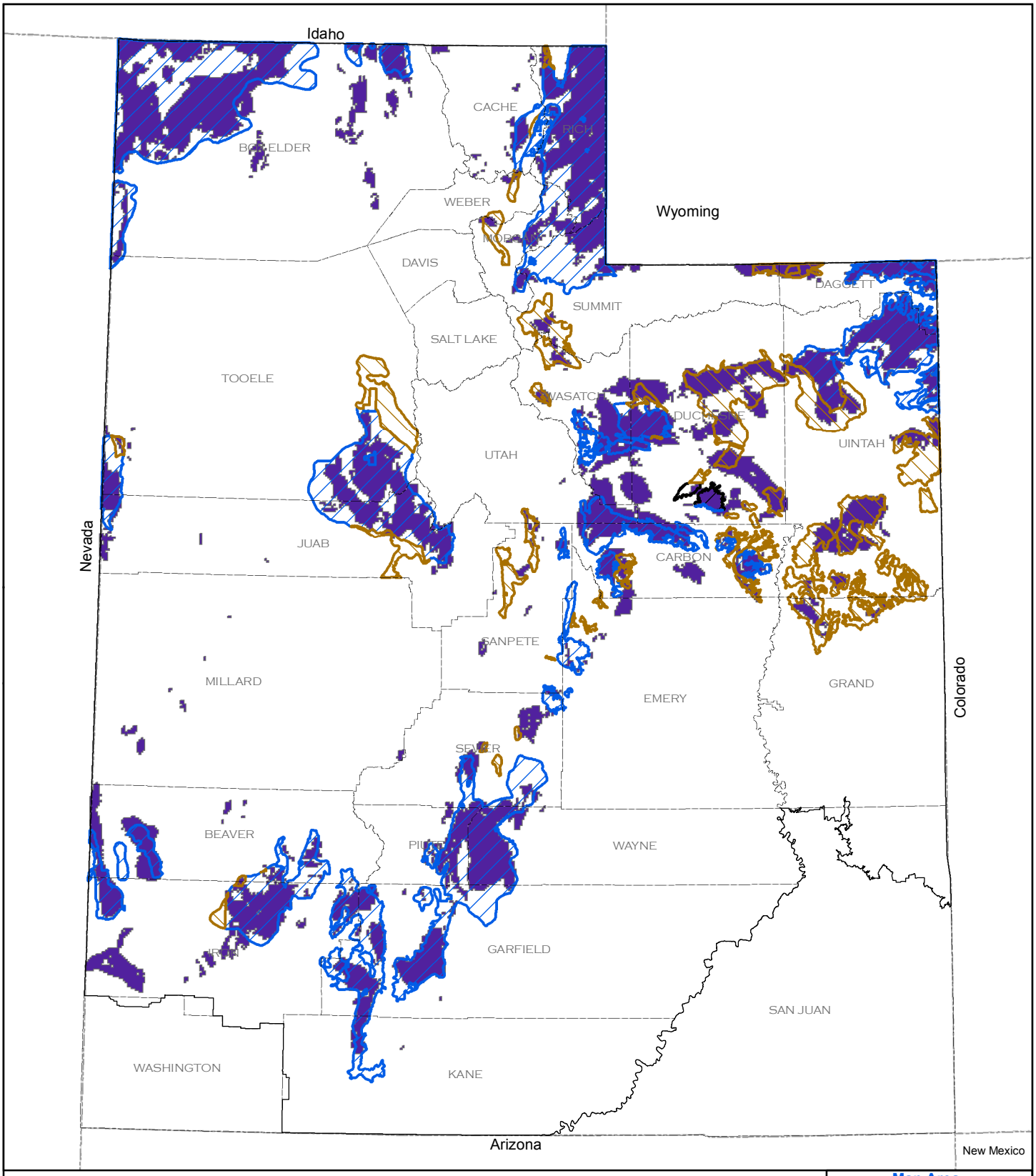


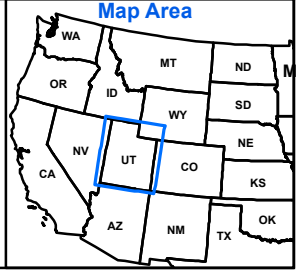
Figure 3-4: Utah Greater Sage-Grouse Winter Habitat

Winter
Anthro Mountain (AM)
General Habitat Management Areas
Priority Habitat Management Areas
Planning Area Boundary
State Boundary
County Boundary

N
W
E
S

0 20 40 Miles

Map Area



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Appendix B

Applying Lek Buffer Distances

Appendix B. Applying Lek Buffer Distances

Buffer-distances and Evaluation of Impacts on Leks

Evaluate impacts on leks during the National Environmental Policy Act (NEPA) analysis process. In addition to any other relevant information determined to be appropriate (e.g., State wildlife agency plans), and consistent with valid existing rights, the BLM, through project-specific analysis for NEPA documentation, will assess and address impacts from the following activities using the lek buffer-distances as identified in the US Geological Survey (USGS) Report *Conservation Buffer-distance Estimates for Greater Sage-Grouse – A Review* (Open File Report 2014-1239) and local-based science. The BLM will assess and address impacts within the lek buffer-distances specified unless *justifiable departures* are determined to be appropriate (see below). The starting point for lek buffer-distances is as follows:

- linear features (roads) within 3.1 miles of leks
- infrastructure related to energy development within 3.1 miles of leks
- tall structures (e.g., communication or transmission towers and transmission lines) within 1.7 miles of leks
- low structures (e.g., fences and rangeland structures) within 1.2 miles of leks
- surface disturbance (continuing human activities that alter or remove the natural vegetation – see **Table C.2** in **Appendix C**) within 3.1 miles of leks
- noise and related disruptive activities, including those that do not result in habitat loss (e.g., motorized recreational events), at least 0.25 miles from leks

Justifiable departures will be considered to decrease or increase these distances from the lek where variability is anticipated, based on local data, best available science, landscape features, and other existing protections (e.g., land use allocations and state regulations). The USGS report recognized "that because of variation in populations, habitats, development patterns, social context, and other factors, for a particular disturbance type, there is no single distance that is an appropriate buffer for all populations and habitats across the sage-grouse range." The distances noted above are starting points, from which local information should be applied to determine if local variations in distances are necessary to address lek persistence. The USGS report also states that "various protection measures have been developed and implemented… [which have] the ability (alone or in concert with others) to protect important habitats, sustain populations, and support multiple-use demands for public lands". All variations in lek buffer-distances will require appropriate analysis and disclosure as part of activity authorization. The BLM will use the most recent occupied lek data available from the state wildlife agency to assess and address project-specific impacts on leks.

Actions in PHMA

In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM, through NEPA analysis, will assess and address impacts within the lek buffer-distances identified above to document that conservation measures address the impacts on leks (e.g., land use allocations, minimization measures, state regulations, and site-specific conditions of approval) to the degree that the activity will not directly or indirectly threaten the

continued use of the occupied lek by Greater Sage-Grouse (i.e., lek persistence). The BLM may approve actions in PHMA within the applicable lek buffer-distance identified above if:

- The BLM, with input from the state fish and wildlife agency, determines, based on best available science, landscape features, and other existing protections, that a lek buffer-distance other than the applicable distance identified above offers equivalent protection to the Greater Sage-Grouse lek and its adjacent nesting habitat; or
- The BLM determines that impacts on leks and associated nesting habitats are minimized such that the project will cause minor or no new loss of habitat; or
- Other mitigation measures have been developed and implemented that will, alone or in concert with other minimization actions, maintain lek persistence and the use of adjacent nesting habitat.

If analysis determines impacts could affect lek persistence (i.e., result in a lek no longer being occupied) after application of the above, additional conservation measures should be assessed and applied to address impacts (e.g., locating the action outside of the applicable lek buffer-distance(s) identified above).

Range improvements that do not affect Greater Sage-Grouse or range improvements that provide a conservation benefit to Greater Sage-Grouse, such as fences for protecting important seasonal habitats, are exempt from the lek buffer requirement.

Appendix E

Greater Sage-Grouse Disturbance Cap Guidance

Appendix E. Greater Sage-Grouse Disturbance Cap Guidance

INTRODUCTION

In the US Fish and Wildlife Service's (USFWS) 2010 listing decision for Greater Sage-Grouse (GRSG), the USFWS identified 18 threats contributing to the destruction, modification, or curtailment of the GRSG's habitat or range (75 *Federal Register* 13910 2010). The 18 threats have been aggregated into three measures. The three measures are:

- Sagebrush availability (percent of sagebrush per unit area)
- Habitat degradation (percent of human activity per unit area)
- Density of energy and mining (facilities and locations per unit area)

Habitat Degradation and Density of Energy and Mining will be evaluated under the Disturbance Cap and Density Cap respectively and are further described in this appendix. The three measures, in conjunction with other information, will be considered during the National Environmental Policy Act of 1969 (NEPA) process for projects authorized or undertaken by the Bureau of Land Management (BLM).

DISTURBANCE CAP

This land use plan has incorporated a 3 percent disturbance cap, applicable only within GRSG priority habitat management areas (PHMA). The disturbance cap applies to PHMA within 1) PHMA associated with a GRSG population area (referred to as biologically significant units {BSU} when coordinating across state lines), and 2) the project authorization scale.

For the Utah Sub-region, a "BSU" is the total PHMA acreage associated with a GRSG population area. At this scale, the total PHMA acreage in a population area is the denominator portion of the percentage calculation.

At the project scale, the denominator is determined by identifying PHMA that is nearby or affected by the proposed project that is also located in PHMA. The project scale denominator should include the portions of PHMA used by the local population of GRSG, including all seasonal habitats and transition zones, associated with where the project is proposed. If sufficient monitoring information is not available to identify the portions of the PHMA used by a local population of GRSG, project level boundaries should be identified as described in steps 2-4 below. Steps 1and 5-9 are applicable to either approach of identifying the project scale denominator.

The denominator in the disturbance calculation formula consists of all acres of lands classified as PHMA within the analysis area (BSU or project scale). Areas that are not GRSG seasonal habitats, or are not currently supporting sagebrush cover (e.g., due to wildfire), are not excluded from the acres of PHMA in the denominator of the formula. Information regarding GRSG seasonal habitats, sagebrush availability, and areas with the potential to support GRSG populations will be considered along with other local conditions that may affect GRSG during the analysis of the proposed project area.

The numerator portion of the percentage calculation is limited to specific activities associated with specific GRSG threats. At both the BSU and project scale, this includes the 12 items identified in the "Habitat Degradation" column of **Table E-1**, Relationship between the 18 Threats and the Three Habitat Disturbance Measures for Monitoring and Disturbance Calculations. At the project scale, seven additional site scale features are included in the cap, identified and defined in **Table E-2**, Seven Site Scale Features Considered Threats to GRSG Included in the Disturbance Calculation for Project Authorizations. No other activities, actions, or threats are included in the numerator when calculating the cap.

At both the BSU and project scale, the best available information should be used to map existing disturbance. At the BSU scale, the west-wide habitat degradation (disturbance) data layers and associated areas of direct influence identified in **Table E-3**, Anthropogenic Disturbance Types for Disturbance Calculations, will be used, at a minimum, to calculate the amount of disturbance and to determine if the disturbance cap has been exceeded as the land use plans are being implemented. Locally collected disturbance data will be used to determine if the disturbance cap has been exceeded for project authorizations, and, as available, may also be used to calculate the amount of disturbance in the BSUs. Locally collected disturbance data should identify the actual areas of disturbance to the extent possible, and are not required to rely on the "Direct Area of Influence" estimates in **Table E-3**.

Although locatable mine sites are included in the degradation calculation, mining activities under the Mining Law of 1872, as amended, may not be subject to the 3 percent disturbance cap. Details about locatable mining activities will be fully disclosed and analyzed in the NEPA process to assess impacts to GRSG and their habitat as well as to goals and objectives, and other agency programs and activities.

DISTURBANCE FORMULAS

Formulas for calculations of the amount of disturbance in PHMA in a Population Area (BSU) and in a proposed project area are as follows:

- For PHMA within a Population Area (BSUs):

  % Degradation Disturbance = (combined acres of the 12 degradation threats[1]) ÷ (acres of all lands within PHMA in a Population Area {BSU}) x 100.

- For the Project Analysis Area:

  % Degradation Disturbance = (combined acres of the 12 degradation threats[2] plus the 7 site scale threats and acres of habitat loss[3]) ÷ (acres of all lands within PHMA in the project analysis area) x 100.

PROJECT ANALYSIS AREA METHOD FOR PERMITTING SURFACE DISTURBANCE ACTIVITIES

1. Identify the portions of the proposed area of physical disturbance within PHMA. In other words, in GIS, "clip" the proposed project to PHMA.

[1] See **Table E-1**.
[2] See **Table E-1**.
[3] See **Table E-2**.

2. Determine potentially affected occupied leks by placing a 4 mile boundary around the proposed area of physical disturbance related to the project. All occupied leks located within the 4 mile project boundary and within PHMA will be considered affected by the project.

3. Next, place a 4 mile boundary around each of the affected occupied leks.

4. PHMA within the 4 mile project boundary as well as the 4 mile lek boundary creates the project analysis area for each individual project. If there are no occupied leks within the 4 mile project boundary, the project analysis area will be that portion of the 4 mile project boundary within PHMA.

5. Map disturbances or use locally available data. Use of NAIP imagery is recommended.

6. Calculate percent existing disturbance using the formula above. If existing disturbance is less than 3 percent, proceed to next step. If existing disturbance is greater than 3 percent, defer the project unless a technical team, in coordination with the appropriate State of Utah agency, determines the project will improve the condition of GRSG habitat through analysis of site-specific GRSG habitat and population information and project design elements (see MA-SSS-3B).

7. Add proposed project disturbance footprint area and recalculate the percent disturbance. If disturbance is less than 3 percent, proceed to next step. If disturbance is greater than 3 percent, defer project unless a technical team, in coordination with the appropriate State of Utah agency, determines the project will improve the condition of GRSG habitat through analysis of site-specific GRSG habitat and population information and project design elements (see MA-SSS-3B).

8. For disturbance from proposed energy or mining facilities, calculate the disturbance density (listed below under *Density Cap*). If the disturbance density is less than 1 facility per 640 acres, averaged across the project analysis area, proceed to the NEPA analysis incorporating mitigation measures into an alternative. If the disturbance density is greater than 1 facility per 640 acres, averaged across the project analysis area, either defer the proposed energy or mining project or co-locate it into existing disturbed area. Discrete disturbances should be consolidated and localized as much as possible; this could result in small areas where density exceeds 1 facility per 640 acres, but average density in the project analysis area remains beneath the cap.

9. If a project that would exceed the degradation cap or density cap (for energy or mining facilities) cannot be deferred due to valid existing rights or other existing laws and regulations, fully disclose the local and regional impacts of the proposed action in the associated NEPA.

TRAVEL AND TRANSPORTATION FEATURES IN THE DISTURBANCE CAP

When locally collecting disturbance inventories, travel and transportation features would be included or not included as disturbance based on the characteristics of the feature.

The following would count as disturbance (see **Attachment I** for definitions):

- Linear transportation features identified as roads that have a maintenance intensity of 3 or 5
- Linear transportation features identified as primitive roads, temporary routes, or administrative routes that have a functional classification and a maintenance intensity of level 3 or 5

The following items would not count as disturbance:

- Linear transportation features identified as trails.
- Linear transportation features identified as primitive roads, temporary routes, or administrative routes that have a maintenance intensity of either level 0 or 1.
- Linear transportation features identified as primitive routes.
- Linear disturbances.

DENSITY CAP

This land use plan has also incorporated a cap on the density of energy and mining facilities at an average of 1 facility per 640 acres in PHMA in a project authorization area. If the disturbance density from energy or mining facilities in PHMA in a proposed project area is on average less than 1 facility per 640 acres, the analysis will proceed through the NEPA process incorporating mitigation measures into an alternative. If the disturbance density from energy or mining facilities is greater than an average of 1 facility per 640 acres, the proposed project will either be deferred (1) until the density of energy and mining facilities is less than the cap, or (2) the energy or mining facility is co-located into existing disturbed area (subject to applicable laws and regulations, such as the Mining Law of 1872, as amended, valid existing rights, etc.). However, the density cap may be exceeded if a project is located in non-habitat (see MA-SSS-1 language related to placement of development in non-habitat portions of PHMA), or, if the process identified in MA-SSS-3B determines the project will improve the condition of GRSG habitat through analysis of site-specific GRSG habitat and population information and project design elements. Facilities affected by the density calculation (**Table E-3**) are:

- Energy (oil and gas wells and development facilities)
- Energy (coal mines)
- Energy (wind towers)
- Energy (solar fields)
- Energy (geothermal)
- Mining (active locatable, leasable, and saleable developments)

Table E-1
Relationship Between the 18 Threats and the Three Habitat Disturbance Measures for Monitoring and Disturbance Calculations

USFWS Listing Decision Threat	Sagebrush Availability	Habitat Degradation (disturbance cap)	Energy and Mining Density (density cap)
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 saleable 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-way		X	

Table E-2
The Seven Site Scale Features Considered Threats to Sage-Grouse Included in the Disturbance Calculation for Project Authorizations

1.	Coalbed Methane Ponds
2.	Meteorological Towers
3.	Nuclear Energy Facilities
4.	Airport Facilities and Infrastructure
5.	Military Range Facilities & Infrastructure
6.	Hydroelectric Plants
7.	Recreation Areas Facilities and Infrastructure
Definitions:	
1.	**Coalbed Methane and other Energy-related Retention Ponds –** The footprint boundary will follow the fenceline and includes the area within the fenceline surrounding the impoundment. If the pond is not fenced, the impoundment itself is the footprint. Other infrastructure associated with the containment ponds (roads, well pads, etc.) will be captured in other disturbance categories.
2.	**Meteorological Towers –** This feature includes long-term weather monitoring and temporary meteorological towers associated with short-term wind testing. The footprint boundary includes the area underneath the guy wires.
3.	**Nuclear Energy Facilities** – The footprint boundary includes visible facilities (fence, road, etc.) and undisturbed areas within the facility's perimeter.
4.	**Airport Facilities and Infrastructure (public and private)** – The footprint boundary will follow the boundary of the airport or heliport and includes mowed areas, parking lots, hangers, taxiways, driveways, terminals, maintenance facilities, beacons and related features. Indicators of the boundary, such as distinct land cover changes, fences and perimeter roads, will be used to encompass the entire airport or heliport.
5.	**Military Range Facilities & Infrastructure** – The footprint boundary will follow the outer edge of the disturbed areas around buildings and includes undisturbed areas within the facility's perimeter.
6.	**Hydroelectric Plants** – The footprint boundary includes visible facilities (fence, road, etc.) and undisturbed areas within the facility's perimeter.
7.	**Recreation Areas & Facilities –** This feature includes all sites/facilities larger than 0.25 acres in size. The footprint boundary will include any undisturbed areas within the site/facility.

Table E-3
Anthropogenic Disturbance Types for Disturbance Calculations
Data Sources are Described for the West-Wide Habitat Degradation Estimates

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; USFS; Office of Surface Mining Reclamation and Enforcement; USGS Mineral Resources Data System	Polygon area (digitized)	Esri/Google Imagery
	Power Plants	Platts (power plants)	Polygon area (digitized)	Esri Imagery
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 (3.0ha)/ 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	40.7ft (12.4m)	USGS
	Major Roads	Esri StreetMap Premium	84.0ft (25.6m)	USGS
	Interstate Highways	Esri StreetMap Premium	240.2ft (73.2m)	USGS
Infrastructure (railroads)	Active Lines	Federal Railroad Administration	30.8ft (9.4m)	USGS
Infrastructure (power lines)	1-199kV Lines	Platts (transmission lines)	100ft (30.5m)	BLM WO-300
	200-399 kV Lines	Platts (transmission lines)	150ft (45.7m)	BLM WO-300
	400-699kV Lines	Platts (transmission lines)	200ft (61.0m)	BLM WO-300
	700+kV Lines	Platts (transmission lines)	250ft (76.2m)	BLM WO-300
Infrastructure (communication)	Towers	Federal Communications Commission	2.5ac (1.0ha)	BLM WO-300

Note: Data sources are described for the west-wide habitat degradation estimates.

ATTACHMENT 1: TRAVEL AND TRANSPORTATION MANAGEMENT DEFINITIONS FOR USE IN ANTHROPOGENIC DISTURBANCE CALCULATION

Roads are linear routes managed for use by low clearance vehicles having four or more wheels, and are maintained for regular and continuous use.

Primitive Roads are linear routes managed for use by four-wheel drive or high-clearance vehicles. They do not normally meet any design standards.

Trails are linear routes managed for human-powered, stock, or off-highway vehicle forms of transportation or for historical or heritage values. Trails are not generally managed for use by four-wheel drive or high-clearance vehicles.

Linear Disturbances are human-made linear features that are not part of the designated transportation network are identified as "Transportation Linear Disturbances." These may include engineered (planned) as well as unplanned single and two-track linear features that are not part of the BLM's transportation system.

Primitive Routes are any transportation linear feature located within a wilderness study area or lands with wilderness characteristics identified for protection by a land use plan and not meeting the wilderness inventory road definition.

Temporary Routes are short-term overland roads, primitive roads or trails which are authorized or acquired for the development, construction or staging of a project or event that has a finite lifespan. Temporary routes are not intended to be part of the permanent or designated transportation network and must be reclaimed when their intended purpose(s) has been fulfilled. Temporary routes should be constructed to minimum standards necessary to accommodate the intended use; the intent is that the project proponent (or their representative) will reclaim the route once the original project purpose or need has been completed. Temporary routes are considered emergency, single use or permitted activity access. Unless they are specifically intended to accommodate public use, they should not be made available for that use. A temporary route will be authorized or acquired for the specific time period and duration specified in the written authorization (e.g., permit, ROW, lease, or contract) and will be scheduled and budgeted for reclamation to prevent further vehicle use and soil erosion from occurring by providing adequate drainage and re-vegetation.

Administrative Routes are those that are limited to authorized users (typically motorized access). These are existing routes that lead to developments that have an administrative purpose, where the agency or permitted user must have access for regular maintenance or operation. These authorized developments could include such items as power lines, cabins, weather stations, communication sites, spring.

Maintenance Intensities

Level 0

Maintenance Description

Existing routes that will no longer be maintained and no longer be declared a route. Routes identified as Level 0 are identified for removal from the Transportation System entirely.

Maintenance Objectives

- No planned annual maintenance.
- Meet identified environmental needs.
- No preventative maintenance or planned annual maintenance activities.

Level 1

Maintenance Description

Routes where minimum (low intensity) maintenance is required to protect adjacent lands and resource values. These roads may be impassable for extended periods of time.

Maintenance Objectives

- Low (Minimal) maintenance intensity.
- Emphasis is given to maintaining drainage and runoff patterns as needed to protect adjacent lands. Grading, brushing, or slide removal is not performed unless route bed drainage is being adversely affected, causing erosion.
- Meet identified resource management objectives.
- Perform maintenance as necessary to protect adjacent lands and resource values.
- No preventative maintenance.
- Planned maintenance activities limited to environmental and resource protection.
- Route surface and other physical features are not maintained for regular traffic.

Level 3

Maintenance Description

Routes requiring moderate maintenance due to low volume use (for example, seasonally or year-round for commercial, recreational, or administrative access). Maintenance Intensities may not provide year-round access but are intended to generally provide resources appropriate to keep the route in use for the majority of the year.

Maintenance Objectives

- Medium (Moderate) maintenance intensity.
- Drainage structures will be maintained as needed. Surface maintenance will be conducted to provide a reasonable level of riding comfort at prudent speeds for the route conditions and intended use. Brushing is conducted as needed to improve sight distance when appropriate for management uses. Landslides adversely affecting drainage receive high priority for removal; otherwise, they will be removed on a scheduled basis.
- Meet identified environmental needs.
- Generally maintained for year-round traffic.
- Perform annual maintenance necessary to protect adjacent lands and resource values.
- Perform preventative maintenance as required to generally keep the route in acceptable condition.

- Planned maintenance activities should include environmental and resource protection efforts, annual route surface.
- Route surface and other physical features are maintained for regular traffic.

Level 5

Maintenance Description

Route for high (maximum) maintenance due to year-round needs, high volume of traffic, or significant use. Also may include route identified through management objectives as requiring high intensities of maintenance or to be maintained open on a year-round basis.

Maintenance Objectives

- High (Maximum) maintenance intensity.
- The entire route will be maintained at least annually. Problems will be repaired as discovered. These routes may be closed or have limited access due to weather conditions but are generally intended for year-round use.
- Meet identified environmental needs.
- Generally maintained for year-round traffic.
- Perform annual maintenance necessary to protect adjacent lands and resource values.
- Perform preventative maintenance as required to generally keep the route in acceptable condition.
- Planned maintenance activities should include environmental and resource protection efforts, annual route surface.

Route surface and other physical features are maintained for regular traffic.

Appendix G

Stipulations Associated with Fluid Mineral Leasing

Appendix G. Stipulations Associated with Fluid Mineral Leasing – Proposed Plan Amendment

This appendix lists stipulations for new fluid minerals leases referred to under the Proposed Plan Amendment.

DESCRIPTION OF SURFACE STIPULATIONS

Table G-1 shows the fluid mineral leasing stipulations for the Proposed Plan Amendment, including exceptions, modifications, and waivers. Three types of surface stipulations could be applied to fluid mineral leases: (1) no surface occupancy (NSO), (2) timing limitations (TL), and (3) controlled surface use (CSU). All stipulations for other resources, besides Greater Sage-Grouse, included in the existing land use plans would still be applicable.

Areas identified as NSO would be closed to surface-disturbing activities associated with fluid mineral development.

Areas identified as TL would be closed to surface-disturbing activities associated with fluid mineral development during identified time frames. TL areas would be open to operational and maintenance activities, including associated vehicle travel, during the closed period unless otherwise specified in the stipulation.

Areas identified as CSU would require proposals to be authorized only according to the controls or constraints specified. The controls would be applicable to activities associated with fluid mineral development.

RELIEF FROM STIPULATIONS

With regard to fluid minerals, surface stipulations could be excepted, modified, or waived by the Authorized Officer, but only as specifically identified below. An exception exempts the holder of the land use authorization document from the stipulation on a one-time (or case-by-case) basis. A modification changes the language or provisions of a surface stipulation, either temporarily or permanently. A waiver permanently removes the stipulation from the lease. The environmental analysis document prepared for site-specific proposals such as fluid minerals development (i.e., master development plans applications for permit to drill or sundry notices) also would need to address proposals to exempt, modify, or waive a surface stipulation.

On BLM-administered lands, to exempt, modify, or waive a stipulation, the environmental analysis document would have to show that (1) the circumstances or relative resource values in the area had changed following issuance of the lease, (2) less restrictive requirements could be developed to protect the resource of concern, and (3) operations could be conducted without causing unacceptable impacts.

In cases where waivers, exceptions, or modification are granted for projects with a residual impact, voluntary compensatory mitigation consistent with the State's management goals can be one mechanism

by which a proponent achieves the RMPA goals, objectives, and waiver, exception, or modification criteria. When a proponent volunteers compensatory mitigation as their chosen approach to address residual impacts, the BLM can incorporate those actions into the rationale used to grant a waiver, exception, or modification. The final decision to grant a waiver, exception, or modification will be based, in part, on criteria consistent with the State's Greater Sage-Grouse management plans and policies.

Table G-1
BLM Proposed Plan Amendment
Fluid Minerals Stipulations and Exception, Modification, and Waiver Criteria

Stipulation	Stipulation Description
No surface occupancy within PHMA.	**Purpose:** To protect Greater Sage-Grouse habitat from activity in PHMA. **Exception:** The Authorized Officer may grant an exception where the proposed action: i. Occurs in non-habitat that does not provide important connectivity between habitat areas and the development would not cause indirect disturbance to or disruption of adjacent seasonal habitats that would impair their biological function of providing the life-history or behavioral needs of the Greater Sage-Grouse population due to project design (e.g., minimize sound, preclude tall structures, require perch deterrents), as demonstrated in the project's NEPA document; OR ii. Is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel, and development on the parcel in question would have less of an impact to Greater Sage-Grouse or its habitat than on nearby parcel. This exception must also include measures sufficient to allow the BLM to conclude that such benefits will endure for the duration of the proposed action's impacts. **Modification:** The Authorized Officer may grant a modification to a fluid mineral lease NSO stipulation only where an exception is granted, as described above, for the primary disturbance (e.g., well pad, compressor station). A modification to the NSO stipulation could be considered for the associated infrastructure related to the development that are not individually precluded by other Greater Sage-Grouse actions (e.g., roads, pipelines, powerlines). While the NSO stipulation could be modified for this infrastructure, it must still comply with other Greater Sage-Grouse management contained in MA-SSS-3. **Waiver:** The Authorized Officer may grant a waiver to a fluid mineral lease NSO stipulation if, through the appropriate planning process (i.e., maintenance, amendment), the area is no longer within PHMA. *The other Greater Sage-Grouse stipulations would only be applicable to new fluid minerals leases if the exception criteria identified for the NSO stipulation above were granted.

Stipulation	Stipulation Description
Manage discrete anthropogenic disturbances, whether temporary or permanent, so they cover less than 3 percent of 1) PHMA associated with a Greater Sage-Grouse population area (referred to as biologically significant units {BSU} when coordinating across state lines), and 2) within the proposed project analysis area.	**Purpose:** To protect PHMA and the life-history needs of Greater Sage-Grouse from habitat loss and Greater Sage-Grouse populations from disturbance and limit fragmentation in PHMA. This would be implemented as a lease notice associated with new leases, in addition to the NSO stipulation. This would only be applicable to new fluid minerals leases if the exception criteria identified for the NSO stipulation above were granted. **Exception:** The 3 percent cap may be exceeded at the proposed project analysis scale if a technical team determines that site-specific Greater Sage-Grouse habitat and population information, combined with project design elements indicates the project will improve the condition of Greater Sage-Grouse habitat within the proposed project analysis area. Factors considered by the team are in **Appendix E** and in MA-SSS-3B. Such exceptions to the 3 percent disturbance cap may be approved by the Authorized Officer only with the concurrence of the State Director. The finding and recommendation shall be made by the technical team, which should consist of a BLM field biologist, other local Greater Sage-Grouse experts, and biologists and other representatives from the appropriate State of Utah agency. **Modification:** The stipulation can be modified to allow disturbance to exceed 3 percent on the lease if disturbance in the project analysis area and PHMA associated with a Greater Sage-Grouse population area remains under 3 percent. **Waiver:** The Authorized Officer may grant a waiver to a fluid mineral lease NSO stipulation if, through the appropriate planning process (i.e., maintenance, amendment), the area is no longer within PHMA. *This would only be applicable to new fluid minerals leases if the exception criteria identified for the NSO stipulation above were granted.

Stipulation	Stipulation Description
In PHMA, limit the density of energy and mining facilities during project authorization to an average of one energy/mineral facility per 640 acres.	**Purpose:** To protect PHMA and the life-history needs of Greater Sage-Grouse from habitat loss and Greater Sage-Grouse populations from disturbance and limit fragmentation in PHMA. This would be implemented as a lease notice associated with new leases, in addition to the NSO stipulations. This would only be applicable to new fluid minerals leases if the exception criteria identified for the NSO stipulation above were granted. **Exception:** The density cap may be exceeded at the proposed project analysis scale if a technical team determines that site-specific Greater Sage-Grouse habitat and population information, combined with project design elements, indicates the project will improve the condition of Greater Sage-Grouse habitat within the proposed project analysis area. Factors considered by the team are in **Appendix E** and MA-SSS-3C. Such exceptions to the density cap may be approved by the Authorized Officer only with the concurrence of the State Director. The finding and recommendation shall be made by the technical team which should consist of a BLM field biologist, other local Greater Sage-Grouse experts, and biologists and other representatives from the appropriate State of Utah agency. **Modification:** Can exceed the density cap on the lease if the broader project area remains under the limit. **Waiver:** None
Surface occupancy or use within the PHMA is subject to the following operating constraints: • Limit noise from discretionary activities (during construction, operation, or maintenance) will not exceed 10 decibels above ambient sound levels at occupied leks from 2 hours before to 2 hours after official sunrise and sunset during breeding season (e.g., while males are strutting); support the establishment of ambient baseline noise levels for PHMA habitat area leks. • Limit project related noise in other PHMA habitats and seasons where it would be expected to reduce functionality of habitats that support associated Greater Sage-Grouse populations.	**Purpose:** Protecting Greater Sage-Grouse from auditory disturbance associated with fluid mineral developments. **Exception:** None **Modification:** As additional research and information emerges, specific new limitations appropriate to the type of projects being considered would be evaluated and appropriate measures would be implemented where necessary to minimize potential for noise impacts on PHMA Greater Sage-Grouse population behavioral cycles. **Waiver:** None

Stipulation	Stipulation Description
Surface occupancy or use within the PHMA is subject to the following operating constraints: • Limit the placement of permanent tall structures within PHMA breeding and nesting habitats. • For the purposes of this restriction, a tall structure is any man-made structure that provides for perching/nesting opportunities for predators (e.g., raptors, ravens) that may naturally be absent, or that decreases the use of an area by PHMA. A determination as to whether something is considered a tall structure would be made based on local conditions such as existing vegetation or topography.	**Purpose:** To minimize placement of structures that introduce new perching and/or nesting opportunities for avian predators. This would only be applicable to new fluid minerals leases if the exception criteria identified for the NSO stipulation above were granted. **Exception:** None **Modification:** None **Waiver:** None
No surface disturbance allowed between Feb 15 – June 15, in PHMA Greater Sage-Grouse breeding, nesting, and early brood-rearing habitat.	**Purpose:** To seasonally protect Greater Sage-Grouse within PHMA from disruptive activity during breeding, nesting and early brood-rearing. This would only be applicable to new fluid minerals leases if the exception criteria identified for the NSO stipulation above were granted. **Exception:** None **Modification:** Specific time and distance determinations would be based on site-specific conditions and may be modified due to documented local variations (e.g., higher/lower elevations) or annual climactic fluctuations (e.g., early/late spring, long and/or heavy winter) in order to better protect Greater Sage-Grouse, in coordination with UDWR biologists. **Waiver:** None
No surface disturbance allowed between April 15 – August 15, in PHMA Greater Sage-Grouse brood-rearing habitat.	**Purpose:** To seasonally protect Greater Sage-Grouse within PHMA from disruptive activity during brood-rearing. This would only be applicable to new fluid minerals leases if the exception criteria identified for the NSO stipulation above were granted. **Exception:** None **Modification:** Specific time and distance determinations would be based on site-specific conditions and may be modified due to documented local variations (e.g., higher/lower elevations) or annual climactic fluctuations (e.g., early/late spring, long and/or heavy winter) in order to better protect Greater Sage-Grouse, in coordination with UDWR biologists. **Waiver:** None

Stipulation	Stipulation Description
No surface disturbance allowed between Nov 15 – March 15, in PHMA Greater Sage-Grouse winter habitat.	**Purpose:** To seasonally protect Greater Sage-Grouse within PHMA from disruptive activity during the winter season. This would only be applicable to new fluid minerals leases if the exception criteria identified for the NSO stipulation above were granted. **Exception:** None **Modification:** Specific time and distance determinations would be based on site-specific conditions and may be modified due to documented local variations (e.g., higher/lower elevations) or annual climactic fluctuations (e.g., early/late spring, long and/or heavy winter) in order to better protect Greater Sage-Grouse, in coordination with UDWR biologists. **Waiver:** None
Outside of PHMA, areas that are 1) within of State of Utah opportunity areas, and 2) within the lek buffer distances identified in **Appendix B** for leks located in PHMA, will be subject to the following operating constraints: • Limit noise from discretionary activities (during construction, operation, or maintenance) so it will not exceed 10 decibels above ambient sound levels at occupied leks from 2 hours before to 2 hours after official sunrise and sunset during breeding season (e.g., while males are strutting); support the establishment of ambient baseline noise levels for PHMA habitat area leks. • Limit project related noise in other PHMA habitats and seasons where it would be expected to reduce functionality of habitats that support associated Greater Sage-Grouse populations.	**Purpose:** Protecting Greater Sage-Grouse from indirect disturbance near leks within PHMA. **Exception:** None **Modification:** As additional research and information emerges, specific new limitations appropriate to the type of projects being considered would be evaluated and appropriate measures would be implemented where necessary to minimize potential for noise impacts on PHMA Greater Sage-Grouse population behavioral cycles. **Waiver:** None

Stipulation	Stipulation Description
Outside of PHMA, areas that are 1) within of State of Utah opportunity areas, and 2) within the lek buffer distances identified in **Appendix B** for leks located in PHMA, will be subject to the following operating constraints: • Limit the placement of permanent tall structures within PHMA breeding and nesting habitats. • For the purposes of this restriction, a tall structure is any man-made structure that provides for perching/nesting opportunities for predators (e.g., raptors, ravens) that may naturally be absent, or that decreases the use of an area by PHMA. A determination as to whether something is considered a tall structure would be made based on local conditions such as existing vegetation or topography.	**Purpose:** To minimize placement of structures that introduce new perching and/or nesting opportunities for avian predators. **Exception:** None **Modification:** None **Waiver:** None **For the purposes of this restriction, a tall structure is any manmade structure that provides for perching/nesting opportunities for predators (e.g., raptors and ravens) that are naturally absent, or that decreases the use of an area by Greater Sage-Grouse. A determination as to whether something is considered a tall structure will be made based on local conditions such as existing vegetation or topography.

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Appendix I

Adaptive Management

Appendix I. Adaptive Management

Adaptive management is a decision process that promotes flexible resource management decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Careful monitoring of these outcomes both advances scientific understanding and helps with adjusting resource management directions as part of an iterative management process. Adaptive management also recognizes the importance of natural variability in contributing to ecological resilience and productivity. It is not a "trial and error" process, but rather emphasizes learning while doing. Adaptive management does not represent an end in itself, but rather a means to more effective decisions and enhanced benefits. On February 1, 2008, the Department of the Interior published its Adaptive Management Implementation Policy (522 DM 1). The adaptive management strategy presented within this Resource Management Plan Amendment (RMPA) complies with this policy and direction.

In relation to the Bureau of Land Management (BLM) and US Forest Service (Forest Service) National Greater Sage-Grouse Planning Strategy, adaptive management provides additional certainty for effectiveness of conservation when implemented in concert with the Greater Sage-Grouse conservation measures presented in the plan amendments. This adaptive management strategy is incorporated along with the conservation measures in the plan to ameliorate threats to Greater Sage-Grouse, thereby increasing the likelihood that the combined conservation measures are effective in reducing threats to that species. The following provides the BLM's adaptive management strategy for the Utah Greater Sage-Grouse RMPA.

UTAH SUBREGIONAL ADAPTIVE MANAGEMENT STRATEGY

The Utah Subregional adaptive management strategy includes the identification of soft and hard triggers and a management approach for responding to those triggers. In the spring of 2014, a multi-agency Utah group coordinated to develop adaptive management triggers for Greater Sage-Grouse populations in Utah. This group includes State of Utah Division of Wildlife Resources (UDWR), Utah Governor's Public Lands Policy Coordination Office, US Fish and Wildlife Service (USFWS), Forest Service, and BLM. A biologist focus group, a subset of the Utah adaptive management group, was tasked with reviewing Greater Sage-Grouse monitoring data and determining what population and habitat triggers are appropriate given the natural cyclic variability observed in all Greater Sage-Grouse populations.

BACKGROUND INFORMATION

Greater Sage-Grouse Population Change

As is discussed in the 2015 Final EIS, Section 3.3, Greater Sage-Grouse populations across the range fluctuate cyclically. In Utah the cycle seems, generally, to follow a 10-year pattern. The exact reason for the cycle is currently unknown. However, various aspects (i.e., vital rates) of the Greater Sage-Grouse's life cycle have been linked by past research to changes in environment and habitat.

Utah's Greater Sage-Grouse populations will likely continue to fluctuate over the short term and on their historic 10-year cycle. The general direction of the cycles, whether populations are trending up or down, is the critical conservation concern for Greater Sage-Grouse. Connelly et al. (2004) showed that rangewide the trend was decreasing from the 1960s to the mid-1980s, hitting a low in the mid-1990s,

but then stabilizing to the present. Certainly, if habitat loss and degradation occur within a population's habitat base the population would likely decline in succeeding years without habitat restoration and/or other management intervention. However, if the habitat base remains intact it is likely that the population will continue to fluctuate, but remain relatively stable in the long term. Greater Sage-Grouse require large landscapes of contiguous sagebrush habitat to carry out their life-cycle. Securing these large landscapes from further degradation and adding more habitat through restoration is the primary conservation action for Greater Sage-Grouse.

Lek Count Data

When considering monitoring data there is always uncertainty, error, and statistical noise. Greater Sage-Grouse lek (breeding ground) counts are not comprehensive in nature, but rather represent a sample of and index to the population. This uncertainty carries over into using lek counts to make decisions for implementing management actions. Any metric of population change (e.g., percent annual change, percent above or below 10-year average, etc.) includes the uncertainty that comes from sampling populations. Therefore, creating precise decision triggers based on lek data is inherently problematic, and should include a relatively large range of specific metrics and management options. However, much more certainty exists concerning the effect of habitat loss or degradation, and precise decision triggers would be much more reliable for habitat conservation purposes.

For Greater Sage-Grouse, while some production data has been collected in various populations, the only data that have been consistently collected across the range of the species and within Utah for this species has been males attending leks. While male lek attendance has been the primary source of data collected and is used as an index of Greater Sage-Grouse populations, it is critical that the strengths and weaknesses of lek counts be understood to appropriately evaluate how confidence in the data may vary. For instance, the number of males counted on leks can vary depending upon how many times the lek was counted in a spring (at least three times is recommended to increase the chances that the peak male lek attendance was observed), time of day (three counts conducted between 30 minutes before sunrise to 1 hour after sunrise), and the weather conditions (calm). Standardized lek counts have become more common practice recently. The lek count protocol is based on lek attendance research (Jenni and Hartzler 1978; Emmons and Braun 1984; Connelly et al. 2003). In general, lek count protocol has become a priority in the last 15 years and adherence to the protocol increases the confidence in and comparability of the resulting data.

Early in the history of collecting lek count data in Utah, the likelihood that leks were known depended on two things: 1) the proximity of the lek to areas frequented by people during dawn (near roads or corrals); and 2) the size of the lek; the larger the lek, the more likely it was noticed. Therefore, the leks counted earliest in the history of Greater Sage-Grouse monitoring in Utah were either large leks and/or easily accessible leks (e.g., near roads). In the last 20 years in Utah and throughout the West, efforts to count and find leks have increased substantially (though there is variation in the number of leks counted, up and down, each year). With these concerted efforts to find new leks, new and generally smaller leks were added to the list of known leks. Consequently, by adding primarily small leks to the overall state "average males per lek", the state average males per lek decreases even though more birds and more leks are being counted. In addition, where graduate students have studied Greater Sage-Grouse populations, new leks have been found as a result of the amount of time on the landscape and radio-telemetry information. From these increased efforts, the number of leks counted has increased from 14 leks in 1959, 99 leks in 1980, up to 362 leks in 2012 (2,485 percent increase) (UDWR 2009). Similarly,

the total number of birds counted in a spring has increased, based on State of Utah data, from 451 males in 1959 to 3,231 males counted in 2012 (616 percent increase).

ADAPTIVE MANAGEMENT TRIGGERS

This overarching adaptive management strategy includes the identification of a two-tiered system of triggers (soft and hard) for both Greater Sage-Grouse populations and habitat. These triggers are not specific to any particular project, but identify population and habitat thresholds which, if exceeded/tripped, would result in a change in how the BLM addresses management of Greater Sage-Grouse in that area. Triggers have been based on the two key metrics that are regularly monitored: population declines and habitat loss.

Soft triggers represent an intermediate threshold indicating that management changes are needed to address habitat or population losses before they become severe. They represent a "caution" signal that changes outside the normal range of variation may be occurring. If a soft-trigger is tripped, monitoring data would be evaluated and management would be implemented to stop further declines.

Hard triggers represent a threshold indicating that more direct and refined actions are quickly needed to stop a severe deviation from Greater Sage-Grouse conservation objectives set forth in the BLM plan. The intent of a soft-trigger is to identify changes in management at a point where further losses could be avoided; given this, there is no expectation of hitting a hard trigger. If unforeseen circumstances occur that trip either a population or habitat hard trigger, more restrictive management will be required.

The changes in management required after a trigger is tripped are included below in the "Management Response" section. The following sections present the adaptive management triggers, organized first by the metric being addressed (population or habitat) and then by the associated soft and hard triggers.

Population Triggers

When evaluating population-based adaptive management triggers, this adaptive management strategy includes consideration of two aspects of population data to ensure that one set of data, if in error for any reason, would not unnecessarily trigger management changes. Population declines will be evaluated using the following two metrics:

- Population trends based on "trend leks," and
- Population growth as indicated by Lambda (λ) (as described below) from one year to the next for monitoring associated with all leks within a priority habitat management area (PHMA).

Trend leks are either leks that have been surveyed consistently in the last 20 years or leks that provide spatial representation within PHMA. Twenty years was chosen as the appropriate time period to identify trend leks with consideration of the cyclic nature of Greater Sage-Grouse populations, and to capture monitoring results during the period of time when lek counts were conducted more consistently, and when lek count protocol was more standardized. The Utah Greater Sage-Grouse lek counts appear to have been in a low oscillation in the mid-1990s and again in the last few years (2011). During this same time period, standard lek count protocol use was increasing. Criteria for the trend leks are below:

- Starting with 1996, a lek that had > 1 male counted within one of 5 years between 1994-1998,
- Lek counts have occurred on 80 percent of the years since 1994 (16 years), **AND**

- Lek counts on 50 percent of the years are > 1 (8 of 16), **OR**
- A lek provides spatial representation (in the case of small populations, all leks may be included).

Lambda (λ) is the population change from a given Year 1 to the following Year 2 by dividing the total PHMA males counted in Year 2 by the total males counted in Year 1. If the result equals one (1), there was no change in the population level. A lambda that exceeds one (> 1) means the population is growing. A lambda that is less than one (< 1) indicates a declining population. To generate a consistent and comparable number, lambda can only be calculated on leks that are counted in consecutive years. This is to ensure that the increase in number of leks does not skew population data. This way, lambda can only be calculated for a lek if it is counted in 2 consecutive years. Some examples of calculating lambda are as follows:

- Males in Year 2/males counted in Year 1 = Lambda (λ)

  Example A – No Change in Population: Assuming in 2000, the total males counted on leks in PHMA is 350 and in 2001, on the same leks counted in 2000, the total males counted are 350.

- 350/350 = 1; since lambda is 1, the population is unchanged.

  Example B: Increasing Population: Assuming in 2000, the total males counted on leks in PHMA is 350 males and in 2001, on the same leks counted in 2000, the total males counted are 430.

- 430/350 = 1.23; since lambda is > 1, the population is increasing.

  Example C: Decreasing Population: Assuming in 2000, the total males counted on leks in PHMA is 350 males and in 2001, on the same leks counted in 2000, the total males counted are 280.

- 280/350 = 0.8; since lambda is < 1, the population is decreasing.

Multiple population triggers were established to account for different potential population trends for which management and monitoring should respond. This includes triggers to address rapid short-term declines in a population, as well as persistent long-term decreases of both trend leks or all monitored leks (using lambda - λ).

Population Soft Triggers

A population soft trigger would be met in PHMA if any one of 1a, 1b, 1c, or 1d are met, AND number 2 is also met:

1a) 4 consecutive years of 10 percent or greater annual decline in average males per lek in each year, based on "trend leks"; **OR**

1b) 6 consecutive years of declining average males per lek in each year, based on "trend leks"; **OR**

1c) 40 percent or greater decline in average males per lek in any single year, based on "trend leks"; **OR**

1d) 50 percent or greater decline in average males per lek in a 4 consecutive year period, based on "trend leks"; **AND**

2) Lambda of less than 1 in 4 consecutive years, based on all leks in the PHMA. Using criteria 1c, the 40 percent decline in a single year may occur at any point of the four year lambda monitoring window (year one, two, three or four).

For PHMA in the Ibapah and Hamlin Valley population areas, if a Greater Sage-Grouse population adaptive management trigger (hard or soft) from a Nevada land use plan is met on Greater Sage-Grouse habitat in Nevada that is adjacent to the Ibapah or Hamlin Valley PHMA, a soft trigger would be met for the Utah areas, regardless of whether the above criteria have been met or not.

The management to be applied if the soft trigger criteria are met is identified below under the Management Response header. The intent of the population soft trigger is to identify changes to population trends and adjust management before a hard trigger is met.

Population Hard Triggers

A population hard trigger would be met in PHMA if any one of the following criteria (a-d) is identified through monitoring:

Short-term Decline

a) 4 consecutive years of 20 percent or greater annual decline in average males per lek in each year, based on "trend leks"; **OR**

b) average males per lek, based on trend leks, drops 75 percent below the 10-year rolling average males per lek in any single year (not a 75 percent decrease, but a decline under 75 percent of the 10-year rolling average); **OR**

Long-term Decline

c) Lambda of less than 1 in 6 consecutive years, based on all leks within the PHMA; **OR**

d) Lambda of less than 1 in 8 years of a 10-year window, based on all leks within the PHMA.

The management to be applied if the hard trigger criteria are met is identified below under the Management Response header. Any change in management would only apply to the PHMA where the trigger is tripped.

Habitat Triggers

The adaptive management approach also includes triggers based on Greater Sage-Grouse habitat. Habitat quality is addressed by adherence to the objectives contained in the plan amendment. The adaptive management triggers for habitat is based on the availability of habitat within PHMA, measured using a percent of habitat loss from a baseline of available Greater Sage-Grouse habitat at the signing of the final plan amendments.

Available habitat will be mapped within each PHMA using available information such as vegetation data from satellite imagery (e.g., reGAP, LANDFIRE), local monitoring, soils data, etc. As additional information is made available in the future it can be used to refine the baseline habitat areas that existed at the point the plan amendments are finalized (e.g., removing areas of high juniper density, cliffs, salt-desert scrublands). However, any such changes should reflect habitat as it occurred at the signing of the plan amendments and not reflect changes to habitat from that time. Changes from the baseline acreage

could occur through either the addition of habitat (e.g., juniper reduction projects) or reduction of habitat (e.g., wildfire). In either case, the percentages identified in the triggers are generated by comparing the availability of habitat at a point in time to the acres of habitat available at the signing of the plan amendments.

For both soft and hard triggers, nesting areas will be delineated using lek buffers based on published peer-reviewed data, unless local nesting areas have been specifically mapped by BLM and Forest Service and UDWR biologists using telemetry or other methods with appropriate sampling across the population. Wintering areas will be identified using UDWR mapping, in coordination with BLM and Forest Service biologists.

Habitat Soft Triggers

A habitat soft trigger would be met in PHMA if one of the following criteria is identified through monitoring:

a) 10 percent loss of total Greater Sage-Grouse habitat in PHMA; **OR**

b) 10 percent loss of habitat within nesting areas in PHMA; **OR**

c) 5 percent loss of habitat within UDWR mapped wintering areas in PHMA; **OR**

d) any one fire that burns 5 percent of total Greater Sage-Grouse habitat in PHMA.

For PHMA in the Ibapah and Hamlin Valley population areas, if a Greater Sage-Grouse habitat adaptive management trigger (hard or soft) from a Nevada land use plan is met on Greater Sage-Grouse habitat in Nevada that is adjacent to the Ibapah or Hamlin Valley PHMA, a soft trigger would be met for the Utah areas, regardless of whether the above criteria have been met or not.

The management to be applied if the soft trigger criteria are met is identified below under the Management Response header. The intent of the population soft trigger is to identify decreases in the availability of Greater Sage-Grouse habitat and adjust management before a hard trigger is met.

Habitat Hard Triggers

a) 20 percent loss of total Greater Sage-Grouse habitat in PHMA; **OR**

b) 20 percent loss of habitat within nesting areas in PHMA; **OR**

c) 20 percent loss of habitat within UDWR mapped wintering areas in PHMA.

The management to be applied if the hard trigger criteria are met is identified below under the Management Response header. Any change in management would only apply to the PHMA where the trigger is tripped.

MANAGEMENT RESPONSE

To be successful, an adaptive management strategy couples a change in management direction to an identified change in resource condition (e.g., meeting an identified trigger). The type of management response would vary whether a soft trigger is met versus a hard trigger. The larger deviation from natural variation associated with a hard trigger would necessarily correspond with a greater change in management.

The adaptive change in management will be targeted to respond/resolve the cause of the observed change in resource condition, to the extent it can be determined. A causal factor may be associated with one of the threats the USFWS identified in its 2010 listing determination, though additional monitoring information and research may also identify other causes that could result in reaching population or habitat triggers. It is also important to note that while one or more factors may be associated with a habitat or population decline, directly attributing a change to a specific cause or causes may not be possible. The complexity of some interactions may make it difficult to establish a direct cause-and-effect relationship for a specific cause or causes. Many factors have been suggested as affecting Greater Sage-Grouse populations and habitats throughout the species' range. These factors can interact in numerous potential complex relationships, making the identification of "the" specific cause or causes difficult. It can be difficult to separate proximate factors from ultimate factors leading to population declines. Further, Greater Sage-Grouse populations that use habitat owned or administered by multiple jurisdictions (e.g., private, state, tribal, or other federal) could result in causes of population or habitat declines that are not able to be ameliorated by the BLM.

If direct cause or causes cannot be identified, the change in management may need to address multiple threats that were identified in the area where the trigger was been met in order to alter a negative trend. Absence of a clear cause is not justification to not take some action to reverse a trend.

Management Response to Meeting Soft Triggers

Upon an annual review of monitoring data, if it is apparent that soft trigger criteria have been met for an area (see Spatial Scale discussion below) the BLM will determine if there is a specific cause or causes that are contributing to the decline within six months of identifying that the trigger has been met. In completing this evaluation, the BLM will coordinate with Greater Sage-Grouse biologists from multiple agencies, including UDWR, the Forest Service, USFWS, and/or NRCS. Through this coordination, the BLM will review available national, state-wide, and local data to determine if there is additional information that could identify the cause/causes of the declines. The BLM will also coordinate with field office/district and state agency specialists and local Greater Sage-Grouse working groups to identify additional information that could assist in identifying the cause/causes.

If it is determined that the decline is related to a natural population variation, no specific management actions would be required. However, if BLM management actions are determined to cause or contribute to the decline, the BLM will work with the appropriate State of Utah agency and public land users to identify and apply management to slow down or stop the population decline. Such measures would be applied by the BLM manager within their implementation-level discretion to mitigate the decline of populations and/or habitats to the area where the trigger has been met. These measures would apply more conservative or restrictive implementation conservation conditions, terms, or decisions within the agencies' discretion to mitigate the decline of populations and/or habitats. Such measures could also include other management actions which may require the need to amend the RMP to address the situation and modify management. If able to be identified, the management measures should address the specific causal factor(s) that resulted in the decline, with consideration of local knowledge and conditions.

Responses to soft triggers may require the adjustment of future project level/plan implementation activities in the short or long term, as consistent with the individual site-specific NEPA analyses. Soft

trigger responses can come in the form of terms, conditions, design features, BMPs, or site-specific mitigation measures. Examples of soft trigger responses could include, but are not limited to:

- Extending seasonal restrictions for seasonal surface disturbing activities (provided as stipulations to a right-of-way grant or a condition of approval to an oil and gas lease),
- Reprioritizing wild horse and burro gathers;
- Applying sequential development after reclamation;
- Temporary area closures related to travel management; (2-year maximum);
- Modifying seasons of use for livestock grazing through annual permit authorizations; and/or
- Applying additional restrictions on discretionary activities, or reject the authorization if mitigation criteria cannot be met.

It is expected that monitoring and management in response to soft-triggers should preclude tripping a "hard" trigger, which signals more severe habitat loss or population declines.

Management Response to Meeting Hard Triggers

Hard triggers represent a threshold indicating that more direct and refined actions are quickly needed to stop a severe deviation from Greater Sage-Grouse conservation objectives set forth in the BLM plan. Upon documenting that a hard trigger has been met the BLM will review available and pertinent data, in coordination with Greater Sage-Grouse biologists from multiple agencies including Forest Service, UDWR, USFWS, and/or NRCS, to determine the causal factor(s) for the declines. The BLM and the team will also identify measures needed to address the causal factors and develop a corrective strategy for the area where the trigger has been met. The corrective strategy would include the applicable changes identified in **Table I-1** that address the causal factor, and could also include other management actions, which may require the need to amend or revise the RMP to address the situation and modify management.

If determining the causal factor and development of a corrective strategy is not completed within six months of documenting that the trigger has been met, all the plan level responses identified in **Table I-1** will be applied until the causal factor analysis is complete. Upon completion of the causal factor analysis any responses that don't address the causal factor(s) would be removed. In developing a corrective strategy, managers may select changes in management that are identified in **Table I-1**, Specific Management Responses that have already been analyzed for implementation. This table also identifies which decision from the BLM RMPA would be changed.

Table I-1
Specific Management Responses

Program	Adaptive Management Response[1]	Affected Decision Number
Greater Sage-Grouse Management	If a hard-trigger is tripped in the Sheeprocks Population Area, adopt the PHMA boundary from Alternative B of the 2015 Final EIS and apply management as described in the Proposed Plan, except as modified below.	Modify MA-SSS-1 specific to Sheeprocks
	PHMA within a Population Area (also referred to as a biologically significant unit {BSU}) where a soft trigger has been reached would be the top priority for habitat improvement and restoration projects and for fuels reduction treatments. Areas within and adjacent to PHMA within a Population Area (BSU) where a hard trigger has been reached would be the top priority for regional mitigation habitat restoration and fuels reduction treatments.	Adjust: MA-VEG-1, MA-FIRE-1, and MA-SSS-3A to address specific area
	Collaborate with applicable government entities to implement intensive programs to reduce populations of Greater Sage-Grouse predators (e.g., ravens, red fox, badgers, raccoons, skunks, raptors), focusing on area-specific predators to provide Greater Sage-Grouse populations the best opportunity to recover while improving habitat conditions.	Adjust MA-SSS-3D to focus on area-specific predators
Vegetation Management	PHMA within a Population Area (BSU), would be a priority for regional mitigation, habitat restoration and fuels reduction treatments.	Adjust: MA-VEG-1, MA-FIRE-1, and MA-SSS-3A to address specific area
Wild Horse and Burro Management	Initiate emergency gathers to reduce wild horse and burro populations within affected area to low end of AML, subject to funding and holding space availability. If the population is within AML and the area does not meet Greater Sage-Grouse habitat objectives, reduce AML for the HMA within the affected area up to 25 percent to facilitate meeting habitat objectives.	Adjust: MA-WHB-7, MA-WHB-3, and MA-WHB-4 to address specific area
Wildland Fire Management	Reassess Greater Sage-Grouse habitat needs to determine if priorities for at-risk habitats, fuels management areas, preparedness, suppression and restoration have changed.	Adjust MA-FIRE-1 to address specific area
Livestock Grazing	In areas where a soft trigger was met, prioritize the completion of rangeland health assessments to determine if the area is meeting Utah's Rangeland Health Standards and is achieving the Greater Sage-Grouse habitat objectives (Objective SSS-3). Focus monitoring and management activities on allotments found not to be achieving Utah's Rangeland Health Standards and that have the best opportunities for conserving, enhancing or restoring habitat for Greater Sage-Grouse. For areas not achieving the Greater Sage-Grouse habitat objectives (Objective SSS-3), apply one or more of the adjustments to livestock grazing from MA-LG-6.	Adjust: MA-LG-4 and MA-LG-5 to address specific area

Program	Adaptive Management Response[1]	Affected Decision Number
Rights of Way – Existing Corridors	Retain the corridors as mapped, but limit the size of new lines within the corridors to same as existing structures.	Augment MA-LR-2 and MA-LR-4 with additional criteria
Rights of Way – Outside of Corridors	Management of the affected PHMA Population Area (BSU) would change to exclude high voltage transmission lines or major pipelines that the corrective strategy identifies. No change in management would be made to distribution lines or minor pipelines.	Augment MA-LR-2 with additional criteria
Wind Energy Development	No change from Proposed Plan.	Not applicable
Industrial Solar	No change from Proposed Plan.	Not applicable
Comprehensive Travel and Transportation Management	If travel management planning has not been completed within Greater Sage-Grouse habitat, PHMA areas where the hard trigger was met would be the highest priority for future travel management planning efforts. If travel management has been completed within Greater Sage-Grouse habitat in the PHMA where the hard trigger was met, re-evaluate designated routes to determine their effects on Greater Sage-Grouse. If routes are found to be causing population-level impacts, revise their designation status to reduce the effect.	Adjust: MA-TTM-4, MA-TTM-2, MA-TTM-5, and MA-TTM-3 to address specific area.
Fluid Minerals	No change from Proposed Plan.	Not applicable
Locatable Minerals	No change from Proposed Plan.	Not applicable
Salable Minerals	No change from Proposed Plan.	Not applicable
Nonenergy Leasable Minerals	No change from Proposed Plan.	Not applicable

[1]Any change in management would only apply to the PHMA where the trigger is tripped.
Unless otherwise noted as a soft trigger response, all Adaptive Management Responses would be implemented where a hard trigger is reached.

While implementing the corrective strategy, new scientific information may become available demonstrating that the plan-level response(s) could be insufficient to stop the severe deviation from Greater Sage-Grouse conservation objectives set forth in the BLM plan. If this occurs, the BLM and its partners will review the new scientific information to determine how it may change the causal factor analysis and corrective strategy. If the BLM, in coordination with its partners, concludes that the responses in place would be insufficient, the BLM will implement necessary management to protect Greater Sage-Grouse and its habitat and to ensure that conservation options are not foreclosed in the area where the trigger has been met.

For those Population Areas (BSUs) that are directly connected to identified BSUs in adjacent states (Box Elder, Hamlin Valley, Uintah, and Rich), if a hard trigger is reached on one of the connected BSUs outside of the Utah sub-region, the applicable state wildlife agencies and BLM staff will convene to determine the causal factor and propose project level responses, as appropriate, and discuss further appropriate actions that could be applied. The team will also investigate the status of the hard triggers in

other BSUs within the PAC (in adjacent states) and will recommend the appropriate plan response. Adoption of any further actions at the plan level may require initiating a plan amendment process.

The management identified in the corrective strategy would be implemented until ten-year population trends reflect the natural fluctuations of a self-sustaining population. The BLM would determine the area reflects natural fluctuations for a self-sustaining population in coordination with Greater Sage-Grouse biologists from multiple agencies including Forest Service, UDWR, USFWS, and/or NRCS. Upon such a determination, the management would revert to the RMPA.

If all the leks in an area that has met a hard trigger are not active for ten years, becoming unoccupied by definition, the PHMA designation and all its associated management would be removed since there is no longer a Greater Sage-Grouse population for which management should be prioritized.

MONITORING

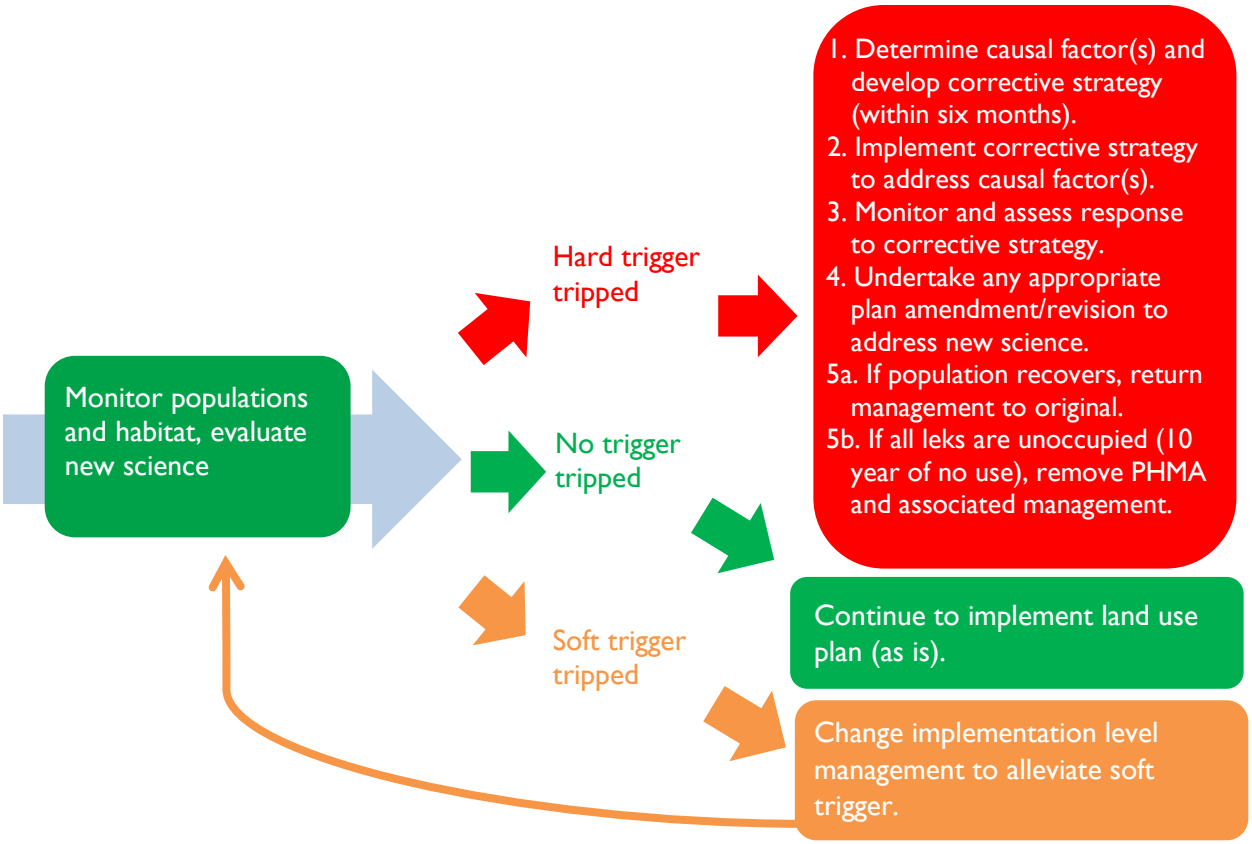
Monitoring is a critical part of implementing adaptive management. Through monitoring, the agencies determine when a trigger has been met, as well as whether management actions taken, including adaptive responses, are effective in increasing Greater Sage-Grouse habitat and populations. The following image shows how monitoring information will be integrated into implementation of the adaptive management plan.

This RMPA contains a Monitoring Framework Plan (**Appendix D**) that outlines monitoring of several aspects of Greater Sage-Grouse biological criteria and aspects of monitoring RMP effectiveness. The information collected through the Monitoring Framework Plan will be used by the BLM, among other available datasets, to determine when adaptive management hard and soft triggers for habitat are met.

The BLM will organize an adaptive management working group, inviting participation from the UDWR, Forest Service, USFWS, and/or local governments. This group will annually review monitoring information related to Greater Sage-Grouse populations and habitat availability to determine if an adaptive management trigger has been met.

The working group will evaluate Greater Sage-Grouse population data collected by the UDWR's lek counts, as well as habitat information available from the BLM's National Operation Center. Habitat information available from the BLM National Operation Center is based on remotely sensed sagebrush vegetation collected as part of the LANDFIRE Existing Vegetation Type layer. Habitat information may be adjusted based on locally available vegetation data, if agreed upon by all adaptive management working group members. However, the baseline for determining the percent loss for the purposes of the adaptive management triggers must remain associated with a consistent vintage, namely the finalization of the RMP-decisions. It is also important that the vegetation data remain at a scale consistent with implementation of the adaptive management plan (BSUs), and remain at such a consistent scale over time.

For any area that has met a soft or hard trigger, the BLM, the appropriate State of Utah agency, and other members of the technical team, will annually review monitoring data regarding population and habitat trends to verify that management actions implemented to mitigate declines are being successful. If monitoring indicates continued declines, the causal factor analysis will be reviewed, updated if needed, and applicable additional management would be identified and implemented.



SPATIAL SCALE

Greater Sage-Grouse biologists, assigned to the multi-agency adaptive management working group, will assess population and habitat adaptive management triggers for PHMA within each Population Area (also referred to as BSUs when coordinating with other states). A BSU is a geographical/spatial area that contains the relevant habitats that are used by Greater Sage-Grouse. In Utah, the BLM is applying adaptive management monitoring and management to the total PHMA area associated with a Greater Sage-Grouse population area. When coordinating with adjacent states in regional monitoring and management, these areas will be referred to as BSUs. These areas generally align with habitat areas within the State of Utah's Greater Sage-Grouse Management Areas (SGMAs) with two adjustments. One adjustment includes some PHMA in the Carbon area that was not identified as an SGMA. Portions of the Anthro Mountain and West Tavaputs areas are combined with Emma Park area for adaptive management purposes. The other adjustment is the Emery population (Wildcat Knoll and Horn Mountain) that is combined with the Parker Mountain SGMA but will be considered separately because the population is small in size and effects to this population would be masked by what is going on in the much larger Parker SGMA. As a result, PHMA in the following areas will be monitored and evaluated for population and habitat adaptive management triggers: Box Elder, Rich, Uinta, Strawberry, Carbon, Emery, Parker, Panguitch, Bald Hills, Hamlin, Sheeprocks, and Ibapah. These areas generally represent population use areas within the sub-region.

As described in the Monitoring Framework Plan, habitat data can be collected at these "BSU" scales and can be both aggregated up to the state-wide population, WAFWA Management Zone, or other

reporting units. Similarly, more specific habitat delineation may be gathered identifying specific seasonal use patterns and even daily movements and preferences. However, in monitoring landscape changes in habitat and effects on Greater Sage-Grouse populations, the interagency team of Greater Sage-Grouse biologists identified the Population Area/SGMA/BSU scale as best capturing the needed metrics at a meaningful and consistent scale. The boundaries of these and other reporting units may be adjusted over time based on the understanding of local population interactions and climate variation.

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Appendix K

Greater Sage-Grouse Habitat Baseline and Habitat Update Protocol

Appendix K. Greater Sage-Grouse Habitat Baseline and Habitat Update Protocol

BACKGROUND

Habitat for Greater Sage-Grouse is the most critical element in any efforts to manage and conserve the species in its range across the western United States. Consequently, considerable time and expense has been dedicated to identifying current, historical, and potential expansion of Greater Sage-Grouse habitat and how it functions to provide the life sustaining elements for the species. Conservation of habitat is the foundation for this resource management plan amendment (RMPA). Any Greater Sage-Grouse conservation effort in Utah, as stated in the Conservation Plan for Greater Sage-Grouse in Utah (State Conservation Plan; UDWR 2013), must be "designed to protect high-quality habitat, enhance impaired habitat and restore converted habitat to support, in Utah, a portion of the range-wide population of Greater Sage-Grouse necessary to eliminate threats to the species."

According to Manier et al. (2013), Greater Sage-Grouse are currently estimated to occupy 165 million acres (668,000 square kilometers) across the western United States and Canada (Knick and Connelly 2011), and this range encompasses tremendous variability in habitat conditions, anthropogenic activities, and Greater Sage-Grouse populations. Development of comprehensive monitoring approaches leads to formal recognition that habitat selection assessments are needed to utilize approaches that address multiple spatial scales to represent selection processes of the animals (Connelly et al. 2003; Stiver et al. 2010). The first-order (1) is the broad geographic range that defines the species distribution Greater Sage-Grouse (2) characterization of the second-order hinges on large, relatively intact regions of habitat identified using populations or subpopulation distributions (for example, geographic connections among leks or regional population connectivity using genetics) to link habitats to Greater Sage-Grouse use. The third-order (3) requires refinement from delineations of populations/subpopulations within the species range in a given area to availability of the seasonal habitats (for example, nesting and winter habitats), and connectivity of seasonal habitats to support migration. Finally, assessment can be made of fourth-order selection (for example, daily site selection and behavioral observations) by (4) quantifying food and cover attributes and foraging behavior at particular sites. In practice, selection of food items is nested within selection of the feeding site because selection of a particular site determines the array of food items available to be selected; importantly, habitat value and use will best be determined using a combination of these characteristics (not one alone). To accurately characterize Greater Sage-Grouse habitat/range selection for a given population at the first- and second-orders, or landscape spatial scales, the migratory nature (seasonal movements) of the population must be well understood (Connelly et al. 2000), and this may include very large areas on an annual basis. It has been suggested that migratory populations may range across hundreds of square miles (Connelly et al. 2003).

HABITAT IDENTIFICATION PROCESS

The UDWR is the primary entity responsible for management of Greater Sage-Grouse populations in Utah and is also the lead entity in identifying and mapping Greater Sage-Grouse distribution. Information on the distribution identification process followed in Utah was summarized and is included in the Utah Greater Sage-Grouse Management Plan (State Management Plan; UDWR 2009). Although this plan has

been superseded by the State Conservation Plan, the now dated Management Plan provides relevant information on the habitat identification process.

Following Doherty's work in Wyoming, Montana, and Colorado (Doherty 2008), core Utah Greater Sage-Grouse breeding habitats were mapped. The mapping was accomplished utilizing occupied lek densities and associated male Greater Sage-Grouse maximum lek attendance data for the period 1999–2008 (10 years), referred to as the breeding bird density mapping. The breeding bird density mapping identified four density levels or parameters. The first parameter identified areas where 25 percent of the state's total 10-year average spring breeding Greater Sage-Grouse males (indicator for populations) are located. These areas symbolize the highest statewide density of breeding males on leks and can also be viewed as high-priority leks or those leks and associated habitats that individually contribute the most to the state's Greater Sage-Grouse total population. The second parameter identified areas where 50 percent of the state's total breeding Greater Sage-Grouse males are found. This was repeated for the 75 percent and 100 percent of spring breeding Greater Sage-Grouse males until all occupied leks were classified. Viewed from the converse, the total known spring Greater Sage-Grouse statewide population was indicated by the combined area of all parameters.

The breeding bird density mapped habitat was further refined over time as additional population and habitat area inventory, studies, and other information were available. This included information provided by other field specialists, other agencies, local and special interest groups, private landowners, and academia. Adjustments to habitat boundaries have been made based on verified information. The mapped seasonal habitat boundaries in each population area are intended to include areas currently used by a population or populations of Greater Sage-Grouse and are based upon the location of occupied leks, the identification of nesting and brood-rearing habitat, and associated winter and other habitat.

For decades prior to the current review, the UDWR has been supporting research and community-based conservation efforts to learn more about the ecology of the species. Appendix 8 of the State's 2013 Conservation Plan contains a listing of research studies and reports on Greater Sage-Grouse conducted in Utah. To facilitate this effort, the UDWR established ten Local Area Working Groups under the general direction of Utah State University, with the first established as far back as 1996. These Local Area Working Groups were composed of private interests and governmental entities, and were tasked to assess the local nature and scope of the threats to the species, and to recommend a course of action to address those threats. Because of this early and ongoing assessment, the State of Utah is fortunate to have a high level of knowledge about many of the populations, including seasonal range, migration routes, and other factors known to be essential to maintenance of the species, all in the context of Utah's unique conditions.

Greater Sage-Grouse distribution in Utah is highly influenced by the geography of Utah, which is characterized by mountainous terrain, separated by broad valleys in the Great Basin, and by deeply incised canyons in the Colorado Plateau. Greater Sage-Grouse habitat may be found in intact blocks in the Great Basin, or in disconnected "islands" of habitat in the Colorado Plateau.

The UDWR's seasonal habitat maps are intended to encompass the range used throughout the year by known Greater Sage-Grouse populations. Broad based maps that identify the Greater Sage-Grouse range are necessary to include a variety of important seasonal habitats and movement corridors that are spread across Utah's geographically diverse and naturally fragmented landscape. Greater Sage-Grouse, frequently described as "landscape-scale species," may use multiple areas to meet seasonal habitat needs

throughout the year and the resulting patchwork of habitats (e.g., winter, breeding, nesting, early brood-rearing, late brood-rearing, transitional, and movement corridor habitats) can encompass large areas, sometimes ranging between 180,000 and 1.2 million acres. Broad range maps increase the likelihood that all seasonal habitats (including transition and movement corridors) are included, especially where there are information gaps on Greater Sage-Grouse populations' habitats. Inevitably these Greater Sage-Grouse range maps include a patchwork of Greater Sage-Grouse habitats and non-habitats. Non-habitats, in and of themselves, may not provide direct habitat value for Greater Sage-Grouse (e.g., deep canyons or water bodies), but may be crossed by Greater Sage-Grouse when moving between seasonal habitats.

There are approximately 7.3 million acres mapped as Greater Sage-Grouse range throughout Utah. According to state-wide LANDFIRE vegetation data reflecting existing vegetation, there are 3.1 million acres (approximately 41%) of these areas that are associated with vegetation communities that do not include sagebrush as either the dominant vegetation type or as a primary component species of the vegetation community.

While areas mapped as Greater Sage-Grouse range encompass seasonal habitats and transition zones for Greater Sage-Grouse, they are also interspersed with areas that do not provide direct habitat at the site-scale (sagebrush) but may provide dispersal options or seasonal migration opportunities. Ninety-nine percent of the data pixels that comprise the 3.1 million acres of non-sagebrush vegetation types are less than 50 acres, reflecting the nature of habitat comprised of multiple interspersed vegetation types that often intermingle; however, the remaining 1 percent of the data pixels that comprise the 3.1 million acres represent areas that are larger than 50 acres and include nearly 86 percent of the area lacking a sagebrush component within the mapped occupied areas. This accounts for nearly 2.6 million acres of vegetation within Utah's Greater Sage-Grouse range that does not provide the necessary sagebrush components for Greater Sage-Grouse site-scale habitat needs. However, these areas may still provide important contributions to the mid- and fine-scale habitat levels for large, intact areas that are needed to support Greater Sage-Grouse populations. Such a determination would need to be made on a case-by-case basis following a multi-scale habitat assessment.

In short, the range boundaries were drawn on a broad scale, thus they include substantial amounts of interspersed areas of habitat and non-habitat. Most of the areas of non-habitat are predominantly small tracts that could be used for transitional zones or that could be affected by public land uses, in concert with adjacent tracts of habitat. However, some of these non-habitat areas are so large that they are unlikely to provide habitat for Greater Sage-Grouse populations.

To assist in refining Greater Sage-Grouse seasonal habitat in Utah, telemetry and GPS data have been collected for a portion of the Greater Sage-Grouse populations in the state. Telemetry and GPS data provide the UDWR with site-specific data on how Greater Sage-Grouse use the landscape. Telemetry information provides a snapshot of how Greater Sage-Grouse used the landscape in specific years but does not necessarily represent how those same birds use the landscape every year, or what areas other individual birds may use. In general, maps are refined as additional information on habitat conditions, Greater Sage-Grouse habitat use patterns, population susceptibility to stochastic events, and impacts of vegetation treatment are available. BLM and UDWR biologists would determine habitat availability using information that may include site visits, telemetry data, documented quantitative or qualitative habitat assessments, vegetation and soils mapping, or other inputs that may inform habitat presence/absence.

In summary, broad maps are more likely to include all seasonal habitat areas important for each population and can be refined as management agencies gain more information. While occupied habitat maps were used as a baseline for the 2015 RMPA/EIS, through on-the-ground information it is clear those maps include known use areas, as well as areas of potential habitat and areas of non-habitat.

PLANNING REQUIREMENTS

Though the BLM manages the habitat for wildlife species, the UDWR is the agency primarily responsible for managing Greater Sage-Grouse in Utah. In the past, the UDWR has been the primary repository for information regarding Greater Sage-Grouse habitat in Utah. The range maps represent a broad combination of information sources, including intact sagebrush areas, field observations, radio-telemetry data, historic habitats, professional judgment, and sagebrush areas adjacent to the previously mentioned areas. Since telemetry data have not been collected for every Greater Sage-Grouse population in the state, to refine the broader identified ranges, the aforementioned other sources of information are used in conjunction with telemetry and GPS data to create the Greater Sage-Grouse range maps. For the BLM's purposes of maintaining and enhancing Greater Sage-Grouse persistence on the landscape, all Greater Sage-Grouse range identified and mapped by the UDWR is included as the baseline for planning to ensure that all habitats that are or may be necessary for long-term Greater Sage-Grouse persistence are including for assessment and evaluation in the planning process. However, the identification and mapping of Greater Sage-Grouse habitat is an ongoing effort.

The Greater Sage-Grouse habitat maps used as a baseline for the land use planning process are not intended to represent a survey-grade boundary of Greater Sage-Grouse habitat and are not expected to be exclusively used at the project level. In this sub-regional RMPA, the BLM is making broad-scale land use planning decisions that are connected with similarly broad-scale RMPAs across the range of Greater Sage-Grouse (see Section 1.1 of the 2015 Final EIS). Based on the scale of planning (landscape level), baseline habitat represented in this RMPA primarily represents a portion of the first and the second order habitat within Utah discussed in the background section above.

Not only is the scale of mapping appropriate given the scale of planning, but it is also appropriate given the stated goals and objectives of this RMPA/EIS. Through this planning process the BLM aims to not only stop the decline of Greater Sage-Grouse populations, but to increase habitat availability and population size and distribution.

HABITAT UPDATES

As expressed in the 2013 State Conservation Plan for Utah, the implementation of any plan should be accompanied by efforts to refine mapping of habitats, which includes this RMPA/EIS. These efforts should be coordinated among federal, state, and local agencies; private landowners; Greater Sage-Grouse working groups; and academia that may choose to participate. On-the-ground projects should also contribute to this refined habitat mapping effort, at a level commensurate with the decisions to be made.

Habitat map updates will be made when agencies with special expertise and legal jurisdiction for Greater Sage-Grouse and their habitat gain more information on the presence/absence of Greater Sage-Grouse; obtain new or additional baseline population data, including information on the distribution and connectivity of Greater Sage-Grouse populations with other populations; identify Greater Sage-Grouse seasonal habitats and movements; and identify and quantify sagebrush habitats, the condition of those habitats, and connectivity within populations.

While refinements to habitat maps are necessary and appropriate, the RMPA includes management that gives the agency discretion to authorize actions in non-habitat areas under identified conditions. This eliminates the need to make constant site-specific adjustments to Greater Sage-Grouse habitat management area boundaries through the land use planning processes, which is neither consistent with the landscape nature of management actions in the BLM RMPs, nor consistent with application of conservation measures at a scale and timing needed to protect Greater Sage-Grouse.

Prior to considering proposed actions within Priority Habitat Management Areas (PHMA), an evaluation should be conducted by a qualified biologist in collaboration with federal and state biologists, including a field investigation if needed. To this end, additional site-specific information associated with local surveys could result in a more precise delineation of habitat boundaries. If during implementation of the RMPA or evaluation of a proposed action there are discrepancies between the LUP maps and the on-the-ground conditions, the on-the-ground information should be used to determine where the management included within this RMPA/EIS would apply. A similar site-specific review process has been effectively employed while Greater Sage-Grouse habitats were under interim management, allowing proposed projects in areas identified as non-habitat to proceed.

When considering new or local information for application of management actions, the goal is to provide a transparent and consistent scientific-based process for adjusting Greater Sage-Grouse habitat that will promote conservation of Greater Sage-Grouse in Utah. To that end, the following would be considered when updating the Greater Sage-Grouse habitat delineations:

Seasonal Habitat

- Determination of adjustments in the delineation of mapped seasonal Greater Sage-Grouse habitats would be coordinated among federal, state, and local agencies; academia; and technical specialists through a Greater Sage-Grouse Working Group.
- Adjustments in mapped Greater Sage-Grouse seasonal habitats will be based on the best available information, including field observations and inventories, radio-telemetry data, GPS collar data, habitat assessments, site visits, supporting research and science, restoration treatments, disturbance, technical expertise, and accepted modeling (including ground-truthing).
- Review of Greater Sage-Grouse mapped seasonal habitats and proposed adjustments could occur anytime there is a need to adjust the habitat baseline. At a minimum, the BLM would evaluate the mapped seasonal habitat boundaries approximately every 5 years in conjunction with land use plan evaluations.
- In general, mapped seasonal habitat boundaries would not be adjusted to exclude non-habitat areas if those areas of non-habitat are wholly contained in the mapped seasonal habitat boundaries, considering the level of habitat identification needed commensurate with the level of decision-making.
- Habitat altered by fire would not be removed as seasonal habitat. If the BLM, in consultation with other agencies, determines that rehabilitation or restoration of mapped seasonal Greater Sage-Grouse habitat is not feasible and that the area no longer contributes to any part of the Greater Sage-Grouse life cycle, adjustments may be made to exclude the area.
- Determinations on adjustments to mapped Greater Sage-Grouse seasonal habitat would be by consensus of the Greater Sage-Grouse Working Group.

Priority Habitat Management Areas

- Because PHMA boundaries are a land use plan action, adjustments are a BLM responsibility and will comply with the applicable BLM planning regulations and policies.
- Adjustments in delineation of PHMA would be coordinated among federal, state, and local agencies and interested parties.
- Adjustments in delineation of PHMA would be based on the best available information, including field observations and inventories, radio-telemetry and GPS data, habitat assessments, site visits, supporting research and science, restoration treatments, disturbance, technical expertise, and accepted modeling (including ground-truthing).
- Review of PHMA boundaries would generally be done every 5 years (for the BLM, this would be in conjunction with land use plan evaluations), unless more frequent adjustments are needed.
- Consistent with landscape-level decision making, PHMA would be identified at a second-order level (Manier et. al. 2013), and as such, boundaries would generally not be adjusted to exclude non-habitat areas if those areas are wholly contained within the LUP-identified boundaries.
- Areas within PHMA that are not currently used by Greater Sage-Grouse, but are ecologically capable of supporting Greater Sage-Grouse, would not be removed from PHMA boundaries.
- The Greater Sage-Grouse Working Group would make adjustment recommendations to PHMA to the BLM Utah State Director, who will make the final determination on whether the PHMA boundary adjustment is appropriate.
- New areas of mapped Greater Sage-Grouse seasonal habitat could be identified as PHMA following the appropriate BLM planning rules and procedures. The administrative process through which boundary adjustments will be made would be determined on a case-by-case basis.

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Appendix 1

Cumulative Effects Supporting Information

Appendix 1. Cumulative Effects Supporting Information

1.1 Rangewide Impacts from Past, Present, and Reasonably Foreseeable Actions

Table 1 represents the past, present, and reasonably foreseeable actions across the entire range for Greater Sage-Grouse, which are separated by state. When assessing the cumulative impact of the RMPA/EIS on Greater Sage-Grouse and its habitat, there are multiple geographic scales that the BLM has considered, including the appropriate WAFWA MZ. WAFWA MZs have biological significance to Greater Sage-Grouse. Established and delineated in 2004 in the *Conservation Assessment of Greater Sage-Grouse and Sagebrush Habitats* (Connelly et al. 2004), the WAFWA MZs are based on floristic provinces that reflect ecological and biological issues and similarities, not political boundaries.

Table 1
Rangewide Impacts from Past, Present, and Reasonably Foreseeable Actions

Action	Type	Effects
Great Basin		
Habitat Restoration Programmatic EIS	Great Basin-wide programmatic habitat restoration project	Programmatic document effects will be realized when the field implements projects. This action will provide opportunities to improve and enhance habitat through vegetation treatments.
Fuel Breaks Programmatic EIS	Great Basin-wide programmatic habitat fuel break project	Programmatic document effects will be realized when the field implements projects. This action will help to reduce the loss of habitat due to catastrophic fires.
Northwest Colorado		
Integrated program of work	Habitat restoration and improvement projects	Potential localized, short-term, adverse impacts on Greater Sage-Grouse habitat, with beneficial long-term impacts. Actions are consistent with those foreseen in the 2015 Final EIS and are therefore within the range of cumulative effects analyzed in the 2015 Final EIS.
Travel management	White River Field Office: Area-wide travel designations being considered through an ongoing plan amendment Little Snake Field Office: Travel Management plan, identifying route designations consistent with criteria in the 2015 LUPA	These actions represent implementation of objectives from 2015 ARMPA to prioritize travel management in Greater Sage-Grouse habitat. Impacts are covered in the cumulative impacts of the 2015 Final EIS as reasonably foreseeable.

Action	Type	Effects
Continued oil and gas development	Disturbance and fragmentation	Development is consistent with the reasonably foreseeable development scenarios analyzed as part of the 2015 Final EIS and the associated field office RMPs. Additional impacts are expected to be within the range analyzed in 2015 Final EIS cumulative impacts analysis.
Plans		
Northwest Colorado Programmatic Vegetation Treatment Environmental Assessment (DOI-BLM-CO-N000-2017-0001-EA) decision	Programmatic NEPA document for streamlining habitat treatments in sagebrush	-
Idaho		
Wildland fires 2015–2017	BLM: Past acres burned on BLM-administered land	534,744 acres of HMA burned since the ROD was signed in 2015. Post-fire rehabilitation was implemented. Too soon to determine the effectiveness of rehabilitation.
Habitat treatments 2015–2017	BLM: Past habitat improvement projects	431,295 acres treated to restore or improve potential Greater Sage-Grouse habitat. Too soon to determine the effectiveness of treatment.
ROWs issued 2015–2017	BLM: Past ROWs issued on BLM-administered land	97 ROWs were issued in the planning area but fewer than 10 were in Greater Sage-Grouse habitat and resulted in new habitat loss. The effects were mitigated, using the mitigation hierarchy.
Soda Fire restoration	BLM: Present habitat restoration and fuel break construction	Restoration of previously burned Greater Sage-Grouse habitat. Results in a net benefit to Greater Sage-Grouse habitat.
Twin Falls Vegetation Project	BLM: Present habitat treatment project that improves Greater Sage-Grouse habitat district-wide	Restoration of Greater Sage-Grouse habitat and improved rangeland conditions. Results in a net benefit to Greater Sage-Grouse habitat.
Idaho Falls Vegetation Project	BLM: Present habitat treatment project that improves Greater Sage-Grouse habitat district-wide	Restoration of Greater Sage-Grouse habitat and improved rangeland conditions. Results in a net benefit to Greater Sage-Grouse habitat.
Natural gas-producing well near Weiser, Idaho	Private: Present active gas well on private land	Well is not in Greater Sage-Grouse habitat.
Conifer removal	NRCS: Present (2018) 1,862 acres of conifer removal on private land to improve Greater Sage-Grouse habitat	Conifer removal would improve Greater Sage-Grouse habitat and open areas to Greater Sage-Grouse that were previously unavailable because of juniper encroachment.
Weed treatments	NRCS: Present (2018) 95 acres of weed treatments on private land to reduce noxious weeds in Greater Sage-Grouse habitat	Weed treatments allow the native vegetation to outcompete weeds on treated acres.

Action	Type	Effects
Water development	NRCS: Present (2018) 21,308 feet of pipeline and 40 watering tanks installed on private land	Water development to move livestock out of natural springs and wet meadows.
Pending ROWs 2015–2017	BLM: Future ROW under analysis on BLM-administered land	123 ROW applications have been submitted and are pending review and analysis.
Boise District Vegetation Project	BLM: Future habitat treatment project that improves Greater Sage-Grouse habitat district-wide	Restoration of Greater Sage-Grouse habitat and improved rangeland conditions result in a net benefit to Greater Sage-Grouse habitat.
Tristate Fuel Breaks Project	BLM: Future Greater Sage-Grouse habitat protection	Fuel breaks would protect habitat from wildfires. Some sagebrush may be lost during fuel break construction. Results in a net benefit to Greater Sage-Grouse habitat.
Bruneau-Owyhee Sage-Grouse Habitat Project	BLM: Future removal of juniper encroaching into Greater Sage-Grouse habitat	Bruneau-Owyhee Sage-Grouse Habitat Project would remove encroaching juniper from Greater Sage-Grouse habitat and render the habitat usable for Greater Sage-Grouse. Results in a net benefit to Greater Sage-Grouse habitat.
Conifer removal	NRCS: Future (2019–2023) 5,541 acres of conifer removal on private land to improve Greater Sage-Grouse habitat	Conifer removal would improve Greater Sage-Grouse habitat and open areas to Greater Sage-Grouse that were previously unavailable because of juniper encroachment.
Weed treatments	NRCS: Future (2019–2023) 357 acres of weed treatments on private land to reduce noxious weeds in Greater Sage-Grouse habitat	Weed treatments allow the native vegetation to outcompete weeds on treated acres.
Water development	NRCS: Present (2019–2023) 82,502 feet of pipeline and 46 watering tanks installed on private land	Water development to move livestock out of natural springs and wet meadows.
Nevada and Northeast California		
Wildland Fires 2015-2017	BLM: Past – Acres burned on BLM administered land	Approximately 1.3 million acres of HMA burned between 2015-2017. Post-fire restoration is being implemented as described below.
Fire Restoration (Emergency Stabilization and Rehabilitation)	BLM: Past and Present – Habitat restoration following wildland fires	1.8 million acres of habitat are either currently being treated or scheduled to be treated according to specific prescriptions outlined in Emergency Stabilization and Burned Area Rehabilitation plans following wildfire.
Habitat Treatments	BLM: Past – Habitat improvement projects	Over 176,000 acres of Greater Sage-Grouse habitat was treated between 2015-2017 to maintain or improve conditions for Greater Sage-Grouse. Treatments included conifer removal, fuel breaks, invasive species removal and habitat protection/restoration.

Action	Type	Effects
Land Use and Realty (issued and pending) 2015-2018	BLM: Past ROWs issued on BLM land	227 ROWs were issued in the planning area between 2015-2017. This includes amendments and reauthorizations, which may not have resulted in new disturbance. For ROWs occurring in Greater Sage-Grouse habitat, effects were offset using the mitigation hierarchy.
	BLM: Future pending	85 ROW applications are pending review and analysis. New ROWs would be held to the compensatory mitigation process described in this Proposed RMPA/Final EIS. However, no additional impacts from those described in the Draft EIS and 2015 Final EIS are expected. In addition, BLM Nevada is also currently evaluating a proposed withdrawal for expansion of the Fallon Naval Air Station, Fallon Range Training Complex for defense purposes.
Oil and Gas	BLM: Past	BLM has offered for lease 425,711 acres in HMAs; 407,478 of that total was leased. Lease stipulations apply as described in the leases according to HMA category.
	BLM: Past and Future	BLM's scheduled lease sale on June 12, 2018 included offering a total 110,556 acres of HMAs for lease. After the sale, 30,591 acres in HMA were sold. On September 11, 2018, BLM held another lease sale, where 13,163 acres in HMA were sold. The final lease sale of 2018 for BLM Nevada is scheduled for December 11, 2018 and this sale will not include any parcels within HMA for lease.
Geothermal	BLM: Past and Present	Between 2015 and 2017, the BLM has offered for lease 24,468 acres within HMAs. Lease stipulations apply as described in the leases as analyzed in the 2015 Final EIS. Six geothermal development permits have been approved and drilled on existing pads on existing leases. McGinness Hills Phase 3 Environmental Assessment authorized up to 42 acres of disturbance on existing leases, which will be offset according to the mitigation hierarchy.
Geothermal	Forest Service: Future Pending	6,901 acres of HMA pending Forest Service concurrence to lease, no pending geothermal development permits. If in HMAs, stipulations would be as described in 2015.

Action	Type	Effects
Locatable Mineral Projects	BLM: Past and Present	Between 2015 and 2017, the BLM has approved 18 new mines and/or expansions in the planning area, which is within the reasonably foreseeable development scenario outlined in the 2015 Final EIS (Section 5.1.16).
	BLM: Future Pending	The BLM is currently reviewing 20 plans of development for new mines or expansions, which is within the reasonably foreseeable development scenario outlined in the 2015 Final EIS (Section 5.1.16).
Fuel Breaks Programmatic EIS	BLM: Future – Great Basin-wide programmatic habitat fuel break project	Programmatic document effects will be realized when the field implements projects.
Greater Sage-Grouse Conservation	Forest Service- Future	Forest Service has indicated they will also be amending their land use plans. Specific details of their proposed changes are not yet known, but it is anticipated they propose alignment with state management plans and strategies.
Oregon		
Emergency Stabilization and Rehabilitation in South Bull Ridge RNA	Aerial herbicide application	Preliminary results indicate success in treating annual grasses (2017).
Emergency Stabilization and Rehabilitation in South Ridge Bully Creek RNA	Aerial herbicide application	Preliminary results indicate success in treating annual grasses (2015).
Emergency Stabilization and Rehabilitation in North Ridge Bully Creek RNA	Aerial herbicide application	Preliminary results indicate success in treating annual grasses (2015).
Trout Creek Mountain	Grazing permit renewal	Grazing permit renewal allotment includes the East Fork Trout Creek Research Natural Area (2016).
Utah		
Fire and Fuels		
Wildland Fires 2015-2019	Acres burned on BLM administered land	Approximately 181,159 acres of PHMA/GHMA burned between 2015-2019. Post-fire restoration is being implemented across all population areas that are affected. Effects: Potential loss of habitat value due to the removal of vegetation by fire.

Action	Type	Effects
Fire Restoration (Emergency Stabilization and Rehabilitation)	Acres of habitat restoration following wildland fires	Approximately 380,704 acres of HMA were treated/restored between 2015-2017. All of these acres are being restored in according to specific prescriptions outlined in Emergency Stabilization and Burned Area Rehabilitation plans following wildfire across all population areas that are affected. Effect: Potentially improve or increase habitat due to vegetative restoration activities.
Vegetation		
Habitat Treatments	Acres of habitat improvement projects	Past: Over 270,000 acres of Greater Sage-Grouse habitat was treated between 2015-2017 to maintain or improve conditions for Greater Sage-Grouse across all populations. Treatments included conifer removal, fuel breaks, invasive species removal and habitat protection/restoration. Effect: Potentially improve or increase habitat due to vegetative restoration activities. Future: Over 524,702 acres of Greater Sage-Grouse habitat is being proposed for treatment over the next 5 years. Treatments will include conifer removal, fuel breaks, invasive species removal and habitat protection/restoration across all populations. Effect: Potentially improve or increase habitat due to vegetative restoration activities.

Action	Type	Effects
Lands and Realty		
Land Use and Realty (issued and pending) 2015-2019	ROWs issued or pending on BLM land	Past: Throughout the planning area (all BLM field offices in Utah except Saint George and Monticello) regardless of Greater Sage-Grouse habitat, 1,092 ROWs were issued between 2015 and 2019. However, only 109 of these were within PHMA. Effect: These numbers include amendments and reauthorizations, which would likely not have resulted in any new disturbance. For ROWs occurring in Greater Sage-Grouse habitat, effects were offset using the mitigation hierarchy. Future: Throughout the entire planning area, 225 ROW applications are pending review and analysis. Of these, only 30 are within PHMA. Effect: New ROWs would be held to the compensatory mitigation process described in this Proposed RMPA/Final EIS. However, no additional impacts from those described in the Draft EIS and 2015 Final EIS are expected.
Zephyr Transmission Line	500 kV transmission line	Application received – could impact the Bald Hills, Uintah, Carbon, Strawberry, Emery, and Sheeprocks populations. Effects: May remove vegetation due to construction activities. Towers may provide perching opportunities for avian predators. However, most of these impacts should be removed by management standards identified in the selected alternative.
Parker Knoll Pump Storage Hydroelectric Federal Energy Regulatory Commission Project	Create electricity using a two-reservoir, gravity-fed system; approximately 200 acres of Greater Sage-Grouse habitat would be lost; mitigation involves Greater Sage-Grouse habitat-improvement work in areas adjacent to the lost habitat.	Still in planning and pre-NEPA stages – could impact the Parker Mountain population. Effects: May remove vegetation due to construction activities. Increased maintenance activities could lead to an increase in collision mortalities. Any associated tall structures may provide perching opportunities for avian predators. However, most of these impacts should be removed by management standards identified in the selected alternative.

Action	Type	Effects
Enefit Utility Project	Five rights-of-way across public lands for infrastructure (a road, 3 pipelines, and 2 powerlines) to support development of a mine on private lands. Estimated 1,037 acres of disturbance for the rights-of-way (7,000-9,000 acre mine and 320-acre processing plant).	ROD issued in September 2018. Issuance and constructions of ROWs still pending – could impact a portion of the Uintah population (Dead Man Bench GHMA). Effects: May remove vegetation due to construction activities. Increased maintenance activities could lead to an increase in collision mortalities. Any associated tall structures may provide perching opportunities for avian predators. However, most of these impacts should be removed by management standards identified in the selected alternative.
Congressionally Directed Land Tenure Adjustments	Land Tenure Adjustments from the BLM to the State of Utah	**Table 1-2** in **Chapter 1** shows the acres of public land with mapped PHMA and GHMA, establishing the summary of all past lands actions. In the National Defense Authorization Act for Fiscal Year 2017 Congress directed a land exchange between the BLM and State Institution and Trust Lands Administration (SITLA). This includes, approximately 2,400 acres of GHMA in the Sheeprocks area being studied for transfer to the State of Utah. In March 2019 Congress provided for land transfers in the John D. Dingell, Jr. Conservation, Management, and Recreation Act. This could include the BLM acquiring 2,065 acres of PHMA and 1,360 acres of GHMA in the Uinta population. It could also include the transfer of SITLA land in Congressional designations outside of Greater Sage-Grouse habitat for BLM lands throughout the state. While the list of involved lands has not been finalized, preliminary potential parcels include approximately 51,400 acres of PHMA and 1,870 acres of GHMA in the Rich, Carbon, Emery, Uinta, and Sheeprocks populations. Effects: Since compliance with the state's 2019 Greater Sage-Grouse plan and the Governor's Executive Order on Greater Sage-Grouse is voluntary for SITLA, transfers of PHMA from BLM would decrease the level of certainty for Greater Sage-Grouse protection. However, since the lands involved in

Action	Type	Effects
		these Congressionally directed transfers has not been finalized at this time, the specific lands involved and, if transferred, their potential future uses are not known. It would be speculative to analyze beyond the above statement.
Leasable Minerals (Oil and Gas, Non-energy Leasable Minerals, Coal, and Oil Shale and Tar Sands)		
Oil and Gas Leases	Acres of BLM land leased for Oil and Gas development	Past: From 2015-2019 the number of acres in PHMA and GHMA with current fluid mineral leases has decreased from approximately by nearly 240,000 acres, 651,000 to 411,463. This is due to leases expiring at a rate faster than them being leased in PHMA and GHMA. Similarly, acres of leases held by production have decreased by over 50,000 acres. Lease stipulations apply as described in the leases according to HMA category. Effects: The act of leasing would have no direct effect. Future: The BLM is required to conduct quarterly lease sales which could include parcels in HMA. Lease stipulations would still be as described in 2015 until a decision is made on this RMPA/EIS. Effect: The act of leasing would have no direct effect, as no specific disturbance is taken as a result of purchasing a lease. Leasing could occur in any of the populations, but would be most likely to impact the Uintah, Carbon, Emery, and Rich populations due to mineral potential.

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

Action	Type	Effects
Alton Coal Tract Lease-by-Application	Add 3,576 acres of federal surface or mineral estate to existing 300-acre mine on private land.	ROD issued in August 2018. The lease sale and issuance was completed in February 2019, and as such was developed to be in conformance with the 2015 Utah Greater Sage-Grouse ARMPA. Development of the mine is still pending. As described in the July 2018 Alton Final EIS, development of the mine could impact a part of the southern habitat in the Panguitch population. Effect: Activities associated with development of the lease could result in loss of habitat and vehicle mortality due to increased traffic. Most of these impacts should be removed by management standards identified in the selected alternative, or offset by habitat improvements.
Williams Draw Coal Lease by Application	The proposed action includes 4,200 acres of federal surface and mineral estate; the proposal may have several vents, drilling exploration holes on the surface and underground, and load-out facilities	Still in planning and NEPA stages; could impact the Carbon population. Effect: The act of leasing would have no direct effect. However, the activities associated with development of the lease could result in loss of habitat and vehicle mortality due to increased traffic. Most of these impacts should be removed by management standards identified in the selected alternative.
Greens Hollow Coal Lease by Application	Proposal includes 6,700 acres; a vent is proposed off site; minimal surface disturbances with the exception for exploration drilling	The area has been leased, but development is on hold due to litigation. Would affect the Emery population. Effect: This is an expansion of an existing underground mine. Activities associated with development of the lease could result in the loss of a small amount of habitat from development of ancillary features (vent fan). Most mining activity (portal, truck traffic, etc.) occurs down the cliff face, far removed from the habitat. Most of these impacts would be removed by management standards identified in the selected alternative.

Action	Type	Effects
Flat Canyon Coal Lease by Application	Lease by Application 3,792 acres; and Exploration License, 595 acres	Leased and under production in the Carbon population. Effect: The act of leasing would have no direct effect. However, the activities associated with development of the lease could result in loss of habitat and vehicle mortality due to increased traffic. Most of these impacts should be removed by management standards identified in the selected alternative.
Gilsonite Leasing	16,810 acres that are currently under prospecting permit application; the permits would either be issued or a Known Gilsonite Leasing Area would be established, thus allowing competitive leasing	The prospecting permit applications have been in place since the late 1980s; Known Gilsonite Leasing Area report ongoing, after which NEPA will begin to address backlogs for these GHMA portions of the Uintah population. Effect: Activities associated with development or prospecting of the permit / lease could result in loss of habitat and vehicle mortality due to increased traffic. Most of these impacts should be removed by management standards identified in the selected alternative.
Phosphate Fringe Acreage Lease	1,627 acres of fringe acreage lease on BLM-administered lands	NEPA has started and awaiting a Development Scenario to complete the NEPA for this expansion of an existing phosphate mine in the Diamond Mountain portion of PHMA in the Uintah population. Effect: The act of leasing would have no direct effect. However, the activities associated with development of the lease could result in loss of habitat and vehicle mortality due to increased traffic. Most of these impacts should be removed by management standards identified in the selected alternative.
Phosphate Competitive Lease Application	1,186 acres on National Forest System lands	NEPA has started and awaiting a Development Scenario to complete the NEPA for this area in the Uintah population. Effect: Activities associated with development of the lease could result in loss of habitat and vehicle mortality due to increased traffic. Most of these impacts should be removed by management standards identified in the selected alternative.

Action	Type	Effects
Other Items		
Hard Rock Prospecting Permits being considered on Bankhead Jones	Hard rock exploration permits	Pending Consideration for this area in the Sheeprocks population. Effect: Activities associated with development of the lease could result in loss of habitat, vehicle mortality due to increased traffic and disruption of seasonal use areas. Most of these impacts should be removed by management standards identified in the selected alternative.
Gooseberry Narrows Reservoir	Bureau of Reclamation project on Forest Service and private land; project is approximately 1,200 acres	EIS is complete, pending EPA review and approval for this portion of the Carbon population. Effect: Activities associated with construction and operation of the reservoir would result in loss of habitat within the project area and a potential increase for vehicle mortality due to increased traffic. However, the habitat lost within the project area may be supplemented by improving the quality and seasonal functionality of the adjacent habitat. Most of the impacts should be removed by management standards identified in the selected alternative.
Uinta Basin Railway	Development of a railway that begins in the Uinta Basin, and terminates at a location that connects to the national rail system.	The project is in the early stages of consideration. Scoping was conducted by the Surface Transportation Board in June-August, 2019. The EIS is currently being developed. There is not a preferred alternative, but based on the early alternatives, one alternative alignment could affect GHMA in the Uinta Population, and others could affect PHMA in the Emma Park portion of the Carbon Population. Effect: Construction of the railway could result in a direct loss of habitat. Use of the railway could result in noise that would displace birds from preferred habitats. The occurrence and magnitude of these impacts would vary based on alternative alignment and mitigation measures applied.

Action	Type	Effects
Motorized Travel Plan Implementation	Implementation of motorized route designation plans across the planning region	Implementation actions underway statewide, with travel planning reasonably foreseeable in the Sheeprocks, Uintah, Carbon and Panguitch populations. Effect: The development of a motorized travel plan would potential help to reduce fragmentation of habitat and centralizing disturbance into areas of lesser importance.
Grand Staircase-Escalante National Monument Management Plan	Development of a resource management plan	Final EIS issued in August 2019. Still in planning stages for this area that overlaps the Panguitch population. This action would provide a framework to manage both the remaining monument areas and the areas no longer within the monument boundaries. Effect: Since no alternative proposes different management for Greater Sage-Grouse from Greater Sage-Grouse planning process, there will be no cumulative effects not already address in the impact analysis above. Further, there are no major reasonably foreseeable developments in the areas no longer in the monument and near the PHMA. As such, there are no impacts anticipated to add to those already disclosed in the impacts analysis above.
Forest Service Greater Sage-Grouse Planning	Forest Service and Utah Division of Wildlife Resources	Forest Service is in the process of amending their land use plans. Their proposed changes are similar with those considered in this EIS, and would increase alignment with state management plans and strategies. Applicable to all Greater Sage-Grouse populations with National Forest System Lands. Effect: This effort will help to align the Forest Service's plan to be more consistent with the State of Utah's plan and provide the adequate management actions necessary to protect and conserve the Greater Sage-Grouse.

Action	Type	Effects
State of Utah Greater Sage-Grouse Management	Update of the State's Conservation Plan for Greater Sage-Grouse in Utah, as well as implementation of the State's compensatory mitigation rule	Past: The Conservation Plan for Greater Sage-Grouse in Utah was finalized in 2013; it was designed to be updated every 5 years. While it requires a 4:1 mitigation ratio in the State's Greater Sage-Grouse Management Areas (SGMA), there was no established approach to implement that mitigation process to the State's 11 SGMAs. Effect: The plan established the management actions necessary for the State of Utah to continue to enhance and conserve the Greater Sage-Grouse while still allowing for economic opportunities. Future: The State updated their Greater Sage-Grouse plan in January 2019, incorporating the compensatory mitigation rule that provides a process to develop a banking system to apply the state's 4:1 mitigation ratio that is designed to improve habitat for Greater Sage-Grouse. Effect: This effort will help to refine and identify areas to improve management actions and allow for the incorporation of new and local science to better balance Greater Sage-Grouse management across the state. It provides management to maintain and improve Greater Sage-Grouse populations, as well as a framework for managing habitat on state and private land. It will also provide an opportunity for economic development to occur while offsetting the impacts to habitat quality.
Wyoming		
Wildland Fires 2015-2017	BLM: Past – Acres burned on BLM administered land	Approximately 137,000 acres of HMA burned between 2015 and 2017. Post-fire restoration and habitat treatments are being implemented, as described below, to diminish impacts of habitat lost to wildland fire.
Fire Restoration (Emergency Stabilization and Rehabilitation)	BLM: Past and Present – Habitat restoration following wildland fires	Approximately 4,030 acres of BLM-administered habitat are either currently being treated or scheduled to be treated according to specific prescriptions outlined in Emergency Stabilization and Burned Area Rehabilitation plans following wildfire.

Action	Type	Effects
Habitat Treatments	BLM: Past – Habitat improvement projects	More than 96,000 acres of Greater Sage-Grouse habitat were treated between 2015 and 2017 to maintain or improve conditions for Greater Sage-Grouse. Treatments included conifer removal, fuel breaks, invasive species removal and habitat protection/ restoration.
Land Use and Realty (issued and pending) 2015-2018	BLM: Past ROWs issued on BLM land	BLM Wyoming issued approximately 3,000 ROWs in the planning area between 2015-2017. This includes amendments and reauthorizations, which may not have resulted in new disturbance. For ROWs occurring in Greater Sage-Grouse habitat, effects were offset by the management prescriptions in the RMPs and ARMPA.
	BLM: Future pending	There are approximately 590 ROW applications pending review and analysis. New ROWs under the Proposed Plan would align with the management prescriptions of the Core Area Strategy and State of Wyoming Mitigation Framework. No additional cumulative impacts are anticipated, beyond those described.
Oil and Gas	BLM: Past	BLM Wyoming has offered for lease 861,634 acres; 812,123 acres of that total was leased. Leases followed management prescriptions in the RMPs and ARMPA and stipulations apply as described in the leases according to HMA category.
	BLM: Future pending	BLM Wyoming has a scheduled lease sale in June 2018 that will offer 198,588 acres for lease. The actions in the Proposed Plan to not propose to change stipulations analyzed in the 2014 and 2015 plans.
Locatable Mineral Projects	BLM: Past and Present	Between 2015-2017, the BLM has approved 17 new mines and/or expansions within the planning area (including non-habitat). The Proposed Plan does not propose changes to any decisions associated with locatable minerals, which were sufficiently analyzed on the existing plans.

Action	Type	Effects
Locatable Mineral Projects (*continued*)	BLM: Future pending	The BLM is currently reviewing 26 plans of operation for new mines, mine expansions and notice-level activities. This number also includes 10 pending mine patents, which are in the process of being patented into private ownership. The Proposed Plan does not propose changes to any decisions associated with locatable minerals, and future impacts would be analyzed in future EISs, adhering to existing requirements of the RMPs and ARMPA.
Leasable Mineral Projects (Coal)	BLM: Past and Present	Two coal lease modifications were issued in 2018, totaling 1,306.61 acres. For lease modifications occurring in Greater Sage-Grouse habitat, effects were offset by the management prescriptions in the RMPs and ARMPA.
	BLM: Future pending	BLM Wyoming is currently reviewing 4 coal lease applications/modifications totaling 10,148.56 acres. No management decisions for leasable minerals are proposed for change under the Proposed Plan.
Greater Sage-Grouse Conservation	Forest Service: Future	Forest Service has indicated they will also be amending their land use plans. Specific details of their proposed changes are not yet known, but it is anticipated they will propose alignment with state management plans and strategies.

1.2 Cumulative Effects Analysis – Habitat and Allocation Decision Summaries for the No-Action and Proposed Plan Amendment Alternatives by Management Zone

Data representing the final plan allocation decisions and habitat delineations collected by the BLM upon the completion of the 2015 planning process have been updated or corrected relative to the final allocation decisions from the 2015 plans to reflect maintenance-related changes, adaptive management responses, or refined source data. The BLM used these data to represent the No-Action Alternative for the current plan analysis. The BLM then identified 2015 data which are not subject to change in any alternatives associated with the 2018 planning process. These data were carried forward as the alternative allocation decision data. The BLM was also able to provide allocation decision data representing changes included in the 2018 Proposed RMPAs/Final EISs, which were then used in the comparative analysis. Decision data are summarized by habitat type within each Management Zone (MZ) (see **Figure 1**) and are presented in this appendix in both approximate acreage of BLM-administered lands within each habitat designation as well as percent of BLM-administered lands within a habitat designation to which an allocation decision applies. For programs where allocation decisions change, information is presented separately. In cases where no change has occurred, both alternatives are presented together. The BLM Montana is currently not undergoing a plan amendment process; however, data were included in this cumulative effects summary. A summary of data submitted for this analysis can be found in **Table 1**, detailing which areas did not provide data for analysis. In these cases, summaries reflect submitted data only. All figures and tables are intended for MZ summary purposes only. They represent data available at the time of consolidation and may be revised as plans are finalized. Consult each individual EIS for final/official acreages.

Table 2
Data Submission Summary for Cumulative Effects Analysis. Y = Data submitted, N = No data submitted, followed by which area within the State that did not provide data.

Program Area	Colorado	Idaho	Montana & The Dakotas	Nevada/NE California	Oregon	Utah	Wyoming
Geothermal Energy	Y	Y	N – Miles City, Lewistown, Billings, UMRBNM	Y	N	Y	N – Bighorn Basin
Land Tenure	Y	Y	Y	Y	N	Y	Y
Livestock Grazing	Y	Y	Y	Y	Y	Y	Y
Locatable Minerals	Y	Y	Y	Y	Y	Y	Y
Non-Energy Leasable Minerals	Y	Y	N – Miles City, Billings	Y	N	Y	N – Bighorn Basin, Buffalo, Wyoming (9-Plan)
Fluid Mineral Leasing (Oil & Gas)	Y	Y	N - Lewistown	Y	N	Y	Y
Rights-of-Ways	Y	Y	Y	Y	N	Y	Y
Salable-Mineral Materials Disposals	Y	Y	Y	Y	N	Y	Y
Solar Energy	Y	Y	Y	Y	N	Y	N – Bighorn Basin, Buffalo, Lander, Wyoming (9-Plan)
Trails and Travel Management	Y	Y	Y	Y	N	Y	Y
Wind Energy	Y	Y	Y	Y	N	Y	Y

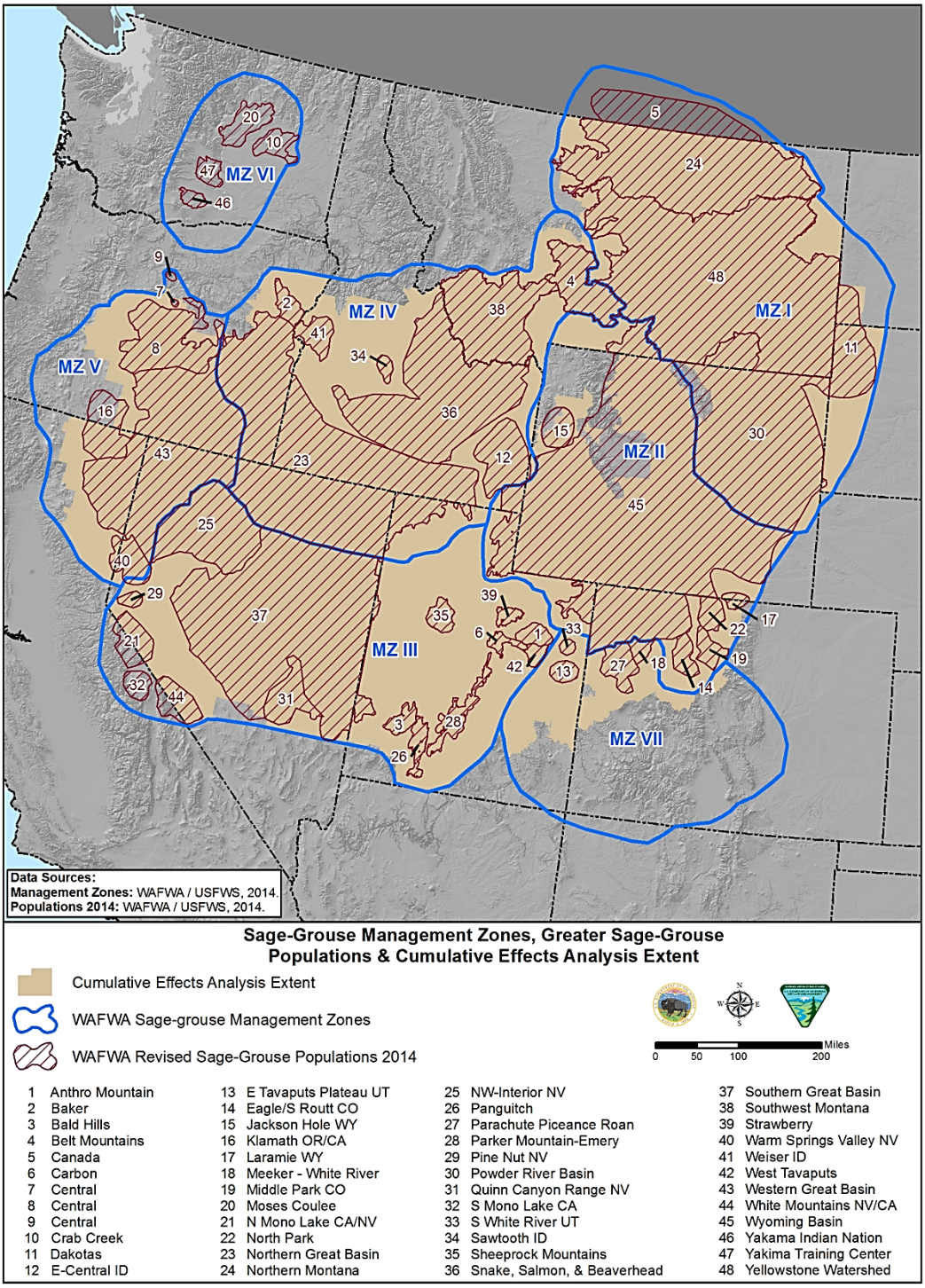


Figure 1 – Cumulative Effects Analysis Extent, Greater Sage-Grouse Management Zones and Populations

1.2.1 Management Zone I – Wyoming, Montana, North Dakota, South Dakota

I. Habitat Management

Table 3 – Habitat Management Areas within MZ I

Acres and percentages reflect all lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of HMA in MZ I							
No Action				Management Alignment			
PHMA	GHMA	RHMA[1]	Non-HMA	PHMA	GHMA	RHMA	Non-HMA
12,122,000	28,339,000	437,000	33,467,000	12,122,000	28,339,000	437,000	33,467,000

Approximate Percent of MZ I that is HMA							
No Action				Management Alignment			
PHMA	GHMA	RHMA	Non-HMA	PHMA	GHMA	RHMA	Non-HMA
16%	38%	1%	45%	16%	38%	1%	45%

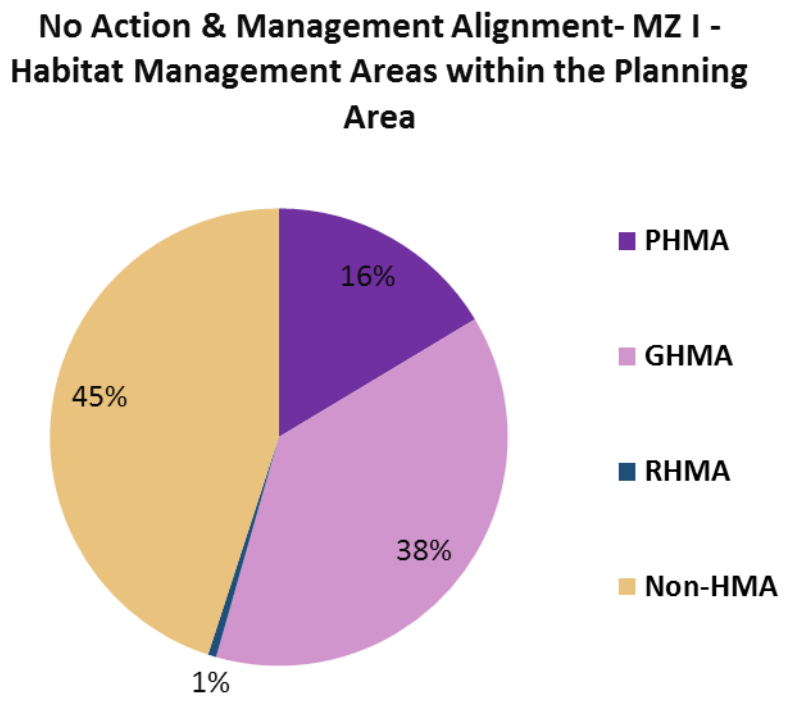


Figure 2 - Habitat Management Areas within MZ I

Percentages reflect all lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

[1] Restoration Habitat Management Area (RHMA)

II. Geothermal Energy

Table 4 – Geothermal Energy Decisions within MZ I

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding.
[1] Data not available for portions of MT and WY. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Geothermal Decisions[1] in MZ I by Habitat Management Area Type					
Geothermal Energy	**No Action & Management Alignment**				
	PHMA	**GHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	86,000	0	NA	86,000	**172,000**
Open NSO	1,988,000	130,000	NA	230,000	**2,349,000**
Open CSU/TL	0	443,000	NA	1,071,000	**1,514,000**
Open Standard Stipulations	0	141,000	NA	372,000	**514,000**
Total	**2,074,000**	**714,000**	**NA**	**1,760,000**	**4,548,000**

Approximate % of Habitat Management Area by Geothermal Decision[1] within Habitat in MZ I					
Geothermal Energy	**No Action & Management Alignment**				
	PHMA	**GHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	4%	0%	NA	5%	**4%**
Open NSO	96%	18%	NA	13%	**52%**
Open CSU/TL	0%	62%	NA	61%	**33%**
Open Standard Stipulations	0%	20%	NA	21%	**11%**
Total	**100%**	**100%**	**NA**	**100%**	**100%**

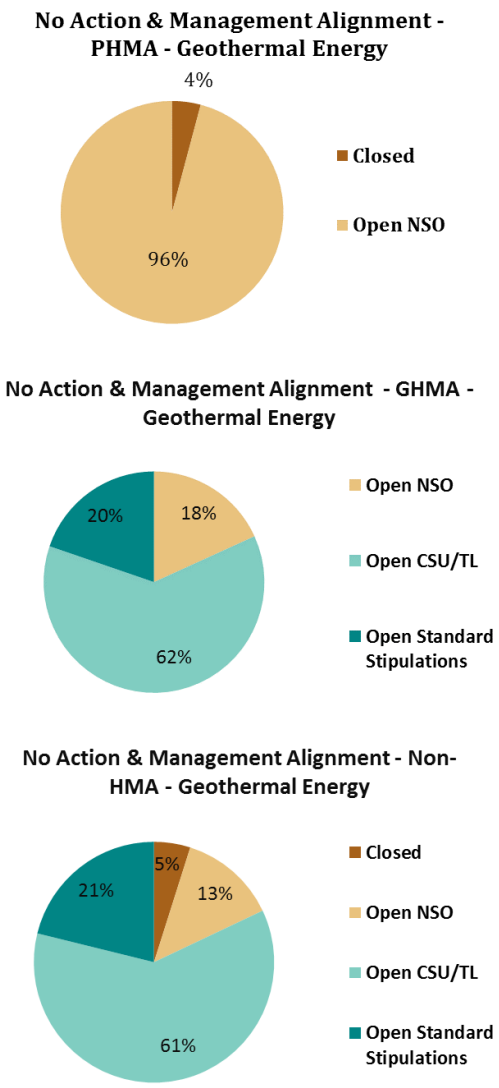


Figure 3 – Geothermal Energy Decisions within MZ I

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. [1] Data not available for portions of MT and WY. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

III. Land Tenure

Table 5 – Land Tenure Decisions within MZ I

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Land Tenure Decisions in MZ I by Habitat Management Area Type					
Land Tenure	**No Action & Management Alignment**				
	PHMA	**GHMA**	**RHMA**	**Non-HMA**	**Total**
Disposal	49,000	167,000	0	143,000	**359,000**
Retention	3,259,000	2,997,000	159,000	1,538,000	**7,953,000**
Total	**3,308,000**	**3,164,000**	**159,000**	**1,681,000**	**8,312,000**

Approximate % of Habitat Management Area by Land Tenure Decision within Habitat in MZ I					
Land Tenure	**No Action & Management Alignment**				
	PHMA	**GHMA**	**RHMA**	**Non-HMA**	**Total**
Disposal	1%	5%	0%	9%	**4%**
Retention	99%	95%	100%	91%	**96%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

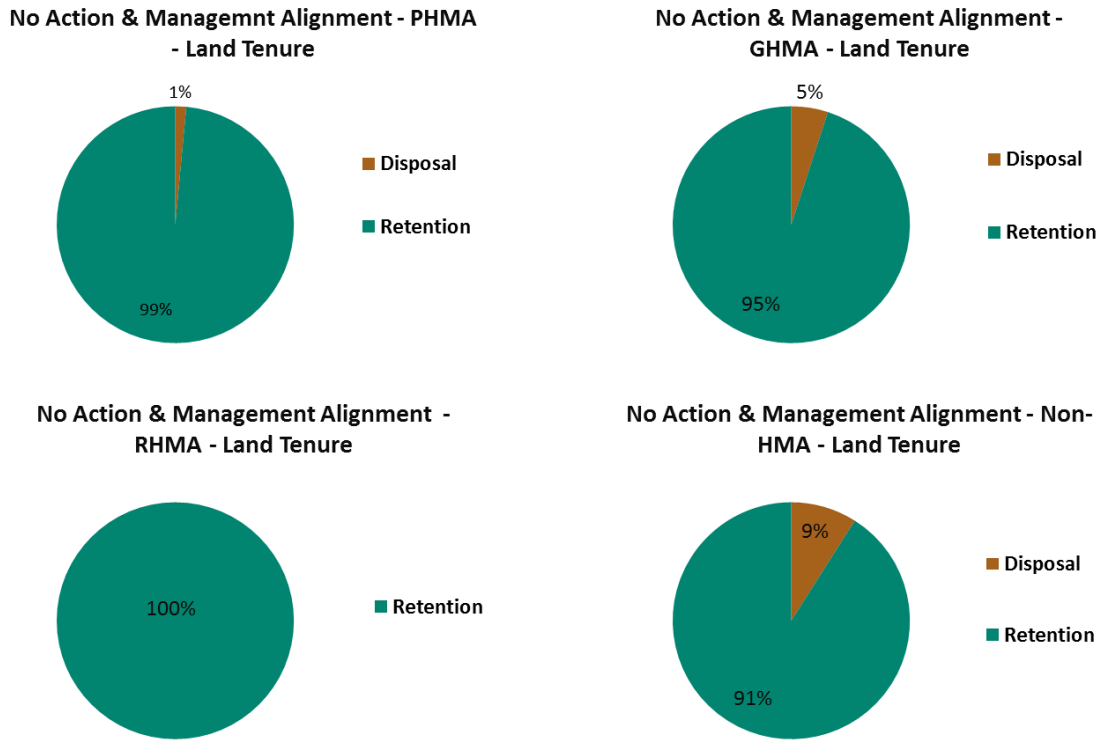


Figure 4 – Land Tenure Decisions within MZ I

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

IV. Livestock Grazing

Table 6 – Livestock Grazing Decisions within MZ I

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Livestock Grazing Decisions in MZ I by Habitat Management Area Type					
Livestock Grazing	**No Action & Management Alignment**				
	PHMA	**GHMA**	**RHMA**	**Non-HMA**	**Total**
Unavailable	3,000	8,000	0	12,000	**23,000**
Available	3,303,000	3,186,000	158,000	1,632,000	**8,279,000**
Total	**3,306,000**	**3,194,000**	**158,000**	**1,644,000**	**8,302,000**

Approximate % of Habitat Management Area by Livestock Grazing Decision within Habitat in MZ I					
Livestock Grazing	**No Action & Management Alignment**				
	PHMA	**GHMA**	**RHMA**	**Non-HMA**	**Total**
Unavailable	<1%	<1%	0%	<1%	**<1%**
Available	100%	100%	100%	100%	**100%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

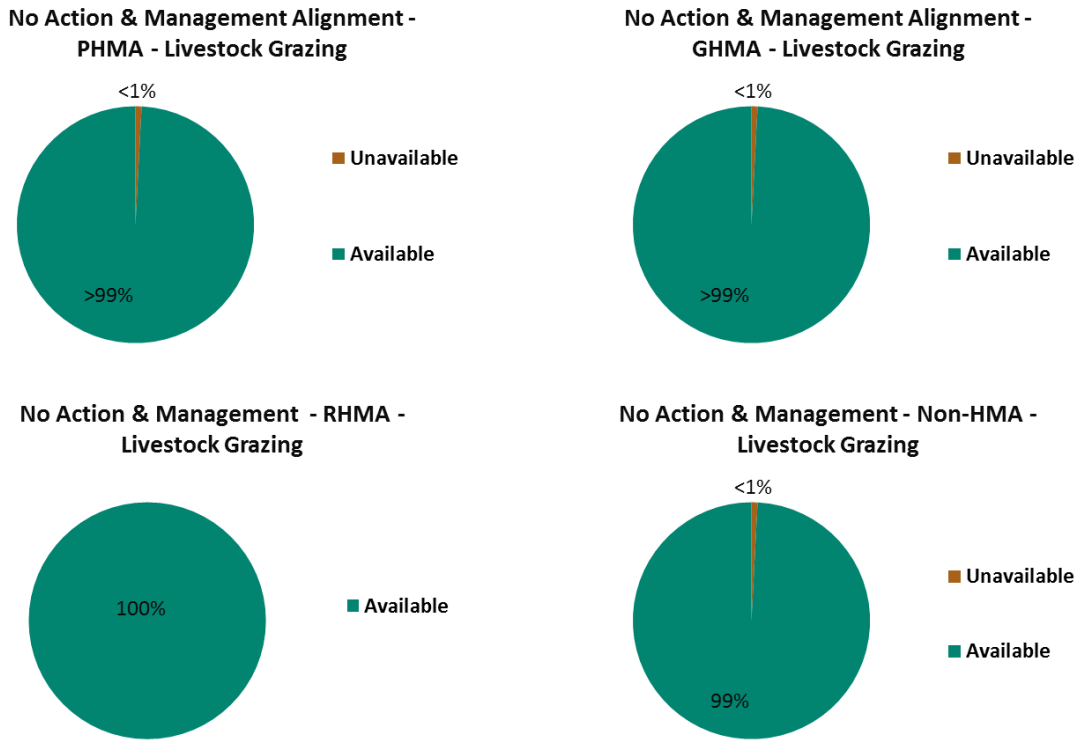


Figure 5 – Livestock Grazing Decisions within MZ I

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

V. Locatable Minerals

Table 7 – Locatable Minerals Decisions within MZ I

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages. [2] MT Recommended Withdrawals Decisions in PHMA will be removed via plan maintenance.

Approximate Acres of Locatable Minerals Decisions[2] in MZ I by Habitat Management Area Type					
Geothermal Energy	**No Action & Management Alignment**				
	PHMA	**GHMA**	**RHMA**	**Non-HMA**	**Total**
Existing Withdrawals	22,000	203,000	0	240,000	**465,000**
Recommended Withdrawals	1,094,000	166,000	0	46,000	**1,306,000**
Open	4,053,000	7,132,000	164,000	2,688,000	**14,037,000**
Total	**5,169,000**	**7,501,000**	**165,000**	**2,974,000**	**15,808,000**

Approximate % of Habitat Management Area by Locatable Minerals Decisions[2] within Habitat in MZ I					
Geothermal Energy	**No Action & Management Alignment**				
	PHMA	**GHMA**	**RHMA**	**Non-HMA**	**Total**
Existing Withdrawals	<1%	3%	<1%	8%	**3%**
Recommended Withdrawals	21%	2%	0%	2%	**8%**
Open	79%	95%	100%	90%	**89%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

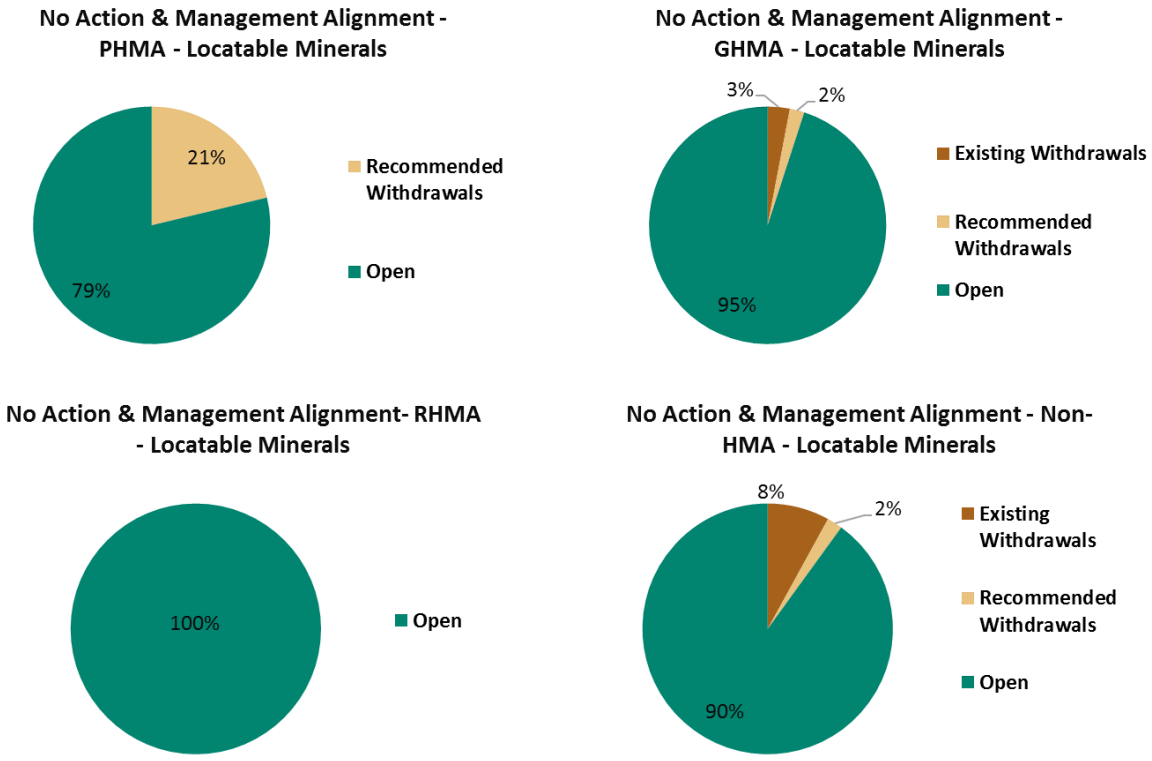


Figure 6 – Locatable Mineral Decisions within MZ I

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages. [2] MT Recommended Withdrawals Decisions in PHMA will be removed via plan maintenance.

VI. Non-Energy Leasable Minerals

Table 8 – Non-Energy Leasable Minerals Decisions within MZ I

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. [3] Data not available for portions of MT and WY. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Non-Energy Leasable Minerals[3] Decisions in MZ I by Habitat Management Area Type					
Livestock Grazing	**No Action & Management Alignment**				
	PHMA	**GHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	2,432,000	296,000	NA	355,000	**3,083,000**
Open	1,900,000	6,205,000	NA	2,463,000	**10,568,000**
Total	**4,332,000**	**6,501,000**	NA	**2,818,000**	**13,651,000**

Approximate % of Habitat Management Area by Non-Energy Leasable Minerals[3] Decision within Habitat in MZ I					
Livestock Grazing	**No Action & Management Alignment**				
	PHMA	**GHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	56%	5%	NA	13%	**23%**
Open	44%	95%	NA	87%	**77%**
Total	**100%**	**100%**	**NA**	**100%**	**100%**

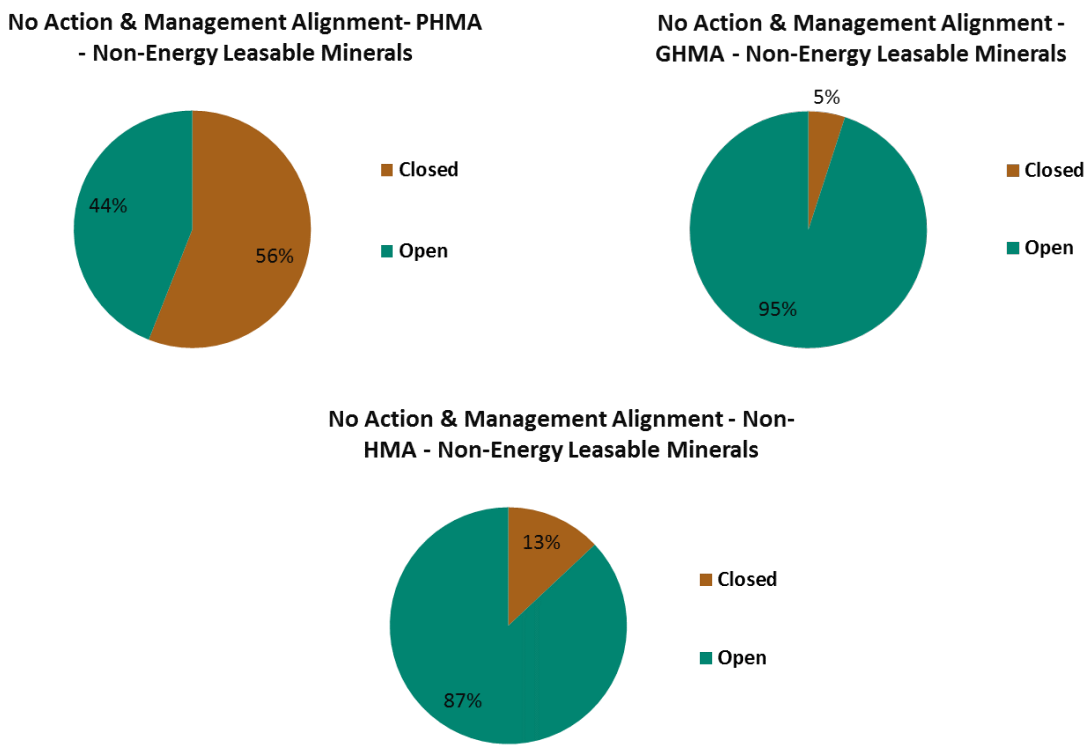


Figure 7 – Non-Energy Leasable Minerals Decisions within MZ I

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. [3] Data not available for portions of MT and WY. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VII. Fluid Minerals (Oil & Gas)

Table 9 – Fluid Minerals (Oil & Gas) Decisions within MZ I

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. [4]Data not available for portions of MT. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Fluid Minerals (Oil a& Gas) Decisions[4] in MZ I by Habitat Management Area Type					
Fluid Minerals (Oil and Gas)	**No Action & Management Alignment**				
	PHMA	**GHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	196,000	328,000	0	346,000	**870,000**
Open NSO	3,730,000	1,485,000	228,000	406,000	**5,849,000**
Open CSU/TL	1,582,000	5,280,000	64,000	2,155,000	**9,082,000**
Open Standard Stipulations	0	2,223,000	0	744,000	**2,967,000**
Total	**5,508,000**	**9,316,000**	**292,000**	**3,651,000**	**18,768,000**

Approximate % of Habitat Management Area by Fluid Minerals (Oil a& Gas) Decision[4] within Habitat in MZ I					
Fluid Minerals (Oil and Gas)	**No Action & Management Alignment**				
	PHMA	**GHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	3%	4%	0%	9%	**5%**
Open NSO	68%	16%	78%	11%	**31%**
Open CSU/TL	29%	57%	22%	59%	**48%**
Open Standard Stipulations	0%	24%	0%	20%	**16%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

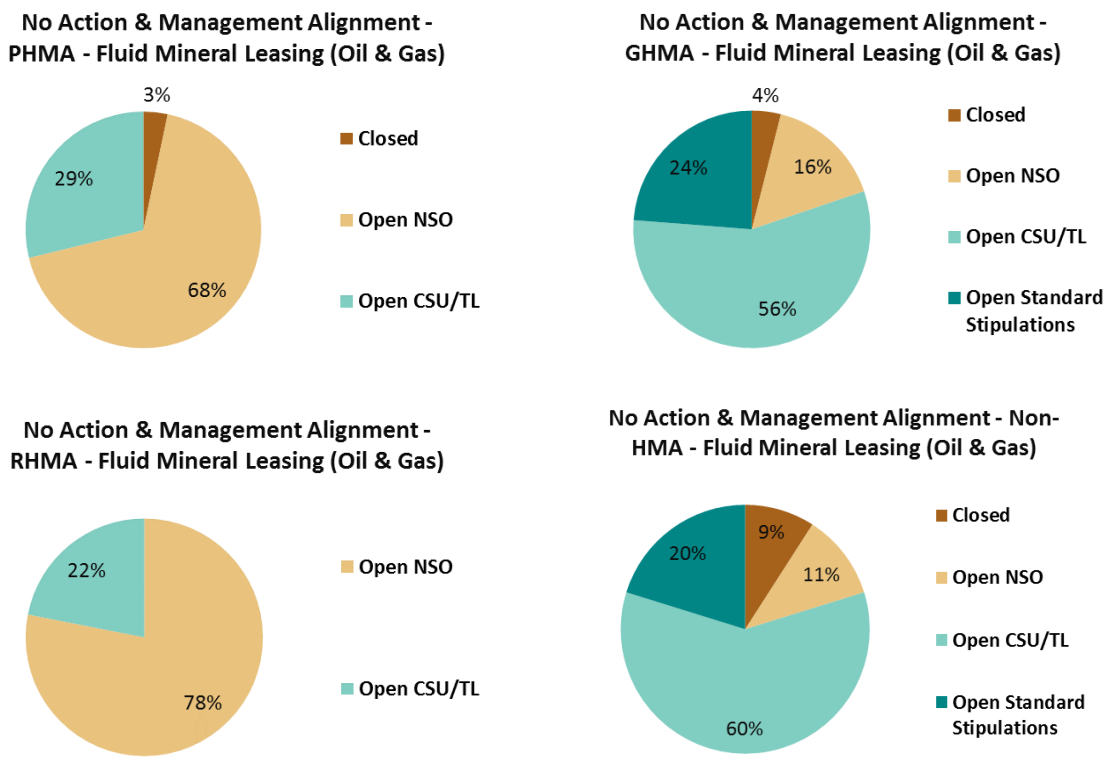


Figure 8 – Fluid Minerals (Oil & Gas) Decisions within MZ I

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. [4]Data not available for a portion of MT. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VIII. Rights-of-Ways

Table 10 – Rights-of-Ways Decisions within MZ 1

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Rights-of-Ways Decisions in MZ 1 by Habitat Management Area Type					
Geothermal Energy	**No Action & Management Alignment**				
	PHMA	**GHMA**	**RHMA**	**Non-HMA**	**Total**
Exclusion	110,000	240,000	0	86,000	**436,000**
Avoidance	3,163,000	1,819,000	72,000	282,478	**5,336,478**
Open	5,000	1,067,000	87,000	1,206,000	**2,364,000**
Total	**3,278,000**	**3,126,000**	**159,000**	**1,574,478**	**8,136,478**

Approximate % of Habitat Management Area by Rights-of-Ways Decision within Habitat in MZ 1					
Geothermal Energy	**No Action & Management Alignment**				
	PHMA	**GHMA**	**RHMA**	**Non-HMA**	**Total**
Exclusion	3%	8%	0%	5%	**5%**
Avoidance	97%	58%	45%	18%	**66%**
Open	0%	34%	55%	77%	**29%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

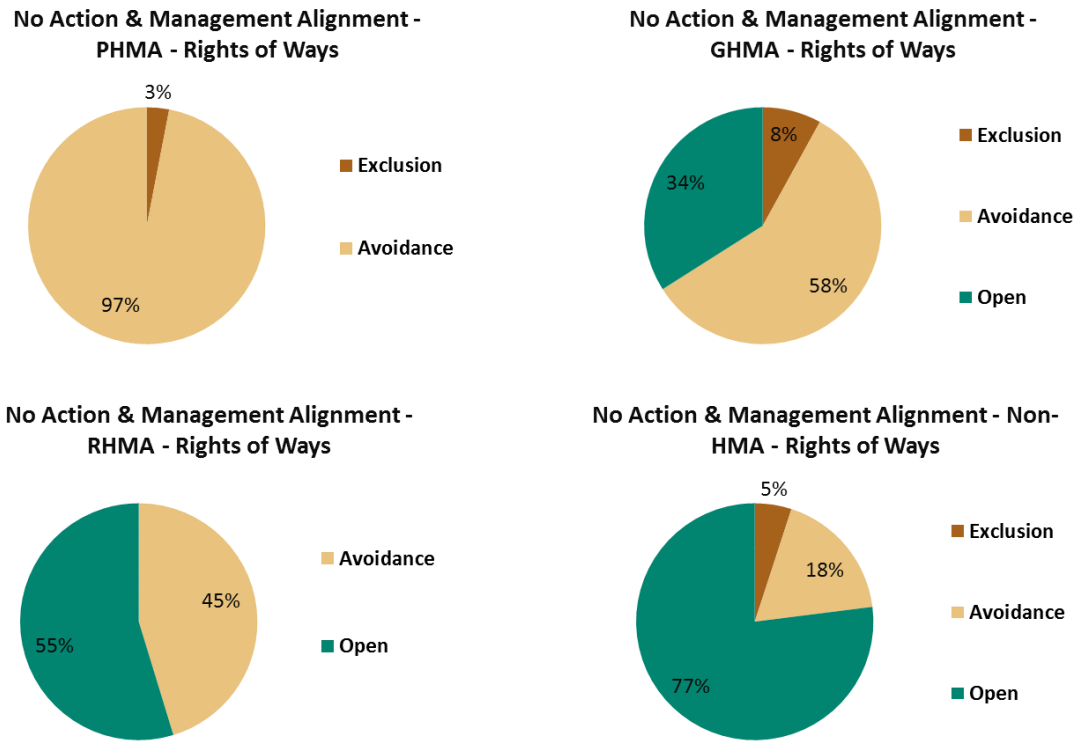


Figure 9 – Rights-of-Ways Decisions within MZ 1

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

IX. Salable Minerals Materials

Table 11 – Salable Minerals Decisions within MZ I

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Salable Minerals Materials Decisions in MZ I by Habitat Management Area Type					
Livestock Grazing	**No Action & Management Alignment**				
	PHMA	**GHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	3,870,000	402,000	9,000	424,000	**4,705,000**
Open	1,882,000	8,787,000	267,000	2,990,000	**13,926,000**
Total	**5,752,000**	**9,189,000**	**276,000**	**3,414,000**	**18,631,000**

Approximate % of Habitat Management Area by Salable Minerals Materials Decision within Habitat in MZ I					
Livestock Grazing	**No Action & Management Alignment**				
	PHMA	**GHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	67%	4%	3%	12%	**25%**
Open	33%	96%	97%	88%	**75%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

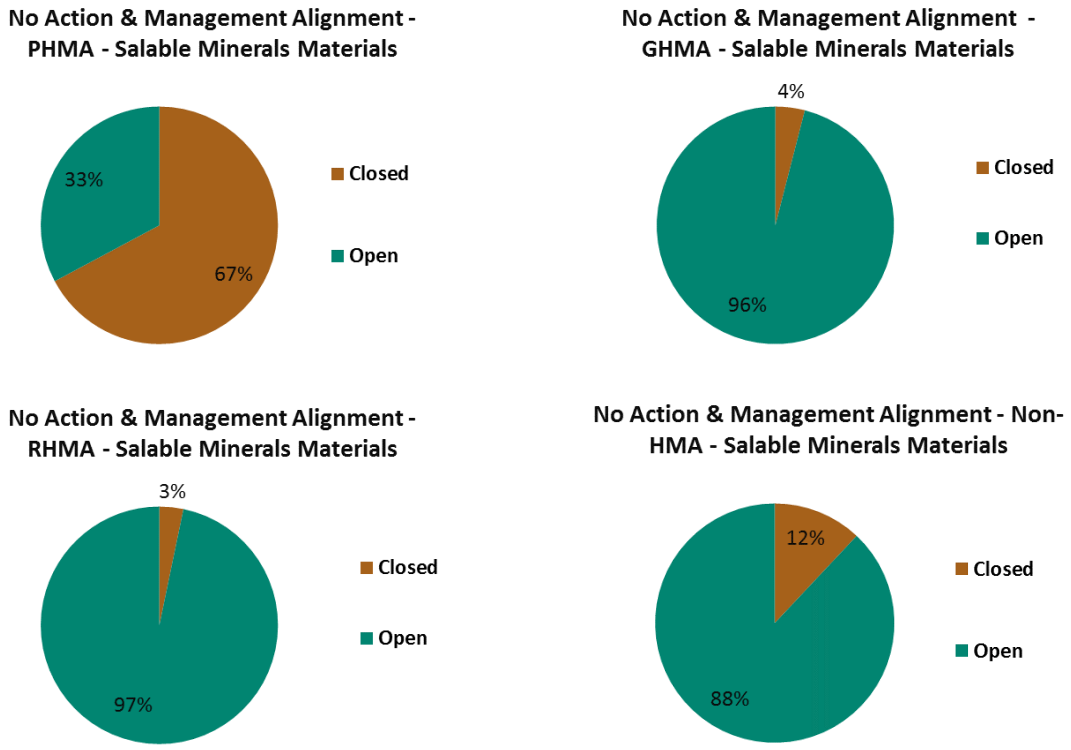


Figure 10 – Salable Minerals Materials Decisions within MZ I

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

X. Solar Energy

Table 12 – Solar Energy Decisions within MZ I

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. [5] Data not available for Wyoming. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Solar Energy Decisions[5] in MZ I by Habitat Management Area Type					
Geothermal Energy	**No Action & Management Alignment**				
	PHMA	**GHMA**	**RHMA**	**Non-HMA**	**Total**
Exclusion	2,709,000	249,000	93,000	239,000	**3,290,000**
Avoidance	0	1,844,000	55,000	172,000	**2,071,000**
Open	0	0	0	1,144,000	**1,145,000**
Total	**2,709,000**	**2,093,000**	**148,000**	**1,555,000**	**6,506,000**

Approximate % of Habitat Management Area by Solar Energy Decision[5] within Habitat in MZ I					
Geothermal Energy	**No Action & Management Alignment**				
	PHMA	**GHMA**	**RHMA**	**Non-HMA**	**Total**
Exclusion	100%	12%	63%	11%	**51%**
Avoidance	0%	88%	37%	15%	**32%**
Open	0%	0%	0%	74%	**18%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

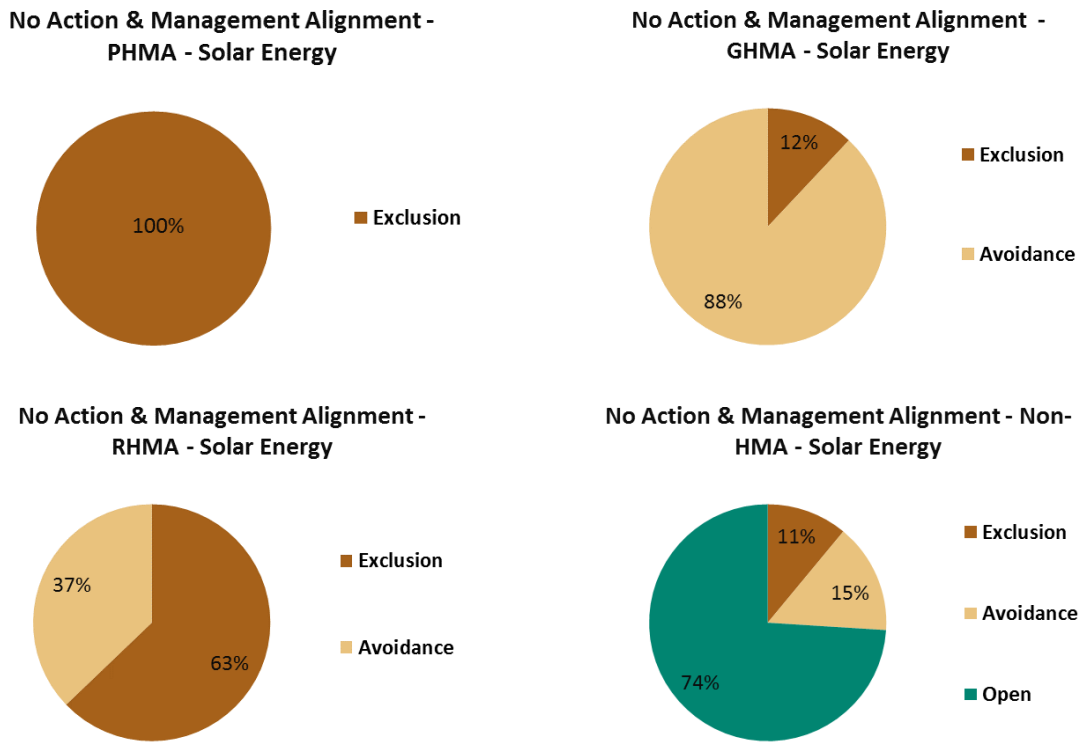


Figure 11 - Solar Energy Decisions within MZ I

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. [5] Data not available for Wyoming. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

XI. Trails and Travel Management

Table 13 – Trails and Travel Management Decisions within MZ I

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Trails and Travel Management Decisions in MZ I by Habitat Management Area Type					
Geothermal Energy	**No Action & Management Alignment**				
	PHMA	**GHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	2,000	39,000	0	11,000	**52,000**
Limited	3,306,000	3,125,000	159,000	1,655,000	**8,245,000**
Open	0	0	0	0	**0**
Total	**3,308,000**	**3,164,000**	**159,000**	**1,666,000**	**8,297,000**

Approximate % of Habitat Management Area by Trails and Travel Management Decision within Habitat in MZ I					
Geothermal Energy	**No Action & Management Alignment**				
	PHMA	**GHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	0%	1%	0%	1%	**1%**
Limited	100%	99%	100%	99%	**99%**
Open	0%	0%	0%	0%	**0%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

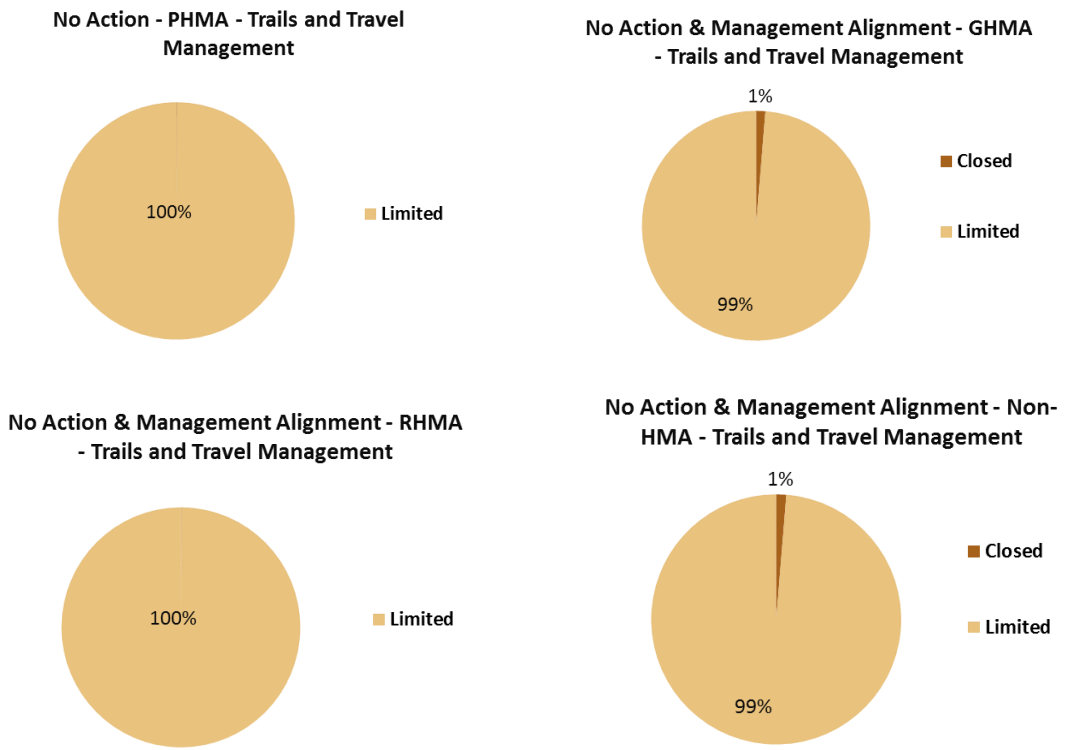


Figure 12 – Trails and Travel Management Decisions within MZ I

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

XII. Wind Energy

Table 14 – Wind Energy Decisions within MZ I

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Wind Energy Decisions in MZ I by Habitat Management Area Type					
Geothermal Energy	**No Action & Management Alignment**				
	PHMA	**GHMA**	**RHMA**	**Non-HMA**	**Total**
Exclusion	2,966,000	384,000	93,000	419,000	**3,862,000**
Avoidance	493,000	2,090,000	55,000	594,000	**3,232,000**
Open	0	513,000	0	655,000	**1,168,000**
Total	**3,459,000**	**2,987,000**	**148,000**	**1,668,000**	**8,262,000**

Approximate % of Habitat Management Area by Wind Energy Decision within Habitat in MZ I					
Geothermal Energy	**No Action & Management Alignment**				
	PHMA	**GHMA**	**RHMA**	**Non-HMA**	**Total**
Exclusion	86%	13%	63%	25%	**47%**
Avoidance	14%	70%	37%	36%	**39%**
Open	0%	17%	0%	39%	**14%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

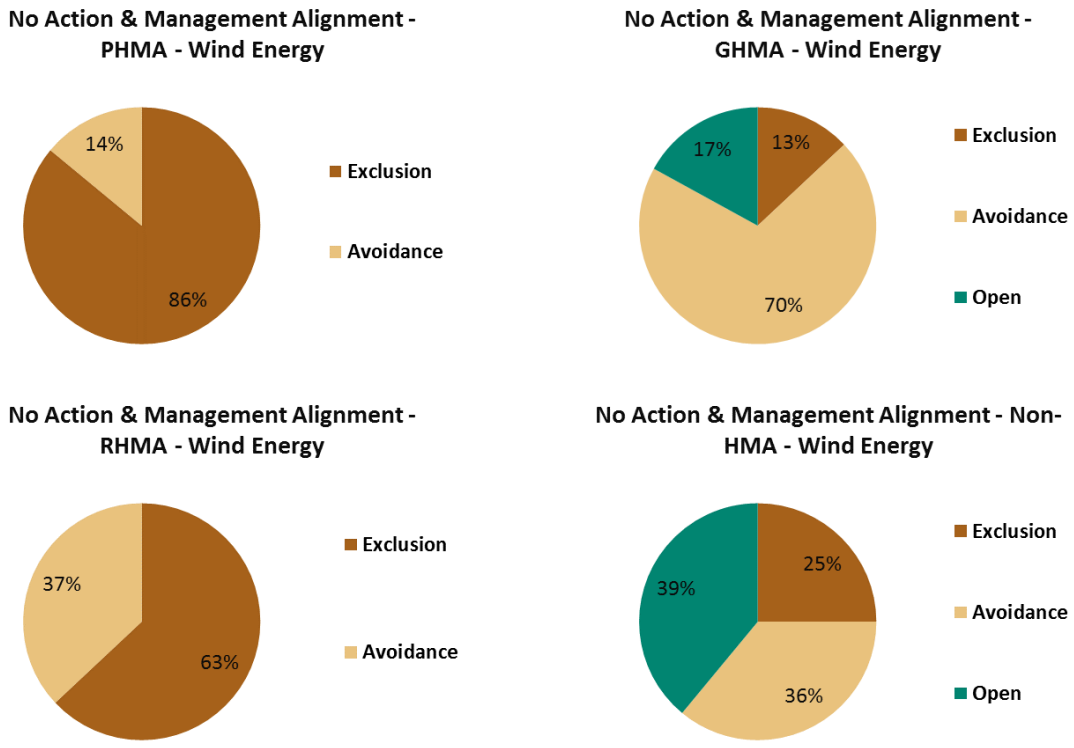


Figure 13 – Wind Energy Decisions within MZ I

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

1.2.2 Management Zones II/VII – Wyoming, Colorado, Utah, Idaho

I. Habitat Management

Table 15 – Habitat Management Areas within MZs II/VII

Acres and percentages reflect all lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of HMA in MZs II/VII					
No Action					
PHMA	**IHMA**	**GHMA**	**LCHMA[2]**	**RHMA**	**Non-HMA**
16,699,000	69,000	18,220,000	295,000	8,000	28,409,000
Management Alignment					
PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**
16,664,000	69,000	17,394,000	295,000	8,000	29,270,000

Approximate Percent of MZs II/VII that is HMA					
No Action					
PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA
26%	<1%	29%	<1%	<1%	45%

Management Alignment					
PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA
26%	<1%	27%	<1%	<1%	46%

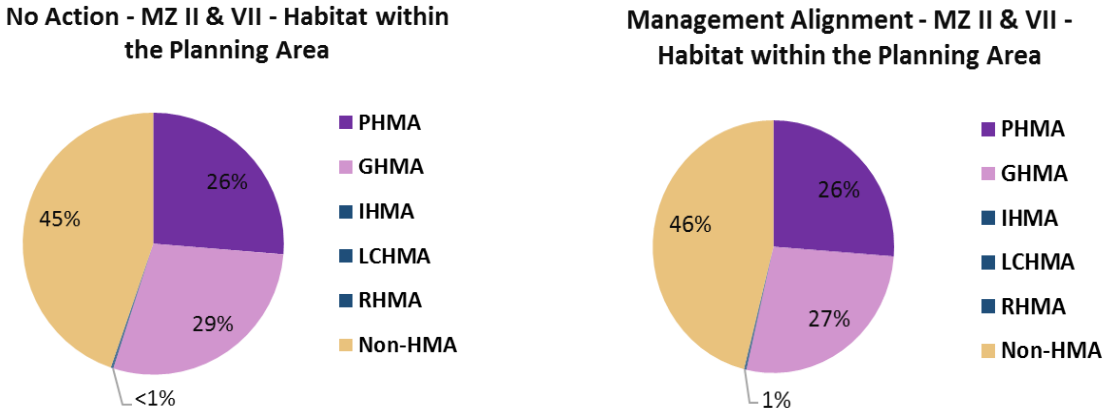


Figure 14 – Habitat Management Areas within MZs II/VII

Percentages reflect all lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

[2] Linkage Connectivity Habitat Management Area (LCHMA)

II. Geothermal Energy

Table 16 – Geothermal Energy Decisions within MZ II/VII

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. [6] Data not available for portions of MT and WY. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Geothermal Energy Decisions[6] in MZ II/VII by Habitat Management Area Type							
Geothermal Energy	**No Action**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	781,000	1,000	285,000	1,000	NA	2,342,000	**3,409,000**
Open NSO	2,271,000	29,000	342,000	54,000	NA	1,917,000	**4,615,000**
Open CSU/TL	983,000	0	1,316,000	81,000	NA	3,511,000	**5,891,000**
Open Standard Stipulations	0	0	245,000	8,000	NA	2,407,000	**2,660,000**
Total	**4,037,000**	**29,000**	**2,187,000**	**144,000**	**NA**	**10,179,000**	**16,575,000**

Geothermal Energy	**Management Alignment**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	565,000	1,000	260,000	1,000	NA	2,355,000	**3,181,000**
Open NSO	2,451,000	29,000	348,000	54,000	NA	1,923,000	**4,804,000**
Open CSU/TL	983,000	0	1,109,000	81,000	NA	3,719,000	**5,891,000**
Open Standard Stipulations	0	0	140,000	8,000	NA	2,512,000	**2,660,000**
Total	**4,000,000**	**29,000**	**1,857,000**	**144,000**	**NA**	**10,509,000**	**16,538,000**

Approximate % of Habitat Management Area by Geothermal Energy Decision[6] in MZ II/VII							
Geothermal Energy	**No Action**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	19%	<1%	13%	1%	NA	23%	**21%**
Open NSO	56%	100%	16%	38%	NA	19%	**28%**
Open CSU/TL	24%	0%	60%	56%	NA	34%	**36%**
Open Standard Stipulations	0%	0%	11%	6%	NA	24%	**16%**
Total	**100%**	**100%**	**100%**	**100%**	**NA**	**100%**	**100%**

Geothermal Energy	**Management Alignment**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	14%	<1%	14%	1%	NA	22%	**19%**
Open NSO	61%	100%	19%	38%	NA	18%	**29%**
Open CSU/TL	25%	0%	60%	56%	NA	35%	**36%**
Open Standard Stipulations	0%	0%	8%	6%	NA	24%	**16%**
Total	**100%**	**100%**	**100%**	**100%**	**NA**	**100%**	**100%**

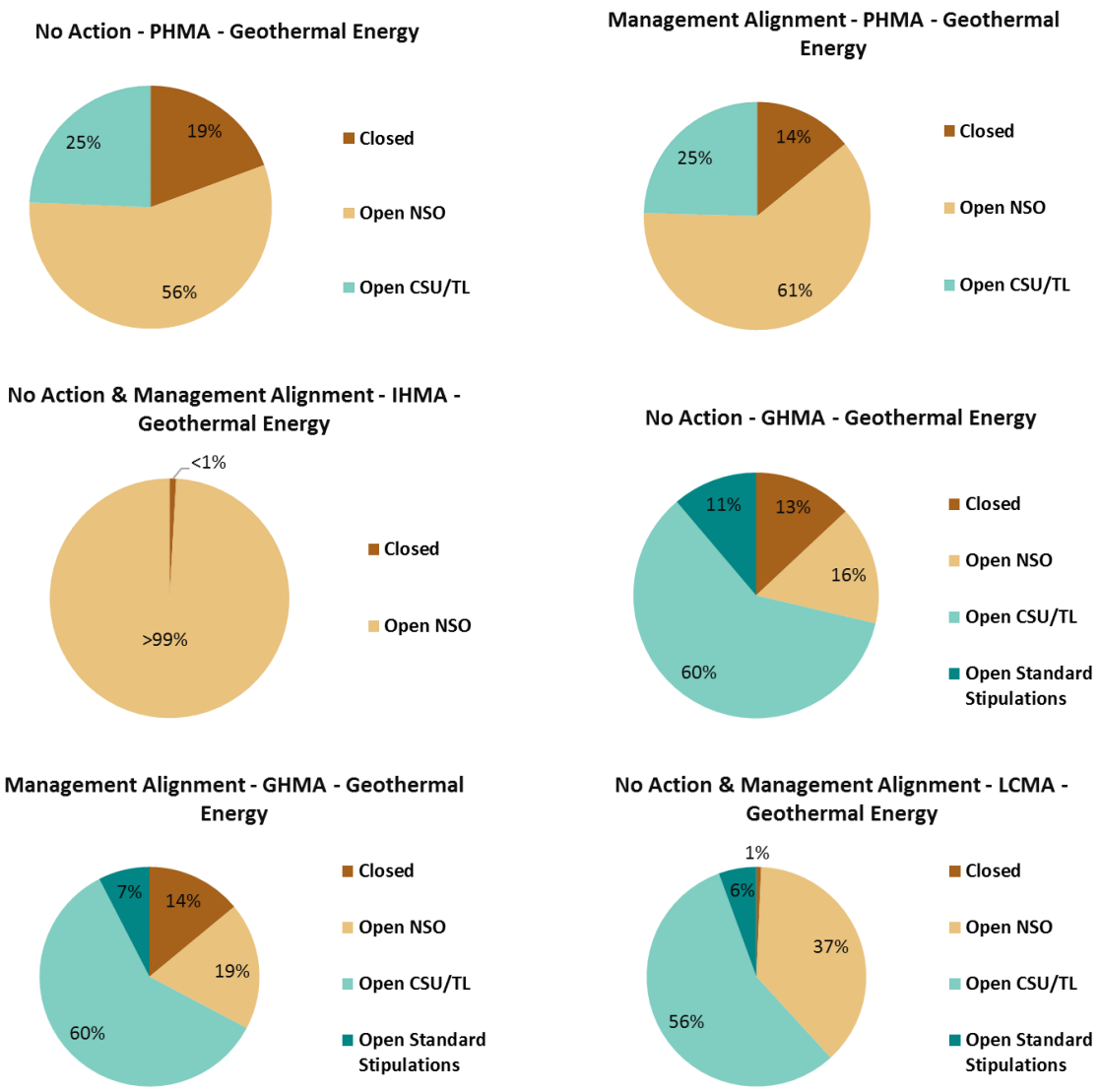
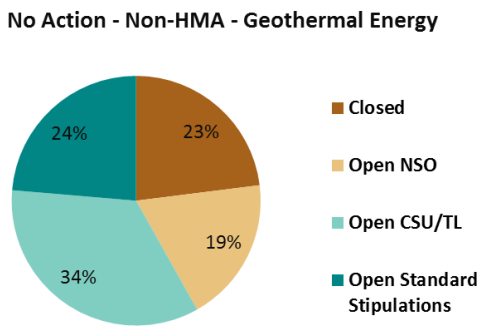


Figure 15 – Geothermal Energy Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. [6] Data not available for portions of MT and WY. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.



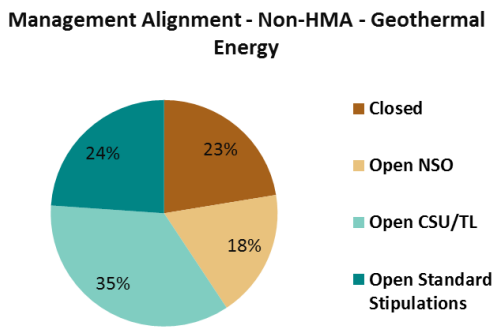


Figure 15 (cont'd) - Geothermal Energy Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. [6] Data not available for portions of MT and WY. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

III. Land Tenure

Table 17 – Land Tenure Decisions within MZ II/VII

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Land Tenure Decisions in MZ II/VII by Habitat Management Area Type							
Land Tenure	**No Action**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Disposal	57,000	0	154,000	0	0	115,000	**325,000**
Retention	8,894,000	18,000	8,972,000	82,000	7,000	11,837,000	**29,811,000**
Total	**8,951,000**	**18,000**	**9,126,000**	**82,000**	**7,000**	**11,952,000**	**30,136,000**

Land Tenure	**Management Alignment**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Disposal	57,000	0	154,000	0	0	115,000	**325,000**
Retention	8,894,000	18,000	8,685,000	82,000	7,000	12,125,000	**29,811,000**
Total	**8,951,000**	**18,000**	**8,839,000**	**82,000**	**7,000**	**12,239,000**	**30,136,000**

Approximate % of Habitat Management Area by Land Tenure Decision in MZ II/VII							
Land Tenure	**No Action & Management Alignment**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Disposal	1%	0%	2%	0%	0%	1%	**1%**
Retention	99%	100%	98%	100%	100%	99%	**99%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

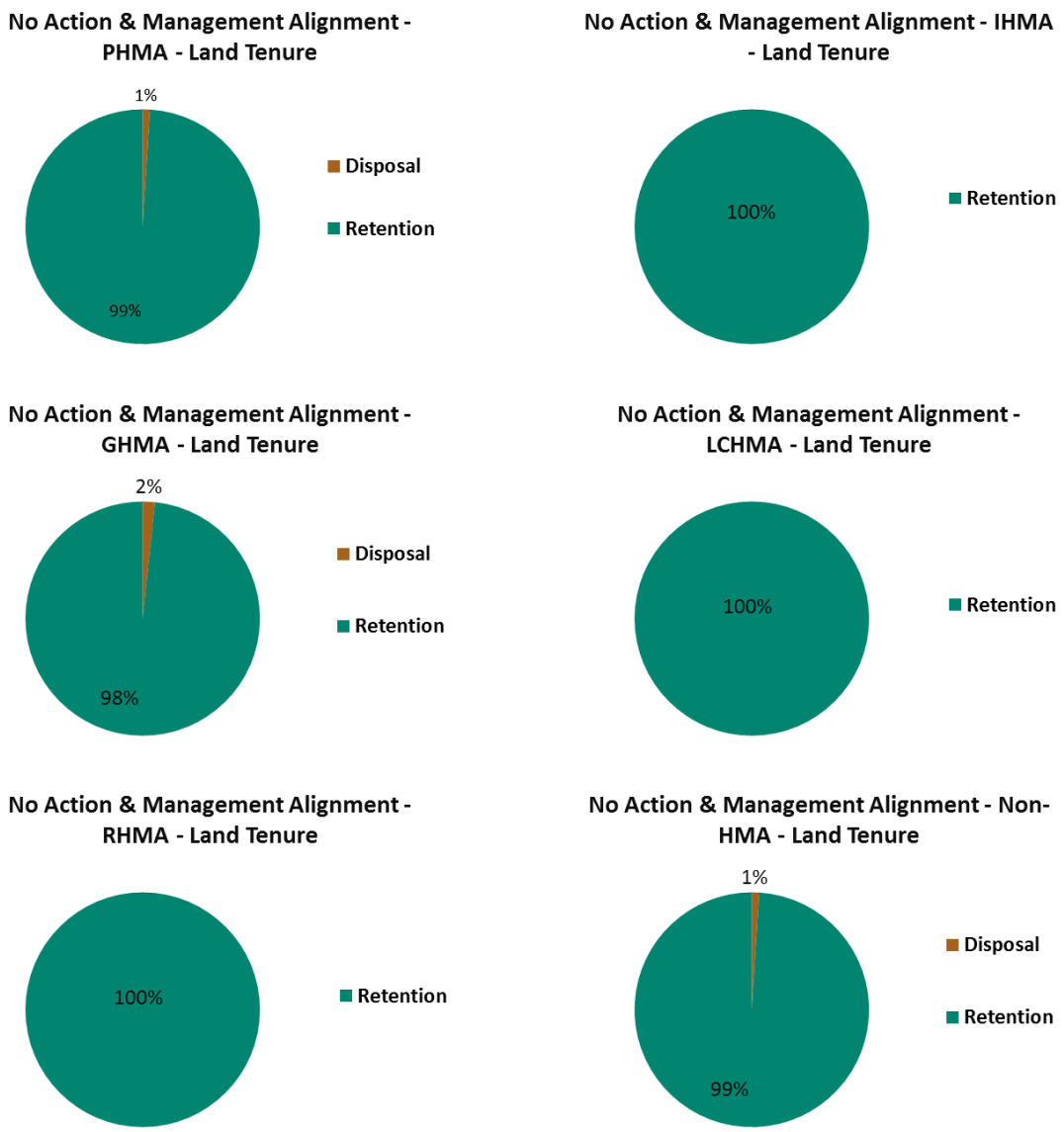


Figure 16 – Land Tenure Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

IV. Livestock Grazing

Table 18 – Livestock Grazing Decisions within MZ II/VII

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Livestock Grazing Decisions in MZ II/VII by Habitat Management Area Type							
Livestock Grazing	**No Action**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Unavailable	40,000	0	40,000	0	0	316,000	**395,000**
Available	8,872,000	18,000	9,069,000	81,000	7,000	8,193,000	**26,241,000**
Total	**8,912,000**	**18,000**	**9,109,000**	**81,000**	**7,000**	**8,508,000**	**26,635,000**

Livestock Grazing	**Management Alignment**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Unavailable	40,000	0	40,000	0	0	316,000	**395,000**
Available	8,872,000	18,000	8,784,000	81,000	7,000	8,479,000	**26,241,000**
Total	**8,912,000**	**18,000**	**8,824,000**	**81,000**	**7,000**	**8,794,000**	**26,635,000**

Approximate % of Habitat Management Area by Livestock Grazing Decision in MZ II/VII							
Livestock Grazing	**No Action & Management Alignment**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Unavailable	<1%	0%	<1%	0%	0%	4%	**1%**
Available	100%	100%	100%	100%	100%	96%	**99%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Figure 17 – Livestock Grazing Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

V. Locatable Minerals

Table 19 – Locatable Minerals Decisions within MZ II/VII

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Locatable Minerals Decisions in MZ II/VII by Habitat Management Area Type							
Locatable Minerals	**No Action**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Existing Withdrawals	1,863,000	7,000	2,394,000	1,000	0	4,804,000	**9,068,000**
Recommended Withdrawals	998,000	0	320,000	0	0	302,000	**1,620,000**
Open	8,323,000	27,000	8,529,000	137,000	7,000	10,250,000	**27,273,000**
Total	**11,185,000**	**33,000**	**11,243,000**	**137,000**	**7,000**	**15,357,000**	**37,962,000**

Locatable Minerals	**Management Alignment**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Existing Withdrawals	1,863,000	7,000	2,125,000	1,000	0	5,072,000	**9,068,000**
Recommended Withdrawals	618,000	0	318,000	0	0	302,000	**1,238,000**
Open	8,703,000	27,000	8,420,000	137,000	7,000	10,361,000	**27,656,000**
Total	**11,185,000**	**33,000**	**10,863,000**	**137,000**	**7,000**	**15,736,000**	**37,962,000**

Approximate % of Habitat Management Area by Locatable Minerals Decision in MZ II/VII							
Locatable Minerals	**No Action**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Existing Withdrawals	17%	20%	21%	<1%	0%	31%	**24%**
Recommended Withdrawals	9%	0%	3%	0%	0%	2%	**4%**
Open	74%	80%	76%	100%	100%	67%	**72%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Locatable Minerals	**Management Alignment**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Existing Withdrawals	17%	20%	20%	<1%	0%	32%	**24%**
Recommended Withdrawals	6%	0%	3%	0%	0%	2%	**3%**
Open	78%	80%	78%	100%	100%	66%	**73%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

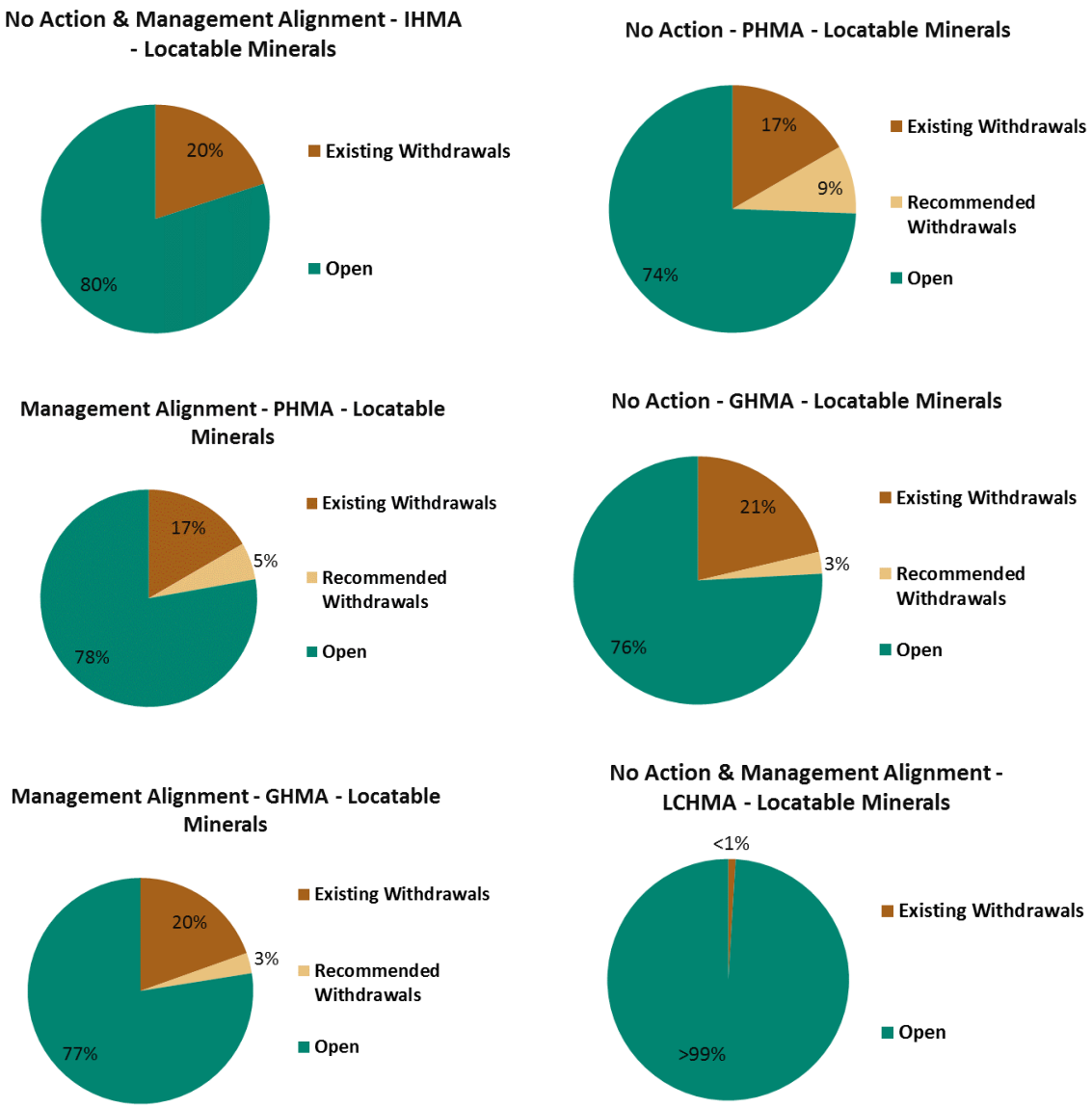


Figure 18 – Locatable Minerals Decisions within MZ II/VII

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

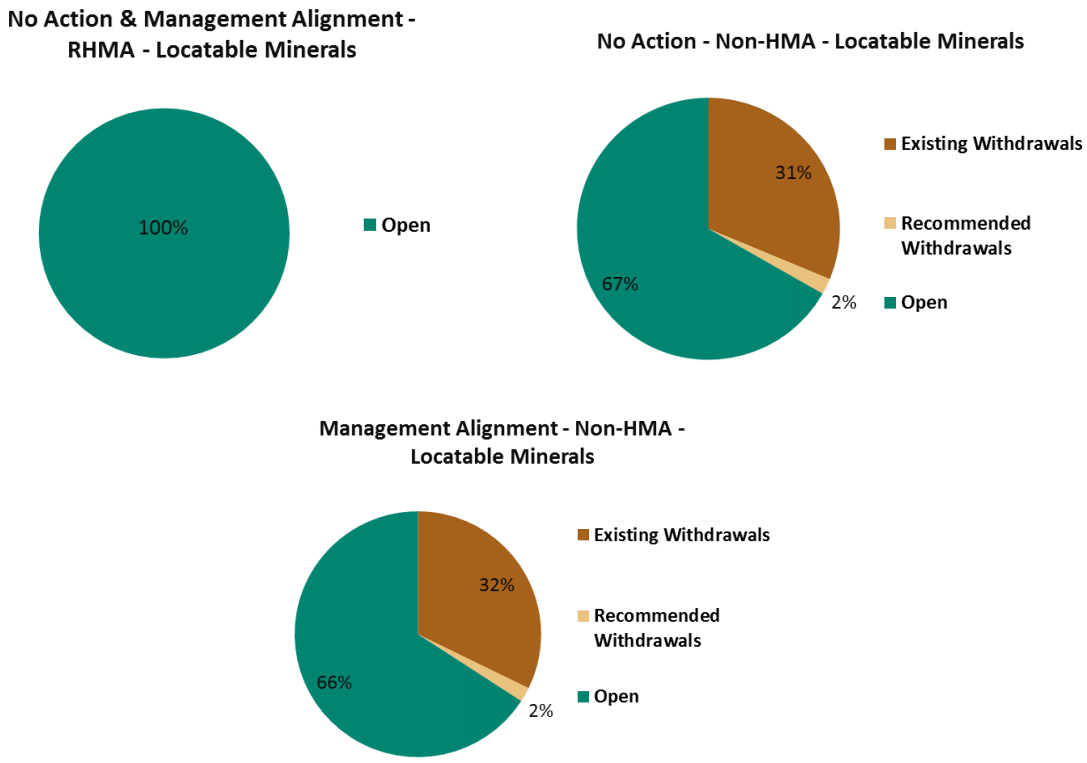


Figure 18 (cont'd) – Locatable Minerals Decisions within MZ II/VII

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VI. Non-Energy Leasable Minerals

Table 20 – Non-Energy Leasable Minerals Decisions within MZ II/VII

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. [7]Data not avaible for portions of MT and WY. Calculations reflect only the portions of the MZ where data was avaible. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Non-Energy Leasable Minerals Decisions[7] in MZ II/VII by Habitat Management Area Type							
Non-Energy Leasable Minerals	**No Action**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	3,617,000	7,000	1,256,000	1,000	NA	4,591,000	**9,471,000**
Open	6,052,000	23,000	7,330,000	137,000	NA	10,221,000	**23,763,000**
Total	**9,669,000**	**30,000**	**8,586,000**	**137,000**	**NA**	**14,812,000**	**33,233,000**

Non-Energy Leasable Minerals	**Management Alignment**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	3,581,000	7,000	1,244,000	1,000	NA	4,603,000	**9,436,000**
Open	6,052,000	23,000	6,972,000	137,000	NA	10,614,000	**23,799,000**
Total	**9,633,000**	**30,000**	**8,216,000**	**137,000**	**NA**	**15,217,000**	**33,233,000**

Approximate % of Habitat Management Area by Non-Energy Leasable Minerals Decision[7] in MZ II/VII							
Non-Energy Leasable Minerals	**No Action**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	37%	23%	15%	<1%	NA	31%	**28%**
Open	63%	77%	85%	100%	NA	69%	**72%**
Total	**100%**	**100%**	**100%**	**100%**	**NA**	**100%**	**100%**

Non-Energy Leasable Minerals	**Management Alignment**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	37%	23%	15%	<1%	NA	30%	**28%**
Open	63%	77%	85%	100%	NA	70%	**72%**
Total	**100%**	**100%**	**100%**	**100%**	**NA**	**100%**	**100%**

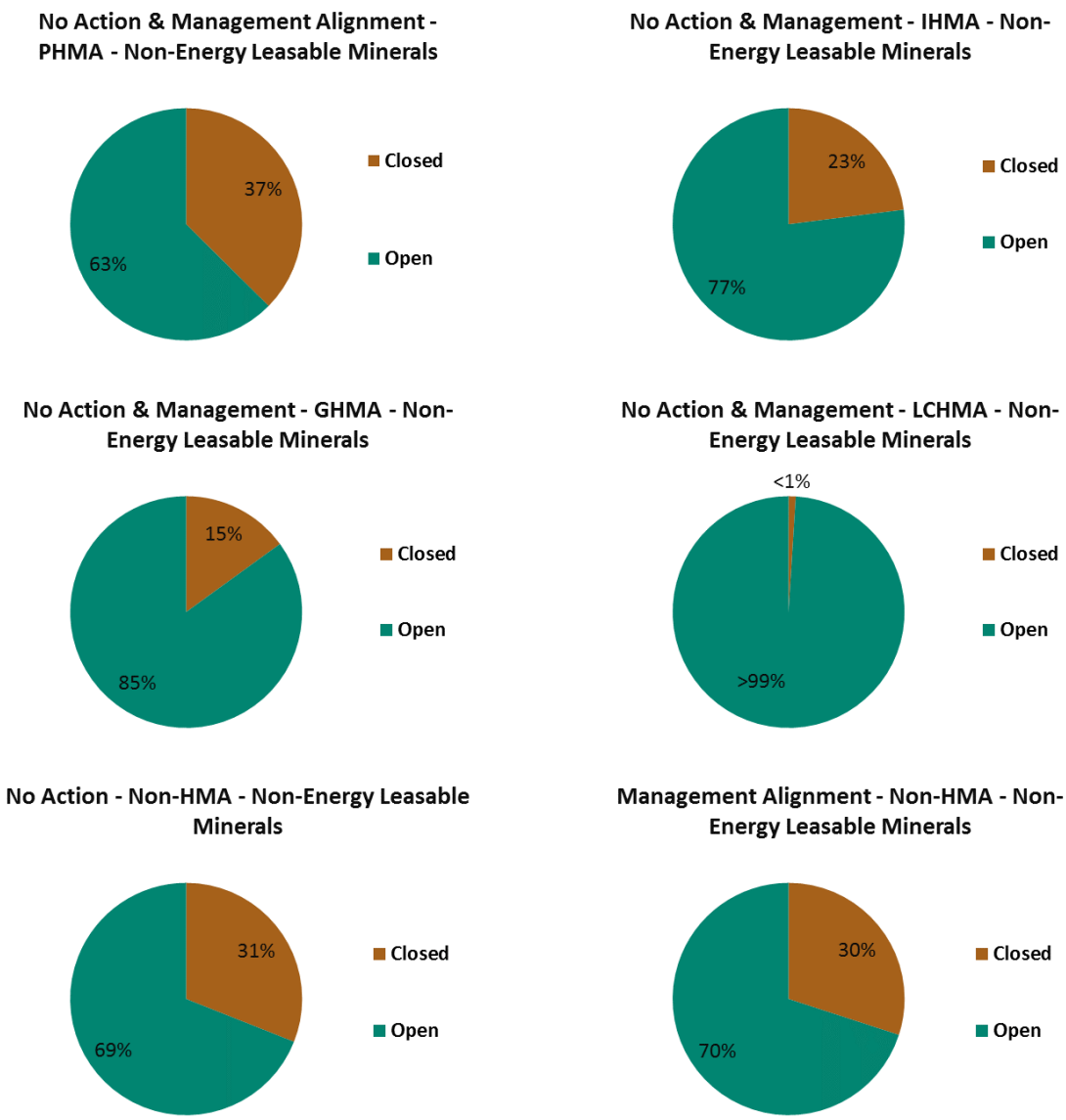


Figure 19 - Non-Energy Leasable Minerals Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. [7]Data not avaible for portions of MT and WY. Calculations reflect only the portions of the MZ where data was avaible. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VII. Fluid Minerals (Oil & Gas)

Table 21 – Fluid Minerals (Oil & Gas) Decisions within MZ II/VII

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages

Approximate Acres of Fluid Minerals (Oil & Gas) Decisions in MZ II/VII by Habitat Management Area Type							
Fluid Minerals (Oil & Gas)	**No Action**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	1,294,000	7,000	1,178,000	1,000	0	4,773,000	**7,252,000**
Open NSO	4,399,000	23,000	1,425,000	54,000	5,000	2,628,000	**8,535,000**
Open CSU/TL	5,689,000	0	6,517,000	81,000	2,000	4,748,000	**17,036,000**
Open Standard Stipulations	0	0	2,297,000	8,000	0	2,895,000	**5,200,000**
Total	**11,382,000**	**29,000**	**11,416,000**	**144,000**	**8,000**	**15,046,000**	**38,024,000**

Fluid Minerals (Oil & Gas)	**Management Alignment**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	1,078,000	7,000	1,153,000	1,000	0	4,787,000	**7,024,000**
Open NSO	4,578,000	23,000	1,430,000	54,000	5,000	2,634,000	**8,725,000**
Open CSU/TL	5,689,000	0	6,310,000	81,000	2,000	4,956,000	**17,036,000**
Open Standard Stipulations	0	0	2,193,000	8,000	0	3,000,000	**5,200,000**
Total	**11,345,000**	**29,000**	**11,086,000**	**144,000**	**8,000**	**15,376,000**	**37,988,000**

Approximate % of Habitat Management Area by Fluid Minerals (Oil & Gas) Decision in MZ II/VII							
Fluid Minerals (Oil & Gas)	**No Action**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	11%	21%	10%	<1%	0%	32%	**19%**
Open NSO	39%	79%	12%	38%	63%	17%	**22%**
Open CSU/TL	50%	0%	57%	56%	37%	32%	**45%**
Open Standard Stipulations	0%	0%	20%	6%	0%	19%	**14%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Fluid Minerals (Oil & Gas)	**Management Alignment**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	10%	21%	10%	<1%	0%	31%	**18%**
Open NSO	40%	79%	13%	38%	63%	17%	**23%**
Open CSU/TL	50%	0%	57%	56%	37%	32%	**45%**
Open Standard Stipulations	0%	0%	20%	6%	0%	20%	**14%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

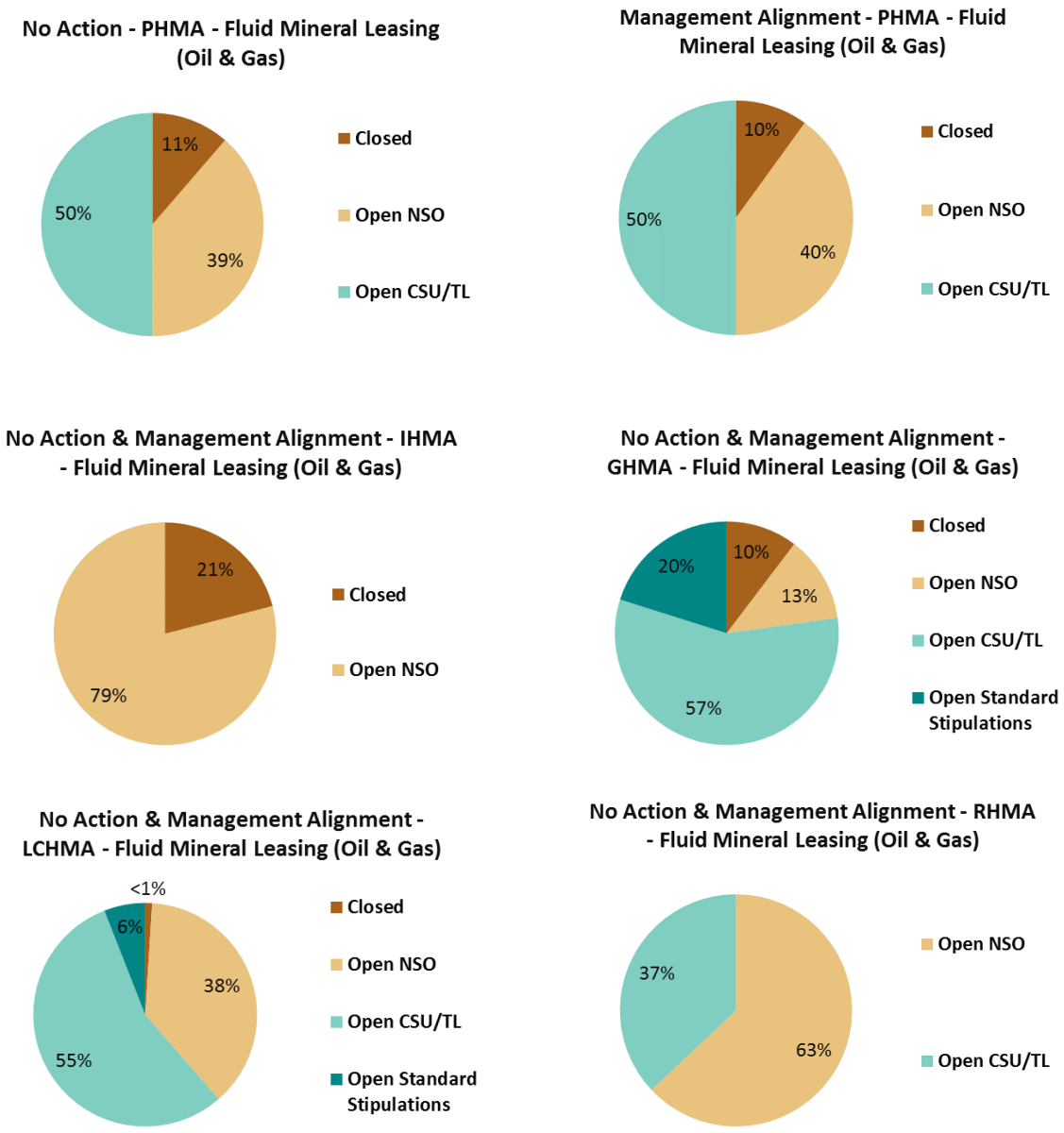


Figure 20 – Fluid Minerals (Oil & Gas) Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

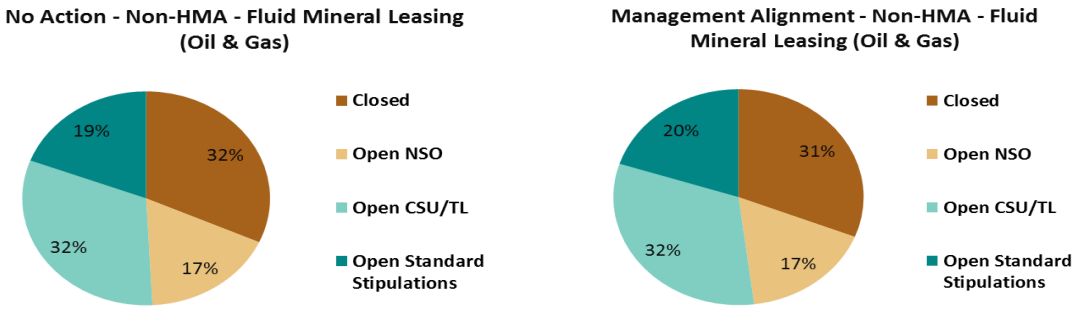


Figure 20 (cont'd) – Fluid Minerals (Oil & Gas) Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VIII. Rights-of-Ways

Table 22 – Rights-of-Ways Decisions within MZ II/VII

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Rights-of-Ways Decisions in MZ II/VII by Habitat Management Area Type							
Rights-of-Ways	No Action						
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	Total
Exclusion	561,000	0	654,000	0	0	1,255,000	**2,471,000**
Avoidance	8,119,000	18,000	3,132,000	16,000	7,000	1,172,000	**12,465,000**
Open	71,000	16,000	5,256,000	51,000	0	5,067,000	**10,460,000**
Total	**8,752,000**	**34,000**	**9,041,000**	**67,000**	**7,000**	**7,494,000**	**25,395,000**

Rights-of-Ways	Management Alignment						
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	Total
Exclusion	561,000	0	651,000	0	0	1,258,000	**2,471,000**
Avoidance	8,119,000	18,000	3,132,000	16,000	7,000	1,172,000	**12,465,000**
Open	71,000	16,000	4,971,000	51,000	0	5,351,000	**10,460,000**
Total	**8,752,000**	**34,000**	**8,754,000**	**67,000**	**7,000**	**7,781,000**	**25,395,000**

Approximate % of Habitat Management Area by Rights-of-Ways Decision in MZ II/VII							
Rights-of-Ways	No Action						
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	Total
Exclusion	6%	0%	7%	0%	0%	17%	**10%**
Avoidance	93%	53%	35%	24%	100%	16%	**49%**
Open	1%	47%	58%	76%	0%	68%	**41%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Rights-of-Ways	Management Alignment						
	PHMA	IHMA	GHMA	LCHMA	RHMA	Non-HMA	Total
Exclusion	6%	0%	7%	0%	0%	16%	**10%**
Avoidance	93%	53%	36%	24%	100%	15%	**49%**
Open	1%	47%	57%	76%	0%	69%	**41%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

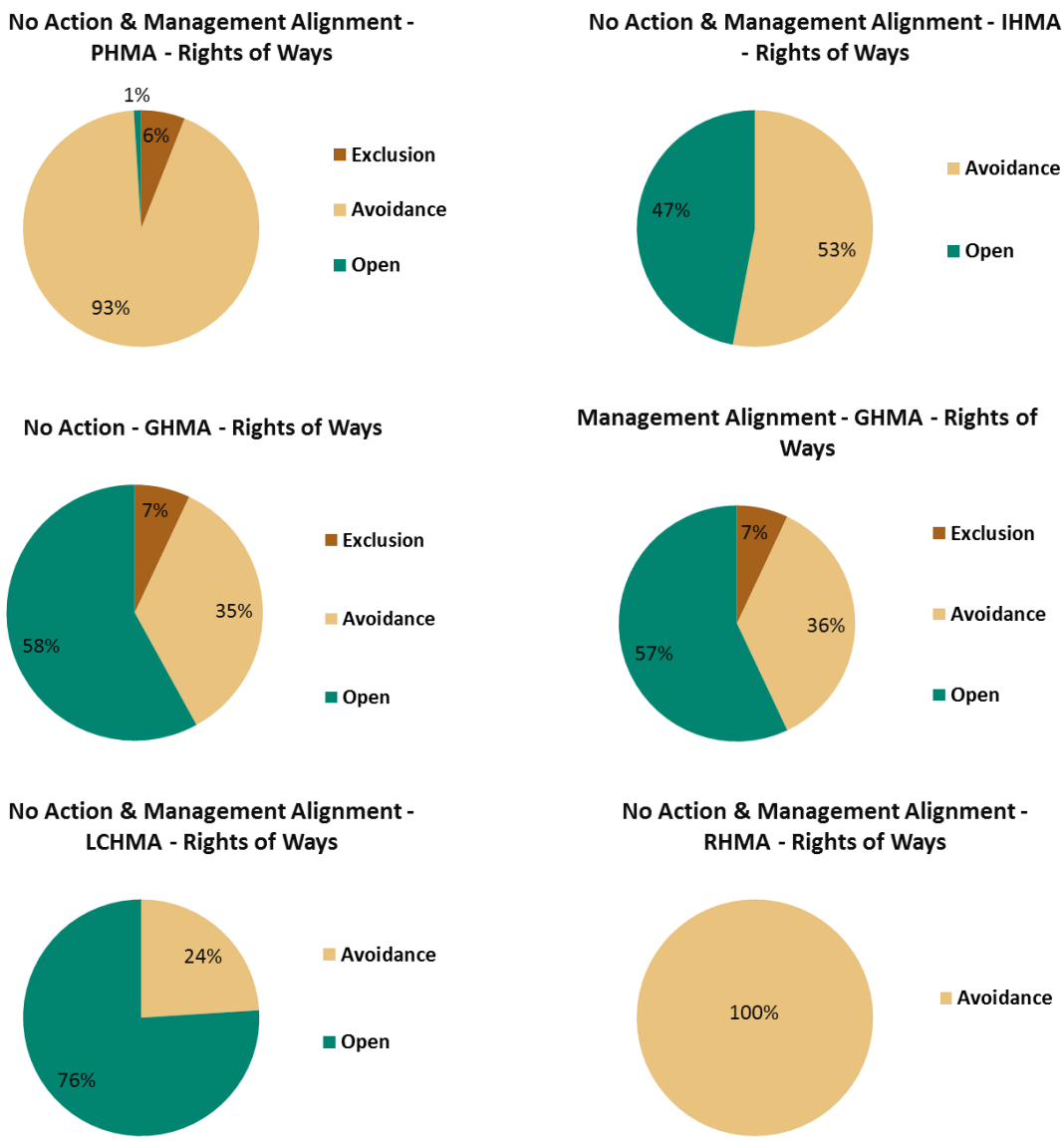


Figure 21 – Rights-of-Ways Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

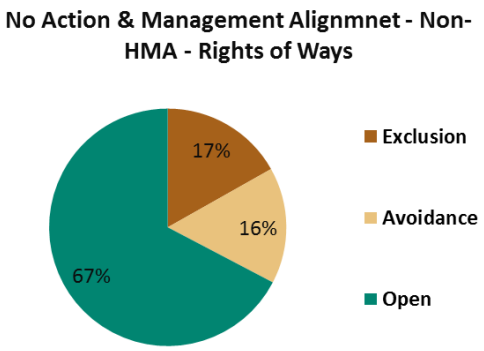


Figure 21 (cont'd) – Rights-of-Ways Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

IX. Salable Minerals Materials

Table 23 – Salable Minerals Materials Decisions within MZ II/VII

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Salable Minerals Materials Decisions in MZ II/VII by Habitat Management Area Type							
Salable Minerals Materials	**No Action**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	3,241,000	0	1,401,000	27,000	0	3,592,000	**8,263,000**
Open	7,671,000	28,000	9,745,000	115,000	7,000	9,675,000	**27,239,000**
Total	**10,912,000**	**28,000**	**11,145,000**	**142,000**	**7,000**	**13,268,000**	**35,502,000**
Salable Minerals Materials	**Management Alignment**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	3,241,000	0	1,399,000	27,000	0	3,594,000	**8,263,000**
Open	7,671,000	28,000	9,413,000	115,000	7,000	10,006,000	**27,239,000**
Total	**10,912,000**	**28,000**	**10,813,000**	**142,000**	**7,000**	**13,600,000**	**35,502,000**

Approximate % of Habitat Management Area by Salable Minerals Materials Decision in MZ II/VII							
Salable Minerals Materials	**No Action**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	30%	0%	13%	19%	0%	26%	**23%**
Open	70%	100%	87%	81%	100%	74%	**77%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Salable Minerals Materials	**Management Alignment**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	30%	0%	13%	19%	0%	27%	**23%**
Open	70%	100%	87%	81%	100%	73%	**77%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

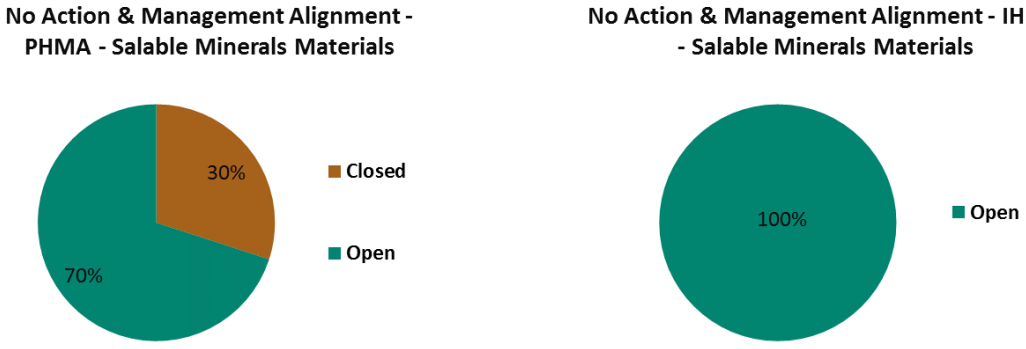


Figure 22 – Salable Minerals Materials Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

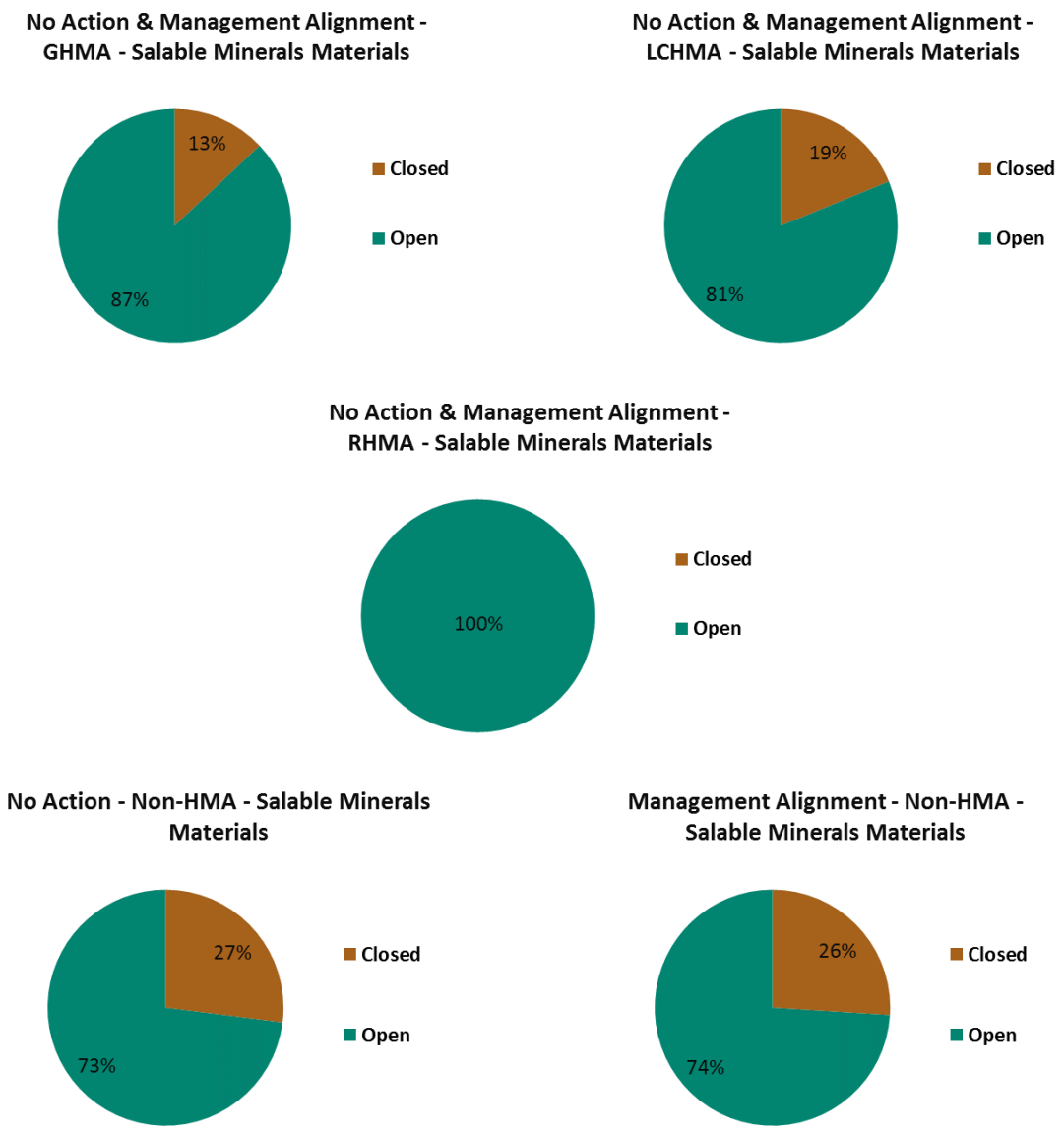


Figure 22 (cont'd) – Salable Minerals Materials Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

X. Solar Energy

Table 24 – Solar Energy Decisions within MZ II/VII

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. [8] Data not available for WY. Calculations reflect only the portions of the MZ where data was avaible. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Solar Energy Decisions[8] in MZ II/VII by Habitat Management Area Type							
Solar Energy	**No Action**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Exclusion	1,494,000	0	317,000	0	7,000	4,352,000	**6,169,000**
Avoidance	2,000	18,000	764,000	83,000	0	742,000	**1,610,000**
Open	0	0	1,000	0	0	2,170,000	**2,171,000**
Total	**1,496,000**	**18,000**	**1,082,000**	**83,000**	**7,000**	**7,265,000**	**9,950,000**
Solar Energy	**Management Alignment**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Exclusion	1,494,000	0	30,000	0	7,000	4,639,000	**6,169,000**
Avoidance	2,000	18,000	764,000	83,000	0	742,000	**1,610,000**
Open	0	0	1,000	0	0	2,170,000	**2,171,000**
Total	**1,496,000**	**18,000**	**795,000**	**83,000**	**7,000**	**7,551,000**	**9,950,000**

Approximate % of Habitat Management Area by Solar Energy Decision[8] in MZ II/VII							
Solar Energy	**No Action**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Exclusion	100%	0%	29%	0%	100%	60%	**62%**
Avoidance	0%	100%	71%	100%	0%	10%	**16%**
Open	0%	0%	<1%	0%	0%	30%	**22%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Solar Energy	**Management Alignment**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Exclusion	100%	0%	4%	0%	100%	61%	**62%**
Avoidance	0%	100%	96%	100%	0%	10%	**16%**
Open	0%	0%	<1%	0%	0%	29%	**22%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

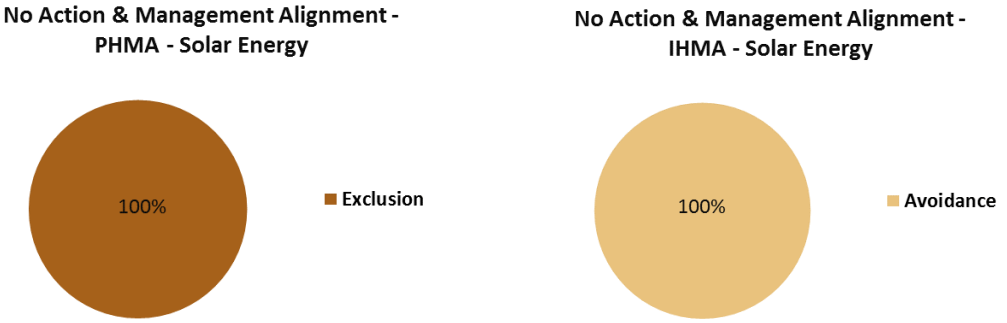


Figure 23 – Solar Energy Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. [8] Data not available for WY. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

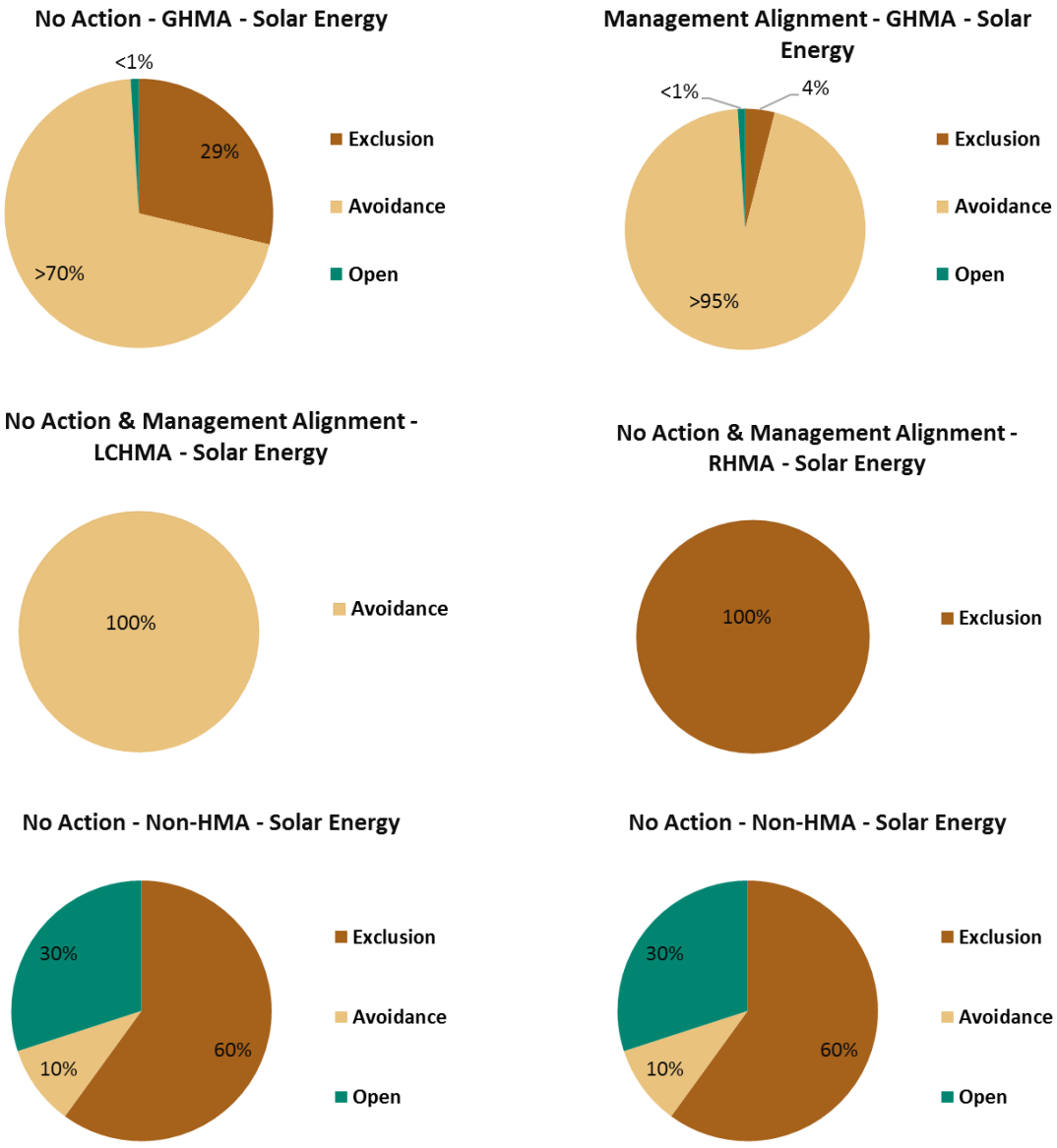


Figure 23 (cont'd) – Solar Energy Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. [8] Data not available for WY. Calculations reflect only the portions of the MZ where data was available. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

XI. Trails and Travel Management

Table 25 – Trails and Travel Management Decisions within MZ II/VII

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Trails and Travel Management Decisions in MZ II/VII by Habitat Management Area Type							
Trails and Travel Management	**No Action**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	103,000	0	369,000	11,000	0	1,304,000	**1,787,000**
Limited	8,840,000	18,000	8,696,000	69,000	7,000	6,337,000	**23,966,000**
Open	4,000	0	54,000	3,000	0	891,000	**953,000**
Total	**8,947,000**	**18,000**	**9,121,000**	**82,000**	**7,000**	**8,531,000**	**26,706,000**

Trails and Travel Management	**Management Alignment**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	103,000	0	366,000	11,000	0	1,307,000	**1,787,000**
Limited	8,840,000	18,000	8,413,000	69,000	7,000	6,620,000	**23,966,000**
Open	4,000	0	54,000	3,000	0	891,000	**953,000**
Total	**8,947,000**	**18,000**	**8,834,000**	**82,000**	**7,000**	**8,819,000**	**26,706,000**

Approximate % of Habitat Management Area by Trails and Travel Management Decision in MZ II/VII							
Trails and Travel Management	**No Action & Management Alignment**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Closed	1%	0%	4%	13%	0%	15%	**7%**
Limited	99%	100%	95%	84%	100%	74%	**90%**
Open	0%	0%	1%	4%	0%	10%	**4%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Figure 24 – Trails and Travel Management Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

XII. Wind Energy

Table 26 – Wind Energy Decisions within MZ II/VII

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Wind Energy Decisions in MZ II/VII by Habitat Management Area Type							
Wind Energy	**No Action**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Exclusion	3,660,000	0	1,041,000	0	7,000	1,327,000	**6,035,000**
Avoidance	5,294,000	18,000	2,805,000	83,000	0	1,103,000	**9,304,000**
Open	0	0	5,272,000	0	0	5,045,000	**10,317,000**
Total	**8,953,000**	**18,000**	**9,119,000**	**83,000**	**7,000**	**7,476,000**	**25,656,000**

Wind Energy	**Management Alignment**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Exclusion	3,660,000	0	1,038,000	0	7,000	1,330,000	**6,035,000**
Avoidance	5,294,000	18,000	2,805,000	83,000	0	1,103,000	**9,304,000**
Open	0	0	4,988,000	0	0	5,329,000	**10,317,000**
Total	**8,953,000**	**18,000**	**8,831,000**	**83,000**	**7,000**	**7,763,000**	**25,656,000**

Approximate % of Habitat Management Area by Wind Energy Decision in MZ II/VII							
Wind Energy	**No Action**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Exclusion	41%	0%	11%	0%	100%	18%	**24%**
Avoidance	59%	100%	31%	100%	0%	15%	**36%**
Open	0%	0%	58%	0%	0%	67%	**40%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Wind Energy	**Management Alignment**						
	PHMA	**IHMA**	**GHMA**	**LCHMA**	**RHMA**	**Non-HMA**	**Total**
Exclusion	41%	0%	12%	0%	100%	17%	**24%**
Avoidance	59%	100%	32%	100%	0%	14%	**36%**
Open	0%	0%	56%	0%	0%	69%	**40%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

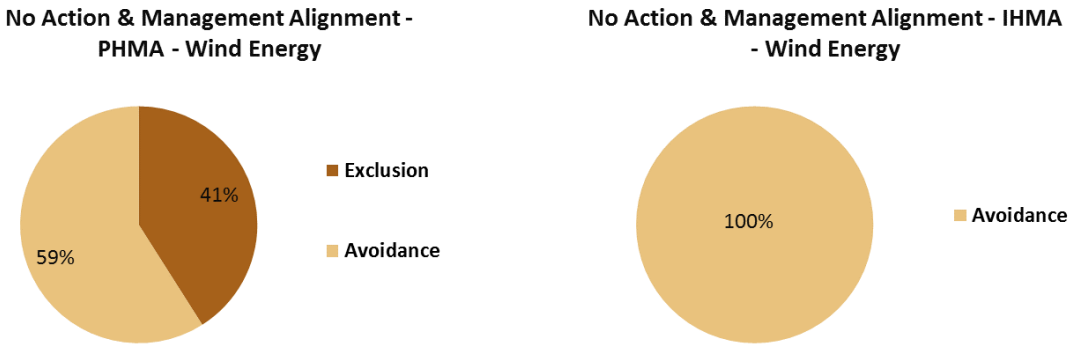


Figure 25 – Wind Energy Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

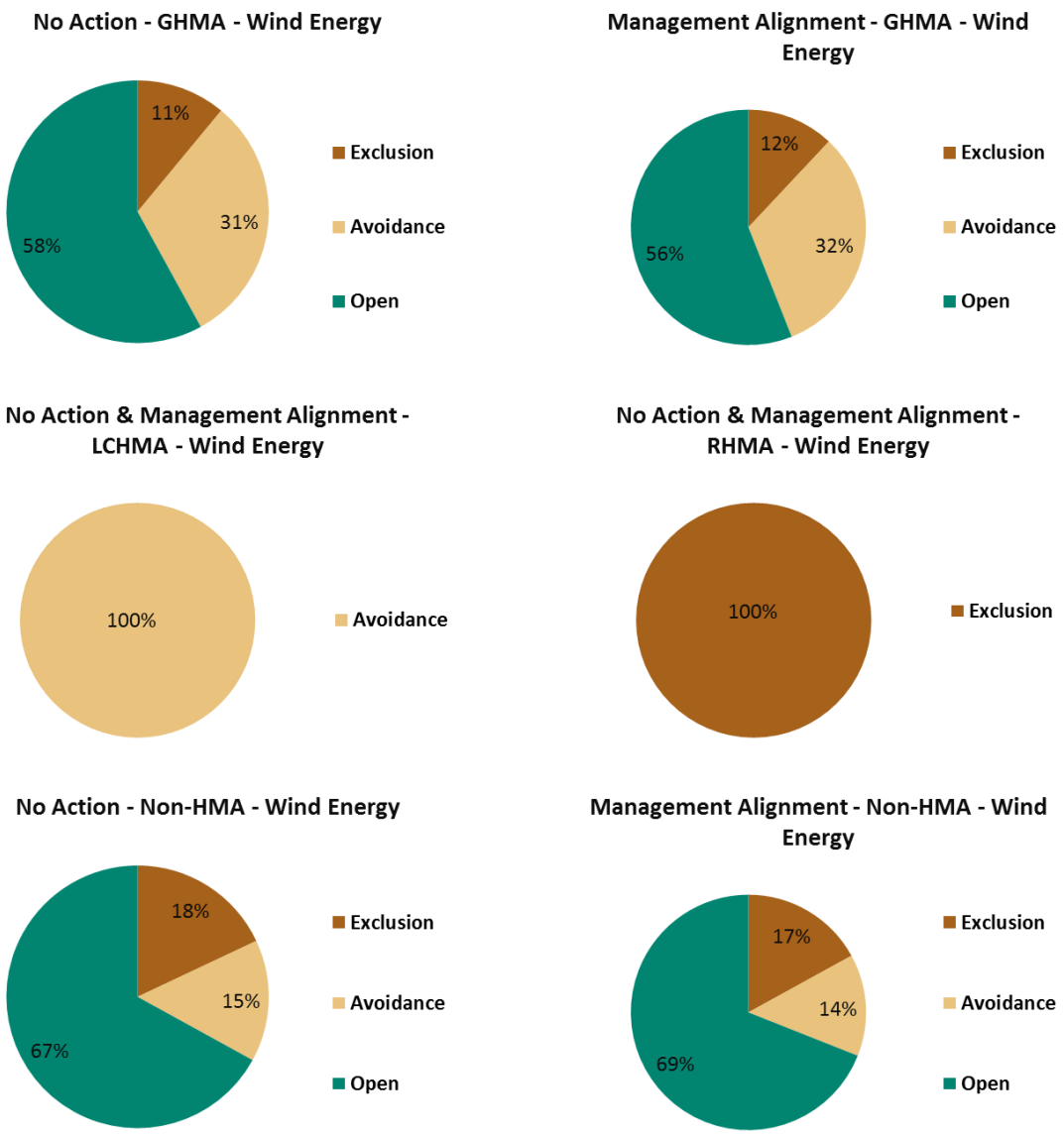


Figure 25 (cont'd) – Wind Energy Decisions within MZ II/VII

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

1.2.3 Management Zone III – Utah, Nevada

I. Habitat Management

Table 27 – Habitat Management Areas within MZ III

Acres and percentages reflect all lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of HMA in MZ III									
No Action					Management Alignment				
PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA
7,093,000	5,953,000	5,651,000	42,000	54,928,000	6,974,000	4,474,000	4,253,000	42,000	57,925,000

Approximate Percent of MZ III that is HMA									
No Action					Management Alignment				
PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA	PHMA	GHMA	OHMA	Anthro Mtn	Non-HMA
10%	8%	8%	<1%	75%	**9%**	**6%**	**6%**	**<1%**	**79%**

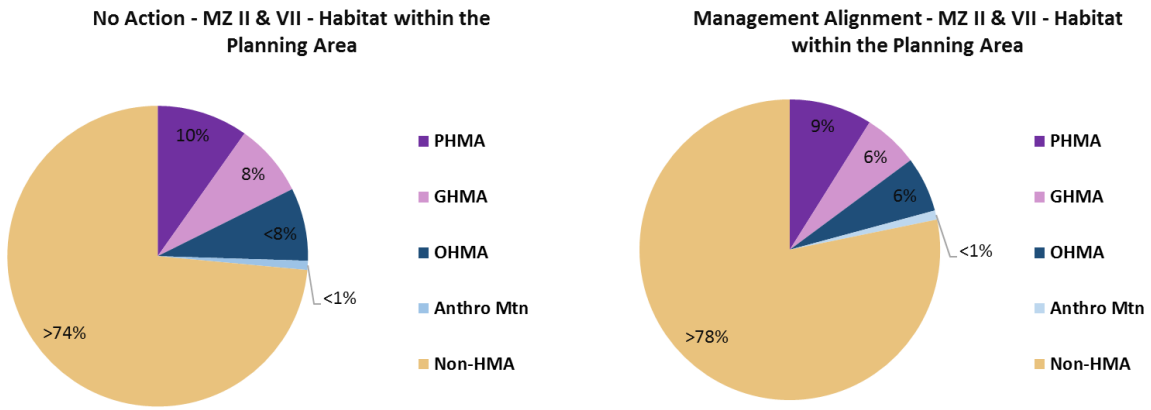


Figure 26 – Habitat Management Areas within MZ III

Percentages reflect all lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

II. Geothermal Energy

Table 28 – Geothermal Energy Decisions within MZ III

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Geothermal Energy Decisions in MZ III by Habitat Management Area Type						
Geothermal Energy	**No Action**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Closed	126,000	165,000	230,000	7,000	4,948,000	**5,476,000**
Open NSO	5,358,000	23,000	0	35,000	3,939,000	**9,354,000**
Open CSU/TL	0	3,628,000	0	0	2,135,000	**5,763,000**
Open Standard Stipulations	0	86,000	4,042,000	0	26,065,000	**30,193,000**
Total	**5,484,000**	**3,902,000**	**4,272,000**	**42,000**	**37,087,000**	**50,787,000**

Geothermal Energy	**Management Alignment**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Closed	124,000	176,000	159,000	7,000	4,990,000	**5,457,000**
Open NSO	5,483,000	0	0	35,000	3,961,000	**9,479,000**
Open CSU/TL	0	3,565,000	0	0	2,191,000	**5,756,000**
Open Standard Stipulations	0	0	3,534,000	0	26,554,000	**30,088,000**
Total	**5,607,000**	**3,741,000**	**3,693,000**	**42,000**	**37,696,000**	**50,780,000**

Approximate % of Habitat Management Area by Geothermal Energy Decision in MZ III						
Geothermal Energy	**No Action**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Closed	2%	4%	5%	17%	13%	**11%**
Open NSO	98%	1%	0%	83%	11%	**18%**
Open CSU/TL	0%	93%	0%	0%	6%	**11%**
Open Standard Stipulations	0%	2%	95%	0%	70%	**59%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Geothermal Energy	**Management Alignment**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Closed	2%	5%	4%	17%	13%	**11%**
Open NSO	98%	0%	0%	83%	11%	**19%**
Open CSU/TL	0%	95%	0%	0%	6%	**11%**
Open Standard Stipulations	0%	0%	96%	0%	70%	**59%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

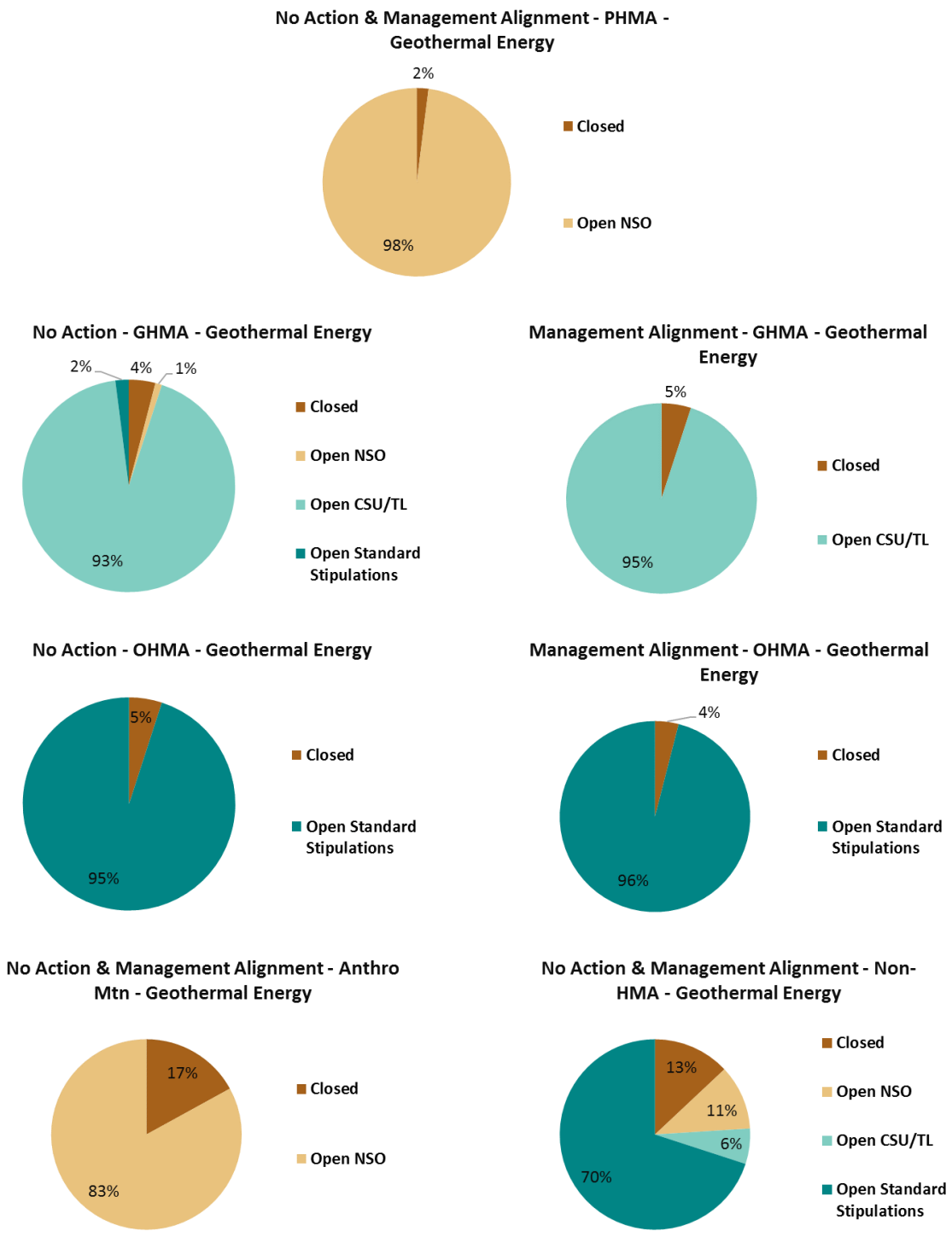


Figure 27 – Geothermal Energy Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

III. Land Tenure

Table 29 – Land Tenure Decisions within MZ III

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Land Tenure Decisions in MZ III by Habitat Management Area Type						
Land Tenure	**No Action**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Disposal	0	0	280,000	NA	2,178,000	**2,458,000**
Retention	4,722,000	3,875,000	3,992,000	NA	30,234,000	**42,824,000**
Total	**4,722,000**	**3,875,000**	**4,272,000**	**NA**	**32,413,000**	**45,283,000**

Land Tenure	**Management Alignment**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Disposal	3,000	62,000	304,000	NA	2,214,000	**2,583,000**
Retention	4,844,000	3,679,000	3,389,000	NA	30,782,000	**42,694,000**
Total	**4,847,000**	**3,741,000**	**3,693,000**	**NA**	**32,996,000**	**45,277,000**

Approximate % of Habitat Management Area by Land Tenure Decision in MZ III						
Land Tenure	**No Action**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Disposal	0%	0%	7%	NA	7%	**5%**
Retention	100%	100%	93%	NA	93%	**95%**
Total	**100%**	**100%**	**100%**	**NA**	**100%**	**100%**

Land Tenure	**Management Alignment**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Disposal	0%	2%	8%	NA	7%	**6%**
Retention	100%	98%	92%	NA	93%	**94%**
Total	**100%**	**100%**	**100%**	**NA**	**100%**	**100%**

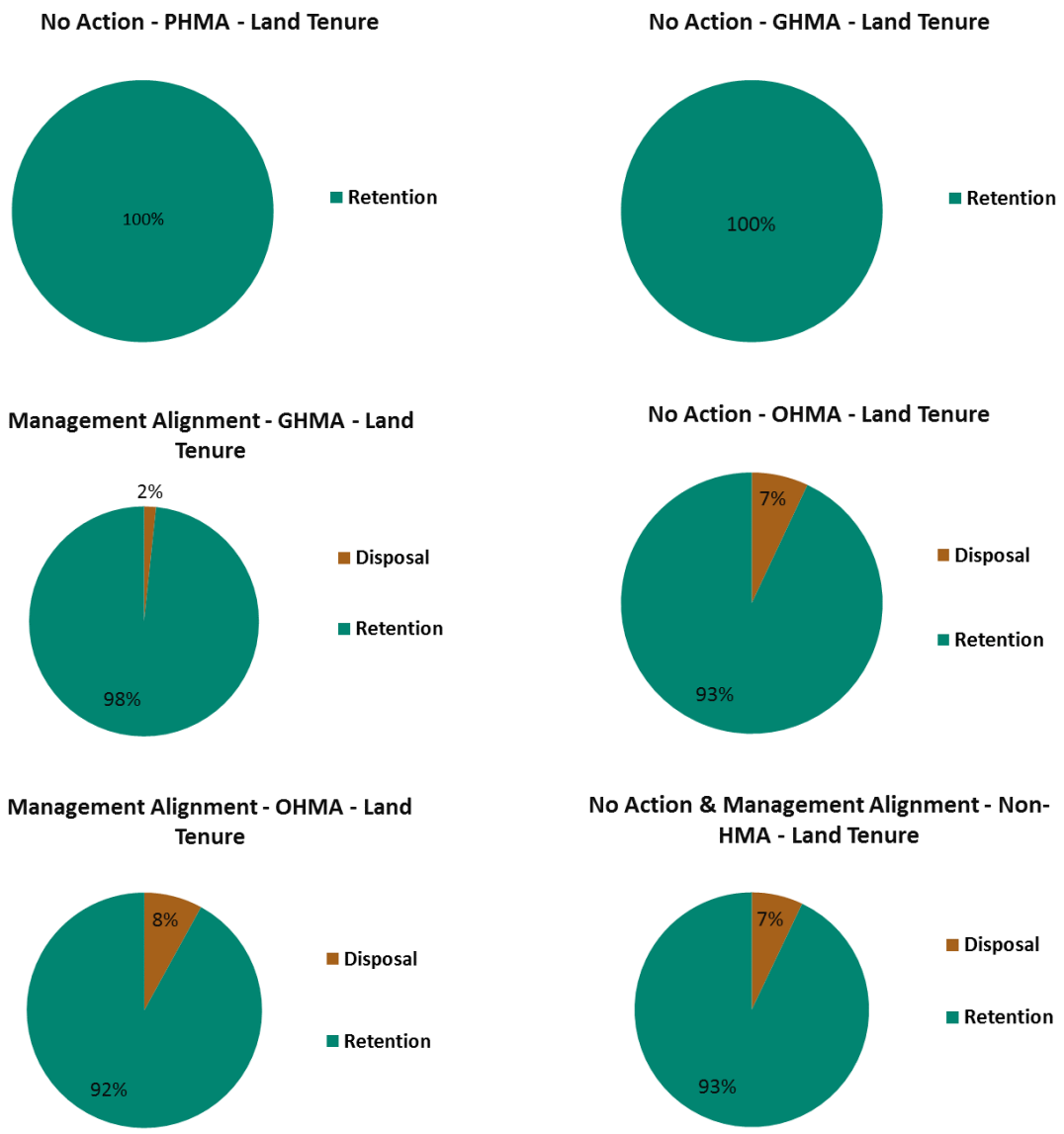


Figure 28 – Land Tenure Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

IV. Livestock Grazing

Table 30 – Livestock Grazing Decisions within MZ III

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Livestock Grazing Decisions in MZ III by Habitat Management Area Type						
Livestock Grazing	**No Action**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Unavailable	0	0	0	NA	129,000	**129,000**
Available	4,722,000	3,868,000	4,265,000	NA	31,559,000	**44,415,000**
Total	**4,722,000**	**3,868,000**	**4,265,000**	**NA**	**31,688,000**	**44,544,000**

Livestock Grazing	**Management Alignment**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Unavailable	0	0	0	NA	129,000	**129,000**
Available	4,845,000	3,741,000	3,690,000	NA	32,135,000	**44,410,000**
Total	**4,845,000**	**3,741,000**	**3,690,000**	**NA**	**32,264,000**	**44,539,000**

Approximate % of Habitat Management Area by Livestock Grazing Decision in MZ III						
Livestock Grazing	**No Action**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Unavailable	0%	0%	0%	NA	<1%	**<1%**
Available	100%	100%	100%	NA	100%	**100%**
Total	**100%**	**100%**	**100%**	**NA**	**100%**	**100%**

Livestock Grazing	**Management Alignment**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Unavailable	0%	0%	0%	NA	<1%	**<1%**
Available	100%	100%	100%	NA	100%	**100%**
Total	**100%**	**100%**	**100%**	**NA**	**100%**	**100%**

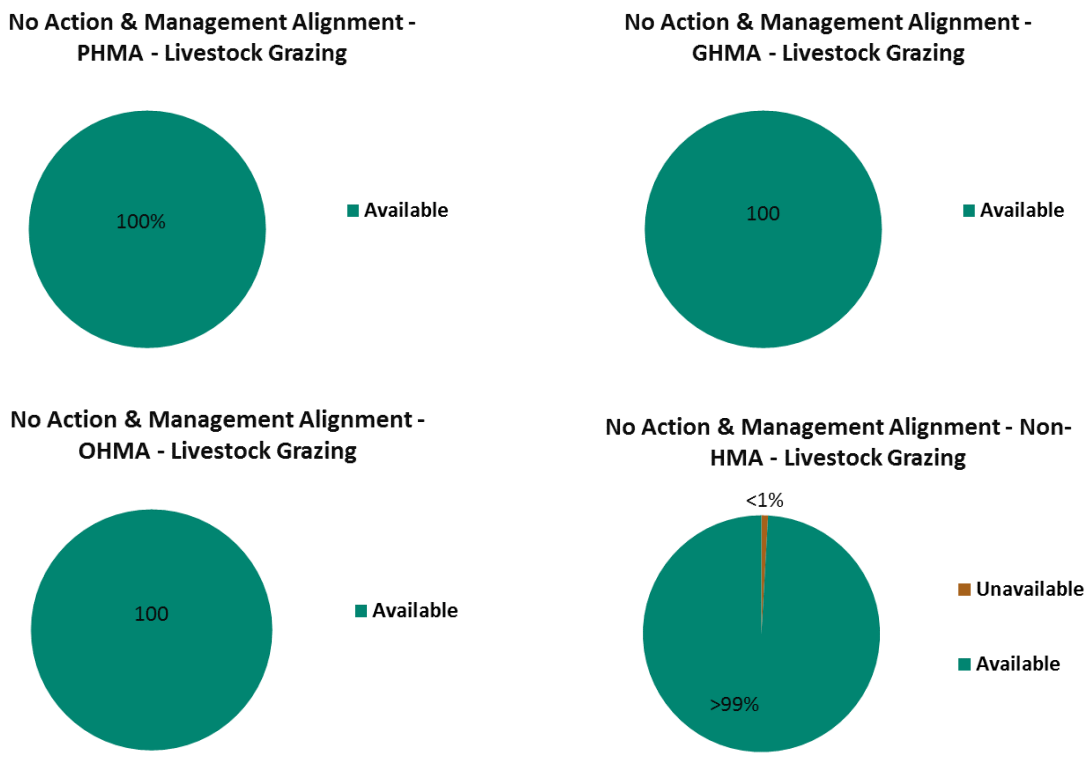


Figure 29 – Livestock Grazing Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

V. Locatable Minerals

Table 31 – Locatable Minerals Decisions within MZ III

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Locatable Minerals Decisions in MZ III by Habitat Management Area Type						
Locatable Minerals	**No Action**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Existing Withdrawals	56,000	143,000	52,000	0	3,350,000	**3,602,000**
Recommended Withdrawals	4,000	0	0	0	49,000	**53,000**
Open	5,429,000	3,788,000	4,219,000	42,000	34,853,000	**48,332,000**
Total	**5,489,000**	**3,931,000**	**4,272,000**	**42,000**	**38,253,000**	**51,987,000**

Locatable Minerals	**Management Alignment**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Existing Withdrawals	61,000	100,000	42,000	0	3,398,000	**3,601,000**
Recommended Withdrawals	4,000	0	0	0	50,000	**53,000**
Open	5,552,000	3,641,000	3,650,000	42,000	35,444,000	**48,330,000**
Total	**5,617,000**	**3,741,000**	**3,693,000**	**42,000**	**38,892,000**	**51,985,000**

Approximate % of Habitat Management Area by Geothermal Energy Decision in MZ III						
Locatable Minerals	**No Action**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Existing Withdrawals	1%	4%	1%	0	9%	**7%**
Recommended Withdrawals	<1%	0%	0%	0%	<1%	**<1%**
Open	99%	96%	99%	100%	91%	**93%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Locatable Minerals	**Management Alignment**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Existing Withdrawals	**1%**	**3%**	**1%**	**0%**	**9%**	**7%**
Recommended Withdrawals	**<1%**	**0%**	**0%**	**0%**	**0%**	**<1%**
Open	**99%**	**97%**	**99%**	**100%**	**91%**	**93%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

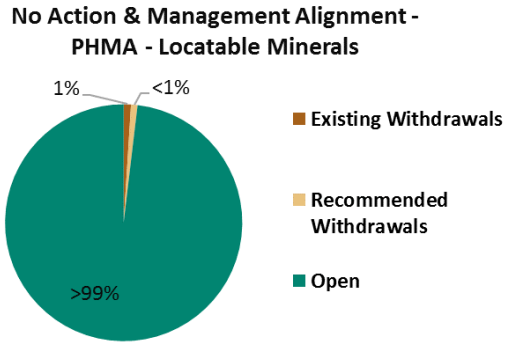


Figure 30 – Locatable Minerals Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

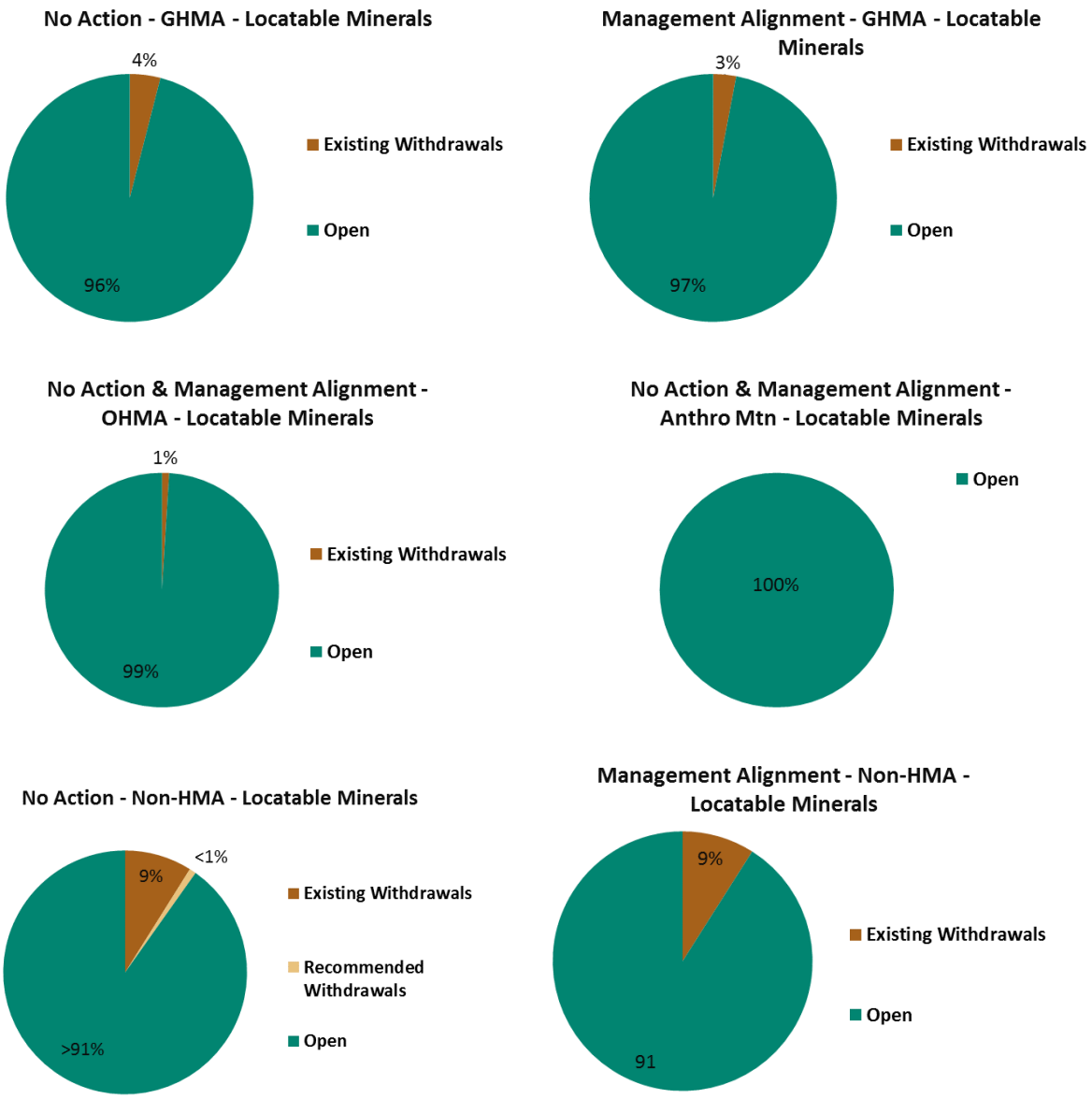


Figure 30 (cont'd) – Locatable Minerals Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VI. Non-Energy Leasable Minerals

Table 32 – Non-Energy Leasable Minerals Decisions within MZ III

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Non-Energy Leasable Minerals Decisions in MZ III by Habitat Management Area Type						
Non-Energy Leasable Minerals	**No Action**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Closed	5,486,000	165,000	230,000	42,000	4,948,000	**10,871,000**
Open	0	3,766,000	4,042,000	0	33,308,000	**41,116,000**
Total	**5,486,000**	**3,931,000**	**4,272,000**	**42,000**	**38,256,000**	**51,987,000**
Non-Energy Leasable Minerals	**Management Alignment**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Closed	5,611,000	176,000	159,000	42,000	4,990,000	**10,978,000**
Open	0	3,565,000	3,534,000	0	33,904,000	**41,004,000**
Total	**5,611,000**	**3,741,000**	**3,693,000**	**42,000**	**38,894,000**	**51,981,000**
Approximate % of Habitat Management Area by Non-Energy Leasable Minerals Decision in MZ III						
Non-Energy Leasable Minerals	**No Action**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Closed	100%	4%	5%	100%	13%	**21%**
Open	0%	96%	95%	0%	87%	**79%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Non-Energy Leasable Minerals	**Management Alignment**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Closed	100%	5%	4%	100%	13%	**21%**
Open	0%	95%	96%	0%	87%	**79%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

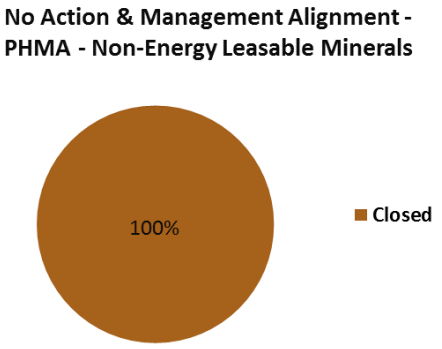


Figure 31 – Non-Energy Leasable Minerals Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

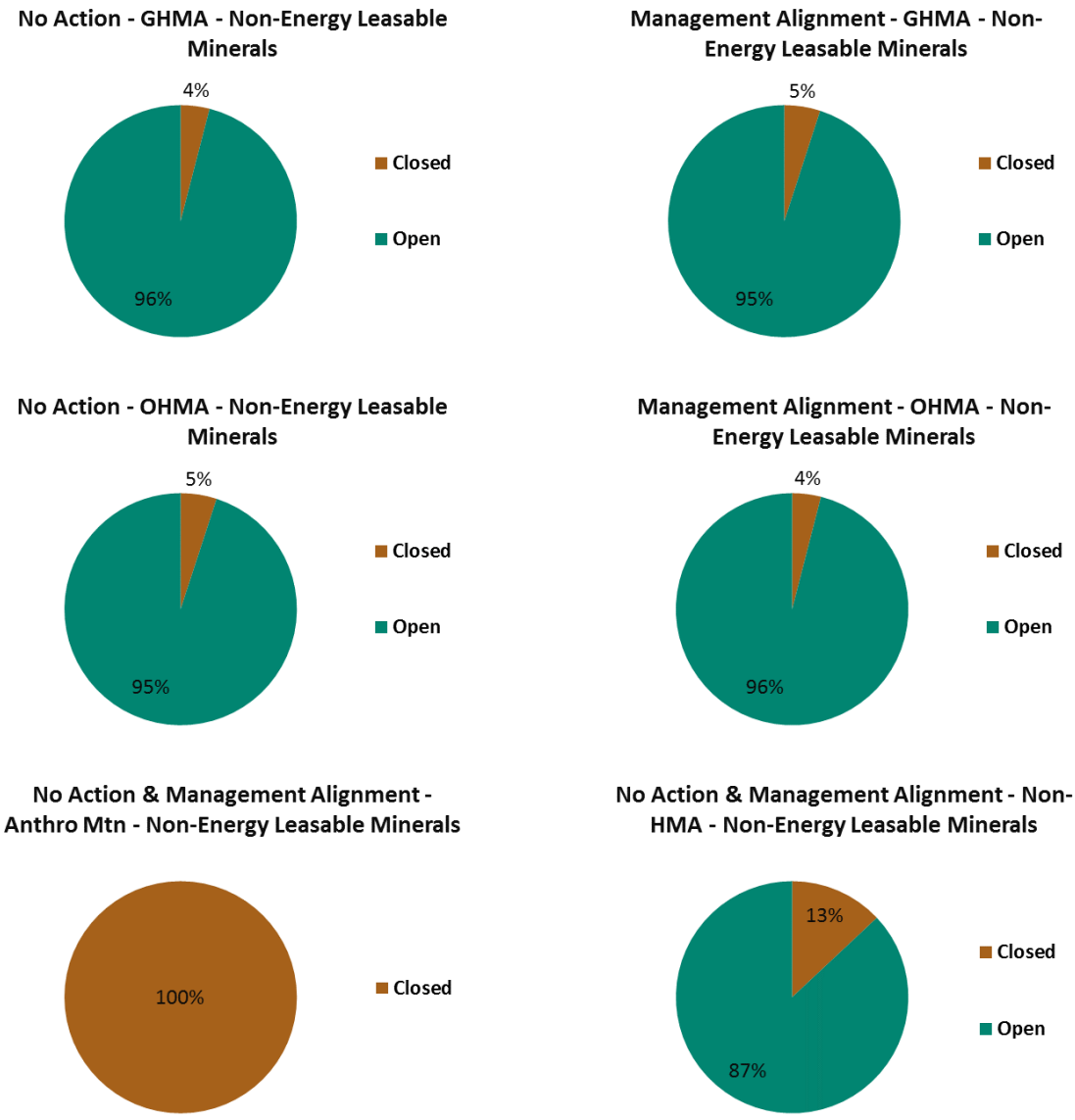


Figure 31 (cont'd) – Non-Energy Leasable Minerals Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VII. Fluid Minerals (Oil & Gas)

Table 33 – Fluid Mineral (Oil & Gas) Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Fluid Mineral (Oil & Gas) Decisions in MZ III by Habitat Management Area Type						
Fluid Mineral (Oil & Gas) Decisions	**No Action**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Closed	126,000	165,000	230,000	7,000	4,948,000	**5,476,000**
Open NSO	5,358,000	23,000	0	35,000	3,431,000	**8,847,000**
Open CSU/TL	0	3,628,000	0	0	2,135,000	**5,763,000**
Open Standard Stipulations	0	86,000	4,042,000	0	26,502,000	**30,630,000**
Total	**5,484,000**	**3,902,000**	**4,272,000**	**42,000**	**37,016,000**	**50,716,000**

Fluid Mineral (Oil & Gas) Decisions	**Management Alignment**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Closed	144,000	176,000	159,000	7,000	4,990,000	**5,476,000**
Open NSO	5,464,000	0	0	35,000	3,454,000	**8,952,000**
Open CSU/TL	0	3,565,000	0	0	2,191,000	**5,756,000**
Open Standard Stipulations	0	0	3,534,000	0	26,991,000	**30,525,000**
Total	**5,607,000**	**3,741,000**	**3,693,000**	**42,000**	**37,626,000**	**50,710,000**

Approximate % of Habitat Management Area by Fluid Mineral (Oil & Gas) Decision in MZ III						
Fluid Mineral (Oil & Gas) Decisions	**No Action**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Closed	2%	4%	5%	17%	13%	**11%**
Open NSO	98%	1%	0%	83%	9%	**17%**
Open CSU/TL	0%	93%	0%	0%	6%	**11%**
Open Standard Stipulations	0%	2%	95%	0%	72%	**60%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Fluid Mineral (Oil & Gas) Decisions	**Management Alignment**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Closed	3%	5%	4%	17%	13%	**11%**
Open NSO	97%	0%	0%	83%	9%	**18%**
Open CSU/TL	0%	95%	0%	0%	6%	**11%**
Open Standard Stipulations	0%	0%	96%	0%	72%	**60%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

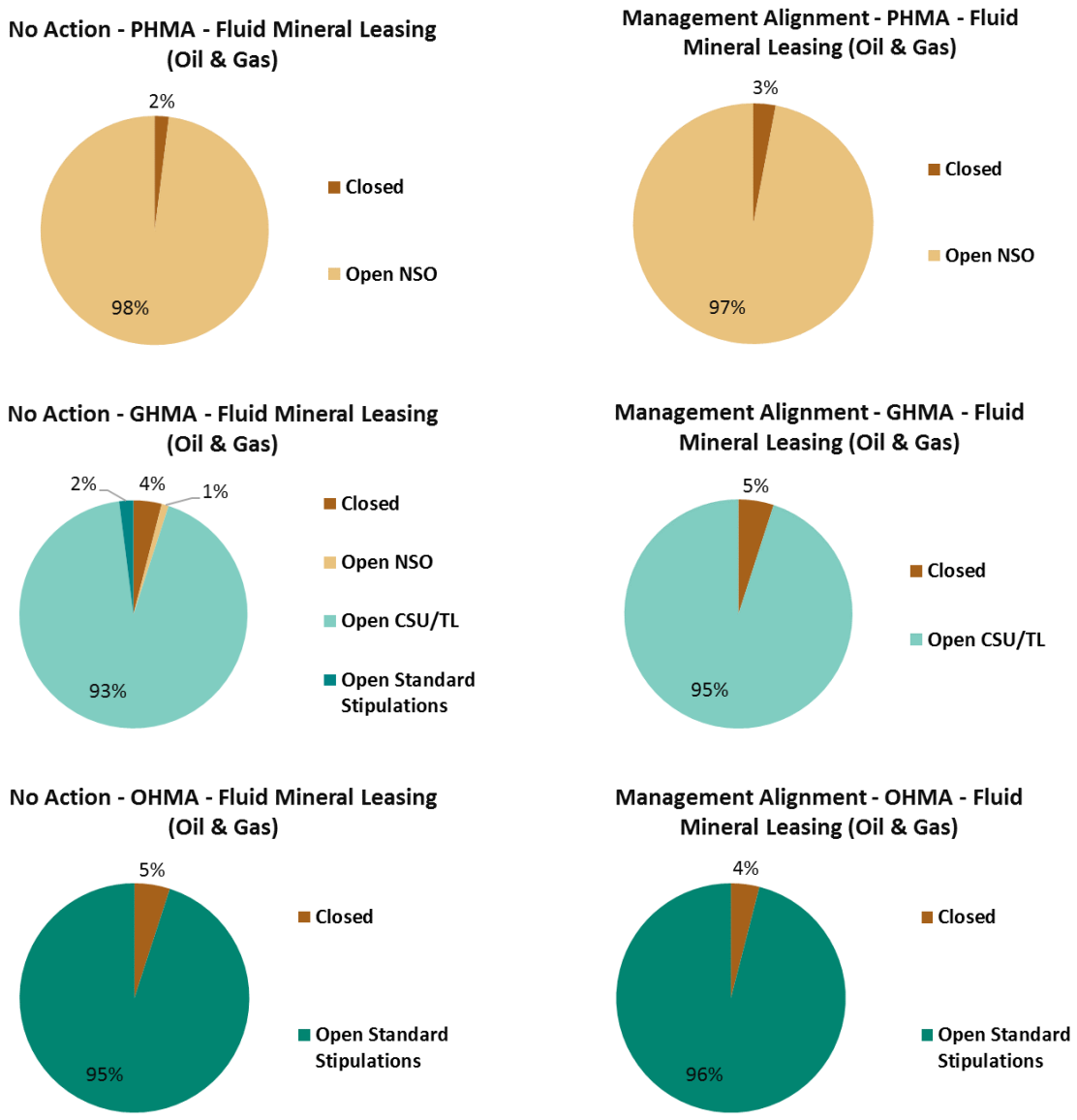


Figure 32 – Fluid Mineral (Oil & Gas) Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

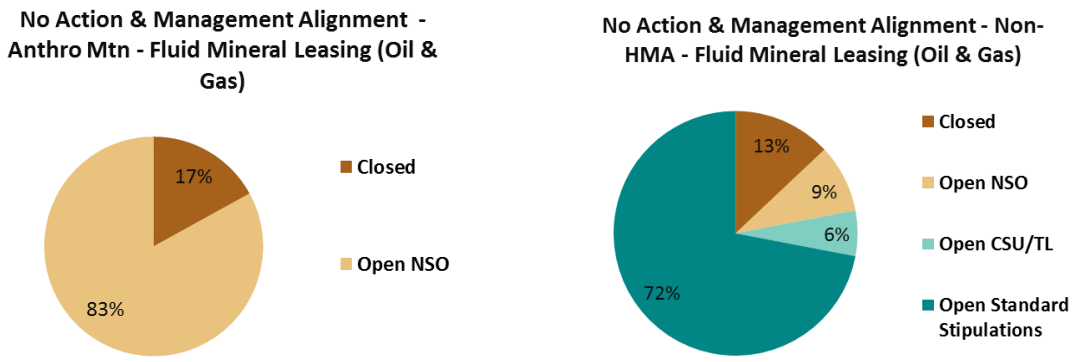


Figure 32 (cont'd) – Fluid Mineral (Oil & Gas) Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VIII. Rights-of-Ways

Table 34 – Rights-of-Ways Decisions within MZ III

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Rights-of-Ways Decisions in MZ III by Habitat Management Area Type						
Rights-of-Ways	**No Action**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Exclusion	86,000	164,000	230,000	NA	3,794,000	**4,274,000**
Avoidance	4,591,000	3,495,000	0	NA	799,000	**8,884,000**
Open	46,000	216,000	4,043,000	NA	27,890,000	**32,195,000**
Total	**4,722,000**	**3,875,000**	**4,272,000**	**NA**	**32,483,000**	**45,353,000**

Rights-of-Ways	**Management Alignment**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Exclusion	104,000	176,000	159,000	NA	3,837,000	**4,275,000**
Avoidance	4,726,000	3,565,000	0	NA	373,000	**8,664,000**
Open	17,000	0	3,534,000	NA	28,857,000	**32,408,000**
Total	**4,847,000**	**3,741,000**	**3,693,000**	**NA**	**33,066,000**	**45,348,000**

Approximate % of Habitat Management Area by Rights-of-Ways Decision in MZ III						
Rights-of-Ways	**No Action**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Exclusion	2%	4%	5%	NA	12%	**9%**
Avoidance	97%	90%	0%	NA	2%	**20%**
Open	1%	6%	95%	NA	86%	**71%**
Total	**100%**	**100%**	**100%**	**NA**	**100%**	**100%**

Rights-of-Ways	**Management Alignment**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Exclusion	2%	5%	4%	NA	12%	**9%**
Avoidance	98%	95%	0%	NA	1%	**19%**
Open	<1%	0%	96%	NA	87%	**71%**
Total	**100%**	**100%**	**100%**	**NA**	**100%**	**100%**

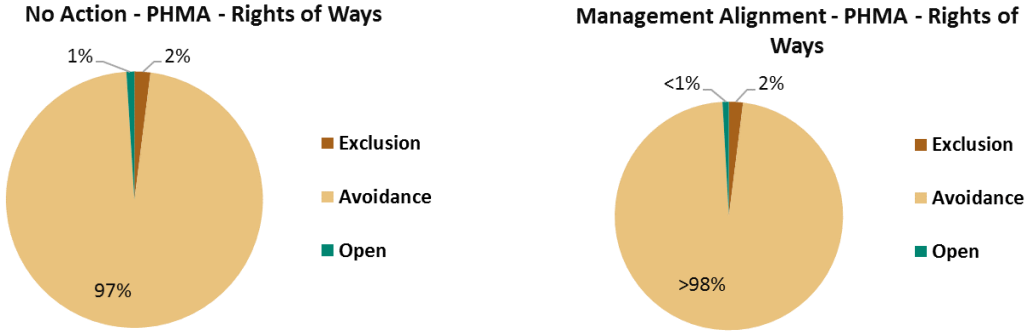


Figure 33 – Rights-of-Ways Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

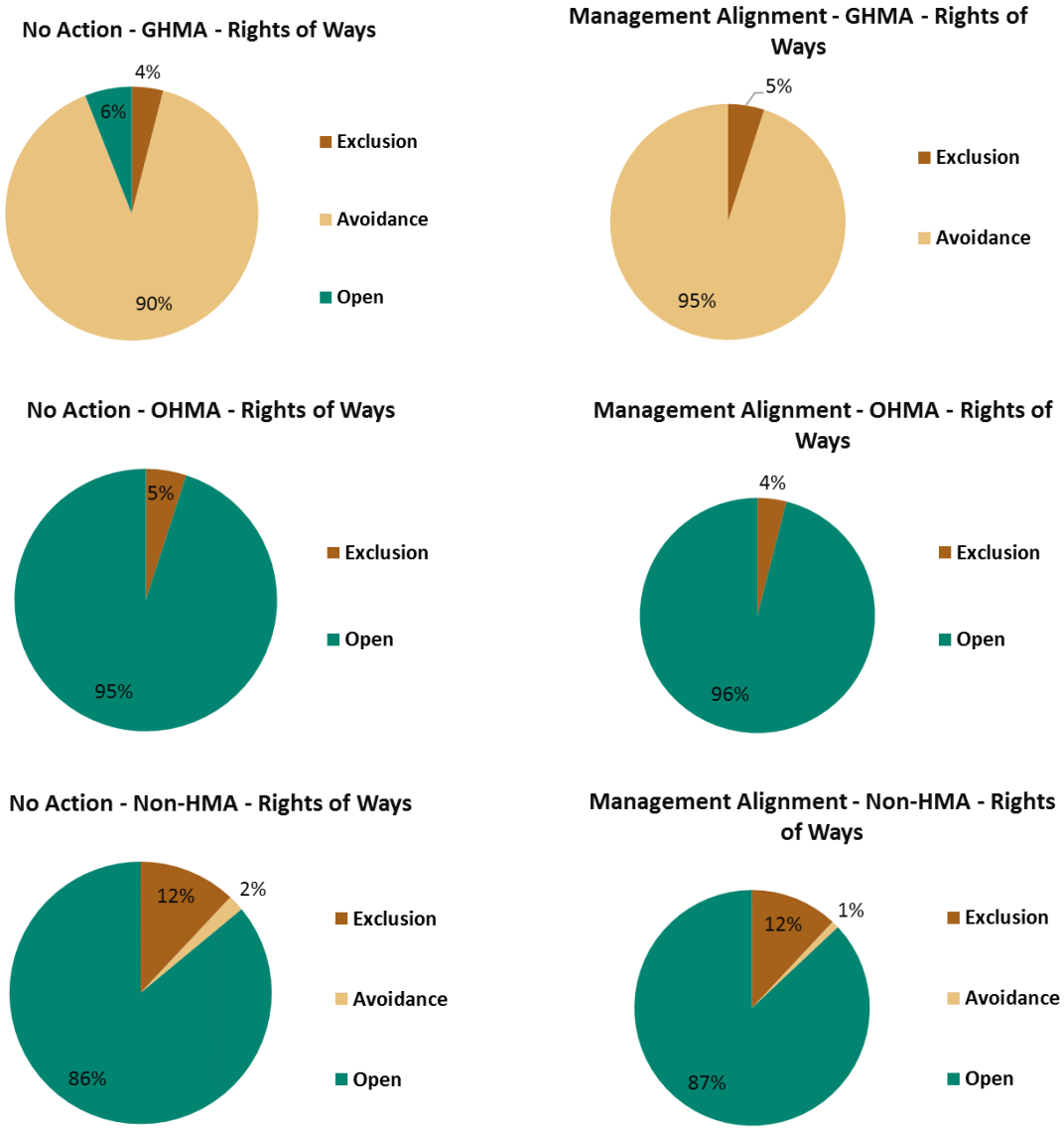


Figure 33 (cont'd) – Rights-of-Ways Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

IX. Salable Minerals Materials

Table 35 – Salable Minerals Materials Decisions within MZ III

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Salable Minerals Materials Decisions in MZ III by Habitat Management Area Type						
Salable Minerals Materials	**No Action**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Closed	4,722,000	172,000	230,000	NA	4,646,000	**9,770,000**
Open	0	3,707,000	4,042,000	NA	27,834,000	**35,583,000**
Total	**4,723,000**	**3,878,000**	**4,272,000**	**NA**	**32,479,000**	**45,353,000**

Salable Minerals Materials	**Management Alignment**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Closed	4,847,000	176,000	159,000	NA	4,694,000	**9,876,000**
Open	0	3,565,000	3,534,000	NA	28,372,000	**35,471,000**
Total	**4,847,000**	**3,741,000**	**3,693,000**	**NA**	**33,066,000**	**45,347,000**

Approximate % of Habitat Management Area by Non-Energy Leasable Minerals Decision in MZ III						
Salable Minerals Materials	**No Action**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Closed	100%	4%	5%	NA	14%	**22%**
Open	0%	96%	95%	NA	86%	**78%**
Total	**100%**	**100%**	**100%**	**NA**	**100%**	**100%**

Salable Minerals Materials	**Management Alignment**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Closed	100%	5%	4%	NA	14%	**22%**
Open	0%	95%	96%	NA	86%	**78%**
Total	**100%**	**100%**	**100%**	**NA**	**100%**	**100%**

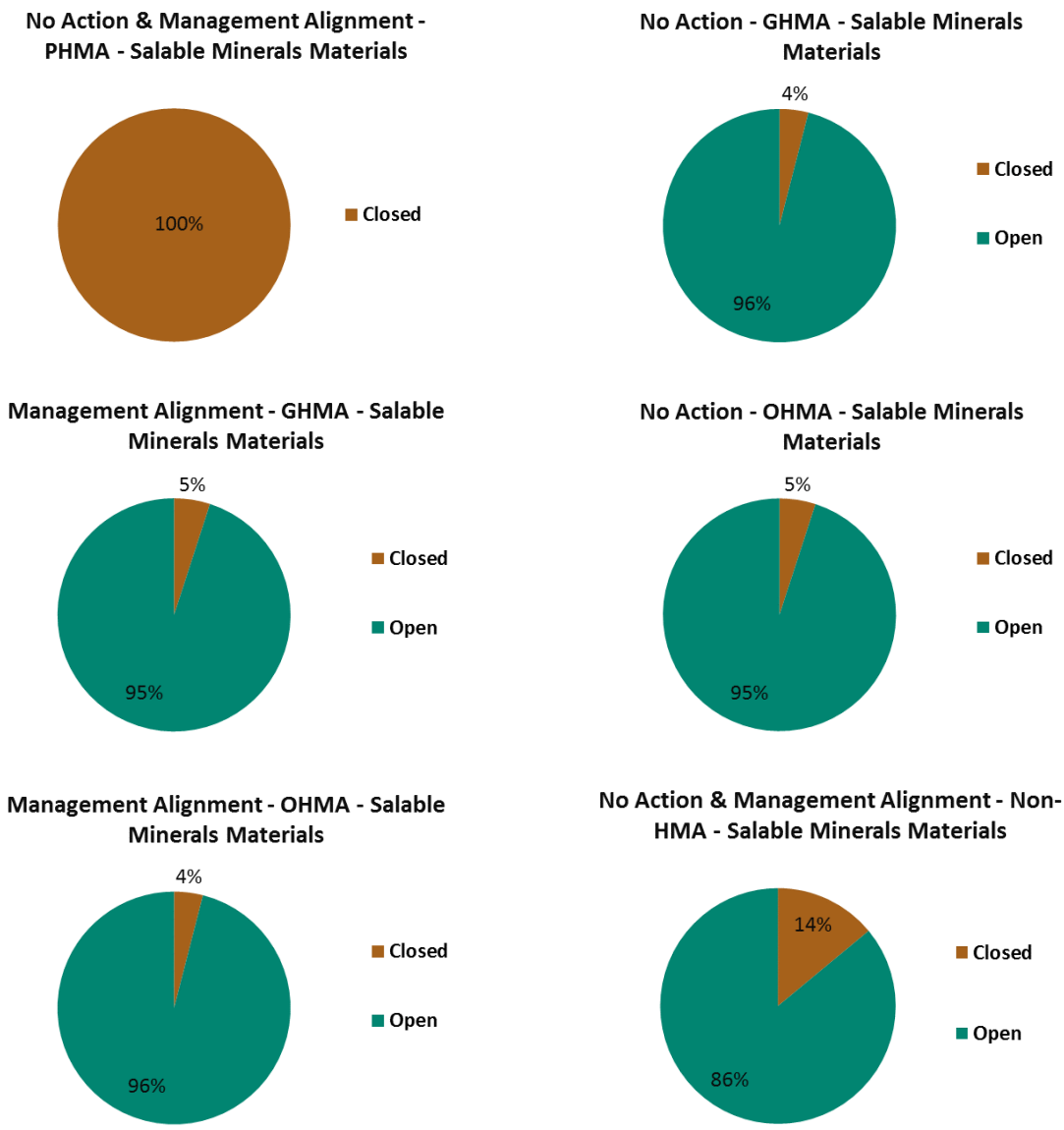


Figure 34 – Salable Minerals Materials Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

X. Solar Energy

Table 36 – Solar Energy Decisions within MZ III

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Solar Energy Decisions in MZ III by Habitat Management Area Type						
Solar Energy	**No Action**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Exclusion	4,731,000	3,886,000	3,417,000	NA	24,421,000	**36,454,000**
Avoidance	2,000	4,000	857,000	NA	7,637,000	**8,499,000**
Open	0	0	1,000	NA	340,000	**341,000**
Total	**4,732,000**	**3,889,000**	**4,274,000**	**NA**	**32,398,000**	**45,294,000**

Solar Energy	**Management Alignment**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Exclusion	4,858,000	3,748,000	3,699,000	NA	24,867,000	**37,172,000**
Avoidance	0	0	0	NA	7,770,000	**7,770,000**
Open	0	0	0	NA	346,000	**346,000**
Total	**4,858,000**	**3,748,000**	**3,699,000**	**NA**	**32,983,000**	**45,288,000**

Approximate % of Habitat Management Area by Solar Energy Decision in MZ III						
Solar Energy	**No Action**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Exclusion	100%	100%	80%	NA	75%	**80%**
Avoidance	<1%	<1%	20%	NA	24%	**19%**
Open	0%	0%	<1%	NA	1%	**1%**
Total	**100%**	**100%**	**100%**	**NA**	**100%**	**100%**

Solar Energy	**Management Alignment**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Exclusion	100%	100%	100%	NA	75%	**82%**
Avoidance	0%	0%	0%	NA	24%	**17%**
Open	0%	0%	0%	NA	1%	**1%**
Total	**100%**	**100%**	**100%**	**NA**	**100%**	**100%**

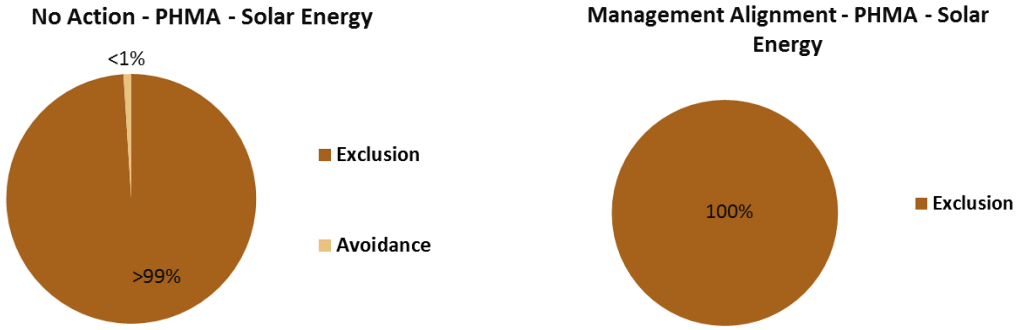


Figure 35 – Solar Energy Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

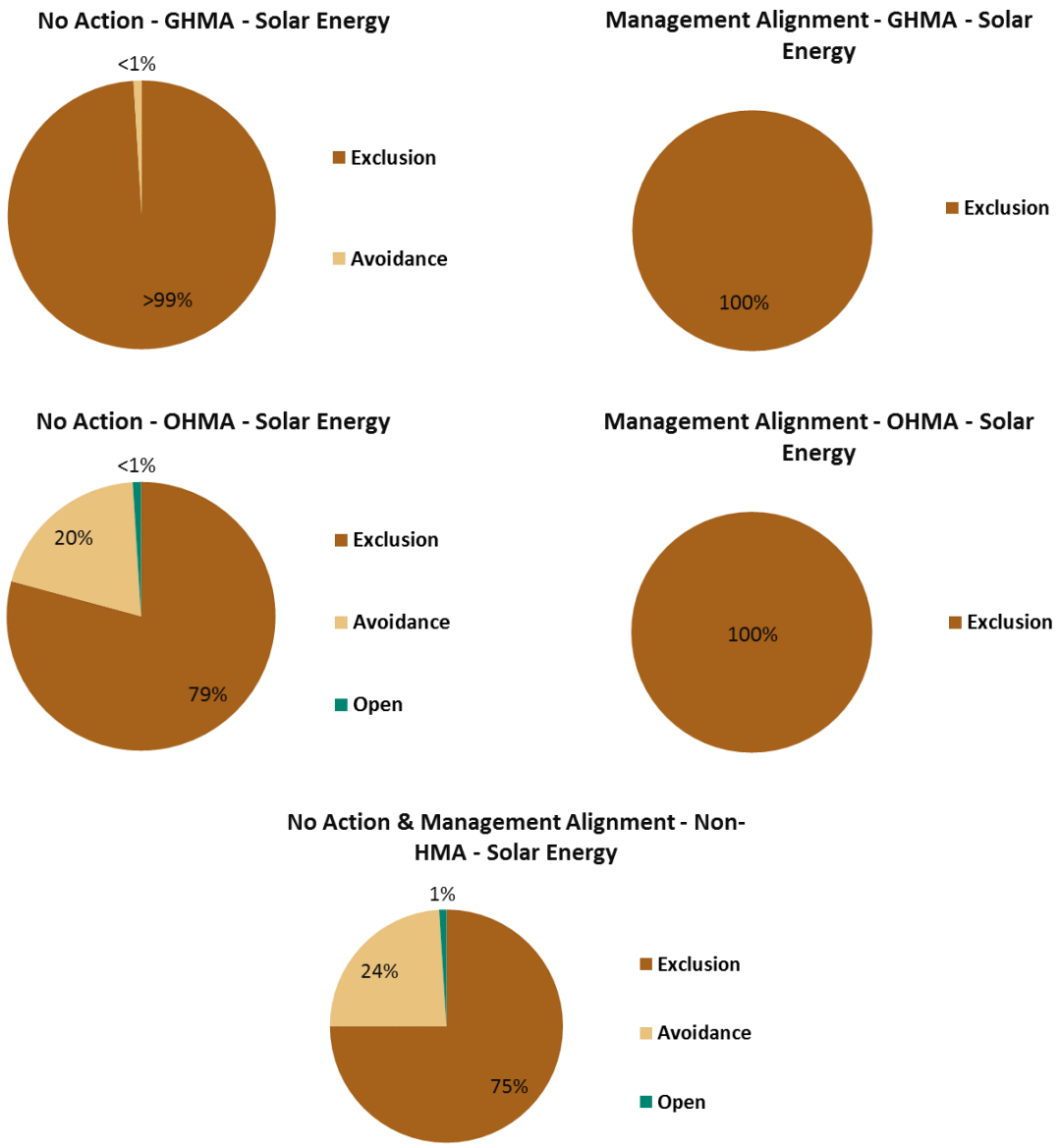


Figure 35 (cont'd) – Solar Energy Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

XI. Trails and Travel Management

Table 37 – Trails and Travel Management Decisions within MZ III

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Trails and Travel Management Decisions in MZ III by Habitat Management Area Type						
Trails and Travel Management Decisions	**No Action**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Closed	16,000	84,000	52,000	NA	2,517,000	**2,669,000**
Limited	4,702,000	3,791,000	1,000	NA	5,791,000	**14,285,000**
Open	0	0	4,219,000	NA	24,153,000	**28,372,000**
Total	**4,718,000**	**3,875,000**	**4,273,000**	**NA**	**32,461,000**	**45,326,000**

Trails and Travel Management Decisions	**Management Alignment**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Closed	21,000	100,000	42,000	NA	2,505,000	**2,668,000**
Limited	4,821,000	3,642,000	14,000	NA	6,095,000	**14,572,000**
Open	0	0	3,637,000	NA	24,429,000	**28,066,000**
Total	**4,842,000**	**3,741,000**	**3,693,000**	**NA**	**33,030,000**	**45,307,000**

Approximate % of Habitat Management Area by Trails and Travel Management Decisions Decision in MZ III						
Trails and Travel Management Decisions	**No Action**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Closed	<1%	2%	1%	NA	8%	**6%**
Limited	100%	98%	0%	NA	18%	**32%**
Open	0%	0%	99%	NA	74%	**63%**
Total	**100%**	**100%**	**100%**	**NA**	**100%**	**100%**

Trails and Travel Management Decisions	**Management Alignment**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Closed	<1%	3%	1%	NA	8%	**6%**
Limited	100%	97%	0%	NA	18%	**32%**
Open	0%	0%	98%	NA	74%	**62%**
Total	**100%**	**100%**	**100%**	**NA**	**100%**	**100%**

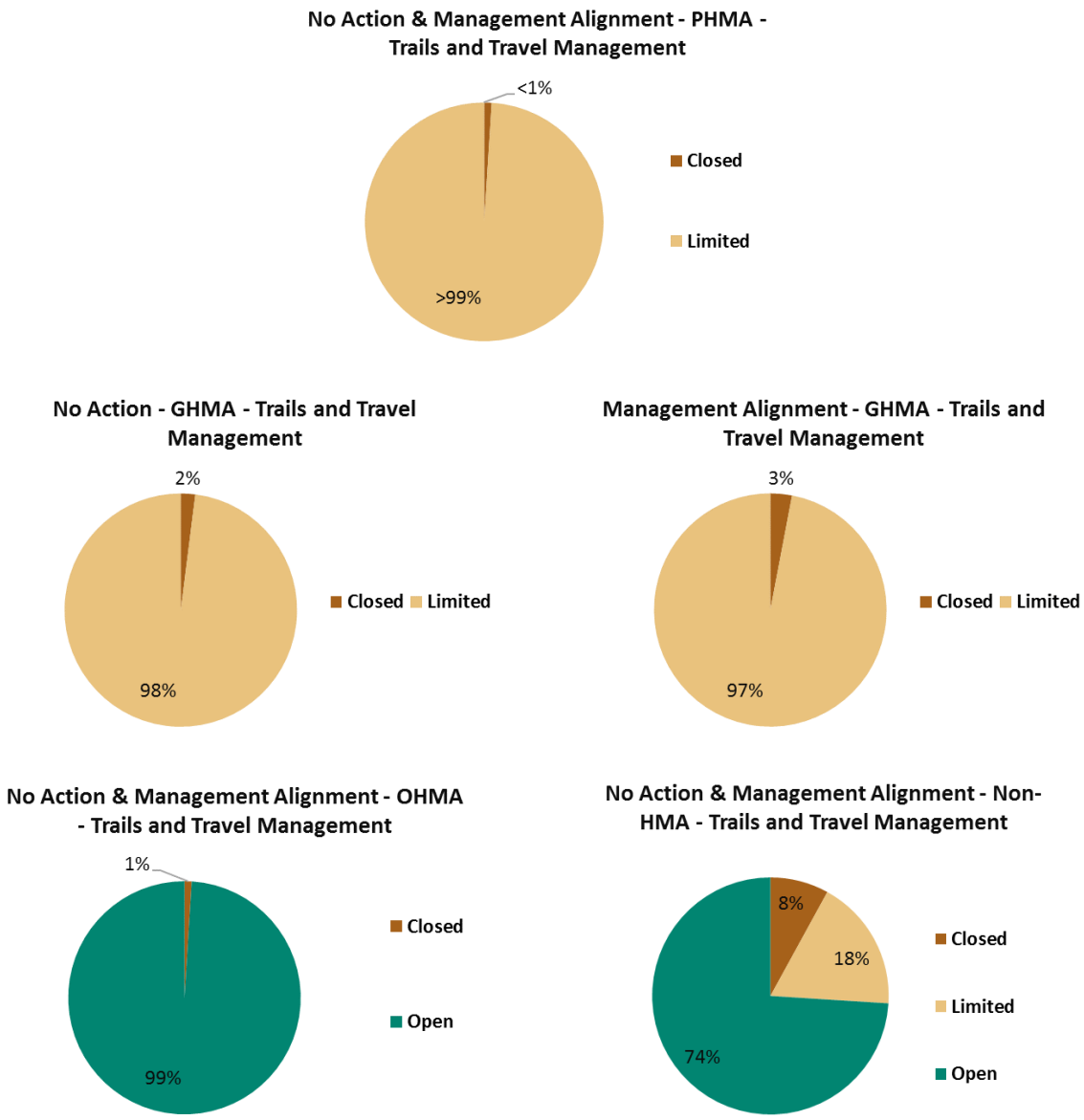


Figure 36 – Trails and Travel Management Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

XII. Wind Energy

Table 38 – Wind Energy Decisions within MZ III

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Wind Energy Decisions in MZ III by Habitat Management Area Type						
Wind Energy	**No Action**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Exclusion	4,669,000	166,000	230,000	NA	3,939,000	**9,004,000**
Avoidance	0	3,572,000	0	NA	212,000	**3,784,000**
Open	54,000	137,000	4,042,000	NA	28,265,000	**32,498,000**
Total	**4,723,000**	**3,876,000**	**4,272,000**	**NA**	**32,415,000**	**45,286,000**

Wind Energy	**Management Alignment**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Exclusion	4,793,000	176,000	159,000	NA	3,982,000	**9,110,000**
Avoidance	0	3,565,000	0	NA	212,000	**3,777,000**
Open	54,000	0	3,534,000	NA	28,805,000	**32,393,000**
Total	**4,847,000**	**3,741,000**	**3,693,000**	**NA**	**32,999,000**	**45,280,000**

Approximate % of Habitat Management Area by Wind Energy Decision in MZ III						
Wind Energy	**No Action**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Exclusion	0%	92%	0%	NA	1%	**8%**
Avoidance	99%	4%	5%	NA	12%	**20%**
Open	1%	4%	95%	NA	87%	**72%**
Total	**100%**	**100%**	**100%**	**NA**	**100%**	**100%**

Wind Energy	**Management Alignment**					
	PHMA	**GHMA**	**OHMA**	**Anthro Mtn**	**Non-HMA**	**Total**
Exclusion	0%	95%	0%	NA	1%	**8%**
Avoidance	99%	5%	4%	NA	12%	**20%**
Open	1%	0%	96%	NA	87%	**72%**
Total	**100%**	**100%**	**100%**	**NA**	**100%**	**100%**

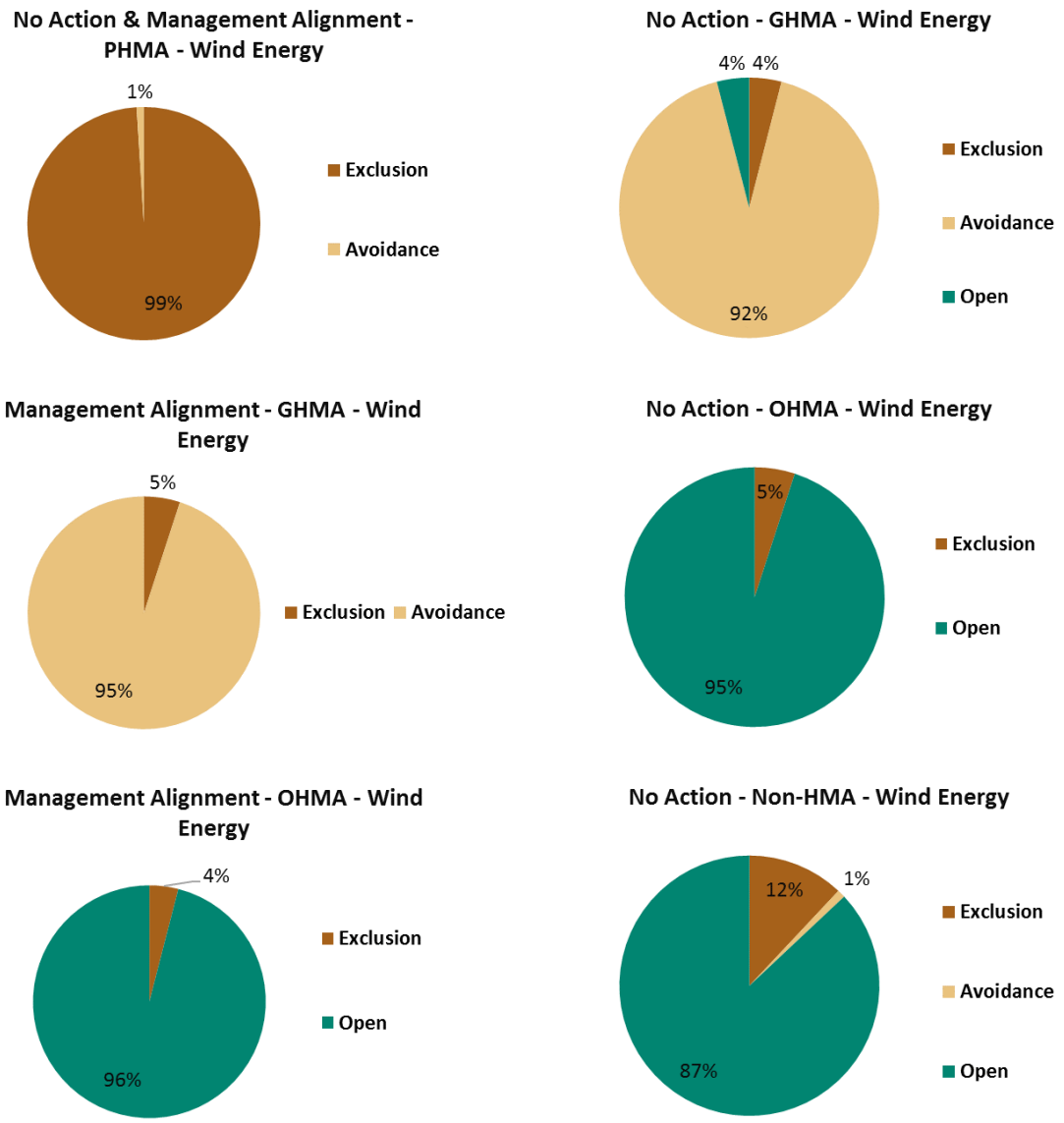


Figure 37 – Wind Energy Decisions within MZ III

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

1.2.4 Management Zone IV – Idaho, Utah, Nevada, Oregon

I. Habitat Management

Table 39 – Habitat Management Areas within MZ IV

Acres and percentages reflect all lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of HMA in MZ IV									
No Action					Management Alignment				
PHMA	IHMA	GHMA	OHMA	Non-HMA	PHMA	IHMA	GHMA	OHMA	Non-HMA
17,170,000	4,449,000	11,447,00	1,261,000	41,395,000	16,147,000	4,519,000	11,297,000	990,000	42,769,022

Approximate Percent of MZ IV that is HMA									
No Action					Management Alignment				
PHMA	IHMA	GHMA	OHMA	Non-HMA	PHMA	IHMA	GHMA	OHMA	Non-HMA
23%	6%	15%	2%	55%	21%	6%	15%	1%	56%

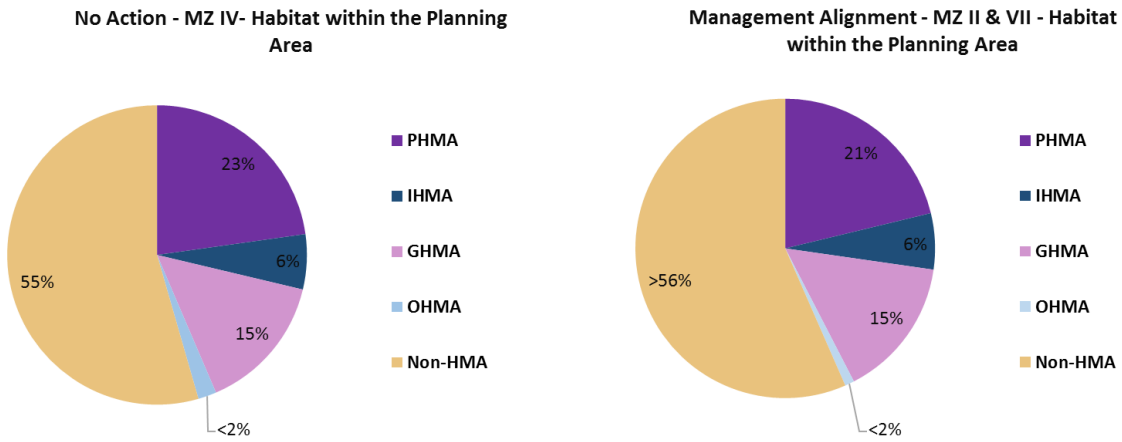


Figure 38 – Habitat Management Areas within MZ IV

Percentages reflect all lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

II. Geothermal Energy

Table 40 – Geothermal Energy Decisions within MZ IV

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Geothermal Energy Decisions in MZ IV by Habitat Management Area Type						
Geothermal Energy	**No Action**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	1,923,000	918,000	1,130,000	4,000	9,440,000	**13,415,000**
Open NSO	10,256,000	2,638,000	424,000	0	1,125,000	**14,443,000**
Open CSU/TL	0	0	4,881,000	0	2,196,000	**7,077,000**
Open Standard Stipulations	0	3,000	20,000	704,000	4,529,000	**5,257,000**
Total	**12,178,000**	**3,560,000**	**6,455,000**	**708,000**	**17,290,000**	**40,191,000**

Geothermal Energy	**Management Alignment**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	1,913,000	918,000	1,133,000	6,000	9,439,000	**13,410,000**
Open NSO	9,848,000	2,702,000	424,000	0	1,125,000	**14,099,000**
Open CSU/TL	0	0	4,974,000	0	2,196,000	**7,169,000**
Open Standard Stipulations	0	3,000	20,000	616,000	4,855,000	**5,494,000**
Total	**11,762,000**	**3,624,000**	**6,550,000**	**622,000**	**17,615,000**	**40,173,000**

Approximate % of Habitat Management Area by Geothermal Energy Decision in MZ IV						
Geothermal Energy	**No Action**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	16%	26%	18%	1%	55%	**33%**
Open NSO	84%	74%	7%	0%	7%	**36%**
Open CSU/TL	0%	0%	76%	0%	13%	**18%**
Open Standard Stipulations	0%	0%	0%	99%	26%	**13%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Geothermal Energy	**Management Alignment**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	16%	25%	17%	1%	54%	**33%**
Open NSO	84%	75%	6%	0%	6%	**35%**
Open CSU/TL	0%	0%	76%	0%	12%	**18%**
Open Standard Stipulations	0%	0%	0%	99%	28%	**14%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

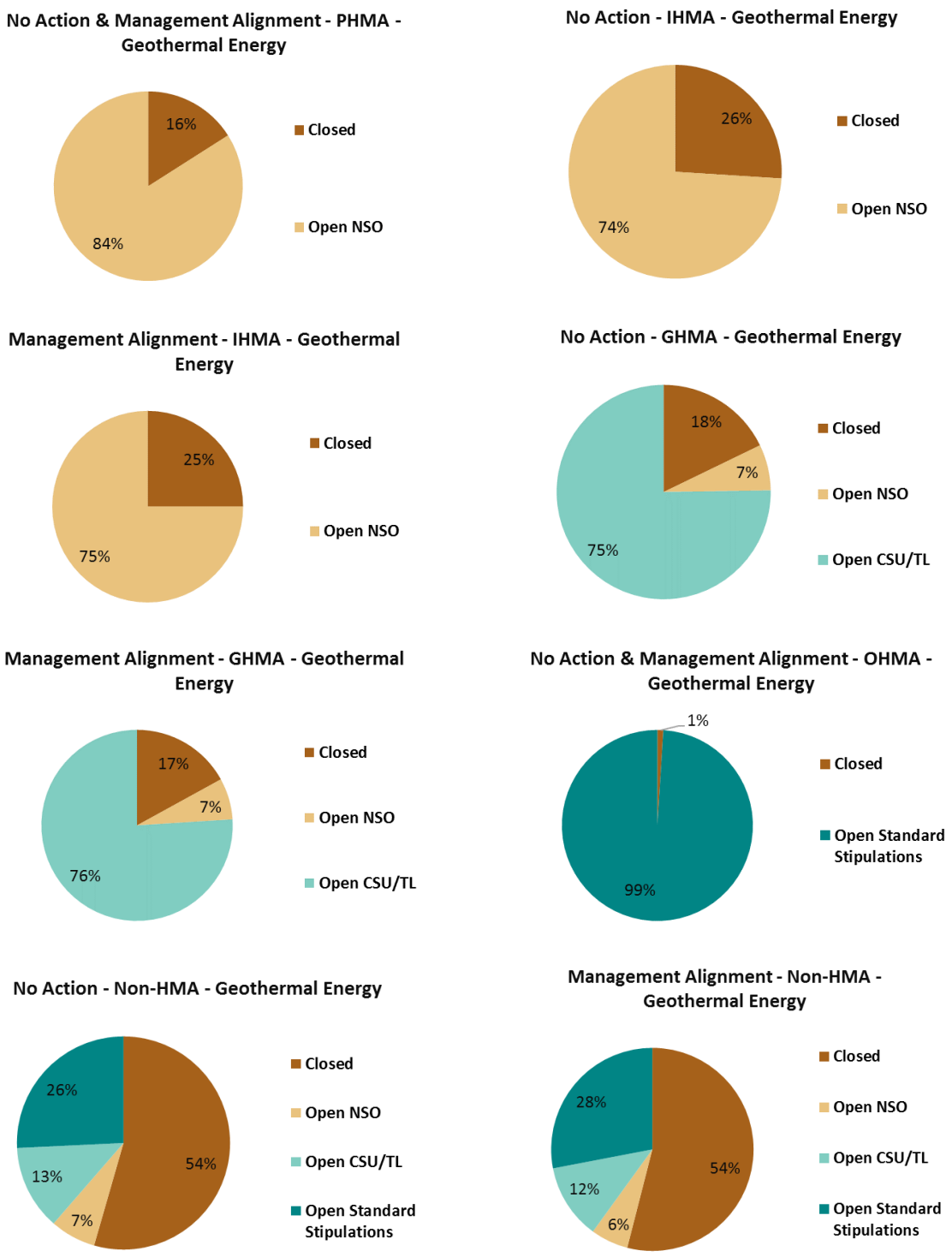


Figure 39 – Geothermal Energy Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

III. Land Tenure

Table 41 – Land Tenure Decisions within MZ IV

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Land Tenure Decisions in MZ IV by Habitat Management Area Type						
Land Tenure	**No Action**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Disposal	0	0	1,000	146,000	659,000	**805,000**
Retention	10,726,000	2,719,000	4,948,000	562,000	4,277,000	**23,232,000**
Total	**10,727,000**	**2,719,000**	**4,949,000**	**708,000**	**4,935,000**	**24,038,000**

Land Tenure	**Management Alignment**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Disposal	6,000	0	25,000	85,000	799,000	**914,000**
Retention	10,319,000	2,780,000	5,019,000	537,000	4,462,000	**23,117,000**
Total	**10,325,000**	**2,780,000**	**5,043,000**	**622,000**	**5,261,000**	**24,032,000**

Approximate % of Habitat Management Area by Land Tenure Decision in MZ III						
Land Tenure	**No Action**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Disposal	0%	0%	<1%	21%	13%	**3%**
Retention	100%	100%	100%	79%	87%	**97%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Land Tenure	**Management Alignment**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Disposal	<1%	0%	<1%	14%	15%	**4%**
Retention	100%	100%	100%	86%	85%	**96%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

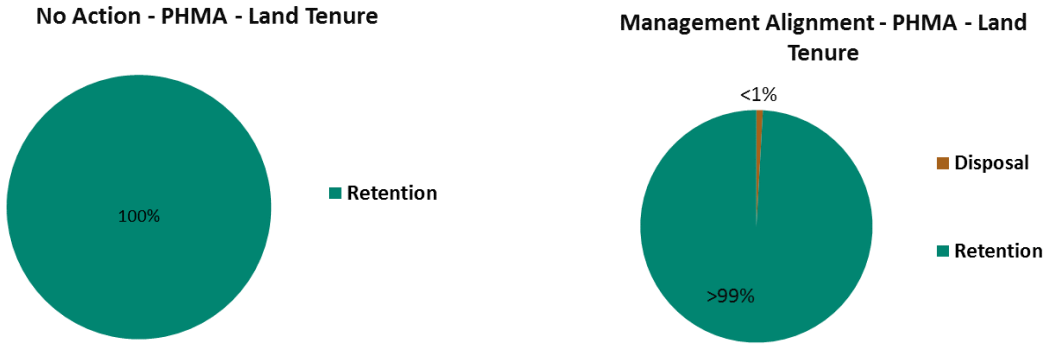


Figure 40 – Land Tenure Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

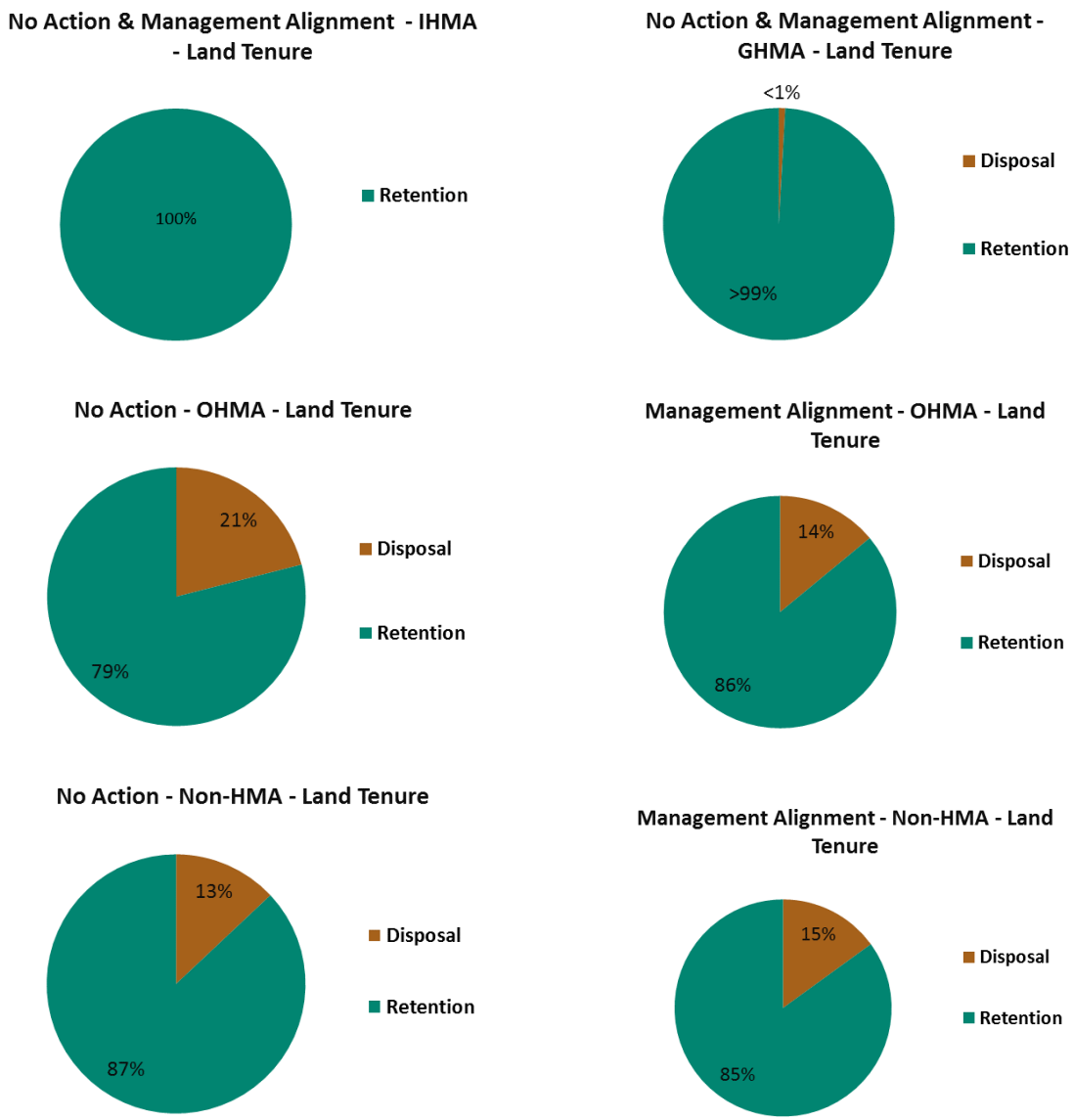


Figure 40 (cont'd) – Land Tenure Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

IV. Livestock Grazing

Table 42 – Livestock Grazing Decisions within MZ IV

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Livestock Grazing Decisions in MZ IV by Habitat Management Area Type						
Livestock Grazing	**No Action**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Unavailable	182,000	18,000	43,000	0	92,000	**335,000**
Available	10,515,000	2,701,000	4,923,000	709,000	4,562,000	**23,411,000**
Total	**10,697,000**	**2,719,000**	**4,966,000**	**709,000**	**4,655,000**	**23,746,000**

Livestock Grazing	**Management Alignment**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Unavailable	182,000	18,000	43,000	0	92,000	**335,000**
Available	10,112,000	2,762,000	5,029,000	620,000	4,883,000	**23,406,000**
Total	**10,294,000**	**2,780,000**	**5,072,000**	**620,000**	**4,975,000**	**23,740,000**

Approximate % of Habitat Management Area by Livestock Grazing Decision in MZ IV						
Livestock Grazing	**No Action & Management Alignment**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Unavailable	2%	1%	1%	0%	2%	**1%**
Available	98%	99%	99%	100%	98%	**99%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Figure 41 – Livestock Grazing Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

V. Locatable Minerals

Table 43 – Locatable Minerals Decisions within MZ IV

Acreages and Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Locatable Minerals Decisions in MZ IV by Habitat Management Area Type						
Locatable Minerals	**No Action**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Existing Withdrawals	1,079,000	442,000	432,000	0	3,606,000	**5,560,000**
Recommended Withdrawals	4,836,000	0	2,000	0	0	**4,838,000**
Open	6,074,000	2,858,000	6,055,000	708,000	13,798,000	**29,492,000**
Total	**11,990,000**	**3,300,000**	**6,489,000**	**708,000**	**17,404,000**	**39,891,000**

Locatable Minerals	**Management Alignment**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Existing Withdrawals	1,078,000	442,000	431,000	0	3,605,000	**5,556,000**
Recommended Withdrawals	0	0	2,000	0	0	**2,000**
Open	10,518,000	2,923,000	6,151,000	622,000	14,113,000	**34,327,000**
Total	**11,597,000**	**3,364,000**	**6,584,000**	**622,000**	**17,718,000**	**39,885,000**

Approximate % of Habitat Management Area by Geothermal Energy Decision in MZ IV						
Locatable Minerals	**No Action**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Existing Withdrawals	9%	13%	7%	0%	21%	**14%**
Recommended Withdrawals	40%	0%	0%	0%	0%	**12%**
Open	51%	87%	93%	100%	79%	**74%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Locatable Minerals	**Management Alignment**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Existing Withdrawals	9%	13%	9%	0%	20%	**14%**
Recommended Withdrawals	0%	0%	<1%	0%	0%	**0%**
Open	91%	87%	91%	100%	80%	**86%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Figure 42 – Locatable Minerals Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VI. Non-Energy Leasable Minerals

Table 44 – Non-Energy Leasable Minerals Decisions within MZ IV

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Non-Energy Leasable Minerals Decisions in MZ IV by Habitat Management Area Type						
Non-Energy Leasable Minerals	**No Action**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	12,180,000	682,000	1,059,000	4,000	9,139,000	**23,064,000**
Open	0	2,877,000	5,413,000	704,000	8,375,000	**17,369,000**
Total	**12,180,000**	**3,559,000**	**6,472,000**	**708,000**	**17,514,000**	**40,433,000**

Non-Energy Leasable Minerals	**Management Alignment**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	11,775,000	682,000	1,062,000	6,000	9,138,000	**22,663,000**
Open	0	2,941,000	5,505,000	616,000	8,701,000	**17,763,000**
Total	**11,775,000**	**3,624,000**	**6,567,000**	**622,000**	**17,839,000**	**40,426,000**

Approximate % of Habitat Management Area by Non-Energy Leasable Minerals Decision in MZ IV						
Non-Energy Leasable Minerals	**No Action**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	100%	19%	16%	1%	52%	**57%**
Open	0%	81%	84%	99%	48%	**43%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Non-Energy Leasable Minerals	**Management Alignment**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	100%	19%	16%	1%	51%	**56%**
Open	0%	81%	84%	99%	49%	**44%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Figure 43 – Non-Energy Leasable Minerals Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VII. Fluid Minerals (Oil & Gas)

Table 45 – Fluid Mineral (Oil & Gas) Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Fluid Mineral (Oil & Gas) Decisions in MZ IV by Habitat Management Area Type						
Fluid Mineral (Oil & Gas) Decisions	**No Action**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	1,924,000	1,136,000	1,136,000	4,000	9,542,000	**13,523,000**
Open NSO	10,245,000	436,000	436,000	0	1,164,000	**14,493,000**
Open CSU/TL	18,000	4,947,000	4,947,000	0	2,266,000	**7,230,000**
Open Standard Stipulations	1,000	3,000	3,000	704,000	4,729,000	**5,437,000**
Total	**12,187,000**	**6,522,000**	**6,522,000**	**708,000**	**17,701,000**	**40,683,000**

Fluid Mineral (Oil & Gas) Decisions	**Management Alignment**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	1,917,000	917,000	1,138,000	6,000	9,541,000	**13,520,000**
Open NSO	9,846,000	2,712,000	436,000	0	1,176,000	**14,171,000**
Open CSU/TL	17,000	0	5,039,000	0	2,266,000	**7,322,000**
Open Standard Stipulations	1,000	0	3,000	616,000	5,043,000	**5,663,000**
Total	**11,782,000**	**3,629,000**	**6,616,000**	**622,000**	**18,027,000**	**40,676,000**

Approximate % of Habitat Management Area by Fluid Mineral (Oil & Gas) Decision in MZ IV						
Fluid Mineral (Oil & Gas) Decisions	**No Action**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	16%	26%	17%	1%	54%	**33%**
Open NSO	84%	74%	7%	0%	7%	**36%**
Open CSU/TL	<1%	0%	76%	0%	13%	**18%**
Open Standard Stipulations	<1%	0%	<1%	99%	27%	**13%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Fluid Mineral (Oil & Gas) Decisions	**Management Alignment**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	16%	25%	17%	1%	53%	**33%**
Open NSO	84%	75%	7%	0%	7%	**35%**
Open CSU/TL	<1%	0%	76%	0%	13%	**18%**
Open Standard Stipulations	<1%	0%	<1%	99%	28%	**14%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

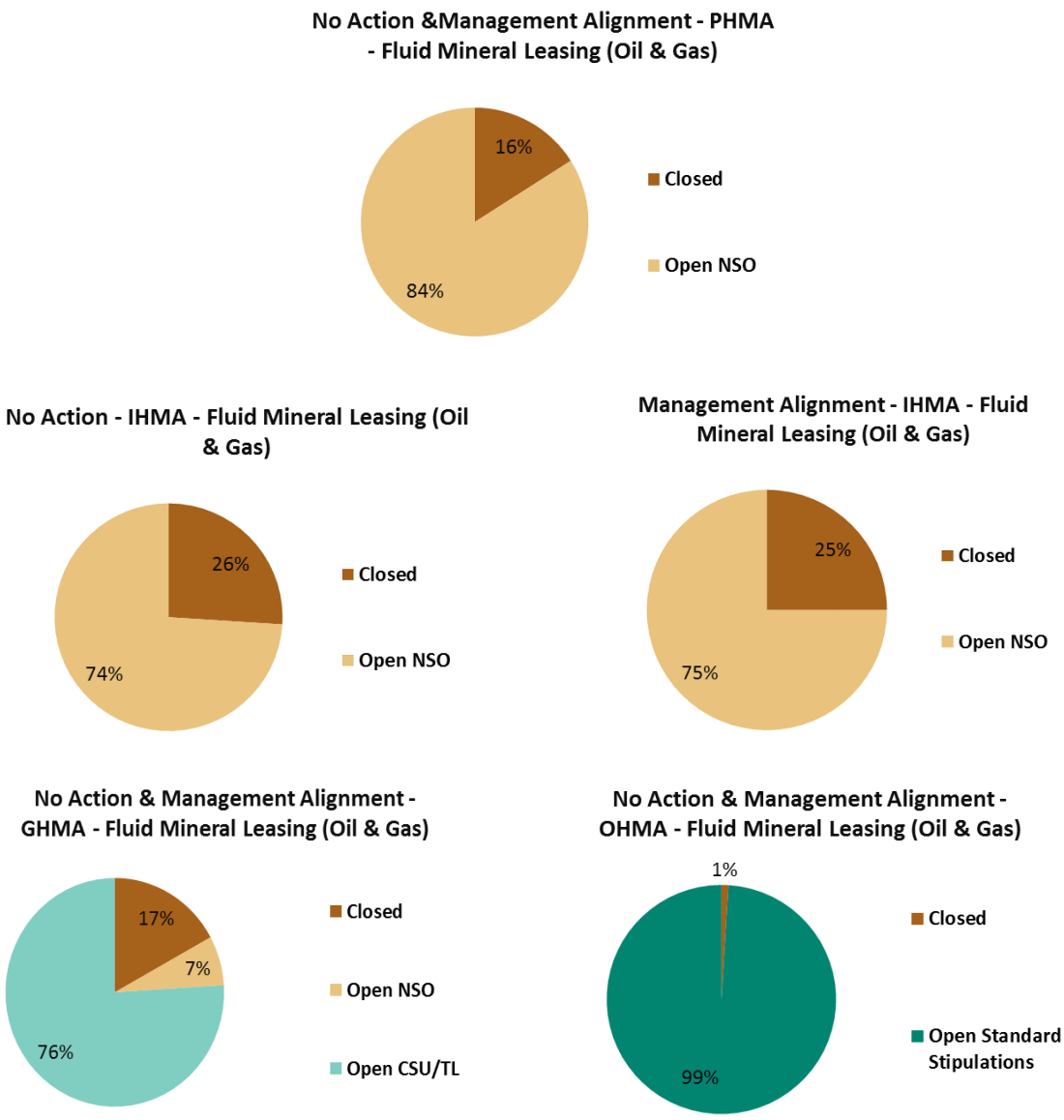


Figure 44 – Fluid Mineral (Oil & Gas) Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

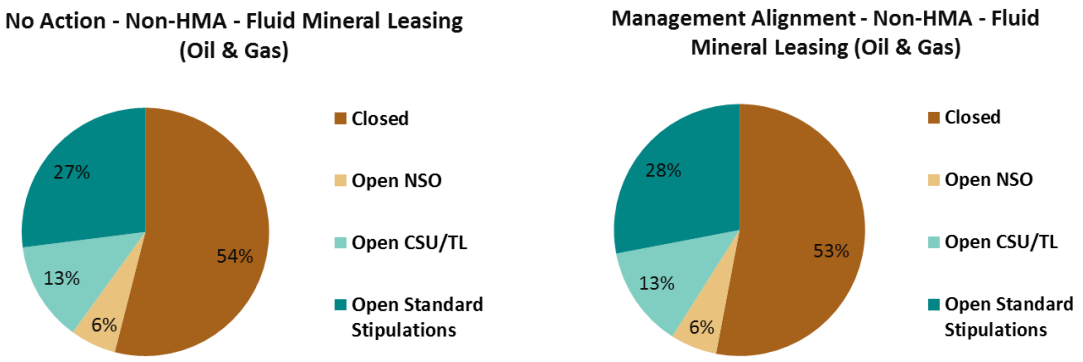


Figure 44 (cont'd) – Fluid Mineral (Oil & Gas) Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VIII. Rights-of-Ways

Table 46 – Rights-of-Ways Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Rights-of-Ways Decisions in MZ IV by Habitat Management Area Type						
Rights-of-Ways	**No Action**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Exclusion	637,000	131,000	269,000	3,000	244,000	**1,283,000**
Avoidance	9,993,000	2,565,000	3,095,000	0	463,000	**16,117,000**
Open	98,000	24,000	1,827,000	705,000	4,381,000	**7,035,000**
Total	**10,728,000**	**2,719,000**	**5,192,000**	**708,000**	**5,088,000**	**24,435,000**

Rights-of-Ways	**Management Alignment**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Exclusion	631,000	131,000	272,000	6,000	245,000	**1,285,000**
Avoidance	9,623,000	2,626,000	3,204,000	0	475,000	**15,928,000**
Open	68,000	24,000	1,810,000	615,000	4,700,000	**7,217,000**
Total	**10,322,000**	**2,780,000**	**5,286,000**	**621,000**	**5,420,000**	**24,429,000**

Approximate % of Habitat Management Area by Rights-of-Ways Decision in MZ IV						
Rights-of-Ways	**No Action**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Exclusion	6%	5%	5%	0%	5%	**5%**
Avoidance	93%	94%	60%	0%	9%	**65%**
Open	1%	1%	35%	100%	86%	**29%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Rights-of-Ways	**Management Alignment**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Exclusion	6%	5%	5%	1%	4%	**5%**
Avoidance	93%	94%	61%	0%	9%	**65%**
Open	1%	1%	34%	99%	87%	**30%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

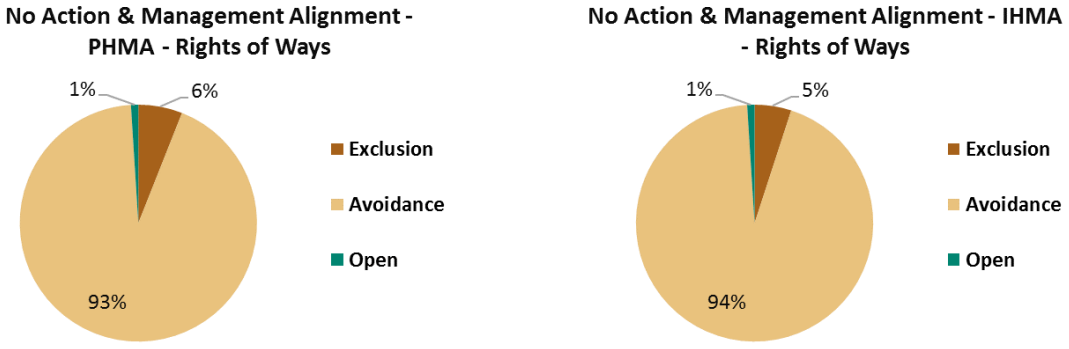


Figure 45 – Rights-of-Ways Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

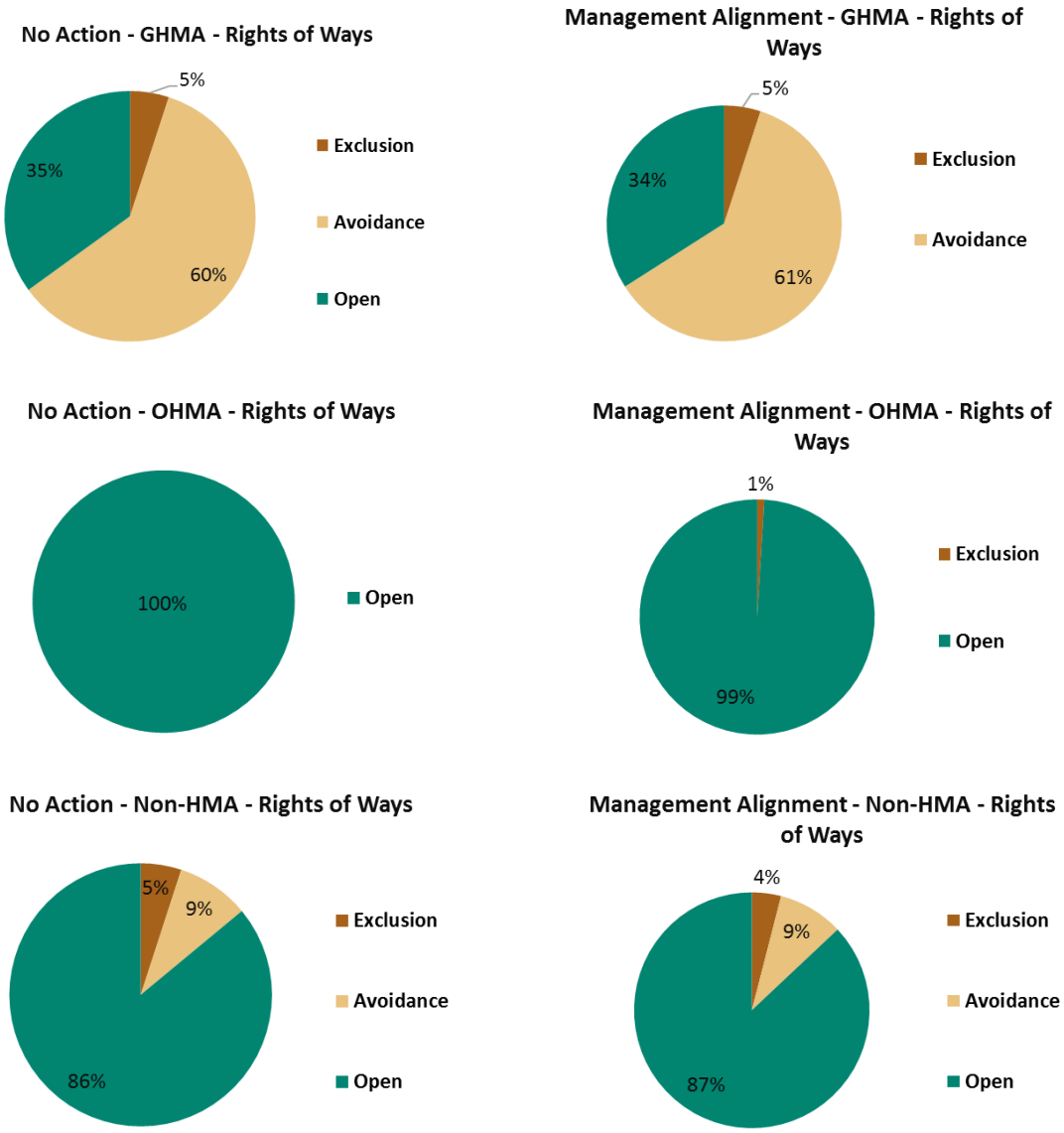


Figure 45 (cont'd) – Rights-of-Ways Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

IX. Salable Minerals Materials

Table 47 – Salable Minerals Materials Decisions within MZ IV

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Salable Minerals Materials Decisions in MZ IV by Habitat Management Area Type						
Salable Minerals Materials	**No Action**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	11,494,000	313,000	682,000	4,000	830,000	**13,323,000**
Open	4,000	2,878,000	5,250,000	704,000	5,504,000	**14,339,000**
Total	**11,497,000**	**3,191,000**	**5,932,000**	**708,000**	**6,334,000**	**27,662,000**

Salable Minerals Materials	**Management Alignment**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	11,089,000	313,000	684,000	6,000	829,000	**12,922,000**
Open	4,000	2,942,000	5,343,000	616,000	5,830,000	**14,734,000**
Total	**11,093,000**	**3,255,000**	**6,027,000**	**622,000**	**6,659,000**	**27,656,000**

Approximate % of Habitat Management Area by Non-Energy Leasable Minerals Decision in MZ IV						
Salable Minerals Materials	**No Action**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	100%	10%	11%	1%	13%	**48%**
Open	<1%	90%	89%	99%	87%	**52%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Salable Minerals Materials	**Management Alignment**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	100%	10%	11%	1%	12%	**47%**
Open	<1%	90%	89%	99%	88%	**53%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

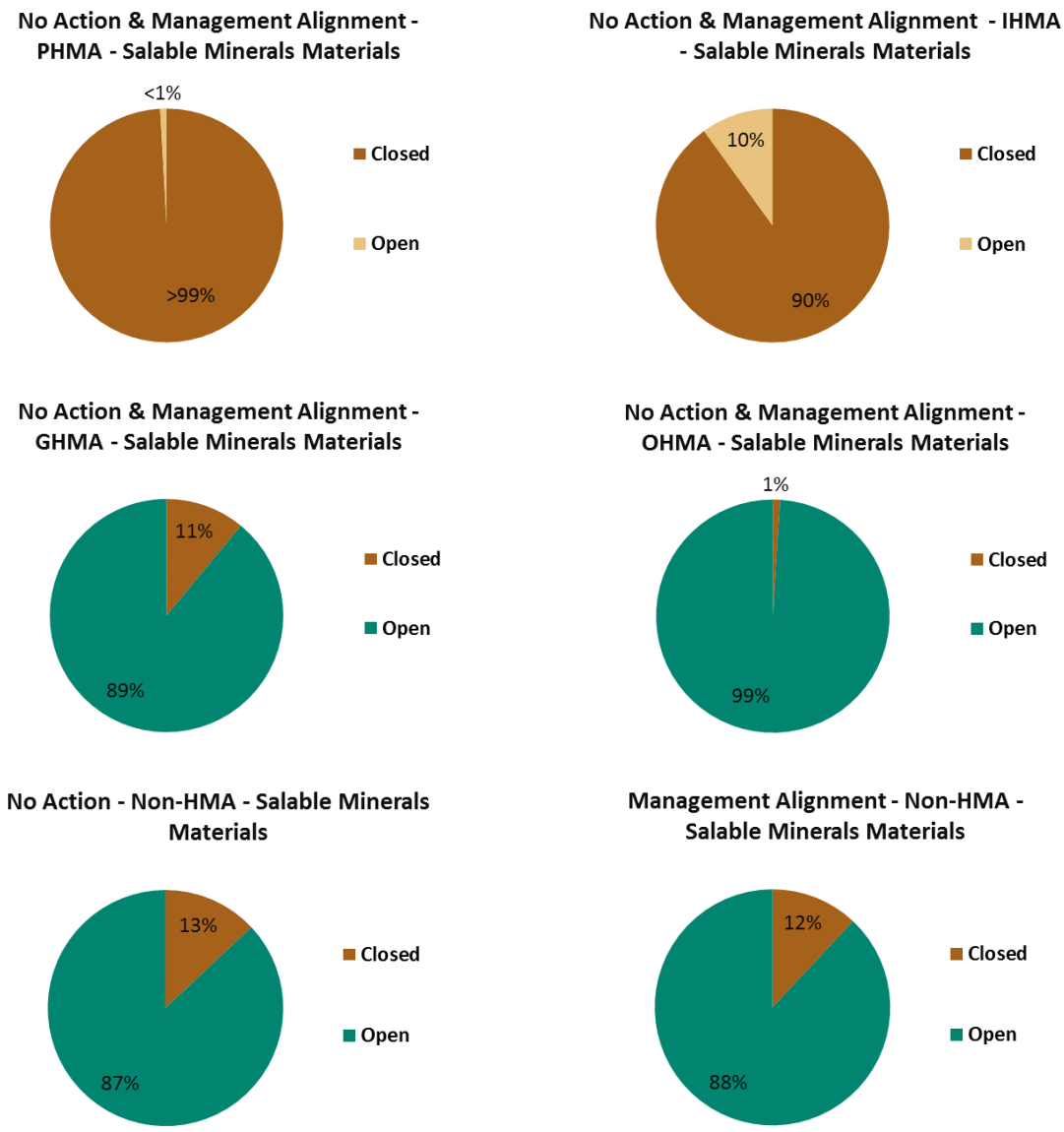


Figure 46 – Salable Minerals Materials Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

X. Solar Energy

Table 48 – Solar Energy Decisions within MZ IV

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Solar Energy Decisions in MZ IV by Habitat Management Area Type						
Solar Energy	**No Action**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Exclusion	9,341,000	363,000	1,210,000	706,000	2,275,000	**13,895,000**
Avoidance	1,390,000	2,357,000	2,235,000	0	123,000	**6,105,000**
Open	0	0	1,500,000	1,000	2,521,000	**4,022,000**
Total	**10,731,000**	**2,719,000**	**4,945,000**	**707,000**	**4,919,000**	**24,021,000**

Solar Energy	**Management Alignment**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Exclusion	8,937,000	363,000	1,304,000	622,000	2,605,000	**13,831,000**
Avoidance	1,390,000	2,417,000	2,235,000	0	123,000	**6,165,000**
Open	0	0	1,500,000	0	2,520,000	**4,020,000**
Total	**10,326,000**	**2,780,000**	**5,039,000**	**622,000**	**5,248,000**	**24,015,000**

Approximate % of Habitat Management Area by Solar Energy Decision in MZ IV						
Solar Energy	**No Action**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Exclusion	87%	13%	24%	100%	46%	**58%**
Avoidance	13%	87%	45%	0%	3%	**25%**
Open	0%	0%	30%	0%	51%	**17%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Solar Energy	**Management Alignment**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Exclusion	87%	13%	26%	100%	50%	**58%**
Avoidance	13%	87%	44%	0%	2%	**26%**
Open	0%	0%	30%	0%	48%	**17%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

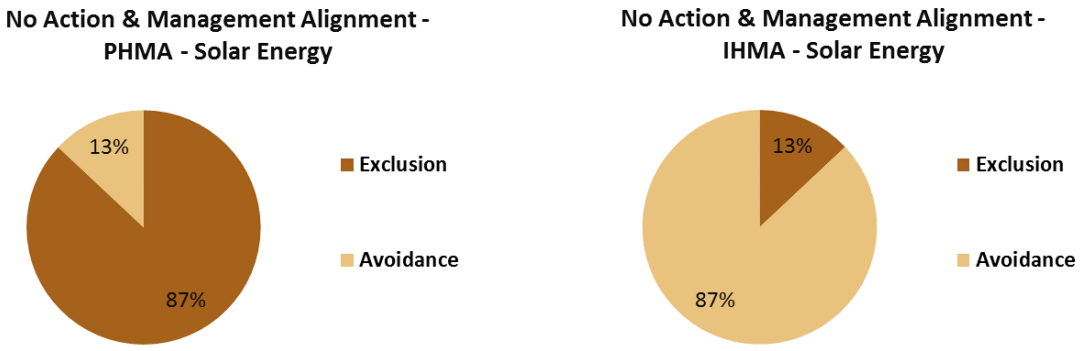


Figure 47 – Solar Energy Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

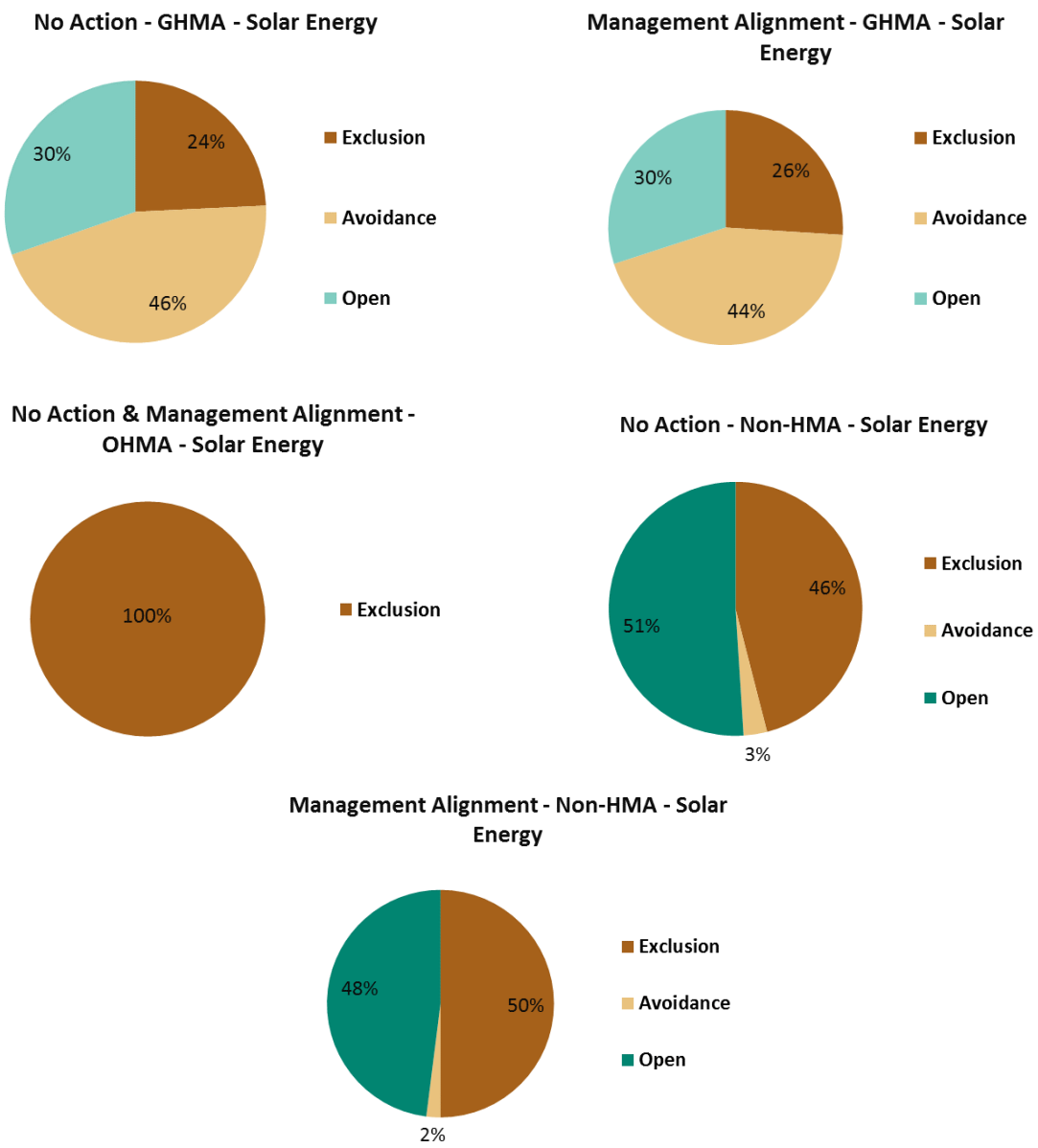


Figure 47 (cont'd) – Solar Energy Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

XI. Trails and Travel Management

Table 49 -– Trails and Travel Management Decisions within MZ IV

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Trails and Travel Management Decisions in MZ IV by Habitat Management Area Type						
Trails and Travel Management Decisions	**No Action**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	560,000	83,000	85,000	1,000	215,000	**943,000**
Limited	10,169,000	2,633,000	4,866,000	1,000	3,101,000	**20,770,000**
Open	0	3,000	0	707,000	1,619,000	**2,329,000**
Total	**10,729,000**	**2,719,000**	**4,951,000**	**708,000**	**4,935,000**	**24,042,000**

Trails and Travel Management Decisions	**Management Alignment**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	559,000	83,000	84,000	0	214,000	**940,000**
Limited	9,768,000	2,694,000	4,961,000	5,000	3,188,000	**20,617,000**
Open	0	3,000	0	617,000	1,859,000	**2,479,000**
Total	**10,327,000**	**2,780,000**	**5,046,000**	**622,000**	**5,261,000**	**24,036,000**

Approximate % of Habitat Management Area by Trails and Travel Management Decisions Decision in MZ IV						
Trails and Travel Management Decisions	**No Action**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	5%	3%	2%	<1%	4%	**4%**
Limited	95%	97%	98%	<1%	63%	**86%**
Open	0%	<1%	0%	100%	33%	**10%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Trails and Travel Management Decisions	**Management Alignment**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	5%	3%	2%	0%	4%	**4%**
Limited	95%	97%	98%	1%	61%	**86%**
Open	0%	0%	0%	99%	35%	**10%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Figure 48 – Trails and Travel Management Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

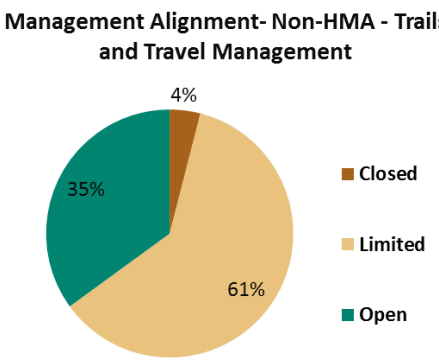


Figure 48 (cont'd) – Trails and Travel Management Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

XII. Wind Energy

Table 50 – Wind Energy Decisions within MZ IV

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Wind Energy Decisions in MZ IV by Habitat Management Area Type						
Wind Energy	**No Action**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Exclusion	9,339,000	363,000	392,000	4,000	1,035,000	**11,133,000**
Avoidance	1,390,000	2,357,000	3,051,000	0	123,000	**6,920,000**
Open	0	0	1,501,000	704,000	3,769,000	**5,973,000**
Total	**10,728,000**	**2,719,000**	**4,944,000**	**708,000**	**4,926,000**	**24,026,000**

Wind Energy	**Management Alignment**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Exclusion	8,938,000	363,000	395,000	6,000	1,046,000	**10,748,000**
Avoidance	1,390,000	2,417,000	3,144,000	0	123,000	**7,073,000**
Open	0	0	1,501,000	616,000	4,083,000	**6,199,000**
Total	**10,327,000**	**2,780,000**	**5,039,000**	**622,000**	**5,252,000**	**24,020,000**

Approximate % of Habitat Management Area by Wind Energy Decision in MZ IV						
Wind Energy	**No Action**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Exclusion	87%	13%	8%	1%	21%	**46%**
Avoidance	13%	87%	62%	0%	2%	**29%**
Open	0%	0%	30%	99%	77%	**25%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Wind Energy	**Management Alignment**					
	PHMA	**IHMA**	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Exclusion	87%	13%	8%	1%	20%	**45%**
Avoidance	13%	87%	62%	0%	2%	**29%**
Open	0%	0%	30%	99%	78%	**26%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

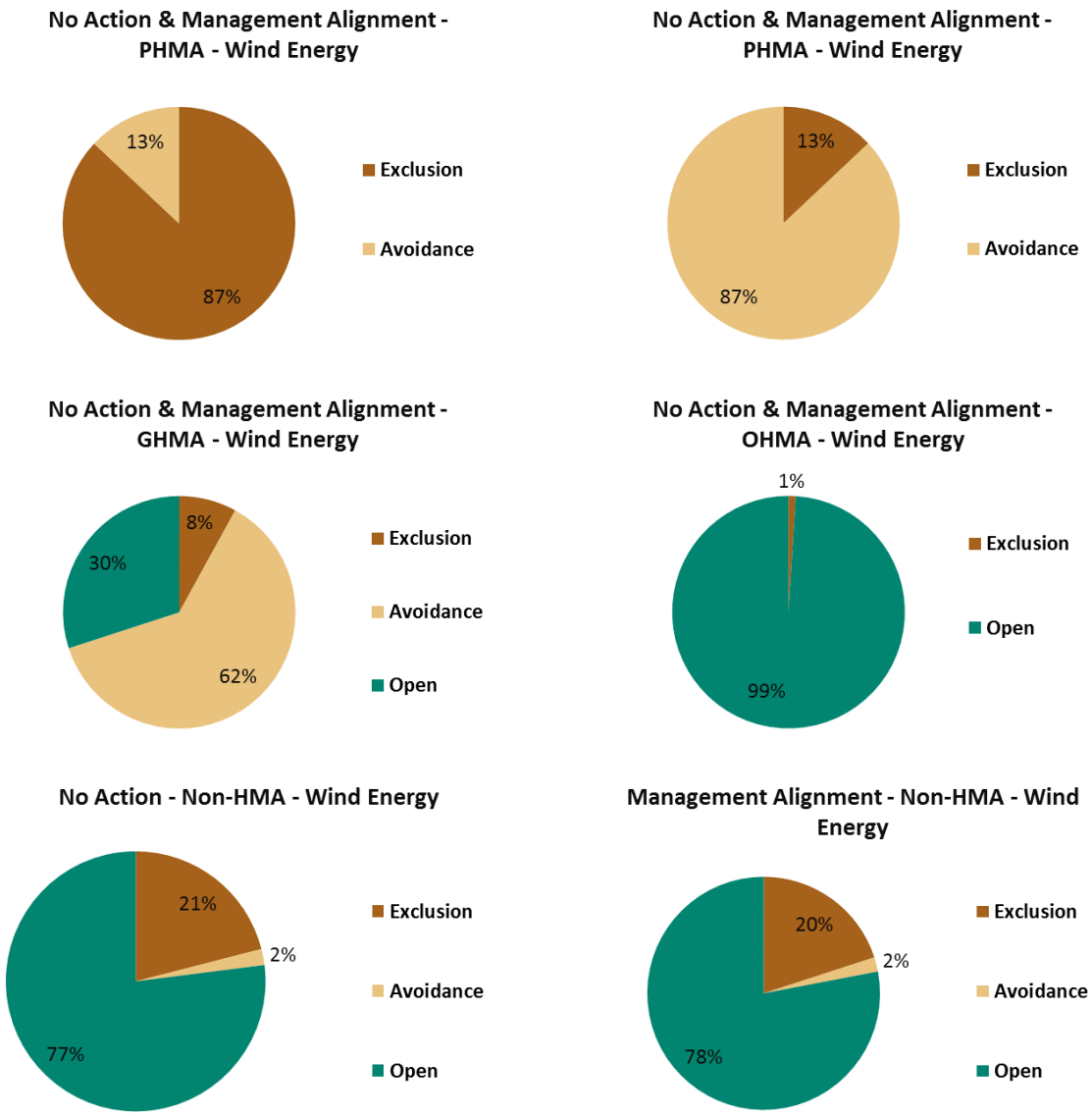


Figure 49 – Wind Energy Decisions within MZ IV

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

1.2.5 Management Zone V – Oregon, Nevada, California

I. Habitat Management

Table 51 – Habitat Management Areas within MZ V

Acres and percentages reflect all lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of HMA in MZ V							
No Action				Management Alignment			
PHMA	GHMA	OHMA	Non-HMA	PHMA	GHMA	OHMA	Non-HMA
6,510,000	7,323,000	1,932,000	15,519,000	6,567,000	6,846,000	1,142,000	16,727,000

Approximate Percent of MZ I that is HMA							
No Action				Management Alignment			
PHMA	GHMA	OHMA	Non-HMA	PHMA	GHMA	OHMA	Non-HMA
21%	23%	6%	50%	21%	22%	4%	53%

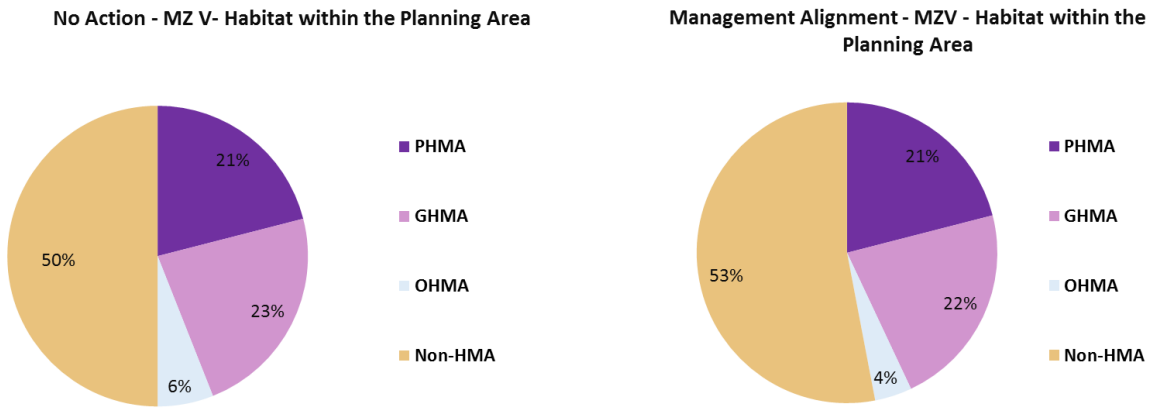


Figure 50 – Habitat Management Areas within MZ V

Percentages reflect all lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

II. Geothermal Energy

Table 52 – Geothermal Energy Decisions within MZ V

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Geothermal Energy Decisions in MZ V by Habitat Management Area Type					
Geothermal Energy	**No Action**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	1,626,000	1,359,000	158,000	898,000	**4,042,000**
Open NSO	3,350,000	379,000	0	164,000	**3,893,000**
Open CSU/TL	0	3,287,000	0	335,000	**3,622,000**
Open Standard Stipulations	5,000	0	744,000	2,367,000	**3,117,000**
Total	**4,982,000**	**5,026,000**	**903,000**	**3,764,000**	**14,674,000**

Geothermal Energy	**Management Alignment**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	1,569,000	1,373,000	141,000	935,000	**4,018,000**
Open NSO	3,566,000	379,000	0	164,000	**4,110,000**
Open CSU/TL	0	3,185,000	0	335,000	**3,520,000**
Open Standard Stipulations	0	0	423,000	2,598,000	**3,021,000**
Total	**5,136,000**	**4,937,000**	**564,000**	**4,032,000**	**14,668,000**

Approximate % of Habitat Management Area by Geothermal Energy Decision in MZ V					
Geothermal Energy	**No Action**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	33%	27%	17%	24%	**28%**
Open NSO	67%	8%	0%	4%	**27%**
Open CSU/TL	0%	65%	0%	9%	**25%**
Open Standard Stipulations	<1%	0%	82%	63%	**21%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Geothermal Energy	**Management Alignment**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	31%	28%	25%	23%	**27%**
Open NSO	69%	8%	0%	4%	**28%**
Open CSU/TL	0%	65%	0%	8%	**24%**
Open Standard Stipulations	0%	0%	75%	64%	**21%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

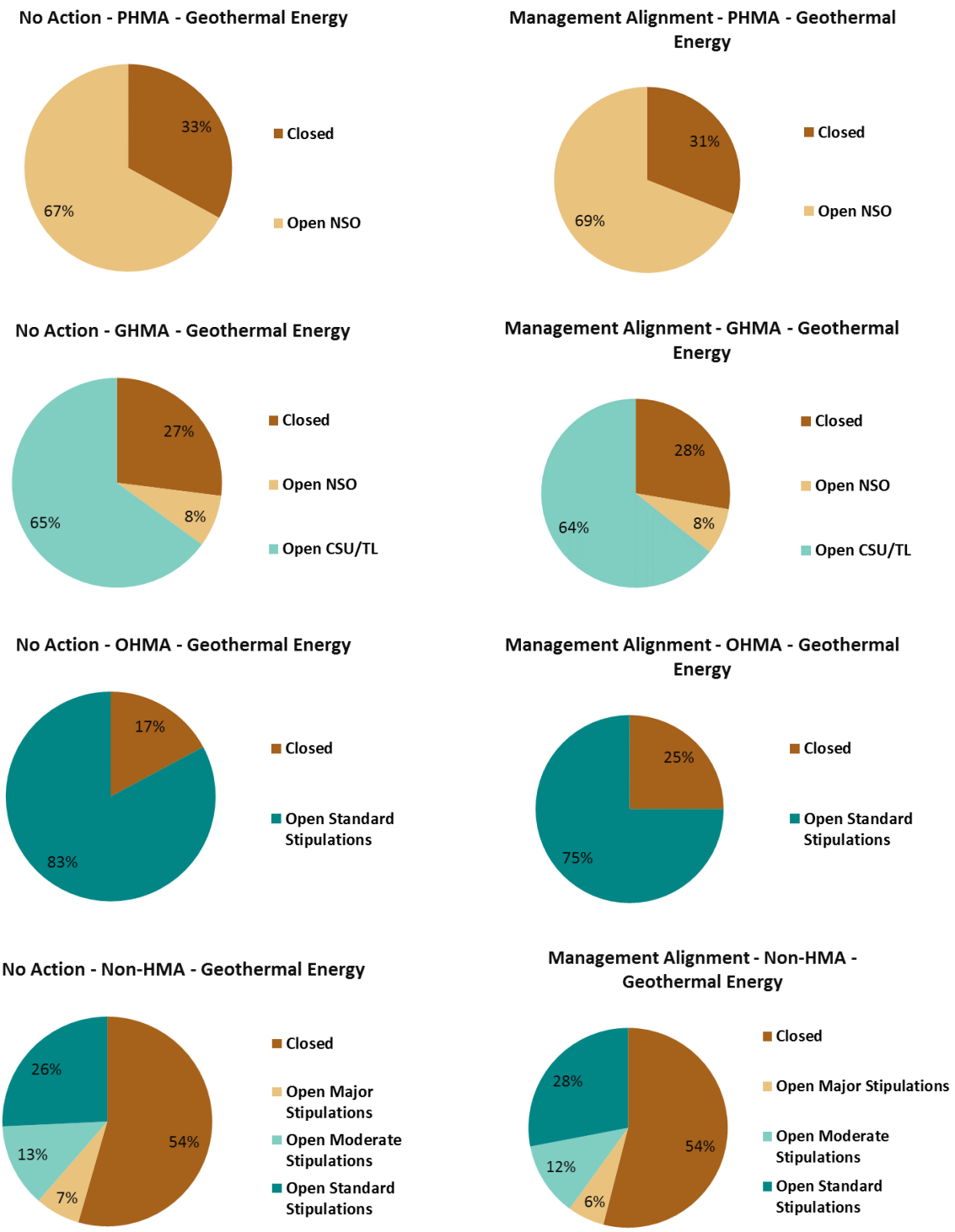


Figure 51 – Geothermal Energy Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

III. Land Tenure

Table 53 – Land Tenure Decisions within MZ V

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Land Tenure Decisions in MZ V by Habitat Management Area Type					
Land Tenure	**No Action**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Disposal	0	0	79,000	521,000	**600,000**
Retention	4,649,000	4,896,000	822,000	3,044,000	**13,410,000**
Total	**4,649,000**	**4,896,000**	**901,000**	**3,565,000**	**14,011,000**

Land Tenure	**Management Alignment**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Disposal	2,000	19,000	32,000	592,000	**644,000**
Retention	4,802,000	4,787,000	530,000	3,241,000	**13,360,000**
Total	**4,804,000**	**4,806,000**	**562,000**	**3,833,000**	**14,005,000**

Approximate % of Habitat Management Area by Land Tenure Decision in MZ III					
Land Tenure	**No Action**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Disposal	0%	0%	9%	15%	**4%**
Retention	100%	100%	91%	85%	**96%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Land Tenure	**Management Alignment**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Disposal	<1%	<1%	6%	15%	**5%**
Retention	100%	100%	94%	85%	**95%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

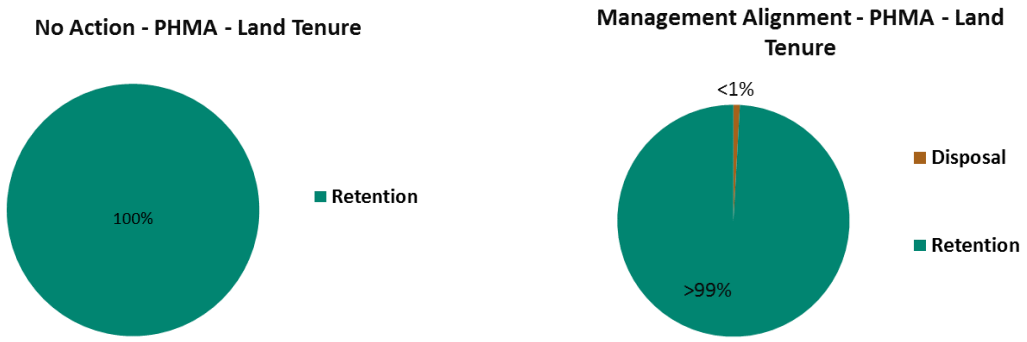


Figure 52 – Land Tenure Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

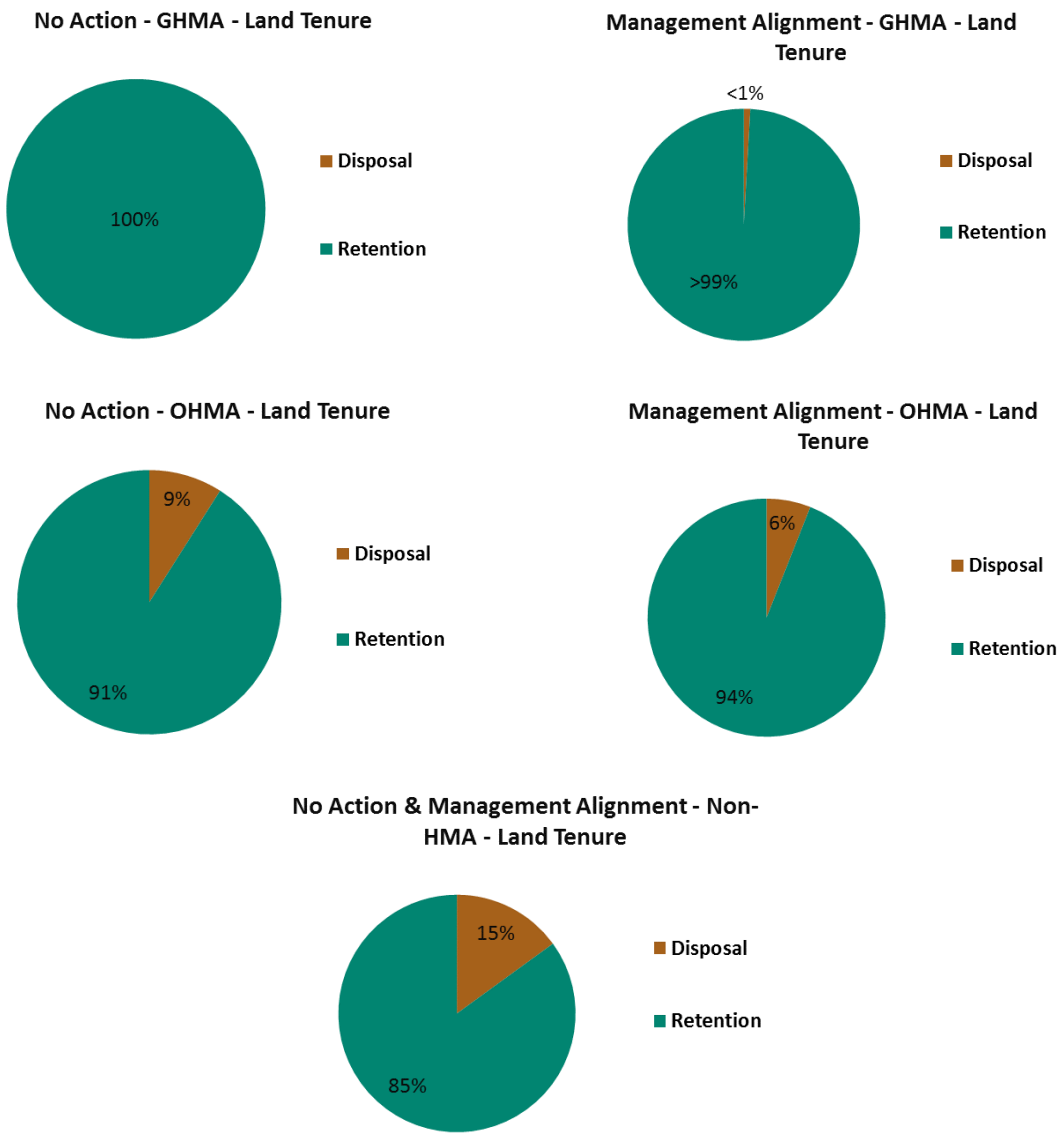


Figure 52 (cont'd) – Land Tenure Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

IV. Livestock Grazing

Table 54 – Livestock Grazing Decisions within MZ V

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Livestock Grazing Decisions in MZ V by Habitat Management Area Type					
Livestock Grazing	**No Action**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Unavailable	47,000	102,000	0	84,000	**232,000**
Available	4,582,000	4,762,000	883,000	3,233,000	**13,461,000**
Total	**4,629,000**	**4,864,000**	**883,000**	**3,317,000**	**13,694,000**

Livestock Grazing	**Management Alignment**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Unavailable	47,000	102,000	0	84,000	**232,000**
Available	4,736,000	4,671,000	550,000	3,493,000	**13,450,000**
Total	**4,783,000**	**4,772,000**	**550,000**	**3,577,000**	**13,682,000**

Approximate % of Habitat Management Area by Livestock Grazing Decision in MZ V					
Livestock Grazing	**No Action**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Unavailable	1%	2%	0%	3%	**2%**
Available	99%	98%	100%	97%	**98%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Livestock Grazing	**Management Alignment**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Unavailable	1%	2%	0%	2%	**2%**
Available	99%	98%	100%	98%	**98%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Figure 53 – Livestock Grazing Decisions within MZ V

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

V. Locatable Minerals

Table 55 – Locatable Minerals Decisions within MZ V

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Locatable Minerals Decisions in MZ V by Habitat Management Area Type					
Locatable Minerals	**No Action**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Existing Withdrawals	631,000	687,000	59,000	486,000	**1,864,000**
Recommended Withdrawals	435,000	5,000	0	0	**440,000**
Open	3,885,000	4,329,000	842,000	3,048,000	**12,104,000**
Total	**4,951,000**	**5,022,000**	**901,000**	**3,534,000**	**14,408,000**

Locatable Minerals	**Management Alignment**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Existing Withdrawals	626,000	687,000	64,000	487,000	**1,864,000**
Recommended Withdrawals	12,000	5,000	0	0	**17,000**
Open	4,469,000	4,240,000	499,000	3,314,000	**12,522,000**
Total	**5,106,000**	**4,932,000**	**562,000**	**3,801,000**	**14,403,000**

Approximate % of Habitat Management Area by Geothermal Energy Decision in MZ V					
Locatable Minerals	**No Action**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Existing Withdrawals	13%	14%	7%	14%	**13%**
Recommended Withdrawals	9%	0%	0%	0%	**3%**
Open	78%	86%	93%	86%	**84%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Locatable Minerals	**Management Alignment**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Existing Withdrawals	12%	14%	11%	13%	**13%**
Recommended Withdrawals	0%	0%	0%	0%	**0%**
Open	88%	86%	89%	87%	**87%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

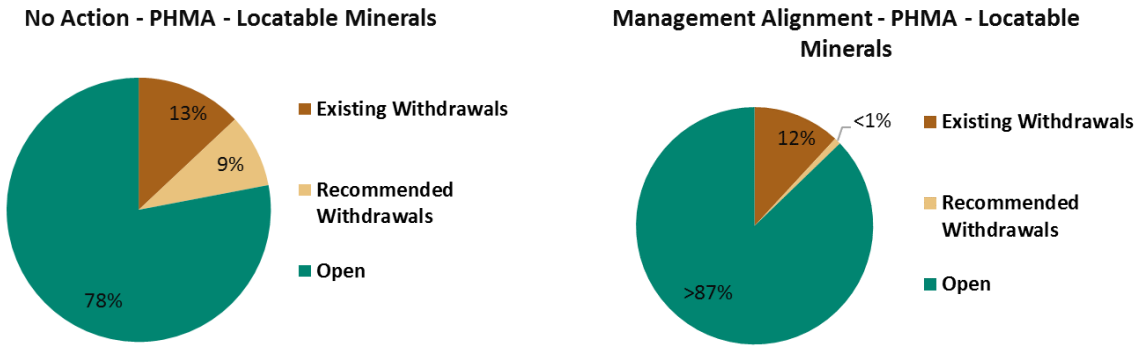


Figure 54 – Locatable Minerals Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Figure 54 (cont'd) – Locatable Minerals Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VI. Non-Energy Leasable Minerals

Table 56 – Non-Energy Leasable Minerals Decisions within MZ V

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Non-Energy Leasable Minerals Decisions in MZ V by Habitat Management Area Type					
Non-Energy Leasable Minerals	**No Action**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	4,980,000	1,388,000	158,000	898,000	**7,423,000**
Open	0	3,635,000	744,000	2,866,000	**7,247,000**
Total	**4,980,000**	**5,024,000**	**903,000**	**3,764,000**	**14,671,000**

Non-Energy Leasable Minerals	**Management Alignment**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	5,135,000	1,402,000	141,000	935,000	**7,613,000**
Open	0	3,532,000	423,000	3,097,000	**7,052,000**
Total	**5,135,000**	**4,934,000**	**564,000**	**4,032,000**	**14,665,000**

Approximate % of Habitat Management Area by Non-Energy Leasable Minerals Decision in MZ V					
Non-Energy Leasable Minerals	**No Action**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	100%	28%	17%	24%	**51%**
Open	0%	72%	82%	76%	**49%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Non-Energy Leasable Minerals	**Management Alignment**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	100%	28%	25%	23%	**52%**
Open	0%	72%	75%	77%	**48%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Figure 55 – Non-Energy Leasable Minerals Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VII. Fluid Minerals (Oil & Gas)

Table 57 – Fluid Mineral (Oil & Gas) Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Fluid Mineral (Oil & Gas) Decisions in MZ V by Habitat Management Area Type					
Fluid Mineral (Oil & Gas) Decisions	**No Action**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	1,590,000	1,373,000	141,000	935,000	**4,039,000**
Open NSO	3,542,000	379,000	0	164,000	**4,085,000**
Open CSU/TL	0	3,184,000	0	335,000	**3,519,000**
Open Standard Stipulations	0	0	423,000	2,598,000	**3,021,000**
Total	**5,133,000**	**4,936,000**	**564,000**	**4,032,000**	**14,664,000**

Fluid Mineral (Oil & Gas) Decisions	**Management Alignment**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	1,626,000	1,359,000	158,000	898,000	**4,042,000**
Open NSO	3,354,000	379,000	0	164,000	**3,898,000**
Open CSU/TL	0	3,287,000	0	335,000	**3,622,000**
Open Standard Stipulations	0	0	743,000	2,365,000	**3,108,000**
Total	**4,981,000**	**5,026,000**	**902,000**	**3,762,000**	**14,670,000**

Approximate % of Habitat Management Area by Fluid Mineral (Oil & Gas) Decision in MZ V					
Fluid Mineral (Oil & Gas) Decisions	**No Action**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	33%	27%	18%	24%	**28%**
Open NSO	67%	8%	0%	4%	**27%**
Open CSU/TL	0%	65%	0%	9%	**25%**
Open Standard Stipulations	0%	0%	82%	63%	**21%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Fluid Mineral (Oil & Gas) Decisions	**Management Alignment**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	31%	28%	25%	23%	**28%**
Open NSO	69%	8%	0%	4%	**28%**
Open CSU/TL	0%	65%	0%	8%	**24%**
Open Standard Stipulations	0%	0%	75%	64%	**21%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

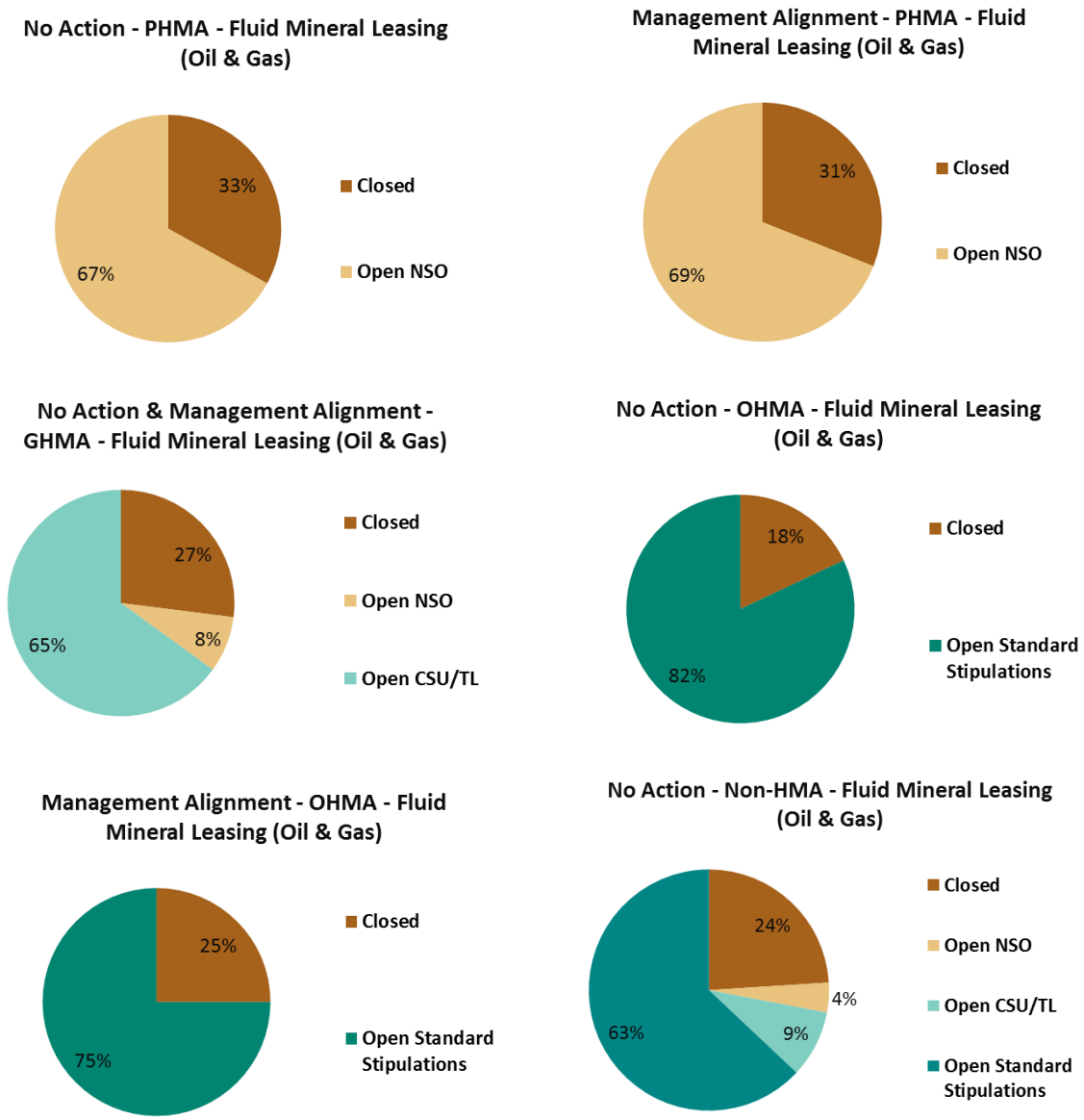


Figure 56 – Fluid Mineral (Oil & Gas) Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

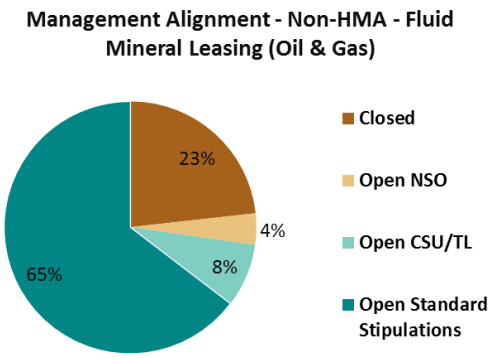


Figure 56 (cont'd) – Fluid Mineral (Oil & Gas) Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

VIII. Rights-of-Ways

Table 58 – Rights-of-Ways Decisions within MZ V

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Rights-of-Ways Decisions in MZ V by Habitat Management Area Type					
Rights-of-Ways	**No Action**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Exclusion	956,000	445,000	158,000	787,000	**2,347,000**
Avoidance	3,634,000	4,349,000	0	325,000	**8,307,000**
Open	87,000	106,000	744,000	2,449,000	**3,386,000**
Total	**4,677,000**	**4,900,000**	**902,000**	**3,561,000**	**14,040,000**
Rights-of-Ways	**Management Alignment**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Exclusion	922,000	459,000	141,000	824,000	**2,346,000**
Avoidance	3,854,000	4,281,000	0	325,000	**8,460,000**
Open	51,000	69,000	423,000	2,685,000	**3,228,000**
Total	**4,827,000**	**4,809,000**	**564,000**	**3,834,000**	**14,034,000**

Approximate % of Habitat Management Area by Rights-of-Ways Decision in MZ V					
Rights-of-Ways	**No Action**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Exclusion	78%	89%	0%	9%	**59%**
Avoidance	20%	9%	18%	22%	**17%**
Open	2%	2%	82%	69%	**24%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**
Rights-of-Ways	**Management Alignment**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Exclusion	80%	89%	0%	8%	**60%**
Avoidance	19%	10%	25%	21%	**17%**
Open	1%	1%	75%	70%	**23%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

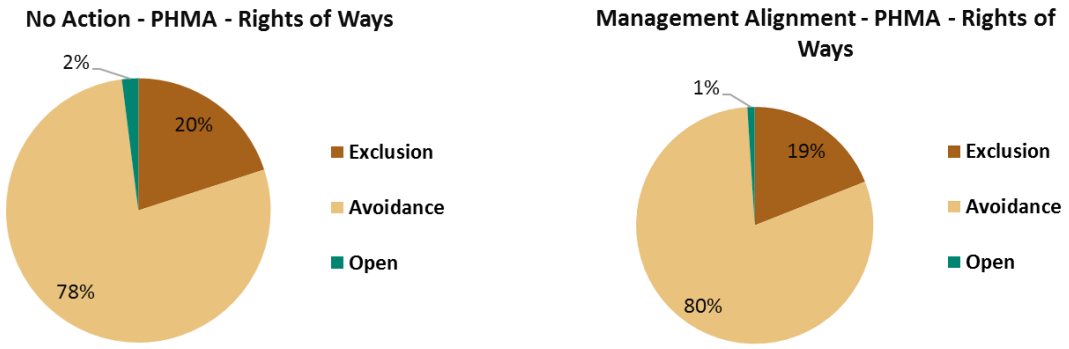


Figure 57 – Rights-of-Ways Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

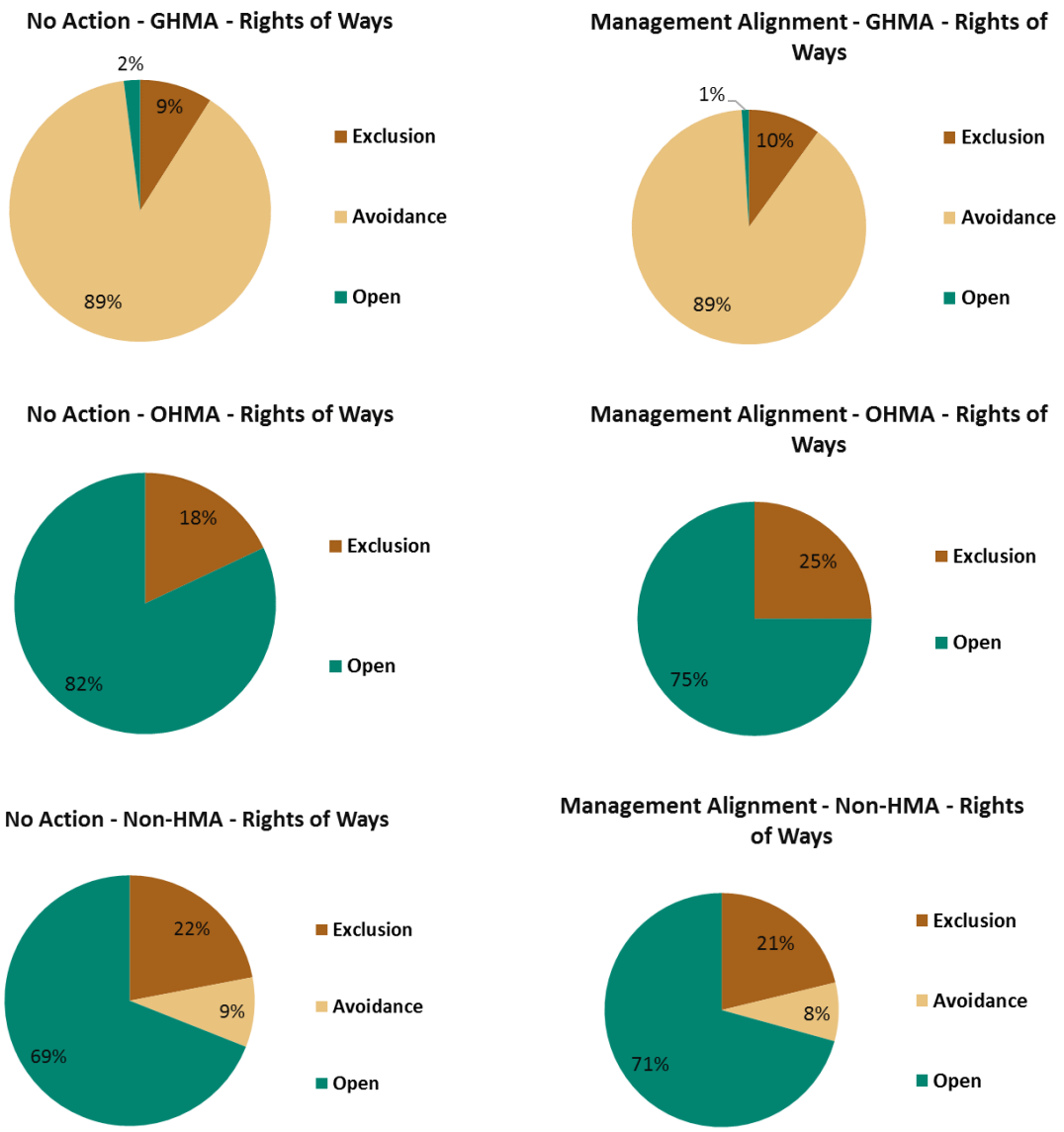


Figure 57 (cont'd) – Rights-of-Ways Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

IX. Salable Minerals Materials

Table 59 – Salable Minerals Materials Decisions within MZ V

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Salable Minerals Materials Decisions in MZ V by Habitat Management Area Type					
Salable Minerals Materials	**No Action**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	4,980,000	1,402,000	158,000	935,000	**7,475,000**
Open	1,000	3,621,000	744,000	2,827,000	**7,194,000**
Total	**4,980,000**	**5,024,000**	**903,000**	**3,762,000**	**14,669,000**
Salable Minerals Materials	**Management Alignment**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	5,135,000	1,416,000	141,000	972,000	**7,664,000**
Open	0	3,518,000	423,000	3,057,000	**6,998,000**
Total	**5,135,000**	**4,934,000**	**564,000**	**4,030,000**	**14,663,000**

Approximate % of Habitat Management Area by Non-Energy Leasable Minerals Decision in MZ V					
Salable Minerals Materials	**No Action**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	100%	28%	17%	25%	**51%**
Open	<1%	72%	83%	75%	**49%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**
Salable Minerals Materials	**Management Alignment**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	100%	29%	25%	24%	**52%**
Open	0%	71%	75%	76%	**48%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

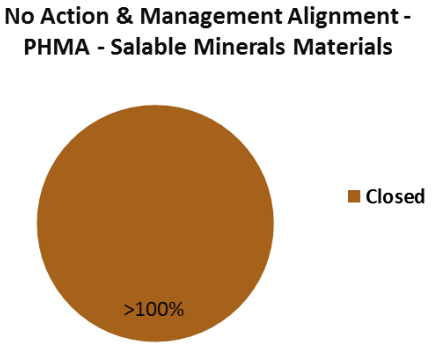


Figure 58 – Salable Minerals Materials Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

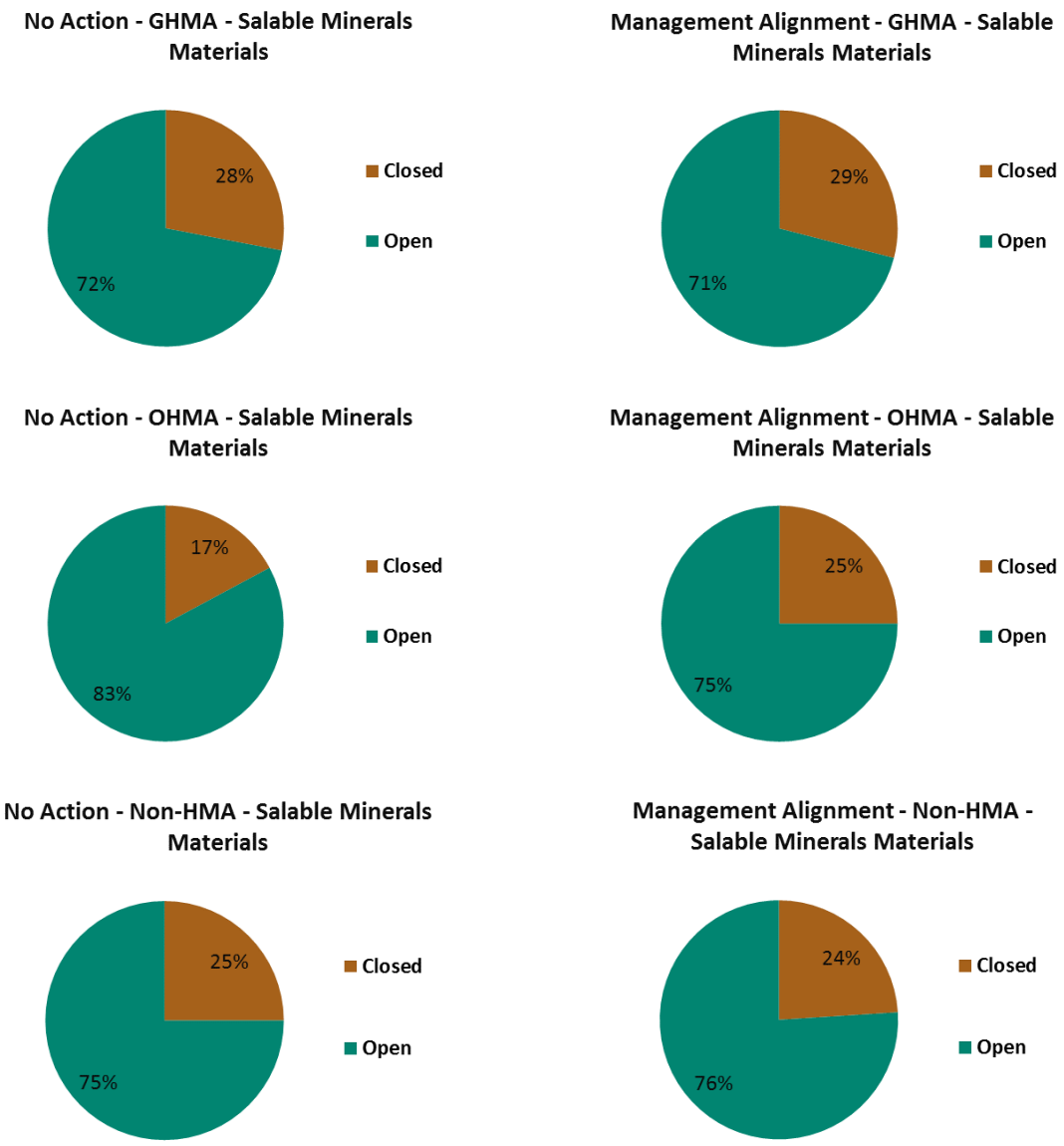


Figure 58 (cont'd) – Salable Minerals Materials Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

X. Solar Energy

Table 60 – Solar Energy Decisions within MZ V

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Solar Energy Decisions in MZ V by Habitat Management Area Type					
Solar Energy	**No Action**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Exclusion	3,932,000	1,466,000	897,000	2,191,000	**8,487,000**
Avoidance	750,000	3,438,000	1,000	348,000	**4,537,000**
Open	0	0	4,000	1,032,000	**1,036,000**
Total	**4,683,000**	**4,904,000**	**903,000**	**3,571,000**	**14,060,000**
Solar Energy	**Management Alignment**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Exclusion	4,088,000	1,373,000	564,000	2,457,000	**8,483,000**
Avoidance	750,000	3,438,000	0	349,000	**4,537,000**
Open	0	0	0	1,034,000	**1,035,000**
Total	**4,838,000**	**4,810,000**	**564,000**	**3,841,000**	**14,054,000**

Approximate % of Habitat Management Area by Solar Energy Decision in MZ V					
Solar Energy	**No Action**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Exclusion	84%	30%	99%	61%	**60%**
Avoidance	16%	70%	<1%	10%	**32%**
Open	0%	0%	<1%	29%	**7%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**
Solar Energy	**Management Alignment**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Exclusion	84%	29%	100%	64%	**60%**
Avoidance	16%	71%	0%	9%	**32%**
Open	0%	0%	0%	27%	**7%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

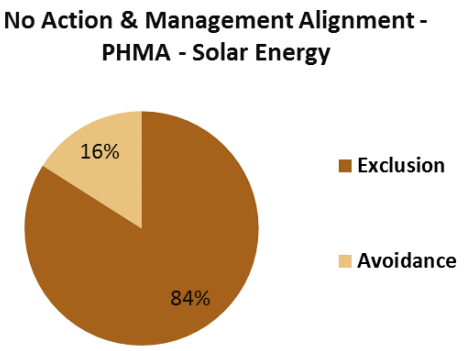


Figure 59 – Solar Energy Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

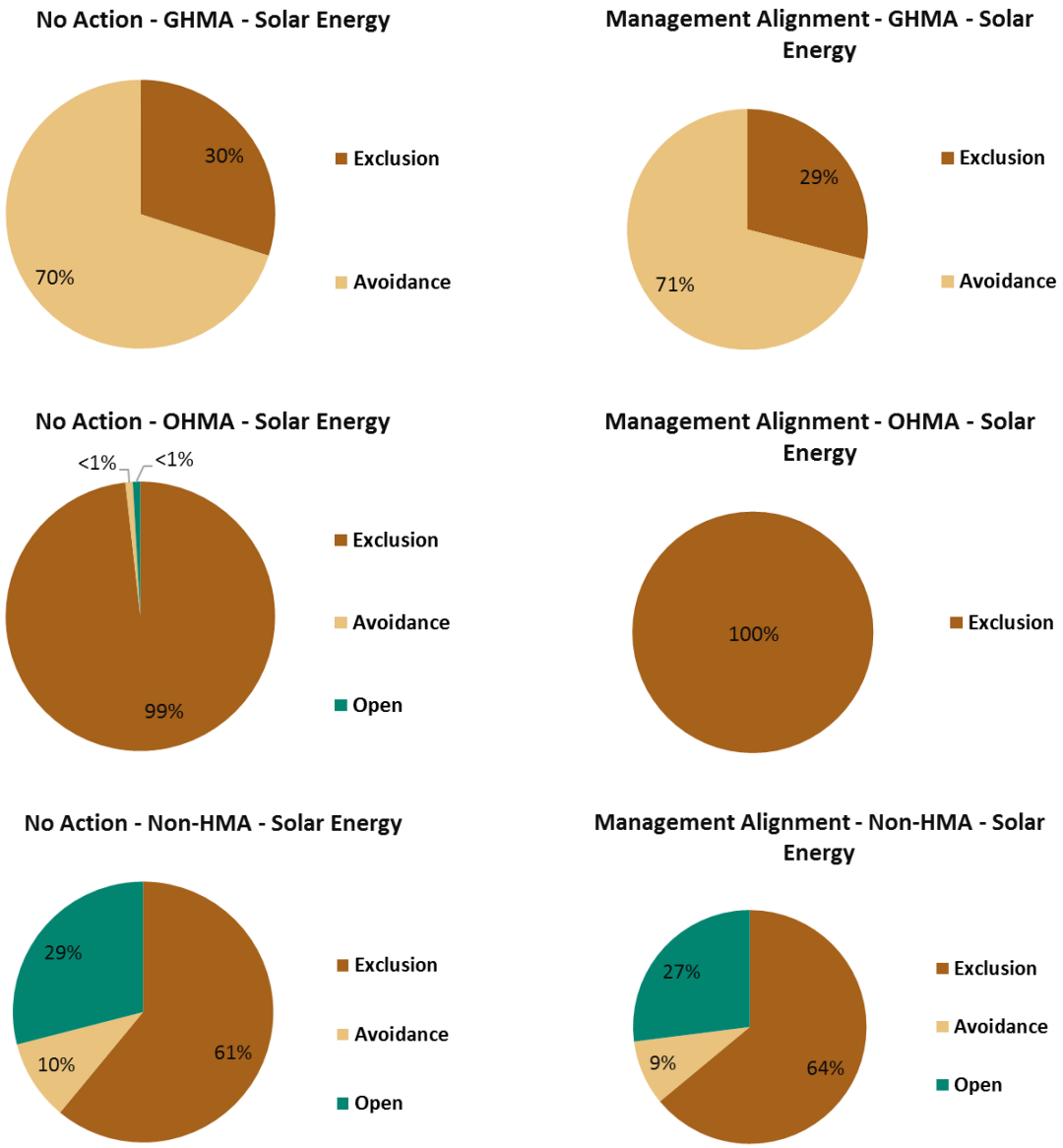


Figure 59 (cont'd) – Solar Energy Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

XI. Trails and Travel Management

Table 61 – Trails and Travel Management Decisions within MZ V

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Trails and Travel Management Decisions in MZ V by Habitat Management Area Type					
Trails and Travel Management Decisions	**No Action**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	220,000	215,000	59,000	423,000	**917,000**
Limited	4,452,000	4,681,000	428,000	1,257,000	**10,818,000**
Open	0	2,000	414,000	1,888,000	**2,304,000**
Total	**4,672,000**	**4,897,000**	**901,000**	**3,568,000**	**14,038,000**
Trails and Travel Management Decisions	**Management Alignment**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	215,000	214,000	64,000	424,000	**917,000**
Limited	4,613,000	4,591,000	290,000	1,280,000	**10,774,000**
Open	0	2,000	209,000	2,131,000	**2,342,000**
Total	**4,828,000**	**4,807,000**	**562,000**	**3,836,000**	**14,032,000**

Approximate % of Habitat Management Area by Trails and Travel Management Decisions Decision in MZ V					
Trails and Travel Management Decisions	**No Action**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	5%	4%	7%	12%	**7%**
Limited	95%	96%	48%	35%	**77%**
Open	0%	<1%	46%	53%	**16%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**
Trails and Travel Management Decisions	**Management Alignment**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Closed	4%	4%	11%	11%	**7%**
Limited	96%	96%	52%	33%	**77%**
Open	0%	<1%	37%	56%	**17%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

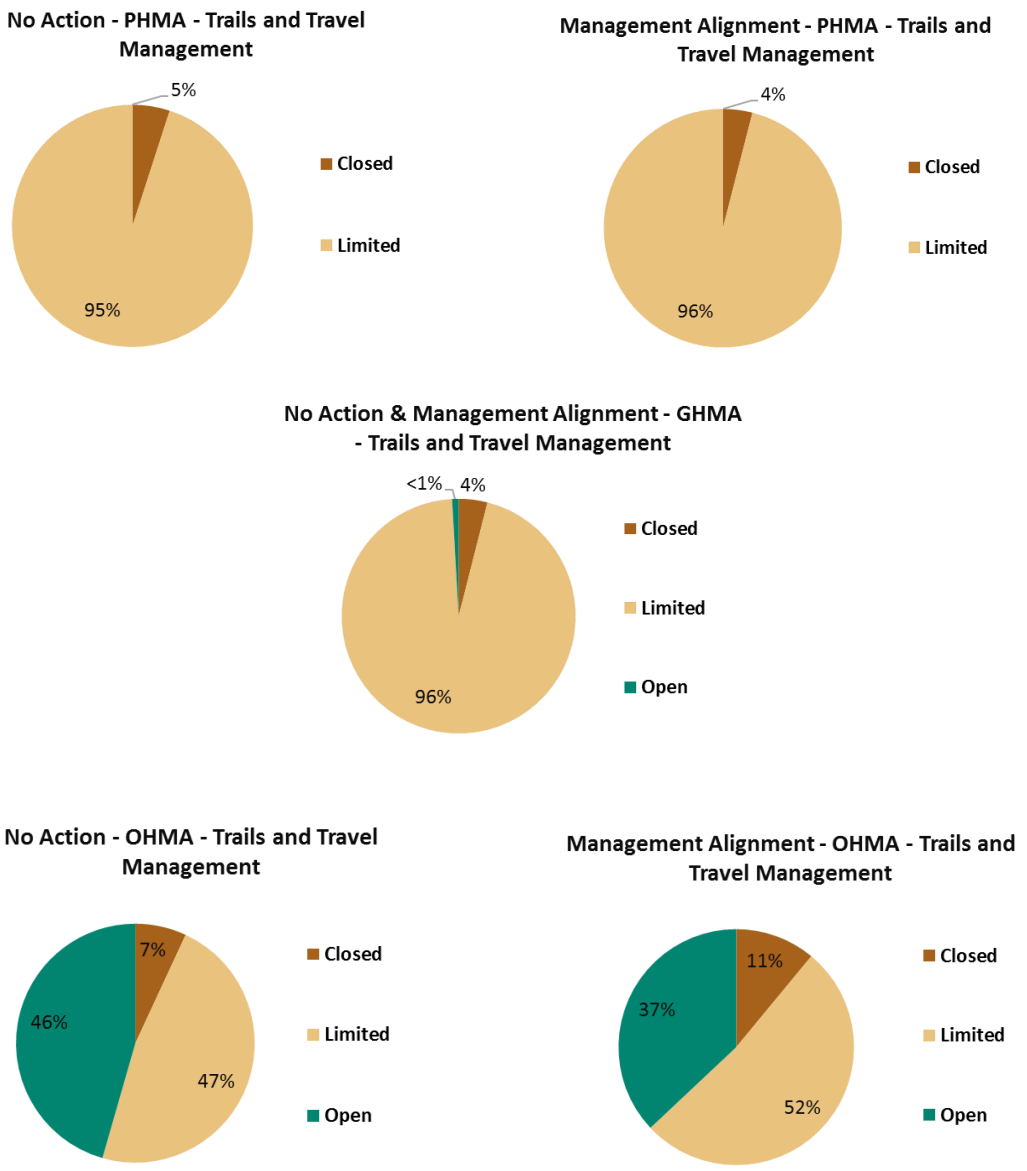
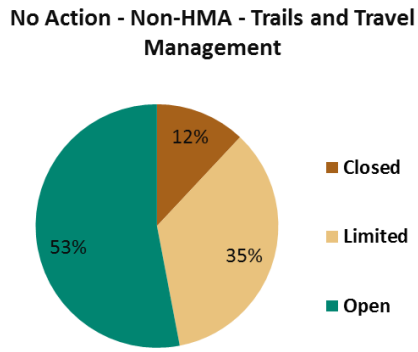


Figure 60 – Trails and Travel Management Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.



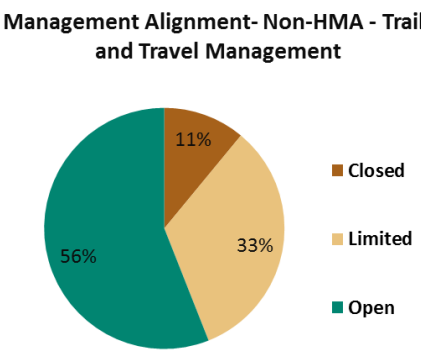


Figure 60 (cont'd) – Trails and Travel Management Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

XII. Wind Energy

Table 62 – Wind Energy Decisions within MZ V

Acres and percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Approximate Acres of Wind Energy Decisions in MZ V by Habitat Management Area Type					
Wind Energy	**No Action**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Exclusion	3,927,000	454,000	158,000	792,000	**5,330,000**
Avoidance	750,000	4,445,000	0	321,000	**5,516,000**
Open	1,000	0	744,000	2,456,000	**3,201,000**
Total	**4,678,000**	**4,900,000**	**903,000**	**3,568,000**	**14,048,000**
Wind Energy	**Management Alignment**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Exclusion	4,083,000	467,000	141,000	829,000	**5,520,000**
Avoidance	750,000	4,341,000	0	321,000	**5,412,000**
Open	0	0	423,000	2,686,000	**3,110,000**
Total	**4,833,000**	**4,809,000**	**564,000**	**3,836,000**	**14,042,000**

Approximate % of Habitat Management Area by Wind Energy Decision in MZ V					
Wind Energy	**No Action**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Exclusion	84%	9%	17%	22%	**38%**
Avoidance	16%	91%	0%	9%	**39%**
Open	<1%	0%	82%	69%	**23%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**
Wind Energy	**Management Alignment**				
	PHMA	**GHMA**	**OHMA**	**Non-HMA**	**Total**
Exclusion	84%	10%	25%	22%	**39%**
Avoidance	16%	90%	0%	8%	**39%**
Open	0%	0%	75%	70%	**22%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**

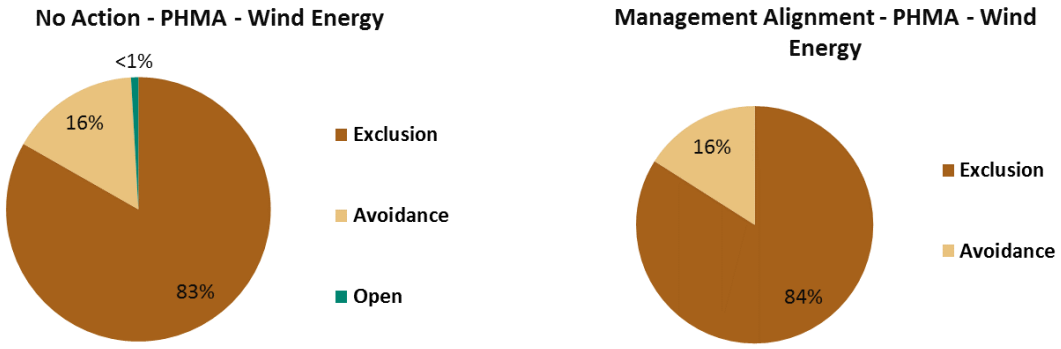


Figure 61 – Wind Energy Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

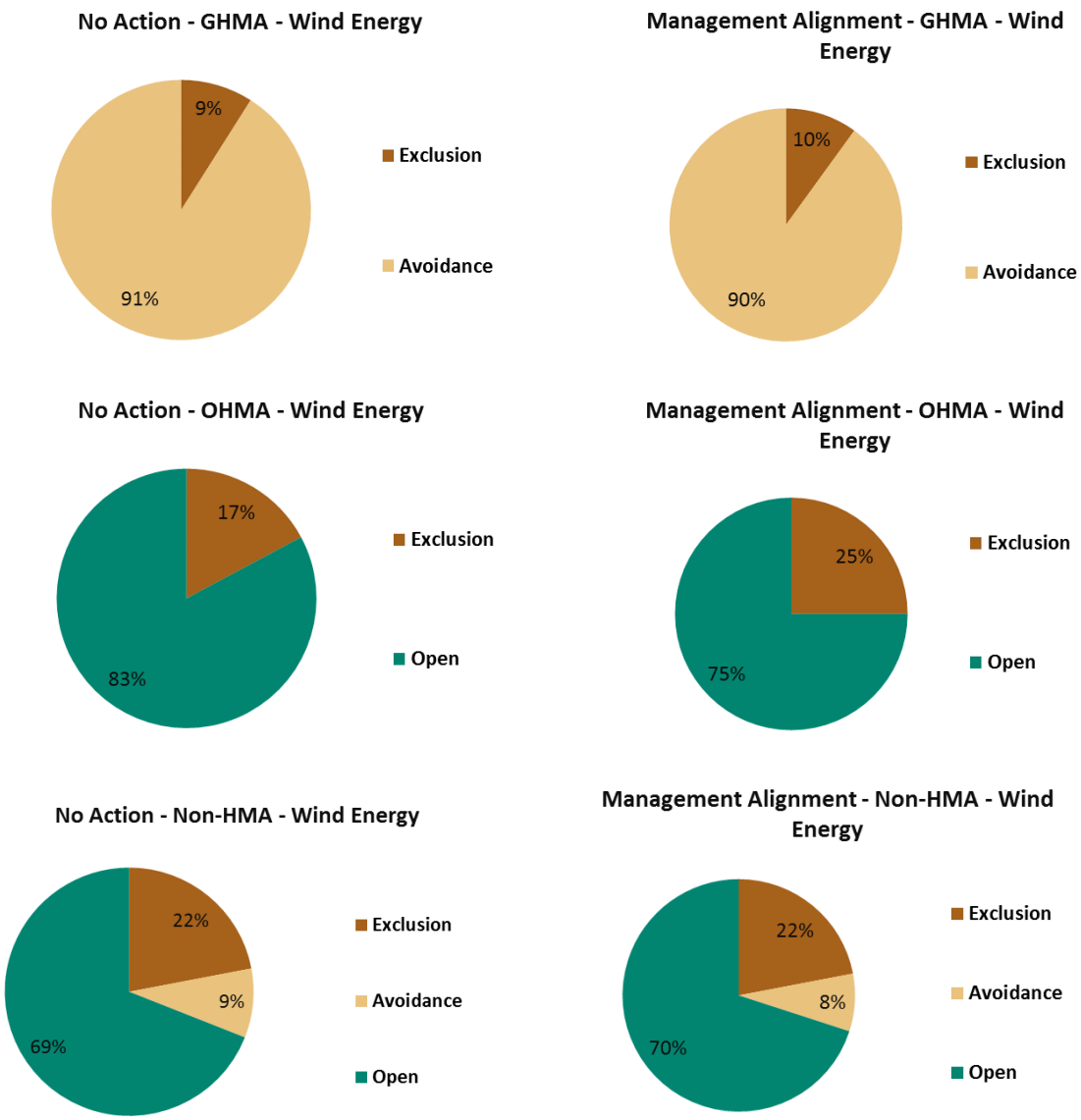


Figure 61 (cont'd) – Wind Energy Decisions within MZ V

Percentages reflect BLM managed lands. Percentages may not total to 100% due to rounding. All figures and tables are intended for Management Zone summary purposes only. They represent data available at the time of consolidation and may be revised as Plans are finalized. Consult each individual EIS for final/official acreages.

Appendix 2

Responses to Substantive Public Comments on the Draft EIS

Appendix 2. Responses to Substantive Public Comments on the Draft EIS

This appendix is split up into four sections: Rangewide Comment Responses; Utah-Specific Comment Responses; Rangewide Comments; and Utah-Specific Comments. The Rangewide Comment Responses section contains a summary of comments received that apply mostly rangewide. The BLM recognizes that not all of these comments apply to all states, but they do apply across multiple states. This section also contains a response to the summaries of comments. The Utah-Specific Comment Responses section contains a summary of comments received specific to Colorado and responses to those comments. The full text of parsed comments received both rangewide and Utah-specific can be found in the respective sections.

2.1 RANGEWIDE COMMENT RESPONSES

2.1.1 Adaptive Management

Summary: The "hard" and "soft" triggers identified in the 2015 plan amendments should be maintained in the current planning amendments.

Response: BLM is focused on aligning its management with the states. BLM's stated purpose and *need* is to promote consistency and alignment with each State's management for Greater Sage-Grouse. The adaptive management triggers have been maintained. However, they have been modified to align with the State's management for Greater Sage-Grouse and with consideration for local circumstances. See individual state plans for the modified adaptive management.

Summary: Priority Habitat Management Area (PHMA) should be expanded to include additional areas.

Response: BLM is focused on aligning its management with the states. BLM's stated purpose and need is to promote consistency and alignment with each State's management for Greater Sage-Grouse. The habitat areas identified in the Draft RMPAs are based, in part, on the information provided by the State agencies and the latest available science and information regarding habitat for Greater Sage-Grouse. The habitat designations in the plans can be modified based on established criteria to address habitat changes, new information, and site-specific conditions. Core area and winter habitat needs to coordinate response with Wyoming.

2.1.2 Alternatives Other

Summary: West Nile virus is a material threat to sage-grouse, and retention ponds and infiltration ponds contribute to this risk.

Response: Where West Nile virus has been identified as a threat, the 2015 plans identified required design features specifically designed to reduce the risk of West Nile Virus. Further analyzing impacts of West Nile are outside the scope and do not meet the purpose and need of the 2018 plan amendment.

Summary: The BLM must respect valid existing rights, including those reflected in oil and gas leases issued under the Mineral Leasing Act and the rights of claimants under the 1872 Mining Law.

Response: All proposed actions contained in the RMPA will be subject to valid existing rights, including those associated with Mineral Leasing Act and the 1872 Mining Law. The BLM recognizes that in some circumstances its discretion to deny or regulate a proposed public land use is limited, such as with existing leases, existing contracts, or mining plans of operations. Accordingly, the BLM will ensure that its implementation of the management actions in the RMPA is consistent with the terms and conditions in existing leases or existing contracts, or with the regulations governing mining plans of operations.

For example, if the BLM previously issued an oil and gas lease with standard lease terms and conditions, and the lessee submits an APD, the BLM will ensure that any management actions from the RMPA will be applied in a manner that is consistent with the terms and conditions of the underlying oil and gas lease. Similarly, if an applicant submits a mining plan of operations under 43 CFR Subpart 3809, the BLM will apply management actions in the RMPA only to the extent that they are consistent with the BLM's authority to regulate hardrock mining under Subpart 3809, including to prevent unnecessary or undue degradation.

2.1.3 Assumptions and Methodology

Summary: The analysis assumes that there are sufficient resources to implement the plan, which is not a supported assumption. The analysis makes unrealistic assumptions about the capacity for restoration.

Response: Department workforce reduction actions are speculative at this time and not specific to BLM or Greater Sage-Grouse related staff. To date the BLM has treated 1,505,326 acres; 1,159,247 of those acres since 2015. Further, specific Congressional appropriations have provided the funds allowing the BLM to treat more acres every fiscal year, highlighting both Congressional and the BLM's commitment to Greater Sage-Grouse conservation. BLM is committed to the continued implementation of sage-grouse habitat and sagebrush steppe management.

Summary: The analysis assumes that project-level activities will undergo additional environmental review, but the use of Categorical Exclusions (CXs) and Determinations of NEPA Adequacy contradicts this assumption.

Response: If additional project level analysis is needed the BLM will conduct it at the appropriate stage. If the existing NEPA relevant to future actions is sufficient to support the decision maker, the BLM will document this in a Determination of NEPA Adequacy. If an action is categorically excluded and no extraordinary circumstances are present, the BLM expects to use a Categorical Exclusion. The list of DOI and BLM Categorical Exclusions is included in Appendices 3 and 4 of the BLM NEPA Handbook (H-1790-1). In addition, Section 390 of the Energy Policy Act of 2005 established five statutory Categorical Exclusions that apply only to oil and gas exploration and development pursuant to the Mineral Leasing Act.

Summary: The analysis assumes impacts will primarily occur on federal lands, but there is research that suggests otherwise.

Response: The decisions in the RMPAs apply only to BLM-administered lands and federal mineral estate. To the extent that these decisions affect non-BLM-administered lands, the effects are disclosed in the EIS. However, much of the direct and indirect effects of the decisions are confined to BLM-administered lands and federal mineral estate.

Summary: The analysis assumes use of best available science, but key studies are missing.

Response: The BLM coordinated with states, federal agencies and cooperating agencies to identify how the affected environment for sage-grouse management has changed. BLM specifically partnered with USGS to review the best available information published between January 2015 and January 2018 and incorporate the management implications of that information into this EIS. The report from USGS is available at https://pubs.er.usgs.gov/publication/ofr20181017 and referenced throughout the EIS. Please review the Data and Science response in this section for more information.

2.1.4 Cumulative Impacts

Summary: Because the scope of the current amendments isn't narrower than the 2015 amendments, tiering isn't appropriate. Incorporation of the Cumulative Effects Analysis (CEA) by reference is allowable, but the summary of the CEA is insufficient as written.

Response: BLM is using incorporation by reference, not tiering, to streamline our analysis consistent with Administrative priorities. Incorporation of the 2015 EIS by reference is allowable under BLM regulations and is appropriate in this circumstance because the purpose of this action builds upon the goals and objectives of the 2015 EIS.

Summary: The incorporation by reference of the 2015 CEA impedes public review.

Response: BLM is adding quantitative analysis of the cumulative impacts from planning decisions for each management zone to the Final EISs to address rangewide issues and trends.

Summary: The CEA failed to account for a number of relevant activities, such as oil and gas projects in Wyoming and other scheduled lease sales.

Response: The BLM will update the past, present, and reasonably foreseeable actions as needed to reflect all current projects in the Final EIS.

2.1.5 Data and Science

Summary: The public submitted studies for consideration by the BLM.

Response: BLM specifically partnered with USGS to review the best available information and incorporate the management implications of that information into this EIS. The report from USGS is available at https://pubs.er.usgs.gov/publication/ofr20181017 and referenced throughout the EIS.

The BLM places great import on the best available information, including new scientific studies and government reports that indicate a potential change in our assumptions or conditions related to a land use planning effort. The BLM has to balance reviewing new information with determining what information is relevant to a decision in light of the BLM's purpose and need. Many commenters highlighted information and studies to the BLM to consider, and the BLM has reviewed each source submitted. Further, the BLM asked the USGS to participate in the review, and to verify if information was included in the USGS synthesis report that was developed for the Draft EIS. Many suggested articles were already included for analysis in the USGS report, and may have been missed by commenters in the initial review of the synthesis report and Draft EIS.

Both known and new studies were reviewed by BLM staff, including scientists and NEPA specialists, and each BLM State Office reviewed each study specific to how it informed their planning decisions and environmental conditions. The BLM has included, where appropriate, updates to analysis in the appropriate EISs. Overall, submitted studies did not offer information that changed the analysis of the plans/EISs and did not offer any new conditions or other information the BLM had not considered already. The BLM has reviewed all new information and suggested studies from comments received rangewide, and in specific states. Further, the BLM takes new information seriously, and identified 11 articles from the studies suggested in comments. These 11 studies are sorted below by whether they were review by the BLM by being cited in the USGS Report, being references in the bibliography of the USGS Report, or by the BLM considering them during the RMP Amendment development and review of comments. Articles not specifically addressed below were still reviewed during comment response development.

Cited in USGS Synthesis Report

Baumgardt, J. A., Reese, K. P., Connelly, J. W., & Garton, E. O. (2017). Visibility bias for sage-grouse lek counts. Wildlife Society Bulletin, 41(3), 461-470.

Smith, K. T., Beck, J. L., & Pratt, A. C. (2016). Does Wyoming's Core Area Policy protect winter habitats for greater sage-grouse?. Environmental Management, 58(4), 585-596.

Dinkins, J. B., Smith, K. T., Beck, J. L., Kirol, C. P., Pratt, A. C., & Conover, M. R. (2016). Microhabitat conditions in Wyoming's Sage-grouse Core Areas: effects on nest site selection and success. PloS one, 11(3), e0150798.

Green, A. W., Aldridge, C. L., & O'donnell, M. S. (2017). Investigating impacts of oil and gas development on greater sage-grouse. The Journal of Wildlife Management, 81(1), 46-57.

Edmunds, D. R., Aldridge, C. L., O'Donnell, M. S., & Monroe, A. P. (2018). Greater sage-grouse population trends across Wyoming. The Journal of Wildlife Management, 82(2), 397-412.

Gamo, R.S. & Beck, J.L. Environmental Management (2017) 59: 189. https://doi.org/10.1007/s00267-016-0789-9.

Not cited, but considered and in USGS Synthesis Report Bibliography

Spence, E. S., Beck, J. L., & Gregory, A. J. (2017). Probability of lek collapse is lower inside sage-grouse Core Areas: Effectiveness of conservation policy for a landscape species. PloS one, 12(11), e0185885.

Juliusson, L. M., & Doherty, K. E. (2017). Oil and gas development exposure and conservation scenarios for Greater sage-grouse: Combining spatially explicit modeling with GIS visualization provides critical information for management decisions. Applied geography, 80, 98-111.

Not included in USGS Report, but considered by BLM in review (this includes the new WAFWA and USFS studies that were not published before the Draft EISs)

WAFWA Gap Analysis 2018

Cross, T. B., Schwartz, M. K., Naugle, D. E., Fedy, B. C., Row, J. R., & Oyler-McCance, S. J. (2018). The genetic network of greater sage-grouse: Range-wide identification of keystone hubs of connectivity. Ecology and Evolution, 8(11), 5394-5412.s

Kitzberger, T., Falk, D. A., Westerling, A. L., & Swetnam, T. W. (2017). Direct and indirect climate controls predict heterogeneous early-mid 21st century wildfire burned area across western and boreal North America. PloS one, 12(12), e0188486

2.1.6 Disturbance and Density Caps

Summary: NSO in priority habitat should be maintained

Response: BLM is focused on aligning our management with the states. BLM's goal is to promote consistency and alignment with each State's management for Greater Sage-Grouse, including the approach to implementing actions to reduce threats to sage-grouse. The analysis and decisions in the RMPs are based on the information provided by the State agencies and are based on the latest available science and information regarding Greater Sage-Grouse.

Summary: Existing disturbance caps should be maintained

Response: BLM is focused on aligning our management with the states. BLM's goal is to promote consistency and alignment with each State's management for Greater Sage-Grouse, including the approach to implementing actions to reduce threats to sage-grouse. The analysis and decisions in the RMPs are based on the information provided by the State agencies and are based on the latest available science and information regarding Greater Sage-Grouse.

Summary: Disturbance caps are inadequate because they permit severe localized impacts

Response: The BLM analyzed the impacts of the disturbance cap in 2015 and in 2018, where appropriate, and disclosed the potential for localized impacts. Mitigation is designed to reduce some of these impacts to a level below the thresholds established in the plans.

Summary: Disturbance caps don't account for fragmentation

Response: The BLM recognizes the risk that habitat fragmentation poses to greater sage-grouse and its habitats. The BLM analyzed the impacts, including fragmentation, of the disturbance cap in 2015 and in 2018, where appropriate, and disclosed the potential for fragmentation. Disturbance caps are one tool in a broader management strategy that BLM employs to minimize habitat fragmentation. The density cap is designed to reduce some of these impacts to below the thresholds established in the plans. Further, the BLM also addresses fragmentation through mechanisms other than disturbance caps. For example, the conservation measures that apply in PHMA address threats to Greater Sage-Grouse, including fragmentation. Those measures include, but are not limited to, disturbance and density caps.

2.1.7 Fire and Invasive Species

Summary: The approach to managing noxious and invasive weeds needs to be more specific. The analysis should also include the 2018 Western Association of Fish and Wildlife Agencies (WAFWA) Gap Report.

Response: BLM has comprehensive strategies to address invasive species and has been implementing those strategies. Improving invasive species management did not emerge as an issue during scoping to increase management alignment or flexibility.

2.1.8 General Habitat Management Areas

Summary: The public submitted studies for consideration by the BLM in support of maintaining protections for General Habitat Management Areas (GHMA). The importance of GHMA to genetic conservation was not given sufficient attention in the analysis

Response: Removing GHMA is being evaluated as a potential way to better align federal management with that of the state. The BLM reviewed the best available science and finds that while there is evidence that gene-flow and connectivity is facilitated by GHMA, presents a sufficiently low risk to species persistence that additional analysis of this impact related to GHMA removal, beyond that in the draft EIS, is not warranted.

2.1.9 Guidance and Policy

Summary: Discretionary waivers and modifications create uncertainty in the application of protections that was not adequately analyzed.

Response: Under the Proposed Plan, waivers, exemptions and modifications would be granted only when meeting specific criteria designed to advance the management goals and objectives in the RMPs. BLM's proposed plan balances the risk of uncertainty against the benefits of management flexibility when considering whether to grant a waiver, exception, or modification. Planning criteria identified for this amendment include consideration of how planning decisions may impact future listing determinations under the ESA.

Summary: BLM should tailor policies closer to state policy rather than providing general discretion.

Response: BLM implementation actions must conform with plan goals and objectives. The details of implementation are guided by current policy which are discretionary and open to change based on amendments to RMPs.

Summary: Secretarial Orders referenced in the Draft EISs need additional clarifying language for how they are guiding the direction of the Draft EISs.

Response: BLM is ensuring this planning effort conforms with the guidance and direction contained in Secretary's Orders, including SO 3353, Greater Sage-Grouse Conservation and Cooperation with Western States. The Proposed Plan explains the relationship between various SOs and this planning process in greater detail. The BLM will continue to manage public lands in conformance with its approved land use plans, while future policies and Secretary's Orders may provide guidance and direction about how BLM implements those plans.

2.1.10 Habitat Boundary/Habitat Management Area Designations

Summary: BLM should use a strict 3% area threshold on administrative boundary changes. Changes to habitat boundaries exceeding 3% in area should require a new plan amendment.

Response: The thresholds for amending plans are defined in BLM's planning handbook and often depend on specific context. The BLM is committed to streamlined and effective processes using plan maintenance and other measures when appropriate. Habitat boundaries are adjusted according to specific criteria and whether modified via plan maintenance or amendment will be determined at the appropriate time. Public participation will be commensurate with the level of planning and BLM policy.

Summary: Discretionary waivers and modifications introduce uncertainty to protections that were not adequately analyzed.

Response: Under the Proposed Plan, waivers, exemptions and modifications would be granted only when meeting specific criteria designed to advance the management goals and objectives in the RMPs. BLM's proposed plan balances the risk of uncertainty against the benefits of management flexibility when considering whether to grant a waiver, exception, or modification. Planning criteria identified for this amendment include consideration of how planning decisions may impact future listing determinations under the ESA.

Summary: Secretarial Orders referenced in the Draft EISs need additional clarifying language for how they are guiding the direction of the Draft EISs

Response: The BLM is ensuring this planning effort conforms with the guidance and direction contained in Secretary's Orders, including SO 3353, Greater Sage-Grouse Conservation and Cooperation with Western States. The Proposed Plan explains the relationship between various SOs and this planning process in greater detail. The BLM will continue to manage public lands in conformance with its approved land use plans, while future policies and Secretary's Orders may provide guidance and direction about how BLM implements those plans

2.1.11 Habitat Management Areas

Summary: The spatial extent of habitat management areas should not be modified.

Response: HMAs reflect habitat which is mapped based on best available information. If BLM and the state finds that habitat was not reflected correctly in light of new information, plan maintenance or an amendment can be used to update boundaries to reflect the change in information.

Summary: The management prescriptions associated with habitat management areas should not be modified.

Response: The purpose of these plan amendments is to increase consistency with state management. In some cases that may result in changes to management within the HMAs..

Summary: Restoration targets for Priority Habitat Management Areas (PHMA) should be developed and incorporated into the plans.

Response: While BLM has not developed specific restoration targets, the BLM has committed to significant restoration and recovery actions. The BLM spent considerable time and energy on the development of the FIATs that identify specific areas for specific types of actions and used that as a basis for requesting funding from Congress. Some targets have been developed, but are not included in the plans for reasons such as uncertainty of funding to implement the actions to reach the targets.

2.1.12 Habitat Objectives

Summary: BLM should more closely align its specific habitat objectives with the 2018 USGS report.

Response: BLM's habitat objectives reflect the best available information defining habitat conditions that sage-grouse preferentially select. The USGS report confirms BLM's assumption that such understanding may change over time. BLM has developed the flexibility in the plans to modify seasonal habitat objectives based on new science or site-specific information.

2.1.13 Lands and Realty

Summary: BLM should not dispose of lands with sage-grouse because transferring lands out of federal ownership introduces regulatory uncertainty and risks reducing habitat connectivity.

Response: BLM disposes of lands based on programmatic guidance and policy, and following specific criteria. Land and realty actions are often implementation level decisions that must conform with the sage-grouse goals and objectives identified in these RMP amendments.

2.1.14 Lek Buffers

Summary: Lek buffers should be maintained to protect leks.

Response: The BLM agrees that lek buffers are one of many important conservation tools available to manage sagebrush habitat and protect Greater Sage-Grouse. The BLM is retaining, and in some instances modifying/clarifying the application of lek buffers as a management tool.

Summary: Lek buffers should be larger than prescribed in the plan amendments.

Response: As applicable, each RMPA has an appendix that addresses lek buffers and allows the BLM to adjust lek buffers based on the best available science, this would allow the BLM to adjust the buffers based on new information as well. Further, some states are clarifying the approach in this RMPA effort, or adjusting to better align with their individual State's management. For more specific information, please refer to the individual plans and their associated lek buffer appendix.

Summary: The public submitted studies for consideration by the BLM in support of larger lek buffers.

Response: The BLM reviewed all submitted studies, and additional information. Please see the response to Data and Science comments for a response to this study.

2.1.15 Mitigation

Summary: Mitigation provisions in the 2015 plans were relied on in the USFWS 2015 finding. Mitigation should follow consistent principles. Mitigation could benefit from different strategies in different states. Mitigation provides stronger, faster decisions on project authorizations

Response: BLM's Proposed Plan balances the risk of uncertainty against the benefits of management flexibility when considering mitigation strategies. The BLM is committed to applying and enforcing the mitigation hierarchy of actions to avoid, minimize, and otherwise mitigate impacts to the extent that federal law allows. A principal component of Greater Sage-Grouse management is the implementation of mitigation actions to ameliorate the threats and impacts to Greater Sage-Grouse and its habitats. The Proposed Plan clarifies how voluntary compensatory mitigation should be considered in the management

of Greater Sage-Grouse habitat and how BLM will work with each state management agency to implement its compensatory mitigation strategy.

Summary: Mandatory net-gain and compensatory mitigation is supported by some commenters, and objected to by others.

Response: BLM's Proposed Plan balances the risk of uncertainty against the benefits of management flexibility when considering mitigation strategies. Following extensive review of FLPMA, including existing regulations, orders, policies, and guidance, the BLM has concluded 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 the public lands (Instruction Memorandum No. 2018-093, *Compensatory Mitigation*, July 24, 2018). However, the BLM is committed to applying and enforcing the mitigation hierarchy of actions to avoid, minimize, and otherwise mitigate impacts to the extent that federal law allows. A principal component of Greater Sage-Grouse management is the implementation of mitigation actions to ameliorate the threats and impacts to Greater Sage-Grouse and its habitats. The Proposed Plan clarifies how voluntary compensatory mitigation should be considered in the management of Greater Sage-Grouse habitat and how BLM will work with each state management agency to implement its compensatory mitigation strategy.

Summary: Various commenters argued that the "net conservation gain" standard should be retained, modified or eliminated. Many commenters requested clarification of the BLM's authority to impose compensatory mitigation.

Response: Following extensive review of FLPMA, including existing regulations, orders, policies, and guidance, the BLM has concluded that FLPMA does not explicitly mandate or authorize the BLM to require public land users to implement compensatory mitigation to offset environmental effects beyond the proponents level of impact. The Proposed Plan seeks to clarify that the mitigation standard applies not at the project level, but rather as a planning-level goal and objective unless specifically required under a state management authority. The BLM is pursuing agreements with the States of Colorado, Idaho, Nevada, Oregon, Utah and Wyoming to clarify how BLM, project proponents, and state management agencies will collaborate to implement a State's compensatory mitigation plan.

Summary: Various commenters argued that recent changes in mitigation policy and the applicability to sage-grouse warrant additional analysis, public review, or a SEIS.

Response: Public input on implementing mitigation, "including alternative approaches to requiring compensatory mitigation in BLM land use plans," was explicitly requested as part of the public comment period on the 2018 Draft EIS (see page ES-8, Section ES.4.2, last sentence of second paragraph). The Proposed Plan clarifies how voluntary compensatory mitigation should be considered in the management of Greater Sage-Grouse habitat and how BLM will work with each state management agency to implement its compensatory mitigation strategy. Because this clarification simply aligns the Proposed Plan Amendment with BLM policy and with the scope of compensatory mitigation authority expressly provided by FLPMA, and because any analysis of compensatory mitigation relating to future projects would necessarily be fact-specific and evaluated in project-specific NEPA documents, there is limited value in attempting to do so at the level of land use planning.

Summary: Many commenters stated the BLM should clarify how it will implement compensatory mitigation.

Response: The BLM is pursuing agreements with the States of Colorado, Idaho, Nevada, Oregon, Utah and Wyoming to clarify how BLM, project proponents, and state management agencies will collaborate to implement a State's compensatory mitigation plan. The BLM will defer to a state methodology for habitat quantification if such a tool exists and incorporate the state's assessment into the appropriate NEPA documentation. The Proposed Plan Amendment clarifies that 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. The Proposed Plan further clarifies the application of the mitigation standard as a planning-level goal and objective for sage-grouse habitat conservation. BLM commits to cooperating with the State to analyze applicant-proffered or state-imposed compensatory mitigation to offset residual impacts. BLM may then authorize such actions consistent with NEPA analysis and the governing Resource Management Plan.

2.1.16 Modifying Waivers, Exceptions, and Modifications of Fluid Minerals

Summary: One-time exceptions should be preferred over more expansive exceptions

Response: Under the Proposed Plan, waivers, exceptions, and modifications would be granted only when meeting specific criteria designed to advance the management goals and objectives in the RMPs. BLM's proposed plan balances the risk of uncertainty against the benefits of management flexibility when considering whether to grant a waiver, exception, or modification. Planning criteria identified for this amendment include consideration of how planning decisions may impact future listing determinations under the ESA.

Summary: Waivers should be narrowly defined.

Response: Under the Proposed Plan, waivers, exceptions, and modifications would be granted only when meeting specific criteria designed to advance the management goals and objectives in the RMPs. BLM's proposed plan balances the risk of uncertainty against the benefits of management flexibility when considering whether to grant a waiver, exception, or modification. Planning criteria identified for this amendment include consideration of how planning decisions may impact future listing determinations under the ESA.

Summary: There should be opportunity for public notice and comment for certain types of waivers, exceptions, or modifications.

Response: The BLM will comply with 43 CFR 3101.1-4 regarding public notification of waivers, exceptions, or modifications, which includes a 30-day public notification period. An exception is a limited type of waiver and therefore is subject to 43 CFR 3101.1-4.

2.1.17 Noise Management Outside of PHMA

Summary: Noise restrictions should be stronger. The public submitted studies for consideration by the BLM in support of stronger restrictions on noise. The public suggested changes to the noise measurement methods.

Response: BLM has determined the noise restrictions are adequate to balance best available information with the goals and objectives of the Proposed Plan and to meet the Purpose and Need.

2.1.18 Preferred Alternative

Summary: The preferred alternative should be the No Action Alt because it was relied on for the 2015 listing decisions.

Response: The proposed plan was chosen based on the BLM's stated purpose and need, coordination with cooperating agencies, and public comment. The no action was not the sole factor USFWS relied upon when reaching it's 2015 listing determination. BLM's proposed plan balances the risk of uncertainty against the benefits of management flexibility when considering the selection of a proposed plan. Planning criteria identified for this amendment include consideration of how planning decisions may impact future listing determinations under the ESA.

2.1.19 Prioritization of Mineral Leasing

Summary: No summary—implementation-level decision

2.1.20 Range of Alternatives

Summary: The range of alternatives is unreasonably narrow.

Response: The range is adequate to address the agency's purpose and need for considering these amendments. And by incorporating the 2015 plans by reference, BLM avails itself of a larger range of management options previously analyzed in a broadly distributed EIS. Further, BLM considered a number of alternatives and issues during scoping that the agency determined not to carry forward.

Summary: The no-action alternative does not reflect a proper baseline.

Response: The No-Action Alternative represents the current management plan as it is implemented on the ground across 11 states and over 90 RMPs, including US Forest Service lands, thereby reflecting a management baseline that is well understood by BLM.

2.1.21 Recreation

Summary: Recreation and its socioeconomic benefits are tied to sagebrush ecosystems

Response: The BLM agrees and ensures that recreation-related projects and actions in sage-grouse habitats conform with management goals and objectives from the 2015 management plans.

2.1.22 Required Design Features (RDFs)

Summary: NSO stipulations should be maintained in priority habitats.

Response: BLM is focused on aligning our management with the states. BLM's goal is to promote consistency and alignment with each State's management for greater sage-grouse. In most cases, the proposed plan maintains NSO restrictions and other management prescriptions. Where BLM has increased its management flexibility, it has done so to improve alignment with the state plans and based on local information. The impact to sage-grouse from disturbance and habitat fragmentation is well documented in the 2015 EIS.

2.1.23 Sagebrush Focal Areas (SFAs)

Summary: Sagebrush focal areas (SFAs) should not be removed. Inconsistency in retention and removal of SFA across states is arbitrary and capricious. BLM is not legally required to remove SFA. Justifications for eliminating SFAs are inadequate.

Response: BLM is focused on aligning our management with the states. BLM's goal is to promote consistency and alignment with each State's management for greater sage-grouse. Where BLM has increased its management flexibility, it has done so to improve alignment with the state plans and based on local information. BLM has determined that SFA designations provide a redundant layer of resource protection and land use prioritization within PHMA and is acting within its discretion to remove SFA designation. Further, the BLM canceled the proposed withdrawal of SFAs through a publication in the Federal Register on October 11, 2017 (82 Fed. Reg. 47,248) and findings in the Sagebrush Focal Area Draft EIS noted that there was broadly low potential for locatable minerals within the recommended withdrawal area, so the withdrawal would not have provided additional protection to Greater Sage-Grouse.

2.1.24 Sage-Grouse

Summary: Regulatory changes and regulatory uncertainty increase the likelihood of listing of the species under the ESA. The impacts analysis is deficient. Protections afforded by the plans aren't sufficient to prevent listing of the species.

Response: BLM's proposed plan balances the risk of uncertainty against the benefits of management flexibility and alignment when considering changes to the 2015 plans. Planning criteria identified for this amendment include consideration of how planning decisions may impact future listing determinations under the ESA.

2.1.25 Statutes and Regulations

Summary: The BLM must respect valid existing rights, including those reflected in oil and gas leases issued under the Mineral Leasing Act. The BLM also implements land use planning decisions differently with respect to uses related to the Mining Law of 1872.

Response: All proposed actions contained in the RMPA will be subject to valid existing rights, including those associated with leases issued under the Mineral Leasing Act of 1920. Accordingly, the BLM will ensure that its implementation of the management actions in the RMPA is consistent with the terms and conditions in existing leases or existing contracts. For example, if the BLM previously issued an oil and gas lease with standard lease terms and conditions, and the lessee submits an application for permit to dill, the BLM will ensure that any management actions from the RMPA will be applied in a manner that is consistent with the terms and conditions of the underlying oil and gas lease.

The BLM also recognizes that it has limited authority to impose conditions on certain uses related to the Mining Law of 1872 through land use planning decisions. Accordingly, the BLM will apply management actions in the RMPA only to the extent that they are consistent with the Mining Law of 1872 and the BLM's regulations.

Summary: The purpose and need is unreasonably narrow.

Response: The agency's purpose and need for considering these amendments was carefully drawn to promote alignment with the State's plans and policies while satisfying the BLM's responsibilities under FLPMA, other applicable laws, and BLM policy. This planning effort also builds off the comprehensive 2015 planning and NEPA process; incorporates the 2015 Final EIS analysis by reference in its entirety, including its alternatives; and has been informed by a scoping process that has identified specific opportunities to improve alignment with state plans.

Summary: The purpose and need is driven solely by applicant objectives.

Response: The planning and NEPA process does not respond to any applications submitted to the BLM. The BLM's intention is to build upon the 2015 plans by improving access and management flexibility by better aligning our management plans with the States' management plans. The purpose and need reflects this intent consistent with the agency's mission and Administration's priorities.

Summary: The BLM inappropriately tiered to a document of equal scope. The BLM failed to summarize and relate applicability of material incorporated by reference to the new plans.

Response: BLM is using incorporation by reference to streamline our analysis consistent with Administrative priorities. Incorporation of the 2015 EIS by reference is allowable under BLM regulations and is appropriate in this circumstance because the purpose of this action builds upon the goals and objectives of the 2015 EIS. Further, the CEQ 40 Questions, Question 24c, states that, "Tiering is a procedure which allows an agency to avoid duplication of paperwork through the incorporation by reference of the general discussions and relevant specific discussions from an environmental impact statement of broader scope into one of lesser scope or vice versa." The BLM has summarized and referenced applicable aspects of the 2015 EIS throughout the 2018 EIS, but especially in **Chapters 2** and **4**.

Summary: The BLM failed to consider and designate Areas of Critical Environmental Concern (ACECs).

Response: BLM properly considered and analyzed the designation of ACECs in 2015. No new information suggests it is necessary to reconsider those decisions and BLM has determined the issue of ACECs to fall outside the scope of this effort to better align federal management with state management plans.

Summary: BLM fails to incorporate an appropriate Analysis of Management Situation.

Response: BLM analyzed the management situation in full compliance with its regulations and policies. The BLM evaluated inventory and other data and information, partnering with USGS and coordinating extensively with States, to help provide a basis for formulating reasonable alternatives. The BLM described this process in its Report to the Secretary in response to SO 3353 (Aug. 4, 2017). Among other things, the Report describes how the BLM coordinated "with each State to gather information related to the [Secretary's] Order, including State-specific issues and potential options for actions with respect to the 2015 Greater Sage-Grouse Plans and IMs to identify opportunities to promote consistency with State plans." (Report to the Secretary at 3.) This process overlapped to some degree with the BLM's scoping process, which also assisted the BLM in identifying the scope of issues to be addressed and significant issues, and with coordination with the States occurring after the Report. In

addition, as described in Draft EIS Chapter 3, the BLM determined that the current management situation is similar in condition to that assessed in 2015.

2.1.26 Travel and Transportation Management

Summary: Travel plans should be part of the plan amendments.

Response: Travel management planning is a crucial aspect in implementing land use plans. Ongoing travel management decisions in sage-grouse habitat are guided by the 2015 plans, with clarifications in the 2018 plan. Those BLM offices with travel plans in Greater Sage-Grouse habitat would also conform with the goals and objectives, and planning decisions in these amendments.

2.1.27 Waivers, Exceptions, and Modifications

Summary: The uncertainty with how waivers, exceptions, and modifications will be used introduces uncertainty to protections that aren't fully analyzed. Criteria for the use of waivers, exceptions, and modifications should be more narrowly prescribed.

Response: Under the Proposed Plan, waivers, exemptions and modifications would be granted only when meeting specific criteria designed to advance the management goals and objectives in the RMPs. BLM's proposed plan balances the risk of uncertainty against the benefits of management flexibility when considering whether to grant a waiver, exception, or modification. Planning criteria identified for this amendment include consideration of how planning decisions may impact future listing determinations under the ESA.

Summary: BLM should monitor the use of waivers, exceptions, and modifications.

Response: BLM currently monitors and tracks disturbance in Greater Sage-Grouse habitats. Some BLM states, through the fluid minerals program, track waivers, exceptions, and modifications. The BLM is currently reviewing how to apply these best management practices at the national level.

2.2 UTAH-SPECIFIC COMMENT RESPONSES

2.2.1 Purpose and Need

Summary: The Purpose and Need of the Draft EIS should be expanded in order to better align with the US Fish and Wildlife Service's 2015 "not warranted" decision.

Response: The agency's purpose of and need for this planning effort applies to the current situation, not the circumstances that existed in 2011 when greater sage-grouse was warranted for listing. The BLM's intention is to build upon the 2015 plans by improving access and management flexibility by better aligning our management plans with the States' management plans. The purpose and need reflects this intent consistent with the agency's mission and Administration's priorities.

Summary: The Purpose and Need Statement should clarify that the Draft EIS aims to incorporate updated science, research and local information and management practice, and to ensure, not only enhanced cooperation with the States, but also achieve consistency and coordination with State, Tribal and Local Governments' sage-grouse conservation and land use plans.

Response: The Purpose and Need of the planning effort cites specifically to the FLPMA-specified roles of State agencies in managing non-listed wildlife species. It does not require complete alignment with state, local and tribal plans, since law and regulation requires consistency to the extent such "are also consistent with the purposes, policies, and programs of Federal laws and regulations" (43 CFR 1610.3-2). Language has been added to the purpose and need to recognize that some of the changes considered in the Draft EIS correspond to incorporating local research, which is also consistent with the State of Utah's plans.

Summary: The BLM's Purpose and Need for the Draft EIS is unreasonably narrow.

Response: The agency's purpose and need for considering these amendments was carefully drawn to promote alignment with the State's plans and policies while satisfying the BLM's responsibilities under FLPMA, other applicable laws, and BLM policy. This planning effort also builds off the comprehensive 2015 planning and NEPA process; incorporates the 2015 Final EIS analysis by reference in its entirety, including its alternatives; and has been informed by a scoping process that has identified specific opportunities to improve alignment with state plans.

Summary: The BLM has impermissibly defined the Purpose and Need based on project proponent objectives.

Response: This planning and NEPA process does not respond to any project application submitted to the BLM. The BLM's intention is to build upon the 2015 plans by improving access and management flexibility by better aligning our management plans with the States' management plans. The purpose and need reflects this intent consistent with the agency's mission and Administration's priorities. Further, there is no project proponent involved in this land use plan amendment. This planning process is in response to direction from the Secretary of the Interior, who, in Secretarial Order 3353, directed the BLM to "enhance cooperation between the Department of the Interior and the [State]...of Utah...in the management and conservation of the Greater Sage-Grouse and its habitat."

Summary: BLM must clarify how Secretarial Orders, policy and other guidance relate to implementation of plan decisions.

Response: BLM has ensured that this planning effort conforms with BLM policies, including all applicable Secretarial Orders (SOs), including SO 3353, issued on June 7, 2017, titled Greater Sage-Grouse Conservation and Cooperation with Western States. The plan amendment must be consistent with law, regulation, and policy, including the Secretarial Orders. Consistent with the BLM's planning regulations, "all future resource management authorizations and actions...shall conform to the approved plan" (43 CFR 1610.5-3).

2.2.2 Criteria

Summary: The new planning criteria does not include one of the criteria from the 2015 RMP: "maintaining the federal land management planning considerations to protect greater sage-grouse populations and habitats sufficiently so that the species does not warrant listing under the Endangered Species Act (ESA)."

Response: The determination of whether a species warrants listing under the Endangered Species Act is beyond the BLM's jurisdiction, which is why that specific language was removed. The Fish and Wildlife

Service makes listing determinations. However, the BLM's 6840 manual identifies the BLM's policy for Special Status Species Management, noting that "actions authorized by the BLM shall further the...conservation of Bureau sensitive species." It also notes that BLM sensitive species "will be managed...to promote their conservation and to minimize the likelihood and need for listing under the ESA." The Draft EIS planning criteria states "the RMPA/EIS will comply with BLM Manual 6840, Special Status Species Management," thereby addressing this concept within the BLM's jurisdiction and consistent with its policies.

2.2.3 Issues dismissed from detailed analysis

Summary: The BLM should identify wild horses as a threat in the Draft EIS.

Response: The 2015 Final EIS evaluates threats from wild horses and corresponding management and impacts. As noted in section 1.2 of the 2018 Draft EIS, the purpose and need for this effort is to modify greater sage-grouse management "to better align with individual state plans…" Because management from the 2015 ARMPA is consistent with the state's plan, considering changes to wild horse management is not consistent with the purpose of this effort, and is therefore not analyzed in detail.

Summary: The Utah Plan does not provide adequate consideration of the issues and site-specific resource conditions.

Response: RMP management actions cannot provide sufficient detail and analysis for every site-specific circumstance that arises during implementation. The proposed RMP actions provide the sufficient management framework to meet the goals and objectives while providing flexibility to account for local project and site-specific variability.

Summary: The 2015 Plan and 2018 Draft EIS fail to address the impacts of predation and hunting. The BLM cannot rely on a narrow set of data to manage sage-grouse with regards to predation.

Response: The BLM does not manage greater sage-grouse hunting and the BLM has limited jurisdiction regarding predation. The 2015 Final EIS does address predation, to the extent the BLM has jurisdiction (see 2015 Final EIS page 4-9 and Appendix M). The 2018 changes do not deviate from this analysis. As such, it is not addressed in detailed analysis.

2.2.4 Modifying Waivers, Exceptions, and Modifications of Fluid Minerals Determinations

Summary: The Draft EIS should only apply the NSO stipulation in areas of occupied habitat within PHMA.

Response: Oil and gas stipulations must be identified and mapped in the RMP so applicable stipulations can be appropriately applied to potential future leases. Absent a map that specifically identifies the areas of occupied habitat, the exception language in the RMP would accomplish the same purpose while being consistent with the BLM's regulatory leasing requirements. While PHMA would be NSO at the lease stage, the exception language could allow for development within PHMA if an area is not habitat and the development would not indirectly affect adjacent greater sage-grouse seasonal habitats.

Summary: The Draft EIS should clarify the criteria for allowing exceptions to NSOs, including adding a criterion to except the NSO if mitigation improves functional habitat.

Response: The Final EIS has been revised to clarify how the exception criteria would be applied. However, since mitigation would be entirely voluntary, allowing an exception to the NSO without corresponding habitat improvement would not be consistent with 43 CFR 3101.1-4, where an exception (a one-time waiver) can only be issued if "the factors leading to its inclusion in the lease have changed sufficiently to make the protection provided by the stipulation no longer justified or if proposed operations would not cause unacceptable impacts." Since voluntary mitigation could not ensure such a condition, the regulatory criteria for an exception could not be met, therefore it was not included in the Proposed Plan.

Summary: WEMs to lease stipulations should be narrowly applied and granted only under specific circumstances.

Response: Under the proposed plan, waivers, exceptions, and modifications would be granted only when meeting specific criteria designed to advance the management goals and objectives in the RMPs. BLM's proposed plan balances the risk of uncertainty against the benefits of management flexibility when considering whether to grant a WEM. Planning criteria identified for this amendment include consideration of how planning decisions may impact future listing determinations under the ESA.

Summary: NSO stipulations must be restored as mandatory in sage-grouse habitat during leasing for energy development.

Response: BLM leasing regulations at 43 CFR 3101.1-4 state that that an exception, waiver, or modification can be granted "only if the authorized officer determines that the factors leading to its inclusion in the lease have changed sufficiently to make the protection provided by the stipulation no longer justified or if proposed operations would not cause unacceptable impacts." Consistent with regulation, the exception criteria provide for consideration of site-specific conditions that must be present at the site-level in order for the exception to be considered while still providing for protection of greater sage-grouse.

Summary: The BLM should track boundary adjustments, WEMs requested and those granted, and provide this information to the public.

Response: The BLM will comply with 43 CFR 3101.1-4 regarding public notification of waivers, exceptions, or modifications, which includes a 30-day public notification period when applicable. An exception is a limited type of waiver and therefore is subject to 43 CFR 3101.1-4.

2.2.5 Sagebrush Focal Area (SFA) Designations

Summary: The BLM should remove SFAs from the EIS as they fail to address the major threats to sage-grouse and do not contribute to the long-term conservation of Utah sage-grouse. The BLM should maintain SFAs in order to achieve conservation goals. SFAs are no longer relevant in Utah due to the cancellation of limiting mineral withdrawal on federal lands. The BLM must evaluate the benefits of maintaining SFAs and maintaining range management measures associated with SFA designations.

Response: The Draft EIS considers two alternatives: The No Action alternative, which analyzes impacts if the SFAs remain in the plan, and the Management Alignment Alternative that does not include SFAs. The analysis of impacts of regulatory changes to sage-grouse in **Chapter 4** of the EIS describes that management actions in the Management Alignment Alternative would protect the species, and obtain

conservation goals, in the absence of SFAs. BLM is focused on aligning our management with the states. BLM's goal is to achieve promote consistency and alignment with each State's management for Greater Sage-Grouse. Where BLM has increased its management flexibility, it has done so to improve alignment with the state plans and based on local information. BLM has determined that SFA designations provide a redundant layer of resource protection and land use prioritization within PHMA and is acting within its discretion to remove SFA designation. Further, the BLM canceled the proposed withdrawal of SFAs through a publication in the Federal Register on October 11, 2017 (82 Fed. Reg. 47,248) and findings in the SFA EIS noted that there was broadly low potential for locatable minerals within the recommended withdrawal area, so the withdrawal would not have provided additional protection to Greater Sage-Grouse.

Summary: Eliminating SFAs in select states may conflict with the BLM's goal of maintaining a landscape-scale approach to sage-grouse management.

Response: The BLM does not have an overarching goal of maintaining a landscape-scale approach to sage-grouse management. Consistent with the BLM's Special Status Species Management policy, "Bureau sensitive species will be managed...to promote their conservation and to minimize the likelihood and need for listing under the [Endangered Species Act]" (BLM-M-6840 section .06). This is accomplished through species and habitat management objectives in land use plans. The cumulative effects analysis does consider the effects of the proposed changes to the land use plans by addressing past, present, and reasonably foreseeable future impacts on greater sage-grouse and its habitat at the rangewide scale, as well as at the scale of Management Zone identified by the Western Association of Fish and Wildlife Agencies.

Summary: The BLM must reconsider whether the SFA designations were made with sufficient opportunity for public comment, and allow for additional public comment if warranted.

Response: As part of this land use planning process, which makes determinations on SFA designations, the BLM provided the public 90 days to review and comment on the analysis in the 2015 Final EIS, as well as the 2018 Draft EIS, consistent with the regulations found at 40 CFR 1506.6 and 6.203.

2.2.6 Disturbance and Density Caps

Summary: The BLM's established date for counting disturbance is arbitrary and capricious. The BLM should not count disturbances from before the plans approval.

Response: Extensive research has indicated that greater sage-grouse are sensitive to disturbances (see 2015 Final EIS impact analysis for Greater Sage-Grouse for extensive descriptions). The variable is the presence of disturbance, not the age of disturbance. As such, there is no specific date for when disturbance begins counting or stops counting. Disturbance inventories include existing disturbance regardless of when it was generated. Moreover, the disturbance inventory is not intended to show all areas disturbed throughout history, but rather areas that are currently disturbed and have not yet been restored. Impacts from the disturbance did not begin when the 2015 plans were finalized. As such, in order to meet the goal of maintaining and/or increasing Greater Sage-Grouse abundance and distribution, the existing condition of disturbance on the landscape must be taken into account when considering future actions.

Summary: The BLM should disclose uncertainties associated with existing disturbance.

Response: Appendix E and Chapter 3 of the 2018 Draft EIS both address the concept of using the best available information when calculating the disturbance cap. Appendix E notes that "locally collected disturbance data will be used to determine if the disturbance cap has been exceeded…" Chapter 3 of the 2018 Draft EIS notes that "since 2015, the disturbance inventory has been refined in several areas…" It also notes that "as disturbance data was refined with on-the-ground knowledge, the amount of disturbance was less than the amount identified from the coarser-scale data due to the removal of disturbances that were being double counted." As more specific information continues to be collected at the site-level, the disturbance inventory will be maintained to ensure that the best available data will always be used when determining plan conformance.

Summary: The BLM should enter into government to government coordination with Garfield County regarding disturbance cap criteria and wildlife habitat value for areas identified in PHMAs.

Response: Garfield County is a cooperating agency. The government-to-government relationship is a specific political and legal relationship that the United States Government has with American Indian Tribes, not counties or other local governments. Counties have been involved as cooperating agencies in the NEPA process where they have jurisdiction by law or special expertise, enabling closer consultation and privileged status. Further, BLM has solicited input from the counties during scoping, preparation of the Draft EIS, and in the comment period on the proposed sage-grouse amendments. Local government positions were considered in the development of the proposed action, but are not guaranteed to be consistent with federal management, where state management supersedes local policy (43 CFR 1610.3-2(d)).

Summary: The Draft EIS fails to list a number of disturbances that negatively affect Greater Sage-Grouse populations, and should be modified to include these disturbances.

Response: The BLM considered the full array of threats that affect greater sage-grouse, but no one management tool was deemed the only one necessary to address every threat. The 2015 Plans included in the disturbance cap those specific developments identified in the Fish and Wildlife Service's listing determination as discrete threats to greater sage-grouse to be addressed by the disturbance cap. However, the disturbance cap is not the only management tool to address all threats to greater sage-grouse. **Table E-1** in **Appendix E** lists three categories of threats; the disturbance cap is designed to address only one of those categories. Other threats are addressed through other managerial tools (e.g., noise and tall structure stipulations; fire prevention, suppression and restoration; habitat improvements to reduce conifer encroachment and invasive species).

Summary: The BLM's 3% disturbance cap is inconsistent with the State's 5% disturbance cap.

Response: The BLM plan does currently have an inconsistency with the State's Conservation Plan in that it has a 3 percent disturbance cap rather than a 5 percent disturbance cap. However, after close coordination with the state over the past three years, the apparent differences are not as simple as two percentage points. While there is a difference in the percentage, there is also a difference in what is counted under each cap. The BLM includes the specific items identified **Appendix E** in **Table E-1** and **Table E-2**. When considering these, the BLM includes the actual footprint of disturbance. However, the State's plan includes a 5% disturbance cap in which it includes "any ground disturbing activity, event or action, natural or human-caused, that will either eliminate or render greater sage-grouse habitat not usable" (Conservation Plan for Greater Sage-Grouse in Utah, 2013, section 10.3.1). Further, the State's

plan counts both the footprint of disturbance and the area "where effects of the project...could be expected to cause a disturbance." As such, while the BLM's cap is 3 percent, it is limited to a smaller list of activities and is limited to the direct footprint while the State's 5 percent includes a larger list of potential impacts as well as their indirect effects. As such, while differences exist, during implementation the two approaches are much closer to conditions on the ground. Recognizing this, the BLM has been coordinating with the State of Utah to develop more consistent strategies to improve alignment of the two processes during implementation.

Summary: The BLM should specify who is in the technical team.

Response: MA-SSS-3B contains language specifically identifying the type of skill-sets that must be on the technical team. Identifying actual personnel in an RMP overlooks the fact that each office would have a different team and over time, staff changes would require further adjustments. The list of positions needed for the team has been clarified in the Final EIS.

Summary: The BLM should specify that the disturbance cap MA-SSS-3C can also be exceeded like MA-SSS-3B.

Response: As noted in the Draft EIS on page 2-12, MA-SSS-3C specifically notes that the density cap may be exceeded if "the process identified in MA-SSS-3B determines the project will improve the condition of Greater Sage-Grouse habitat through analysis of site-specific Greater Sage-Grouse habitat and population information and project design elements." This language has been edited in the Final EIS to more clearly note the exception applies to both the disturbance cap and the density cap.

Summary: The BLM should include a time frame requirement for analysis of restoration in disturbed sage-grouse habitat.

Response: The request for a time frame requirement for restoration of disturbances is not practical nor ecologically possible. Not every disturbance will have the same project life. For example, a pipeline may be a single year of disturbance followed by restoration where an oil/gas well may have a life of 20 years before it is plugged and restored. Further, areas that are at higher elevations with more precipitation and faster growing mountain sage would have far quicker restoration rates than lower elevation and drier Wyoming sagebrush stands. For these reasons, the RMP amendment cannot set a standard time frame. However, language has been added to the Final EIS that a schedule be included in project authorizations to monitor disturbances and the status of associated restoration efforts.

Summary: The BLM should clarify the locations of where density caps may be exceeded.

Response: There are not specific portions of PHMA where the density cap may be exceeded compared to other areas where it may not be exceeded. However, as noted in the Draft EIS on page 2-12, MA-SSS-3C specifically notes that the density cap may be exceeded if "the process identified in MA-SSS-3B determines the project will improve the condition of Greater Sage-Grouse habitat through analysis of site-specific Greater Sage-Grouse habitat and population information and project design elements." This language has been edited in the Final EIS to more clearly note the exception applies to both the disturbance cap and the density cap.

Summary: The BLM should consider landscape-scale conservation needs prior to any reduction of disturbance or density caps.

Response: As noted in Final EIS actions MA-SSS-3B and MA-SSS-3C, the disturbance and density caps could only be exceeded where "site-specific Greater Sage-Grouse habitat and population information, combined with project design elements indicates the project will improve the condition of Greater Sage-Grouse habitat within the proposed project analysis area or within the PHMA in the population area where the project is located." As such, the site-specific documentation necessary before the caps could be exceeded would include either the area of immediate effect (project area) or the broader PHMA associated with the sage-grouse population.

Summary: Disturbance and density caps fail to realistically measure actual wildlife habitat.

Response: The purpose of the disturbance and density caps is not to measure wildlife habitat, but to manage disturbance in PHMA at a level that will help meet the goal to maintain and/or increase greater sage-grouse abundance and distribution. **Appendix E** clearly notes that the denominator portion of the percentage calculation consists of "all lands classified as PHMA within the analysis area" and does not exclude areas that are not greater sage-grouse seasonal habitats. As noted in the Appendix, "information regarding [greater sage-grouse] seasonal habitats, sagebrush availability, and areas with the potential to support [greater sage-grouse] populations will be considered along with other local conditions that may affect [greater sage-grouse] during the analysis of the proposed project area." However, such analysis is separate from application of the disturbance and density caps.

Summary: The BLM should allow exceedance of the 3 percent disturbance cap if the project will improve the condition of sage-grouse habitat within the proposed project analysis area or within the PHMA where the project is located.

Response: Exceedance of the disturbance and density caps is allowed as described in MA-SSS-3B and MA-SSS-3C.

Response: Any technical team should include state technical experts.

Response: MA-SSS-3B contains language specifically identifying the type of skill-sets that must be on the technical team. This includes "biologists and other representatives from the appropriate State of Utah agency."

Summary: The BLM should reevaluate the prescriptive recommendations presented in the 2011 NTT.

Response: The purpose of this planning effort is not to reevaluate the recommendations from the 2011 NTT Report, COT Report, or even the actions from the 2015 Plan Amendment. As required by Secretarial Order 3353 and as described in Chapter 1 of the Draft EIS, the purpose of this planning effort is to modify "the approach to Greater Sage-Grouse management in existing land use plans to better align with individual state plans." As such, reevaluating recommendations from the NTT report is outside the scope of this planning effort.

Summary: The BLM should clarify what constitutes habitat improvement and how much improvement is required before exceedance of disturbance and density caps will be allowed.

Response: The Draft EIS provides sufficient guidance that the proposed project, in combination with siting, minimization measures, and mitigation, will result in an improved condition for greater sage-grouse habitat than prior to the project. Habitat improvements could be made in an area so that it would fall more inline with Objective SSS-3 or so areas that are not habitat due to conifer encroachment become habitat. Habitat improvement is defined in terms of restoration of formerly unsuitable habitat to habitat of similar quality to that being impacted. This improvement would likely be as described in Chapter 4 Section 4.6.4 "that could change vegetation conditions in the project area to shift away from a landscape more dominated by trees to one more dominated by grasses and shrubs that is conducive to Greater Sage-Grouse habitat." The amount of improvement required is defined on a case-by-case basis based on what is necessary to replace residual impacts after avoidance and minimization measures have been applied. As such, each instance of improvement cannot be fully detailed at the land use planning level.

Summary: Disturbance at project locations should not exceed 3% (or 1 well pad per section), to maintain existing habitat functionality.

Response: The Management Alignment Alternative retains the 3% disturbance cap, as well as the density cap of 1 facility per section, and only allows for exceedances of these restrictions where there is reasonable evidence that doing so will have, on balance, a benefit to habitat. Although this introduces the potential for localized impacts to the species, functional habitat available to the population will be maintained.

2.2.7 Habitat Objectives

Summary: The BLM should revise the habitat objectives tables to better account for local conditions and site variability.

Response: BLM has incorporated locally based research from Utah State University to identify Greater Sage-Grouse habitat objectives that are specific to Utah. The updated numbers are based on extensive data documenting vegetation conditions where greater sage-grouse are actually using the landscape for various seasonal habitats. The habitat objectives table references levels several times to an objective should be applied "where appropriate, relative to ecological site potential" to incorporate flexibility in the prescription of the objectives that take into account the local conditions and site variability.

Summary: Habitat objectives relating to sagebrush cover should be based on adequate scientific support.

Response: BLM's habitat objectives reflect the best available information defining habitat conditions that sage-grouse preferentially select. The USGS report confirms BLM's assumption that such understanding may change over time. BLM has developed flexibility in the plans to modify seasonal habitat objectives based on new science or site-specific information.

Summary: The BLM should incorporate Greater Sage-Grouse habitat objectives and management considerations into all BLM grazing allotments through AMPs or permit renewals within priority sage-grouse habitat.

Response: The RMP objectives for greater sage-grouse may inform the wildlife component on the Land Health Standard evaluation process, but they categorically do not replace the rangeland health

assessments. The indicators and desired conditions in the habitat objectives table are to only be used to assess habitat suitability for greater sage-grouse, and to evaluate land use plan effectiveness for sage-grouse conservation. Grazing allotments will continue to be managed according to the 43 CFR 4100 regulations. As described in the regulations, if an area is not meeting Land Health Standards then the causal factor(s) will be determined and addressed.

Summary: The BLM should rename the different zones of habitat in the EIS to provide clarification to the public.

Response: For clarification purposes the BLM has renamed the different zones associated with the habitat objectives to High, Medium and Low in the 2018 Final EIS.

Summary: The vegetation objectives lack support and are contradictory.

Response: The vegetation objectives and associated habitat objectives tables were developed using associated scientific research that more closely aligns to known sage-grouse habitat and habitat requirements for Utah sage-grouse based on local research and data.

Summary: The BLM incorrectly uses the habitat objectives in the Draft EIS as standards.

Response: The RMP objectives for greater sage-grouse may inform the wildlife component on the Land Health Standard evaluation process, but they categorically do not replace the rangeland health assessments. The indicators and desired conditions in the habitat objectives table are to only be used to assess habitat suitability for greater sage-grouse, and to evaluate land use plan effectiveness for sage-grouse conservation. Grazing allotments will continue to be managed according to the 43 CFR 4100 regulations.

Summary: The BLM should prioritize vegetation management and restoration of sage-grouse habitat.

Response: The vegetation management actions from the 2015 Plan Amendment were consistent with the State of Utah's sage-grouse plans. Because the purpose of this planning effort is to increase alignment with the state plans, no additional changes were needed or proposed in the 2018 Draft EIS, and the vegetation management actions are carried forward, unchanged.

Summary: The BLM's use of HAF and AIM protocols do not address monitoring needs for the RMPA.

Response: BLM already has existing policies and regulations outside of this planning effort that address monitoring needs for the RMPA. AIM and HAF are additional tools to help assist BLM managers when making determinations regarding habitat suitability and to evaluate land use plan effectiveness.

2.2.8 Adaptive Management

Summary: The BLM should modify triggers in order to better capture significant population changes in sage-grouse numbers.

Response: Based on its review of the best available science, the BLM identified the adaptive management triggers in the 2015 Final EIS. As described in **Appendix I** (see page I-1), these triggers reflect the expertise from a multi-agency team of State and Federal biologists who reviewed decades of

monitoring data and determined what "population and habitat triggers are appropriate given the natural cyclic variability observed in greater sage-grouse populations." These triggers were designed to be sufficiently responsive to population changes to allow for early and effective management response, but not so sensitive as to prompt an undue response to natural fluctuations. Further, because the BLM developed the triggers in close coordination with the State of Utah who has managerial jurisdiction over the species, they are not inconsistent with the State's plans, and as such do not need to be changed to improve alignment as part of this effort. Finally, the threshold for significant changes were not evaluated in detail in this EIS, but instead the difference in the impacts among alternatives, irrespective of significance, is the central concern of the analysis. The BLM is responsible for making an informed decisions with respect to determining what constitutes a reasonable threshold. The comment does not clearly or convincingly show that BLM failed to consider relevant information or that its conclusion is in error.

Summary: The BLM should identify what conservation measures will be applied when soft-triggers are tripped and include a monitoring requirement.

Response: In regards to addressing conservation measures for soft-trigger threats, the BLM has purposefully retained flexibility in their ability to respond to threats by not identifying specific management responses. Because soft triggers may be due to natural fluctuations, establishing set responses is premature until the cause of the trigger is identified. However, pages I-7 and I-8 of **Appendix I** includes a list of potential management actions that could be applied if a "soft trigger" is identified.

Summary: The BLM should maintain, but not limit, hard and soft trigger adaptive management provisions.

Response: Because the BLM developed the adaptive management triggers in close coordination with the State of Utah, who has managerial jurisdiction over the species, they are not inconsistent with the State's plans, and as such do not need to be changed to improve alignment as part of this effort. However, over the process of implementing the 2015 Plan Amendment, several issues were identified in coordination with the State to improve the processes and alignment of monitoring and managing populations that trip a trigger. As described The deviations between adaptive management under the 2015 and the 2018 Amendments are not expected to result in material changes to the overall impacts to the species, as discussed in **Chapter 4** (**Table 4-2** on page 4-14 and in the Cumulative Impacts section for sage-grouse (**Chapter 4**, **Section 4-7**, page 4-50).

Summary: The BLM should provide the opportunity for public involvement and engagement in the decision process to modify the adaptive management strategy.

Response: The changes to the adaptive management strategy considered in the 2018 Draft EIS were available for a 90-day comment period. In relation to the BLM's revisions to IM-2018-022, there is no requirement for public involvement when changing or issuing instruction memorandums. While implementing the RMP, the BLM will comply with all public involvement requirements.

Summary: The Final EIS should include a monitoring framework plan, and include the actions to be taken in the event that trigger deadlines are not met.

Response: As identified on page I-8 of **Appendix I**, if a causal factor analysis is not completed within six months of identifying a tripped trigger, then all the plan level responses identified in **Table I-1** will be applied until a causal factor analysis can be completed. Additionally, the Monitoring Framework from the 2015 Plan Amendment is not changing as part of this process and is still being implemented.

2.2.9 General Habitat Management Areas

Summary: The BLM should include language clarifying what management actions and allocations would result in the event of an "untrigger" in the Sheeprocks area, since the Proposed Plan no longer maintains GHMA.

Response: The Draft EIS Appendix I does not define adaptive management of the Sheeprocks area in terms of PHMA or GHMA, just in terms of what areas would be managed as PHMA. In the event of a hard trigger, PHMA would align with the boundaries from Alternative B in the 2015 Final EIS. As noted on page I-11, in the event the area's sage-grouse population recovers, "management would revert to the RMPA," meaning PHMA boundaries would return to those identified in the 2015 ARMPA. Management of the areas outside these PHMA boundaries would follow what is in the RMP at that time.

Summary: The data promoting GHMAs for the purposes of gene-flow and connectivity is unsupported by the best-available science and local data.

Response: The BLM reviewed the best available science and finds that while some research identifies the potential for connectivity through GHMA rangewide, based on state-specific data, the foreseeable gene-flow impact of removing GHMA decisions in Utah does not present an obvious risk to species persistence that warrants additional analysis of GHMA beyond that in the draft EIS. The BLM has added an appendix to the Final EIS that summarizes key considerations associated with GHMA areas from the 2015 ARMPA. Of the mapped GHMA in the 2015 ARMPA, the BLM has no jurisdiction over 66% of it, including the areas most likely to provide connectivity between populations (South Slope area of the Uintah population). Other areas of GHMA are on the periphery of populations with extensive geographical or human-barriers impeding movement between populations. For example, approximately 17% of mapped GHMA in the No Action Alternative is in the Sheeprocks population area, less than 23% of which is administered by the BLM. There are no leks in that GHMA. Only 1% of the GHMA has any modeled seasonal habitat. Any natural moving bird would need to cross the Great Salt Lake, West Desert, or Utah Valley and the Wasatch Mountains to connect to another population. The area's sage-grouse population has been augmented by transplants from other populations in the state. In some areas, the presence of GHMA does nothing to maintain connectivity. The Uintah Population Area includes over 55% of the mapped GHMA in the No Action Alternative, less than 38% of which is administered by the BLM. Most of it is in the South Slope Population of West Tavaputs, which is either privately owned or within the Ute Indian Tribe Reservation. The areas on the east and southeast of the Uintah Basin only have four occupied leks and are heavily impacted by existing oil and gas development, with most of the GHMA in this area already exceeding well density that would maintain a long-term population of sage-grouse. As noted in the Draft EIS, given these various circumstances there is no long-term difference in sage-grouse conservation between retaining or removing GHMA.

Summary: Eliminating GHMAs will eliminate habitat connectivity options, and decrease habitat improvement and enhancement opportunities.

Response: The BLM reviewed the best available science and finds that while some research identifies the potential for connectivity through GHMA rangewide, based on state-specific data, the foreseeable gene-flow impact of removing GHMA decisions in Utah does not present an obvious risk to species persistence that warrants additional analysis of GHMA beyond that in the draft EIS. The BLM has added an appendix to the Final EIS that summarizes key considerations associated with GHMA areas from the 2015 ARMPA. Of the mapped GHMA in the 2015 ARMPA, the BLM has no jurisdiction over 66% of it, including the areas most likely to provide connectivity between populations (South Slope area of the Uintah population). Other areas of GHMA are on the periphery of populations with extensive geographical or human-barriers impeding movement between populations. For example, approximately 17% of mapped GHMA in the No Action Alternative is in the Sheeprocks population area, less than 23% of which is administered by the BLM. There are no leks in that GHMA. Only 1% of the GHMA has any modeled seasonal habitat. Any natural moving bird would need to cross the Great Salt Lake, West Desert, or Utah Valley and the Wasatch Mountains to connect to another population. The area's sage-grouse population has been augmented by transplants from other populations in the state. In some areas, the presence of GHMA does nothing to maintain connectivity. The Uintah Population Area includes over 55% of the mapped GHMA in the No Action Alternative, less than 38% of which is administered by the BLM. Most of it is in the South Slope Population of West Tavaputs, which is either privately owned or within the Ute Indian Tribe Reservation. The areas on the east and southeast of the Uintah Basin only have four occupied leks and are heavily impacted by existing oil and gas development, with most of the GHMA in this area already exceeding well density that would maintain a long-term population of sage-grouse. As noted in the Draft EIS, given these various circumstances there is no long-term difference in sage-grouse conservation between retaining or removing GHMA.

Summary: The BLM should clarify the definition of the term "occupied habitat" and clearly indicate that mitigation of former GHMAs is not required.

Response: Despite the managerial and biological problems with GHMA, there are still areas outside of PHMA with existing sage-grouse populations and with mapped seasonal habitats. Given this existing condition, the BLM's Special Status Species policy, described in BLM Manual 6840, would apply. Section .2-C of the manual notes that "the BLM shall manage Bureau sensitive species and their habitats to minimize or eliminate threats affecting the status of the species or to improve the condition of the species habitat." The BLM's planning regulations require that BLM be consistent with state, local and tribal plans so long as they are consistent with the "purposes, policies and programs of Federal laws and regulations…" (43 CFR 1610.3-2). Management of occupied greater sage-grouse habitats outside PHMA has been clarified in the Final EIS has been clarified to be consistent with the BLM's special status species manual, and mitigation policies.

Summary: Seasonal habitats not included in priority areas should receive protection.

Response: As noted in the Draft EIS chapter 3, Figures 3.2, 3.3, and 3.4 "do not reflect occupied seasonal habitats, but areas with vegetation characteristics similar to areas where" collared birds have used elsewhere in the state. Reintroducing birds into currently unoccupied habitats has had a very poor success rate. As such, managing areas with potentially suitable, but unoccupied habitat would be of very limited value in long-term sage-grouse conservation efforts. Therefore, protecting unoccupied potentially suitable habitat outside PHMA would not be consistent with either BLM policy or state plans, and is therefore outside of the scope of this analysis.

Summary: The BLM should maintain GHMAs, as GHMAs contain a significant amount of sage-grouse breeding, summer, and winter habitat.

Response: As noted in the Draft EIS chapter 3, Figures 3.2, 3.3, and 3.4 "do not reflect occupied seasonal habitats, but areas with vegetation characteristics similar to areas where" collared birds have used elsewhere in the state. Reintroducing birds into currently unoccupied habitats has had a very poor success rate. As such, managing areas with potentially suitable, but unoccupied habitat would be of very limited value in long-term sage-grouse conservation efforts. Therefore, protecting unoccupied potentially suitable habitat outside PHMA would not be consistent with either BLM policy or state plans, and is therefore outside of the scope of this analysis.

Summary: Elimination of the GHMAs will have a significant and disproportionate impact on Utah.

Response: As noted in the Draft EIS, nearly 96% of greater sage-grouse populations are in PHMAs. Of the 4% of sage-grouse populations outside PHMA's, most use leks that are not affected by BLM management, such as those on Tribal lands in the South Slope area of the Uinta Mountains, or on private lands in the Morgan/Summit area. Based on this context and intensity of analyzed impacts, significant impacts from eliminating the GHMA classification are not anticipated. No new information has been provided by the commenter that would change this determination. Removing GHMA is being evaluated as a potential way to better align federal management with that of the state, consistent with BLM planning law and regulations.

Summary: The BLM should evaluate the potential value of GHMAs to contribute to sage-grouse conservation prior to elimination of these areas.

Response: The Draft EIS presents information on the best available science and modeling in managing greater sage-grouse in Utah, including management actions for the habitats needed to achieve management goals. With this information, the BLM evaluated the potential impacts of changing management to greater sage-grouse as part of investigating the potential to better align federal management with the state, including retaining or removing GHMA. Most of the GHMA areas are either not administered by the BLM, are isolated patches of habitat surrounded by non-habitat, or are heavily impact by existing development. In all these instances, retaining GHMA would not change the conservation value associated with the conditions currently present on-the-ground.

Summary: The BLM can use GHMAs for compensatory mitigation offsets and restoring degraded habitat.

Response: The BLM gave GHMA a lower priority than PHMA because GHMA included areas that were poor quality, already highly impacted by resource activity, or isolated, thus not likely to provide areas for habitat improvement or connectivity between greater sage-grouse populations. As noted in the Draft EIS chapter 1, PHMA includes high-quality habitat, but also may include "areas with poor or potential habitat" (see page 1-3). PHMA boundaries do not only include high-quality habitat, but were designed to manage entire populations and the various seasonal habitats. This includes areas where habitat could be improved and created, resulting in ample opportunities to create or improve habitat within PHMA, as indicated by treatment objectives from the 2015 ARMPA (see Objective SSS-4).

2.2.10 Exceptions/Variances from Non-Fluid Mineral Greater Sage-Grouse Restrictions

Summary: The BLM should clarify ecological threshold elements in MA-SSS-1.

Response: The Final EIS has been modified with citations to clarify for BLM managers considerations to be taken while applying MA-SSS-1.

Summary: The BLM should close loopholes and remove exceptions.

Response: Under the Proposed Plan, exceptions could be considered only when meeting specific criteria designed to advance the management goals and objectives in the RMPs. BLM's proposed plan balances the risk of uncertainty against the benefits of management flexibility when considering whether to grant an exception. Prior to granting any exception, the authorized officer must identify that the criteria have been met and that the RMP goal for sage-grouse would still be met.

2.2.11 Prioritization

Summary: The removal of mineral leasing prioritization will ensure alignment with the State's Conservation Plan.

Response: As noted in section 1.2 of the Draft EIS, the purpose for this planning effort is to modify greater sage-grouse management "to better align with individual state plans," not to maintain range-wide consistency in sage-grouse management. The State of Utah's sage-grouse plan does not have any similar objective or action prioritizing leasing outside of their Greater Sage-Grouse Management Areas, which is consistent with the Management Alignment Alternative that considered removing the objective that prioritized leasing outside PHMA and GHMA.

Summary: Eliminating the prioritization of mineral leasing requirement in select states conflicts with the BLM's goal of maintaining a rangewide conservation program.

Response: As noted in section 1.2 of the Draft EIS, the purpose for this planning effort is to modify greater sage-grouse management "to better align with individual state plans," not to maintain range-wide consistency in sage-grouse management. The State of Utah's sage-grouse plan does not have any similar objective or action prioritizing leasing outside of their Greater Sage-Grouse Management Areas, which is consistent with the Management Alignment Alternative that considered removing the objective that prioritized leasing outside PHMA and GHMA.

Summary: The BLM should retain the objective to prioritize leasing outside of PHMA and GHMA, using various criteria to minimize impacts to greater sage-grouse.

Response: Appendix C in the BLM's planning handbook (BLM-1601-1) identifies land use planning decisions for fluid minerals. A land use plan is to identify, "consistent with the goals and objectives for natural resources," areas that are 1) open to leasing subject to the terms and conditions of the standard lease form; 2) open to leasing subject to moderate constraints such as seasonal and controlled use restrictions; 3) open to leasing subject to major constraints such as no-surface-occupancy (NSO); 4) closed to leasing. The handbook also notes, similar to language from the Energy Policy and Conservation Act, that "when applying leasing restrictions, the least restrictive constraint to meet the resource protection objective should be used" (BLM-1601-1 Appendix C page 24). The 2015 ARMPA identified PHMA as open to leasing, subject to NSO stipulations. However, the combination of the "open to

leasing subject to NSO" stipulation and the "prioritize leasing outside PHMA and GHMA" has created a situation that has been confusing to the public over whether PHMA is open for leasing or not, and with what stipulations. Additionally, the analysis in the Draft EIS Chapters 3 and 4 shows that prioritization can be eliminated while still maintaining sufficient protections for the greater sage-grouse. Finally, prioritization is an implementation-level tool that the BLM uses to manage staff and budget resources. With the removal of the objective, the plan language is more consistent with BLM planning guidance, as well as more consistent with State, local and Tribal plans.

Summary: The Draft EIS does not consider the impacts of the IMs Before the BLM changes the RMPs, they should change the IMs and implement the plans as currently written.

Response: BLM instruction memorandum are not RMP decisions and are not subject to revision of analysis in this effort.

2.2.12 Land Disposal and Exchange

Summary: It can be difficult under the standards proposed by BLM to determine if land disposal "will compromise" sage-grouse persistence, or have "no direct or indirect impact" on populations. Retaining habitat in federal ownership helps ensure the land will be managed as prescribed in the BLM land use plans, providing certainty.

Response: The BLM's policy for special status species management allows for consideration of land disposals upon determination that such actions are consistent with relevant law and if such actions minimize the likelihood and need for listing under the Endangered Species Act. The BLM's criteria for land tenure decisions establish a sufficiently clear standard to outline the conditions that must be met before any land tenure/disposal may be approved so as to not materially contribute to declines of sage-grouse populations within PHMA.

2.2.13 Burial of Transmission Lines

Summary: Sage-grouse instinctively steer away from tall structures, like above-ground transmission lines. The BLM should allow flexibility in determining whether to bury transmission lines by allowing local managers to evaluate site-scale impacts and minimize sage-grouse habitat impacts at the project level.

Response: Regardless of the proposed changes to MA-LR-2 and MA-LR-5, the remaining management in those actions would be unchanged. Nothing in the Draft EIS would change the fact that PHMA is still an avoidance area for rights of way (MA-LR-2), or that the first order of management for transmission lines must be to avoid PHMA, or locate them in designated corridors. Other minimization methods, including tall structure restrictions (MA-SSS-3F), buffers (MA-SSS-3H), required design features (MA-SSS-3I) would be retained. Additionally, consideration of burial as a minimization tool is still specifically allowed but would no longer be a required under the Management Alignment Alternative, since in some cases requiring burial could result in more impact to sage-grouse habitat than the presence of an above-ground transmission line. These impacts are discussed on page 4-20 of the Draft EIS.

2.2.14 Habitat Management Area Boundaries

Summary: BLM fails to recognize the amount of habitat restoration efforts that have occurred on the ground in relation to the 2015 Final EIS.

Response: BLM recognizes that at a site scale or at a PHMA/population level there are areas that have seen an increase in the availability of greater sage-grouse habitat due to restoration efforts that have occurred on the ground. **Chapter 3**, **Table 3-6** notes that conifer has been removed on over 140,000 acres since 2015, in addition to several other treatment types. However, for the purposes of the 2018 Draft EIS, the extent of those changes when viewed at a landscape level are relatively minor in scope (less than 4% of PHMA/GHMA) and would not significantly affect the results of the analysis completed for the 2018 Draft EIS.

2.2.15 Mitigation

Summary: The full suite of mitigation options, including compensatory mitigation, must be available to conserve sage-grouse habitat and populations necessary to avoid a future listing under the ESA.

Response: BLM's Proposed Plan balances the risk of uncertainty against the benefits of management flexibility when considering mitigation strategies. The BLM is committed to applying and enforcing the mitigation hierarchy of actions to avoid, minimize, and otherwise mitigate impacts to the extent that federal law allows. A principal component of Greater Sage-Grouse management is the implementation of mitigation actions to ameliorate the threats and impacts to Greater Sage-Grouse and its habitats. The Proposed Plan clarifies how voluntary compensatory mitigation should be considered in the management of Greater Sage-Grouse habitat and how BLM will work with each state management agency to implement its compensatory mitigation strategy.

Summary: The net-conservation mitigation standard is an unlawful extension of the BLM's authority pursuant to FLPMA and should be eliminated.

Response: Following extensive review of FLPMA, including existing regulations, orders, policies, and guidance, the BLM has concluded that FLPMA does not explicitly mandate or authorize the BLM to require public land users to implement compensatory mitigation to offset environmental effects beyond the proponents level of impact. The Proposed Plan seeks to clarify that the mitigation standard applies not at the project level, but rather as a planning-level goal and objective unless specifically required under a state management authority. The BLM is pursuing agreements with the States of Colorado, Idaho, Nevada, Oregon, Utah and Wyoming to clarify how BLM, project proponents, and state management agencies will collaborate to implement a State's compensatory mitigation plan.

Summary: NEPA does not authorize or require mitigation of impacts.

Response: BLM's Proposed Plan balances the risk of uncertainty against the benefits of management flexibility when considering mitigation strategies. Following extensive review of FLPMA, including existing regulations, orders, policies, and guidance, the BLM has concluded 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 the public lands (IM 2018-093, *Compensatory Mitigation*, July 24, 2018). However, the BLM is committed to applying and enforcing the mitigation hierarchy of actions to avoid, minimize, and otherwise mitigate impacts to the extent that federal law allows. A principal component of Greater Sage-Grouse management is the implementation of mitigation actions to ameliorate the threats and impacts to Greater Sage-Grouse and its habitats. The Proposed Plan clarifies how voluntary compensatory mitigation should be considered in the management of

Greater Sage-Grouse habitat and how BLM will work with each state management agency to implement its compensatory mitigation strategy.

Summary: The BLM cannot rely on Manual 6840 to impose mitigation standards.

Response: BLM's Proposed Plan balances the risk of uncertainty against the benefits of management flexibility when considering mitigation strategies. Following extensive review of FLPMA, including existing regulations, orders, policies, and guidance, the BLM has concluded 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 the public lands (IM 2018-093, *Compensatory Mitigation*, July 24, 2018). However, the BLM is committed to applying and enforcing the mitigation hierarchy of actions to avoid, minimize, and otherwise mitigate impacts to the extent that federal law allows. A principal component of Greater Sage-Grouse management is the implementation of mitigation actions to ameliorate the threats and impacts to Greater Sage-Grouse and its habitats. The Proposed Plan clarifies how voluntary compensatory mitigation should be considered in the management of Greater Sage-Grouse habitat and how BLM will work with each state management agency to implement its compensatory mitigation strategy. The BLM's Special Status Species Management manual describes the agency's policy for management sensitive species as follows: "Bureau sensitive species will be managed consistent with species and habitat management objectives in land use and implementation plans to promote their conservation and to minimize the likelihood and need for listing under the ESA" (BLM-M-6840, section .06 Policy). The manual later notes specifically that "the BLM shall manage Bureau sensitive species and their habitats to minimize or eliminate threats affecting the status of the species or to improve the condition of the species habitat" (Section .2 Administration of Bureau Sensitive Species, subsection C).

Summary: The BLM should maintain the net conservation gain standard; a no net loss of habitat only prevents additional habitat loss and is not adequate to achieve long-term conservation of sage-grouse.

Response: The net conservation gain mitigation standard was analyzed as part of the No Action Alternative in the Draft EIS. Following extensive review of FLPMA, including existing regulations, orders, policies, and guidance, the BLM has concluded that FLPMA does not explicitly mandate or authorize the BLM to require public land users to implement compensatory mitigation to offset environmental effects beyond the proponents level of impact. The Proposed Plan seeks to clarify that the mitigation standard applies not at the project level, but rather as a planning-level goal and objective unless specifically required under a state management authority. The BLM is pursuing agreements with the States of Colorado, Idaho, Nevada, Oregon, Utah and Wyoming to clarify how BLM, project proponents, and state management agencies will collaborate to implement a State's compensatory mitigation plan.

Summary: The EIS should emphasize management of easily controllable land uses, such as livestock grazing.

Response: In managing for sensitive species such as greater sage-grouse, the BLM has coordinated with the State of Utah, who has managerial jurisdiction over the species, to address the range of threats affecting the species. Rather than "emphasize management of easily controllable land uses" the BLM has focused on ameliorating identified threats to the species and applying pertinent management to "all future resource management authorizations and actions," consistent with 43 CFR 1610.5-3(a).

Summary: The BLM has the necessary authority to apply the entire mitigation hierarchy, including requiring compensatory mitigation pursuant to FLPMA, the authority to promulgate regulations, relevant case-law, and the specific authorities applicable to land use plans and project-specific authorizations.

Response: BLM's Proposed Plan balances the risk of uncertainty against the benefits of management flexibility when considering mitigation strategies. Following extensive review of FLPMA, including existing regulations, orders, policies, and guidance, the BLM has concluded 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 the public lands (IM 2018-093, *Compensatory Mitigation*, July 24, 2018). However, the BLM is committed to applying and enforcing the mitigation hierarchy of actions to avoid, minimize, and otherwise mitigate impacts to the extent that federal law allows. A principal component of Greater Sage-Grouse management is the implementation of mitigation actions to ameliorate the threats and impacts to Greater Sage-Grouse and its habitats. The Proposed Plan clarifies how voluntary compensatory mitigation should be considered in the management of Greater Sage-Grouse habitat and how BLM will work with each state management agency to implement its compensatory mitigation strategy.

Summary: The BLM should allow for public comment regarding consideration and implementation of mitigation with respect to sage-grouse, including alternative approaches to requiring compensatory mitigation in BLM land use plans.

Response: Public input on implementing mitigation, "including alternative approaches to requiring compensatory mitigation in BLM land use plans," was explicitly requested as part of the public comment period on the 2018 Draft EIS (see page ES-8, Section ES.4.2, last sentence of second paragraph). The Proposed Plan clarifies how voluntary compensatory mitigation should be considered in the management of Greater Sage-Grouse habitat and how BLM will work with each state management agency and implement its compensatory mitigation strategy. Because this clarification simply aligns the Proposed Plan Amendment with BLM policy and with the scope of compensatory mitigation authority expressly provided by FLPMA, and because any analysis of compensatory mitigation relating to future projects would necessarily be fact-specific and evaluated in project-specific NEPA documents, there is limited value in attempting to do so at the level of land use planning.

Summary: Even if the net conservation gain is not continued as the standard, the BLM should still maintain a "no net loss" mitigation standard.

Response: Compensatory mitigation would be applied consistent with BLM policy, when it is proffered by the proponent on a voluntary basis, or as required by the State of Utah. These determinations would be made on a project-specific basis in coordination with the State of Utah.

Summary: The BLM's mitigation strategy should be consistent with the State of Utah's mitigation plans.

Response: The BLM is still required to follow the applicable rules and regulations that apply to federal land management. The BLM must be consistent with federal law and regulation, as well as current policy, as described in Chapter 1 of the Draft EIS and Final EIS. Compensatory mitigation would be applied consistent with BLM policy, when it is proffered by the proponent on a voluntary basis, or as required by the State of Utah. These determinations would be made on a project-specific basis in coordination with the State of Utah.

Summary: To the extent the BLM relies on the State of Utah's sage-grouse mitigation policy, the BLM should ensure that the resulting standards ensure it has the authority to incorporate, implement, and enforce state sage-grouse mitigation programs that meet a recognized set of principles.

Response: Compensatory mitigation would be applied consistent with BLM policy, when it is proffered by the proponent on a voluntary basis, or as required by the State of Utah. These determinations would be made on a project-specific basis in coordination with the State of Utah.

Summary: The BLM should evaluate the "substantial changes" to the Management Alignment Alternative required by IM 2018-093 in a supplemental EIS, specifically with regards to mitigation.

Response: Public input on implementing mitigation, "including alternative approaches to requiring compensatory mitigation in BLM land use plans," was explicitly requested as part of the public comment period on the 2018 Draft EIS (see page ES-8, Section ES.4.2, last sentence of second paragraph). The Proposed Plan clarifies how voluntary compensatory mitigation should be considered in the management of Greater Sage-Grouse habitat and how BLM will work with each state management agency to implement its compensatory mitigation strategy. Because this clarification simply aligns the Proposed Plan Amendment with BLM policy and with the scope of compensatory mitigation authority expressly provided by FLPMA, and because any analysis of compensatory mitigation relating to future projects would necessarily be fact-specific and evaluated in project-specific NEPA documents, there is limited value in attempting to do so at the level of land use planning.

Summary: The BLM should clarify how the IM allows the continuance of the BLM's commitment to the states in terms of applying state mitigation plans.

Response: The EIS analyzes the effects of the alternatives considered, not the effects of the BLM's Instruction Memorandum.

Summary: The Draft EIS does not assess whether the revised mitigation standard would result in a net conservation gain to sage-grouse.

Response: Following extensive review of FLPMA, including existing regulations, orders, policies, and guidance, the BLM has concluded that FLPMA does not explicitly mandate or authorize the BLM to require public land users to implement compensatory mitigation to offset environmental effects beyond the proponents level of impact. The Proposed Plan seeks to clarify that the mitigation standard applies not at the project level, but rather as a planning-level goal and objective unless specifically required under a state management authority. The BLM is pursuing agreements with the States of Colorado, Idaho, Nevada, Oregon, Utah and Wyoming to clarify how BLM, project proponents, and state management agencies will collaborate to implement a State's compensatory mitigation plan. There is no law, regulation or policy that requires the BLM achieve a net conservation gain in Greater Sage-Grouse habitat. However, the Draft EIS on page 1-9 clearly notes that the principles of the Proposed Plan's mitigation standard are consistent with the 2015 Approved Plan, and as such changing "net conservation gain" to "improve the condition of greater sage-grouse habitat" does not require new analysis.

Summary: The compensatory mitigation requirements in PHMA habitat should be consistent with existing secretarial orders.

Response: BLM's Proposed Plan balances the risk of uncertainty against the benefits of management flexibility when considering mitigation strategies. The BLM is committed to applying and enforcing the mitigation hierarchy of actions to avoid, minimize and mitigate impacts to the extent that federal law allows. A principal component of Greater Sage-Grouse management is the implementation of mitigation actions to ameliorate the threats and impacts to Greater Sage-Grouse and its habitats. The Proposed Plan clarifies how voluntary compensatory mitigation should be considered in the management of Greater Sage-Grouse habitat and how BLM will work with each state management agency to implement its compensatory mitigation strategy.

Summary: The RMPA/EIS currently does not provide clarification regarding the "amount" of mitigation required on federal land for disturbance in PHMA.

Response: As noted in the 2018 Draft EIS, page 2-33, the BLM and the State of Utah would develop a Mitigation Strategy to guide the application of the mitigation approach and hierarchy. This has been clarified in the 2018 Final EIS in Section 2.6, where it notes that the BLM and the State of Utah will coordinate to develop a memorandum of agreement to guide the mitigation hierarchy and compensatory mitigation actions for future project authorizations in Greater Sage-Grouse habitat on BLM-administered lands.

Summary: The mitigation requirement ratio is arbitrary and unconstitutional. The BLM should instead use a Habitat Quantification Tool.

Response: The Final EIS does not include a mitigation ratio, or even a requirement for mitigation. To the extent a project proponent voluntarily engages in compensatory mitigation, the BLM would coordinate on a project-specific basis with the State of Utah. As noted in the 2018 Draft EIS, page 2-33, the BLM and the State of Utah would develop a Mitigation Strategy to guide the application of the mitigation approach and hierarchy. This has been clarified in the 2018 Final EIS in Section 2.6, where it notes that the BLM and the State of Utah will coordinate to develop a memorandum of agreement to guide the mitigation hierarchy and compensatory mitigation actions for future project authorizations in Greater Sage-Grouse habitat on BLM-administered lands.

Summary: The State and BLM must meet prior to finalizing this EIS to identify the proper Mitigation Strategy moving forward, in-light of IM No. 2018-093.

Response: As noted in the 2018 Draft EIS, page 2-33, the BLM and the State of Utah would develop a Mitigation Strategy to guide the application of the mitigation approach and hierarchy. This has been clarified in the 2018 Final EIS in Section 2.6, where it notes that the BLM and the State of Utah will coordinate to develop a memorandum of agreement to guide the mitigation hierarchy and compensatory mitigation actions for future project authorizations in Greater Sage-Grouse habitat on BLM-administered lands.

Summary: Commenters requested clarification regarding how the BLM should consider and implement mitigation with respect to the sage-grouse, including alternative approaches to requiring compensatory mitigation in BLM land use plans.

Response: The BLM is pursuing agreements with the States of Colorado, Idaho, Nevada, Oregon, Utah and Wyoming to clarify how BLM, project proponents, and state management agencies will collaborate

to implement a State's compensatory mitigation plan. The BLM will defer to a state methodology for habitat quantification if such a tool exists and incorporate the state's assessment into the appropriate NEPA documentation. The Proposed Plan Amendment clarifies that 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. The Proposed Plan Amendment further clarifies the application of the mitigation standard as a planning-level goal and objective for Greater Sage-Grouse habitat conservation. BLM commits to cooperating with the State to analyze applicant-proffered or state-imposed compensatory mitigation to offset residual impacts. BLM may then authorize such actions consistent with NEPA analysis and the governing RMP.

Summary: Mitigation provisions in the 2015 plans were relied on in the USFWS 2015 finding. Mitigation should follow consistent principles. Mitigation could benefit from different strategies in different states. Mitigation provides stronger, faster decisions on project authorizations.

Response: BLM's Proposed Plan balances the risk of uncertainty against the benefits of management flexibility when considering mitigation strategies. The BLM is committed to applying and enforcing the mitigation hierarchy of actions to avoid, minimize, and otherwise mitigate impacts to the extent that federal law allows. A principal component of Greater Sage-Grouse management is the implementation of mitigation actions to ameliorate the threats and impacts to Greater Sage-Grouse and its habitats. The Proposed Plan clarifies how voluntary compensatory mitigation should be considered in the management of Greater Sage-Grouse habitat and how BLM will work with each state management agency to implement its compensatory mitigation strategy.

2.2.16 Lek Buffers

Summary: The Draft EIS fails to address the actions available to address lek persistence or how lek persistence will be measured.

Response: The Draft EIS evaluates the difference between current federal management and modifications to management to align with the State of Utah's management. Unless the "actions available to address lek persistence" simultaneously improve alignment with the State of Utah's management, then they are outside the scope of this planning effort. However, **Appendix B** includes several examples of actions that could address impacts to lek persistence. In relation to how lek persistence is measured, the monitoring is simple and already conducted. If the lek has impacts to the degree is no longer occupied, is would have ceased to persist.

Summary: The BLM should use a more criteria-driven, site-specific approach to determining lek buffer distances.

Response: The BLM in coordination with the State of Utah, has identified and incorporated local science based data into the 2018 Draft EIS to more accurately reflect Greater Sage-Grouse lek buffer distances unique to Utah. Beyond this, **Appendix B** clearly describes that local data and landscape features should be considered to decrease or increase buffer distances.

2.2.17 Prioritization of Grazing Permits

Summary: The BLM should clarify the purposes for removing livestock grazing decisions from the Alternative in order to ensure the action is supported by the Purpose and Need statement.

Response: The management actions that were removed from the livestock grazing section are clarifications, not management modifications. They are not motivated by consistency with state plans. The grazing decisions removed from the 2015 management prescriptions under the 2018 Management Alignment Alternative are those that are duplicative with agency regulations, policies, or management actions. Consequently, removing the actions does not change whether they are implemented (see page 1-9).

2.2.18 Water Developments for Livestock

Summary: The BLM should clarify the words "critical areas" in order to avoid limiting or eliminating water development within a PHMA.

Response: The Final EIS has been revised to remove the example language from the action, therefore the phrase "critical areas" is no longer in the action.

Summary: The BLM should modify the Draft EIS to allow for the authorization of new water developments in PHMA that have a neutral or beneficial effect to sage-grouse habitat.

Response: MA-LG-10 and MA-LG-11 have been merged into the following language in the Final EIS: In PHMA, manage water developments to have a neutral effect or a beneficial effect to Greater Sage-Grouse habitat.

Summary: The LUPA must clarify that existing water rights will not be impaired or taken.

Response: No existing action in the Draft EIS has reference to infringing on existing water rights. Compliance with State water Law is not an RMP decision but a State Law requirement.

2.2.19 Role of States in Transportation and Travel Management Planning

Summary: The BLM should clarify that the State's and counties' rights-of-ways are preserved and will remain open for public use regardless of any travel management decision, unless the State or counties decide otherwise.

Response: The adjudication or management of RS 2477 assertions is outside the scope of this planning process. This amendment does not adjudicate, analyze, or otherwise determine the validity of the claimed ROWs or the responsibilities for route management or maintenance.

Summary: The BLM should include language expressly preserving the State's and counties' ability to manage and maintain roads within PHMA.

Response: The adjudication or management of RS 2477 assertions is outside the scope of this planning process. This amendment does not adjudicate, analyze, or otherwise determine the validity of the claimed ROWs or the responsibilities for route management or maintenance.

2.2.20 Range of Alternatives

Summary: The Draft EIS did not consider any alternative that is completely consistent with the county RMP.

Response: As noted in section 1.2 of the Draft EIS, the purpose and need for this effort is to modify greater sage-grouse management "to better align with individual state plans…" BLM's planning regulations note that "where State and local government policies, plans, and programs differ, those of the higher authority will normally be followed" (43 CFR 1610.3-2). Additionally, sections 2.2.3 and 2.2.4 of the Draft EIS address alternatives that were considered but were dismissed from detailed analysis, including county sage-grouse management plans.

Summary: The range of alternatives is insufficient and does not meet the BLM's obligations pursuant to NEPA.

Response: The range is adequate to address the purpose and need for these amendments. And by incorporating the 2015 plans by reference, BLM avails itself of a larger range of management options previously analyzed in the 2015 EIS. Further, section 2.2 and section 1.5.3 of the Draft EIS describes a number of alternatives and issues identified during scoping that the agency determined not to carry forward.

Summary: Because the 2018 Draft EIS states a different Purpose and Need compared to the 2015 EIS, the BLM must necessarily consider and analyze a new range of alternatives to meet that new Purpose and Need.

Response: While the purpose of the 2018 planning effort is different than that of the 2015 effort, the alternatives considered in the 2015 Final EIS, which are incorporated by reference, have informed the range of alternatives analyzed in detail in the 2018 Draft EIS. The range of alternatives considered in detail is adequate to address the purpose and need for these amendments.

Summary: The BLM should also have considered alternatives to complete additional analysis of key protective provisions that it is proposing to eliminate through the Draft EISs: net conservation gain and SFAs.

Response: As noted in the Draft EIS section 2.2.1, this planning process does not revisit every issue evaluated in 2015, but incorporates the entire range of alternatives evaluated through the 2015 planning process by reference. This includes consideration and analysis of a variety of restrictive provisions in greater sage-grouse habitat.

Summary: The BLM should evaluate the impacts of the SFAs without the previously-proposed withdrawal and how application can be better coordinated with the states.

Response: The 2015 Final EIS considered an alternative that included the SFAs with the corresponding management that recommended a withdrawal, as well as an alternative that considered no such designation or recommended withdrawal. Similarly, the 2018 Draft EIS considered similar alternatives. Considering a separate alternative that retains the SFA but omits the withdrawal recommendation would be substantially similar in effect to the alternative without an SFA, since it is the management prescription that results in the effect, not the mere presence of an area called an SFA. As such, the Draft EIS has considered alternatives that include and exclude the proposed mineral withdrawal and disclosed the impacts of each.

Summary: Because the 2018 Draft EISs are not of "lesser scope" than the 2015 EISs, NEPA prohibits the BLM from "tiering" to the 2015 EISs.

Response: BLM is using incorporation by reference to streamline our analysis consistent with Administrative priorities, in compliance with 40 CFR 1502.21. Incorporation of the 2015 Final EIS by reference is allowable under regulations and is appropriate in this circumstance because the purpose of this action builds upon the goals and objectives of the 2015 EIS. Further, the CEQ 40 Questions, Question 24c, states that, "Tiering is a procedure which allows an agency to avoid duplication of paperwork through the incorporation by reference of the general discussions and relevant specific discussions from an environmental impact statement of broader scope into one of lesser scope or vice versa." The BLM has summarized and referenced applicable aspects of the 2015 EIS throughout the 2018 EIS, but especially in **Chapters 2** and **4**.

2.2.21 Data and Science

Summary: The USGS report on Page 1-5 does not accurately reflect site-specific conditions in Garfield County and does not rely on relevant science. When site-specific analysis is conducted in Garfield County, the BLM should use information developed by the State of Utah and its experts.

Response: Although the referenced data may not have been directly incorporated into the USGS report, BLM has made a concerted effort in coordination with the State of Utah to incorporate all local based research and data into Utah's 2018 Draft EIS in an effort to better align with the State's plan.

Summary: Excepting [sic] broad generalized overviews, the BLM's mapping in the Draft EIS is insufficient.

Response: As described in **Appendix K**, habitat can be mapped at multiple scales. For RMP-level decision-making, the BLM uses first and second order mapping, which is consistent with the scale and level of detail presented in the 2015 Final EIS and 2018 Draft EIS. As implementation planning proceeds, mapping at the third and, when appropriate, fourth order will occur to reflect conditions at a site specific level. The 2018 Draft EIS also clearly notes that there are opportunities to refine boundaries based on site specific surveys and analysis (see MA-SSS-1 on page 2-31 and 2-32).

Summary: The Draft EIS's disturbance calculation methods are incorrect.

Response: The disturbance cap is not the only tool the BLM uses to manage threats to greater sage-grouse habitat. The commenters recommendation of a "net disturbance cap" that balances improvements from land treatments with habitat loss from disturbance is very similar to the approach proposed in the Management Alignment Alternative. However, the BLM has separate RMP management actions (see Objective SSS-4 and MA-SSS-3B). The commenter's suggestion to start from a specific baseline for disturbance would create an arbitrary starting date from which to count new disturbance, which would overlook the effect that existing disturbance has on how sage-grouse use the landscape. Extensive research has indicated that greater sage-grouse are sensitive to disturbances (see 2015 Final EIS impact analysis for Greater Sage-Grouse for extensive descriptions). The variable is the presence of disturbance, not the age of disturbance. As such, there is no specific date for when disturbance begins counting or stops counting. Disturbance inventories include existing disturbance regardless of when it was generated. Moreover, the disturbance inventory is not intended to show all areas disturbed throughout history, but rather areas that are currently disturbed and have not yet been restored.

Impacts from the disturbance did not begin when the 2015 plans were finalized. As such, in order to meet the goal of maintaining and/or increasing Greater Sage-Grouse abundance and distribution, the existing condition of disturbance on the landscape must be taken into account when considering future actions. As far as accounting for relative habitat value, the BLM's plan already accounts for habitat of variable value through Objective SSS-3 and Objective VEG-1. The difference is that the BLM doesn't directly merge habitat value with the disturbance cap management action, since the direct impact from a disturbance would not vary based on habitat condition. Rather, the value of the affected habitat is related to whether or not it is meeting the seasonal habitat objectives. The BLM has developed a process to calculate disturbance that takes into account its effect on sage-grouse, with a separate tool that accounts for the presence and quality of habitat within PHMA.

Summary: The BLM's selection of the number of energy and mining facilities per acre is arbitrary and capricious. The number is inconsistent with Garfield County plans, and the BLM should consider revising it.

Response: The density cap that is identified in the 2015 Final EIS and brought forward into the 2018 Draft EIS is not arbitrary and capricious but is based on scientific research (see 2015 Final EIS pages 4-24 and 4-104 which is incorporated into the 2018 Draft EIS by reference). The commenter has not provided any literature applicable to the Garfield County area that refutes the findings of the peer-reviewed science used in the 2015 Final EIS.

Summary: The elevation ranges for various categories on page 2-13 fails to accurately describe site-specific habitat conditions. The BLM should work with Garfield County to better refine habitat objectives for sage-grouse in relevant PHMAs.

Response: BLM's habitat objectives reflect the best available information defining habitat conditions that sage-grouse preferentially select. The USGS report confirms BLM's assumption that such understanding may change over time. BLM has developed the flexibility in the plans to modify seasonal habitat objectives based on new science or site-specific information.

Summary: The BLM should disclose uncertainties associated with its conclusion that existing habitat conditions in Utah are not substantially different from 2015.

Response: BLM recognizes that at a site scale or at a PHMA/population level there are areas that have seen an increase in the availability of greater sage-grouse habitat due to restoration efforts that have occurred on the ground. **Chapter 3**, **Table 3-6** notes that conifer has been removed on over 140,000 acres since 2015, in addition to several other treatment types. However, for the purposes of the 2018 Draft EIS, the extent of those changes when viewed at a landscape level are relatively minor in scope (less than 4% of PHMA/GHMA) and would not significantly affect the results of the analysis completed for the 2018 Draft EIS.

Summary: The BLM should use the best and most recent available data in its analyses.

Response: During the preparation of the 2018 Draft EIS, BLM did consider the findings identified in the 2017 USGS report, as well as recent data, both locally and rangewide, to corroborate the analysis conducted in both the 2015 Final EIS and 2018 Draft EIS and to support the management actions identified in the 2018 Draft EIS.

Summary: The BLM should assess herbaceous and shrub habitat characteristics as they relate to sage-grouse habitat needs.

Response: The 2018 Draft EIS has incorporated research and science from local universities to identify and assess herbaceous and shrub habitat objectives for Greater Sage-Grouse habitat (See page 2-13 of the 2018 Draft EIS)**.**

Summary: The plan does not present the results of past HAF monitoring.

Response: The use of HAF assessments are outside the scope of this planning effort, as the appropriate use of the HAF should be conducted at the site specific scale. The information from the HAF assessments would not inform the RMP-level of decision-making, since the assessments are an evaluation of how areas are achieving the habitat objectives from the RMP. The HAF, then, is a tool for determining plan conformance, not to inform RMP decision-making.

Summary: The Draft EIS and the 2015 land use plan amendment lacks scientific verification of the success of vegetation removal treatments.

Response: BLM considered the availability of data from all sources, adequacy of existing data, data gaps, and the type of data necessary to support informed management decisions at the land-use plan level. BLM has used sufficient scientific research to support the management actions in the 2015 Final EIS and 2018 Draft EIS.

Summary: The BLM should include indirect evidence suggesting that excessive grazing during breeding season may have a negative impact on sage-grouse populations.

Response: BLM considered the availability of data from all sources, adequacy of existing data, data gaps, and the type of data necessary to support informed management decisions at the land-use plan level.

Summary: The BLM should reexamine the research cited in the 2015 Plan, specifically the NTT Report, COT Report, and Monograph.

Response: The purpose of this amendment is to better align with the State's management plans and build upon the efforts that were undertaken in the 2015 Final EIS. BLM considered the availability of data from all sources, adequacy of existing data, data gaps, and the type of data necessary to support informed management decisions at the land-use plan level. BLM has used sufficient scientific research to support the management actions in the 2015 Final EIS and 2018 Draft EIS.

Summary: The BLM should address the variation in **Table 2-2** based on the best available science in all states.

Response: BLM has incorporated locally based research from Utah State University to identify Greater Sage-Grouse habitat objectives that are specific to Utah. The updated numbers are based on extensive data documenting vegetation conditions where greater sage-grouse are actually using the landscape for various seasonal habitats. The habitat objectives table references levels several times to an objective should be applied "where appropriate, relative to ecological site potential" to incorporate flexibility in the prescription of the objectives that take into account the local conditions and site variability.

Summary: Removing protections provided by SFAs contradicts the best available science.

Response: The Draft EIS considers two alternatives: The No Action Alternative, which analyzes impacts if the SFA's remain in the plan, and the Management Alignment Alternative that does not include SFA's. The analysis of impacts of regulatory changes to sage-grouse in Chapter 4 of the EIS describes that management actions in the Management Alignment Alternative would protect the species, and obtain conservation goals, in the absence of SFAs (see Draft EIS page 4-12). Based on this analysis, the BLM has determined that SFA designations and associated management provide a redundant layer of resource protection and land use prioritization within PHMA and is acting within its discretion to remove SFA designation. Further, the BLM canceled the proposed withdrawal of SFAs through a publication in the Federal Register on October 11, 2017 (82 Fed. Reg. 47,248) and findings in the Sagebrush Focal Area Draft EIS noted that there was broadly low potential for locatable minerals within the recommended withdrawal area, so the withdrawal would not have provided additional protection to Greater Sage-Grouse.

Summary: The Draft EIS cites new information from a USGS report that synthesized the best available greater sage-grouse science from 2015-2017, but does not specify how the new science supports each of the changes in the proposed action.

Response: The findings within the USGS report were not meant to drive change in management actions identified in the 2018 Draft EIS. Instead, it was developed to determine if the original analyses in the 2015 Final EIS were still applicable and could be incorporated into the 2018 Draft EIS by reference.

Summary: The BLM's density limitation of one facility per 640 acre lacks scientific support.

Response: The density cap that is identified in the 2015 Final EIS and brought forward into the 2018 Draft EIS is based on scientific research that was already considered in the 2015 Final EIS (see 2015 Final EIS pages 4-24 and 4-104 which is incorporated into the 2018 Draft EIS by reference). Research indicated that as the density of oil and gas facilities increased above one per section then attendance at proximal leks decreased.

Summary: Best available science does not support a three or five percent disturbance cap.

Response: The disturbance cap that is identified in the 2015 Final EIS and brought forward into the 2018 Draft EIS is based on scientific research that was already considered in the 2015 Final EIS (see 2015 Final EIS page 4-10 which is incorporated into the 2018 Draft EIS by reference). Analyzing western Greater Sage-Grouse populations and factors related to occupied versus extirpated leks, Knick and others (2013) found that almost all occupied leks (99 percent) in the western portion of the range had less than 3 percent disturbance within 3.1 miles of the lek. Similarly, range-wide lek trend analyses suggest that the aggregated human influences on the landscape are associated with negative lek count trends (Johnson et al. 2011) and population persistence (Aldridge et al. 2008, Wisdom et al. 2011).

Summary: The BLM should require that local maps be used unless more refined data is available. The BLM should require that maps reflect the most accurate data available.

Response: As described in **Appendix K**, habitat can be mapped at multiple scales. For RMP-level decision-making, the BLM uses first and second order mapping, which is consistent with the scale and

level of detail presented in the 2015 Final EIS and 2018 Draft EIS. This scale of mapping is consistent with the level of mapping the State of Utah has applied in designating its Greater Sage-Grouse Management Areas. As implementation planning proceeds, mapping at the third and, when appropriate, fourth order will occur to reflect conditions at a site specific level. The 2018 Draft EIS also clearly notes that there are opportunities to refine boundaries based on site specific surveys and analysis (see MA-SSS-1 on page 2-31 and 2-32).

Summary: Commenters requested further explanation and clarification regarding the USGS data referenced in **Chapter 3**.

Response: The findings within the USGS report were not meant to drive change in management actions identified in the 2018 Draft EIS. Instead, it was developed to determine if the original analyses in the 2015 Final EIS were still applicable and could be incorporated into the 2018 Draft EIS by reference.

Summary: Commenters offered scientific literature concluding that discrete anthropogenic activities present in sagebrush have negative effects on sage-grouse.

Response: Literature concluding that discrete anthropogenic activities impact greater sage-grouse is not different than the literature and analysis conclusions from the 2015 Final EIS. Adding more citations in support of analysis conclusions already present is unnecessary, moving the EIS to be more encyclopedic, which is inconsistent with NEPA regulations. The BLM considered the availability of data from all sources, adequacy of existing data, data gaps, and the type of data necessary to support informed management decisions at the land-use plan level. BLM has used sufficient scientific research to support the management actions in the 2015 Final EIS and 2018 Draft EIS.

2.2.22 Assumptions and Methods:

Summary: The analysis methods are inaccurate for lands in specific locations in Utah.

Response: As noted in **Chapter 1** the purpose of the planning effort is to increase alignment of sage-grouse management with that of the State of Utah. As such, the planning area includes all of the State of Utah. The alternatives and corresponding analysis was conducted within that context. Several locations throughout the Draft EIS specifically note that management or impacts could vary based on site-specific conditions, which would be determined at the project scale and be based on site-specific information.

Summary: The BLM incorrectly based its analysis of sage-grouse population changes on methods that misrepresent sage-grouse population trends.

Response: Greater sage-grouse population information in the Draft EIS is based on actual lek counts. The regression trends spanned 20 years to include two natural oscillation cycles and started recently enough to only include lek counts from years after lek counting methods had become standardized (see 2015 Final EIS section 3.3.3). This approach allows for comparing a long-term population trend rather than focusing on sharp increases or decreases associated with natural oscillations. It also avoids comparing early and modern lek counts that used different methods. Further, efforts to find new leks have increased over time, resulting in the identification of more, but often smaller leks that previously evaded detection due to their smaller size. Using a total male trend avoids the bias that such efforts would have on a males per lek trend. Finally, the methodologies for monitoring population trends in **Appendix I** are specifically intended for use in the adaptive management process to track where

populations are in relation to adaptive management triggers. The monitoring appendix, which the 2018 Draft EIS does not propose to change, notes clearly that "state wildlife management agencies are responsible for monitoring [greater sage-grouse] populations. Consistent with their jurisdiction and expertise over wildlife, population information in the Draft EIS was developed in coordination with the State of Utah Division of Wildlife Resources.

Summary: The BLM's reliance on the NTT, COT, and the Monograph fails to address the significant data quality and technical errors, omissions, actual and potential conflicts of interest, and incorrect conclusions regarding sage-grouse status and habitat management.

Response: The purpose of this planning effort is not to reevaluate the recommendations from the 2011 NTT Report, COT Report, or even the actions from the 2015 Plan Amendment. As required by Secretarial Order 3353 and as described in Chapter 1 of the Draft EIS, the purpose of this planning effort is to modify "the approach to Greater Sage-Grouse management in existing land use plans to better align with individual state plans." As such, reevaluating recommendations from the NTT report is outside the scope of this planning effort. However, the information presented in the NTT Report and COT Report, used in the 2015 RMP Amendments, and incorporated by reference into this planning effort is considered by the BLM to include reliable information. The BLM uses the best available science to prepare and analyze the RMP Amendments. The National Technical Team (NTT) was formed as an independent, science-based team to ensure that the best information about how to manage sage-grouse habitat is reviewed, evaluated, and provided to the BLM (and Forest Service) in the planning process. The NTT Report was produced in December 2011 and recommended science-based conservation measures to promote sustainable sage-grouse habitat. However, neither the NTT Report nor the COT Report were the sole source of management decisions for the range or alternatives or Approved RMP Amendments in the 2015 plan amendments and it has also been supplemented in this current effort by the USGS Science Review.

Summary: Monitoring schedules should be set and prioritized by the local office level on an annual or periodic bases based upon staff-levels and budgets.

Response: The BLM would apply the actions and monitoring identified in the 2015 Approved RMP Amendment Appendix D to the extent possible, conditional on staffing and budget. However, allocation of staff and budget is not an RMP action.

Summary: The Environmental Consequences Chapter uses the terms minor, little, low and minimal extensively to characterize impacts when that data could instead be used to quantify the anticipated impact.

Response: The analysis in the Final EIS has been revised to minimize the use of qualitative descriptors of intensity.

Summary: It is not certain that implementation level actions necessary to execute the LUP-level decisions in the Utah Draft EIS would be subject to further environmental review.

Response: Implementation level actions will be subject to further NEPA review. NEPA requires agencies to consider the effects of all major federal actions. While the necessary level of NEPA analysis may vary (e.g., environmental impact statement, environmental assessment, categorical exclusion, or

determination of NEPA adequacy), the appropriate level of analysis will be driven by project- and site-specific conditions. However, additional consideration of impacts is required in each instance.

Summary: While the BLM assumes that impacts would primarily occur on public land, recent scientific research indicates the likelihood of impacts to adjoining private or public lands owned by agencies other than the BLM.

Response: The area to which the actions considered in the Draft EIS would apply is limited to BLM-administered surface and mineral estates. However, the analysis never concludes that impacts, whether indirect or cumulative, would stop at an administrative boundary.

Summary: The Utah Draft EIS fails to provide a summary of existing scientific evidence relevant to evaluating reasonably foreseeable significant adverse impacts and the BLM's evaluation of such impacts. CEQ regulations require, where data is unavailable, a summary of existing scientific evidence relevant to evaluating reasonably foreseeable significant adverse impacts and the agency's evaluation of such impacts.

Response: The Council on Environmental Quality's NEPA regulations require that if there is missing or incomplete information, a statement of relevance to evaluating impacts should be made. The Draft EIS notes that, while some information is missing and therefore impacts may not be able to be quantified, impacts could still be projected in qualitative terms. As such, obtaining the missing information is not required to reasonably analyze effects.

Summary: The Draft EIS does not include a stand-alone effects analysis for the Proposed Action's combined components and instead relies primarily on the effects analysis in the 2015 EIS.

Response: The analysis in the EIS appropriately focuses on scope of changes associated with the purpose and need and the corresponding issues that were identified during the scoping process conducted in fall of 2017. The 2015 Final EIS did analyze the effects of some of the proposed changes in its range of alternatives. Where such analysis exists, it was incorporated by reference in **Table 4-2**. Where actions in the 2018 Draft EIS were different than those considered in the 2015 Final EIS, new analysis was conducted, as presented in Section 4.6.1. No new analysis was conducted for actions that were not being proposed to change. The overall impacts to greater sage-grouse from the proposed changes, in combination with past, present, and reasonably foreseeable future actions are identified in the cumulative analysis portion of **Chapter 4**.

2.2.23 Greater Sage-Grouse

Summary: The BLM should disclose and make available to the public the study it relied on to determine habitat objectives for vegetation height and canopy cover standards.

Response: A request for information is not a substantive comment on the Draft EIS and as such does not need a response. The BLM is not required to publish with the draft all the literature and citations it used in developing the EIS. Rather, a request for studies should be made through a formal request for information through the Freedom of Information Act process.

Summary: The BLM has failed to follow scientific data recommendations relating to population trends.

Response: Greater sage-grouse population information in the Draft EIS is based on actual lek counts. The regression trends spanned 20 years to include two natural oscillation cycles and started recently enough to only include lek counts from years after lek counting methods had become standardized (see 2015 Final EIS section 3.3.3). This approach allows for comparing a long-term population trend rather than focusing on sharp increases or decreases associated with natural oscillations. It also avoids comparing early and modern lek counts that used different methods. Further, efforts to find new leks have increased over time, resulting in the identification of more, but often smaller leks that previously evaded detection due to their smaller size. Using a total male trend avoids the bias that such efforts would have on a males per lek trend. Finally, the methodologies for monitoring population trends in **Appendix I** are specifically intended for use in the adaptive management process to track where populations are in relation to adaptive management triggers. The monitoring appendix, which the 2018 Draft EIS does not propose to change, notes clearly that "state wildlife management agencies are responsible for monitoring [greater sage-grouse] populations. Consistent with their jurisdiction and expertise over wildlife, population information in the Draft EIS was developed in coordination with the State of Utah Division of Wildlife Resources. The BLM considered the availability of data from all sources, adequacy of existing data, data gaps, and the type of data necessary to support informed management decisions at the land-use plan level.

Summary: The BLM's method of counting leks is misleading and inaccurate and there is no scientific support justifying the BLM's decision to use twenty years as the appropriate time period to identify trend leks.

Response: BLM considered the availability of data from all sources, adequacy of existing data, data gaps, and the type of data necessary to support informed management decisions at the land-use plan level. The regression trends spanned 20 years to include two natural oscillation cycles and started recently enough to only include lek counts from years after lek counting methods had become standardized (see 2015 Final EIS section 3.3.3). This approach allows for comparing a long-term population trend rather than focusing on sharp increases or decreases associated with natural oscillations. It also avoids comparing early and modern lek counts that used different methods. Further, efforts to find new leks have increased over time, resulting in the identification of more, but often smaller leks that previously evaded detection due to their smaller size. Using a total male trend avoids the bias that such efforts would have on a males per lek trend.

Summary: Where sage-grouse populations continue to decline, conditions that are less than the standard are likely to be one of the reasons for that decline in population.

Response: Based on its review of the best available science, the BLM has identified an adaptive management strategy that involves the use of both population and habitat based triggers which are identified in both the 2015 Final EIS and 2018 Draft EIS. These triggers reflect a judgement on a level that is sufficiently responsive to population changes to allow for early and effective management response, but not so sensitive as to prompt an undue response. Once one of these triggers is tripped, the BLM will conduct a thorough analysis of the threats and conditions that may be contributing to the decline of the population and will take the necessary steps to implement management actions to reverse those declines.

Summary: It is important, particularly in light of climate change, to set aside areas both where sage-grouse are now and where they will need to go in the future.

Response: BLM is focused on aligning its management with the states. BLM's stated purpose and need is to achieve promote consistency and alignment with each State's management for Greater Sage-Grouse. The habitat areas identified in the Draft RMPAs are based, in part, on the information provided by the State agencies and the latest available science and information regarding habitat for Greater Sage-Grouse. The habitat designations in the plans can be modified based on established criteria to address habitat changes, new information, and site specific conditions. Core area and winter habitat needs to coordinate response with WY.

2.2.24 Non-Greater Sage-Grouse

Summary: The Draft EIS may overstate the impacts to soil resources.

Response: BLM recognizes that impacts to soil resources may differ from site to site based on the particular soil types identified in a particular area. However, at this scale BLM believes that Impacts to soil resources were adequately addressed in both the 2015 Final EIS and the 2017 Draft EIS.

2.2.25 Livestock Grazing

Summary: The BLM should update the EIS's data to reflect how many grazing allotments currently fail to meet the Rangeland Health Standards. For those allotments that fail to meet the Standards but are making progress towards meeting them, the BLM should provide a description of what actions led to this progress and the monitoring methods used.

Response: The land health status of allotments has the potential to change yearly. Any actions taken to resolve standards not being meet is an implementation level action. An updated snapshot of allotment land health status would not change the effects analysis in the LUP.

Summary: The BLM should require that all permits be assessed prior to renewal to determine whether improper grazing is occurring and allow for public participation.

Response: Grazing permits that are being fully processed would consider effects of a proposed actions on land health standard. Actions analyzed pursuant to NEPA will be implemented through the grazing decision process consistent with 43 CFR 4160.

Summary: The BLM should analyze grazing practices in PHMAs and report those allotments with improper grazing in the Final EIS using proper GRI methods.

Response: Evaluations and associated grazing practice analysis by allotment is outside the scope of this amendment decision.

Summary: The BLM should identify allotments with improper grazing and actions taken in the Final EIS.

Response: Allotment/grazing permit analysis is beyond the scope of the EIS. The analysis of grazing management is done at the implementation level.

Summary: The NTT Report inaccurately describes the impacts of domestic livestock and wild horse grazing.

Response: The purpose of this planning effort is not to reevaluate the recommendations from the 2011 NTT Report or the actions from the 2015 Plan Amendment. As required by Secretarial Order 3353 and as described in Chapter 1 of the Draft EIS, the purpose of this planning effort is to modify "the approach to Greater Sage-Grouse management in existing land use plans to better align with individual state plans." As such, reevaluating recommendations from the NTT report is outside the scope of this planning effort.

Summary: The LUPAs improperly elevated livestock grazing to a priority threat.

Response: The 2018 Draft EIS made adjustments to the livestock grazing actions to focus livestock grazing management on the threat of improper grazing rather than addressing and/or repeating management that was consistent with management that was already contained in regulation and policy.

2.2.26 Fluid Minerals

Summary: Commenters offered research that refutes the NTT Report regarding energy development in sage-grouse habitat.

Response: No research, including those referenced by commenters, has indicated that oil and gas development has no impact on local sage-grouse use of breeding and nesting areas. These impacts are described in detail in Chapter 4 of the 2015 Final EIS and incorporated by reference into the 2018 Draft EIS. Including additional citations supporting these conclusions is unnecessary. While some models identify questions between oil and gas development and population-level impacts, those studies still acknowledge that increasing development could have consequences for sage-grouse populations (Local and population-level responses of Greater Sage-Grouse to oil and gas and climatic variation in Wyoming Ramey et. al. 2018). As such, there is no new research that would change the conclusions of the analysis for impacts from oil and gas development on greater sage-grouse.

Summary: The NSO stipulation should only apply in areas of occupied habitat within PHMA.

Response: Oil and gas stipulations must be identified and mapped in the RMP so applicable stipulations can be appropriately applied to potential future leases. The exception language in the RMP would accomplish the same purpose while being consistent with the BLM's leasing requirements.

Summary: Any technical team must use criteria identified in Garfield County's Sage grouse Conservation and Recovery Plan and must provide an opportunity for the review and input of state and local entities.

Response: As noted in section 1.2 of the Draft EIS, the purpose and need for this effort is to modify greater sage-grouse management "to better align with individual state plans…" The BLM will comply with 43 CFR 3101.1-4 regarding public notification of waivers, exceptions, or modifications, which includes a 30-day public notification period when the waiver or modification is substantial. An exception is a limited type of waiver and therefore is subject to 43 CFR 3101.1-4.

2.2.27 Solid Minerals

Summary: Commenters offered studies that indicate that phosphate exploration can be successful in areas of Greater Sage-Grouse habitat with minimal to no impact to nearby sage-grouse populations.

Response: The 2015 ARMPA management action MA-MR-1 allows exploration for all minerals that are not closed to leasing. However, exploration under a non-energy mineral prospecting permit includes a right to lease if economical levels of resource are discovered. As such, when determining whether to authorize prospecting permits the BLM must consider both the effects of the exploration activities as well as the potential effects of development associated with a potential lease. Since the existing prospecting permits overlap or are within a mile of 12 greater sage-grouse leks, the potential impacts of leasing and development that could follow exploration would not be consistent with the goal of for sage-grouse to maintain and/or increase greater sage-grouse abundance and distribution.

Summary: The 2015 Plan and the Utah EIS inadequately address solid non-energy leasable minerals, specifically lands used to mine phosphate.

Response: The 2015 Final EIS included sufficient information on the location, development potential, and existing leases and prospecting permits for phosphate (see Chapter 3, section 3.21.2 and pages 4-385 and 4-386). Additional information has been added to the 2018 Final EIS in Chapters 3 and 4.

Summary: The BLM should reevaluate and remove from consideration measures for solid minerals that do not have a discernible positive effect on sage-grouse or activities that already have adequate existing regulatory mechanisms.

Response: The BLM reviewed the phosphate potential map and prospecting permit locations, overlapped with the DWR seasonal habitat maps and 2017 lek locations. There were 12 leks (39% of Diamond Mtn leks) inside of or within a mile of the phosphate prospecting permit areas, with 9 leks (29% of Diamond Mtn leks) south of the permit areas and 10 leks (32% of Diamond Mtn leks) to the north or east (see attached map). Were prospecting permits authorized and if development followed, one of the State's largest greater sage-grouse populations could be bisected by mining activities, affecting more than a third of the leks in the Diamond Mountain area and effectively splitting the remaining leks. Given the presence of sage-grouse resources in this area, opening PHMA to new, non-contiguous mining of non-energy leasable minerals would not be consistent with the special status species goal for greater sage-grouse.

Summary: The Draft EIS fails to discuss the consequences of prohibiting or limiting access to high potential phosphate areas in PHMAs. The Draft EIS and supporting analysis fails to discuss the effects on fertilizer availability, fertilizer sources and prices, and implications for national food security.

Response: The 2015 Final EIS describes the impact on new phosphate leasing and developments. However, it also noted that lands under existing leases and development associated with these valid existing rights would provide future development opportunities that exceeded the timeframe of the Final EIS's analysis. The analysis in the 2018 Final EIS has been adjusted to reflect new information and changes to the Management Alignment Alternative.

Summary: The Draft EIS fails to include additional analysis in the RMPA/EIS to quantify the impacts to leasable minerals from implementing the Management Alignment Alternative.

Response: The 2015 Final EIS describes the impact on new phosphate leasing and developments. However, it also noted that lands under existing leases and development associated with these valid

existing rights would provide future development opportunities that exceeded the timeframe of the Final EIS's analysis. The analysis in the 2018 Final EIS has been adjusted to reflect new information.

Summary: The BLM should clarify why PHMA acreage associated with total surface area and split estate area increased.

Response: The 2018 Draft EIS, page 3-7, explains why PHMA acreage increased from the numbers in the 2015 ARMPA.

Summary: The BLM must clearly define, identify, and address valid existing rights regarding non-energy leasable minerals in the Draft EIS. The BLM should recognize fringe leases and the development of existing leases as valid existing rights.

Response: One of the planning criteria listed in **Chapter 1.4** is to recognize valid existing rights. The Final EIS has been adjusted to include additional information for non-energy leasable minerals.

Summary: The BLM should identify strategies for allowing for the development of non-energy mineral leasable in areas of non-habitat, or in areas where siting and minimization techniques can be utilized to continue to conserve sage-grouse habitats within PHMA.

Response: The BLM reviewed the phosphate potential map and prospecting permit locations, overlapped with the DWR seasonal habitat maps and 2017 lek locations. There were 12 leks (39% of Diamond Mtn leks) inside of or within a mile of the phosphate prospecting permit areas, with 9 leks (29% of Diamond Mtn leks) south of the permit areas and 10 leks (32% of Diamond Mtn leks) to the north or east (see attached map). Were prospecting permits authorized and if development followed, one of the State's largest greater sage-grouse populations could be bisected by mining activities, affecting more than a third of the leks in the Diamond Mountain area and effectively splitting the remaining leks. Given the presence of sage-grouse resources in this area, opening PHMA to new, non-contiguous mining of non-energy leasable minerals would not be consistent with the special status species goal for greater sage-grouse.

Summary: The Final EIS needs to include additional analysis and disclosure of the entire range of impacts associated with implementing the Management Alignment Alternative and its effect on the development of phosphate resources in Utah.

Response: The 2015 Final EIS describes the impact on new phosphate leasing and developments. However, it also noted that lands under existing leases and development associated with these valid existing rights would provide future development opportunities that exceeded the timeframe of the Final EIS's analysis. The analysis in the 2018 Final EIS has been adjusted to reflect new information.

2.2.28 Lands and Realty

Summary: The RMPA/EIS fails to disclose the basis by which private lands can be considered in a federal land management planning document.

Response: As noted in Chapter 1 of the Draft EIS, PHMA are areas prioritized for the management of greater sage-grouse populations. While the BLM only has jurisdiction to implement management on public lands (surface and mineral estates), sage-grouse populations use areas regardless of ownership. As

such, when making management decisions on public lands, the BLM will consider the conditions of habitat on private lands. To this end, private lands are considered so far as relevant to the effects analysis, as required under the National Environmental Policy Act, which requires that cumulative impacts to resources be analyzed irrespective of jurisdiction. The plan's decision area is limited to just BLM managed lands, as indicated in Figures 2-1a and 2-1b in the Draft EIS, as well as in corresponding figures depicting management.

Summary: There is no basis for including private land in density and disturbance calculations.

Response: The National Environmental Policy Act requires that federal agencies consider the cumulative effects on a resource, irrespective of jurisdiction. The BLM does not have jurisdiction beyond the public lands it administers, but it is required, as part of its decision-making process, to consider the condition of a resource and how BLM actions could contribute to its condition. BLM's management of sage-grouse accordingly must consider how actions on non-public lands could affect sage-grouse and, by extension, sage-grouse management on public lands.

Summary: Commenters requested clarification on **Appendix A's** treatment of the Anthro Mountain area.

Response: The area mapped as Anthro Mountain was identified in the 2015 ARMPA as neither PHMA nor GHMA. The area is within the National Forest System, with surface resources managed by the Ashley National Forest and its mineral resources administered by the BLM. It is included in the 2015 Forest Service ROD simply as "Anthro Mountain" with separate labeling and management throughout the Forest Service's 2015 amendment. Because of this distinction, the BLM has carried forward the Anthro Mountain nomenclature to be consistent with the current Forest Service management documents.

2.2.29 Wild Horse and Burro

Summary: The Draft EIS fails to account for the impacts caused by growing wild horse populations on sage-grouse habitat.

Response: The 2015 Final EIS includes a detailed description of impacts of wild horses on greater sage-grouse on pages 4-47 and 4-48, as well as on page 4-52. Chapter 3 of the 2018 Draft EIS, Table 3-7, shows that when compared to Table 3-42 in the 2015 Final EIS, six of the seven wild horse HMAs that overlap sage-grouse population areas in Utah have smaller current populations in 2018 than in 2015. Additionally, while current population estimates are important and included, because the period of the analysis for the EIS is 20 years, the analysis is intended to provide anticipated effects of proposed management over that time, which will obviously include wild horse population fluctuations.

Summary: The 2015 Plan and NTT Report fail to adequately analyze or describe the effects of wild horses on sage-grouse habitat. Consequently, the BLM's reliance on AMLs having no adverse impact on sage-grouse habitat is incorrect.

Response: The 2015 Final EIS includes a detailed description of impacts of wild horses on greater sage-grouse on pages 4-47 and 4-48, as well as on page 4-52. Chapter 3 of the 2018 Draft EIS, Table 3-7, shows that when compared to Table 3-42 in the 2015 Final EIS, six of the seven wild horse HMAs that overlap sage-grouse population areas in Utah have smaller current populations in 2018 than in 2015.

Additionally, while current population estimates are important and included, because the period of the analysis for the EIS is 20 years, the analysis is intended to provide anticipated effects of proposed management over that time, which will obviously include wild horse population fluctuations.

Summary: The BLM should include more effective management tools in the plan to adequately control wild horse and burro populations and meet Land Health Standards.

Response: The BLM Planning Handbook identifies decisions to be made at the planning level and at the implementation level. The 2015 ARMPA actions are limited to the planning level. Other actions would be considered at the implementation level, or by Congress.

2.2.30 Fuels and Fire

Summary: The LUPAs fail to adequately assess restoration and rehabilitation potential and impacts outside of fire rehabilitation, and prioritizing such efforts in areas with the highest likelihood for success.

Response: As noted in section 1.2 of the Draft EIS, the purpose and need for this effort is to modify greater sage-grouse management "to better align with individual state plans…" Because fire and fuels management from the 2015 ARMPA is largely consistent with the state's plan, considering changes to this is not consistent with the purpose of this effort. Additionally, Objective SSS-4 in the 2015 ARMPA specifically addresses increasing the amount and functionality of seasonal habitats through a variety of vegetation management tools. Because the 2018 Draft EIS does not mention this objective or most of the vegetation and fire action from the 2015 ARMPA, these are being carried forward, unchanged. This includes MA-VEG-11 that addresses post-fire Emergency Stabilization and Rehabilitation efforts, and MA-VEG-1 that calls for prioritizing projects in areas most likely to benefit greater sage-grouse.

2.2.31 Travel and Transportation Management

Summary: The BLM should revise the travel and transportation section to better reflect the BLM's mandate to engage in meaningful and extensive consultation and coordination with local governments.

Response: The BLM is required to comply with all existing laws and regulations when implementing RMP actions. As such, it is not necessary to repeat all the legal and regulatory requirements in the RMP.

Summary: BLM needs to operate without impacting County rights of way and in a spirit of cooperation and coordination.

Response: The adjudication or management of RS 2477 assertions is outside the scope of this planning process. This amendment does not adjudicate, analyze, or otherwise determine the validity of the claimed ROWs or the responsibilities for route management or maintenance.

Summary: The BLM should clarify that any remaining travel management direction would not apply to permitted actions, including the management of livestock grazing permits.

Response: As directed in 43 CFR 1610.5-3, "All future resource management authorizations and actions...and subsequent more detailed or specific planning, shall conform to the approved plan." As such, all future permitted actions would need to conform to whatever RMP actions are in place at the time of permitting.

2.2.32 Cumulative Impacts

Summary: The BLM improperly relies on the cumulative effects analysis from the 2015 LUPAs. Consequently, the cumulative impacts analysis in the Utah Draft EIS is insufficient and invalid and should be expanded to fully address the cumulative impacts from the amendments.

Response: BLM is using incorporation by reference, not tiering, to streamline our analysis consistent with Administrative priorities. Incorporation of the 2015 EIS by reference is allowable under BLM regulations and is appropriate in this circumstance because the purpose of this action builds upon the goals and objectives of the 2015 EIS.

Summary: The list of reasonably foreseeable future projects fails to incorporate many relevant projects that should be considered in the cumulative effects analysis.

Response: The BLM will update the past, present, and reasonably foreseeable actions as needed to reflect applicable projects for the Final EIS.

Summary: The incorporation by reference of the 2015 CEA impedes public review.

Response: BLM is adding quantitative analysis of the cumulative impacts from planning decisions for each management zone to the Final EISs to address rangewide issues and trends.

Summary: The BLM should modify the cumulative effects assessment by considering the cross-border and population-wide effects of the seven new management plans on the conservation status of the sage-grouse.

Response: The cumulative effects analysis has been updated in the Final EIS to analyze cumulative effects across the greater sage-grouse range, organized by each WAFWA management zone.

2.3 RANGEWIDE COMMENTS

2.3.1 Adaptive Management

Adaptive management provisions such as "hard" and "soft" triggers must be maintained, along with provisions for public notice and comment when they are triggered, to show that monitoring of effectiveness is ongoing and management is adjusted as needed.

In sum, designated PHMAs should be expanded to all lands designated as PACs by the US Fish and Wildlife Service in 2013 (COT 2013), and include expansions of Core Areas adopted by the State of Wyoming in 2015. In turn, SFA status and management parameters should be expanded to all lands designated as PHMA if the BLM truly wants to protect and conserve sage-grouse throughout its range and the Plans are being used to defer ESA listing.

2.3.2 Alternatives Other

In sum, designated PHMAs should be expanded to all lands designated as PACs by the US Fish and Wildlife Service in 2013 (COT 2013), and include expansions of Core Areas adopted by the State of Wyoming in 2015. In turn, SFA status and management parameters should be expanded to all lands designated as PHMA if the BLM truly wants to protect and conserve sage-grouse throughout its range and the Plans are being used to defer ESA listing.

2.3.3 Assumptions and Methodology

The analytical assumptions in the DEISs are neither reasonable nor supportable At the beginning of Chapter 4, each DEIS lays out a series of analytical assumptions. The purpose of these assumptions is to set guidelines and provide reasonably foreseeable projected levels of development that would occur in the planning area during the planning period. As shown below, however, many of these assumptions are neither reasonable nor supportable when looked at objectively, and considering the most recent science. Assumption One: Sufficient funding and personnel would be available for implementing the final decision. Table ES-1 in each Executive Summary of the DEISs shows a significant decline in all planned habitat restoration and protection activities for FY 18, including conifer removal and invasive species removal. However, invasive species removal is already falling far behind the pace needed to adequately restore sagebrush habitat, as shown in a recent WAFWA report (WAFWA Gap Analysis) finding that most invasive weed management programs are addressing less than 10% of the average infested acres, while the annual rate of spread of invasive plants, can range from 15-35%. That document states, "[This] [l]ack of effort is due almost entirely to lack of capacity, not expertise."14 In FY 19, The Administration budget request for funding sage-grouse would impose further cuts by consolidating the sage-grouse program with other programs and reducing the total amount sought.15 Interior Secretary Zinke has told lawmakers that he wants to reduce the Department workforce by 4,000 full-time jobs.16(Greenwire 8/15/17) Assumption Two: Implementation-level actions necessary to execute the LUP-level decisions in this RMPA/EIS would be subject to further environmental review, including that under NEPA. Instruction Memorandum (IM) 2018-034, recent guidance issued by BLM governing oil and gas leasing, emphasizes using Determinations of NEPA Adequacy instead of NEPA analysis. IM 2018-061 instructs BLM staff members to ensure they are using several tools to make the NEPA process more efficient, including categorical exclusions for certain types of oil and gas development. Pending legislation, H.R. 6106, introduced by Representative Pearce (R-NM), would require use of categorical exclusions from NEPA for many oil and gas drilling activities. Pending legislation, H.R. 6088, introduced by Representative Curtis (R-UT), would allow oil and gas companies to obtain authorization to drill in some circumstances without NEPA analysis. Pending legislation, S.1417, introduced by Sen. Hatch (R-UT) and Sen Heinrich (D-NM), would create categorical exclusions for a wide variety of sage-grouse management activities, such as the use of herbicides and pesticides, mechanical piling and burning, chaining, and broadcast burning. There has been a large increase in the use 5of categorical exclusions from NEPA analysis for oil and gas development in Wyoming, particularly in the Continental Divide-Creston Project Area, where categorical exclusions allowed by section 390 of the Energy Policy Act of 2005 (42 U.S.C. § 15942) are being employed. Assumption Three: Direct and indirect impacts of implementing the RMPA/EIS would primarily occur on public lands administered by the BLM in the planning area. The DEISs loosen restrictions on oil and gas development on BLM lands in a variety of ways, such as decreasing buffers, removing or modifying disturbance and density caps, opening new areas to development, and eliminating general habitat in Utah. While BLM assumes that impacts would primarily occur on public land, recent scientific research indicates the likelihood of impacts to adjoining private or public lands owned by agencies other than BLM. This study, by Spence et al., found that the probability of lek collapse was positively related to the density of oil and gas wells located outside of core areas at two distances within 1.6 km and within 4.8 km of the core area boundary.17 These proposed changes would impact future collaborative processes, as expressed by Wyoming Governor Matt Mead: "If we go down a different road now with the sage grouse, what it says is, when you try to address other endangered species problems in this country, don't have a collaborative process, don't work together, because it's going to be changed," Mead said. "To me, that would be a very unfortunate circumstance."18 Assumption Four: The BLM would carry out appropriate maintenance for the functional capability of all developments. As

noted in Assumption One, BLM is already not carrying out appropriate maintenance, and potential budget cuts foretell even greater deficiencies in the future. Moreover, the mere fact that treatment has occurred does not necessarily indicate that the habitat has successfully been restored, rendering Table ES-1 essentially meaningless. As the 2018 USGS Synthesis of recent scientific research states, "Restoring sagebrush communities can be difficult, costly and slow."19 In Desert Survivors v. U.S. Dept. of the Interior, Case No. 16-cv-01165-JCS (N.D. CA May 15, 2018)20, in ruling that the FWS erred in failing to list the bi-state GRSG population under ESA, the court held, "the service must offer some rational basis for its conclusions that future conservation efforts will be effective enough to improve the status of the bi-state (grouse) and therefore warrant withdrawal of the proposed listing." Id. at 64. Assumptions must have a basis in fact. Assumption Five: The discussion of impacts is based on best available data. In Chapter 4, the DEISs acknowledge that much important data is not available, including comprehensive planning area-wide inventory of wildlife and special status species occurrence and condition and GIS data used for disturbance calculation on private lands. Indeed, the DEISs acknowledge that some impacts of the proposed changes could not be quantified.21 CEQ regulations further require, where data is unavailable a summary of existing scientific evidence relevant to evaluating reasonably foreseeable significant adverse impacts and the agency's evaluation of such impacts.22The DEISs fail to provide either of these types of information. In addition to failing to include the results of the WAFWA Gap Analysis, the DEISs also do not consider a study published in PLoS ONE by Kitzberger et al. (PLoS ONE study) finding that many parts of the West can expect to see more than five times the area burned during the next 20 years than fires covered in the past 20.23 The DEISs state that their assumptions apply to the analysis of both alternatives presented by BLM. It is not appropriate, however, to rely on assumptions, as BLM has done here, that are not based either in fact or sound science.

III. THE ASSUMPTIONS, DATA, AND PLANNING CRITERIA BLM RELIES ON IN THE DRAFT EISs ARE FLAWED. There are significant problems in the DEISs relating to the assumptions, data, and planning criteria BLM uses in support of the proposed amendments to the 2015 land use plans. These flaws lead to a series of inadequacies in the DEISs themselves, including both faulty conclusions and a high degree of regulatory uncertainty as to the meaning of the proposed amendments, discussed in detail below. A. The analytical assumptions in the DEISs are neither reasonable nor supportable At the beginning of Chapter 4, each DEIS lays out a series of analytical assumptions. The purpose of these assumptions is to set guidelines and provide reasonably foreseeable projected levels of development that would occur in the planning area during the planning period. As shown below, however, many of these assumptions are neither reasonable nor supportable when looked at objectively, and considering the most recent science.

2.3.4 Cumulative Impacts

F. BLM's cumulative impacts analysis is insufficient and invalid. The BLM is required to consider the cumulative environmental impacts to sage-grouse and sage-grouse habitat in the EISs it has prepared. Cumulative environmental impacts are defined as: The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions. 40 C.F.R. § 1508.7. "Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." Id. Cumulative impacts must be considered in the scope of an EIS. Id. § 1508.2(c). Despite the requirement to consider cumulative environmental impacts in the sage-grouse land use plan amendment EISs, the BLM has failed to do this adequately. For one, the BLM claims that the cumulative effects analysis from the 2015 sage-grouse land use plan amendments meets the

cumulative effects analysis requirement that is needed now. The inappropriateness and legal invalidity of this claim is discussed elsewhere in these comments. As noted above, tiering is only appropriate when a subsequent narrower environmental analysis relies on an earlier broader environmental analysis. See 40 C.F.R. § 1508.28 (a) (stating that tiering is appropriate when a program, plan, or policy environmental impact statement is used to support a new analysis of "lessor scope" or which is site-specific). But we do not have that here; the scope of the current analysis is as broad as the 2015 analysis. There is no "step down" present here, therefore the cumulative impacts analysis from the 2015 plans cannot "incorporate[ ] by reference the analysis in the 2014 and 2015 Final EISs and the 2016 Draft Sagebrush Focal Area Withdrawal EIS." Wyoming DEIS at 4-20. In addition, BLM cannot simply incorporate the previous analysis by reference without justifying how it is appropriate and summarizing how it applies, neither of which has been done in the Draft EISs. See, 43 C.F.R. § 46.135(a). BLM also must ensure any incorporation by reference does not impede review by the public, which it surely does here. See 40 C.F.R. § 1502.21. Moreover, the purpose and need for the 2018 EISs differs from that of the 2015 EISs, which underscores why neither tiering nor incorporation by reference is appropriate.

Secondly, in each of the six 2018 EISs the BLM lists a number of projects that it claims reflect the cumulative effects impacts that are applicable here. See, e.g., Table 4-3 in the Wyoming Draft EIS (DEIS). But this list of projects fails to incorporate many relevant projects that should be considered in the cumulative effects analysis. In Wyoming, for example, neither the Normally Pressured Lance or Converse County oil and gas projects are listed. See Wyoming DEIS at Table 4-3, page 4-35. These are two mammoth projects, that will involve drilling thousands of oil and gas wells which will have significant impacts on sage-grouse and sage-grouse habitats.11 Neither of these projects were considered in the 2015 EISs. In Utah the Greater Chapita Wells Natural Gas Infill Project is not considered in the Utah sage-grouse plan amendment EIS. Utah DEIS at Table 4-4, pages 4-41 to 42. This project could involve the drilling of 2808 natural gas wells in Uintah County, which is prime sage-grouse habitat. See https://eplanning.blm.gov/epl-frontoffice/eplanning/planAndProjectSite.do?methodName= renderDefaultPlanOrProjectSite&projectId=3736 2. There are other projects missing from the Range Wide Impacts from Past, Present, and Reasonably Foreseeable Future Actions table in the other states. In addition, while in Wyoming (and the other states), past and upcoming oil and gas lease sales are mentioned, see Wyoming DEIS at Table 4-3, page 4-35, the list is incomplete. The June lease sale(198,588 acres) is mentioned but neither the upcoming September (366,151 acres) or December (698,589 acres) lease sales are discussed.12 The same is true in other states. For example, in Utah, the Utah DEIS says 646 acres of oil and gas leases will be offered in Habitat Management Areas (HMA) in June, but it fails to mention the 158,944 acres (with 45,227 acres that had been previously offered) that will be offered for lease in September.13 The same is true in other states.

The BLM should review the list of projects shown in Tables 4-3 or 4-4 (depending on the state) causing cumulative impacts and ensure they are as comprehensive as is required to include "the incremental impact[s] . when added to other past, present, and reasonably foreseeable future actions." We note again the projects we have mentioned were not considered in the 2015 sage-grouse plan amendment EISs. These are "collectively significant actions taking place over a period of time" that must be considered in the cumulative impacts analysis, but which have not been. In addition, BLM should evaluate the cumulative effects of these projects across the planning areas of the 2015 Sage-grouse Plans. Under Council on Environmental Quality (CEQ) guidance, BLM must consider the current aggregate effects of past actions in a cumulative impacts analysis. CEQ, Guidance on the Consideration of Past Actions in Cumulative Effects Analysis (available at https://ceq.doe.gov/docs/ceq-regulations-andguidance/

regs/Guidance_on_CE.pdf). This means the BLM must consider what the impacts of implementing the 2015 plans has been on cumulative impacts. BLM cannot just incorporate the 2015 plans by reference as its cumulative effects analysis, rather it must consider the "identifiable present effects of past actions," which the 2015 plans clearly are. Under the 2015 plans BLM has taken hundreds of actions, and in total those actions have had cumulative environmental impacts. An analysis of those cumulative impacts is missing from the current EISs, which is not permissible. "A cumulative impact analysis "must be more than perfunctory; it must provide 'a useful analysis of the cumulative impacts of past, present, and future projects.'"" N. Plains Res. Council, Inc. v. Surface Transp.Bd., 668 F.3d 1067, 1076 (9th Cir. 2011) (quoting Kern v. U.S. Bureau of Land Mgmt., 284 F.3d 1062,1075 (9th Cir. 2002) (additional citation omitted). "To be useful to decision makers and the public, the cumulative impact analysis must include "some quantified or detailed information; . general statements about possible effects and some risk do not constitute a hard look absent a justification regarding why more definitive information could not be provided."" 668 F.3d at 1076 (quoting Ocean Advocates v. U.S. Army Corps of Eng'rs, 402 F.3d 846, 868 (9th Cir. 2004) (additional citation omitted). Here the BLM has offered nothing more than a perfunctory cumulative impacts analysis. There is no useful analysis of past projects; the dozens if not hundreds of approved projects implementing the 2015 sage-grouse plans. There is no quantifiable or detailed information about those projects, and there are not even any general statements about the cumulative impacts of those projects, many of which have undergone a NEPA analysis. Based on the above, it is evident the cumulative impacts analyses in the 2018 Draft EISs is invalid and must be expanded to fully address the cumulative impacts from the amendments.

2.3.5 Data and Science

A 2016 Wyoming study by Smith et al.33cited in both the USGS Annotated Bibliography and the ZUSGS Synthesis found that sage-grouse frequently used winter habitats outside of core areas. The Annotated Bibliography summarizes the implications of this study: Current seasonal use restrictions in winter concentration areas (December 1 to March 15) are shorter than the GRSG winter habitat use period identified in the study. A substantial proportion of winter use areas were located outside of identified core areas in one of the two study areas, suggesting reconsideration of the ability of Wyoming's Core Area policy to provide for long-term conservation of GRSG. While the Wyoming DEIS refers to potential changes to Habitat Management Area Designations (See, e.g., WY DEIS at 4-14-4-15), neither this study nor the need to expand winter habitat is mentioned. A second Wyoming study by Spence et al.35found the probability of lek collapse was positively related to the density of oil and gas wells located outside core areas at two distances within 1.6 km and within 4.8 km of the core area boundary. The USGS Annotated Bibliography states: The proportion of the male population within core areas and the observed decreased probability of lek collapse within core areas suggest that the core area policy is providing broad protection for GRSG in Wyoming. However, limitations on development near core areas may be needed to more effectively protect GRSG populations within core areas.36 The Wyoming DEIS again makes no mention of this study, and in fact proposes reducing noise restrictions outside priority habitat (WY DEIS at 2-12-2-13), while other DEISs in other states, such as Utah and Idaho, eliminate a variety of restrictions outside but adjacent to priority habit (see e.g., UT DEIS at 2-6; ID DEIS at 2-10).

A second Wyoming study by Spence et al.35 found the probability of lek collapse was positively related to the density of oil and gas wells located outside core areas at two distances within 1.6 km and within 4.8 km of the core area boundary. The USGS Annotated Bibliography states: The proportion of the male population within core areas and the observed decreased probability of lek collapse within core areas

suggest that the core area policy is providing broad protection for GRSG in Wyoming. However, limitations on development near core areas may be needed to more effectively protect GRSG populations within core areas.36 The Wyoming DEIS again makes no mention of this study, and in fact proposes reducing noise restrictions outside priority habitat (WY DEIS at 2-12-2-13), while other DEISs in other states, such as Utah and Idaho, eliminate a variety of restrictions outside but adjacent to priority habit (see e.g., UT DEIS at 2-6; ID DEIS at 2-10). BLM must accurately characterize the findings in the Synthesis, elaborate upon the status of data considered and explain how it is addressing missing data. The agency cannot simply gloss over these requirements with rote or unsupported conclusions that it used in support of its Preferred Alternative.

We appreciate the idea that broad, science-based objectives have a place in determining whether greater sage-grouse habitat is contributing to stable populations. However, no single objective can cover the wide range of variability that occurs across a landscape as vast as the sagebrush sea. The Habitat Objectives Tables (Table 2-2) have been misinterpreted as standards that must be met, likely at the expense of the widest and most adaptable use in the West-livestock grazing. It does not make sense that these objectives be reflected in livestock grazing permittee/lessee terms and conditions if they do not fit the ecosystem in which they are being applied. Because of this, we appreciate those amendments that propose to make clear that habitat objectives must account for local conditions and site variability. This includes the removal of the seven-inch perennial grass and forb height habitat objective. We understand why grass and forb height objectives need to be considered for the health of the bird, but we believe these objectives should vary across the range. We request these changes be made to the habitat objectives tables for each greater sage-grouse RMP amendment.

By ignoring the WAFWA Gap Analysis and Plos ONE study, the DEISs fail to recognize the warning that occurs later in the USGS Synthesis, which states: [T]here continues to be emerging science quantifying effects and measuring the efficacy of conservation recommendations. Review of this new information as it becomes available, and incorporating changes, if appropriate, are essential to implementing valid conservation recommendations.32

In addition to the problems with Table ES-1 noted above in the first section, the figures used in the Table and on page 3-1 are of limited utility at best because they are not broken down either state by state or by sage-grouse management zone. Range-wide data can mask significant decreases in habitat or population in a more localized area. In addition, no citation is provided for either data set so that the numbers provided can be examined and verified. The PLoS ONE study found that median increases in AAB (Annual Area Burned) greater than 700% are predicted for ID, MT, and NV, and strong upper quartile increases are predicted for OR, ID, MT, and WY. In many areas the actual burning on the ground has exceeded the models. This is a huge increase from the conclusion in the 2015 FWS sage-grouse listing decision that that wildfire would continue to affect the Great Basin at the current rate of about 85% percent per year.29

In discussing the findings of the Synthesis on impacts of activities such as oil and gas development to sage-grouse habitat, the DEIS states: The science developed since 2015 corroborates prior knowledge about the impact of discrete human activities on Greater Sage-Grouse. New science suggests that strategies to limit surface disturbance may be successful at limiting range-wide population declines; however, it is not expected to reverse the declines, particularly in areas of active oil and gas operations ([Synthesis], p.2). This information may have relevance when considering the impact of management

actions designed to limit discrete disturbances.31 The studies referenced in this passage appears to be set out on page 14 and 15 of the USGS Synthesis. We were not able to locate a single instance in any of the DEISs, however, where any of these papers were cited in a discussion of the Impacts of the BLM Preferred Alternative in the DEISs.

The DEISs ignore studies referenced in the USGS Annotated Bibliography and USGS Synthesis that either support additional protections for sage-grouse habitat or provide evidence against the amendments BLM proposes.

The PLoS ONE study found that median increases in AAB (Annual Area Burned) greater than 700% are predicted for ID, MT, and NV, and strong upper quartile increases are predicted for OR, ID, MT, and WY. In many areas the actual burning on the ground has exceeded the models. This is a huge increase from the conclusion in the 2015 FWS sage-grouse listing decision that that wildfire would continue to affect the Great Basin at the current rate of about 85% percent per year.29

The WAFWA Gap Analysis shows that invasive plant infestations in the West, particularly in the range of the sage-grouse, have reached enormous levels with estimates of invasive annual grass and perennial forb infestations at more than 100 million acres of public and private lands. Again, this is far more than contemplated in the FWS sage-grouse listing decision.30

A limit of 3% human surface disturbance per square-mile section is the minimum necessary standard for preventing habitat abandonment by sage grouse. Knick et al. (2013) found that 99% of active leks across the western half of the sage grouse's range were surrounded by land with 3% or less human development. Decker et al. (2017) found a similar result in Colorado, with a linear decrease in sage grouse lek populations once surface disturbance increased above the 2.5% threshold. Preliminary results from Kirol et al. (in prep) indicate that the vast majority of sage-grouse were found in habitats with <1% surface disturbance. Disturbance density can also affect survival, Kirol et al. (2015a) found that brood survival for sage-grouse began to decline significantly once disturbance density hit the 4% threshold. The vast majority were surrounded by much less disturbance. Copeland et al. (2013) found that if all of the State of Wyoming sage grouse policy provisions (which include a 5% disturbance cap calculated using a Disturbance Density Calculation Tool) were implemented fully and to the letter, that a 9 to 15% decline in greater sage grouse populations would still occur statewide, including a 6 to 9% decline within designated Core Areas (where the 5% disturbance cap would be applied). There is no scientific evidence at all indicating that sage grouse can tolerate a greater percentage of surface disturbance. In particular, the 5% cap on disturbance proposed for the Wyoming RMP amendment for Core Areas and Connectivity Areas been shown to be effective by no scientific study, ever.

The data BLM chose to rely upon is insufficient. The scientific grounding for the BLM plans, including the level of certainty in how they are applied, was a key part of the foundation for the FWS decision that listing the sage-grouse under ESA was not warranted.24 Any changes proposed to the plans now by the BLM should meet a similarly high standard, complying with both the CEQ regulations and considering all the most recent peer-reviewed research. Unfortunately, here, much of the relevant data is not available, and the data BLM has ignored includes important studies that would argue against many of the changes BLM proposes in the DEISs. Table ES-1 of the DEISs purports to use the amount of on-the-ground treatment activity for the past three fiscal years, as well as planned activities for the current fiscal year, to show progress in sagebrush habitat restoration. In addition, every DEIS also includes the following language on page 3-1: While the BLM acknowledges that there have been changes to the landscape since

2015, due to the scale of this analysis… data collected consistently across the range indicate that the extent of these changes to the landscape are relatively minimal. For example, BLM monitoring data collected and analyzed annually at the biologically significant unit (BSU) scale… indicates that there has been a minimal overall increase in estimated disturbance (less than 1 percent range-wide from 2015 through 2017) within PHMA. Moreover, there has been an overall decrease in sagebrush availability (less than 1 percent range-wide from 2012 through 2015) in PHMAs within BSUs. Finally, Chapter 3 of every DEIS references both the USGS annotated bibliography of scientific research on greater sage-grouse published since January 201525 (USGS Annotated Bibliography) and the USGS report that synthesizes and outlines potential management implications of the new science.26 (USGS Synthesis). These data are intended to show that changes to the landscape since the 2015 plans are "relatively minimal."27 In addition, the DEISs state: Based on available information, including [the Annotated Bibliography and Synthesis], the BLM has concluded that the existing condition is not substantially different from that of 2015; therefore, the data and information presented in the 2014 and 2015 Final EISs are incorporated into this RMPA/EIS.28 Both conclusions are faulty. Changes to the landscape since 2015 are not relatively minimal, and the sagebrush landscape of 2018 is not substantially similar to that of 2015, as shown below.

BLM must accurately characterize the findings in the Synthesis, elaborate upon the status of data considered and explain how it is addressing missing data. The agency cannot simply gloss over these requirements with rote or unsupported conclusions that it used in support of its Preferred Alternative.

Finally, Chapter 3 of every DEIS references both the USGS annotated bibliography of scientific research on greater sage-grouse published since January 201525(USGS Annotated Bibliography) and the USGS report that synthesizes and outlines potential management implications of the new science.26(USGS Synthesis). These data are intended to show that changes to the landscape since the 2015 plans are "relatively minimal."27In addition, the DEISs state: Based on available information, including [the Annotated Bibliography and Synthesis], the BLM has concluded that the existing condition is not substantially different from that of 2015; therefore, the data and information presented in the 2014 and 2015 Final EISs are incorporated into this RMPA/EIS.28 Both conclusions are faulty. Changes to the landscape since 2015 are not relatively minimal, and the sagebrush landscape of 2018 is not substantially similar to that of 2015, as shown below.

Holloran (2005) found that several types of oil and gas infrastructure sited within 1.9 miles of the lek site had a negative impact on populations of breeding males on the lek; these infrastructure feature include both wellpads during the post-drilling, production phase and gravel trunk roads leading to five or more wellpads. It is important to note that a single wellpad or road can cause significant impacts, and these impacts occur even in cases where roads are not visible from the lek site due to intervening terrain (Holloran 2005). Drilling activities can have significant impacts when wells are sited within 3 miles of leks (id.). Manier et al. (2014) reviewed all available science and found that appropriate lek buffers (the "interpreted range") ranged from 3.1 to 5 miles. Aldridge and Boyce (2007) suggested that even larger buffers (10 km) are warranted. In addition to significant negative impacts on breeding populations at the lek site, industrial incursions can also have a significant negative impact on nesting females. The lek is the hub of nesting activity, with most females nesting within 4 to 6 miles of a lek site. Holloran et al. (2007) found that yearling sage grouse avoided otherwise suitable nesting habitat within 930m (almost 0.6 mile) of oil and gas-related infrastructure. This means that individual wellsites, and their access roads and other related facilities, will be surrounded by a 0.6-mile band of habitat that has substantially lost its

habitat capability for use by nesting grouse. The National Technical Team (2011: 20) observed, "it should be noted that protecting even 75 to >80% of nesting hens would require a 4-mile radius buffer (Table 1). Even a 4-mile NSO buffer would not be large enough to offset all the impacts reviewed above." Importantly, a 0.6-mile lek buffer covers by area only 2% of the nesting habitat encompassed by a 4-mile lek buffer, which takes in approximately 80% of nesting grouse according to the best available science.

Priority Habitats were largely designated on the basis of buffers around active lek sites, which encompass the breeding and nesting habitats used by grouse during spring and summer. But protecting wintering habitats is equally important to assuring the continued existence and ultimate recovery of the species, and these wintering habitats are frequently located outside the protective boundaries of designated Priority Habitats (see, e.g., Smith et al. 2016, Dinkins et al. 2017). For Wyoming, Dinkins et al. (2017: 10) state, "Although breeding habitat-defined as the area within 8.5 km [5.3 miles] of a lek-was a good surrogate for delineating all seasonal habitats for sage-grouse, Core Areas provided habitat protections disproportionately for summer habitats compared to winter." These researchers went on to state, "our mapping results demonstrated that net reproduction from all birds associated with a winter habitat magnifies the importance of maintaining high-quality winter habitat. In other words, birds breeding outside of winter habitats were reliant on winter habitats for winter survival; thus, degraded winter habitat could equate to loss of reproduction from a much larger spatial footprint.

Recent empirical study confirms the established finding that sage-grouse lek attendance is negatively related to oil and gas density, regardless of sagebrush cover and participation.3 Green et al. (2017) examined greater sage-grouse lek attendance, oil and gas well, and habitat and precipitation data from Wyoming over the period 1984 to 2008, and, consistent with numerous prior studies, that lek attendance declines are closely associated with the density of oil and gas development: Oil and gas development correlates well with sage-grouse population declines from 1984 to 2008 in Wyoming, which is supported by other findings (Doherty et al. 2010b, Harju et al. 2010, Hess and Beck 2012, Taylor et al. 2013, Gregory and Beck 2014). As with other studies, we also found support for 4-year lag effects of oil and gas development on lek attendance (Walker et al. 2007, Doherty et al. 010a, Harju et al. 2010, Gregory and Beck 2014). This result suggests that development likely affects recruitment into the breeding population rather than avoidance of wells by adult males or adult survival. Adult sage-grouse are highly philopatric to lek sites (Dalke et al. 1963, Wallestad and Schladweiler 1974, Emmons and Braun 1984, Dunn and Braun 1985, Connelly et al. 2011a), and males typically recruit to the breeding population in 2-3 years. We would expect a delayed response in lek attendance if development affects recruitment, either by reducing fecundity or avoidance of disturbance by nesting females, as adult males die and are not replaced by young males.

Sagebrush Focal Areas ("SFAs") are by definition a subset of PHMA, where all PHMA direction applies with additional protections overlaid in some cases. Our organizations agree with the need for modification insofar as we believe SFA management actions should be expanded to more lands. In addition, we believe that all priority habitats, including SFAs must be designated as sage-grouse Areas of Critical Environmental Concern (ACECs) and managed to protect sage-grouse, as discussed in more detail above. The current Greater Sage-Grouse RMP Amendments and Revisions incorporate insufficient Priority Habitat Management Area designations in all states except Oregon, Colorado, and North Dakota. Crist et al. (2015) provided a critique that indicated that many PHMA units were too small and isolated to sustain sage-grouse populations over the long term, and also noted that a handful of large areas are strongholds of disproportionate importance to sage-grouse conservation efforts. All lands

designated as Priority Areas for Conservation 65 ("PACs") by the U.S. Fish and Wildlife Service need to be designated as Priority Habitat Management Areas and given strong, science-based protections in accord with the recommendations of the National Technical Team. In addition, expansions of PHMA are warranted in Wyoming, where the BLM and U.S. Fish and Wildlife Service erroneously incorporated reductions in state Core Area designations that were made for political, rather than scientific, proposes, and which render this state's Priority Habitat Management Areas scientifically invalid.

Scientific research has determined that one energy site per square mile is the density threshold at which significant impacts to sage-grouse populations begin to be measured (Copeland et al. 2013). Tack (2009) found that this study in Montana's Milk River Basin, well densities of one per square mile also we correlated with a very low probability of a lek being large (see Figure 9, p. 43). The analysis of Copeland et al. (2013) found that a statewide analysis 72 of well densities revealed population decline curves very close to the earlier studies by Holloran (2005), but also noted that a 1 wellpad per square mile density of development correlated to approximately 18% decline in sage grouse lek population (see Figure 4). So one wellpad per square mile definitely is not a zero-impact threshold. Indeed, Garman (2018) found that clustering 8 wells per pad using directional drilling in the Atlantic Rim coalbed methane project, which would meet the one-pad-per-square-mile threshold required for PHMA, still left comparatively little habitat within the Project Area outside the ecological zone of influence of roads and wellpads. This one-site-per-square- mile-section is a threshold that should not be subject to waiver, modification, or exception.

The BLM's own experts recommended for existing fluid mineral leases that a 4-mile No Surface Occupancy buffer should be applied to leks, with an exception allowed in cases where the entire lease is within 4 miles of a lek, in which case a single wellsite should be permitted in the part of the lease most distal to the lek (NTT 2011). This recommendation is reinforced by a similar recommendation from western state agency biologists, who also recommended a 4-mile No Surface Occupancy buffer (Apa et al. 2008). According to Taylor et al.(2012: 27), in a study commissioned by BLM, 68 Second, female sage-grouse that visit a lek use an approximately 9-mi (15-km) radius surrounding the lek for nesting; a 2-mi (3.2-km) radius encompasses only 35-50% of nests associated with the lek (Holloran and Anderson 2005, Tack 2009). While a lek provides an important center of breeding activity, and a conspicuous location at which to count birds, its size is merely an index to the population dynamics in the surrounding habitat. Thus attempting to protect a lek, without protecting the surrounding habitat, provides little protection at all.

The studies referenced in this passage appears to be set out on page 14 and 15 of the USGS Synthesis. We were not able to locate a single instance in any of the DEISs, however, where any of these papers were cited in a discussion of the Impacts of the BLM Preferred Alternative in the DEISs. By ignoring the WAFWA Gap Analysis and Plos ONE study, the DEISs fail to recognize the warning that occurs later in the USGS Synthesis, which states: [T]here continues to be emerging science quantifying effects and measuring the efficacy of conservation recommendations. Review of this new information as it becomes available, and incorporating changes, if appropriate, are essential to implementing valid conservation recommendations.32 The DEISs ignore studies referenced in the USGS Annotated Bibliography and USGS Synthesis that either support additional protections for sage-grouse habitat or provide evidence against the amendments BLM proposes.

There is a substantial body of scientific literature concluding that discrete anthropogenic activities that are present in sagebrush have negative effects on sage-grouse. The extent of these effects varies based on the size, intensity and persistence of the human activity, and can range from displacement to local extirpation of sage-grouse.73 Nonrenewable energy developments, such as fluid mineral leasing, and their supporting infrastructure are a pervasive, and in some cases an increasing presence within the range of sage-grouse.74 There has, however, been a gradual decrease in recommended requirements for fluid mineral leasing within priority areas. * 2011 NTT Report75: For unleased federal fluid mineral estate, close priority areas with very limited exceptions. For leased federal areas, do not allow new surface occupancy in priority habitat, with limited exception. Proposed surface disturbance cannot exceed 3% with limited exception. Disturbance measured within individual priority areas and local project area.76 * 2013 COT Report77: Avoid development in priority areas; identify areas where leasing is not acceptable. If avoidance not possible, development should occur only in non-habitat areas or 72 U. least suitable habitat. Reduce and maintain density of energy structures below which there are no impacts to sage-grouse habitats or do not result in declines to sage-grouse populations.78 * 2015 BLM Plans79: Implement disturbance cap of 3% within individual priority areas and local project area in priority habitat. Implement a density cap of an average of 1 energy and mining facility per 640 acres.80 * 2018 BLM Proposed RMPA.EIS: Numerous additional waivers, exceptions and modifications for drilling in priority areas; restrictions on drilling limited; for Utah, if project design and site conditions indicate a project will improve habitat, exceedances of disturbance and density caps at either project level or individual priority area are allowed.; in Idaho disturbance cap only measured for individual population areas, not project area.81 The 2015 finding by the Fish and Wildlife Service that Greater Sage-Grouse did not need to be listed under the ESA relied heavily on the provisions in the 2015 BLM plans: As previously stated, sage-grouse are sensitive to disturbance, and small amounts of development within sage-grouse habitats can negatively affect sage-grouse population viability. Thus, limiting future disturbances in sage-grouse habitats is an essential component of reducing or eliminating effects related to disturbance, as recommended in the COT Report.82 In addition to the NTT and COT reports, numerous research papers confirm the importance of density and disturbance caps: * 2017 Edmunds study: Modeled density-independent and -dependent population growth across multiple spatial scales relevant to management and conservation. Relatively close fine-scale populations of sage-grouse can trend differently, indicating that large-scale trends may not accurately depict what is occurring across the landscape (e.g., local effects of gas and oil fields may be masked by increasing larger populations). 83 * 2017 Green study (importance of caps): Best models indicated that GRSG responded to energy development with a 1 to 4-year time lag, and well density within 6,400 m of leks best explained GRSG losses. Sagebrush cover and precipitation explained little variation in lek attendance over time. Across Wyoming, decreases in lek attendance were significant at a density of 4 wells per square kilometer, reaching 17 percent per year at 5.24 wells per square kilometer. Current regulations in Core Areas could limit GRSG losses from energy developments, but they may not promote GRSG recovery.84 * 2015 Holloran Study (importance of caps): Use of suitable winter habitat by sage-grouse decreased with increasing density of gas wells within 2.8 km of data loggers. Habitat use also increased with distance to wells and plowed main haul roads, but well density was a better predictor. Effects of anthropogenic activity were evident at lower well densities. Effects of gas development on sage-grouse can be reduced by minimizing well densities and adopting methods that reduce anthropogenic activities.85 * 2015 Fedy study (importance of caps): Birds avoided areas of high well density and nests were not found in areas with greater than 4 wells per km2 and majority of nests (63%) were in areas with = 1 well per km2.86 * 2015 Kirol study (importance of caps): Energy infrastructure had negative effects on habitat use and brood survival, with brood survival decreasing once surface disturbance exceeded 4 percent. Results

suggest that reduction of habitat quality was primarily driven by avoidance of energy infrastructure, resulting in primary and secondary source habitat becoming low-occurrence habitat.87 * 2017 Spence Study (importance of caps): Probability of lek collapse inside core areas was positively related to the density of oil and gas wells located outside of core areas at two distances within 1.6 km and within 4.8 km of the core area boundary.88 * 2018 Holloran Letter (importance of 2015 protections): Recommending management approaches and objectives established in 2015 BLM sage-grouse land use plans be used as minimum standards in sagebrush habitat.89

As explained in the NTT report: Sage grouse exhibit strong site fidelity (loyalty to a particular area even when the area is no longer of value) to seasonal habitats, which includes breeding, nesting, brood rearing, and wintering areas. (Connelly et al. 2004, Connelly et al. 2011b). Adult sage grouse rarely switch between these habitats once they have been selected, limiting their adaptability to changes. NTT at 51 (emphases added). Accordingly, loss of critical wintering habitat could lead to extirpation of sage-grouse populations that solely rely on these areas for the winter. See also FEIS at 3-5 ("Site fidelity in breeding birds could delay population response to habitat changes, and a clear response may require the death of most site-tenacious individuals.")

Attached is Attachment 3 to comments submitted by The Wilderness Society, Conservation Colorado, National Audubon Society, Colorado Wildlife Federation, Rocky Mountain Wild, Western Values Project, National Wildlife Federation and Natural Resources Defense Council.

For example, in Wyoming, Copeland et al. (2013) projected further sage-grouse population declines with full and rigorous implementation of the Wyoming Core Area plan (which subsequently was implemented in the federal Wyoming amendments and revisions as PHMA). Smith et al. (2017:9) found much lower probability of lek collapse inside PHMA, attributing this to a lower density of energy development in designated PHMA habitats: "This finding was predictable given how Core Areas were delineated to avoid existing energy disturbance and the low densities of disturbance where Core Areas were to be established prior to the [state Sage-Grouse Executive Order] in 2008." Also for Wyoming, Juliusson et al. (2017) modeled the likelihood of future oil and gas development under state and federal development restrictions (but not incorporating prioritization of leasing and development outside Core Areas, and found that with all other restrictions applied, 27.4% of the sage-grouse population would be exposed to baseline or high intensity energy development in Management Zone I (Northern Plains), versus 13.9% of the sage-grouse population in Management Zone II. Spence et al. (2017) found that the likelihood of lek collapse inside PHMAs was roughly half that of leks outside PHMAs, related to comparatively higher levels of surface development outside PHMAs, but also found that leks 53 near the boundary are likely to be negatively affected by development along the PHMA boundary. Edmunds et al. (2016) documented continued declines in most Core Areas, while Gamo and Beck (2017) attributed value to the Core Area effort on the basis of lower levels of drilling and construction in sage-grouse habitats outside Core Areas versus inside them. Based on these studies, RMPAs as originally drafted and approved are expected to slow the decline, but not to halt or reverse it. During the pendency of the sage-grouse RMPA process and in the years that followed, approximately 5 million acres of oil and gas leases were deferred from federal lease auctions across 7 western states due to sage-grouse concerns, including 2.2 million acres in Nevada, 1.6 million acres in Wyoming, 600,000 acres in Montana, and more than 300,000 acres each in Colorado and Utah. This enormous amount of lease deferral represents the sole effective and scientifically sound conservation measure in the ARMPAs, inasmuch as sage-grouse

habitats that remain unleased cannot be industrially developed, and their habitats are not subject to further degradation.

It is a well-established principle that for sage grouse, there is a time-lag for population responses to habitat impacts, taking two to ten years before population changes become measurable (Holloran 2005, Walker et al. 2007, Harju et al. 2010). As a result, the appropriate decision-point for changing management strategies would actually be 2-10 years before population declines are noted (in the best-case scenario that monitoring reliably recognizes a downturn as caused by a management problem versus population cyclicity, which is also problematic), which means that by the time that adaptive management changes are adopted it is already too late, the damage has been done, and because industrial infrastructure is rarely removed once in place the damage has become effectively irreversible.

We appreciate the idea that broad, science-based objectives have a place in determining whether greater sage-grouse habitat is contributing to stable populations. However, no single objective can cover the wide range of variability that occurs across a landscape as vast as the sagebrush sea. The Habitat Objectives Tables (Table 2-2) have been misinterpreted as standards that must be met, likely at the expense of the widest and most adaptable use in the West-livestock grazing. It does not make sense that these objectives be reflected in livestock grazing permittee/lessee terms and conditions if they do not fit the ecosystem in which they are being applied. Because of this, we appreciate those amendments that propose to make clear that habitat objectives must account for local conditions and site variability. This includes the removal of the seven-inch perennial grass and forb height habitat objective. We understand why grass and forb height objectives need to be considered for the health of the bird, but we believe these objectives should vary across the range. We request these changes be made to the habitat objectives tables for each greater sage-grouse RMP amendment.

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The BLM's own experts recommended for existing fluid mineral leases that a 4-mile No Surface Occupancy buffer should be applied to leks, with an exception allowed in cases where the entire lease is within 4 miles of a lek, in which case a single wellsite should be permitted in the part of the lease most distal to the lek (NTT 2011). This recommendation is reinforced by a similar recommendation from western state agency biologists, who also recommended a 4-mile No Surface Occupancy buffer (Apa et al. 2008). According to Taylor et al (2012: 27), in a study commissioned by BLM, Second, female sage-grouse that visit a lek use an approximately 9-mi (15-km) radius surrounding the lek for nesting; a 2-mi (3.2-km) radius encompasses only 35-50% of nests associated with the lek (Holloran and Anderson 2005, Tack 2009). While a lek provides an important center of breeding activity, and a conspicuous location at which to count birds, its size is merely an index to the population dynamics in the surrounding habitat. Thus attempting to protect a lek, without protecting the surrounding habitat, provides little protection at all.

To the extent that BLM's existing ARMPAs and revised RMPs ignore the recommendations of its own experts, they are arbitrary and capricious and an abuse of discretion. BLM should rectify this legal deficiency if the ARMPAs are further amended. In the context of the original Greater Sage-Grouse RMP amendment and revision effort, BLM's own Draft EIS analysis has supported 4-mile No Surface Occupancy buffers to be applied as Conditions of Approval to existing fluid mineral leases. The Wyoming Nine-Plan DEIS states, "Walker et al. (2007) recommends a buffer distance of at least 4.0 miles containing extensive stands of sagebrush habitat for breeding populations to persist." Wyoming Greater Sage-grouse RMP Amendment DEIS at 4-291. For the Buffalo RMP revision, BLM's analysis of the science states, 73 "Energy development within two miles of leks is projected to reduce the average probability of lek persistence from 87% to 5% (Walker et al. 2007a). Current research suggests that impacts to leks from energy development are discernible out to a minimum of 4 miles, and that some leks within this radius have been extirpated as a direct result of energy development (Apa et al. 2008). Even with a timing limitation on construction activities, Greater Sage-Grouse avoid nesting in oil and gas fields because of the activities associated with operations and production" Buffalo RMP Revision DEIS at 367. For Montana, BLM observes, "Impacts from energy development occur at distances between 3 and

4 miles. Impacts to leks caused by energy development would be most severe near the lek." HiLine RMP Revision DEIS at 4-135. Manier et al. (2014) undertook a comprehensive analysis of the available science on lek buffers, and concluded that the appropriate range for lek buffer protections was 3.1 to 5 miles, which encompasses and buttresses BLM's earlier NTT (2011) expert recommendations. State agencies and their wildlife experts have long pointed out the flaws in smaller lek buffers and the need for 4-mile No Surface Occupancy buffers around leks. According to the Nevada Division of Wildlife, "…the current NSO distance is 0.6 miles, which is not based on the best available science (see Coates et al. 2013 which suggests a buffer distance of 5.0 kilometers)." NDOW comments on Nevada Northeastern California DEIS, January 14, 2014, analysis chart 1. Apa et al. (2008, emphasis added) reviews the best available science by a team of state sage grouse biologists, and states, "Yearling female greater sage-grouse avoid nesting in areas within 0.6 miles of wellpads, and brood-rearing females avoid areas within 0.6 miles of producing wells. This suggests a 0.6- mile buffer around all suitable nesting and brood-rearing habitat is required to minimize impacts to females during these seasonal periods." This report further clarifies, "These suggest that all areas within at least 4-miles of a lek should be considered nesting and brood-rearing habitats in the absence of mapping." Thus, by combining these two recommended buffers, state experts in this report in effect recommended a 4.6-mile NSO buffer around active leks. The U.S. Fish and Wildlife Service has also pointed out the inadequacy of smaller lek buffers. For the Utah RMP effort, the agency states, "There is substantial scientific information that shows that impacts of human disturbance (e.g. oil and gas drilling) to sage-grouse remain discernible out to distances > 4 miles of a lek." Attachment 2, USFWS comments on Utah Conservation Plan 7/12/12, at 3. The agency goes on to conclude, "In summary, we recommend avoiding permanent structures within a 4 mile lek buffer…at all times. Exceptions may be appropriate for the placement of permanent structures on non-habitat areas within the 4 mile lek buffer if it can be determined that the location of these structures will not impact nesting sagegrouse." USFWS comments Utah Conservation Plan, 5/8/13 at 8. In Nevada, the USFWS states, "We recommend a year-round lek buffer of 4.0 miles." 74 BLM's own NEPA analysis indicates that proposed lek buffers are inadequate. In the Nevada Northeastern California DEIS, BLM states, Impacts on GRSG accrue over varying distances from origin depending on the type of development: Energy extraction such as oil and gas, geothermal, and plan of operation mining at 11.8 miles (19 kilometers) based on direct impacts of field development, including associated infrastructure, noise, lighting, and traffic (Johnson et al. 2011; Taylor et al. 2012) Nevada Northeastern California Greater Sage-grouse RMP Amendment DEIS at 605. BLM Wyoming Draft EIS analysis arrives at the same conclusion: "Buffer distances from 0.5 to two miles from oil and gas infrastructure have been shown to be inadequate to prevent declines of birds from leks (Walker et al. 2007). Studies have shown that greater distances, anywhere from two to four miles, are required for viable Greater Sage-Grouse populations to persist (Connelly et al. 2000, Holloran and Anderson 2005, Walker et al. 2007)." Wyoming Greater Sage-grouse RMP Amendment DEIS at 4-335. According to Apa et al. (2008), "Buffer sizes of 0.25 mi., 0.5 mi., 0.6 mi., and 1.0 mi. result in estimated lek persistence of 5%, 11%, 14%, and 30%." BLM concludes, "Studies have shown that greater distances, anywhere from two to four miles, are required for viable Greater Sage-Grouse populations to persist." Wyoming Greater Sage-grouse RMP Amendment DEIS at 4-335. For these reasons, the application of a 0.6-mile lek buffer is arbitrary and capricious, violates BLM Sensitive Species Policy, and will contribute to further population declines in Core Areas that will contribute to the need to protect the greater sage grouse under the Endangered Species Act. Holloran (2005) undertook an empirical test of the adequacy of 0.25-mile No Surface Occupancy buffers and 2-mile Timing Limitation Stipulations, and determined that sage grouse in the Pinedale Anticline and Jonah Fields would be completely extirpated within 19 years of the study as a result of full-field development with this package of protections applied. BLM's NEPA analysis for a

recent Miles City Field Office oil and gas leasing EA provides a thorough synopsis: "Sage grouse are offered species specific protections through a stipulation. Under Alternative B, ¼ mile NSO buffers and 2 mile timing buffers would apply where relevant. Based on research, these stipulations for sage grouse are considered ineffective to ensure that sage grouse can persist within fully developed areas. With regard to existing restrictive stipulations applied by the BLM, (Walker et al. 2007a) research has demonstrated that the 0.4-km (0.25 miles) NSO lease stipulation is insufficient to conserve breeding sage-grouse populations in fully developed gas fields because this 75 buffer distance leaves 98 percent of the landscape within 3.2 km (2 miles) open to fullscale development. Full-field development of 98 percent of the landscape within 3.2 km (2 miles) of leks in a typical landscape in the Powder River Basin reduced the average probability of lek persistence from 87 percent to 5 percent (Walker et al. 2007a). Other studies also have assessed the efficacy of existing BLM stipulations for sage grouse. Impacts to leks from energy development are most severe near the lek, and remained discernable out to distances more than 6 km (3.6 miles) (Holloran 2005, Walker et al. 2007a), and have resulted in the extirpation of leks within gas fields (Holloran 2005, Walker et al. 2007a). Holloran (2005) shows that lek counts decreased with distance to the nearest active drilling rig, producing well, or main haul road, and that development influence counts of displaying males to a distance of between 4.7 and 6.2 km (2.9 and 3.9 miles). All well-supported models in Walker et al. (2007a) indicate a strong effect of energy development, estimated as proportion of development within either 0.8 km (0.5 miles) or 3.2 km (2 miles), on lek persistence. Buffer sizes of 0.25 mi., 0.5 mi., 0.6 mi. and 1.0 mi. result in an estimated lek persistence of 5 percent, 11 percent, 14 percent, and 30 percent. Lek persistence in the absence of CBNG development averages approximately 85 percent. Models with development at 6.4 km (4 miles) had considerably less support, but the regression coefficient indicated that impacts were still apparent out to 6.4 km (4 miles) (Walker et al. 2007a). Tack (2009) found impacts of energy development on lek abundances (numbers of males per lek) out to 7.6 miles." Miles City October 2014 Oil and Gas Leasing EA, Environmental Assessment DOIBLM-MT-C020-2014-0091-EA, May 19, 2014 at 60. For most states, BLM purported to apply lek buffer distances in accordance with Manier et al. (2014) at the project stage of the NEPA approval process. These typically are set at 3.1 miles for roads and energy infrastructure, 2 miles for tall structures, and 1.2 miles for low structures, and represent the lowest (least protective) end of the protection spectrum described by Manier et al. (2014). Green et al. (2017) found that oil and gas development in proximity to leks contributed to a 2.5% per year decline in sage-grouse populations, and that the 3.1-mile buffer best explained these energy-driven declines, but it is important to note that these researchers neglected to test development densities at buffer distances larger than 3.1 miles in radius. We are concerned that these buffer distances (and also the 1.2-mile standard for low structures) are inappropriately small (with the possible exception of the road buffer) because while they be adequate to protect breeding grouse while on the lek based on the best available science, they will allow these disruptive and damaging features to be located in the midst of prime nesting habitat, which extends 5.3 miles from the lek site (Holloran and Anderson 2005). Furthermore, "Justifiable departures to decrease or increase from these distances, based on local data, best available science, landscape features, and other existing protections (e.g., land use allocations, state regulations) may be appropriate for determining activity impacts." See, e.g., Idaho/Southwest Montana RMPA FEIS at DD-1. Statements like these completely undermine the certainty of implementation of lek buffers, rendering them completely discretionary. Because the nesting period is equally sensitive and equally important to survival of and recruitment to

A limit of 3% human surface disturbance per square-mile section is the minimum necessary standard for preventing habitat abandonment by sage grouse. Knick et al. (2013) found that 99% of active leks across

the western half of the sage grouse's range were surrounded by lands with 3% or less human development. Decker et al. (2017) found a similar result in Colorado, with a linear decrease in sage grouse lek populations once surface disturbance increased above the 2.5% threshold. Preliminary results from Kirol et al. (in prep.) indicate that the vast majority of sage-grouse were found in habitats with <1% surface disturbance. Disturbance density can also affect survival; Kirol et al. (2015a) found that brood survival for sage-grouse began to decline significantly once disturbance density hit the 4% threshold. The vast majority was surrounded by much less disturbance. Copeland et al. (2013) found that if all of the State of Wyoming sage grouse policy provisions (which include a 5% disturbance cap calculated using a Disturbance Density Calculation Tool) were implemented fully and to the letter, that a 9 to 15% decline in greater sage grouse populations would still occur statewide, including a 6 to 9% decline within designated Core Areas (where the 5% disturbance cap would be applied). There is no scientific evidence at all indicating that sage grouse can tolerate a greater percentage of surface disturbance. In particular, the 5% cap on disturbance proposed for the Wyoming RMP amendment for Core Areas and Connectivity Areas been shown to be effective by no scientific study, ever.

Scientific research has determined that one energy site per square mile is the density threshold at which significant impacts to sage-grouse populations begin to be measured (Copeland et al. 2013). Tack (2009) found that this study in Montana's Milk River Basin, well densities of one per square mile also we correlated with a very low probability of a lek being large (see Figure 9, p. 43). The analysis of Copeland et al. (2013) found that a statewide analysis of well densities revealed population decline curves very close to the earlier studies by Holloran (2005), but also noted that a 1 wellpad per square mile density of development correlated to approximately 18% decline in sage grouse lek population (see Figure 4). So one wellpad per square mile definitely is not a zero-impact threshold. Indeed, Garman (2018) found that clustering 8 wells per pad using directional drilling in the Atlantic Rim coalbed methane project, which would meet the one-pad-per-square-mile threshold required for PHMA, still left comparatively little habitat within the Project Area outside the ecological zone of influence of roads and wellpads. The one-site-per-square- mile-section is a threshold that should not be subject to waiver, modification, or exception.

BLM should not reduce protections for greater sage-grouse on GHMA in Idaho because the agency does not have enough information about some Idaho sage-grouse populations to reasonably predict what impacts of reducing protections will be. One area of concern is the East-Central Idaho population of sage-grouse, where BLM Idaho has proposed oil and gas leasing twice in 2018 and then temporarily deferred leasing after conservation groups filed administrative protests and litigated. In 2012, the U.S. Fish and Wildlife Service convened a "Conservation Objectives Team" of Service and state representatives with expertise in greater sage-grouse science and conservation. In 2013, that body issued a Conservation Objectives Team Report (COT Report) evaluating the threats to the species and recommending conservation measures. The COT Report described the East- Central Idaho sage-grouse population as "isolated/small size" and "high risk" with a "low probability of persistence" COT Report at 22, 76-77. Such a greater sage-grouse population is nevertheless 10 Green, Adam et al., Investigating Impacts of Oil and Gas Development on Greater Sage-Grouse, Journal of Wildlife Management, doi: 10.1002/jwmg.21179 (2016). 85 valuable because it helps ensure the species continues to exist by contributing to its redundancy, representation, and resilience. See COT Report at 12. Preserving peripheral populations is essential to arresting the decline of greater sage-grouse toward extinction and Endangered Species Act listing. See COT Report at 12-13. The COT Report further stated: [L]ittle information is available on [East Central Idaho] sage-grouse populations other than some limited

location and attendance data on a few leks. No lek routes have been established within this area that would allow consistent monitoring of sage-grouse populations. This lack of data is largely due to very difficult access in most years during winter and spring. COT Report at 76. This paucity of information about the East-Central Idaho/East Idaho Uplands population of sage-grouse is well known to resource managers. Due to insufficient population information, the Idaho Department of Fish and Game closed the East Idaho Uplands area of the state to greater sage-grouse hunting in 2008. It has not been reopened since. See 2015 Idaho Sage-grouse Statewide Report at 16, 2016 Sage-grouse Rules at 2 and 2017 Sage-grouse Rules at 2.11 The Sage-grouse Conservation Plan prepared by the East Idaho Uplands Sage-grouse Working Group noted, "There is a need for better information related to population status and trends. Status, survival and trend data relative to sage-grouse populations in the East Idaho Uplands SGPA [Sage-grouse Planning Area] is lacking." EIU Sage-grouse Conservation Plan at 29. The Conservation Plan also stated that much of the area had not been surveyed for sage-grouse or had been only minimally surveyed by air without follow-up ground surveys; due to the lack of consistent lek counts and lek count routes, there was no index to sage-grouse breeding trend. EIU Sage-grouse Conservation Plan at 29. Furthermore, "It is unknown if sage-grouse in the East Idaho Uplands are migratory and if there is one population or multiple populations occurring in different parts of the area." EIU Sage-grouse Conservation Plan at 30. Moreover, the Plan stated there is no information available about seasonal habitat quality, the population is believed to be isolated from other sage-grouse populations, and there may be sage-grouse population isolations within the East Idaho Uplands Planning Area. EIU Sage-grouse Conservation Plan at 30, 31. The 2015 Idaho Sage-grouse Local Working Groups Statewide Annual Report, which was published in August 2016 by the Idaho Sage-grouse Advisory Committee Technical Assistance Team, demonstrates that five years later, these data deficiencies still existed. "Lack of information" was listed as a threat to the East Idaho Uplands greater sage-grouse population: "Most of EIU [East Idaho Uplands] does not have detailed information on populations, movements, etc." 2015 Idaho Sage-grouse Statewide Report at 20.12 11 The 2018-2019 Idaho sage-grouse season will not be set until August 2018. See Idaho Department of Game and Fish, Upland Game, Turkey & Furbearer, 2018 & 2019 Seasons & Rules at 9. Available at https://idfg.idaho.gov/sites/default/files/seasons-rules-upland-birds-2018-2019.pdf. 12 The 2015 statewide report (published in August 2016) is the most recent. No Idaho Sage-grouse Local Working Group Statewide Report has been published for 2016 or 2017. Email communications between Ann Moser (Idaho Department of Fish and Game) and Kelly Fuller (Western Watersheds Project), December 19, 2017. 86 Oil and gas leasing and exploratory well drilling in this area, near Grays Lake National Wildlife Refuge, has occurred in the past, despite BLM's lack of site-specific greater sagegrouse population information for this area. Attachment 6. Although BLM has deferred oil and gas leasing in this area twice in 2018, the Expressions of Interest that led to this area being scheduled for leasing are still listed as "pending" in BLM's National Fluids Lease Sale System database as of July 17, 2018.

Its impact analysis must also account for the primacy of cheatgrass invasion in determining patterns of rangeland fire. According to BLM's past NEPA analysis, "The positive feedback loop between fire and invasive plant species may be the greatest impact on fire management and GRSG (Abatzoglou and Kolden 2011)." Nevada Northeastern California Greater Sage Grouse RMP Amendment DEIS at 701. BLM further elucidates, 87 In Oregon 19th and early 20th century grazing practices, along with introduction and spread of invasive plant species and the practice of fire suppression in the 20th century, have all contributed to fire suppression and to increasingly destructive wildfires. Oregon Greater Sage Grouse RMP Amendment DEIS at 4-10. BLM's past NEPA analysis concedes, "In the absence of cheatgrass, Wyoming big sagebrush sites can take 150 years to recover." Nevada Northeast California

Greater Sage Grouse RMP Amendment DEIS at 608. When cheatgrass is present, it can take over following disturbance, forming a monoculture characterized by unnaturally frequent fire return intervals that can effectively prevent the recovery of sagebrush and perennial grasses on a long-term if not permanent basis. For Oregon, BLM states, "In Wyoming big sagebrush sites, full recovery to pre-burn sagebrush canopy cover conditions will take over 100 years (Cooper 2007);…." Oregon Greater Sage Grouse RMP Amendment DEIS at 3-70. More generally, BLM states, "Sagebrush recovers slowly from fire; most species do not resprout but must be replenished by winddispersed seed from adjacent unburned stands or seeds in the soil. Depending on the species and the size of a burn, sagebrush can reestablish itself within five years, but a return to a full pre-burn community cover can take 50 to over 100 years (Baker 2011)." Oregon Greater Sage Grouse RMP Amendment DEIS at 4-10. For these reasons, BLM must incorporate science-based measures to reduce the spread of cheatgrass, including rest from livestock grazing, into any future sage-grouse plan amendments, and must also rest burned areas for two years or more from livestock grazing, to allow native perennial grasses to recover and to reduce the distribution of weed seeds on newly burned areas.

Smith et al. (2017:9) found much lower probability of lek collapse inside PHMA, attributing this to a lower density of energy development in designated PHMA habitats: "This finding was predictable given how Core Areas were delineated to avoid existing energy disturbance and the low densities of disturbance where Core Areas were to be established prior to the [state Sage-Grouse Executive Order] in 2008." Also for Wyoming, Juliusson et al. (2017) modeled the likelihood of future oil and gas development under state and federal development restrictions (but not incorporating prioritization of leasing and development outside Core Areas, and found that with all other restrictions applied, 27.4% of the sage-grouse population would be exposed to baseline or highintensity energy development in Management Zone I (Northern Plains), versus 13.9% of the sage-grouse population in Management Zone II. Spence et al. (2017) found that the likelihood of lek collapse inside PHMAs was roughly half that of leks outside PHMAs, related to comparatively higher levels of surface development outside PHMAs, but also found that leks near the boundary are likely to be negatively affected by development along the PHMA boundary. Edmunds et al. (2016) documented continued declines in most Core Areas, while Gamo and Beck (2017) attributed value to the Core Area effort on the basis of lower levels of drilling and construction in sage-grouse habitats outside Core Areas versus inside them. Based on these studies, RMPAs as originally drafted and approved are expected to slow the decline, but not to halt or reverse it. During the pendency of the sage-grouse RMPA process and in the years that followed, approximately 5 million acres of oil and gas leases were deferred from federal lease auctions across 7 western states due to sage-grouse concerns, including 2.2 million acres in Nevada, 1.6 million acres in Wyoming, 600,000 acres in Montana, and more than 300,000 acres each in Colorado and Utah. This enormous amount of lease deferral represents the sole effective and scientifically-sound conservation measure in the ARMPAs, inasmuch as sage-grouse habitats that remain unleased cannot be industrially developed, and their habitats are not subject to further degradation.

Wyoming Greater Sage-grouse RMP Amendments Draft EIS at 4-276. Wisdom et al. (2011) found that lands within 3.1 miles of transmission lines and highways had an elevated rate of lek abandonment. Nonne et al. (2011) found that raven abundance increased along the Falcon-Gondor powerline corridor in Nevada both during the construction period, and long-term after powerline construction activities had ceased. Braun et al. (2002) reported that 40 leks with a power line within 0.25 mile of the lek site had significantly slower population growth rates than unaffected leks, which was attributed to increased raptor predation. Dinkins (2013) documented sage grouse avoidance of powerlines not just during the

nesting period but also during early and late brood-rearing. LeBeau et al. (2014) found that sage grouse avoided habitats within 2.9 miles of transmission lines during the brood-rearing period. Hansen et al. (2016) documented negligible additional avoidance of a powerline co-located with an existing transmission line in low-quality wintering habitats in Utah, and stated (at p. 184, "existing transmission line corridors located in poor-quality winter habitat are likely already avoided by sage-grouse, and co-locating additional lines within these corridors may dampen the effects of new tall structures on the landscape in the years immediately following construction." Dinkins et al. (2014) documented no spatial avoidance, but lower hen survival in areas with higher powerline density. Shirk et al. (2015) found that colocating several transmission lines beside each other resulted in a complete barrier to sagegrouse migration and dispersal in central Washington. The National Technical Team (NTT 2011) recommended that Priority Habitats be exclusion areas for overhead powerlines, and that General Habitats should be avoidance areas for overheads lines. And according to BLM's own NEPA analysis, Impacts on GRSG accrue over varying distances from origin depending on the type of development: Tall structures such as power lines, wind turbines, communication towers, agricultural, and urban development based on an avian predator foraging distance of 4.3 miles (6.9 kilometers; Boarman and Heinrich 1999; Leu et al. 2008) Nevada Northeastern California Greater Sage-grouse RMP Amendment DEIS at 605. The National Technical Team (NTT 2011) recommended that Priority Habitats be exclusion areas for overhead powerlines, and that General Habitats should be avoidance areas for overheads lines. And according to BLM's own NEPA analysis, 61 Impacts on GRSG accrue over varying distances from origin depending on the type of development: Tall structures such as power lines, wind turbines, communication towers, agricultural, and urban development based on an avian predator foraging distance of 4.3 miles (6.9 kilometers; Boarman and Heinrich 1999; Leu et al. 2008) Nevada Northeastern California Greater Sage-grouse RMP Amendment DEIS at 605. The National Technical Team (2011) recommended that general habitats be managed as avoidance areas for new rights-of-way, and also recommended that overhead powerlines and other infrastructure that have fallen out of use should be removed, when they occur in Priority Habitats

The EPA supports coordination among federal, state, local, and tribal authorities for consistent and effective conservation of imperiled species. We are concerned that the Draft EIS does not provide sufficient information to fully assess the impacts of the proposed action. For this reason, the EPA has rated the Draft EIS/RMPA as Environmental Concerns Insufficient Information (EC-2). The description of the EPA' s rating system is available at: https://www.epa.gov/nepa/environmental-impact-statementrating-system-criteria. The enclosed detailed comments include recommendations for improving the assessment and disclosure of the Proposed Action's expected impacts to greater sage-grouse and habitat; however, we defer to the expertise of the U.S. Fish and Wildlife Service and appropriate state wildlife management agencies regarding the extent to which those impacts would be beneficial or detrimental to the species. Specifically, we recommend improvements in the analysis of the potential impacts from increased oil and gas development for the Proposed Action, and updating the mitigation section to reflect any changes resulting from public comments.

Wyoming Greater Sage-grouse RMP Amendments Draft EIS at 4-276. Wisdom et al. (2011) found that lands within 3.1 miles of transmission lines and highways had an elevated rate of lek abandonment. Nonne et al. (2011) found that raven abundance increased along the Falcon-Gondor powerline corridor in Nevada both during the construction period, and long-term after powerline construction activities had ceased. Braun et al. (2002) reported that 40 leks with a power line within 0.25 mile of the lek site had significantly slower population growth rates than unaffected leks, which was attributed to increased

raptor predation. Dinkins (2013) documented sage grouse avoidance of powerlines not just during the nesting period but also during early and late brood-rearing. LeBeau et al. (2014) found that sage grouse avoided habitats within 2.9 miles of transmission lines during the brood-rearing period. Hansen et al. (2016) documented negligible additional avoidance of a powerline co-located with an existing transmission line in low-quality wintering habitats in Utah, and stated (at p. 184, "existing transmission line corridors located in poor-quality winter habitat are likely already avoided by sage-grouse, and co-locating additional lines within these corridors may dampen the effects of new tall structures on the landscape in the years immediately following construction." Dinkins et al. (2014) documented no spatial avoidance, but lower hen survival in areas with higher powerline density. Shirk et al. (2015) found that co-locating several transmission lines beside each other resulted in a complete barrier to sage-grouse migration and dispersal in central Washington. The National Technical Team (NTT 2011) recommended that Priority Habitats be exclusion areas for overhead powerlines, and that General Habitats should be avoidance areas for overheads lines. And according to BLM's own NEPA analysis, Impacts on GRSG accrue over varying distances from origin depending on the type of development: Tall structures such as power lines, wind turbines, communication towers, agricultural, and urban development based on an avian predator foraging distance of 4.3 miles (6.9 kilometers; Boarman and Heinrich 1999; Leu et al. 2008) Nevada Northeastern California Greater Sage-grouse RMP Amendment DEIS at 605. 58 The National Technical Team (NTT 2011) recommended that Priority Habitats be exclusion areas for overhead powerlines, and that General Habitats should be avoidance areas for overheads lines. And according to BLM's own NEPA analysis, Impacts on GRSG accrue over varying distances from origin depending on the type of development: Tall structures such as power lines, wind turbines, communication towers, agricultural, and urban development based on an avian predator foraging distance of 4.3 miles (6.9 kilometers; Boarman and Heinrich 1999; Leu et al. 2008) Nevada Northeastern California Greater Sage-grouse RMP Amendment DEIS at 605. The National Technical Team (2011) recommended that general habitats be managed as avoidance areas for new rights-of-way, and also recommended that overhead powerlines and other infrastructure that have fallen out of use should be removed, when they occur in Priority Habitats.

A rather glaring oversite throughout this and all state DEISs is that BLM attempts to justify several aspects of the planning analyses through inclusion by reference from the 2015 analyses of sage-grouse plan amendments. However, the BLM used 2012-13 data in their analyses for the 2015 land use plan amendments, and it cannot be denied that an extensive amount of new I information, project development, and other factors have been developed or occurred since 2013. This seemingly violates BLM Planning Handbook and NEPA procedures.

Scientific Flaws with the Plan Amendment and Listing Decision: In addition to the missteps related to process, the Plan Amendments are substantively flawed. The key agency reports (the Reports) underpinning the Plan Amendments, as well as the earlier warranted but precluded GRSG listing decision, were plagued with conflicts of interest, bias and selective citation. They ignored the most relevant factors to grouse populations (weather, predation and hunter harvest) in favor of draconian restrictions that will cost jobs and harm local communities without corresponding benefits to the species. The 2018 LUPAs fail to acknowledge the scientific shortcomings in the National Technical Team ("NTT") Report, the Conservation Objectives Team ("COT") Report, the U.S. Geological Society ("USGS") Monograph, and the Manier et al. Buffers Report (collectively, the "Reports"), much less redress the resulting inaccuracies in the agency decisions. DOI and the U.S. Department of Agriculture must recognize critical errors in the Reports and the prescriptions they support. Because future agency

management decisions and potential litigation continue to turn to the Reports for support, addressing the scientific foundation is crucial. Accordingly, DOI should include this statement in the forthcoming amendments and records of decision ("RODs"): The NTT Report, the COT Report, the USGS Monograph and Manier, et al. 2014 (collectively "the Reports") were heavily relied upon in the 2010 listing decision on GRSG as well as the LUPAs and corresponding RODs. Since then, the science and understanding on GRSG has evolved and some significant shortcomings with the Reports have come to light. Management prescriptions from the Reports should be viewed with caution and tempered with the best available information, including specifically state and local science and knowledge. Detailed Data Quality Act challenges based on these issues were never adequately answered. In 2015, a coalition of 20 local governments (including the Counties) as well as diverse agricultural and energy interests (collectively, the Petitioners) undertook an independent scientific review of the Reports. The reviews uncovered significant errors, omissions and biases in the Reports that have contaminated subsequent policy and management actions based thereon. In several Data Quality Act challenges, (the Challenges), Petitioners documented hundreds of pages of flaws with: * 3 percent disturbance caps * Density caps of 1 disturbance per 640 acres * Lek buffers * Required Design Features * No Surface Occupancy areas (NSOs) in priority habitat * Implementation of an avoid-minimize-compensate policy * Net conservation gains * Sagebrush canopy cover * The warranted but precluded listing decision for GRSG The Reports erroneously ignore accurate population data and adopt flawed modeling approaches that have consistently failed to accurately predict populations. This selective use of science is wholly misleading and assumes GRSG populations are in decline despite evidence to the contrary. The Reports ignore natural population fluctuations; single out human-driven activities for alleged declines (but exclude the significance of hunter harvest); and overlook actual threats to GRSG such as predation. The Reports fail to meet the standards of quality, integrity, objectivity and utility required by the Data Quality Act, as well DOI's standards of scientific integrity and transparency. DOI failed to address these shortcomings. The National Technical Team Challenge was 97 pages in length with four exhibits for a total of 197 pages of detailed issues. The COT Challenge was 88 pages with four exhibits for a total of 159 pages. The Monograph Challenge was 99 pages with three exhibits for a total of 332 pages. The Buffers Challenge was 41 pages. Nonetheless, the agencies virtually ignored these shortcomings and issued only a four-page response to the cumulative 729-page Challenges, and a two-page response to subsequent appeals. Moreover, in the NEPA documents, the agencies hardly recognized the existence of the Challenges, let alone addressed their merits. BLM and the USFS failed to address the substance and detail in these challenges and provided little if any rationale for their misplaced use of the Reports and the Monograph. No corrective actions were taken nor were adequate disclosures of these flaws recognized or addressed as required by implementing regulations for NEPA. See 40 C.F.R. § 1502.9(b). In sum, these misplaced and unscientific management restrictions will negatively impact the economies and future viability of countless communities, small businesses, and family farms and ranches as well as efforts to conserve GRSG and we request BLM address the above bulleted points.

The purpose of this letter is to underscore recommendations made in a letter sent to you on Octob~13, 2017 by members of the sage-grouse science community in light of the recently completed U.S. Geo~ical Survey (USGS) literature review and the Bureau of Land Management's (BLM) May 2018 draft Land UZPlan (LUP) amendments. Conclusions reached by the USGS in their synthesis of sage-grouse science (SynthdSi'S) published since release of the BLM and U.S. Forest Service's LUPs in 2015 suggest that if these agencies proceed with amendments to those LUPs they must do so with a narrow, science-based focus. Unfortunately, we do not believe BLM's recently released draft Environmental Impact Statements (DEISs) reflect such a targeted focus.

The Department of Interior (DOI) and the u.s. Department of Agriculture (USDA) must recognize shortcomings in the key reports relied upon to craft the BIM's 2015 Record of Decision (ROD) which include the NIT and COT Reports and the USGS Monograph and the prescriptions they support. Agency management decisions and potential litigation will surely turn towards the Reports for support. Absent recognition of shortcomings, land management is sure to be entangled in controversy for years to come. Accordingly, we urge DOI to include this statement in the forthcoming amendments and records of decision (RODs): The NIT Report, the COT Report, the USGS Monograph and Manier, et al. 2014 (collectively "the Reports") were heavily relied upon in the 2010 listing decisian on GRSG as well as the LUPAs and correspanding RODs. Since then, the science and understanding on GRSG has evolved and some significant shortcomings with the Reports have come to light. Management prescriptions from the Reports should be viewed with caution and tempered with the best available information including specifically state and local science and knowledge. Most importantly, none of the information contained in the COT Report, NIT Report or the USGS Monograph specifically addressed the highly unique landforms, variable habitat or naturally fragmented habitat that exists in the Parachute-Piceance-Roan population found in Garfield County. The terrain in our County that hosts Greater Sage Grouse is a naturally fragmented habitat that varies radically over short distances to include severely undulating topography, steep slopes and deep canyons, dark timber, sage brush on the ridges and a complex range of vegetation types. These reports relied on above are void of scientific specificity regarding Garfield County's highly unique terrain.

The BLM is required to contemplate new science since the BLM's 2015 Record of Decision to better inform policy in the RMPA. Rather, the BLM has only relied on a limited scope of new scientific information contained in a report prepared by the US Geologic Survey. This report ignores a vast body of additional science that provides beneficial analysis on grazing, predation, climate weather impacts, high-resolution mapping and the value of including local working group activity. This a tremendous shortcoming where the BLM ignored the opportunity to approach the management of the impacts to the species that could have been informed by a wide net of best available science; rather, it appears the best available science has been cherry picked thereby excluding highly important elements of could and should contribute to a more robust and effective adaptive management program for the benefit of the species.

We ask that the following information be considered in the EIS so that there is a more complete set of relevant new scientific information as best available science: A. THE IMPORTANVE OF HIGH RESOLUTION MAPPING TO PRIORITIZING SAGE-GROUSE CONSERVATION EFFORTS Coates, P.S., Casazza, M.L., Brussee, B.E., Ricca, M.A., Gustafson, K.B., Sanchez-Chopitea, E., Mauch, K., Niell, L., Gardner, S., Espinosa, S., and Delehanty, D.I., 2016, Spatially explicit modeling of annual and seasonal habitat for greater sage-grouse (Centrocercus uraphasianus) in Nevada and northeastern California-An updated decision-support tool for management: U.S. Geological Survey Open-File Report 2016-1080, 160 p., https:/ldol.org/10.3133/ofr20161080. This revised USGS report utilized new data mUltiple sources, including updated GRSG telemetry locations, high-resolution vegetation maps, and seasonal habitat suitability indices. As a result of this higher resolution mapping, the authors note that, "GRSG habitat area increased by 6.5 percent compared to findings in the earlier report, with increases of a similar magnitude in core, priority, and general GRSG habitat management categories." The significance of this study is that it underscores the importance of producing modern, reproducible, high-resolution sage-grouse habitat maps to inform and prioritize conservation efforts far better that broad brush

stroke approaches used in the development of the Northwestern Colorado RMP. A similar high-resolution habitat mapping effort is underway in Northwestern Colorado.

ACCOUNTING FOR CLIMATIC VARIATION IN POPULATION RESPONSES IN ADAPTIVE MANAGEMENT This paper is significant to northwestern Colorado but not for what the authors may have intended. Genetic and habitat connectivity analyses reveal the highest high levels of genetic and spatial connectivity among sage-grouse subpopulations were found within Sage-grouse management zone 2, comprising the greater Wyoming basin population which includes Northwestern Colorado. These results are contrary to and refute the basic assumptions of Garton et al. (2009, 2011), that assumed far greater genetic isolation and were used to produce the population extinction predictions relied upon by the USFWS in their 2010 ESA listing decision, management subsequent reports and recommendations (including the COT and subsequent BIM RMPs). Homer, C.G., G. Xian, C.L. Aldridge, O.K. Meyerd, T.R. loveland, M.S. O'Donnell. 2015. Forecasting sagebrush ecosystem components and greater sage-grouse habitat for 2050: learning from past climate patterns and landsat imagery to predict the future. EcologicollndicotorS 55: 131-145. https:/Idol.org/10.1016/i.ecollnd.2015.03.002 The Significance of this paper to Northwestern Colorado RMP is that it reiterates the need for locally informed and locally implemented adaptive tactics and strategies for vegetation and land management to offset predicted long-term climatic trends. Tronstad, L., G. Jones, M. Andersen and G. Beauvais. 2018. Modeling and mapping the distribution of invertebrate prey used by Greater Sage-grouse during the early brood rearing period: Report of a pilot project. Report prepared for the Wyoming landscape Conservation Initiative by the Wyoming Natural Diversity Database, University of Wyoming, laramie, Wyoming. Previous research on sage-grouse habitat evaluations has focused on vegetation and topographic components. However, invertebrate prey, which is strongly affected by climate and local weather, is vital to chick survival and sage-grouse hens typically prefer brooding habitat with higher densities of invertebrates. Therefore, this study investigated the relationship between vegetation and invertebrate species composition and density. This approach is significant because tracking annual variation and mUlti-year trends in invertebrate populations potentially provides a locally-based predictor of annual chick survival and therefore, population trends (i.e. spring conditions where a warm, moist spring may have far more invertebrates available compared to a cold, dry spring, and this will influence annual cohort size.). Ramey II, R.R. J.L. Thorley, and A.S. Ivey. local and popUlation-level responses of greater sagegrouse to oil and gas and climatic variation in Wyoming. BioArxiv (https:lldoi.org/10.1101/028274 The significance of this research to adaptive management in the Northwestern Colorado RMP is that it was the first study to quantitatively evaluate the relative effects of regional climatic variation (as indexed by the PDO) and oil and gas surface disturbance on sage grouse population dynamics, at local and population-level scales. This research underscores the need for accounting for climatic variation in understanding sage-grouse responses to human development and management actions, including the use of population "triggers" in adaptive management.

THE IMPORTANCE OF LOCAL WORKING GROUPS AND KNOWLEDGE FOR EFFECTIVE SAGEGROUSE MANAGEMENT Belton, LR., S.N. Frey; and D.K. Dahlgren. 2017. Participatory Research in Sage-grouse Local Working Groups: Case Studies from Utah. Human-Wildlife Interactions: 11(3) :287-301. Available at: https:lldlgltalcommons.usu.edu/hwl/vol11/1ss3/7 Christiansen, T J. and L.R. Belton. 2017. Wyoming Sage-Grouse Working Groups: Lessons learned. Human-Wildlife Interactions: 11(3): 274-286. Available at: https:lldlglta1commons.usu.edu/hwl/volll/lss3/6 The significance of these two papers, one from Utah and the other from Wyoming, is that they demonstrate the value of participatory research and tailored management done at local (working group) scale, which benefits greater sage-

grouse conservation efforts both locally and regionally. The collaborative, local working group approach as implemented in Utah and Wyoming, contrasts sharply with the one-size fits all, top-down management prescriptions as proposed in the BlM via the Northwest Colorado RMP. As noted by Christiansen and Belton (2017), the strength of the local working group approach is that it is "reliant on the ability of diverse participants, who often hold adversarial viewpoints, to develop and maintain positive working relationships in seeking to achieve mutually agreeable goals. We believe the Wyoming model has potential to succeed in an era of political polarization."

THE IMPORTANCE OF MANAGING RAVENS: A DIRECT THREAT TO SAGE-GROUSE SURVIVAL
Peebles, L.W., M.R. Conover, and J.B. Dinkins. 2017. Adult sage-grouse numbers rise following raven removal or an increase in precipitation. Wildlife Society Bulletin 41(3). Available at https:lldol.org/10.1002/wsb_788 This paper is significant to the Northwestern Colorado RMP because it underscores the importance of incorporating climatic (or long term weather) indices in any evaluation of population response to any management prescriptions, in this case, decreasing raven numbers to increase sage grouse survival. This approach is especially important for effective adaptive management of sage-grouse populations northwestern Colorado in general, and Gafield County in particular, where habitat is naturally fragmented and sage-grouse are found at low density, or both. The significance of this paper to the Northwestern Colorado RMP is twofold. First, the authors report that reducing anthropogenic subsidies (i.e. food and water sources, open landfills) is likely to be most effective in reducing raven densities over the long term, and thus decrease raven predation on sage grouse nests and chicks. And second, the authors report that because livestock and animal husbandry operations provide indirect food and water subsidies that are exploited by ravens, increasing their distance from sage-grouse nesting and brood rearing habitat will further decrease predation on sage-grouse and increase overall population productivity. These recommendations are critical to Northwestern Colorado where the threat of predation from ravens us under-addressed and other restrictive land management measures are favored by the BLM. Peebles, L.W. and M.R. Conover. 2017. Winter ecology and spring dispersal of common ravens in Wyoming. Western North American Naturalist 77(3): 293-308. Repeated research has shown that ravens have emerged as the primary predation threat to sagegrouse. However, land management agencies, including the BLM have continued to advocate for various restrictions on human activities (including NSO and setbacks) despite the fact that have not been proven to have a net positive effect on sage-grouse at local or population scales. The paper by Peebles and Conover (2017) is significant to the question of how to directly reduce local raven populations in order to mitigate the primary threat to sage-grouse eggs and chicks: determine raven dispersal distances and target winter roosts at landfills within range of sage-grouse nesting and brood rearing habitat. Because of the close proximity of landfills to BLM administered sagegrouse habitat in northwestern Colorado, this adaptive and highly effective approach should not be ignored or discounted in favor of one-size fits all management prescriptions that fails to address this threat.

Peebles, loW. and M.R. Conover. 2017. Winter ecology and spring dispersal of common ravens in Wyoming. Western North American Naturalist 77(3): 293-308. Repeated research has shown that ravens have emerged as the primary predation threat to sage-grouse. However, land management agencies, including the BlM have continued to advocate for various restrictions on human activities (including NSO and setbacks) despite the fact that have not been proven to have a net positive effect on sage-grouse at local or population scales. The paper by Peebles and Conover (2017) is significant to the question of how to directly reduce local raven populations in order to mitigate the primary threat to sage-grouse eggs and chicks: determine raven dispersal distances and target winter roosts at landfills

within range of sage-grouse nesting and brood rearing habitat. Because of the close proximity of landfills to BlM administered sage-grouse habitat in northwestern Colorado, this adaptive and highly effective approach should not be ignored or discounted in favor of one-size fits all management prescriptions that fails to address this threat. Additionally, as another example of the BIM's failure to meaningfully coordinate with local governments, the RMPA did not consider the predator control policies found in the Garfield County Greater Sage Grouse Conservation Plan of 2014, as amended and provided here: Section 5: Predotion of sage-grouse eggs, juveniles, and adults occurs naturally, but can increase in association with human development, unless precautions are undertaken. Scientific research has shown that the predators on sage grouse are generalists, meaning that they prey on other species as well, and in some cases their populations are subsidized by human sources of food. Sage-grouse eggs are preyed upon by red foxes, coyotes, badgers, ravens, and (sometimes) block-billed magpies. Common predators of juvenile and adult sage-grouse include golden eagles, prairie folcons (as well as other raptors), coyotes, badgers, red fox and bobcats. Younger birds (especially brood$), may be preyed upon by raven, red fox, northern harrier, ground squirrel, snakes, and weasels. However, of these predators, research has shown that ravens are the most abundant and have the greatest impact on the populotions studied. While predation on sage grouse occurs at all stages of the life cycle, it is predation on nests and broods that is generally recognized as having the largest deleterious effect on annual survivorship and recruitment in populations. Adding to this problem is the fact that predators, such as ravens, are subsidized by humans to the point where they exceed historic levels in some areas by as much as 1,500%. In such cases, management actions, especially where predators like ravens are abundant and sage grouse mortolity is high (such as in the Plan Area), may be needed to ensure that sage-grouse populations are not depressed by a known and potentially mitigated source of mortality. Ravens are clever and highly adaptable in their behavior. They use communication and group foraging which allows them to opportunistically exploit food resources associoted with humans (e.g., landfills, trosh, road kill, unottended food, and carrion from livestock operations). In contrast, sage-grouse are very stereotypic in their behavior and rely on cryptic coloration, which makes them vulnerable to predotion by rovens. As a result of these and other unintended food subsidies, raven populations have greatly expanded in the West. This, in turn, hos impacted many species, including desert tortoises, marbled murrelets, least terns, California condors, and sage-grouse. While reducing human-supplied food subsidies to predators is an essential part of any management strategy, it may not be effective unless coupled with active deterrents or management actions to reduce raven density (i.e., Coates and Delehanty 2010; Dinkins 2013). The last reported research on nest and brood survival in the PPR population (Apa 2010), estimated annual nest success between zero and 40%, and substantially lower chicle survival. By the end of that study, "Only 2 chicks remained radio-marked after 30 days of age. Apparent brood survival was 86% (n = 12/14) at 7 days, 62% (n = 9/14) at 14 days, and 14% (n = 2/14) at 30 days." Those data indicate predation could be holding back the PPR population.

Chapter 6 References This section refers to older (now amended) versions of the Garfield County's Land Use Resolution and the Greater Sage Grouse Conservation Plan which is additional evidence that the BLM did not meaningfully coordinate with Garfield County. Further, as pointed out earlier in these comments, the BLM has neglected to consider significant studies and best available science published since the 2015 ROD. Garfield County requests the BLM not only cite the following studies but also amend the RMPA DEIS to incorporate the value these studies bring to the document including adaptive management.

Addressed Scientific Flaws with the Plan Amendments and the Listing Decision The Department of Interior (DOI) failed to recognize shortcomings in the key reports relied upon to craft the BLM's 2015 Record of Decision (ROD) which include the NTT and COT Reports and the USGS Monograph and the prescriptions they support. Multiple Data Quality Act challenges documented significant flaws with: * 3 percent disturbance caps * Density caps of I disturbance per 640 acres * Lek buffers * Required Design Features * No Surface Occupancy areas (NSOs) in priority habitat * Implementation of an avoid-minimize-compensate policy * Net conservation gains * Sagebrush canopy cover * The warranted but precluded listing decision for GRSG Absent recognition of these flaws, land management will be misled and entangled in litigation for many years to come. Therefore, the Districts respectfully request DOI to include the following statement in the forthcoming amendments and records of decision (RODs): provide adequate habitat quality for nesting sage 0 grouse." Effects of rotational grazing management on nesting greater sage o grouse (The Journal of Wildlife Management https://onlinelibralY. wile)'. com/doi/full/1 0.1 002/jwmg. 21344)

"The newest study's authors re-evaluated more than 800 nests from several studies that originally showed a positive correlation between nest success and grass height. After correcting the data to account for grass growth, researchers found no relationship between grass height and nest fate, confirming a sampling bias in two of three re-analyzed datasets, (emphasis added) and a reduced but still significant association in the third." "These findings suggest that the height of grass may not be as crucial to sage grouse nesting success as previously thought. Researchers recommend that field sampling methods be adjusted to ensure unbiased measurement of grass height at predicted hatch date, and that sitescale habitat management guidelines that include grass height as an indicator of nesting habitat quality be revisited." Sage Grouse Initiative. 2017. Taking the Bias Out of Grass Height Measurements. Science to Solutions Series Number 15. Sage Grouse Initiative. 4pp.sagegrouseinitiative. com/ taking-bias-out-sage-grouse-nesting-studies.

All Land Use Plan Amendments ("LUPAs") must recognize and allow for updates based on the most current and best science available. Identifying unique place- based, topographical differences and adjusting standards accordingly should be a decision made by local land managers utilizing the best available information and local, scientifically based data.

The RMPA should replace the current RMPA mapping with the revised mapping of priority habitat boundaries and active lek sites provided by Colorado Parks and Wildlife ("CPW").

Scientific Flaws with the Plan Amendment and Listing Decision: In addition to the missteps related to process, the Plan Amendments are substantively flawed. The key agency reports (the Reports) underpinning the Plan Amendments, as well as the earlier warranted but precluded GRSG listing decision, were plagued with conflicts of interest, bias and selective citation. They ignored the most relevant factors to grouse populations (weather, predation and hunter harvest) in favor of draconian restrictions that will cost jobs and harm local communities without corresponding benefits to the species. The 2018 LUPAs fail to acknowledge the scientific shortcomings in the National Technical Team ("NTT") Report, the Conservation Objectives Team ("COT") Report, the U.S. Geological Society ("USGS") Monograph, and the Manier et al. Buffers Report (collectively, the "Reports"), much less redress the resulting inaccuracies in the agency decisions. DOI and the U.S. Department of Agriculture must recognize critical errors in the Reports and the prescriptions they support. Because future agency management decisions and potential litigation continue to turn to the Reports for support, addressing

the scientific foundation is crucial. Accordingly, DOI should include this statement in the forthcoming amendments and records of decision ("RODs"): The NTT Report, the COT Report, the USGS Monograph and Manier, et al. 2014 (collectively "the Reports") were heavily relied upon in the 2010 listing decision on GRSG as well as the LUPAs and corresponding RODs. Since then, the science and understanding on GRSG has evolved and some significant shortcomings with the Reports have come to light. Management prescriptions from the Reports should be viewed with caution and tempered with the best available information, including specifically state and local science and knowledge. Detailed Data Quality Act challenges based on these issues were never adequately answered. In 2015, a coalition of 20 local governments (including the Counties) as well as diverse agricultural and energy interests (collectively, the Petitioners) undertook an independent scientific review of the Reports. The reviews uncovered significant errors, omissions and biases in the Reports that have contaminated subsequent policy and management actions based thereon. In several Data Quality Act challenges, (the Challenges), Petitioners documented hundreds of pages of flaws with: * 3 percent disturbance caps * Density caps of 1 disturbance per 640 acres * Lek buffers * Required Design Features * No Surface Occupancy areas (NSOs) in priority habitat * Implementation of an avoid-minimize-compensate policy * Net conservation gains * Sagebrush canopy cover * The warranted but precluded listing decision for GRSG The Reports erroneously ignore accurate population data and adopt flawed modeling approaches that have consistently failed to accurately predict populations. This selective use of science is wholly misleading and assumes GRSG populations are in decline despite evidence to the contrary. The Reports ignore natural population fluctuations; single out human-driven activities for alleged declines (but exclude the significance of hunter harvest); and overlook actual threats to GRSG such as predation. The Reports fail to meet the standards of quality, integrity, objectivity and utility required by the Data Quality Act, as well DOI's standards of scientific integrity and transparency. DOI failed to address these shortcomings. The National Technical Team Challenge was 97 pages in length with four exhibits for a total of 197 pages of detailed issues. The COT Challenge was 88 pages with four exhibits for a total of 159 pages. The Monograph Challenge was 99 pages with three exhibits for a total of 332 pages. The Buffers Challenge was 41 pages. Nonetheless, the agencies virtually ignored these shortcomings and issued only a four-page response to the cumulative 729-page Challenges, and a two-page response to subsequent appeals. Moreover, in the NEPA documents, the agencies hardly recognized the existence of the Challenges, let alone addressed their merits. BLM and the USFS failed to address the substance and detail in these challenges and provided little if any rationale for their misplaced use of the Reports and the Monograph. No corrective actions were taken nor were adequate disclosures of these flaws recognized or addressed as required by implementing regulations for NEPA. See 40 C.F.R. § 1502.9(b). In sum, these misplaced and unscientific management restrictions will negatively impact the economies and future viability of countless communities, small businesses, and family farms and ranches as well as efforts to conserve GRSG and we request BLM address the above bulleted points.

The Department of Interior (DOI) and the u.s. Department of Agriculture (USDA) must recognize shortcomings in the key reports relied upon to craft the BIM's 2015 Record of Decision (ROD) which include the NIT and COT Reports and the USGS Monograph and the prescriptions they support. Agency management decisions and potential litigation will surely turn towards the Reports for support. Absent recognition of shortcomings, land management is sure to be entangled in controversy for years to come. Accordingly, we urge DOI to include this statement in the forthcoming amendments and records of decision (RODs): The NIT Report, the COT Report, the USGS Monograph and Manier, et al. 2014 (collectively "the Reports") were heavily relied upon in the 2010 listing decisian on GRSG as well as the LUPAs and correspanding RODs. Since then, the science and understanding on GRSG has evolved

and some significant shortcomings with the Reports have come to light. Management prescriptions from the Reports should be viewed with caution and tempered with the best available information including specifically state and local science and knowledge. Most importantly, none of the information contained in the COT Report, NIT Report or the USGS Monograph specifically addressed the highly unique landforms, variable habitat or naturally fragmented habitat that exists in the Parachute-Piceance-Roan population found in Garfield County. The terrain in our County that hosts Greater Sage Grouse is a naturally fragmented habitat that varies radically over short distances to include severely undulating topography, steep slopes and deep canyons, dark timber, sage brush on the ridges and a complex range of vegetation types. These reports relied on above are void of scientific specificity regarding Garfield County's highly unique terrain.

The BLM is required to contemplate new science since the BLM's 2015 Record of Decision to better inform policy in the RMPA. Rather, the BLM has only relied on a limited scope of new scientific information contained in a report prepared by the US Geologic Survey. This report ignores a vast body of additional science that provides beneficial analysis on grazing, predation, climate weather impacts, high-resolution mapping and the value of including local working group activity. This a tremendous shortcoming where the BLM ignored the opportunity to approach the management of the impacts to the species that could have been informed by a wide net of best available science; rather, it appears the best available science has been cherry picked thereby excluding highly important elements of could and should contribute to a more robust and effective adaptive management program for the benefit of the species.

We ask that the following information be considered in the EIS so that there is a more complete set of relevant new scientific information as best available science: A. THE IMPORTANVE OF HIGH RESOLUTION MAPPING TO PRIORITIZING SAGE-GROUSE CONSERVATION EFFORTS Coates, P.S., Casazza, M.L., Brussee, B.E., Ricca, M.A., Gustafson, K.B., Sanchez-Chopitea, E., Mauch, K., Niell, L., Gardner, S., Espinosa, S., and Delehanty, D.I., 2016, Spatially explicit modeling of annual and seasonal habitat for greater sage-grouse (Centrocercus uraphasianus) in Nevada and northeastern California-An updated decision-support tool for management: U.S. Geological Survey Open-File Report 2016-1080, 160 p., https:/ldol.org/10.3133/ofr20161080. This revised USGS report utilized new data mUltiple sources, including updated GRSG telemetry locations, high-resolution vegetation maps, and seasonal habitat suitability indices. As a result of this higher resolution mapping, the authors note that, "GRSG habitat area increased by 6.5 percent compared to findings in the earlier report, with increases of a similar magnitude in core, priority, and general GRSG habitat management categories." The significance of this study is that it underscores the importance of producing modern, reproducible, high-resolution sage-grouse habitat maps to inform and prioritize conservation efforts far better that broad brush stroke approaches used in the development of the Northwestern Colorado RMP. A similar high-resolution habitat mapping effort is underway in Northwestern Colorado.

Chapter 6 References This section refers to older (now amended) versions of the Garfield County's Land Use Resolution and the Greater Sage Grouse Conservation Plan which is additional evidence that the BLM did not meaningfully coordinate with Garfield County. Further, as pointed out earlier in these comments, the BLM has neglected to consider significant studies and best available science published since the 2015 ROD. Garfield County requests the BLM not only cite the following studies but also amend the RMPA DEIS to incorporate the value these studies bring to the document including adaptive management.

the ARMPA, and by extension the Draft RMPA, rely on technical reports riddled with significant inaccuracies, omissions, and shortcomings which do not constitute the best scientific data.

The NTT Report contains numerous errors and shortcomings, as documented in the Alliance's first DQA challenge, including: * Failure to include citations in the "Literature Cited" section, and listed articles in the "Literature Cited" section that are not referenced or used in the Report; * Citing authorities in a misleading fashion; * Failure to provide justification for the 3% disturbance cap used; * Including noise restriction recommendations based on flawed studies that relied on unpublished data and speculation, and using suspect testing equipment in unrealistic conditions; * Failure to cite or include scientific reports and papers on oil and natural gas operations and mitigation measures available at the time the NTT Report was created; and, * Failure to undergo an adequate peer review.

The ARMPA further relies on Greater Sage-Grouse: Ecology and Conservation of a Landscape Species and Its Habitats (Studies in Avian Biology), published in 2011 (USGS Monograph). This book also suffers from scientific and technical flaws. The Center for Environmental Science, Accuracy and Reliability analyzed four of the most frequently cited sources and found, as documented in our third DQA challenge: Northwest Colorado Greater Sage-Grouse Draft RMPA August 2, 2018 Page 12 of 17 * Significant mischaracterization of previous research; * Substantial errors and omissions; * Lack of independent authorship and peer review; * Methodological bias; * Lack of reproducibility; and, * Inadequate data.

BLM finally relies on the flawed USGS "Conservation Buffer Distance Estimates for Greater Sage-Grouse A Review" (Buffer Report), to support the 3.1-mile lek buffer for infrastructure related to energy development imposed in the Draft RMPA. Draft RMPA at H-3. As discussed in our fourth DQA challenge, the studies referenced in the Buffer Report did not test the buffers discussed therein and failed to recognize other factors driving GrSG population changes such as variations in regional climate and weather. Furthermore, the Buffer Report: * Was developed with unsound methods; * Ignores scientific studies that do not support its conclusions; * Reaches conclusions that are pure conjecture; and * Disseminates information that is neither objective nor reliable and that lacks scientific integrity. Accordingly, the Buffer Report, and by extension the buffers and noise restrictions in the Draft RMPA, are not based on the best available science.

On March 22, 2013, the FWS-organized Conservation Objectives Team (COT) issued the Greater Sage-grouse (Centrocercus urophasianus) Conservation Objectives: Final Report (COT Report). BLM applies measures from the COT Report to all of the action alternatives identified in the ARMPA, and by extension to the Draft RMPA. As detailed in our second DQA challenge, the COT Report suffers from various errors. Specifically, the report: * Provides no original data or quantitative analysis; * Does not provide comprehensive, unbiased review of all available scientific literature; * Relies on unverified data; * Relies on flawed and biased reports; * Contains flawed methodology; * Suffers from conflicts of interest; * Relies on ambiguous definitions; * Includes unsupported, speculative statements lacking empirical basis; * Ignores evidence related to GrSG adaptation to disturbed environments; * Discounts conservation strategies utilized by states; and, * Fails to recognize latest habitat mapping efforts.

The operational restrictions in the ARMPA and Draft RMPA are not based on the best available science. The Buffer Report, the NTT Report, the COT Report, and the GrSG Monograph are fundamentally flawed and do not support the operational restrictions in the ARMPA and the Draft RMPA. BLM should address additional scientific analysis related to GrSG conservation that were not cited in the NTT

Report, COT Report, GrSG Monograph, and the Buffer Report. Additionally, BLM should utilize state and local conservation measures that have been imposed and successful for over a decade, rather than unsubstantiated landscape-scale measures that do not take into account site-specific considerations.

The proposed disturbance cap and density limit, to be applied across an entire section of habitat that contains existing development and fragmentation, are overbroad and unduly restrictive. This type of habitat management mechanism should only be applied sparingly on an as-needed basis, after site-specific survey and biological analysis. Specifically, any disturbance threshold should be based on a discrete area of biological influence, rather than across an entire section of habitat that contains existing surface development and habitat fragmentation. The Draft RMPA fails to recognize that increased surface disturbance will not automatically result in environmental impacts where there are protections in place for specific resources, such as offset mitigation requirements. In addition, BLM fails to explain why it rejected less restrictive disturbance caps and density limits. Specifically, BLM proposes to require a 3% disturbance cap in Colorado and a 5% disturbance cap in Wyoming. 2015 ROD at 1-18. The use of a 5% disturbance cap in Wyoming demonstrates that a higher threshold is reasonable. Further, BLM does not explain why it rejected Colorado's less restrictive density BMP which calls for the avoidance of 10 well pads per 10-square mile area in GrSG breeding and summer habitat (within 4 miles of active leks) and allows for increased density with a Comprehensive Development Plan, which has proven effective. BLM should remove the proposed 3% disturbance cap and density limit. Instead, BLM should rely on site-specific analysis to determine potential impacts to GrSG and appropriate mitigation measures consistent with CPW's AMAIWR.

Scientific Flaws with the Plan Amendment and Listing Decision: In addition to the missteps related to process, the Plan Amendments are substantively flawed. The key agency reports (the Reports) underpinning the Plan Amendments, as well as the earlier warranted but precluded GRSG listing decision, were plagued with conflicts of interest, bias and selective citation. They ignored the most relevant factors to grouse populations (weather, predation and hunter harvest) in favor of draconian restrictions that will cost jobs and harm local communities without corresponding benefits to the species. The 2018 LUPAs fail to acknowledge the scientific shortcomings in the National Technical Team ("NTT") Report, the Conservation Objectives Team ("COT") Report, the U.S. Geological Society ("USGS") Monograph, and the Manier et al. Buffers Report (collectively, the "Reports"), much less redress the resulting inaccuracies in the agency decisions. DOI and the U.S. Department of Agriculture must recognize critical errors in the Reports and the prescriptions they support. Because future agency management decisions and potential litigation continue to turn to the Reports for support, addressing the scientific foundation is crucial. Accordingly, DOI should include this statement in the forthcoming amendments and records of decision ("RODs"): The NTT Report, the COT Report, the USGS Monograph and Manier, et al. 2014 (collectively "the Reports") were heavily relied upon in the 2010 listing decision on GRSG as well as the LUPAs and corresponding RODs. Since then, the science and understanding on GRSG has evolved and some significant shortcomings with the Reports have come to light. Management prescriptions from the Reports should be viewed with caution and tempered with the best available information, including specifically state and local science and knowledge.

Detailed Data Quality Act challenges based on these issues were never adequately answered. In 2015, a coalition of 20 local governments (including the Counties) as well as diverse agricultural and energy interests (collectively, the Petitioners) undertook an independent scientific review of the Reports. The reviews uncovered significant errors, omissions and biases in the Reports that have contaminated

subsequent policy and management actions based thereon. In several Data Quality Act challenges, (the Challenges), Petitioners documented hundreds of pages of flaws with: * 3 percent disturbance caps * Density caps of 1 disturbance per 640 acres * Lek buffers * Required Design Features * No Surface Occupancy areas (NSOs) in priority habitat * Implementation of an avoid-minimize-compensate policy * Net conservation gains * Sagebrush canopy cover * The warranted but precluded listing decision for GRSG The Reports erroneously ignore accurate population data and adopt flawed modeling approaches that have consistently failed to accurately predict populations. This selective use of science is wholly misleading and assumes GRSG populations are in decline despite evidence to the contrary. The Reports ignore natural population fluctuations; single out human-driven activities for alleged declines (but exclude the significance of hunter harvest); and overlook actual threats to GRSG such as predation. The Reports fail to meet the standards of quality, integrity, objectivity and utility required by the Data Quality Act, as well DOI's standards of scientific integrity and transparency. DOI failed to address these shortcomings. The National Technical Team Challenge was 97 pages in length with four exhibits for a total of 197 pages of detailed issues. The COT Challenge was 88 pages with four exhibits for a total of 159 pages. The Monograph Challenge was 99 pages with three exhibits for a total of 332 pages. The Buffers Challenge was 41 pages. Nonetheless, the agencies virtually ignored these shortcomings and issued only a four-page response to the cumulative 729-page Challenges, and a two-page response to subsequent appeals. Moreover, in the NEPA documents, the agencies hardly recognized the existence of the Challenges, let alone addressed their merits. BLM and the USFS failed to address the substance and detail in these challenges and provided little if any rationale for their misplaced use of the Reports and the Monograph. No corrective actions were taken nor were adequate disclosures of these flaws recognized or addressed as required by implementing regulations for NEPA. See 40 C.F.R. § 1502.9(b). In sum, these misplaced and unscientific management restrictions will negatively impact the economies and future viability of countless communities, small businesses, and family farms and ranches as well as efforts to conserve GRSG and we request BLM address the above bulleted points.

Research has shown that in arid and semiarid areas, grazing at use levels below 40 percent can have positive impacts to forage plants compared to exclusion of grazing.1 Research conducted in western Colorado in mountain big sagebrush communities found no significant effects from 40-50 years of grazing exclusion on cover or frequency of grasses, biotic crusts, or bare soil and that grazing exclusion decreased above ground net primary production and biodiversity.2 In a synthesis of scientific literature on long-term rest in the sagebrush steppe, Davies et al.3 found that long-term rest and properly managed grazing produced few significant differences, and in some situations, negative ecological effects from long-term rest.

The Department of Interior (DOI) and the u.s. Department of Agriculture (USDA) must recognize shortcomings in the key reports relied upon to craft the BlM's 2015 Record of Decision (ROD) which include the NIT and COT Reports and the USGS Monograph and the prescriptions they support. Agency management decisions and potential litigation will surely turn towards the Reports for support. Absent recognition of shortcomings, land management is sure to be entangled in controversy for years to come. Accordingly, we urge DOI to include this statement in the forthcoming amendments and records of decision (RODs): The NIT Report, the COT Report, the USGS Monograph and Manier, et al. 2014 (collectively "the Reports") were heavily relied upon in the 2010 listing decisian on GRSG as well as the LUPAs and correspanding RODs. Since then, the science and understanding on GRSG has evolved and some significant shortcomings with the Reports have come to light. Management prescriptions from the Reports should be viewed with caution and tempered with the best available information including

specifically state and local science and knowledge. Most importantly, none of the information contained in the COT Report, NIT Report or the USGS Monograph specifically addressed the highly unique landforms, variable habitat or naturally fragmented habitat that exists in the Parachute-Piceance-Roan population found in Garfield County. The terrain in our County that hosts Greater Sage Grouse is a naturally fragmented habitat that varies radically over short distances to include severely undulating topography, steep slopes and deep canyons, dark timber, sage brush on the ridges and a complex range of vegetation types. These reports relied on above are void of scientific specificity regarding Garfield County's highly unique terrain.

While many opine about Sage-grouse as if they are the only species in the sage, I'm well aware of the decline of sagebrush songbirds and mule deer across much of the range, and have documented Brewer's and sagebrush sparrow, sage thrasher, and mule deer on the Pinedale Anticline's critical winter range, where the species has declined by 60% since drilling began in winter a little over a decade ago. Sage-grouse are now the face of a systemic problem of not giving wildlife freedom to roam across the west. Short-sighted land management plans that change with shifting political winds aren't good for wildlife or stakeholders. We need to know that our leaders in land management will stand with the best science and researchers in seeking optimal solutions.

With that backdrop, the sudden change to Secretarial order 3353 just two years away from the next milestone of the current plan is baffling. I stand with Governors Mead and Hickenlooper in calling for giving the current plan a chance to work. Order 3353 isn't adaptive management, but a major shift from solid science into the unknown. State population targets and reduced buffers for these iconic birds, still declining and vulnerable to prolonged drought and a host of other threats invites a population crash that would likely be irreversible.

The EPA supports coordination among federal, state, local, and tribal authorities for consistent and effective conservation of imperiled species. We are concerned that the Draft EIS does not provide sufficient information to fully assess the impacts of the proposed action. For this reason, the EPA has rated the Draft EIS/RMPA as Environmental Concerns Insufficient Information (EC-2). The description of the EPA' s rating system is available at: https://www.epa.gov/nepa/environmental-impact-statementrating-system-criteria. The enclosed detailed comments include recommendations for improving the assessment and disclosure of the Proposed Action's expected impacts to greater sage-grouse and habitat; however, we defer to the expertise of the U.S. Fish and Wildlife Service and appropriate state wildlife management agencies regarding the extent to which those impacts would be beneficial or detrimental to the species. Specifically, we recommend improvements in the analysis of the potential impacts from increased oil and gas development for the Proposed Action, and updating the mitigation section to reflect any changes resulting from public comments.

We note that most of the 2015 greater sage-grouse analysis was focused largely on lek habitat. However, BLM has also identified winter concentration, nesting, brood rearing and linkage habitats as having the highest conservation value to maintain sustainable greater sage-grouse populations1. We recommend the Final EIS include any new information on winter, nesting and brood rearing habitat in Colorado and consider whether additional mitigation measures are warranted to protect these seasonal habitats from impacts from O&G development. We also recommend the Final EIS include information on whether increased drilling and O&G production in greater sage-grouse habitat compared to the 2015 plan would specifically impact any general- or linkage habitat areas.

The RMPA should replace the current RMPA mapping with the revised mapping of priority habitat boundaries and active lek sites provided by Colorado Parks and Wildlife ("CPW")

A study was conducted by Adrian Monroe, a CSU research scientist, and found the effects of grazing on sage-grouse populations may depend on plant productivity. The study evaluates multiple, real- world livestock grazing operations across the entire state. There is a direct correlation between plant growth, when and how much livestock graze, and the effects on wildlife, and a way to sustain ranching while simultaneously sustaining wildlife populations.

2.3.6 Disturbance and Density Caps

No surface occupancy stipulations must be maintained for oil and gas development in priority habitats. Preventing destruction of greater sage-grouse habitat is critical to avoiding harm while permitting development.

Existing disturbance caps must be maintained to limit harm to habitat. Disturbance caps serve as a backstop that limits harm to habitat and provides needed certainty.

BLM acknowledges the changes in Utah "could result in a site-specific loss of Greater Sage-Grouse habitat and displacement from the area of development by local populations."90BLM also admits that, "Projects that would likely be precluded under the No Action Alternative could proceed under the "2018 proposed amendments."91BLM reasons, however, that requiring that impacts improve habitat will offset those concerns. There are significant problems with the agency's reasoning because the Draft Utah mitigation rule does not provide a preference for offset benefits to accrue within the landscape affected by the project; prioritize projects that provide the greatest benefits, and reduce the greatest threats, to sage-grouse habitat; does not require mitigation for all impacts; does not guarantee against temporal losses; does not use a habitat quantification tool to measure comparability between impacts and offsets. BLM also notes the requirement to avoid development within priority habitat, but this development would expressly occur within priority areas. The DEIS also provides new opportunities for waivers, exceptions, modifications for siting projects in priority habitat.93

In Idaho, the DEIS states: Removal of the 3 percent project level disturbance cap would allow BLM to intentionally cluster developments within areas already degraded by discrete anthropogenic activities in Greater Sage- Grouse habitat as long as the overall disturbance within the BSU remains below 3 percent. The 3 percent project scale disturbance cap has the potential to spread development into undeveloped areas of Greater Sage-Grouse habitat just to avoid reaching the 3 percent project scale disturbance cap in already fragmented areas. All 8 BSUs in Idaho are well under the 3 percent BSU scale Disturbance Cap (most are less than 1 percent) and are expected to remain low because of the nonet-loss mitigation standard and the other restrictions to development in PHMA and IHMA. Some areas, especially those with existing development, may be further developed even though compensatory mitigation would offset those impacts for the statewide Greater Sage-Grouse habitat.94 Essentially, Idaho has come up with a standard that for the foreseeable future will never disallow a project because the priority area densities are so low, even though the density of an individual project area may be high. This flies in face of studies showing impacts to sage-grouse because of individual project density, and Edmunds study that there can be differences between densities at large and small-scale levels that are significant. Also, Idaho's mitigation program is not finalized, and there is no time line by which it is guaranteed to be finalized; thus, we do not know what provisions it will or will not include. As a result,

we oppose these amendments to the land use plan, both because they will reduce important protections for sage-grouse, and because they make it more likely that the bird will need to be listed under ESA.95

IX. DENSITY AND DISTURBANCE CAPS SHOULD BE MAINTAINED. The DEISs propose changes in Utah and Idaho to the density and disturbance caps set out in the 2015 BLM sage-grouse land use plans limiting the amount of development that can take in priority habitat management areas. We oppose these changes, for the reasons set out below. 66 The decision by the FWS not to list sage-grouse under the ESA noted the importance of the caps to sagegrouse protection: Each Federal Plan includes a disturbance cap that will serve as an upper limit (the maximum disturbance permitted). Anthropogenic disturbance has been identified as a key impact to sagegrouse. To limit new anthropogenic disturbance within sage-grouse habitats, the Federal Plans establish disturbance caps, above which no new development is permitted (subject to applicable laws and regulations; e.g., General Mining Law of 1872, and valid existing rights). This cap acts as a backstop to ensure that any implementation decisions made under the Federal Plans will not permit substantial amounts of new disturbance within the distribution of sage-grouse on BLM and USFS

2.3.7 Fire and Invasive Species

A more specific approach to managing noxious weeds and invasive species should be developed and included to address this significant threat. The 2018 report issued by Western Association of Fish and Wildlife Agencies (updating a 2013 report) summarizing policy, fiscal and science challenges land managers have encountered in control and reduction of invasive grasses and fire cycle, with a focus on the greater sage-grouse found ongoing gaps and also recommended that the agencies continue working on a "landscape-scale approach to fire and land management and further enhance collaborative, science-based approaches to management activities within the Sagebrush Biome." 2018 Gap Report, p. 46. Following these recommendations and committing to developing a more detailed strategy is needed.

2.3.8 General Habitat Management Areas

A just-released U.S. Forest Service study (Cross 2018) attempted to quantify the importance of connectivity across the sagebrush range .61 Scientists set out to map the mating areas called "leks" and identify the birds that use each of these areas. They grouped 1,200 leks into "nodes," or a collection of leks, within the network of greater sage-grouse. The nodes were then categorized as "hubs" or spokes" based on their importance to facilitating gene flow within and across the range of sage-grouse. Hubs foster gene flow out to the spokes. If a hub were to be lost, the birds in the connected spokes would be at risk of genetic isolation. The two maps below depict (1) the location of general habitat in Utah under the 2015 BLM sage-grouse land use plans, with the pink areas representing general habitat,62 and (2) a figure depicting the overall ranking of node importance to genetic connectivity across the contiguous range of greater sage-grouse, as measured by "betweenness" calculated in Cross et al. 2018.63 As the maps reveal, the Forest Service found hubs across the bird's range, with a concentration in northwestern Utah, where protection of general habitat is particularly important. Areas is northeastern Utah also show up as corridors of genetic connectivity to Colorado. Even where general habitat is not important for connectivity between populations, as is in central Utah, general habitat is important for providing links between different priority habitat areas within Utah. Similarly, hubs were also concentrated in central Idaho, where large swaths of general habitat are located.64 *See attachement, Map* Given the role general habitat plays in preserving connectivity between populations, as well as the other purposes it serves, it would be a grave mistake to eliminate, or even reduce, protections for these areas. In addition, the importance placed on general habitat by the Fish and Wildlife Service raises the

concern that the proposed changes will lead to a greater chance of listing sage-grouse under the ESA. The proposed amendments to eliminate or reduce protections for general habitat should therefore be rejected.

CPC strongly supports the intent of the DRMPA to improve the alignment between individual state plans and/or conservation measures, and DOI and BLM policy. States have authority for managing wildlife populations and work with local governments and stakeholders to balance conservation and business development practices in consideration of their socioeconomic impacts.

Of the more than 48 million acres in the Utah Subregional Planning Area, only about 580,000 are in general habitat, as are another 225,000 acres of mineral estate.55Eliminating general habitat in Utah would mean, for example, that mitigation, including avoidance, minimization and compensatory mitigation, as well as minimal Required Design Features (RDFs), are not required in those areas, regardless of the impact to sage-grouse populations or sagebrush habitat. It would also preclude application of precautionary measures such as avoiding removal of sagebrush and minimizing development that creates a physical barrier to sage-grouse movement.56For areas constituting such a small percentage of Utah's land base, it makes no sense to skimp on protections that could both prevent further reductions in Utah's sage-grouse populations and avoid imposing additional burdens on neighboring states still required to manage general habitat for sage-grouse. This is particularly true given the importance of general habitat in Utah and other sagebrush steppe states for sage-grouse connectivity. Sage-grouse select large intact sagebrush landscapes.57The USGS Synthesis has confirmed the importance of maintaining connectivity between different sage-grouse populations to conserve genetic diversity.58A 2015 study found that long-distance movements of GRSG have been documented, but the risk associated with the landscapes that the birds traverse is not well understood. The current designated priority area strategy does not protect movement corridors among priority areas, and some areas may be at risk of isolation even when they are not separated by large distances.59 A 2016 study covering Idaho, Utah and Wyoming showed that several sage-grouse moved 100 km north and west, traversing from the Wyoming Basin to a range typically associated with the Snake River Plain, and theorized that these migrating birds may serve as an important genetic link between two sage-grouse management zones.60 A just-released U.S. Forest Service study (Cross 2018) attempted to quantify the importance of connectivity across the sagebrush range.61Scientists set out to map the mating areas called "leks" and identify the birds that use each of these areas. They grouped 1,200 leks into "nodes," or a collection of leks, within the network of greater sage-grouse. The nodes were then categorized as "hubs" or spokes" based on their importance to facilitating gene flow within and across the range of sage-grouse. Hubs foster gene flow out to the spokes. If a hub were to be lost, the birds in the connected spokes would be at risk of genetic isolation.

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swaths of general habitat are located.64 [See Attachment PG 37 and 38] Given the role general habitat plays in preserving connectivity between populations, as well as the other purposes it serves, it would be a grave mistake to eliminate, or even reduce, protections for these areas. In addition, the importance placed on general habitat by the Fish and Wildlife Service raises the concern that the proposed changes will lead to a greater chance of listing sage-grouse under the ESA. The proposed amendments to eliminate or reduce protections for general habitat should therefore be rejected.

VII. GENERAL HABITAT MANAGEMENT AREAS SHOULD BE MAINTAINED. The Utah DEIS would eliminate all protections for general habitat.47Other states would weaken protections for sage-grouse in general habitat;48Idaho, for example would eliminate lek buffers, reduce the application of required design features, and eliminate compensatory mitigation in general habitat.49For the reasons set out below, we oppose any reduction of protection for general habitat. While General Habitat Management Areas (GHMA) represent areas with fewer leks and lower densities of breeding birds where disturbance is limited, and provide greater flexibility for land use activities,50their designation is still important to sage-grouse conservation. The FWS 2015 Sage-grouse Listing Decision states: The designation as GHMAs provide sage-grouse conservation by protecting habitat and connectivity between populations and potential refugia in the event of catastrophic events such as wildfire. While the amelioration of threats in GHMAs will likely be less than in PHMAs due to less stringent required conservation measures, GHMAs do have restrictions that benefit sage-grouse conservation.51 It is important to ensure that seasonal habitats not included in priority areas receive some protection,52and to allow for expansion of recovering populations into newly restored areas. In addition, general habitat can serve as a location for compensatory mitigation offsets and restoring degraded habitat.53The recent USGS synthesis of recent science on sage-grouse recently stated: Maintaining connectivity among (priority areas) through restoration activities or conservation of existing sagebrush communities at important "pinch points," where movements are constrained, is an important component of an overall sage-grouse management strategy. Maintenance or restoration of habitat quality within corridors is important to limit exposure to risk (for example, from predators), and because sage-grouse use these sites as resting and refueling areas.54

In addition, general habitat can serve as a location for compensatory mitigation offsets and restoring degraded habitat.53 The recent USGS synthesis of recent science on sage-grouse recently stated: Maintaining connectivity among (priority areas) through restoration activities or conservation of existing sagebrush communities at important "pinch points," where movements are constrained, is an important component of an overall sage-grouse management strategy. Maintenance or restoration of habitat quality within corridors is important to limit exposure to risk (for example, from predators), and because sage-grouse use these sites as resting and refueling areas.54 Of the more than 48 million acres in the Utah Subregional Planning Area, only about 580,000 are in general habitat, as are another 225,000 acres of mineral estate.55 Eliminating general habitat in Utah would mean, for example, that mitigation, including avoidance, minimization and compensatory mitigation, as well as minimal Required Design Features (RDFs), are not required in those areas, regardless of the impact to sage-grouse populations or sagebrush habitat. It would also preclude application of precautionary measures such as avoiding removal of sagebrush and minimizing development that creates a physical barrier to sage-grouse movement.56 For areas constituting such a small percentage of Utah's land base, it makes no sense to skimp on protections that could both prevent further reductions in Utah's sage-grouse populations and avoid imposing additional burdens on neighboring states still required to manage general habitat for sage-grouse. This is particularly true given the importance of general habitat in Utah and other sagebrush

steppe states for sage-grouse connectivity. Sage-grouse select large intact sagebrush landscapes.57 The USGS Synthesis has confirmed the importance of maintaining connectivity between different sage-grouse populations to conserve genetic diversity.58 A 2015 study found that long-distance movements of GRSG have been documented, but the risk associated with the landscapes that the birds traverse is not wellunderstood. The current designated priority area strategy does not protect movement corridors among priority areas, and some areas may be at risk of isolation even when they are not separated by large distances.59 A 2016 study covering Idaho, Utah and Wyoming showed that several sage-grouse moved 100 km north and west, traversing from the Wyoming Basin to a range typically associated with the Snake River Plain, and theorized that these migrating birds may serve as an important genetic link between two sage-grouse management zones.60

2.3.9 Habitat Boundary/Habitat Management Area Designations

For larger adjustments, NEPA and BLM planning rules and procedures should apply, requiring a plan amendment and public engagement, as well as the following provisions, before any adjustment of habitat management boundaries: * Federal, state, and local agencies, and other interested stakeholders, should have the opportunity to participate. * There should be public notice of proposed changes, and an opportunity for the public to comment. * Adjustments should be based on the best available, science-based information, including all applicable peer-reviewed research papers. * Review of boundaries would occur every five years, unless more frequent adjustments are necessary, as determined by BLM and the relevant state agency * Boundaries would generally not be adjusted to exclude non-habitat areas if those areas are wholly contained within existing management boundaries. * Areas within habitat management boundaries not currently used by sage-grouse but ecologically capable of supporting sage-grouse would not be removed from existing management boundaries.153 As part of this process, states may convene working groups to recommend boundary adjustments, as long as the recommendations of those groups are made available to the public for comment. Because of the concern of a future listing under ESA, any changes should not represent a meaningful decrease in the current level of conservation under the 2015 Sage-grouse Plans. In the event that BLM wants to address the potential for broader habitat adjustments, then the agency can conduct additional analysis to evaluate the impacts of increasing and reducing habitat within a larger area (i.e., greater than 3% of the identified habitat management area polygon), which could then be tiered to for later adjustments.

The Plans manage PHMAs as right-of-way "avoidance areas" instead of exclusion areas (See, e.g., Wyoming RMPA FEIS at 2-25), as recommended by their own experts. This prevents certainty of implementation by allowing new rights-of-way to be granted on a case-by-case basis. "Exclusion" is the appropriate level of management for these habitats based on the best available science, and this level of protection should also apply to Focal Areas and Winter Concentration Areas as well. Only portions of General Habitats would be managed as avoidance areas for rights-of-way based on other resource values (See, e.g., Wyoming RMPA FEIS at 2-26); the importance of protecting sage grouse habitat merits avoidance management for all General Habitats.

XII. HABITAT BOUNDARY ADJUSTMENTS SHOULD BE BASED ON BEST AVAILABLE SCIENCE AND DATA, AND MADE WITH FULL TRANSPARENCY. All the 2018 DEISs except for the Oregon DEIS include provisions for adjustment of sage-grouse habitat management boundaries.150 We support transparent and consistent science-based efforts to ensure that any habitat management boundaries changes (1) represent the most available up-to-date and accurate information; and (2) do the most effective job possible of conserving sage-grouse habitat, and do not result in a meaningful decrease in the

current level of conservation provided by the 2015 sage-grouse land use plans. Moreover, boundary adjustments and complementary adjustments of related management prescriptions should only be made to reflect a changed understanding of the preferences of the species and/or data showing changed use and conditions of habitat; adjustments may not be made to accommodate a proposed use that might otherwise be prohibited or conditioned based on a different habitat classification. We recognize that some changes to boundaries will be so small that they do not require a plan amendment. Plain maintenance procedures are available to refine or clarify a previously approved decision. BLM's regulations and Land Use Planning Handbook provide that "land use plan decisions and supporting components can be maintained to reflect minor changes in data" but [m]aintenance is limited to further refining, documenting, or clarifying a previously approved decision incorporated in the plan."151 Examples of appropriate plan maintenance provided in the BLM Land Use Planning Handbook include "correcting minor data, typographical, mapping, or tabular data errors in the planning records after a plan or plan amendment has been completed" and "refining the known habitat of a special status species addressed in the plan based on new information."152 Such actions, which do not involve formal public involvement or NEPA analysis, should only be used for small boundary adjustments of an existing individual habitat management area. We propose that an adjustment (adding or subtracting acreage) comprising not more than 3% of an existing polygon would qualify as appropriate for a maintenance action.

2.3.10 Habitat Management Areas

All sage-grouse habitat must be subject to specific management approaches. While the strongest protections should continue to apply to the most important habitat, managing general habitat is also important for maintaining, improving, restoring and expanding habitat overall. Protections that were included in Sagebrush Focal Area designations should be incorporated into Priority Habitat Management Areas, where appropriate. The General Habitat Management Areas in Utah must be maintained; eliminating GHMA in Utah would hamper sage-grouse recovery in the state and have grave implications for habitat designations in other states. Similarly, proposals to remove management protections associated with GHMA in Idaho must not be adopted, since they effectively undercut the meaning of the habitat classification.

In addition, to meet the overall goals of the plans and habitat objectives to conserve, enhance and restore sage-grouse habitat, the plans should develop and incorporate specific restoration targets for PHMA to incentivize activities to reduce disturbance and the threat from noxious weeds.

2.3.11 Habitat Objectives

Specific habitat objectives for all aspects of the sage-grouse lifecycle should be defined, as discussed in the 2018 USGS report, which highlight the need to address the full range of sage-grouse habitat.

2.3.12 Lands and Realty

Sage-grouse habitat must be retained in federal ownership and not transferred to state control in order to maintain certainty of management across these lands, as well as habitat connectivity.

Sage-grouse habitat should be retained in federal ownership. The BLM's Scoping Report mentions the concerns of states such as Utah that maintaining sage-grouse habitat in federal ownership could affect the states' ability to develop land.67In fact, the Utah DEIS states: Increased potential for disposal and/or exchange of BLM-managed federal lands in [priority] and Greater Sage-Grouse habitat outside of

[priority areas] could possibly result in expanded economic opportunities in the affected location… Possible land uses include use for county and municipal physical facilities, commercial or residential development,e and/or recreation use.68 These uses are all identified as threats to sage-grouse habitat in the 2013 Conservation Objectives Team (COT) Report, which developed range-wide conservation objectives for sage-grouse that define the degree to which threats needed to be reduced or ameliorated to ensure that the species was no longer in danger of an ESA listing. 69 It can be difficult under the standards proposed by BLM to determine if land disposal "will compromise" sage-grouse persistence, or have "no direct or indirect impact" on populations.70Retaining habitat in federal ownership helps ensure the land will be managed as prescribed in the BLM land use plans, providing certainty. It also will promote connectivity of sage-grouse populations.71States have not committed to all the same management and approaches as BLM. Moreover, in some cases, such as for state trust lands, they are required to manage the lands to maximize revenues, which is likely inconsistent with conserving sage-grouse habitat. If there is a need to correct lands designated as sage-grouse habitat, we prefer it be accomplished through authorized habitat management boundary adjustments as provided for in the 2018 DEISs, consistent with our recommendations for how that process should be conducted. We also support the continued inclusion of provisions in the BLM plans that encourage acquisition of habitat where it will benefit sage-grouse populations.

VIII. KEEPING GROUSE HABITAT IN FEDERAL OWNERSHIP IS IMPORTANT FOR CONSISTENT MANAGEMENT AND CONNECTIVITY. The 2015 Utah sage-grouse land use plan provides that BLM cannot dispose of priority or general habitat, unless there are no impacts to sage-grouse or its habitat or there would be a net conservation gain to sagegrouse. The 2018 DEIS would change this provision to allow disposal if it improves the condition of sage-grouse habitat, or BLM can demonstrate disposal "will not compromise the persistence of Greater Sage-Grouse populations" within priority habitat. The 2015 Utah plans also support identifying areas where acquisitions or easements will benefit sage-grouse habitat, while the 2018 DEIS eliminates this provision.65 Similarly, the Nevada DEIS also allows disposal of sage-grouse habitat if it would have "no direct or indirect adverse impact on conservation of the Greater Sage-Grouse or can achieve a net conservation gain though the use of compensatory mitigation."66 We oppose these changes in the 2018 DEISs. Sage-grouse habitat should be retained in federal ownership. The BLM's Scoping Report mentions the concerns of states such as Utah that maintaining sage-grouse habitat in federal ownership could affect the states' ability to develop land.67 In fact, the Utah DEIS states: Increased potential for disposal and/or exchange of BLM-managed federal lands in [priority] and Greater Sage-Grouse habitat outside of [priority areas] could possibly result in expanded economic opportunities in the affected location… Possible land uses include use for county and municipal physical facilities, commercial or residential development, and/or recreation use.68 These uses are all identified as threats to sage-grouse habitat in the 2013 Conservation Objectives Team (COT) Report, which developed range-wide conservation objectives for sage-grouse that define the degree to which threats needed to be reduced or ameliorated to ensure that the species was no longer in danger of an ESA listing. 69 It can be difficult under the standards proposed by BLM to determine if land disposal "will compromise" sage-grouse persistence, or have "no direct or indirect impact" on populations.70 Retaining habitat in federal ownership helps ensure the land will be managed as prescribed in the BLM land use plans, providing certainty. It also will promote connectivity of sage-grouse populations.71 States have not committed to all the same management and approaches as BLM. Moreover, in some cases, such as for state trust lands, they are required to manage the lands to maximize revenues, which is likely inconsistent with conserving sage-grouse habitat. If there is a need to correct lands designated as sage-grouse habitat, we prefer it be accomplished through authorized habitat

management boundary adjustments as provided for in the 2018 DEISs, consistent with our recommendations for how that process should be conducted. We also support the continued inclusion of provisions in the BLM plans that encourage acquisition of habitat where it will benefit sage-grouse populations.

2.3.13 Lek Buffers

Prescribed buffer distances (both those limiting activities and those setting out areas for analyzing and addressing impacts) must be maintained to guide analysis of impacts and limit harm to habitat.

BLM and USFS may approve actions in PHMAs that are within the applicable lek buffer distance identified above only if the BLM or USFS determine that a buffer distance other than the distance identified above offers the same or greater level of protection to sage-grouse and its habitat. The BLM or USFS will make this determination based on best available science... For actions in GHMAs, the BLM and USFS will apply the lek buffer distances in Table 3 as required conservation measures to fully address any impacts to sage-grouse identified during the project-specific NEPA analysis. However, if it is not possible to locate or relocate the project outside of the applicable lek buffer distance(s) identified above, the BLM or USFS may approve the project only if: (1) Based on best available science, landscape features, and other existing protections, (e.g., land use allocations, State regulations), the BLM or USFS determine that a lek buffer distance other than the applicable distance identified above offers the same or a greater level of protection to sage-grouse and its habitat, including conservation of seasonal habitat outside of the analyzed buffer area; or (2) the BLM or USFS determines that impacts to sage-grouse and its habitat are minimized such that the project will cause minor or no new disturbance (e.g., co-location with existing authorizations); and (3) any residual impacts within the lek buffer distances are addressed through compensatory mitigation measures sufficient to ensure a net conservation gain, as outlined in the Mitigation Strategy (see below). By applying lek buffers in addition to other measures, the Federal Plans provide an additional layer of protection to the habitat in closest proximity to leks and the areas documented in the literature to be the most important for breeding and nest success.100

If BLM is to move forward with eliminating the 1-mile leasing closure around sage grouse lek sites in favor of a No Surface Occupancy (NSO) stipulation, then it must be done in a manner that provides certainty for conservation outcomes. The draft plan provides opportunities for oil and gas operators to seek waivers, modifications, or exceptions (WME) for both the new NSO stipulation within 1-mile of a lek and new criteria for WMEs in priority habitat beyond that distance. Given the fact that the criteria for both stipulations is heavily predicated upon consultation with Colorado Parks and Wildlife and compensatory mitigation, then BLM must commit to requiring compensatory mitigation while also still adhering to the mitigation hierarchy, which prioritizes avoiding and minimizing impacts prior to mitigating.

On average, lek attendance was stable when no oil and gas development was present within 6,400m. However, attendance declined as development increased.4 For nesting habitat Zabihi et al. (2017) likewise found that avoidance of wellpads and access roads were the two most important factors predicting nest site selection. Importantly, Green et al. confirmed that declines in sage-grouse populations may continue even within Wyoming's "core areas," where density of wells is limited to approximately one pad per square mile. In addition, Kirol et a. (2015b) found that increases on coalbed methane wastewater ponds were correlated with decreased nest success in the Powder River Basin of Wyoming. To rectify these problems, BLM should impose, as terms of the Resource Management Plan,

Conditions of Approval on all existing fluid mineral leases consistent with the recommendations of the Sage-Grouse National Technical Team, including no new surface occupancy on existing federal leases (with exceptions for occupancy of no more than 3% outside a 4-mile lek buffer, if the entire leasehold is within such habitat).

To develop relevant and practical lek buffer distances for the BLM plans, DOI commissioned the U.S. Geological Survey to review the scientific information on conservation buffer distances for sage-grouse. The resulting study101 recommended there be 5 km (3.1 miles) between leks and infrastructure related to energy development.102 It is important to stress that this distance does not result in 100% protection for sage-grouse: [T]he minimum distance inferred here (5 km [3.1 miles]) from leks may be insufficient to protect nesting and other seasonal habitats. Based on the collective information reviewed for this study, conservation practices that address habitats falling within the interpreted distances may be expected to protect as much as 75 percent to 95 percent of local population's habitat utilization.103 A recent Wyoming study suggests that current regulations may only be sufficient for limiting population declines but not for reversing these trends. That study also noted that areas not protected under the 100 Wyoming plans are not subject to core area regulations and may experience larger increases in oil and gas development and, therefore, larger declines in sage-grouse populations.104 Other scientific input continues to stress the importance of buffers: 2016 Dahlgren study (UT): This study assesses distances between seasonal habitats to recommend buffer zones for conservation. Females and their broods from larger populations in contiguous sagebrush moved more than those in smaller, isolated populations, but small populations moved farther from leks to winter grounds. Distances from nests to leks were consistent with other research, but nest success slightly increased with distance from leks. Seasonal movements of Utah GRSG were generally lower than reported rangewide, likely because of fragmented sagebrush habitats. Management actions that increase the area of usable sagebrush may benefit Utah GRSG. Management plans can incorporate buffers based on, for example, observed distances between nests and leks to increase the conservation value of management actions. The authors recommended buffers of 5 and 8 kilometers between disturbed areas and GRSG breeding and summer habitats, respectively.105 2018 Holloran Letter (importance of 2015 protections): Recommending management approaches and objectives established in 2015 BLM sage-grouse land use plans be used as minimum standards in sagebrush habitat.106 BLM's argument in support of the changes in Idaho, despite its acknowledgment that infrastructure and development would be allowed much closer to leks, is that there is very new development of infrastructure in Idaho in either priority or important habitat.107 If that is the case, then there is no real need for the proposed change. BLM also asserts that disturbance from development is not the major threat to sage-grouse in Idaho. While that is true, it is still a threat, one that buffers are designed to avoid. The Utah and Nevada DEISs argue that the 2014 USGS Report acknowledges that because of differences in populations, habitats and other factors, there is no single buffer distance that is appropriate for all sagegrouse populations and habitats across the range, and that buffers are just one of a number of protections for sage-grouse.108 The USGS Report acknowledges these points, and states that it attempted to take this variability into account in determining proper buffer distances, and notes that some studies have supported an 8 km buffer.109 As a result, USGS thus ended up with a compromise standard that protects most, but not all, habitat. Given that FWS explicitly relied on buffers as one of the protections that allowed it to avoid listing sage-grouse, it would be a mistake to reduce these standards or vest greater discretion with the states to allow reductions.

X. BUFFERS AROUND LEKS SHOULD BE MAINTAINED. The Idaho DEIS proposes to weaken buffers around leks in important habitat management areas, and to eliminate them in general habitat. They also grant additional discretion to decrease or increase buffers generally.96 Other DEISs also increase the degree of discretion afforded to decrease or increase97 buffers.98 Still other DEIS propose to provide "clarification" for lek buffers without stating what form that clarification would take.99 We oppose any changes that would weaken the standard for buffers in the 2015 Sage-grouse Plans. The decision by the FWS not to list sage-grouse under the ESA noted the importance of buffers to sagegrouse protection, and their role in the decision not to list: Sage-grouse leks are communal breeding centers that are representative of the breeding and nesting habitats. Conservation of these areas is crucial to maintaining sage-grouse populations.

2.3.14 Mitigation

Overall, the plans must explicitly commit to maintaining the FWS "not warranted" decision. The purpose and need of the 2018 amendments to seek better cooperation with states by modifying the management approach in the plans must be reconciled and made consistent with the purpose and need of the 2015 Sage-grouse Plans to conserve, enhance, and restore sage-grouse habitat by eliminating or minimizing threats to their habitat identified in the FWS 2010 finding that listing under the ESA was warranted. Without ongoing conservation, enhancement and restoration of habitat, the already impacted habitat and risks of further harm that led to the FWS 2010 finding will not be sufficiently addressed in these plans to maintain the FWS 2015 finding that listing is no longer warranted.

Mitigation must be applied through the mitigation hierarchy (avoid, minimize, then compensate) and, at a minimum, apply a "no net loss" standard so that while a range of multiple uses continue, their impacts are addressed. Avoidance should include avoiding locating rights-of-ways in habitat. Mitigation programs must incorporate a set of recognized principles related to mitigation, and continue to provide for application of compensatory mitigation at greater than 1:1 ratios, where necessary to address factors such as the full suite of harms and the uncertainty of success for specific mitigation measures, including where state programs provide for such approaches. The 2015 Sagegrouse Plans were premised on the understanding that ongoing activities in habitat would result in ongoing damage to habitat, so that opportunities to enhance and expand habitat must be provided in order for the species to ultimately survive.

Mitigation is a well-established tool that was relied upon in the 2015 Fish and Wildlife Service decision to support the decision to not list the Greater Sage-Grouse as threatened or endangered under the Endangered Species Act. The practice of "mitigation" is based on two common-sense principles: (1) certain activities are more appropriate in some locations than others; and (2) we should clean up after ourselves as we conduct activities that damage the landscape. The simplest definition of mitigation is "the action of reducing the severity, seriousness, or painfulness of something." Mitigation "done right" involves smart planning, efficient and effective decision-making, and predictability for project proponents, as well as a multitude of other stakeholder interests, and can result in positive outcomes for all the public, communities, businesses, and the environment. The widely accepted mitigation hierarchy is a step-wise framework for evaluating proposed impacts that first acknowledges that the best way to address impacts from development on the most important habitat is to avoid those impacts in the first place. Some places are just too important to develop, or measures to minimize and/or compensate impacts may not be available or effective. Consider the wintering areas for sage-grouse. Several recent studies have confirmed the importance of ensuring conservation of sufficient amounts of these

habitats.112 The next step in the hierarchy is to minimize impacts. A project developer should employ a wide range of actions to avoid as much disturbance as possible to wildlife in the area. For example, markers work to prevent fence-related mortality or injury that can occur when sage-grouse fly low to the ground over sagebrush range.113 If unavoidable impacts occur, the third and final step in the mitigation hierarchy is to compensate for the loss by creating, restoring, enhancing, or preserving habitat elsewhere. This might involve securing a conservation easement on private land or restoring nearby habitat with treatments designed to improve conditions for the affected species overall. Compensatory mitigation for a new road system or transmission line in sagebrush habitat could involve, for example, payments by the developer to reconvert farmland in central Montana that have pushed out sage species' preferred cover back to native sagebrush habitat. Thus, in its most basic sense, mitigation policy is truly about good governance. Sound mitigation policy provides agencies such as BLM with a structured, rational, and transparent framework for reviewing use requests and meeting their multiple use and sustained yield mandates. When agencies frontload their planning and provide the public and applicants with information in advance about where development should and should not go, they are empowered to make faster, better decisions. Potential conflicts between conservation and development are reduced when developers know in advance what areas should be avoided. Good mitigation policy and practice is also one of the best opportunities to achieve sustainable development and conservation goals. Projects, even those with relatively small footprints, can pose significant impacts to migratory wildlife. Avoidance of the most important places offers the best way to support a Western landscape where species can thrive. Where impacts cannot be avoided or minimized, well-designed compensatory mitigation programs can achieve the multiple-use, sustained yield objectives of BLM and other federal agencies.

Additional authority also exists for the use of the mitigation hierarchy in issuing project-specific authorizations. For example, project-specific authorizations must be "in accordance with the land use plans,"135so if the land use plans adopt the mitigation hierarchy or other mitigation principles for the sage grouse under the various authorities described above, the project authorization must follow those principles. Moreover, in issuing project-specific authorizations, BLM may attach "such terms and conditions" as are consistent with FLPMA and other applicable law.136This general authority also confers broad discretion on BLM to impose mitigation requirements on project applicants, including compensatory mitigation in appropriate circumstances.137 Finally, as a distinct authority, BLM also has the obligation to ensure that project-specific authorizations do not result in "undue or unnecessary degradation. FLPMA states that BLM "shall, by regulation or otherwise, take any action necessary to prevent unnecessary or undue degradation of the lands."138A number of cases have found that BLM met its obligation to prevent unnecessary or undue degradation based, in part, on its imposition of compensatory mitigation. See e.g., Theodore Roosevelt Conservation Partnership v. Salazar, 616 F.3d 497, 518 (D.C. Cir. 2010) (BLM decision to authorize up to 4,399 natural gas wells from 600 drilling pads did not result in "unnecessary or undue degradation" in light of substantial mitigation required from permittees, including prohibition of new development outside core area until comparable acreage in the core was restored to functional habitat, and a monitoring and mitigation fund of up to $36 million); see also Gardner v. United States Bureau of Land Management, 638 F.3d 1217, 1222 (9thCir. 2011) (FLPMA provides BLM "with a great deal of discretion in deciding how to achieve the objectives" of preventing "unnecessary or undue degradation of public lands.")

As noted above, there has been a great deal of concern surrounding the BLM's authority to apply a net conservation benefit standard for sage grouse. Regardless of the standard employed, it is most important that there be a high level of certainty that direct, indirect, and cumulative impacts of infrastructure

development will be offset with high quality, durable, timely, and additional compensatory mitigation projects. High quality compensatory mitigation projects are guided by mitigation programs that appropriately account for the magnitude, extent and duration of impacts, characterize the benefits of compensatory mitigation projects, and ensure that compensatory mitigation projects are durable. We support compensatory mitigation programs that seek to achieve a "reasonable relationship" between impacts and compensatory mitigation and adequately account for habitat quality, temporal losses, and risk of project failure. The 2016 Work Group Mitigation Report states that for compensatory mitigation programs to adequately address residual impacts, they should "provide habitat values, services and functions that bear a reasonable relationship to the lost values, service and functions for which mitigation is required".148 There are large variations in the quality of habitat for sage-grouse, and a significant likelihood of failure of restoration of habitat due to catastrophic fire events and the current low success rates of restoration.149Recognizing these issues, most state sage-grouse mitigation programs, such as Nevada, address the variation in habitat quality by including measures of habitat functionality and using adjustment factors to account for the risk of failure and temporal loss. If habitat functionality is considered, state agencies can use a ratio-based estimate, adjusted to include consideration of factors such as likelihood of success and temporal loss of functions. Compensatory mitigation programs need not rely upon overly complicated measures they must be defensible but need not be overly precise.

BLM has ample authority to apply the full mitigation hierarchy in the sage-grouse plans. FLPMA directs that public lands to be managed in a manner to ensure the protection of ecological and environmental values, preservation and protection of certain public lands in their natural condition, and provision of food and habitat for wildlife.120 This direction guides every significant aspect of the management of public lands under FLPMA, including the development of land management plans,121 project-specific authorizations for the use, occupancy, development of public lands,122 the granting of rights of way on public lands,123 and the promulgation of regulations to implement each of these authorities.124 While FLPMA does not elevate certain uses over others, it does delegate discretion to the BLM to determine whether and how to develop or conserve resources, including whether to require enhancement of resources and values through means such as compensatory mitigation.125 In sum, these statutory policies encompass the protection of environmental and ecological values on the public lands and the provision of food and habitat for fish and wildlife and are furthered by the implementation of the mitigation hierarchy, including compensatory mitigation, to protect and preserve habitat for the sage grouse.

Beside the principles of FLPMA and its multiple use/sustained yield standards, individual provisions of that Act confer additional authority on BLM to apply the mitigation hierarchy. In the section on land use plans, for example, FLPMA obliges BLM to consider environmental values, such as fish and wildlife like the sage grouse, in the development of such plans.133More particularly, BLM must also "consider the relative scarcity of the values involved and the availability of alternative means…and sites for realization of those values".134 Sage-grouse habitat is a wildlife value with relative scarcity, as evidenced by the Fish and Wildlife Service's consideration of the species for listing under the ESA, its designation as a special status species by BLM, and its active management by numerous Western states. In the process of developing land use plans which account for this important and relatively scarce species, BLM can provide for the use of "alternative sites" in appropriate instances, thereby resulting in avoidance. Similarly, BLM can specify "alternative means," which can include minimization as well as compensatory mitigation under appropriate circumstances. In short, resources designated as "special" by BLM should

be managed through a resource goal that may necessitate compensatory mitigation actions, as appropriate.

BLM has the authority to incorporate, implement, and enforce state sage-grouse mitigation programs that meet a recognized set of principles. The 2015 Records of Decision for Greater sage-grouse included a commitment to develop compensatory mitigation strategies in each sage-grouse management zone.142 As the 2015 land use plans were completed and implementation efforts began, however, several states had already completed or had begun efforts to develop compensatory mitigation strategies to implement GRSG conservation measures on state and private lands. It thus became apparent that developing federal mitigation strategies for each management zone would be redundant and could, in fact, create conflicts between state and federal mitigation strategies. This recognition led to the establishment of the Greater Sage-Grouse Mitigation Work Group (2016 Work Group Mitigation Report), and its charge to identify key principles for compensatory mitigation strategies as well as mechanisms to support and institutionalize collaborative state and federal GRSG mitigation efforts.143 The 2018 DEISs state that the purpose of the Work Group was "to enhance cooperation with the states by modifying the approach to Greater Sage-Grouse management in existing land use plans to better align with individual state plans and/or conservation measures and DOI and BLM policy."144 The DEISs also state that, "The BLM will work to be consistent with or complementary to the management actions in [state] plans whenever possible."145 Given BLM's broad authority to adopt and impose mitigation to protect sage-grouse, at a minimum, BLM certainly can act to adopt, implement and enforce the state mitigation programs for use on federal land. In doing so, it is critical to ensure that the state mitigation programs employed by BLM follow commonly recognized principles, such as those laid out by The Nature Conservancy in its 2015 report, Achieving Conservation and Development: Applying the Mitigation Hierarchy (2015 TNC Report).146 These principles include: application of the mitigation hierarchy in a landscape context; policy goals that support conservation and drive accountability; inclusion of stakeholder engagement practices; long-term, durable options; additionality, equivalence, and protection against temporal losses.147 We support efforts of the states to experiment with different mitigation approaches, if their programs and those of the Department, meet the defined principles. The fact that the state programs differ from each other is not necessarily a concern; in fact, variation can often result in good management outcomes, enabling programs to be tailored to the needs of each state, as well as allowing states to experiment and determine which approaches are most effective. We thus support the Department providing minimum principles, consistent with the 2015 TNC Report, that all state programs must meet, and allowing states to exceed those principles if they choose to do so.

FLPMA also directs the Secretary to "manage the public lands under principles of multiple use and sustained yield".126The principles of multiple use and sustained yield pervade and underpin each of BLM's authorities under FLPMA, including the policies governing the Act,127the development of land use plans,128the authorization of specific projects,129and the granting of rights of way.130Multiple use means, among other things: the management of public lands…so that they are utilized in the combinations that will best meet the present and future needs of the American people; … a combination of balanced and diverse resource uses that takes into account the long term needs of future generations for renewable and nonrenewable resources, including…range, … watershed, wildlife and fish…; and harmonious and coordinated management of the various resources without permanent impairment of…the quality of the environment...131 Sustained yield means "the achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the public lands".132 Sage-grouse is certainly one of the wildlife resources to be protected

under the multiple use standard, and it is a resource whose annual and periodic output is to be achieved and maintained in perpetuity under the sustained yield standard. To protect the present and long-term use of the public land for "fish and wildlife" "without impairment of the quality of the environment," BLM has the authority to apply the mitigation hierarchy for sage grouse, including compensatory mitigation in appropriate circumstances. Thus, BLM has additional, clear authority to use the mitigation hierarchy in its land use plans for the protection of the sage-grouse and its habitat. Case law confirms that multiple use/sustained yield principles do "not mandate that every use be accommodated on every piece of land; rather, delicate balancing is required." New Mexico ex rel. Richardson v. BLM, 565 F.3d 683, 710 (10thCir. 2009). The mitigation hierarchy, including compensatory mitigation, provides an important tool for achieving a balance among the multiple uses allowed on public lands. BLM can authorize a consumptive use, like oil and gas development, but balance that use by providing compensatory mitigation for the unavoidable losses suffered by the fish and wildlife. In other words, the mitigation hierarchy can have the effect of expediting and defending authorized consumptive uses of the public lands while simultaneously protecting fish and wildlife resource values in perpetuity.

Good mitigation policy and practice is also one of the best opportunities to achieve sustainable development and conservation goals. Projects, even those with relatively small footprints, can pose significant impacts to migratory wildlife. Avoidance of the most important places offers the best way to support a Western landscape where species can thrive. Where impacts cannot be avoided or minimized, well-designed compensatory mitigation programs can achieve the multiple-use, sustained yield objectives of BLM and other federal agencies. Governments, businesses, and local communities are increasingly acting to improve mitigation policy and practice. This is shown by the following: 56 countries have or are developing national mitigation policies that require offsets or enable the use of offsets, with most of these policies developed over the past decade. Multi-lateral and private sector financial institutions are requiring projects they finance to avoid, minimize, and compensate for biodiversity impacts in accordance with new performance standards. This includes requirements for project developers to avoid impacts to "critical habitat." A 2015 analysis of the economic contribution of mitigation determined that the domestic ecological restoration sector directly employs approximately 126,000 workers nationwide and generates $9.5 billion in economic output (sales) annually, with an additional 95,000 jobs and $15 billion in economic output through indirect (business-to business) linkages and increased household spending.

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In 2015, in its ESA listing decision, the Fish and Wildlife Service (FWS) found that "the greater sage-grouse is not in danger of extinction now or in the foreseeable future throughout all or a significant portion of its range and that listing the species is no longer warranted." The Service's finding was based

not on the stability of the species' population, but rather on the "adequacy of regulatory mechanisms and conservation efforts".114Mitigation avoidance, minimization and, where appropriate, compensatory mitigation was an essential regulatory and conservation tool that supported this decision. Specifically, the FWS stated: All of the Federal Plans require that impacts to sage-grouse habitats are mitigated and that compensatory mitigation provides a net conservation gain to the species. All mitigation will be achieved by avoiding, minimizing, and compensating for impacts following the regulations from the White House Council on Environmental Quality (e.g., avoid, minimize, and compensate), hereafter referred to as the mitigation hierarchy. If impacts from BLM/USFS management actions and authorized third party actions that result in habitat loss and degradation remain after applying avoidance and minimization measures (i.e., residual impacts), then compensatory mitigation projects will be used to provide a net conservation gain to the species. Any compensatory mitigation will be durable, timely, and in addition to that which would have resulted without the compensatory mitigation.115 The decision outlines the efforts states have made to utilize regulatory mechanisms to address threats to the species, noting that the Wyoming state program "features development stipulations to guide and regulate development within the Core Population Areas to avoid as much as possible, but, if avoidance is not possible, to minimize and mitigate, impacts to sage-grouse and its habitat."116The Service then concluded, "Requiring mitigation for residual impacts provides additional certainty that, while impacts will continue at reduced levels on Federal lands, those impacts will be offset".117 Each of the seven states with significant sage-grouse populations has by now either completed or is working on establishing a mitigation program for sage-grouse. Barrick Gold and the Department of the Interior have also signed a separate agreement to create the Barrick Nevada Sage-Grouse Bank in northern Nevada, creating incentives for Barrick to voluntarily protect, restore and enhance sagebrush ecosystems for the benefit of sage-grouse, while allowing the company to conduct mining activities on other BLM land.118 Last August, the Department of the Interior (DOI) Sage-Grouse Review Team Report, commissioned by Secretary Zinke, concluded that state and federal mitigation programs were an important and critical tool to preclude an ESA listing, noting that both DOI and the states agree on this point. 119The 2015 BLM sage-grouse plans not only employ the mitigation hierarchy as a regulatory and conservation tool to preclude listing, but the listing decision is, in part, also based on the promise of the protections and conservation measures that implementation would deliver.

In addition, BLM should have the policy prescriptions and tools available to allow for compensatory mitigation on public lands to offset private or public activities. Impacts to key sage-grouse habitat located on private land, particularly in states such as Nevada, often necessitate the need for compensatory mitigation on public lands, given the limited availability of private land for use as offsets. Maintaining this capability will be critical to conservation success. Last, but far from least, providing agency field staff with training is an important mechanism to accelerate permitting and project review. By committing resources to training field staff, BLM could increase the technical capacity of local staff to implement mitigation policies effectively and do so consistently across field offices. Providing clear direction to project proponents on how the agencies will make avoidance, minimization and compensatory mitigation decisions can help streamline project review and accelerate project approval.

In doing so, it is critical to ensure that the state mitigation programs employed by BLM follow commonly recognized principles, such as those laid out by The Nature Conservancy in its 2015 report, Achieving Conservation and Development: Applying the Mitigation Hierarchy (2015 TNC Report).146These principles include: application of the mitigation hierarchy in a landscape context; policy goals that support conservation and drive accountability; inclusion of stakeholder engagement practices; long-term, durable options; additionality, equivalence, and protection against temporal losses.147 We support

efforts of the states to experiment with different mitigation approaches, if their programs and those of the Department, meet the defined principles. The fact that the state programs differ from each other is not necessarily a concern; in fact, variation can often result in good management outcomes, enabling programs to be tailored to the needs of each state, as well as allowing states to experiment and determine which approaches are most effective. We thus support the Department providing minimum principles, consistent with the 2015 TNC Report, that all state programs must meet, and allowing states to exceed those principles if they choose to do so.

It has recently been argued by several states that BLM may only use compensatory mitigation to prevent "unnecessary or undue degradation". Under this view, where the impacts of a proposed activity have not been demonstrated to rise to the level of "unnecessary or undue degradation," any authorization of that activity which requires either net benefit or no net loss for the actual impacts would violate FLPMA. The unnecessary or undue degradation standard, however, is just a minimum standard for BLM's land management policy; it does not restrain BLM's discretion to adopt or require mitigation in circumstances that do not rise to the level of "undue or unnecessary degradation" or to implement a higher mitigation standard. As explained above, BLM has numerous authorities supporting its use of mitigation more generally, including the policies and principles underlying FLPMA, the foundational multiple use, sustained yield standard, the authority to promulgate regulations, and the specific authorities applicable to land use plans and project-specific authorizations. This point was confirmed in Western Exploration, LLC v. U.S. Department of the Interior.139In considering the argument that a net conservation gain standard for compensatory mitigation violated FLPMA, the court stated: The FEIS states that if actions by third parties result in habitat loss and degradation, even after applying avoidance and minimization measures, then compensatory mitigation projects will be used to provide a net conservation gain to the sage-grouse. The Agencies' goals to enhance, conserve, and restore sage-grouse habitat and to increase the abundance and distribution of the species, they argue, is best met by the net conservation gain strategy because it permits disturbances so long as habitat loss is both mitigated and counteracted through restorative projects. If anything, this strategy demonstrates that the Agencies allow some degradation to public land to occur for multiple use purposes, but that degradation caused to sage-grouse habitat on that land be counteracted. The Court fails to see how BLM's decision to implement this standard is arbitrary and capricious. Moreover, the Court cannot find that BLM did not consider all relevant factors in choosing this strategy… In sum, Plaintiffs fail to establish that BLM's challenged decisions under FLPMA are arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.140 Both FLPMA and the case law thus establish that BLM has ample discretion to go beyond the prevention of unnecessary or undue degradation to seek compensatory mitigation that will meet "the long-term needs of future generations for renewable and non-renewable resources, including, but not limited to, . wildlife and . natural scenic, scientific and historical values."141None of these authorities distinguish between avoidance, minimization, and compensatory mitigation or prohibit or circumscribe compensatory mitigation; rather, the authorities are broad and support the use of each aspect of mitigation in appropriate circumstances. BLM's obligations, discretion and authority are particularly important in coordinating with states, especially where states lack ownership or authority to carry out needed mitigation.

XI. MITIGATION IS AN IMPORTANT PART OF FEDERAL AND STATE EFFORTS, AND MUST BE MAINTAINED. Each of the DEISs contains similar language requesting comments on how the Bureau of Land Management (BLM) should consider and implement sage-grouse mitigation: The DOI and the BLM have also modified their mitigation policies since the 2015 plans were finalized. The public did not have

the opportunity to comment specifically on a net conservation gain approach to compensatory mitigation during the 2015 land use planning process. In addition, the DOI and the BLM are evaluating whether the implementation of a compensatory mitigation standard on public lands is appropriate and consistent with applicable legal authorities. We request public comment about how the BLM should consider and implement mitigation with respect to the Greater Sage-Grouse, including alternative approaches to requiring compensatory mitigation in BLM land use plans.110 For some states, such as Idaho, Utah, and Wyoming, the DEIS also removed the requirement of a net conservation gain standard for their mitigation programs.111 Overall: 1. Mitigation (avoidance, minimization, and compensation) as adopted in the 2015 BLM land use plans is an effective and well-established tool that the Fish and Wildlife Service relied upon to support its decision not to list the Greater Sage-Grouse as threatened or endangered under the ESA. Sound mitigation policy provides agencies such as BLM with a structured, rational, and transparent framework for reviewing use requests and meeting their multiple use and sustained yield mandates. The 2015 BLM sage-grouse plans employed the mitigation hierarchy to help reach their goal of protecting sage-grouse while also allowing multiple uses to proceed by ensuring that associated impacts to habitat are fully offset. 2. BLM has ample authority to apply the full mitigation hierarchy in the sage-grouse plans. Both FLPMA and case law provide BLM the discretion to seek compensatory mitigation to protect sage-grouse. 3. BLM has the authority to incorporate, implement, and enforce state sage-grouse mitigation programs that meet a recognized set of principles. We recommend that these principles should be consistent with those laid out by The Nature Conservancy in its 2015 report, Achieving Conservation and Development: Applying the Mitigation Hierarchy. In addition, we support compensatory mitigation programs that seek to achieve a "reasonable relationship" between impacts and compensatory mitigation and adequately account for habitat quality, temporal losses, and risk of project failure. The amount and type of compensatory mitigation should be proportional to, and have a reasonable relationship to, direct and indirect impacts.

2.3.15 Modifying Waivers, Exceptions, and Modifications of Fluid Minerals

As an example, the general approach conditions included in the Draft Colorado RMP Amendment related to no surface occupancy stipulations are more specific and include public engagement. * Waivers are permitted if the area lacks "protected attributes" as determined through coordination with Colorado Parks and Wildlife and following a 30-day public notice/comment period * Modifications and exceptions are permitted if: (1) impacts are fully offset by compensatory mitigation; or (2) no impacts to greater sage-grouse would occur because of terrain or habitat type but can only be applied after consultation with Colorado Parks and Wildlife. CO Draft RMP Amendment/EIS, pp. 2-4 2-5. Overall, one-time exceptions should be the preferred approach where relief is sought from protective stipulations, such that the safeguards prescribed in these stipulations will remain in place for the majority of oil and gas leases. Waivers, exceptions and modifications should only be granted from no surface occupancy (NSO) stipulations or any stipulations in PHMA after a 30-day public notice and comment period. Further, the U.S. Fish and Wildlife Service should have the opportunity to submit information for consideration prior to granting waivers, exceptions and modifications. Finally, it is critical that BLM track waivers, exceptions and modifications requested and those granted, and make that information available to the public. These records will provide important insight into how the stipulations are being applied and the potential impact of waivers, exceptions and modifications on the overall function of the plans. This information will also allow BLM to determine if the availability of or criteria for granting waivers, exceptions and modifications needs to be further narrowed in order to ensure sufficient protection for sage-grouse habitat. Accordingly, we recommend that each plan include language that provides: Exceptions will be considered prior to considering waivers or modifications. If the BLM determines that

a waiver or modification is more appropriate, the reasons for such decisions will be documented. Waivers are permitted if the area lacks "protected attributes" as determined through coordination with the appropriate state wildlife agency. Modifications and exceptions are permitted if: (1) impacts are fully and verifiably offset by compensatory mitigation; or (2) there are no impacts to greater sage-grouse because of terrain or habitat type, based on consultation with the applicable state wildlife agency. Prior to granting any waivers, exceptions and modifications, BLM will insure that the U.S. Fish and Wildlife Service has the opportunity to submit information for consideration. For no surface occupancy stipulations or stipulations in Priority Habitat Management Areas, waivers exceptions and modifications will only be granted following a 30-day public notice and comment period. BLM will maintain an ongoing record of requests for waivers, exceptions and modifications and whether those requests are granted, and will publish those cumulative results on a quarterly basis.

V. RECOMMENDED APPROACH TO WAIVERS, EXCEPTIONS AND MODIFICATION TO OIL AND GAS LEASE STIPULATIONS. The 2015 Sage-grouse Plans include numerous oil and gas lease stipulations that apply to development in order to protect sage-grouse and sage-grouse habitat, including no surface occupancy stipulations, timing limitations and surface use limitations. The draft amendments and EISs also rely on lease stipulations. However, the protections actually provided by the stipulations are only reliable and effective to the extent that the safeguards are applied. Waivers (permanent exemption that applies to the entire leasehold), exceptions (one-time exemption for a particular site within the leasehold) and modifications (change to the lease stipulation, either temporarily or for the term of the lease, can apply to the entire leasehold or certain areas) all permit an operator to avoid compliance with the requirements of a stipulation. Where these loopholes are permitted and used, the protections that the stipulations are supposed to provide can be undermined. Recent studies confirm that oil and gas development can harm both sage-grouse habitat and lifecycle activities, such as breeding.46 Consequently, it is vital that protections associated with oil and gas development are reliably applied and, as a result, that waivers, exceptions and modifications are not broadly used to weaken those protections. While we can accept narrowly prescribed waivers, exceptions and modifications to lease stipulations that are based on very specific criteria, broad standards, such as those currently included in the Nevada Draft RMP Amendment/EIS are not acceptable.

2.3.16 Noise Management Outside of PHMA

Comment: 2 Document: CH 3 Affected Environment 3.11 Noise 3.11.5 Page Number: 3-95 Line Number: 14 Local studies conducted for the PAPA found existing ambient sound levels (L50) at four locations throughout the Upper Green River area for hours important to greater sage-grouse lek behavior (1800-0800) were 19.9 dBA, 14.8 dBA, 14.3 dBA, and 14.5 dBA. The median L50 for all 1800-0800 hours at all sites was 15.4 dBA.

Comment: 5 Document: CH 3 Affected Environment 3.11 Noise 3.11.5.3 Page Number: 3-97 Line Number: 1-16 The discussion including the BLM Wyoming sage-Grouse RMP Amendments should include Appendix C, Required Design Features identifying ambient measures as 20-24 dBA at sunrise at the perimeter of a lek during active lek season.

Comment: 7 Document: CH 2 -Alternatives 2.4.3 Greater Sagegrouse habitat management Page Number: 2-8 Line Number: 25-27 Noise protocols for Wyoming have been developed and should be required (Ambrose and MacDonald 2015. Review of sound level measurements in Wyoming relative to greater sage grouse and recommended protocol for future measurements) Management of noise should

include but not be limited to, timing restrictions during lekking, nesting and brood rearing season, and design features that include; siting facilities outside of grouse priority habitat or placed to take advantage of topography, application of sound blankets and or sound walls, use of mufflers, and reducing traffic noise through controlled traffic patterns and restricting travel hours to between 8 am and 6 pm within 2 miles of the perimeter of a lek.

Comment:3 Document: CH 3 Affected Environment 3.11 Noise 3.11.5.2 PAge Number: 3-95 Line Number: 27 We are concerned for the validity of the noise data provided for this project as the microphone height was reported as being 2.43 meters (8 feet) above the ground. Protocols for noise monitoring were established for the Pinedale Field Office, Pinedale Anticline Project Area which requires a microphone height of 0.3 m (1 foot) to address the influence of wind on sound measurement.

Comment:4 Document: CH 3 Affected Environment 3.11 Noise 3.11.5.2 Page Number: 3-96 Line Number:2-7 An evaluation of sound level studies was conducted for WGFD which looked at noise data collected throughout Wyoming (Ambrose, S. and J. MacDonald, 2015. Review of Sound Level Measurements in Wyoming Relative to Greater Sage-grouse and Recommended Protocol for Future Measurements.) The authors recommended microphones be placed 1 foot from the ground (0.30 m) to more accurately reflect sounds experienced by the bird. They also found wind to have a clear influence on dBA data and metrics; the higher the wind speed, the higher the dBA levels "As wind speed increased, dBA levels increased, regardless of microphone height; however, dBA levels at 1.5 m were significantly higher than dBA levels at 0.3 m (up to 8.7 dBA higher). What these data indicate is that at a microphone height of 0.3 m, the increase in dBA level was due to sounds of wind through vegetation. The report goes on to say, "Sounds due to wind are of two types: natural sounds, such as leaves rustling and the sound of wind through vegetation, and wind-induced equipment sounds, such as turbulence over the diaphragm of the microphone, wind hitting the foam wind screen, wind causing the microphone tripod to move, or wind sounds through cables securing the tripod. Wind-induced equipment sounds are not part of the acoustic environment, but rather an artifact of data collection. Such data should not be included in analysis. "We are concerned for the validity of the noise data provided for this project as the microphone height was reported as being 2.43 meters (8 feet) above the ground. Also, no monitoring data was excluded from the analysis even though three of the microphones were found tipped over due to wind. This would suggest the data is flawed as the influence of noise and equipment falling over are not legitimate sounds of the environment, but artifacts of wind-equipment interaction.

Comment:6 Document: CH 3 Affected Environment 3.11 Noise 3.11.5.3 Page Number: 3-99 Line Number:1-8 Minimum L50 values reported for the monitoring sites were elevated due to the microphone height being at 8 feet from the ground and tipping over resulting in additive influence from wind. The single average L50 value of 25 dBA recommended to characterize the ambient noise level at the perimeter of lek location in the NPL Project EIS is flawed. By comparison, within the PAPA (an active gas field) the median L50 dBA for all hours at all leks for the years 2013-2015 was 26.0 dBA (range 17.5-36.9). Additionally, monitoring noise impacts in the PAPA has revealed lek declines for all leks exposed noise > 26 dBA from the perimeter of a lek.

Comment: 1 Document: CH 3 Affected Environment 3.11 Noise Page Number: 3-89 through 3-99 This section proposes to evaluate existing sound levels within the proposed project area to adequately assess noise-related impacts from the proposed action. The data was collected in 2012 and likely does not represent sound levels found in the project area today. Six of the 10 leks within the proposed project

area are showing declining trends without the addition of this project activity. This suggests there are already impacts to sage grouse from existing anthropogenic activities. Four of the leks showing declining trends are within a Core area for sage grouse This project evaluation drew comparisons f a study conducted in Lander WY. To adequately assess the noise-related impacts of the NPL Project, it would be appropriate to incorporate local baseline data. Such data was collected for the adjacent Pinedale Anticline Project Area (PAPA) and should be included in this project evaluation. Noise level data has been collected throughout the Upper Green River Valley since 2009. This information is available from published reports on the BLMPAPO web page (http://www.wy.blm.gov/jio-papo/). Instead the analysis drew comparisons only to a study conducted in Lander WY.

2.3.17 Preferred Alternative

Proposed Alternative to Maintain the "Not Warranted" Finding The 2015 Sage-grouse Plans were the basis for the U.S. Fish and Wildlife Service (FWS) finding that listing the greater sage-grouse under the Endangered Species Act (ESA) is no longer warranted. This decision was based on a determination that the plans provide sufficient certainty regarding their implementation and effectiveness and must not be threatened by this amendment process. The surest way to maintain the not warranted decision would be to maintain the current 2015 Sage-grouse Plans by adopting the "no action" alternative in this amendment process, which would still provide sufficient flexibility to adapt through implementation. However, recent instruction memoranda and policy changes (such as rescinding guidance on mitigation) that alter implementation of the 2015 plans are already undermining their effectiveness. The changes to the 2015 plans that are currently under review further jeopardize the structure and function of the plans and, as a result, risk the important protections that safeguard habitat and support FWS's not warranted finding. The collaborative work that went into creating the original plans should be honored. To the extent that DOI and BLM are committed to making some changes to the plans while also maintaining necessary protections to justify the Fish and Wildlife Service's finding, this proposed alternative highlights key elements to be incorporated in the plans, including maintaining current provisions and clarifying or improving others. This alternative is further supported by the 2018 U.S. Geological Survey report (https://doi.org/10.3133/ofr20181017), which found that research since 2015 reinforces the science underlying the structure and function of the 2015 Sage-grouse Plans. The following describes the key elements of our recommended alternative. Additional detail regarding implementation of the elements is available in technical comments.

The surest way to maintain the not warranted decision would be to maintain the current 2015 Sage-grouse Plans by adopting the "no action" alternative in this amendment process, which would still provide sufficient flexibility to adapt through implementation. However, recent instruction memoranda and policy changes (such as rescinding guidance on mitigation) that alter implementation of the 2015 plans are already undermining their effectiveness. The changes to the 2015 plans that are currently under review further jeopardize the structure and function of the plans and, as a result, risk the important protections that safeguard habitat and support FWS's not warranted finding. The collaborative work that went into creating the original plans should be honored. To the extent that DOI and BLM are committed to making some changes to the plans while also maintaining necessary protections to justify the Fish and Wildlife Service's finding, this proposed alternative highlights key elements to be incorporated in the plans, including maintaining current provisions and clarifying or improving others. This alternative is further supported by the 2018 U.S. Geological Survey report (https://doi.org/10.3133/ofr20181017), which found that research since 2015 reinforces the science underlying the structure and function of the 2015 Sage-grouse Plans.

2.3.18 Prioritization of Mineral Leasing

The requirement to prioritize oil and gas leasing and development outside of sage-grouse habitats must be maintained and clarified so that it is a meaningful tool to reduce habitat destruction and fragmentation. Prioritization should be based on analyzing factors such as the condition of habitat and oil and gas potential to make informed decisions about when the best approach would be to prioritize other proposed lease or permits, or even defer leasing or phase development in order to ensure habitat is protected.

In order to ensure adequate conservation of sage-grouse and sage-grouse habitat, prioritization of oil and gas leasing and development cannot be based solely on whether BLM has sufficient resources to process leasing nominations or applications for permits to drill in sage-grouse habitat. Rather, there must be a thorough consideration of opportunities to protect habitat. These opportunities include deferring proposed leasing that would unnecessarily harm habitat or where leasing is not the best use of agency resources (both internal resources and in terms of allocating our public lands), such as where there is low or no potential for leasing, high quality habitat and no surrounding infrastructure or development. BLM is not obligated to lease every parcel that is proposed nor is there a requirement that any deferral be replaced with another parcel to somehow maintain the same number of parcels or acres up for lease. See, e.g., New Mexico ex. rel. Richardson v. BLM, 565 F.3d 683, 710 (10th Cir. 2009) ("It is past doubt that the principle of multiple use does not require BLM to prioritize development over other uses."). Rather, the agency can take into account relevant factors and the importance of conserving grouse habitat to meaningfully prioritize leasing where it is most appropriate and least harmful to sage-grouse habitat. The impact such factors could have on leasing decisions is demonstrated by the map below, which shows the distribution of proposed lease sale parcels for the December 2018 sale in sage-grouse habitat in the Kremmling (Colorado) Field Office: [SEE ATTACHMENT PG 28] Explicitly considering the value of habitat and the potential for actual energy production would unquestionably help the agency prioritize the right parcels for leasing.

RECOMMENDED APPROACH TO PRIORITIZING OIL AND GAS LEASING AND DEVELOPMENT OUTSIDE SAGE-GROUSE HABITAT. The 2015 Sage-grouse Plans are clear as to the need for prioritizing oil and gas leasing and drilling outside sage-grouse habitat and the desired effect of related actions. From the Rocky Mountain Record of Decision (p. 1-25): . the ARMPs and ARMPAs prioritize oil and gas leasing and development outside of identified PHMAs and GHMAs. This is to further limit future surface disturbance and encourage new development in areas that would not conflict with GRSG. This objective is intended to guide development to lower conflict areas and as such protect important habitat and reduce the time and cost associated with oil and gas leasing development by avoiding sensitive areas, reducing the complexity of environmental review and analysis of potential impacts on sensitive species, and decreasing the need for compensatory mitigation. The Rocky Mountain ROD also identifies prioritizing oil and gas leasing and development outside habitat as a "key component" and a "key management response" (pp. 1-18 1-19). The Buffalo Field Office ARMP/ROD (p. 50) and Wyoming 9-Plan ARMPA (p. 24) echo this directive, including the following objective: 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. (emphasis added). The inter-agency, expert Conservation Objectives Team

(COT) Report confirms the need to prioritize development outside habitat, finding that: Sage-grouse populations can be significantly reduced, and in some cases locally extirpated, by non-renewable energy development activities, even when mitigative measures are implemented (Walker et al. 2007). The persistent and increasing demand for energy resources is resulting in their continued development within sage-grouse range, and may cause further habitat fragmentation. . Both non-renewable and renewable energy developments are increasing within the range of sage-grouse, and this growth is likely to continue given current and projected demands for energy.44 As a result, the COT Report recommended the following objective for energy development: "Energy development should be designed to ensure that it will not impinge upon stable or increasing sage-grouse population trends."45

Prioritization for Leasing BLM has used specific factors to guide prioritization of leasing outside sage-grouse habitat. For instance, in assessing the December 2017 lease sale for the Vernal Field Office (https://eplanning.blm.gov/epl-frontoffice/ projects/nepa/80165/130450/158729/Final_Vernal_EA.pdf), BLM created a chart evaluating how certain prioritization considerations applied to parcels (existing lease, existing unit, field-EIS, high gas potential, high oil potential), completed site visits to confirm conditions on the ground, and then only included parcels in the lease sale that met the majority of the factors. We propose that the BLM use the following factors: * Intactness/quality of habitat classification of habitat (i.e., priority, important, general); quality of habitat; importance for connectivity or seasonal habitat * Population trends in applicable zone or biologically significant unit * Distance from existing disturbance * Distance from existing infrastructure roads, well pads, pipelines * Need for additional infrastructure estimated surface disturbance * Adjacent to existing lease yes/no/proximity * Within existing oil and gas unit * Within existing master leasing plan * Oil potential none, low, moderate, high * Natural gas potential none, low, moderate, high BLM will conduct site visits to confirm conclusions, as needed. Decisions to include nominated lease parcels in sage-grouse habitat in lease sales will be based on the following evaluation of factors: Parcels that do not have moderate or high potential should not be offered. Parcels that have high quality habitat, are not in proximity to existing disturbance and/or require additional infrastructure to be developed should not be offered. Parcels that are in close proximity to existing disturbance and infrastructure, and are already within an existing oil and gas unit or master leasing plan that has been analyzed in an environmental impact statement may be considered for leasing. Parcels outside priority habitat should be considered for leasing prior to parcels in PHMA. Prioritization in Development BLM will prioritize development outside sage-grouse habitat by considering the following factors: * Intactness/quality of habitat classification of habitat (i.e., priority, important, general); quality of habitat; quality of habitat; importance for connectivity or season habitat * Population trends in applicable zone or biologically significant unit * Distance from a lek * Need for new infrastructure estimated surface disturbance * Ability to use existing well pad and infrastructure * Oil potential none, low, moderate, high * Natural gas potential none, low, moderate, high These factors will apply to both exploratory and other types of development activities. BLM will conduct site visits to confirm conclusions, as needed. Decisions to approve applications for permits to drill in sage-grouse habitat will be based on the following evaluation of factors: Where applications for permits to drill are in high quality/intact habitat, are not in proximity to existing disturbance and/or require additional infrastructure to be developed, they will not be prioritized and opportunities will be evaluated to relocate permits. Where applications for permits to drill are not in areas with high or moderate potential, they will not be prioritized. Where applications for permits to drill are able to use existing well pads and infrastructure and otherwise avoid surface disturbance and noise impacts to leks, they are more suitable for processing and approval. Applications for permits to drill outside priority habitat should be considered for approval prior to parcels in PHMA.

Prioritization is also essential when it comes to the location of oil and gas leasing and development. BLM makes no mention of lease prioritization in the DEIS despite previous guidance regarding lease prioritization. Quite simply, it makes perfect sense to prioritize the leasing and development of oil and gas resources outside of priority and general habitat. Nearly 90% of Colorado's Greater sage grouse population is concentrated in Moffat and Jackson Counties. Without the highest quality habitat being conserved, the risk of adversely impacting those populations is far too high and in turn, the likelihood of a future ESA listing grows, which no one wants to see happen.

2.3.19 Range of Alternatives

Alternatives are measured against purpose and need; BLM has not considered a reasonable range of alternatives in the Draft EIS based on the restated purpose and need. When developing an EIS, the "range of reasonable alternatives is measured against the 'Purpose and Need' section…." Cal. ex rel. Lockyer v. U.S. Dep't. of Agriculture, 459 F. Supp. 2d 874, 905 (N.D. Calif., 2006), aff'd, 2009 U.S. App. LEXIS 19219 (9th Cir. 2009). The statement of "purpose and need" is the basis upon "which the agency is responding in proposing the alternatives including the proposed action." 40 C.F.R. §1502.13 and City of Carmel-by-the-Sea v. U.S. Dep't. of Transportation, 123 F.3d 1142, 1155 (9th Cir. 1997). Therefore, if the purpose and need of the 2018 Draft EIS for the Greater Sage-Grouse changes from the purpose and need for the 2015 EIS, then the range of alternatives must necessarily change as well. Even the 2018 Draft EIS recognizes that "BLM's purpose and need for this planning action helps define the scope of proposed alternative actions…" Nevada DEIS, p. ES-2. In Lockyer, the Forest Service argued that it could base its EIS for the new 2005 version of the "Roadless Rule" upon the EIS (and its alternatives) for 2001 Roadless Rule that it replaced. The court found: This argument fundamentally misconstrues the role of the consideration of reasonable alternatives, which lies at the heart of any NEPA analysis. Failure to consider reasonable alternatives thwarts the goals of informed decision making and meaningful public comment before the environmental die is cast. Lockyer at 905 (citations omitted). The Forest Service proposed the 2005 Roadless Rule as a means to give states more authority over designating roadless areas on federal land. In fact, the Forest Service called the 2005 rule the "State Petitions" rule. While the Forest Service argued the 2005 rule and the 2001 rule "share the same purpose and need," the Court concluded that their purposes were "plainly quite different" because the 2005 rule granted state-specific exemptions. Lockyer at 906. The 2018 Draft EISs are clear that their purpose and need is different from the 2015 EISs. Under the heading "Purpose of and Need for Action," the Draft EISs state that "The purpose of this RMPA/EIS is to enhance cooperation with the states by modifying the approach to Greater Sage-Grouse management in existing land use plans to better align with individual state plans and conservation measures and with DOI and BLM policy." See, e.g. Nevada DEIS, p. 1-3. Because the 2018 Draft EIS states a different purpose and need compared to the 2015 EIS, BLM, pursuant to Lockyer, must necessarily consider a new range of alternatives to meet that new purpose and need. Under Lockyer, BLM in 2018 cannot tier to alternatives considered for the different purpose and need of the 2015 EIS.

The No-Action Alternative in the Draft EIS is the baseline, not a real alternative. The 2018 Draft EISs for the Greater Sage-Grouse purport to compare two alternatives the "No Action Alternative" versus the "Management Alignment Alternative." See, e.g. Nevada DEIS, p. 2-3. But the "'no action alternative generally does not satisfy the proposed action's purpose and need; its inclusion in the Environmental Impact Statement is required by NEPA as a basis for comparison.'" Lockyer at 905, quoting Ronald E. Bass, Albert I. Herson & Kenneth M. Bogdan, The NEPA Book: A Step-by-Step Guide on How to Comply with the National Environmental Policy Act, 95 (2d. ed. 2001). Because the No Action

Alternative fails to satisfy the purpose and need of the 2018 Draft EISs, the Draft EISs propose only one alternative: the Management Alignment Alternative. When there is only one alternative, it is not, by definition, an alternative at all. "[T]he agency must consider a range of alternatives that covers the full spectrum of possibilities." Sierra Club v. Watkins, 808 F. Supp. 852, 872 D.D.C. 1991). By proposing the "Management Alignment Alternative" as the only option to the status quo, BLM has failed to "consider a range of alternatives that covers the full spectrum of possibilities." Id. at 872.

BLM must evaluate additional management alternatives. By failing to thoroughly evaluate more than one alternative, BLM is not complying with NEPA.. See TWS v. Wisely, 524 F. Supp. 2d 1285, 1312 (D. Colo. 2007) (BLM violated NEPA by failing to consider "middle-ground compromise between the absolutism of the outright leasing and no action alternatives"); Muckleshoot Indian Tribe v. US Forest Serv., 177 F.3d 800, 813 (9thCir. 1999) (NEPA analysis failed to consider reasonable range of alternatives where it "considered only a no action alternative along with two virtually identical alternatives"). BLM must consider additional alternatives, including alternatives that are more environmentally protective than the Management Alignment Alternative. The purpose and need of the 2015 Sage-grouse Plans is to "conserve, enhance, and restore GRSG habitat by eliminating or minimizing threats to their habitat" (Rocky Mountain Record of Decision, p. 1-21), while the 2018 amendments are based on a purpose to "enhance cooperation with the states." BLM should consider an alternative that is explicitly focused on enhancing cooperation with the states while conserving, enhancing and restoring sage-grouse habitat. For instance, the projection of on-the-ground activities set out in Table ES-1 of the 2018 EISs shows a reduction in restoration efforts, but a more conservation-oriented alternative would consider increasing these projects. Similarly, this alternative would evaluate how to enhance cooperation with the states while retaining more of the core protections and management approaches that made the previous plans the basis for the FWS determination that listing was no longer warranted under the ESA. This alternative would be more environmentally protective and provide more certainty. We have developed a proposed alternative that would accomplish these goals, set out in detail in Attachment 1, incorporated herein by reference. BLM should also have considered alternatives to complete additional analysis of key protective provisions that it is proposing to eliminate through the DEISs: net conservation gain and Sagebrush Focal Areas (SFA). The DEISs state: The public did not have the opportunity to comment specifically on a net conservation gain approach to compensatory mitigation during the 2015 land use planning process. In addition, the DOI and the BLM are evaluating whether the implementation of compensatory mitigation standard on public lands is appropriate and consistent with applicable legal authorities. We request public comment about how the BLM should consider and implement mitigation with respect to the Greater Sage-Grouse, including alternative approaches to requiring compensatory mitigation in BLM land use plans. See, e.g. Utah DEIS, p. ES-8. The Management Alignment Alternative in the DEISs for Utah and Wyoming proposes to remove this standard. Utah DEIS, p. ES-8; Wyoming DEIS, p. ES-6. Rather than seeking comments only on eliminating this approach, BLM should evaluate an alternative that would retain the approach, while leaving the agency flexibility to determine applicable standards by working with the states. The DEISs also propose eliminating SFAs in Utah, Wyoming, Nevada and Idaho. Utah DEIS, p. 2-6; Wyoming DEIS, p. ES-6; Nevada DEIS, p. 1-8; Idaho DEIS, p. 2-7. BLM's scoping notice stated that the agency "seeks comments on the SFA designation" in response to the decision in Western Exploration, LLC v. U.S. Dep't of the Interior, 250 F. Supp. 3d 718 (D. Nev. 2017), which found BLM must conduct supplemental NEPA analysis in order to support the designation. 82 Fed. Reg. 47248, 47249 (Oct. 11, 2017). As another alternative, BLM should evaluate the impacts of the SFAs without the previously-proposed mineral withdrawal, which has now been withdrawn, in light of how those designations and the important protective measures they provide

(in addition to the withdrawal protections) benefit sage-grouse habitat and how application can be better coordinated with the states.

The range of alternatives is insufficient. The Draft EISs only consider one alternative, the "Management Alignment Alternative" and refer to the 2015 Sage-grouse Plans as the "No Action Alternative." This does not meet BLM's obligations under NEPA. The range of alternatives is "the heart of the environmental impact statement." 40 C.F.R. § 1502.14. NEPA requires BLM to "rigorously explore and objectively evaluate" a range of alternatives to proposed federal actions. See 40 C.F.R. §§ 1502.14(a) and 1508.25(c). NEPA's requirement that alternatives be studied, developed, and described both guides the substance of environmental decision-making and provides evidence that the mandated decision-making process has actually taken place. Informed and meaningful consideration of alternatives including the no action alternative is thus an integral part of the statutory scheme. Bob Marshall Alliance v. Hodel, 852 F.2d 1223, 1228 (9th Cir. 1988), cert. denied, 489 U.S. 1066 (1989) (citations and emphasis omitted). "An agency must look at every reasonable alternative, with the range dictated by the nature and scope of the proposed action." Northwest Envtl Defense Center v. Bonneville Power Admin., 117 F.3d 1520, 1538 (9thCir. 1997). An agency violates NEPA by failing to "rigorously explore and objectively evaluate all reasonable alternatives" to the proposed action. City of Tenakee Springs v. Clough, 915 F.2d 1308, 1310 (9thCir. 1990) (quoting 40 C.F.R. § 1502.14). This evaluation extends to considering more environmentally protective alternatives and mitigation measures. See, e.g., Kootenai Tribe of Idaho v. Veneman, 313 F.3d 1094,1122-1123 (9thCir. 2002) (and cases cited therein). By only meaningfully considering one alternative and not considering alternatives that would be more environmentally protective, BLM has failed to consider a reasonable range of alternatives.

The 2018 Draft EISs also state that their purpose and need is to "better align with … DOI and BLM policy." See, e.g. Nevada DEIS, p. 1-3. That policy was issued on June 7, 2017, through Secretarial Order 3353, "Greater Sage-Grouse Conservation and Cooperation with Western States." The Secretarial Order stated that one of the policy goals for managing the Greater Sage-Grouse is to "give appropriate weight to the value of energy and other development on public lands" in compliance with President Trump's Executive Order of March 28, 2017, "Promoting Energy Independence and Economic Growth" (EO 13783) The new "DOI and BLM policy" is completely opposite of the purpose and need expressed in the 2015 EIS, which identified the "major threats" to sage grouse habitat as "exploration and development" of hard rock mining and fluid mineral development. Nevada DEIS, p. 1-8. The purpose and need for the 2018 Draft EISs and thus the basis for the 2018 alternatives has shifted from conservation in 2015 to energy development in 2018: "As analyzed in the [2015 EIS], all of the previously analyzed alternatives, including one proposing constraints stricter than the current management plan, were predicted to result in a loss of development opportunities on public lands (emphasis added)." Nevada DEIS, p. 2-3. The purpose and need of the 2018 Draft EIS, pursuant to Secretarial Order 3353, is to "contribut[e] to economic growth and energy independence" (Nevada DEIS, p. 2-3), or, in other words, increase development opportunities on public lands. Therefore, BLM cannot base the pro-development alternatives in its 2018 Draft EISs upon the 2015 alternatives that had a purpose and need focused on conservation and avoidance of an ESA listing, not energy independence and economic growth. Because the "range of reasonable alternatives is measured against the'Purpose and Need' section," Lockyer at 905, the range of alternatives in the 2018 Draft EIS fail to account for the dramatic change in purpose and need compared to the 2015 EIS, which is a violation of NEPA. 40 C.F.R. §1502.13. In another section of these comments we discuss the purpose and need issue in the 2018 EISs in more detail.

2.3.20 Recreation

These management strategies are more than smart conservation they also support our local economies. A healthy sagebrush ecosystem is an important economic driver for Western economies and hundreds of other species that live in sagebrush habitat including the golden eagle, elk, pronghorn and mule deer. Research has shown that across the American West, the sagebrush ecosystem powers the outdoor recreation industry to the tune of more than $1 billion—$76 million in Colorado alone.

2.3.21 Sagebrush Focal Areas

Concerns with removal of SFAs in Idaho, Nevada, Utah, and Wyoming. Unfortunately, under the draft land use plans and the accompanying EISs that BLM has prepared for proposed changes to the 2015 Sage-grouse Plans, the BLM would eliminate SFAs in the states of Idaho, Nevada, Utah, and Wyoming. This would include about 8.7 million acres of public land. It represents a tremendous downgrade in land use plan protections that are oriented towards sage-grouse conservation. While BLM previously decided to not pursue the withdrawal from mineral location and entry that was recommended under the 2015 land use plans for the approximately 10 million acres of SFAs that are located in the states of Wyoming, Montana, Idaho, Oregon, Nevada, and Utah, this new, additional proposal represents a further step backward. It is a retreat from environmental protections that have been recognized as needed for sage-grouse conservation by the U.S. Fish and Wildlife Service (and BLM). But given the previous retreat relative to mineral entry, the effect of the current proposed elimination of the SFAs in four of the states in the range of the sage-grouse is somewhat less significant. Still, there will be a number of lost or modified protections that applied to SFAs in one or more of the four states. These include provisions under the 2015 plans that require oil and gas leasing to only be allowed pursuant to a no surface occupancy (NSO) stipulation that was not subject to waiver, exception, or modification (Idaho, Nevada, and Utah); prioritizing SFAs for vegetation and conservation actions (Idaho, Nevada, Utah, and Wyoming); and prohibitions of geothermal development in SFAs (Nevada). These are important protections that must be maintained in priority habitat management areas (PHMA) if SFAs no longer exist in the four states. The value of these protections was recognized by the Fish and Wildlife Service in its 2015 not warranted decision, and thus are a key component of the land use plans that must be maintained if the not warranted decision is to be sustained, which it must be. "Based on our recommendation to further protect sage-grouse population centers that have been identified in the scientific literature as critically important for the species and areas identified through our analysis as important for conservation, BLM and USFS designated areas as Sagebrush Focal Areas (SFA) and added protections that would further limit new, human-caused surface disturbance in SFAs." 80 Fed. Reg. 59858, 59875 (Oct. 2, 2015). SFAs "are the areas that the Federal Plans manage as the highest priority lands in PHMAs for sage-grouse conservation (Figure 5)." Id. at 59878. They are "strongholds" for sagegrouse conservation and as mentioned above contain important connectivity habitat and high densities of breeding birds. Id. The Fish and Wildlife Service recognized that in addition to PHMA protections, the protections mentioned above would also apply in SFAs, including mineral entry withdrawal, NSO stipulations for fluid minerals with no waivers, exceptions, or modifications, and prioritizing management and conservation actions. Id. This was because SFAs need "the most conservative strategies to protect sage-grouse and habitat." Id. Grazing permit review is also prioritized in SFAs. Id. at 59877, 59910. Clearly the protections in SFAs that would be lost by eliminating SFAs must be maintained in the remaining PHMAs, and the land use plan amendments BLM is contemplating must so provide. The BLM should modify the EISs and proposed land use plan amendments in Idaho, Nevada, Utah, and Wyoming to specifically provide that the fluid minerals NSO stipulation with no waivers, exceptions, or modifications, the vegetation and conservation management stipulation, and where

appropriate the prohibition on geothermal development will be specifically incorporated into and made a part of the PHMAs in those states.

Inconsistent treatment across the plans appears arbitrary and capricious. While the BLM is planning to eliminate SFAs in Idaho, Nevada, Utah, and Wyoming, they would be maintained in Oregon and Montana. The BLM provides no explanation for this differential treatment of central aspects of the 2015 Sage-grouse Plans, yet the agency must do so to comply with fundamental legal requirements that apply to Administrative Procedure Act rulemaking efforts, the hard look and public involvement provisions of NEPA, and the land use planning provisions of the FLPMA. In Oregon, the BLM states that SFAs presented "issues [that] require clarification of language in the 2015 ROD/ARMPA but do not require new analysis" and in any event the only issue that requires clarification relative to SFAs is withdrawal from mineral entry. Oregon Draft Resource Management Plan (RMP) and EIS at 1-8. The BLM does not mention Montana in this NEPA analysis because that state desires to leave its 2015 sage-grouse plans intact. Therefore, SFAs would remain intact in Montana. But in Wyoming, Utah, Idaho, and Nevada elimination of SFAs would be pursued with little explanation. In Wyoming "[u]nder the Management Alignment Alternative, there would be no designation of SFAs." Wyoming Draft RMP and EIS at 4-15. According to the BLM, the environmental impact of not having SFAs was considered in the no action alternative in the 2015 Approved Resource Management Plan Amendment (ARMPA), and in the other Wyoming RMPs that did not consider SFAs, the impacts of designating PHMAs encompassed the impacts of SFAs. Id. The BLM seems to believe that its 2016 Draft EIS for Sagebrush Focal Area Withdrawal concluded that SFAs had little conservation benefit and it isonly interested in issues related to the nonexistent mineral withdrawal in any event. Id. at ES-3, 1-8, 4-16. In Idaho, BLM without explanation, states SFAs duplicate protections, focus on mere de minimis activities, do not provide appreciable benefits for sage-grouse, and they complicate the state's adaptive management provisions. Idaho Draft RMP and EIS at ES-3, 1-6. BLM concludes "[t]he removal of SFA designations would have no measurable effect on the conservation of Greater Sage-Grouse in Idaho because the Management Direction proposed for PHMA would remain in place and continue to protect Greater Sage-Grouse habitat. SFA removal would add flexibility for responsible development with stringent requirements including mitigation to achieve a no net loss to Greater Sage-Grouse habitat in PHMA." Id. at 4-10. In Nevada, BLM is again concerned about the nonexistent mineral withdrawal serving as a basis for SFAs and whether SFAs "adequately maintain conservation of Greater Sage-Grouse habitat . " Nevada Draft RMP and EIS at ES-3, 1-8, 2-8. In Utah BLM also raises the nonexistent mineral withdrawal as a basis for eliminating SFAs as well as questioning whether they achieve conservation outcomes and concerns about alignment with the state strategy. Utah Draft RMP and EIS at ES-3, 1-7. The explanations for elimination of SFAs in these four states does not establish a clear basis for doing so especially when they would be maintained in Montana and Oregon. This differential treatment and the basis for it must be explained. Fundamentally BLM is creating regulatory uncertainty by creating this patchwork pattern. The need for regulatory certainty, and the fact it was established by the 2015 plans, was a key basis for the Fish and Wildlife Service reaching its not warranted decision. 80 Fed. Reg. 59858. Yet now BLM is creating regulatory uncertainty. This raises questions about whether the sage-grouse will have to be given ESA protections, which in our view should be avoided. At a minimum, to avoid this uncertainty, the SFA protections we have mentioned, like the fluid mineral NSO stipulation with no waiver, exception, or modification, need to made part of the PHMAs in states that no longer have SFAs. Moreover, BLM needs to address whether eliminating SFAs in some states will threaten SFA protections in Oregon and Montana where the SFA designation would remain in place. It would be inappropriate for SFAs to be threatened in Oregon and Montana just because they have been eliminated elsewhere. If

BLM is going to treat SFA designation as subject to state-by-state revocation and not as a range-wide need-a proposition that is totally at odds with the Fish and Wildlife Service not warranted finding not to mention language in the 2015 land use plans-it needs to put in place provisions to ensure the SFA designations are protected where they remain and reconsider the proposals to eliminate SFAs.

Recent legal decisions support maintaining SFAs. There are two recent decisions that BLM should consider as it makes decisions about SFA designations. These are W. Exploration, LLC v. U.S. Dept. of the Interior, 250 F. Supp. 3d 718 (D. Nev. 2017) and Desert Survivors v. U.S. Dept. of the Interior, 2018 U.S. Dist. LEXIS 81922 (N.D. Cal., May 15, 2018). BLM frames Western Exploration as creating a need for these RMP amendments stating changes might be needed "in order to comply with the court's order" and "seeking comment on the SFA designation." 82 Fed. Reg. 47248-49 (Oct. 11, 2017). BLM states that the court "held that the BLM violated NEPA by failing to prepare a supplemental EIS for the designation of SFAs in the 2015 Greater Sage-Grouse Plan in Nevada." Id. at 47248. In fact, Western Exploration does not direct BLM to eliminate SFAs from the land use plans. First, the court found that the BLM had adequately considered any inconsistencies between the Federal sage-grouse plans and local county plans. 250 F. Supp. 3d at 744. The court also found that the BLM met its multiple use responsibilities under FLPMA when it adopted the Nevada sage-grouse plan. Id. at 746. The proposed withdrawal of 2.8 million acres from mineral entry (i.e., the SFAs) did not violate FLPMA. Id. "A review of the administrative record shows that BLM considered the relative value of Nevada's resources." Id. While the court agreed that under NEPA "the designation of 2.8 million acres as Focal Areas in Nevada amounts to a substantial change relevant to environmental concerns, requiring the Agencies to prepare [a supplemental EIS]" the court nevertheless refused to enjoin the ROD implementing the Nevada plan, holding "protection of the greater-sage grouse weighs against vacatur of the RODs. Enjoining implementation of the Plan Amendments pending the Agencies' preparation of an SEIS presents "the possibility of undesirable consequences" to the greater sage-grouse species and their habitat." Id. at 748, 751. Based on this decision, the BLM is not required to eliminate SFAs, as it proposes, but rather, at most, it should only reconsider whether the SFA designations were made with a sufficient opportunity for public comment, and allow for additional public comment if warranted, making, possibly, only mid-course corrections, not summary eliminations. Further, as discussed above, in Desert Survivors the court determined that in withdrawing the proposed ESA listing of the Nevada/California bi-state sage-grouse population the FWS ignored the best available science, improperly concluding voluntary conservation measures could stem the decline of the population. The court held the Service "erred in concluding there was sufficient certainty of effectiveness of planned conservation measures to support the conclusion that listing" the bird as threatened "was no longer warranted." Desert Survivors at 71. "There are no rational grounds for the service's conclusion." Id. at 83. The court held that, "the service must offer some rational basis for its conclusions that future conservation efforts will be effective enough to improve the status of the bi-state (grouse) and therefore warrant withdrawal of the proposed listing." Id. at 64. In reaching its 2015 not warranted finding, FWS concluded that SFAs had a strong scientific basis and were a critical element in showing that BLM had put in place adequate regulatory mechanisms to make listing the sage-grouse unnecessary. Now the BLM is abandoning the commitment to implement SFA protections in much of the range of the sage-grouse. That decision is not based on best available science and must be reassessed.

Clearly the protections in SFAs that would be lost by eliminating SFAs must be maintained in the remaining PHMAs, and the land use plan amendments BLM is contemplating must so provide. The BLM should modify the EISs and proposed land use plan amendments in Idaho, Nevada, Utah, and Wyoming

to specifically provide that the fluid minerals NSO stipulation with no waivers, exceptions, or modifications, the vegetation and conservation management stipulation, and where appropriate the prohibition on geothermal development will be specifically incorporated into and made a part of the PHMAs in those states.

In Oregon, the BLM states that SFAs presented "issues [that] require clarification of language in the 2015 ROD/ARMPA but do not require new analysis" and in any event the only issue that requires clarification relative to SFAs is withdrawal from mineral entry. Oregon Draft Resource Management Plan (RMP) and EIS at 1-8. The BLM does not mention Montana in this NEPA analysis because that state desires to leave its 2015 sage-grouse plans intact. Therefore, SFAs would remain intact in Montana. But in Wyoming, Utah, Idaho, and Nevada elimination of SFAs would be pursued with little explanation. In Wyoming "[u]nder the Management Alignment Alternative, there would be no designation of SFAs." Wyoming Draft RMP and EIS at 4-15. According to the BLM, the environmental impact of not having SFAs was considered in the no action alternative in the 2015 Approved Resource Management Plan Amendment (ARMPA), and in the other Wyoming RMPs that did not consider SFAs, the impacts of designating PHMAs encompassed the impacts of SFAs. Id. The BLM seems to believe that its 2016 Draft EIS for Sagebrush Focal Area Withdrawal concluded that SFAs had little conservation benefit and it is only interested in issues related to the nonexistent mineral withdrawal in any event. Id. at ES-3, 1-8, 4-16. In Idaho, BLM without explanation, states SFAs duplicate protections, focus on mere de minimis activities, do not provide appreciable benefits for sage-grouse, and they complicate the state's adaptive management provisions. Idaho Draft RMP and EIS at ES-3, 1-6. BLM concludes "[t]he removal of SFA designations would have no measurable effect on the conservation of Greater Sage-Grouse in Idaho because the Management Direction proposed for PHMA would remain in place and continue to protect Greater Sage-Grouse habitat. SFA removal would add flexibility for responsible development with stringent requirements including mitigation to achieve a no net loss to Greater Sage-Grouse habitat in PHMA." Id. at 4-10. In Nevada, BLM is again concerned about the nonexistent mineral withdrawal serving as a basis for SFAs and whether SFAs "adequately maintain conservation of Greater Sage-Grouse habitat . " Nevada Draft RMP and EIS at ES-3, 1-8, 2-8. In Utah BLM also raises the nonexistent mineral withdrawal as a basis for eliminating SFAs as well as questioning whether they achieve conservation outcomes and concerns about alignment with the state strategy. Utah Draft RMP and EIS at ES-3, 1-7.

The explanations for elimination of SFAs in these four states does not establish a clear basis for doing so especially when they would be maintained in Montana and Oregon. This differential treatment and the basis for it must be explained. Fundamentally BLM is creating regulatory uncertainty by creating this patchwork pattern. The need for regulatory certainty, and the fact it was established by the 2015 plans, was a key basis for the Fish and Wildlife Service reaching its not warranted decision. 80 Fed. Reg. 59858. Yet now BLM is creating regulatory uncertainty. This raises questions about whether the sage-grouse will have to be given ESA protections, which in our view should be avoided. At a minimum, to avoid this uncertainty, the SFA protections we have mentioned, like the fluid mineral NSO stipulation with no waiver, exception, or modification, need to made part of the PHMAs in states that no longer have SFAs. Moreover, BLM needs to address whether eliminating SFAs in some states will threaten SFA protections in Oregon and Montana where the SFA designation would remain in place. It would be inappropriate for SFAs to be threatened in Oregon and Montana just because they have been eliminated elsewhere. If BLM is going to treat SFA designation as subject to state-by-state revocation and not as a range-wide need-a proposition that is totally at odds with the Fish and Wildlife Service not warranted finding not to

mention language in the 2015 land use plans-it needs to put in place provisions to ensure the SFA designations are protected where they remain and reconsider the proposals to eliminate SFAs.

These are important protections that must be maintained in priority habitat management areas (PHMA) if SFAs no longer exist in the four states. The value of these protections was recognized by the Fish and Wildlife Service in its 2015 not warranted decision, and thus are a key component of the land use plans that must be maintained if the not warranted decision is to be sustained, which it must be. "Based on our recommendation to further protect sage-grouse population centers that have been identified in the scientific literature as critically important for the species and areas identified through our analysis as important for conservation, BLM and USFS designated areas as Sagebrush Focal Areas (SFA) and added protections that would further limit new, human-caused surface disturbance in SFAs." 80 Fed. Reg. 59858, 59875 (Oct. 2, 2015). SFAs "are the areas that the Federal Plans manage as the highest priority lands in PHMAs for sage-grouse conservation (Figure 5)." Id. at 59878. They are "strongholds" for sage-grouse conservation and as mentioned above contain important connectivity habitat and high densities of breeding birds. Id. The Fish and Wildlife Service recognized that in addition to PHMA protections, the protections mentioned above would also apply in SFAs, including mineral entry withdrawal, NSO stipulations for fluid minerals with no waivers, exceptions, or modifications, and prioritizing management and conservation actions. Id. This was because SFAs need "the most conservative strategies to protect sage-grouse and habitat." Id. Grazing permit review is also prioritized in SFAs. Id. at 59877, 59910.

IMPORTANCE OF SAGEBRUSH FOCAL AREAS An important component of the existing BLM and Forest Service sage-grouse land use plans is the designation of sagebrush focal areas (SFA). These are the most important sage-grouse habitats, which contain large, contiguous blocks of Federal lands in important sage-grouse habitats that have high levels of population connectivity and densities of breeding birds.

2.3.22 Sage-Grouse

Current finding that listing is no longer warranted. In 2010, FWS determined that the greater sage-grouse warranted listing under the ESA "due to the loss and fragmentation of habitat and a lack of adequate regulatory mechanisms to stem habitat loss."1In 2015, FWS concluded that the species no longer warranted listing, explaining the change in position in a Frequently Asked Questions accompanying its finding as follows: How did the Service arrive at this not warranted finding? In September 2015, the Bureau of Land Management and U.S. Forest Service completed amendments and revisions to 98 separate federal land use plans that address sage-grouse habitat loss, fragmentation, and other threats to the species. This represents the largest landscape-scale conservation planning effort in U.S. history. In addition, states in the greater sage-grouse range developed or updated greater sage-grouse conservation plans. New federal and state regulatory mechanisms developed since 2010 in the Rocky Mountain region have addressed the most serious threats to the species, primarily fossil fuel and renewable energy development, infrastructure such as roads and power lines, mining, improper grazing, the direct conversion of sagebrush to croplands, and urban and ex-urban development. In the Great Basin region, regulatory mechanisms and other conservation efforts developed since 2010 will substantially reduce and mitigate the primary potential threats of wildfire, invasive plants, conifer encroachment and mining.2 Although actual, on-the-ground, measurable improvements to sage-grouse habitat were not accomplished simply by completing the federal plans in 2015, the measures agreed to in those plans, along with those by the states of Wyoming, Montana, and Oregon formed the basis for the FWS finding by meeting the elements of the agency's Policy for Evaluating Conservation Efforts (PECE),

which provides that, in order to rely on a conservation effort, FWS "must find that the conservation effort is sufficiently certain to be implemented and effective so as to have contributed to the elimination or adequate reduction of one or more threats to the species . .3See, 68 Fed.Reg. 15100 (March 28, 2003) (emphasis added). FWS relied on this policy in its 2015 finding, stating: The [PECE] policy provides guidance on how to evaluate conservation efforts that have not yet been implemented or have not yet demonstrated effectiveness. The evaluation focuses on the certainty that the conservation efforts will be implemented and the effectiveness of the conservation efforts to contribute to make listing a species unnecessary. In this finding, we evaluated the certainty that the Federal Plans, and the Montana and Oregon Plans will be implemented into the future and the certainty that they will be effective in addressing threats, based on the best available science and professional recommendations provided in the COT and other scientific literature and reports. 80 Fed.Reg. 59874 (October 2, 2015) (emphasis added).

BLM cannot rely on perch inhibitors to reduce impacts to sage grouse, as these do not address the behavioral avoidance of sage grouse of tall structures, and don't even completely prevent raptor perching. Prather (2010) provided an empirical test of the effectiveness of perch inhibitors on smaller distribution lines in Utah, and found that they had no significant effect in terms of reducing raptor perching activity. Lammers and Collopy (2007) found similar results for larger transmission lines in Nevada.

Geophysical exploration can result in numerous impacts to sage grouse, including crushing sagebrush, creating linear disturbances through sagebrush habitat that facilitate the movements of sage grouse predators, causing direct disturbance to birds, leading to stress and/or displacement from important habitats, and direct collision mortality. For these reasons, the National Technical Team (2011) recommended, "Allow geophysical operations only by helicopter-portable drilling methods and in accordance with seasonal timing restrictions and/or other restrictions that may apply." The existing RMPAs neglect to provide definable seasonal restrictions on geophysical exploration in important sage grouse habitats, and also does not prescribe that low-impact techniques (i.e., heliportable methods) be applied, and the amendments to the RMPAs need to redress this deficiency.

THE DIRECTION OF THE OVERALL CHANGES TO THE 2015 SAGE-GROUSE PLANS RISKS THE FINDING THAT THE GREATER SAGE-GROUSE NO LONGER WARRANTS LISTING UNDER THE ENDANGERED SPECIES ACT. Although the FWS found that the greater sage-grouse no longer warranted listing under the ESA in 2015, the actions that this administration has taken and proposed are undermining the reasons for that finding, imperiling the species. Walking away from the vital commitments in the BLM's 2015 Sage-grouse Plans will have unavoidable consequences for the grouse, the more than 350 species that rely on the same habitat and the many stakeholders who have benefitted from the current, flexible management of millions of acres of public lands. If the administration continues on the present track, then: * Actual protections in BLM's 2015 Sage-grouse Plans the "foundation" of FWS's 2015 not warranted decision would be weakened or removed altogether, despite a wealth of science showing they are needed; * Commitments to implement and fund other meaningful protections will continue to be formally abandoned or made doubtful; and. * Without reliable, effective actions to address ongoing threats to greater sage-grouse, there will no longer be a basis for finding that a listing is not warranted, leading to action by the FWS and/or the courts to protect the species and its habitat.

The FWS's 2015 finding explicitly relied on specific conservation measures in BLM's 2015 Sage-grouse Plans to address major threats, such as oil and gas development. For example, with respect to oil and gas in the Frequently Asked Questions: How do the conservation actions address the threat of oil and gas development in greater sage-grouse habitat? Oil and gas development is likely to continue throughout the greater sage-grouse range into the future, although its form and extent across the landscape may change. For this status review, the Service mapped locations of the highest potential for of oil and gas development in Montana, the Dakotas, Wyoming, Colorado and northeastern Utah to quantify potential exposure of greater sage-grouse to risk of future development. The Service's analyses indicate that the federal land use plans and the Wyoming Core Area Strategy are reducing exposure of the species to fossil fuel development, as measured by the portions of the breeding population and breeding habitat. The Service estimates that the vast majority of lands with a high- to moderate potential for oil and gas development are outside Priority Habitat. Regulatory mechanisms further reduce the risk of nonrenewable energy exposure to the breeding population and breeding habitat by more than 35 percent in Montana, Wyoming's Powder River Basin and the Dakotas, and more than 60 percent in the rest of Wyoming and adjacent portions of Colorado and Utah

The NSO buffers in the plan are likely insufficient to protect wintering sage grouse. While surface disturbance could be prohibited up to 3.1 miles around leks, sage-grouse will still avoid development within 1.75 miles of wellpads and other development during winter (Holloran et al. 2015), or within 1.9 miles of wellpads during the breeding season (Holloran 2005), as discussed above. Thus, development near these buffer zones could still cause sage grouse to avoid otherwise suitable winter areas falling within lek buffer zones. No analysis shows that enough winter habitat will be left undisturbed under existing ARMPAs to support local populations. Absent a clear definition of "winter habitat" and "winter concentration area" and the distinction between the two, BLM should adopt a plan that provides adequate disturbance and vegetation protection for all identified winter habitats. In the current Plans, it is unclear whether these terms are interchangeable or distinct concepts. The NTT defines "winter concentration areas" as: Sage-grouse winter habitats which are occupied annually be sage-grouse and provide sufficient sagebrush cover and food to support birds throughout the winter (especially periods with above average snow cover). Many of these areas support several different breeding populations of sage-grouse. Sage-grouse typically show high fidelity for these areas, and loss or fragmentation can result in significant population impacts. NTT 2011, p. 37. Winter habitat, on the other hand, may be areas that have favorable sagebrush conditions for sage grouse throughout the winter, regardless of whether sage grouse annually occupy these areas. Wintering areas not utilized in typical years may become critical in severe winters. Caudill 2013. Thus, all winter habitat should be protected. Finally, as detailed in previous comments, BLM's winter habitat health objectives must have scientific support. These objectives should require 20-30% crown cover with shrub heights 25-35 cm above the median snow level, or greater than 40 cm in height, whichever is taller. See Center for Biological Diversity Nevada RMPA DEIS Comment, p. 22. PHMA designations may not be adequate to protect sage-grouse wintering habitats. For example, in Wyoming, Dinkins et al. (2016) found that PHMAs protected 62.5% of breeding locations in Wyoming, but only 50% of wintering habitats. These researchers recommended designating winter concentration areas outside PHMAs for elevated habitat protections. BLM should suspend mineral leasing and all other development activities until all winter habitat is identified. Identified winter habitats, whether inside or outside of Priority Habitats, should be closed to future mineral leasing and materials sales and withdrawn from locatable minerals entry. For valid existing rights both agencies should impose a 3% surface disturbance limit and one pad limit, both calculated per square mile section of winter habitat; No Surface Occupancy within 1.75 miles of the edge of wintering habitats; and no high-volume

roads within 1.9 miles of wintering habitats. Wintering habitats should be seasonally closed to all vehicular access between November 30 and March 15. If BLM will not protect all winter habitat as requested, BLM should suspend mineral leasing and all other development activities in winter 63 habitat until winter concentration areas are identified. These winter concentration areas should receive the same protections as the NTT recommends for priority habitats. BLM should also tailor winter habitat objectives to 20-30% crown cover with shrub heights 25-35 cm above the median snow level, or greater than 40 cm in height, whichever is taller.

Wastewater ponds associated with coalbed methane development form breeding habitat for the Culex tarsalis mosquitoes that transmit West Nile virus, and have been directly linked to increases in these mosquito populations (Zou et al. 2006, Doherty 2007). The National Technical Team (2011: 19) observed that "ponds created by coal bed natural gas development may increase the risk of West Nile virus mortality in late summer (Walker et al. 2004, Zou et al. 2006, Walker 3 Id. 4 Green et al. at 9. 52 et al. 2007b)." In addition, Kirol et al. (2015b) found that coalbed methane wastewater ponds subsidize sage-grouse nest predators, and that pond shoreline length was the single greatest correlate with sage-grouse nest failure. Greater sage grouse have essentially no ability to develop immunity to West Nile virus (Naugle et al. 2004), and outbreaks of West Nile have led to catastrophic population losses of sage grouse in habitats developed for coalbed methane in the past (Walker et al. 2004). Sinai et al. (2017) found that sage-grouse did not produce antibodies against West Nile, and in addition were susceptible to avian leukosis virus. Taylor et al. (2012) found that the synergy of oil, gas and coalbed methane impacts and West Nile would result in the functional extinction of the Powder River Basin sage grouse population in Wyoming as a result of the next major West Nile virus outbreak.

Sage grouse avoid habitats 54 surrounding roads (Braun 1986, Holloran 2005, Wisdom et al. 2011). According to BLM's own NEPA analysis: Impacts on GRSG accrue over varying distances from origin depending on the type of development: … Interstate highways at 4.7 miles (7.5 kilometers) and paved roads and primary and secondary routes at 1.9 miles (3 kilometers) based on indirect effects measured through road density studies (Connelly et al. 2004; Holloran 2005; Lyon 2000) Nevada Northeastern California Greater Sage-grouse RMP Amendment DEIS at 605. BLM has admitted that roads fragment habitats and interfere with natural movements of sensitive species, and with regard to road upgrades, "Any exceptions resulting in road upgrades could further fragment habitat, cause vegetation loss, erosion, and the spread of invasive, nonnative plant species." Wyoming Greater Sage-grouse RMP Amendment DEIS at 4-313 and 4- 294, respectively. BLM's own National Technical Team (2011: 11) recommended that at minimum, vehicle traffic in Priority Habitats be limited to designated roads and trails, use existing roads for access, limit construction to realignments of existing routes that minimize impacts to sage grouse, prohibit road upgrades that change route category, consider seasonal road closures, and conduct travel planning within 5 years, reclaiming roads and trails not designated for vehicular use. Road densities are also an issue, because sage grouse avoid habitats adjacent to roads. Holloran (2005) found that road densities greater than 0.7 linear miles per square mile within 2 miles of leks resulted in significant negative impacts to sage grouse populations. This road density should be applied as a maximum density in Priority and General Habitats, and in areas that already exceed this threshold, existing roads should be decommissioned and revegetated to meet this standard on a per-square-mile-section basis. BLM's proposed plan amendment fails to provide adequate limits on road density. Limiting road and trail networks and off-road vehicle travel also is critical in limiting the spread of invasive weeds. According to BLM's own NEPA analysis, "Roads and trails are one of the main vectors of invasive weed spread, which leads to increase in FRCC and ecosystems moving away from natural fire

regimes (CEC 2012)." Nevada Northeastern California Greater Sage-grouse RMP Amendment DEIS at 701. Off-road vehicle travel must be adequately regulated to protect sage grouse under new plans. According to BLM's own analysis, off-road vehicles are noisy, and typically exceed the background noise levels by more than 10 dBA. Northwest Colorado Greater Sage-grouse RMP Amendment DEIS at 399. This level of noise exceedance has significant negative consequences for sage grouse, as outlined in the section of this protest addressing noise. Off-road vehicle use also results in habitat degradation and destruction, disturbance of sage grouse, and proliferation of invasive weeds (NTT 2011; see also Manier et al. 2011).

winter concentration areas should receive at least the level of protection from permitted industrial activities as recommended by NTT (2011) for priority habitats. As it stands now, unlimited surface disturbance is allowed in all winter concentration areas and winter habitat outside of priority habitats, risking significant winter habitat loss. This EIS must discuss these impacts resulting from development and sagebrush removal in winter habitat or respond to comments noting these impacts. Nor does it provide any sense of the long-term impact of winter habitat loss on the persistence of local sage grouse in the planning area. Moreover, BLM must identify baseline winter habitat and winter concentration areas to create a science-based understanding of any plan amendment's impacts on wintering sage grouse. Even if it were proper for BLM to postpone the identification of winter habitat, the EIS must analyze any specific plans as to how and when this will occur or the criteria these areas must meet for winter habitat protections to apply. And the planning amendment must provide for interim protections for these areas until mapping is complete. In the absence of interim protections, it is thus entirely possible that sage-grouse wintering areas will be irreparably damaged and sage-grouse populations lost before they can receive minimal protections that apply today under the ARMPAs, let alone the full set of protections needed for winter habitat based on the science. At minimum, any leasing or development of parcels that potentially contain winter habitat should be suspended until winter habitat and winter concentration areas are fully mapped and designated appropriate protections. This is extremely critical: Without any restrictions on sagebrush removal in wintering habitats, the habitat loss will be permanent. See Minnick 2015 (well sites lacked favorable soil conditions decades after reclamation, preventing sagebrush regrowth); cf. FEIS 4-315 (winter concentration areas "could be difficult to restore to original conditions…due to the composition and size of sagebrush in these areas"). Indeed, to the extent the EIS relies on winter habitat restoration as "mitigation" for any habitat loss, this is wishful thinking. Even a short-term loss of winter habitat would likely be detrimental to sage grouse dependent on these areas

2.3.23 Travel and Transportation Management

Travel planning should be carried out to address the risks of habitat destruction and fragmentation acknowledged in the plans.

2.3.24 Waivers, Exceptions, and Modifications

Waivers, exceptions and modifications to oil and gas lease stipulations must be subject to narrow and specific criteria so they are consistently and reliably applied, and can be effective as intended. In addition, applications for and responses to waivers, exceptions and modifications should be tracked and made available to the public.

Finally, it is critical that BLM track waivers, exceptions and modifications requested and those granted, and make that information available to the public. These records will provide important insight into how the stipulations are being applied and the potential impact of waivers, exceptions and modifications on

the overall function of the plans. This information will also allow BLM to determine if the availability of or criteria for granting waivers, exceptions and modifications needs to be further narrowed in order to ensure sufficient protection for sage-grouse habitat. Accordingly, we recommend that each plan include language that provides: Exceptions will be considered prior to considering waivers or modifications. If the BLM determines that a waiver or modification is more appropriate, the reasons for such decisions will be documented. Waivers are permitted if the area lacks "protected attributes" as determined through coordination with the appropriate state wildlife agency. Modifications and exceptions are permitted if: (1) impacts are fully and verifiably offset by compensatory mitigation; or (2) there are no impacts to greater sage-grouse because of terrain or habitat type, based on consultation with the applicable state wildlife agency. Prior to granting any waivers, exceptions and modifications, BLM will insure that the U.S. Fish and Wildlife Service has the opportunity to submit information for consideration. For no surface occupancy stipulations or stipulations in Priority Habitat Management Areas, waivers exceptions and modifications will only be granted following a 30-day public notice and comment period. BLM will maintain an ongoing record of requests for waivers, exceptions and modifications and whether those requests are granted, and will publish those cumulative results on a quarterly basis.

V. RECOMMENDED APPROACH TO WAIVERS, EXCEPTIONS AND MODIFICATION TO OIL AND GAS LEASE STIPULATIONS. The 2015 Sage-grouse Plans include numerous oil and gas lease stipulations that apply to development in order to protect sage-grouse and sage-grouse habitat, including no surface occupancy stipulations, timing limitations and surface use limitations. The draft amendments and EISs also rely on lease stipulations. However, the protections actually provided by the stipulations are only reliable and effective to the extent that the safeguards are applied. Waivers (permanent exemption that applies to the entire leasehold), exceptions (one-time exemption for a particular site within the leasehold) and modifications (change to the lease stipulation, either temporarily or for the term of the lease, can apply to the entire leasehold or certain areas) all permit an operator to avoid compliance with the requirements of a stipulation. Where these loopholes are permitted and used, the protections that the stipulations are supposed to provide can be undermined. Recent studies confirm that oil and gas development can harm both sage-grouse habitat and lifecycle activities, such as breeding.46Consequently, it is vital that protections associated with oil and gas development are reliably applied and, as a result, that waivers, exceptions and modifications are not broadly used to weaken those protections. While we can accept narrowly prescribed waivers, exceptions and modifications to lease stipulations that are based on very specific criteria, broad standards, such as those currently included in the Nevada Draft RMP Amendment/EIS are not acceptable. As an example, the general approach conditions included in the Draft Colorado RMP Amendment related to no surface occupancy stipulations are more specific and include public engagement. * Waivers are permitted if the area lacks "protected attributes" as determined through coordination with Colorado Parks and Wildlife and following a 30-day public notice/comment period * Modifications and exceptions are permitted if: (1) impacts are fully offset by compensatory mitigation; or (2) no impacts to greater sage-grouse would occur because of terrain or habitat type but can only be applied after consultation with Colorado Parks and Wildlife. CO Draft RMP Amendment/EIS, pp. 2-4 2-5. Overall, one-time exceptions should be the preferred approach where relief is sought from protective stipulations, such that the safeguards prescribed in these stipulations will remain in place for the majority of oil and gas leases. Waivers, exceptions and modifications should only be granted from no surface occupancy (NSO) stipulations or any stipulations in PHMA after a 30-day public notice and comment period. Further, the U.S. Fish and

Wildlife Service should have the opportunity to submit information for consideration prior to granting waivers, exceptions and modifications.

2.4 UTAH-SPECIFIC COMMENTS

2.4.1 Purpose and Need

Purpose and Need Statement The purpose and need for the RMP amendments should be expanded to better align with the overall goal-conserving the species and maintaining the U.S. Fish and Wildlife Service's 2015 "not warranted" decision. We recommend the commitment to conserve, enhance and restore sagegrouse habitat be reflected in the purpose and need statement and in the forthcoming record of decision.

Although the State appreciates the BLM's efforts to enhance cooperation, based on each state's jurisdiction over sage-grouse, the Purpose an

Need Statement should be revised and expanded to also" .incorporate updated science, research and local information and management practice, and to ensure, not only enhanced cooperation with the States, but also achieve consistency and coordination with State, Tribal and Local Governments' sagegrouse conservation and land use plans." The inclusion of the revised Purpose and Need Statement language will provide BLM with the tools necessary to revise the 2015 LUPA, allow the BLM to incorporate new information and changes to science and data that have come about since 2015, and will more closely align with language in FLPMA. Further, since it seems the purpose is also to build upon the 2015 planning process, the BLM may want to expressly state such to avoid confusion.4 Please revise the Purpose and Need Statement to ensure that the DEIS not only enhances cooperation with states, but also seeks consistency with state and local plans over sage-grouse.

If there are any changes that experts deem necessary, these should instead be done via minor plan amendments, also known as "maintenance actions." A complete rewrite is an unnecessary waste of federal resources, and risks upending the official finding made by the FWS that a listing under the ESA is not needed.

The 2015 sage-grouse plans are based on some of the best available science and responsibly balance energy development, recreation, grazing, and other activities on public lands. Proposed changes to the plans in these seven states would undermine the progress that has been made to ensure continued productivity of sagebrush habitat and allow for responsible development across the West on lands owned by all Americans. These changes would also erode fundamental land use planning prescriptions intended to avoid the need to list the sage-grouse for protection under the Endangered Species Act.

Instead of amending the plans by weakening protections, the Bureau of Land Management (BLM) should focus on engaging communities in the decisions necessary to implement the plans as they are. If there are any changes that experts deem necessary, these should instead be done via minor plan amendments, also known as "maintenance actions." A complete rewrite is an unnecessary waste of federal resources, and risks upending the official finding made by the FWS that a listing under the Endangered Species Act is not needed.

BLM's Purpose and Need Violates NEPA BLM is employing an unlawful "purpose and need" for the Draft EISs. While BLM has some discretion over a project's "purpose and need," that discretion is not

unlimited. BLM may not, for example, define the "purpose and need" so narrowly that it forecloses consideration of a reasonable range of alternatives. Westlands Water Dist. v. U.S. DOI, 376 F.3d 853, 867 (9th Cir. 2004); see also City of Carmel-By-The-Sea v. U.S. Dep't of Transp., 123 F.3d 1142, 1155 (9th Cir. 1997) (". . an agency cannot define its objectives in unreasonably narrow terms."). Nor may BLM simply adopt the "purpose and need" advanced by a project proponent. National Parks Conservation Ass'n v. BLM [NPCA], 606 F.3d 1058, 1070-72 (9th Cir. 2010). Yet, that is exactly what BLM has done here. It has developed an unreasonably narrow "purpose and need" for the Draft EISs that forecloses consideration of any alternative that does not "align with individual state plans . ." See, e.g., Utah DEIS at ES-2. Further, it is self-evident that this "purpose and need" was defined not by BLM, as required by NEPA, but by the states/project proponents. Thus, BLM's "purpose and need" is fundamentally flawed and corrupts the range of alternatives, along with other aspects of the Draft EISs. 1. BLM's "Purpose and Need" for the Draft EISs is unreasonably narrow. In violation of NEPA, BLM is using an unreasonably narrow "purpose and need" for the Draft EISs. According to the Draft EISs, "[t]he purpose of this resource management plan amendment/environmental impact statement (RMPA/EIS) is to enhance cooperation with the states by modifying the approach to Greater Sage-Grouse management in existing land use plans to better align with individual state plans and conservation measures and with DOI and BLM policy." Utah DEIS at ES-2. This represents a dramatic departure from the original purpose behind BLM's sage-grouse conservation plans, which was based entirely on the need to develop "adequate regulatory mechanisms" that would avoid the need to list the species under the ESA. See, e.g., Utah 2015 Proposed Land Use Plan Amendment/Final Environmental Impact Statement at 1-27. Yet, BLM has totally and impermissibly eliminated this fundamental objective from the Draft EISs. When evaluating the reasonableness of an agency's "purpose and need" statement, courts consider the views of Congress . in the agency's statutory authorization to act, as well as in other congressional directives." Citizens Against Burlington v. BUSEY IV, 938 F.2d 190, 196 (D.C. Cir. 1991). Here, "Congress intended endangered species to be afforded the highest of priorities." Tenn. Valley Auth. v. Hill, 437 U.S. 153, 174 (1978). Accordingly, the ESA requires BLM to administer programs that "provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved . ." 16 U.S.C. § 1531(b); see also id. § 1536(a)(1) ("The Secretary shall . utilize such programs in furtherance of the purposes of [the ESA]."). Previously, BLM fulfilled the wishes of Congress by identifying the need to develop and adopt "adequate regulatory mechanisms" that would address the long-term "conservation needs of the species" as the guiding and principal purpose for the sage-grouse planning process. See, e.g., Utah 2015 Proposed Land Use Plan Amendment/Final Environmental Impact Statement at 1-27. This purpose drove the development of alternatives for the plans, and more than any other factor, shaped the final decision on the plans: "The ARMPAs are designed to directly address the specific threats to the species identified by the FWS in its 2010 listing determination . ." ROD and ARMPAs for the Great Basin GRSG Sub-Regions at 1-35. The Fish and Wildlife Service (FWS) subsequently recognized BLM's conservation plans as the "foundation" of its "not-warranted" decision for Greater sage-grouse. 80 Fed. Reg. 59,858, 59,887 (Oct. 2, 2015). Notably, this decision found that only conservation plans adopted by BLM (and the U.S. Forest Service) and the states of Montana, Oregon, and Wyoming contained "adequate regulatory mechanisms." Id. at 59,936. However, in spite of Congress's clear direction to make the conservation of endangered and threatened species the "highest priority," and even though BLM did so during the original planning process, BLM has now abandoned this purpose. Instead, in the Draft EISs, BLM is focused on "aligning" its conservation plans with those of the states. This purpose has nothing to do with ensuring the long-term conservation of sage-grouse or avoiding a future ESA listing. If anything, this new direction will likely move the species closer to a listing, because BLM and FWS both previously rejected an approach that relied heavily on state plans: * BLM: "Alternative E is the alternative

based on information provided by the State or Governor's offices for inclusion and analysis in the EISs . . The BLM believes Alternative E did not incorporate adequate regulatory mechanisms into the existing plan to meet its purpose and need to conserve, enhance, and restore GRSG and its habitat; therefore, the BLM did not select Alternative E as the ARMPA." ROD and ARMPAs for the Great Basin GRSG Sub-Regions at 3-3 to -4; and * FWS: "While 10 of the 11 States in the range of the sage-grouse updated their State plans to conserve the species by incorporating new information, which is a testimony to their concern and commitment to protect the grouse and its habitats, not all of these plans have been implemented or are regulatory in scope. We will specifically highlight the regulatory conservation actions mandated by the State plans in Wyoming, Montana, and Oregon because they provide the greatest degree of regulatory certainty in addressing potential threats on State and private lands not under the jurisdiction of Federal plans. We appreciate the work that each State has completed, but not all planning efforts met a level of certainty for implementation and effectiveness." 80 Fed. Reg. at 59,873. Moreover, by focusing so narrowly on what the states want, BLM is foreclosing consideration of alternatives that respond to new information concerning the species and what changes or new approaches might be necessary to strengthen the regulatory mechanisms adopted in 2015. In sum, BLM has adopted an unreasonably narrow "purpose and need" that violates NEPA. 2. BLM has impermissibly defined the "purpose and need" based on project proponent objectives. Also in violation of NEPA, BLM has improperly defined the "purpose and need" to reflect the narrow wishes of certain states/project proponents and not broader objectives set forth in the ESA and other federal laws. NEPA prohibits BLM from "mandating" that the interests of project proponents "define the scope of the proposed project." NPCA, 606 F.3d at 1070. Instead, BLM must reference and incorporate broader, national objectives contained in statutes and other congressional directives. Id. BLM failed to do so here, and instead developed the "purpose and need" to carry out the wishes of specific states. BLM has openly acknowledged doing so, stating that the decision to move forward with the plan amendments, as well as the range of issues and alternatives to be considered, came directly from certain states. See, e.g., Notice of Availability of the Utah Draft Resource Management Plan Amendment and Draft Environmental Impact Statement for Greater Sage-Grouse Conservation, 83 Fed. Reg. 19,803 (May 4, 2018) ("After carefully considering the Governor's input . the BLM proposes amending the Utah Greater Sage-Grouse land use plans that address GRSG management."); BLM, Press Release BLM Listens to Utah State Partners (May 3, 2018) ("We are not abandoning the 2015 plans; we are building on them," said BLM state director Ed Roberson. "In the two and a half years since those plans were adopted, we've gotten tremendous feedback from the State on on-the- ground outcomes and impacts that are the basis for proposed changes that recognize the unique nature of sage-grouse presence in Utah."). Yet, BLM is not permitted to blindly accept a project proponent's objectives in this manner. As the NPCA court explained, "[o]ur holdings . forbid the BLM to define its objectives in unreasonably narrow terms. The BLM may not circumvent this proscription by adopting private interests to draft a narrow purpose and need statement that excludes alternatives that fail to meet specific private objectives . ." 606 F.3d at 1072. While it may have been permissible for BLM to develop a "purpose and need" that sought to better accommodate the wishes of the states, provided that any changes did not weaken the range-wide effectiveness of the plans or undermine the FWS's 2015 not-warranted determination, it did not do so. Consequently, by focusing so narrowly on what specific states want, and ignoring the conservation needs of Greater sage-grouse and objectives of the ESA, BLM's "purpose and need" for the Draft EISs violates NEPA.

the Purpose and Need Statement should be revised and expanded to also incorporate updated science, research and local information and management practice, and to ensure, not only enhanced cooperation

with the States, but also achieve consistency and coordination with State, Tribal and Local Governments' sagegrouse conservation and land use plans." The inclusion of the revised Purpose and Need Statement language will provide BLM with the tools necessary to revise the 2015 WPA, allow the BLM to incorporate new information and changes to science and data that have come about since 2015, and will more closely align with language in FLPMA. Further, since it seems the purpose is also to build upon the 2015 planning process, the BLM may want to expressly state such to avoid confusion. Please revise the Purpose and Need Statement to ensure that the DEIS not only enhances cooperation with states, but also seeks consistency with state and local plans over sage-grouse.

It is unclear exactly what the intent of the Utah DEIS is in Chapter 1. Are the above SOs incorporated by reference in to the Utah DEIS? If it is the policy of the DOI to enhance exploration of Federal onshore oil and gas leases and Federal solid mineral resources, does that mean provisions contrary to that intent are to be given lesser weight? What happens if new SOs are issued in the future that are inconsistent with the BLM's proposed amend

2.4.2 Criteria

Section 1 .2 of the Draft EIS identifies the planning criteria associated with the Preferred Alternative and focuses on modifying protections for greater sage-grouse to conform with state plans and revised policies. We note that the new planning criteria do not include one of the criteria in from 2015 RMP, "maintaining the federal land management planning considerations to protect greater sage-grouse populations and habitats sufficiently so that the species does not warrant listing under the Endangered Species Act (ESA)." We recommend that BLM work with USFWS and Utah Division of Wildlife Resources to assess the impacts from the management changes in this RMPA on greater sage grouse conservation status and include that assessment in the Final EIS.

2.4.3 Issues Dismissed from Detailed Analysis

Identify excess wild horses as a threat. Utah's plan calls for blanket analysis of actions, it doesn't give consideration of the issues and site-specific resource conditions. That is precisely why a blanket NEPA needs to be done through this RMPA. The use of site-specific NEPA many times delays efforts on the ground, that can have negative impacts and create an uncertainty for many other uses of the land. and be based on the specific conditions in the given planning area.

Identify excess wild horses as a threat. Utah's plan calls for blanket analysis of actions, it doesn't give consideration of the issues and site-specific resource conditions. That is precisely why a blanket NEPA needs to be done through this RMPA. The use of site-specific NEPA many times delays efforts on the ground, that can have negative impacts and create an uncertainty for many other uses of the land. and be based on the specific conditions in the given planning area.

2015 Plan and 2018 DEIS Fail to Address Impacts of Predation and Hunting The 2015 Plan includes one management action regarding predation in general and zero analysis with regards to ravens except with regard to a related human activity (i.e. transmission lines, vertical structures, roads, fences). MA No. 135; LUPA at 4-253, 274, 335, 340, 420. The BLM's treatment of ravens and other generalist predators is a material deficiency. The NTT Report ignored a substantial body of literature about raven predation including, but not limited to, 25 different studies mentioned by Ramey in his review of the NTT Report. Attach. 5, Ramey, et al. at 2, 18-19; Attach. 3b, WSI at 29-30. Much like the NTT Report, the LUPA avoids "mention of management of predators on sage-grouse in areas of greatest risk of predation, and

chose instead to treat this threat as a byproduct of human activities that can be regulated (i.e. land health assessments and emphasizing vegetation cover as a means to measure and mitigate livestock use; or increasing landscape level habitat connectivity)." Attach. 5, Ramey, et al. at 18. The BLM cannot rely on a narrow set of data to manage sage-grouse populations with regards to predation.

2.4.4 Modifying Waivers, Exceptions, and Modifications of Fluid Minerals Determinations

The State also would like to see greater clarification to the criteria for allowing exceptions to NSO in PHMA. As written, an exception to NSO will be granted when: (1) fluid mineral leasing occurs in non-habitat that does not provide impOliant connectivity between habitats, (2) does not impair the function of adjacent seasonal habitat, the life history behavioral needs of GRSG due to project design, (3) is proposed to be undertaken to an alternative to a similar action occurring on a nearby parcel and development on the parcel in question will have less of an impact on GRSG or its habitat than on the nearby parcel. 29 The BLM needs to clarify whether or not all three scenarios identified above need to occur together, prior to allowing an exception, or whether each condition for a potential NSO exception can be standalone exception to NSO. Further, a fourth exception to NSO should read that an exception to NSO may be granted, if the project proponent works with the State and BLM to develop compensatory mitigation that improves functional habitat and corridors using the mitigation policies adopted by the State and BLM.

The State believes the BLM should write MA-MR-3, as follows: An exception to NSO may occur, if: (1) fluid mineral leasing occurs in non-habitat that does not provide important connectivity between habitats, (2) does not impair the substantial function of adjacent seasonal habitat, the life history behavioral needs of GRSG due to project design, (3) is proposed to be undertaken to an alternative to a similar action occurring on a nearby parcel and development on the parcel in question will have less of an impact on GRSG or its habitat than on the nearby parcel or (4) if the project proponent works with the State and BLM to develop compensatory mitigation that improves functional habitat and corridors using the mitigation policies adopted by the State and BLM. The State supports the other changes to MA-MR-3.

Recent studies confirm that oil and gas development can harm both sage-grouse habitat and lifecycle activities, such as breeding. Consequently, it is vital that protections associated with oil and gas development are reliably applied and, as a result, that WEMs are not broadly used to weaken those protections. While we can accept narrowly prescribed WEMs to lease stipulations that are based on very specific criteria, broad standards are not acceptable. WEMs should only be granted from no surface occupancy (NSO) stipulations or any stipulations in PHMA after a 30-day public notice and comment period. Further, the FWS should have the opportunity to submit information for consideration prior to granting WEMs. Finally, it is critical that BLM track both WEMs requested and those granted and make that information available to the public. These records will provide important insight into how the stipulations are being applied and the potential impact of WEMs on the overall function of the plans. This information will also allow BLM to determine if the availability of or criteria for granting WEMs needs to be further narrowed in order to ensure sufficient protection for sagegrouse

Habitat. We would recommend that the Utah plan include language that provides:

- Exceptions will be considered prior to considering waivers or modifications. If the BLM determines that a waiver or modification is more appropriate, the reasons for such decisions will be documented.

- Waivers are permitted if the area lacks "protected attributes" as determined through coordination with the appropriate state wildlife agency.

- Modifications and exceptions are permitted if: (1) impacts are fully and verifiably offset by compensatory mitigation; or (2) there are no impacts to greater sage-grouse because of terrain or habitat type, based on consultation with the applicable state wildlife agency.

- Prior to granting any WEMs, BLM will insure that the FWS has the opportunity to submit information for consideration.

- For no surface occupancy stipulations or stipulations in Priority Habitat Management Areas, waivers exceptions and modifications will only be granted following a 30-day public notice and comment period.

- BLM will maintain an ongoing record of requests for WEMs and whether those requests are granted, and will publish those cumulative results on a quarterly basis.

Currently PHMAs are open to oil and gas leasing subject to an NSO stipulation. While exceptions to this stipulation can be permitted, no waivers or modifications are allowed. The FWS must agree to an exception. Utah DIES at 2-16 to -18. Now the BLM is proposing to maintain the NSO stipulation requirement in PHMA prior to leasing but it could allow waivers, exceptions, and modifications (WEM) to this stipulation, and the FWS would no longer have to approve a change. Id. Our concern with this section of the proposed land use plan is the possibility-indeed likelihood-that more WEMs to lease stipulations will be requested and granted in the PHMA areas where an NSO stipulation applies to oil and gas leasing. We can accept narrowly prescribed WEMs to lease stipulations that are based on very specific criteria. But broad standards, such as those currently included in the Nevada Draft RMP Amendment/EIS, are not acceptable. As an example, the conditions included in the Draft Colorado RMP Amendment related to no surface occupancy stipulations are very specific and include public engagement: * Waivers are permitted if the area lacks "protected attributes" as determined through coordination with Colorado Parks and Wildlife and following a 30-day public notice/comment period. * Modifications and exceptions are permitted if: (1) impacts are fully offset by compensatory mitigation; or (2) no impacts to greater sage-grouse occur because of terrain or habitat type but can only be applied after consultation with Colorado Parks and Wildlife. Colorado Draft RMP Amendment/EIS, pp. 2-4 2-5. Overall, one-time exceptions should be the preferred approach where relief is sought from protective stipulations, such that the safeguards prescribed in these stipulations will remain in place for the majority of oil and gas leases. WEMs should only be granted from NSO stipulations, or any stipulations in PHMA, after a 30-day public notice and comment period. Further, the FWS should have the opportunity to submit information for consideration prior to granting any WEMs. Finally, it is critical that BLM track WEMs requested and those granted and make that information available to the public. These records will provide important insight into how the stipulations are being applied and the potential impact of WEMs on the overall function of the plans. This information will also allow BLM to determine if the availability of or criteria for granting WEMs needs to be further narrowed in order to ensure sufficient protection for sage-grouse habitat. Accordingly, we recommend that the Utah plan include language that provides: * Exceptions will be considered prior to considering waivers or modifications. If the BLM determines that a waiver or modification is more appropriate, the reasons for such decisions will be documented. * Waivers are permitted if the area lacks "protected attributes" as determined through coordination with the Utah Division of Wildlife Resources. * Modifications and exceptions are permitted if: (1) impacts are fully and verifiably offset by compensatory mitigation; or (2) there are no impacts to

greater sage-grouse because of terrain or habitat type, based on consultation with the Utah Division of Wildlife Resources. * Prior to granting any WEMs, BLM will insure that the FWS has the opportunity to submit information for consideration. * For NSO stipulations or stipulations in PHMA, WEMs will only be granted following a 30-day public notice and comment period. * BLM will maintain an ongoing record of requests for WEMs and whether those requests are granted and will publish those cumulative results on a quarterly basis.

Restore No Surface Occupancy stipulations as mandatory for sage-grouse habitat when leasing for energy development. Allowing exceptions, in light of what we know with the science, will result in poorly planned development that negatively impacts habitat and leads to fewer birds.

Finally, it is critical that BLM track boundary adjustments, waivers, exceptions and modifications requested and those granted, and make that information available to the public. These records will provide important insight into how the plans' requirements are being applied and the potential impact of such changes on the overall function of the plans. This information will also allow BLM to determine if the availability of or criteria for granting waivers, exceptions and modifications needs to be further narrowed to ensure sufficient protection for sage-grouse habitat.

The plan should the general habitat classification and management protections, as well as those for the most important habitat, by restoring no surface occupancy stipulations without exception, waiver or modification to protect the most important grouse habitat and not sacrifice leks to oil and gas development.

Similarly, one-time exceptions should be the preferred approach where relief is sought from protective stipulations, such that the safeguards prescribed in these stipulations will remain in place for the majority of oil and gas leases. In such cases, FWS should have the opportunity to submit information for consideration prior to granting waivers, exceptions and modifications.

* The BLM should restore No Surface Occupancy stipulations as mandatory for sage-grouse habitat when leasing for energy development. Allowing exceptions, in light of what we know with the science, will result in poorly planned development that negatively impacts habitat and leads to fewer birds.

EXCEPTIONS TO NSO STIPULATIONS According to MA-MR-3 WEMS in PHMA, an Authorized Officer may only grant an exception to an NSO stipulation in a fluid mineral lease if "the proposed action is proposed to be undertaken as an alternative to a similar action occurring on a nearby parcel and development on the parcel in question would have less of an impact on Greater Sage-Grouse or its habitat than on nearby parcel." This language completely ignores myriad other factors that may support an exception on a case-by-case basis. For example, an exception could be granted for a well pad, if the well pad was within a depression which would reduce impacts (i.e. noise, etc.) to the surrounding area. Moreover, timing stipulations or other surface use conditions can often accomplish the same result as NSO. Thus, the Coalition would request that the criteria for an exception be modified to include the qualifier to accommodate a change in resource conditions or a site specific attribute (topography, sage-grouse use, etc.).

Page 4-16: Section 4.6.1. Impacts on Greater Sage-Grouse. Waivers, Exceptions and Modifications for NSO Stipulations. In the fourth line of the first paragraph, it mentions that "Fish and Wildlife"

concurrence would no longer be required. Does this mean the U.S. Fish and Wildlife Service or the Utah Division of Wildlife Resources?

2.4.5 Sagebrush Focal Areas (SFA) Designations

The announced plan revisions, namely the removal of "sagebrush focal areas" from the original conservation plan text, threatens the protections for sage-grouse on millions of acres of public lands. I do not support any proposed amendments to the Greater Sage-Grouse Conservation Plan that would allow new surface disturbances or the opening of these areas (SFA's) to new hardrock mining claims. Weakening protections would have significant consequences for sage-grouse and other wildlife, sagebrush grasslands and the western communities and economies that depend on them. Rather than wasting time on trying to weaken the federal plans, the Trump administration should consider ways to improve them. Scientists have already identified gaps and deficiencies in the current conservation strategy, and have recommended measures to strengthen conservation and management of the species:

Conserve all of the most important sage-grouse habitat, including Sagebrush Focal Areas within Priority Habitat Management Areas. As an example, winter habitat is particularly important to sage-grouse, mule deer and other wildlife, but the current federal plans fail to protect those areas from harmful land use and development. In the Sagebrush Focal Areas as listed in the original 2015 plan, federal land use plans will avoid new surface disturbance and recommend that the areas be withdrawn from new hardrock mining claims.

Sagebrush Focal Areas DesignationslWithdrawal Recommendation The BLM's proposal in MA-SSS-2 of removing the 181,100 acres of BLM surface estate, together with the 52,200 acres of split federal estates, known as Sagebrush Focal Areas ("SF As"), is broadly supported and legally necessary to avoid ongoing legal challenges to a flawed NEPA process in 2015. 13 The BLM must remove SFAs as they were a last-minute addition to the 2015 LUPA and were not fully analyzed as required by law. The late-hour demand by former FWS Director Dan Ashe to include in the Utah and the other land use plans of over 10,000,000 acres of SF As was blatantly illegal. The SF As were created out of whole cloth by former FWS Director Ashe through to so-termed "Ashe Memorandum" of October 2014. According to the Obama Administration, the SF As "serve to anchor the conservation impOliance of the landscape.,,14 The Federal Government has conceded that the SFAs that appeared in the FEIS were entirely absent from the proposed action analyzed in the DEIS but can be excused as a minor variation of the land use restrictions originally proposed. IS Eliminating the legally questionable, unnecessary and counter-productive concept of SF As will provide enhanced coordination and consistency between the State Conservation Plan and the BLM's conservation goals for conserving sage-grouse habitat.

Similarly, in analyzing the purpose for removing SF As, the BLM properly looked at (1) whether SF As were aligned with the State's strategy for conserving sage-grouse in the State's plan, (2) whether SFAs contribute to achieving conservation outcomes, and (3) the relevance of this habitat designation in the absence of a mineral withdrawal. 16 First, the BLM rightly concluded that the SF A Management Strategy from the 2015 LUPA did not align with the State's Conservation Plan for sage-grouse. The State has designated 11 Sage-grouse Management Areas. 17 Within those areas, some mineral, oil and gas, and other development is authorized, so long as actions are taken to minimize impacts to sage-grouse habitat and the State's 5 percent disturbance cap is not exceeded within habitat. Further, grazing, the associated water development, and other land uses associated with grazing are encouraged as the research in Utah, and elsewhere, has shown that grazing practices can be beneficial to sage-grouse.

Regardless of the State's plans, SFAs, as envisioned in the 2015 LUPA, ignored the State management approach, and proposed withdrawing mining, strictly limited oil and gas development to No SUlface Occupancy, without exception and prioritizing revising grazing levels within SF As. Since none of the BLM's management approaches outlined in the 2015 LUPA align with State management, the BLM properly removed these from the DEIS, which is proper considering the mandate in FLPMA that BLM's plans be consistent with the State's plans, policies, and programs. Next, the BLM appropriately concluded, based on analysis in the 2015 LUP A, together with the analysis in 2016 draft Sagebrush Focal Area Withdrawal DEIS, that that SF A management regime does little to contribute to achieving conservation outcomes for sage-grouse habitat. 18 The bottom line is SF As do little for sage-grouse conservation since they do not address the needs of Utah birds. The major threats to Utah's sage-grouse are (1) fire, and (2) loss of habitat from encroachment of invasive weeds and conifers. 19 SF As focuses, instead on mining withdrawal, grazing, and oil and gas development, all threats that are minimal to Utah and were not identified in the COT Report as being major threats to habitat within Utah.2o Since the BLM's use of SF As in Utah attempts to address minimal, even non-existent threats to sage-grouse, the SF A approach does little to contribute to the long-term conservation of Utah's birds. Reveliing SFAs to PHMAs will allow the BLM to focus money and effOlis on implementing needed work of habitat restoration and fuels reductions, manage for invasive weeds, and suppress fire, actions which are truly necessary to conserve sage-grouse habitat in Utah. Finally, SF As are no longer relevant since the main goal of SF As was a mineral withdrawal to limit mining on federal lands. However, the mineral withdrawal was cancelled by the Secretary on October 11, 2017.21 Even absent the cancellation of the withdrawal, the BLM noted "no future mines are projected to be developed in the proposed

Utah withdrawal areas during the 20-year period of the proposed withdrawal if a withdrawal is not implemented. Based on the projection that there would not be any future mines developed in the Utah withdrawal area, even if a withdrawal is not implemented, there would not be any economic or tangible social impacts from future mining operations in the Utah socioeconomic analysis area."22 Since the withdrawal was cancelled, and since mining was not a threat in Utah's SFAs, SF As are not relevant to Utah. For all the above reasons, the State suppo11s the BLM's removal of SF AS.

Issue #5, Recommendation 6: Agency staffing will not allow for prioritizing all allotments within SFAs; the inability to do so will result in litigation, causing unnecessary commitment of federal resources to litigated areas. BLM grazing regulations via 43 C.F.R. 4180.2(c) already requires BLM to make management changes in order for allotments determined to not be meeting rangeland health standards to move towards meeting. As such, additional language covering this is not legally required or rational (see Issue #2). Putting focus on grazing within focal areas is irrational unless a trigger has been tripped and a correlation has been made to existing livestock grazing (as opposed to historical livestock or other grazing practices). Issue #5, Recommendation 7: BLM must remove any and all reference to SFAs. SFAs are an overreach and unnecessary as priority habitat designations provide adequate habitat protection. The LUPAs must be amended to address this overreach of elevating livestock grazing to a primary threat, and not prioritize permit renewals in priority habitat unless a hard trigger is tripped and a cause and effect relationship is established, as published in alternative E of the DLUP of the Idaho plan. Issue 5: DEIS Comment 5: The DEIS at page 2-34 appropriately removes MA-LG-2 (aka "No similar action"); resolving all above recommendations. It is critical that BLM consider carry this recommendation forward in the FEIS, and implement a proposed action in the ROD that adopts the removal of MA-LG-2.

SFAs and BSUs should be removed through any plan amendment processed. In the alternative, we contend that, at a minimum, a supplemental EIS process is initiated to assess the areas units as to each LUPA.

Under the No-Action Alternative, based on Utah's 2015 Approve Resource Management, the Bureau would have designated 181,000 acres as SFAs and there would have been recommendations for withdrawal and prioritized for treatments/livestock permits. Now, under Utah's Preferred Management Alignment Alternative, lands would no longer be designated as SFA and there would be no withdrawals. American Bird Conservancy believes SFAs contribute to achieving conservation outcome, and the management of the SFAs should align with the conservation alternative.

BLM seeks to incorporate by reference discussion of proceeding without SFAs in analyzing alternatives in the 2015 BLM plans and deciding not to proceed with the mineral withdrawals in 2017.61 BLM cannot rely on these previous discussions as analyzing the impacts of removing SFAs. BLM must evaluate the impacts of not only eliminating potential mineral withdrawals, but also removing the other protections associated with SFAs. In addition, BLM must evaluate the benefits from maintaining the SFAs and/or maintaining the range of management measures associated with those designations.

Eliminating SFAs would be a mistake. Like with GHMAs, SFAs would be retained in some states, specifically Oregon and Montana (SFAs were never designated in Colorado). This again raises concerns about whether BLM will maintain a landscape scale approach to managing sage-grouse. An important component of the existing BLM and Forest Service sage-grouse land use plans is the designation of SFAs. These are the most important sage-grouse habitats, which contain large, contiguous blocks of federal lands in important sage-grouse habitats that have high levels of population connectivity and densities of breeding birds. Although BLM halted the process to evaluate withdrawing the SFAs from mining, the SFAs continue to serve as a landscape-level anchor for the sustained conservation and restoration of sage-grouse, including addressing habitat linkages. SFAs are closed or excluded from discretionary surface disturbances, including, in various plans: from waivers, exceptions or modifications from NSO stipulations on oil and gas leasing; from utility-scale wind and solar development; and from geothermal leasing. In addition, SFAs are used to prioritize fire protection, habitat restoration, grazing allotment evaluations, and other habitat management actions. The SFA classification allows BLM to focus limited resources where they can provide the most benefits. Consequently, BLM should maintain the SFA designation and management. If BLM moves forward with removing these designations, then BLM must incorporate the key management approaches that apply to SFAs and do not otherwise apply to PHMA. Eliminating SFAs in Utah represents a tremendous downgrade in land use plan protections that are oriented towards sage-grouse conservation. This new, additional proposal represents a further step backward beyond the decision to not withdraw these areas from mining claims. It is a retreat from environmental protections that have been recognized as needed for sage-grouse conservation by the FWS (and BLM). But given the previous retreat relative to mineral entry, the effect of the current proposed elimination of the SFAs in four of the states in the range of the sage-grouse is somewhat less significant. Still, there will be a number of lost or modified protections that apply to SFAs. These include provisions under the 2015 plans that require oil and gas leasing to only be allowed pursuant to a NSO stipulation that was not subject to waiver, exception, or modification; and prioritizing SFAs for vegetation and conservation actions. These are important protections that must be maintained in PHMAs if SFAs no longer exist. The value of these protections was recognized by the FWS in its 2015 not warranted decision, and thus are a key component of the land use plans that must be maintained if

the not warranted decision is to be sustained, which it must be. "Based on our recommendation to further protect sage-grouse population centers that have been identified in the scientific literature as critically important for the species and areas identified through our analysis as important for conservation, BLM and USFS designated areas as Sagebrush Focal Areas (SFA) and added protections that would further limit new, human-caused surface disturbance in SFAs." 80 Fed. Reg. 59858, 59875 (Oct. 2, 2015). By following the Conservation Objectives Team (COT) Report and the BLM's National Technical Team (NTT) guidance, and restricting impacts in the most important habitat, the Federal Plans ensure that high-quality sage-grouse lands with substantial populations are minimally disturbed and sage-grouse within this habitat remain protected. Id. at 59882. SFAs "are the areas that the Federal Plans manage as the highest priority lands in PHMAs for sage-grouse conservation (Figure 5)." Id. at 59878. They are "strongholds" for sage-grouse conservation and as mentioned above contain important connectivity habitat and high densities of breeding birds. Id. The FWS recognized that in addition to PHMA protections, the protections mentioned above would also apply in SFAs, including mineral entry withdrawal, NSO stipulations for fluid minerals with no waivers, exceptions, or modifications, and prioritizing management and conservation actions. Id. This was because SFAs need "the most conservative strategies to protect sage-grouse and habitat." Id. Grazing permit review is also prioritized in SFAs. Id. at 59877, 59910. BLM seeks to incorporate by reference discussion of proceeding without SFAs in analyzing alternatives in the 2015 sage-grouse plans and deciding not to proceed with the mineral withdrawals in 2017. See e.g., Utah DEIS at 4-12. BLM cannot rely on these previous discussions as analyzing the impacts of removing SFAs. BLM must evaluate the impacts of not only eliminating potential mineral withdrawals, but also removing the other protections associated with SFAs. In addition, BLM must evaluate the benefits from maintaining the SFAs and/or maintaining the range of management measures associated with those designations in other areas (PHMAs). The protections in SFAs that would be lost by eliminating SFAs must be maintained in the remaining PHMAs, and the land use plan amendments BLM is contemplating must so provide. The BLM should modify the EIS and proposed land use plan amendments in Utah to specifically provide that the fluid minerals NSO stipulation with no waivers, exceptions, or modifications, the vegetation, conservation and grazing evaluation management priorities, and, where appropriate, the prohibition on geothermal development, will be specifically incorporated into and made a part of the PHMAs. There are two court cases the BLM should consider as it makes decisions about SFA designations. These are W. Exploration, LLC v. U.S. Dept. of the Interior, 250 F. Supp. 3d 718 (D. Nev. 2017) and Desert Survivors v. U.S. Dept. of the Interior, 2018 U.S. Dist. LEXIS 81922 (N.D. Cal., May 15 2018). BLM viewed Western Exploration as creating a need for these RMP amendments stating changes might be needed "in order to comply with the court's order" and "seeking comment on the SFA designation." 82 Fed. Reg. 47248-49 (Oct. 11, 2017). BLM said the court "held that the BLM violated NEPA by failing to prepare a supplemental EIS for the designation of SFAs in the 2015 Greater Sage-Grouse Plan in Nevada." Id. at 47248. The BLM needs a fuller appreciation of Western Exploration before it treats it as a command to eliminate SFAs from the land use plans. For one the court found that the BLM had adequately considered any inconsistencies between the Federal sage-grouse plans and local county plans. 250 F. Supp. 3d at 744. The court also found that the BLM met its multiple use responsibilities under FLPMA when it adopted the Nevada sage-grouse plan. Id. at 746. The proposed withdrawal of 2.8 million acres from mineral entry (i.e., the SFAs) did not violate FLPMA. Id. "A review of the administrative record shows that BLM considered the relative value of Nevada's resources." Id. While the court agreed that under NEPA "the designation of 2.8 million acres as Focal Areas in Nevada amounts to a substantial change relevant to environmental concerns, requiring the Agencies to prepare [a supplemental EIS]" the court nevertheless refused to enjoin the Record of Decision (ROD) implementing the Nevada plan, holding "protection of the greater-

sage grouse weighs against vacatur of the RODs. Enjoining implementation of the Plan Amendments pending the Agencies' preparation of an SEIS presents ""the possibility of undesirable consequences" to the greater sage-grouse species and their habitat." Id. at 748, 751. Based on this decision, the BLM is not required to eliminate SFAs, as it proposes, but rather, at most, it should only reconsider whether the SFA designations were made with a sufficient opportunity for public comment, and allow for additional public comment if warranted, making, possibly, only mid-course corrections, not summary eliminations. In Desert Survivors the court determined that in withdrawing the proposed ESA listing of the Nevada/California bi-state sage-grouse population the FWS ignored the best available science, improperly concluding voluntary conservation measures could stem the decline of the population. The court held the Service "erred in concluding there was sufficient certainty of effectiveness of planned conservation measures to support the conclusion that listing" the bird as threatened "was no longer warranted." Desert Survivors at 71. "There are no rational grounds for the service's conclusion." Id. at 83. The court held that, "the service must offer some rational basis for its conclusions that future conservation efforts will be effective enough to improve the status of the bi-state (grouse) and therefore warrant withdrawal of the proposed listing." Id. at 64. The BLM needs to bear this decision in mind before it eliminates protections for the sage-grouse in SFAs. Courts are going to be suspicious of commitments/actions with unproven benefits and that are not consistent with current/best available science. As discussed above, in the not warranted finding the FWS clearly concluded that SFAs had a strong scientific basis and were a critical element showing that BLM had put in place adequate regulatory mechanisms to make listing the sage-grouse unnecessary. As noted, BLM reached similar conclusions in the 2015 sage-grouse plans. Further, ongoing reviews of sage-grouse science, such as the USGS Report, do not support weakening any of the protections in the 2015 Sage-grouse Plans. Now the BLM is abandoning the commitment to implement SFA protections in much of the range of the sage-grouse. That is a decision that may not withstand review because it contradicts the best available science.

The protections in SFAs that would be lost by eliminating SFAs must be maintained in the remaining PHMAs. The BLM should modify Utah DEIS to specifically provide that the fluid minerals NSO stipulation with no waivers, exceptions, or modifications, the vegetation, conservation and grazing evaluation and management priorities, and where appropriate, the prohibition on geothermal development will be specifically incorporated into and made a part of the plan.

2.4.6 Disturbance and Density Caps

Additionally BLM is arbitrary and capricious in the date they establish for counting disturbance. Garfield County asserts disturbance caps should start at the time of plan approval and not before. Any determination that existing human disturbance should count against the disturbance cap is based on assumptions of what existed in that location prior to creation of the disturbance. Inasmuch as some of the disturbances in Garfield County are well in excess of 100 years old, Garfield County questions BLM's ability to accurately assess whether the ground underlying the disturbance was actually Sage grouse habitat prior to being disturbed. Garfield County also questions the arbitrary nature of disturbance caps when considering Native Americans burned significant portions of the area and modified the landscape. Did those burn projects created by Native Americans get credit when new habitat was created or did they cause damage to what was then existing? BLM is required to disclose any uncertainties in the document. Garfield County asks for a detailed explanation of uncertainties associated with existing disturbance, including but not limited to: underlying lands that are now occupied by disturbance; lands that existed prior to Native American vegetation treatments; and conditions of lands prior to being impacted by pioneer livestock grazing, federally authorized timber projects, federal

designations and Sage grouse management activities of the last two decades. Garfield County also opposes the "all lands" concept. BLM's planning authority is only for BLM lands. Garfield County and the State of Utah are the only entities that have authority to develop land-use plans for all lands within the County. BLM should not use calculations beyond their authorized boundaries. This is particularly true where Sage grouse have been shown to occupy areas that were previously non-habitat. If Sage grouse can occupy areas that have been modified, there is no limit to the extent to which man can create additional Sage grouse habitat. Thus, a) the priority management area boundaries become arbitrary and capricious, b) the lands identified for disturbance caps become arbitrary and capricious, and c) the whole disturbance concept becomes irrational. Garfield County asserts to compliance with FLIPMA and other consistency requirements mandate BLM a) must confine the disturbance cap to its own lands, b) must consider a net disturbance cap with credit being given to new lands that improve Sage grouse quality and quantity, and c) must begin disturbance cap calculations at the time the plan is implemented.

Page 2 10 Garfield County strongly supports opportunities for exceeding this disturbance cap, particularly where high-value Sage grouse habitat may be developed. Throughout the planning process BLM has ignored the difference between high-value habitat and low value habitat. Garfield County has adopted a Conservation and Recovery Plan which includes wildlife habitat evaluation criteria that is more stringent than that identified in NEPA or in BLM's planning laws. 40 CFR 1506.2 requires that BLM use the County criteria, unless specifically barred. BLM has failed to do so, making the plan inconsistent and indefensible. Garfield County demands that BLM enters into government to government coordination to resolve this inconsistency and appropriately evaluate the wildlife habitat value for areas identified in PHMA.

MA-SSS-3B The ability to exceed the disturbance cap based on a project-by-project analysis will more closely align BLM's plans with the State's Conservation Plan and management strategies. The revised MA-SSS-3B allows the 3 percent disturbance cap to be exceeded "if a technical team determines that site-specific GRSG habitat and population information, combined with project design elements (siting, minimization measures, and compensation), indicates the project will improve the condition of GRSG habitat within the proposed project analysis area.„23 The State appreciates the BLM's flexibility in allowing the exceedance of the cap and believes such action will bring BLM management more in line with the State's approach to managing sage-grouse. Nonetheless, it should be noted that the BLM's disturbance cap of 3 percent, even with exceedance of the cap, is still inconsistent with the State's 5 percent disturbance cap, above the 2013 baseline.24 Because of the inconsistency between the 2013 State Plan and the BLM, the State believes the BLM should allow the 3 percent disturbance cap to be exceeded if the project will improve the condition of GRSG habitat within the proposed project analysis area or within the Priority Habitat Management Area where the project is located. This proposed language to all ow the project proponent to improve sage-grouse habitat in another portion of sage-grouse habitat within PHMA more closely aligns with the State's Conservation Plan and should be added to the Alternative. The State's Conservation Plan allows for projects or disturbance to occur within any SGMA, so long as the project is in non-habitat or if mitigation, siting, or other efforts by a project proponent results in an overall improvement of sage-grouse habitat within the Sage-grouse Management Areas within the State. Further, the exceedance of the BLM cap must occur since the State's disturbance cap is currently broader, at 5 percent. By allowing certain exception to the cap, and allowing a project proponent to improve other sage-grouse habitat outside the project boundary, greater conservation may occur for sage-grouse. For example, the BLM could allow a project proponent to place a project in an already heavily developed portion of PHMA, and then utilize compensatory

mitigation funds to conduct a habitat restoration project that results in increased functional habitat or corridors in an area that has very little permanent disturbance and is a more intact portion of sage-grouse habitat. This broader exception to exceeding the cap would better align with the State's plan. Next, the BLM notes,"The finding and recommendation shall be made by the technical team which should consist of a field biologist or other GRSG experts, and should include coordination with the appropriate State of Utah agency.,,25 The State believes that the language herein discussing the technical team should be revised to note that technical team "will be made up by BLM field biologist, other local GRSG experts, and biologists and other representatives from the State of Utah." Since Utah has jurisdiction over sagegrouse, the State's technical expelis should be on any technical team when discussing how a project or the mitigation tied to a project will impact sage-grouse. Further, the BLM notes that "An area with disturbance within occupied GRSG habitat is not excluded from the 3 percent until it has been restored to provide GRSG habitat.,,26 The BLM should include a time frame for how often the BLM will analyze whether disturbed GRSG habitat has been restored. The State would suggest language in this section that states: "at, a minimum, annually the BLM will assess the entire PHMA or BSU to determine what areas of disturbed habitat have been restored." Otherwise, the State suppOlis the other modifications to MA-SSS-3B.

MA-SSS-3C Density of EnergylMining Facilities Similar to the discussion above, the BLM should clarify that the density cap may be exceeded if a project is located in non-habitat, or the projecwill improve the condition of GRSG habitat within the proposed project analysis area, or within the Priority Habitat Management Area where the project is located.

Disturbance and density caps need to be maintained. They are science based, as the recent USGS Report shows and were well supported by the science cited for the 2015 plans. They are important for maintaining, improving, restoring, and expanding overall habitat. While we appreciate that any reductions in the protections could only be made where it is demonstrated that "the project will improve the condition of Greater Sage-Grouse habitat," we are concerned that these decisions will only be based on "site-specific" analyses. This presents a question as to whether the landscape scale conservation needs of sage-grouse will continue to be considered. They must be before any disturbance or density caps are reduced. As sage-grouse scientists have observed, it is critical that there continues to be a focus "on conserving the landscapes necessary to sustain sage-grouse populations." Exhibit 4. There is a need to focus management on maintaining the "landscape matrix" and therefore the scientists "recommend that sagebrush habitats be managed holistically and collectively . Id. The scientists recommend that "management approaches and objectives established [in the 2015 plans] be used as minimum standards in sage-grouse habitats." Id. BLM's plan to rely only on site-specific analyses in order to justify exceeding the disturbance and density caps need to be modified to also consider landscape scale analyses and data. The decision by the FWS not to list sage-grouse under the ESA noted the importance of the caps to sage-grouse protection: Each Federal Plan includes a disturbance cap that will serve as an upper limit (the maximum disturbance permitted). Anthropogenic disturbance has been identified as a key impact to sage-grouse. To limit new anthropogenic disturbance within sage-grouse habitats, the Federal Plans establish disturbance caps, above which no new development is permitted (subject to applicable laws and regulations; e.g., General Mining Law of 1872, and valid existing rights). This cap acts as a backstop to ensure that any implementation decisions made under the Federal Plans will not permit substantial amounts of new disturbance within the distribution of sage-grouse on BLM and USFS lands. In addition to the percent disturbance cap at the BSU and project scales, the BLM and USFS will use a density cap related to the density of energy and mining facilities during project-scale

authorizations. If the disturbance density is greater than an average of 1/259 ha (1/640 ac) in PHMA, the project will either be deferred or co-located in an existing disturbed area (subject to applicable laws and regulations, such as the General Mining Law of 1872, valid existing rights, etc.). 80 Fed. Reg. 59858. There is a substantial body of scientific literature concluding that discrete anthropogenic activities that are present in sagebrush have negative effects on sage-grouse. As pointed out in the USGS Report, the extent of these effects varies based on the size, intensity and persistence of the human activity, and can range from displacement to local extirpation of sage-grouse. There is also strong support for the density and disturbance caps in the COT and NTT reports. In addition to the NTT and COT reports, numerous research papers confirm the importance of density and disturbance caps. It is clear the density and disturbance caps must not be weakened.

Disturbance and density caps are not a realistic measurement for actual wildlife habitat. Roads have been abandoned and reclaimed in GRSG habitat only to have the birds show up and stay in the area that the new roads were created. This is the same for many "mitigation" actions that attempt to second guess the bird's habits seldom works. The bird needs to tell us if any constraints are relevant for other activities on the ground. The plan protocol needs to allow working group input data to be implemented based on case by case evaluations. This plan should address the NEPA constraints to this protocol NOW; in this plan to avoid any implementation delays on the needs of the actions.

MA-SSS-3B Because of the inconsistency between the 2013 State Plan and the BLM, the State believes the BLM should allow the 3 percent disturbance cap to be exceeded if the project will improve the condition of GRSG habitat within the proposed project analysis area or within the Priority Habitat Management Area where the project is located. This proposed language to allow the project proponent to improve sage-grouse habitat in another portion of sage-grouse habitat within PHMA more closely aligns with the State's Conservation Plan and should be added to the Alternative. The State's Conservation Plan allows fòr projects or disturbance to occur within any SGMA, so long as the project is in non-habitat or if mitigation, siting, or other efforts by a project proponent results in an overall improvement of sage-grouse habitat within the Sage-grouse Management Areas within the State. Further, the exceedance of the BLM cap must occur since the State's disturbance cap is currently broader, at 5 percent. a. MA-SSS-3B By allowing certain exception to the cap, and allowing a project proponent to improve other sage-grouse habitat outside the project boundary, greater conservation may occur for sage-grouse. For example, the BLM could allow a project proponent to place a project in an already heavily developed portion of PHMA, and then utilize compensatory mitigation funds to conduct a habitat restoration project that results in increased functional habitat or corridors in an area that has very little permanent disturbance and is a more intact portion of sage-grouse habitat. This broader exception to exceeding the cap would better align with the State's plan.

MA-SSS-3B Next, the BLM notes,"The finding and recommendation shall be made by the technical team which should consist of a field biologist or other GRSG experts, and should include coordination with the appropriate State of Utah agency. "25 The State believes that the language herein discussing the technical team should be revised to note that technical team "will be made up by BLM field biologist, other local GRSG experts, and biologists and other representatives from the State of Utah." Since Utah has jurisdiction over sagegrouse, the State's technical experts should be on any technical team when discussing how a project or the mitigation tied to a project will impact sage-grouse.

MA-SSS-3B Further, the BLM notes that "An area with disturbance within occupied GRSG habitat is not excluded from the 3 percent until it has been restored to provide GRSG habitat. The BLM should include a time frame for how often the BLM will analyze whether disturbed GRSG habitat has been restored. The State would suggest language in this section that states: "at, a annually the BLM will assess the entire PHMA or BSU to determine what areas of disturbed habitat have been restored."

MA-SSS-3C Density of Energy/Mining Facilities Similar to the discussion above, the BLM should clarify that the density cap may be exceeded if a project is located in non-habitaÇ or the project will improve the condition of GRSG habitat within the proposed project analysis area, or within the Priority Habitat Management Area where the project is located.

3.A. Application of Restrictive Management Prescriptions and the Closure of High Potential Phosphate Mineral Resources to Development. The RMPA/EIS continues to contain very prescriptive management recommendations that are carried forward almost in their entirety as recommended by the 2011 NTT report, including the following: o 3% limit on surface disturbance at both project and BSU level (Disturbance Cap); o 1 energy and mining facility per 640 acres (Density Cap); and, o Right-of-Way exclusions and avoidance areas. The RMPA/EIS also continues to recommend the closure of PHMA to non-energy leasable development, with the exception of "considering" the expansion of existing

operations if disturbance (density and disturbance caps) are met and subject to compensatory mitigation. The prescriptive recommendations presented in the 2011 NTT should be re-evaluated by the BLM. These recommendations have been heavily criticized by multiple stakeholders, including Simplot and the American Exploration and Mining Association. The NTT recommendations were primarily based on the professional judgment of a few select agency biologists without proper peer review according to the Department's Data Quality Act requirements. The NTT report wrongly assumed that GSG conservation should subordinate all other lawful uses of federal lands in contravention of the agency's multipleuse mandate, including mineral development. Indeed, once the previous Administration took a hard look at the consequences of withdrawing over ten million acres from mineral entry, it was readily apparent that mining has little do with the continued viability of the species. As Simplot previously commented these prescriptions are not aligned with the actual threats to the species and provide very little flexibility. Mineral resources can only be mined where they exist. Options that exist for other resources to mine directionally are not an option for leasable minerals. Closing Priority Habitat Management Areas (PHMA) to non-energy development and applying the density and disturbance criteria as written in the RMPA/EIS, results in essentially closing 100% (42,700 acres) of the federal mineral estate with high phosphate potential to new nonenergy leasable mineral prospecting, exploration and leasing resulting in a low likelihood that existing facilities will be able to expand.

already degraded by discrete anthropogenic disturbance while maintaining the overall BSU disturbance below 3%. Additionally, Idaho recognized that the current disturbance cap has the potential to spread or "encourage" development into undeveloped areas of Greater Sage-Grouse habitat just to avoid reaching the 3 percent project scale disturbance cap in already fragmented areas. Based on the "2015 Estimate of Disturbance on Greater Sage-Grouse Priority and Important Habitat Management Areas within the Biologically Significant Units (BSUs)" (Appendix A), disturbance thresholds in the Uintah Population Management Area are 0.88%, significantly below the recommended 3%. Additionally the 2018 Utah RMPA/EIS states in part on page 3-1: "...BLM monitoring data collected using nationally available datasets and analyzed annually at the biologically significant unit (BSU) scale, as outlined in the Greater Sage-

Grouse Monitoring Framework (Appendix D of the 2015 ROD/ARMPA), indicate that there has been a less than 1 percent range-wide overall increase in estimated disturbance from 2015 through 2017 on PHMA and IHMA (Idaho Important Habitat Management Area.). Moreover, there has been a range-wide overall decrease of less than 1 percent range-wide from 2012 through 2015 in sagebrush availability in PHMA within BSUs."

Although Simplot supports the additional flexibility incorporated into the Management Alignment Alternative to allow development in non-habitat portions of PHMA if it does not indirectly impact habitat; the RMPA/EIS continues to recognize in the analysis on page 4-30: "The potential for this exception to allow larger mineral developments would be low given the small likelihood that a large development would fit entirely within an area of non-habitat in PHMA and still not have any indirect impacts would be low. For large projects in this situation, the potential effect of this added flexibility is likely low." In regards to the density and disturbance factors, Simplot supports the recommendations presented in the Idaho Greater Sage-Grouse Draft RMPA/EIS under the Management Alignment Alternative to remove the density cap at a project level and only apply the disturbance criteria at the BSU level in PHMA. Removal of the disturbance criteria at the project level would allow the BLM to intentionally cluster developments within areas

3.B. Flexibility Under the Management Alignment Alternative exceedances of the disturbance and density cap (at both the BSU and project analysis area) in PHMA can be allowed if site specific Sage-Grouse habitat and population information combined with project design elements (siting minimization measures and compensatory mitigation) indicate a project will "improve" habitat. However, there is no clarification as to what constitutes an improvement or how much improvement will be required before an exceedance will be allowed. Additionally, as stated on page 2-10 in the RMPA/EIS, habitat improvement has to be achieved within the project analysis area: "However, the 3 percent cap may be exceeded at either scale if a technical team determines that site-specific Greater Sage-Grouse habitat and population information, combined with project design elements (siting, minimization measures, and compensatory mitigation) indicates the project will improve the condition of Greater Sage-Grouse habitat within the proposed project analysis area." The direction of incorporating "improvement" within the project analysis area in regards to compensatory mitigation is inconsistent with the State Compensatory Mitigation Program which allows compensatory mitigation to occur within broader Sage-Grouse Management Areas (SGMA). Additionally, site specific opportunities to improve habitat (such as reducing tree cover) may not exist at the required level within a project analysis area, but could exist in a wider population area (such as a BSU), which is not currently being taken into account in the RMPA/EIS.

* Simplot does not support the "blanket" exclusion of energy development and other large scale disturbances from priority GRSG habitats as currently recommended in the plan revisions. Decisions should be based on the scope of the proposed actions and its impact to GRSG habitat and populations at the larger BSU.

Page 4-16: Section 4.6. l. Impacts on Greater Sage-Grouse. Administering Disturbance and Density Caps. Duchesne County commends the BLM for recognizing that there may be cases where localized habitat improvements could benefit sage grouse more than strict adherence to an arbitrary density cap. Such flexibility, which would allow local managers to evaluate site-scale impacts and minimize impacts at the project level, should be included in the final agency decision.

2.4.7 Habitat Objectives

Habitat Objectives Tables We appreciate the idea that broad, science-based objectives have a place in determining whether greater sage-grouse habitat is contributing to stable populations. However, no single objective can cover the wide range of variability that occurs across a landscape as vast as the sagebrush sea. The Habitat Objectives Tables (Table 2-2) have been misinterpreted as standards that must be met, likely at the expense of the widest and most adaptable use in the West-livestock grazing. It does not make sense that these objectives be reflected in livestock grazing permittee/lessee terms and conditions if they do not fit the ecosystem in which they are being applied. Because of this, we appreciate those amendments that propose to make clear that habitat objectives must account for local conditions and site variability. This includes the removal of the seven-inch perennial grass and forb height habitat objective. We understand why grass and forb height objectives need to be considered for the health of the bird, but we believe these objectives should vary across the range. We request these changes be made to the habitat objectives tables for each greater sage-grouse RMP amendment. Allowing local BLM offices to develop appropriate habitat objectives and consider variability across sites and years will improve implementation and provide the opportunity for results of that implementation to be recognized and rewarded. This approach also provides a collaborative pathway forward.

The draft plan continues to state one habitat objective is to have sagebrush cover be between10 to 30%. This implies that once this is exceeded further sagebrush thinning will conducted. There is an absence of scientific support for this agency opinion. There is evidence to the contrary that BLM appears to be ignoring. BLM ignores well researched studies that have found this opinion false. The selective avoidance of important scientific information and failure to provide studies in support this agency opinion presents a significant failure of this plan. A number of agency opnions central to actions BLM is conducting to modify vegetation need to have an open scientific review and their merit proven by independent studies.

2018 draft plan, "In general, the existing conditions of livestock grazing in Utah remain the same as described in the 2015 Final EIS. BLM has continued to issue grazing permit renewals consistent with the regulation and in conformance with the RMPs, including the management in the 2015 ROD/ARMPA." BLM's sage grouse National Technical Team (NTT) provided direction that should be incorporated into this plan: * "Within priority sage grouse habitat, incorporate sage grouse habitat objectives and management consideration into all BLM grazing allotments through AMPs or permit renewals." * Prioritize completion of land health assessments and processing grazing permits within priority sage grouse habitat areas. Utilize Ecological Site Descriptions to conduct land health assessments to determine if standards of range-land health are met. As mentioned earlier, most grazing allotments in PHMA have not been assessed for improper grazing, and, based on the evidence BLM has provided, those that have improper grazing lack management changes that have led to monitoring that show today's rangelands now meet sage grouse needs. This land use plan fails to incorporate these key requirements in grazing management. The absence of these shows that this plan is weaker it would be if the NTT direction had been followed.

In the 2018 plan, BLM uses new classifications of sagebrush habitat. Areas now called Wasatch are similar to mesic and areas noted as "low" are arid sites. Here are a few examples of the lowering of these habitat characteristics objectives in the new plan. For breeding habitat sagebrush should be between 40-80 cm high according to Connelly et al. (2000) and in the new plan the objective is 22 cm high in the wetter higher elevation sagebrush. Connelly et al.'s Table 3 shows perennial grass/forbs should be 18cm high or higher with 25% or more canopy cover in breeding habitat. The new plan calls

for perennial grass cover of greater than 8% and forbs greater than 6% (14% total) with no height requirement. These recommendations in the plan don't appear to represent Utah sage grouse habitat characteristics at their potential.

Modifying Habitat Objectives The State suppOlis the inclusion of the revised habitat objective tables and the associated scientific research that more closely aligns to known sage-grouse habitat and habitat requirements for Utah sage-grouse based on local research and data.27 After meeting with local constituents, it may be helpful to rename the different zones of habitat. Many commentators were confused with the names of Wasatch, Low and Parker, since Wasatch and Parker, can also describe specific locations within the State. A potential name change could basically be identifying the habitats as low, mid-elevation (in-lieu of Parker), and high elevation (in-lieu of Wasatch), fmiher not only map the habitat, but to also identify the habitats by elevation and precept zones that makeup those habitat clusters.

Vegetation Objectives Lack Support In addressing the issue of canopy and wildfire, the NTT Report cites J.W. Connelly to support the conclusion that sagebrush canopy should not be reduced to less than 15% when managing wildfire fuels. NTT Report at 26. Connelly, however, discusses a range of 10% to 30% and explicitly states that land treatments should not be based on targets, schedules or quotas. John W. Connelly, et al., Guidelines to Manage Sage-Grouse Populations and Their Habitats, 28 WILDLIFE SOCIETY BULLETIN 967-985, 77 (2000). The NTT authors omitted the complete recommendation in the Connelly paper and arbitrarily picked 15% as the target for sagebrush canopy. The 2015 Plan then made this mandatory in Table 2-2. The NTT Report also contradicts its own statistical assertions. NTT Report at 7. First, the NTT Report states that priority habitat should be managed so that 70% of the habitat is adequate. Id. A page earlier, however, the report states that 50-70% of the range must be adequate to persist. Id. at 6. The sources cited do not recommend either the upper or lower range offered by the NTT authors. Those sources cited rely on anecdotal evidence of a preferred percentage. See Attach. 4, Maxwell at 14-15. The consistent overstating or misstating the recommendations taints the integrity and accuracy of the science. The singular conclusion is that the agenda to preserve large areas of federal land overrode principles of scientific integrity at every turn and this agenda led to the 2015 Plan and the pending litigation.

Determination if GRSG habitat objectives are met (Table 2-2) The purported intent of Table 2-2 at page 2-4 of the LUPA in Utah (as well as similar "Table 2-2" in the other LUPAs) is to set habitat objectives for sage-grouse habitat in various parts of the season, i.e. lek habitat, nesting/early brood rearing, late brood-rearing/summer, and winter. However, the LUPAs continually elevate these "objectives" to Standards, and in many cases, inflexible Standards. The variability between just these four states show that the best available science is not being used and applied in "Table 2-2". Specifically, the GRSG LUPA in (at least) Utah includes the following Objective and Management Actions, which demonstrate these flaws consequences: Objective SSS-3: In all GRSG habitat, where sagebrush is the current or potential dominant vegetation type or is a primary species within the various sates of the ecological site description, maintain or restore vegetation to provide habitat for lekking, nesting, brood rearing, and winter habitats. The Habitat Objectives for Greater Sage-Grouse (see Table 2-2, Habitat Objectives for Greater Sage-Grouse) summarize the characteristics that research has found represent the seasonal habitat needs for GRSG. The specific seasonal components identified in Table 2-2 were adjusted based on local science and monitoring data to define the range of characteristics used in the Utah Sub-region. Thus, the habitat objectives provide the broad vegetative conditions we strive to obtain across the

landscape that indicate the seasonal habitats used by GRSG. These habitat indicators are consistent with the rangeland health indicators used by the BLM (more at 2-5). MA-LG-4: Evaluate Utah's Rangeland Health Standards and process grazing permits. Focus monitoring and management activities on allotments found not to be achieving Utah's Rangeland Health Standards where livestock grazing is identified as a causal factor and that have the best opportunities conserving, enhancing or restoring habitat for GRSG. Use ecological site descriptions and/or other appropriate information to determine the desired plant community within proper functioning ecological processes for conducing land health assessments to evaluate the achievement or non-achievement of rangeland health standards. MA-LG-5: in PHMA and GHMA, conduct land health assessments that include indicators and measurements of structure, condition, composition, etc., of vegetation specific to achieving GRSG habitat objectives (objective SSS-3) including within wetlands and riparian areas. Prioritize land health assessments in SFA, followed by PHMA outside of the SFA. Conduct land health assessments at the watershed scale and use the GRSG habitat objectives when assessing the applicable standard in GRSG habitats.

Restore degraded sage-grouse habitat. Sage-grouse have already lost nearly half their range to agriculture and development. The federal sage-grouse conservation strategy should be updated to support active restoration of areas that can still be used by sage-grouse and other wildlife.

Make vegetation management a priority. Maintaining and improving habitat is a long-standing tradition in Utah and walking away from this responsibility is a bad idea.

THE USE OF THE IM'S IN THIS RMPA The cooperating agency instructions have been very clear that the mandates imposing rigid vegetation height is not acceptable. Since new data has shown a hard line on the use of stubble height to be a disproven theory, new peer reviewed science needs to be accepted into this plan. The IMs have conflicting language. It makes BLM protocols for sage grouse habitat monitoring and other requirements are simply incorrect. If BLM makes it so they are unable to comply, the flawed Grazing Habitat Objectives the RMPA and virtually every grazing permit located in priority sage grouse habitat will be an easy target for litigation. The use of HAF and AIM protocols do not address the needs of monitoring for the RMPA. HAF will only measure whether a site is capable of meeting habitat objectives. AIM will only show the amount of forage in pounds that site can produce. They do not develop monitoring data, which measures the change of rangeland over time in response to management. Continue to use the established monitoring protocol including cooperative monitoring with the allotment permittees. Changing protocols under the grazing IM's, BLM will be unable to comply to their own grazing habitat objectives making virtually every grazing permit located in priority sage grouse habitat open for litigation.

The plan should also make vegetation management a priority and not allow disturbances to habitat to exceed more than 3% or one well pad/development per section.

THE USE OF THE IM'S IN THIS RMPA The cooperating agency instructions have been very clear that the mandates imposing rigid vegetation height is not acceptable. Since new data has shown a hard line on the use of stubble height to be a disproven theory, new peer reviewed science needs to be accepted into this plan. The IMs have conflicting language. It makes BLM protocols for sage grouse habitat monitoring and other requirements are simply incorrect. If BLM makes it so they are unable to comply, the flawed Grazing Habitat Objectives the RMPA and virtually every grazing permit located in priority sage grouse habitat will be an easy target for litigation. The use of HAF and AIM protocols do not address the needs of monitoring for the RMPA. HAF will only measure whether a site is capable of

meeting habitat objectives. AIM will only show the amount of forage in pounds that site can produce. They do not develop monitoring data, which measures the change of rangeland over time in response to management. Continue to use the established monitoring protocol including cooperative monitoring with the allotment permittees. Changing protocols under the grazing IM's, BLM will be unable to comply to their own grazing habitat objectives making virtually every grazing permit located in priority sage grouse habitat open for litigation.

BLM grazing practices usually call for 50% utilization of herbaceous vegetation often during sage-grouse nesting and brooding season. Surveys of habitat condition have verified that herbaceous vegetation abundance is greatly reduced from the ecological potential for many areas within Utah's occupied sage grouse habitat. Messmer and Dahlgren (2018) reported five years of habitat surveys that concluded that grass and forb abundance was reduced with only a fraction of expected perennial grass cover is less than a quarter of what was expected and much less than needed in order to meet the needs of sage grouse as defined by Connelly et al. (2000). This study looked transects near active nest sites for sage grouse. Messmer and Dahlgren recommended and BLM reduce vegetation height and canopy cover standards so that today's degraded habitat meets objectives. BLM appears to have adopted these recommendation and, unfortunately this study is not available to the public. We asked the author's for a copy and were denied this since it has yet to be published. We ask for a copy of this study and the supporting field data be provided by BLM because it is central to supporting their habitat objectives in this plan.

2.4.8 Adaptive Management

Page 2 41 2.7 Adaptive Management Garfield County recognizes the concepts associated with hard triggers soft triggers. However, one of the problems associated with public lands management is the federal government's inability to respond quickly. Provisions need to be in place such that local offices, local biologists in cooperation and coordination with the State of Utah and local governments can act quickly to not only correct declines in habitat quality, quantity and Sage grouse populations but also to make improvements in those areas. The current plan does not in encourage enhancement and development of Sage grouse habitats and populations aggressively enough. In this regard it is inconsistent with Garfield County's plans. In addition, adaptive management should make things better, faster; and credit needs to be given to offset potential future development and disturbances.

The triggers are also based on total male sage grouse counted in each population area. The process of adding newly discovered leks to this total negates the authority of state and BLM population estimates. Appendix I does consider males/lek for one of its triggers. However, the amount of change must be huge in order to trigger action. A population decline needs to be more than 40% in one year. 2017 saw on average a 20% decline. This decline failed to trigger action because 2017 was the first year past a peak in the population cycle. As we have seen, rarely does this trigger identify important reductions sage grouse population, and, over time, we will see the population disappear before a trigger is crossed. This needs to be redesigned in order to capture important population changes in sage grouse numbers.

population decline. Further, similar to hard-triggers, the BLM should note that it could also include other management actions, which may require the need to amend the RMP to address the situation and modify management. These clarifications will provide certainty, and ensures that the BLM's actions are not arbitrary or beyond the scope authorized by the Alternative or by law. Finally, after reviewing the Alternative, it appears the BLM has failed to include a monitoring requirement when soft-triggers are tripped. When developing the Alternative, it was assumed that both the State and BLM would

cooperatively monitor whether management actions being implemented were successful to address a causal factor. Please add a statement identifying the intent to monitor. The statement could say the BLM, the State, and other members of the technical team, will annually monitor and record population trends to verify that any management actions implement to mitigate declines are being successful. If monitoring indicates continued declines, and if a hard trigger is tripped, the BLM will utilize the tools for managing species after a hard trigger is tripped.

Adaptive Management Overall, the State believes the adaptive management protocols identified by the BLM will more closely align with the State's Conservation Plan.42 The Adaptive Management Triggers, together with the technical team working together to identify causal factors for any declines within six months of identifying that the trigger has been tripped, will provide synergistic partnership for managing sage-grouse and sage-grouse habitat. However, the BLM needs to clearly identify what conservation measures will be applied if a soft trigger is tripped, and BLM's management actions are the causal factor for the decline in sage-grouse populations. The Alternative notes that "the BLM manager will apply measures are conservative or restrictive implementation conservation conditions, terms, or decisions within the agencies' discretion to mitigate the decline of populations and/or habitats." if a trigger is caused by BLM management.43 Although the State understands that certain measures may be necessary to mitigate declines to sage-grouse caused by the BLM's management, the BLM needs to clarify and include language stating that the BLM: will work with the State of Utah, and public land users to adopt management protocols identified in the Alternative, or authorized by law to slow down or stop the

The BLM would plan to change the hard and soft trigger adaptive management requirements to first require BLM to determine the "causal factor" causing the problem before applying corrective measures, unlike the current plan which allows corrective measures to be applied immediately. Utah DEIS at 2-28 to -29. This would weaken BLM's adaptive management plans and provisions. Determining the exact causes of why a trigger has been tripped is difficult at best from a scientific perspective, and it may be impossible in many cases. See Utah DEIS at Appendix I-7 (noting identifying specific causes and effects can be difficult). Hard and soft triggers are an important backstop that help ensure the plans are working and that management is changed if needed. Hard and soft trigger adaptive management provisions must be maintained and not limited. While it is appropriate to try to determine causal factors-this can help focus needed management-making this determination a prerequisite to taking action is ill-advised and would only weaken the Utah sage-grouse plan, perhaps awaiting a never-to-be-achieved, and impossible goal. Hard and soft triggers must continue to be applied and not delayed awaiting achievement of an impossible and unneeded goal. In considering changes to the adaptive management strategy it is also crucial that BLM provide for public involvement and engagement in this decision process. Under BLM's new instruction memorandum (IM) 2018-022 no provisions are made for public engagement in the hard and soft trigger implementation process, unlike BLM's prior IM 2016-140. This must be corrected and under the record of decision for this land use planning process the BLM must provide for public comment opportunities when hard and soft triggers are considered and implemented.

Monitoring and Adaptive Management Monitoring is a critical component of the Utah RMPA and its Adaptive Management Plan given the value of the resource and the large scale of its habitat. The timing of monitoring and the data collected informs adaptive management actions. Appendix I (Adaptive Management) of the Draft EIS includes an overview of monitoring and states the RMP A contains a Monitoring Framework Plan (Appendix D). Appendix D is not included in the Draft EIS. Without seeing a revised Monitoring Framework Plan, it is difficult to evaluate the monitoring plan in relation to

adaptive management plan. The EPA recommends the Final EIS include the revised Monitoring Framework Plan (Appendix D). The Adaptive Management strategy in the Draft EIS contains a two-tiered system of hard and soft triggers for the greater sage-grouse and its habitat. These triggers identify population and habitat thresholds which, if exceeded, would result in a change in how BLM addresses management of the greater sage-grouse in that area. The Draft EIS notes soft triggers represent an intermediate threshold where management changes are needed to prevent a severe decline, whereas hard triggers represent a more direct action to stop a severe deviation from the greater sage-grouse conservation objectives. For hard triggers, there are automatic adaptive management responses when strategy development and corrective action deadlines are not met, but there is no similar action for soft triggers. In its October 2015 finding that listing the greater sage-grouse under the Endangered Species Act was not warranted, USFWS states, "Further, in response to monitoring, activities allowable under the Federal Plans may be adjusted based on adaptive management criteria to provide an immediate, corrective response to identified triggers for populations or habitat declines.„2 We recommend the Adaptive Management Plan in Final EIS include the actions that would be taken in the event that soft-trigger and hard-trigger deadlines are not met.

2.4.9 General Habitat Management Areas

Because the hard trigger in the Sheeprocks has already been tripped, changing some GHMA to PHMA, it would be useful to include specific language on what an "untrigger" would do in this area in terms of allocations or management actions, since it seems unhelpful to return to GHMA if all other GHMA has been elimainated. This comment comes from discussion at the West Desert Adaptive Resource Management Group.

Removal of GHMA The BLM's removal of GHMA and the management actions that require or discuss management scenarios within GHMA, including removing MA-SSS-5, must occur since GHMA management action does not align with the State's strategy for conserving sagegrouse. Further, the removal of GHMA is appreciated since the category of General Habitat does little for sage-grouse conservation in Utah. Indeed, eliminating the GHMA designation throughout Utah, and instead focusing the BLM's effOlts on the Priority Habitat Management Areas containing over 96 percent of Utah's sage-grouse population, will be the most valuable and productive approach to conserving sage-grouse habitat in Utah. As examined by BLM in the DEIS, the designation of GHMA has, and will continue to fail to properly conserve sage-grouse in Utah. GHMA areas in Utah include severely fragmented habitats, areas of habitat mostly on private propelty and tribal lands, areas containing small isolated populations, and many acres of unoccupied and non-habitats. 30 The GHMA in the State is of low-biological significance to sage-grouse in the State and limits the State and the BLM's ability to conserve sage-grouse and its habitatY As noted in the DEIS, "the GHMA in the Morgan and Summit counties areas is predominantly found on private lands; the GHMA between Vernal and Strawberry Reservoir (noted as South Slope Uintah in the 2015 Final EIS Chapter 3) is tribal and private lands; the areas of GHMA in the Uintah Population Area is separated into three small subpopulations, described in Chapter 3 of the 2015 Final EIS as Deadman's Bench, East Bench and Book Cliffs, and Halfway Hollow. None of the other GHMA in Utah includes any leks, and is generally comprised of poor quality habitat on the periphery oflarger PHMA.„32 Prior to the development of the Utah 2015 LUPA, the State conducted an analysis of the GHMAs relative to the State SGMAs. This analysis was submitted to the BLM as part of the State's Scoping Comments (See Ex. A), in the State's 2015 Consistency Review and identified that the State's SGMAs, which makes up the BLM's PHMA, encompassed over 96 percent of the known sage-grouse populations in Utah and the habitats which offer the best ecological potentials for successful

conservation.33 After removing Forest Service and tribal lands, the remaining GHMA habitat throughout Utah contains less than 1 percent of the State's known GPS and telemetry Sage-grouse habitat. 34 In other words, GPS and telemetry marked birds are rarely, if ever, using GHMA habitats. In fact, only a few more than 300 male sage-grouse were found in all GHMA and other non-PHMA habitat

throughout Utah in 2017.35 In 2017, 0 males were counted in the Deadman Bench leks and the East Bench lek in the Uinta Basin.36 Thus, very few birds are found in or utilize GHMA habitats in Utah.

As the BLM pointed out, of the 366-known occupied leks in Utah, 96 percent of these leks are found in PHMA.37 Only 8 of the 22 leks in GHMA are in areas affected by BLM management, with the other 14 in areas predominantly owned by tribal or private entities. DEIS.ld. The Alternative allows the BLM to prioritize habitat management in areas that encompass nearly 96 percent of the actual Greater Sage-Grouse, based on 2017 data, and only removes 1 percent of habitat on BLM lands. Based on the best available scientific data, the State's SGMA maps are being updated using state-wide location data obtained by sage-grouse marked with very-highfrequency (VHF) radio-collars. To refine these seasonal maps, the State and its partners has deployed over 300 global position systems (GPS) transmitters on sage-grouse. The GPS transmitters will provide over two million new locations that will be used to refine the sagegrouse seasonal habitat maps in Utah. As such, the State requests the BLM to continue to work with the State to remove the unnecessary GHMA designation and focus the BLM's time, effOlts, and resources on the areas of the State with the highest densities of birds and highest possibility for conservation success. The conservation value of any BLM GHMA lands to the persistence and growth of sage-grouse populations in Utah is marginal when compared with the habitat values and growth trends of populations in PHMA, which PHMA areas align with the State's plan. Finally, some commentators may try to argue that GHMA is vital for conservation of sage-grouse as creating areas necessary for connectivity and genetic flow in Utah. One scientific study that may be inappropriately relied upon by commentators contains certain flaws that were not addressed prior to publishing a paper. A recently-released U.S. Forest Service study (Cross 2018)38 attempted to quantify the impOltance of connectivity across the sagebrush range. The researchers grouped 1,200 leks into "nodes," or a collection of leks, within the network of greater sage-grouse. The nodes were then categorized as "hubs" or spokes" based on their importance to facilitating gene flow within and across the range of sage-grouse. The paper noted that Hubs foster gene flow out to the spokes. If a hub were to be lost, the birds in the connected spokes would be at risk of genetic isolation. The paper identified certain portions of Utah as hubs and spokes and areas of "betweeness" important for connectivity. However, the paper failed to consider the impacts that translocated birds have had in Utah. Throughout the 1950s to the present, the State has utilized hundreds of translocated birds from all pmts of the State as a tool to move birds and recover or supplement populations. Many of the areas identified in the paper as being important for "gene-flow" or connectivity, have been artificially connected through state management and translocation of sage-grouse. Further, the data from collared birds collected by Utah State and BYU, have failed to corroborate the position taken by the research paper. In fact, the data shows that most collared birds have very little interaction or use with BLM lands marked as GHMA. The argument that GHMA is important for gene-flow and connectivity is not supported by the best-available local data and science. For all the above reasons, the State supports the removal of GHMA.

The usage of the term occupied habitat in the DRMPA/EIS causes confusion about potential mitigation requirements. Although the MAA eliminates the GHMA habitat category and removes associated management (see DRMPA/EIS page 2-6), the MAA also requires, "replace[ment of] occupied habitat

developed outside PHMA by improving habitat in PHMA" (see DRMPA/EIS page 2-7; emphasis added). The term occupied habitat is not defined in the DRMPA/EIS, although the document states, "GHMA Areas with mapped occupied habitat outside of PHMA (management is only applicable to actions on BLM-administered lands). The [State Plan] does not include maps or specific management for occupied habitat outside their SGMA" (see DRMPA/EIS page I-3; emphasis added). The DRMPA/EIS continues that, "[i]t is important to note that the State of Utah's maps used for occupied habitat are broad in nature, and were developed to identify the general areas of potential habitat where Greater Sage-Grouse may be found. The state's general maps, and by extension the BLM's PHMA maps, were developed with the intent that as decision-making in the mapped areas moves from broad considerations to application at more specific areas, information that is correspondingly more detailed should be reviewed to determine if a given area actually includes occupied Greater Sage-Grouse habitat" (see DRMPA/EIS page I-4; emphasis added). The DRMPA/EIS further indicates, under the MAA, that the BLM should, "[o]utside of PHMA, provide that acres of occupied Greater Sage-Grouse habitat lost to habitat degradation actions…are replaced by creating/improving Greater Sage-Grouse habitat within PHMA" (see DRMPA/EIS page 2-22; emphasis added). Finally, the DRMPA/EIS states, "In addition, the [MAA] provides that occupied habitat outside PHMA that is lost to development be replaced by creating or improving habitat inside PHMA…The requirement to mitigate the loss of occupied Greater Sage-Grouse habitat in former GHMA area by creating or improving PHMA could have a collective impact over time. As the amount of development increases in former GHMA, the lack of local mitigation could accelerate the declines in Greater Sage-Grouse populations as available habitat that is not affected by disturbance shrinks" (see DRMPA/EIS page 4-18; emphasis added). The treatment of occupied habitat in these various locations throughout the DRMPA/EIS implies that mitigation is still going to be required for areas formerly classified as GHMA, which is inconsistent with the State Plan there is no such category as GHMA in the State Plan, nor is there a requirement to mitigate for loss of GHMA (or disturbance of any other areas beyond those classified as SGMA) under the State Plan.

Prior usage of the term occupied habitat in the preceding plan amendment documents, which are frequently incorporated by reference into the DRMPA/EIS, further complicates the issue. For example, the ARMPA states, "In Utah, all occupied GRSG habitat was identified as [Preliminary Priority Habitat]" (see ARMPA page I-14; emphasis added). This seems to imply that occupied habitat in the BLM's lexicon corresponds to PHMA, rather than GHMA, which would be more consistent with the BLM's usage of the term on DRMPA/EIS page I-4. However, going back further, the DLUPA/EIS states, "In Utah, occupied, winter, and breeding GRSG habitats are shown on Map I.I…Map I.I is based on the best available information on where GRSG populations are currently distributed in Utah" (see DLUPA/EIS page 3-5; emphasis added). The DLUPA/EIS continues, "The mapped habitat is considered occupied based on known historic habitats, field observations, professional judgement, radio-telemetry data, and intact sagebrush areas adjacent to the previously mentioned areas. In addition to leks, nesting habitat, brood-rearing habitat, and wintering habitat, mapped habitats included other known occupied habitats that may fall between those known season use areas and are considered occupied. While there may be GRSG outside current GRSG maps, the best habitat with the highest likelihood to support persisting GRSG populations are contained within the habitat maps" (see DLUPA/EIS page 3-13; emphasis added). Map I.I in the DLUPA/EIS appears to correspond all PHMA and GHMA combined, and this appears to be the only seemingly-definitive indication of a "definition" of occupied habitat. It is important to note that the State Plan does not include any definition of occupied habitat, nor does it include maps indicating the extent of habitat. It appears that the DRMPA/EIS requirement to mitigate for "occupied habitat" outside of PHMA thereby continuing to require mitigation for former GHMA is merely the result of inconsistent

language usage. In any final environmental impact statement, record of decision, and/or revised land use plan amendment(s), the BLM should clearly define the term occupied habitat, and further should clearly indicate that mitigation for former GHMA which is no longer existent under the MAA is not required. This resolves an outside conflict with and inconsistency between the Federal plan and the State Plan.

The BLM and the State of Utah should align their respective planning documents with regard to the definition of occupied habitat;

The BLM should clearly state that mitigation for areas formerly in GHMA which are to be removed under the MAA is not required, regardless of whether that former GHMA is considered "occupied" or not.

Second, the General Habitat Management Areas, or GHMAs, are aspects of the plan we want to bring to your attention. Under the No-Action Alternative, Utah would have 448,600 acres of GHMA. The management of these areas would follow the 2015 Plan Amendment. Lek buffers, required design features, net conservation gain, habitat objectives, and leasing prioritization would be included under the No-Action Alternative, as well. However, in the Preferred Management Alternative, no GHMAs will exist with hopes of directing improvements to Priority Habitat Management Areas (PHMAs). American Bird Conservancy sees the presence of GHMAs management in accordance with the conservation alternative in Utah as a way to protect the Greater Sage-Grouse and its habitat.

The Management Protocol in the 2013 State of Utah's Conservation Plan for Greater SageGrouse in Utah affirms, "[a]reas identified as habitat on federal and state lands should be managed to avoid surface disturbance to the greatest degree possible."105 It is important to ensure that seasonal habitats not included in priority areas receive some protection,106 and to allow for expansion of recovering populations into newly restored areas. In addition, general habitat can serve as a location for compensatory mitigation offsets and restoring degraded habitat.107 The recent USGS synthesis of recent science on sage-grouse recently stated: Maintaining connectivity among (priority areas) through restoration activities or conservation of existing sagebrush communities at important "pinch points," where movements are constrained, is an important component of an overall sagegrouse management strategy. Maintenance or restoration of habitat quality within corridors is important to limit exposure to risk (for example, from predators), and because sage-grouse use these sites as resting and refueling areas.108

[comment:37-16; 105.0306]The USGS Synthesis has confirmed the importance of maintaining connectivity between different sage-grouse populations to conserve genetic diversity.112 A 2015 study found that long-distance movements of GRSG have been documented, but the risk associated with the landscapes that the birds traverse is not well understood. The current designated priority area strategy does not protect movement corridors among priority areas, and some areas may be at risk of isolation even when they are not separated by large distances.113 A 2016 study covering Idaho, Utah and Wyoming showed that several sage-grouse moved 100 km north and west,traversing from the Wyoming Basin to a range typically associated with the Snake River Plain,and theorized that these migrating birds may serve as an important genetic link between two sage-grouse management zones.114[comment end]

To whom it may concern, as both a citizen and a Biologist who has worked on Sage Grouse recruitment monitoring, I'm writing to strongly urge you NOT to relinquish the General Habitat designation from the 2015 Sage Grouse conservation plan. Taking this habitat away does three major, detrimental things:

1.) It relinquishes a safety buffer for populations within the critical habitat area. 2.) It offers nothing for the lecs that are already inside the General Habitat acreage, and 3.) It puts undo pressure on an already threatened bird in decline. Getting rid of this designated area in the name of focusing more resources on the priority area is equivalent to saying you're going to demolish half the house so that you can focus more on the fire burning the other half down. It's complete foolishness and does not take a 'good faith effort' approach to conservation. Your justification that it will not impact this already declining species because habitat effected by development is required to be replaced is absolute nonsense and reckless. First, fragmentation is the number one problem and this old growth sagebrush habitat cannot simply be replaced. Second, these birds do not simply pick up and utilize new habitat once disturbed. You would know this if you actually cared about what the science has to say. Lek site fidelity is absolute with Sage Grouse. Once their leking grounds are disturbed they are vanquished.

Eliminating General Habitat Management Areas The BLM currently manages approximately 618,100 acres of BLM lands in Utah as GHMA for sage-grouse conservation. Utah DEIS at 1-4 (Table 1-2). The BLM manages these areas under a net conservation gain mitigation standard; lek buffer distances are applied; fluid minerals required design features (RDF) are used; oil and gas lease prioritization measures are required; stipulations are specified for fluid minerals leasing, including approximately 60,000 acres that are NSO or closed to leasing; discretionary PHMA provisions can potentially be applied to activities; and other provisions apply to things such as off road vehicle management, livestock grazing, wind energy, noise management, and rights-of-ways. Utah DEIS at 2-19 to -25. Now the BLM is planning to eliminate these areas and the protective management in them. It would return to the management provisions in the pre-2015 land use plans. Only if an area is adjacent to a PHMA might additional protections be considered. Utah DEIS at 2-21. This plan is fraught with problems and must be reconsidered. For one, this plan would only apply in Utah and not in the five other states considering sage-grouse plan amendments, or in Montana which is not considering amendments. This raises issues about whether the "rangewide" conservation program that was a hallmark of the 2015 plans will continue as the basis for sage-grouse conservation. PHMA and GHMA, coupled with SFA, were central to the 2015 conservation strategy, and now BLM is planning to abandon two of those pillars in Utah (GHMA and SFA). BLM's plan would likely "incentivize development in areas formally identified as GHMA." Utah DEIS at 4-17. BLM's plans will in all likelihood have negative impacts on sage-grouse in GHMA or on sage-grouse habitats in GHMA, despite BLM's claim that the impacts of the No Action Alternative and the Management Alignment Alternative will be the same in the long-term. Utah DEIS at 4-18. "As the amount of development increases in former GHMA, the lack of local mitigation could accelerate the declines in Greater Sage Grouse populations as available habitat that is not affected by disturbance shrinks." Id. "The changes in management in the Management Alignment Alternative would continue, if not accelerate these effects [due to fragmentation and further isolation and impacts to GHMA]." Id. BLM claims that these declines will be offset by increases in PHMA populations because of improved management in those areas. But this raises a question: if the goal is to "maintain and/or increase Greater Sage-Grouse abundance and distribution by conserving, enhancing or restoring the sagebrush ecosystem upon which populations depend in collaboration with other conservation partners", id., why not maintain GHMAs and also improve PHMA management? Under BLM's current sage-grouse land use plans, and under the No Action Alternative, development is already allowed in GHMAs. Utah DEIS at 4-17. There is no need to eliminate these areas in order to allow for development. Development in GHMAs under BLM's proposed plans is "not anticipated to be different than the development that would eventually be allowed under the No-Action Alternative . " Id. It is clear there is no need to eliminate GHMAs in order to "further enhance [BLM's] continued cooperation with

western states by ensuring greater consistency between individual state plans and the BLM's multiple-use mission." Id. at ES-1 and 1-2. Development in GHMAs is already allowed, and even encouraged, so there is no inconsistency with Utah state plans. Under the No Action Alternative, where GHMAs would be maintained, there would only be a 0.1 percent reduction in employment and earnings compared to pre-2015 levels, so it is clear that maintaining GHMAs will have essentially no economic effect, which is in alignment with the plans of the state of Utah. Id. at ES-11. Moreover, the BLM existing plan "[has] not resulted in a large decrease in oil and gas leases or right-of-way applications or an increase in rejected applications . so again it is clear GHMA management is not contrary to the State's plan. Id. at 4-34 Data presented in the Utah DEIS demonstrates the values of GHMA habitats. There is a considerable amount of sage-grouse breeding habitat that is found in GHMAs. Utah DEIS at Fig. 3-2. There are also considerable summer range areas in GHMA. Id. at Fig. 3-3. There is a large amount of winter range in GHMA areas. Id. at Fig. 3-4. It is clear that if GHMA are eliminated many habitat improvement and enhancement opportunities will be lost. As noted, the principal objective of BLM's proposed amendments to the Utah sage-grouse plan is an effort to better align with what BLM perceives to be the requirements of Utah's state sage-grouse plan. In particular BLM wants to align its management with the Sage-Grouse Management Areas (SGMA) that Utah has designated. BLM claims that its PHMAs "largely coincide" with the Utah SGMAs. Utah DEIS at 1-3. This is used to justify a management approach that is just based on PHMAs and which eliminates GHMAs. But if Figure 1-1 in the Utah DEIS ("Utah Planning/Habitat Areas, Surface Management and Sub-Surface Estate") is compared with the map of SGMAs in the Conservation Plan for Greater Sage-Grouse in Utah, it is clear that eliminating GHMA will throw away many habitat connectivity options. In particular, eliminating GHMAs will throw away the connections that the current GHMAs provide between the Uintah, Strawberry, and Carbon SGMAs. Links between the Strawberry and Rich-Morgan Summit SGMAs will also be lost. The links between the Carbon and Sheeprock Mountains SGMAs will be abandoned. See Exhibits 2 and 3 (presenting maps showing the GHMAs and SGMAs). Even if there are few leks in some of these GHMAs, or they are not managed by BLM because they are on Indian lands, or they already have a significant level of oil and gas development (such as is the case in some areas of the Uintah Basin), the value of these areas for sage-grouse conservation cannot be dismissed. If nothing else, even if there are currently limits on their value, the potential for these areas to contribute to sage-grouse conservation must be considered before they are eliminated from the Utah sage-grouse conservation plan. The Utah DEIS makes these points about the values that can attend habitats such as those found in GHMAs: Greater Sage-Grouse use multiple areas to meet seasonal habitat needs throughout the year and the resulting mosaic of habitats (e.g., winter, breeding, nesting, early brood-rearing, late brood-rearing, transitional, and movement corridor habitats) can encompass large areas. Broad habitat maps increase the likelihood that all seasonal habitats (including transition and movement corridors) are included. While areas of non-habitat, in and of themselves, may not provide direct habitat value for Greater Sage-Grouse (e.g., canyons, water bodies, and human disturbances), these areas may be crossed by birds when moving between seasonal habitats. Therefore, these habitat management areas are not strictly about managing habitat but are about providing those large landscapes that are necessary to meet the life-stage requirements for Greater Sage-Grouse. These areas will include areas that do not meet the habitat requirements described in the Seasonal Habitat Objectives table in the 2015 Final EIS. These areas meet Greater Sage-Grouse habitat needs by maintaining large, contiguous expanses of relatively intact sagebrush vegetation community. Utah DEIS at 2-4. It is clear the habitat linkages to PHMA that are provided by GHMA must be maintained. "Greater Sage-Grouse require large landscapes of contiguous sagebrush habitat to carry out their life-cycle. Securing these large landscapes from further degradation and adding more habitat through restoration is the primary conservation action for Greater Sage-Grouse." Utah DEIS at 1-2.

Reviewing the new U.S. Geological Survey report on new science regarding sage-grouse that has been garnered since the 2015 plans were put in place, BLM said the report shows "[t]his understanding emphasizes the importance of maintaining connectivity between populations to ensure genetic diversity and distribution . Id. at 3-3. And even where sagebrush habitats providing sage-grouse habitats may not be present, these areas encompass seasonal habitats and transition zones for sage-grouse and they may "may provide dispersal options or seasonal migration opportunities." Id. at 3-11. And they "may still provide important contributions to the mid- and fine-scale habitat levels for large, intact areas that are needed to support Greater Sage-Grouse populations." Id. at 3-12. Scientists recognize the need to maintain GHMAs. There is a need to manage sagebrush habitats holistically and collectively and "all sage-grouse habitats regardless of designation [should] remain an integral component of that management approach." Exhibit 4. "Amendments proposed to the LUPs reducing or eliminating management options in designated habitats-particularly proposed amendments in GHMA-limit the ability of agencies to manage at scales necessary to maintain these connections." Id. And even the Utah sage-grouse plan recognizes the need for management beyond just SGMAs. The Management Protocol in the State of Utah's Conservation Plan for Greater Sage-Grouse in Utah, 2013 states, "[a]reas identified as habitat on federal and state lands should be managed to avoid surface disturbance to the greatest degree possible." Conservation Plan for Greater Sage-Grouse in Utah at 21. Moreover, the FWS 2015 Sage-grouse Listing Decision states, The designation as GHMAs provide sage-grouse conservation by protecting habitat and connectivity between populations and potential refugia in the event of catastrophic events such as wildfire. While the amelioration of threats in GHMAs will likely be less than in PHMAs due to less stringent required conservation measures, GHMAs do have restrictions that benefit sagegrouse conservation. 80 Fed. Reg. at 59878. It is important to ensure that seasonal habitats not included in priority areas receive some protection, and to allow for expansion of recovering populations into newly restored areas. In addition, general habitat can serve as a location for compensatory mitigation offsets and restoring degraded habitat. For areas constituting such a small percentage of Utah's land base, it makes no sense to skimp on protections that could both prevent further reductions in Utah's sage-grouse populations and avoid imposing additional burdens on neighboring states where GHMA protection will still be required-the states of Nevada, Idaho, Colorado, and Wyoming, all of which border Utah.

Do a better job of protecting Priority Habitat Management Areas by reducing oil/gas development impacts. New development should be prioritized outside these important population areas and strong buffers maintained around sage-grouse leks.

To comply with FLPMA and the purpose and need statement, the BLM must remove GHMA management, and management of other habitats (surface or subsurface areas in Anthro and Tavaputs) since these areas are outside of the State's SGMAs, and revert management to pre-2015 LUPA. Under FLPMA, the BLM is to be consistent with the state's plans, policies, and programs. However, in the 2015 LUPA, the BLM failed to achieve or work towards consistency, and instead, elected to designate hundreds of thousands of acres of non-habitat, or fragmented and poor-quality habitat, outside of SGMAs, as "habitat." Such illegal actions have caused ongoing conflicts between the State, BLM, and local governments within the State. The BLM needs to remove 2015 LUPA management from all areas located outside of PHMA, unless such areas are managed as habitat within SGMAs by the State. Please ensure the BLM has properly removed 2015 LUPA management restrictions from all BLM lands located outside of PHMA.

Further, the State has received comments from state agencies, local governments, and stakeholders who are concerned with the BLM's approach to sage-grouse mitigation requirements in "occupied habitat" outside of PHMA. MA-SSS-6 notes that: "Outside of PHMA, provide that acres of occupied Greater Sage-Grouse habitat lost to habitat degradation actions are replaced by creating/improving Greater Sage-Grouse habitat within PHMA "39 The State's plan does not foresee requiring or utilizing mitigation outside of the State's mapped SGMAs. To bring this Section consistent with the State's Conservation Plan, the BLM should say Outside of PHMA, but within occupied habitat within the State's mapped SGMAs, provide that acres of occupied Greater Sage-Grouse habitat lost to habitat degradation actions . are replaced by creating/improving Greater Sage-Grouse habitat within PI-IMA.

The Draft EIS proposes eliminating SFAs and GHMAs, in addition to diminishing the protections that were established for PHMAs. SFA, GHMA and PHMA straddles the borders of Nevada, Idaho, Wyoming and Colorado. The ROD for the 2015 ARMPA emphasizes the importance of SFAs and GHMAs to maintaining the integrity of the PHMA and connectivity to other populations. It also notes these protections were created to support conservation measures for the greater sage-grouse and its habitat not just at a local-level, but on a landscape-level scale. The Draft EIS does not assess how these proposed amendments in Utah may impact populations in nearby states. Given greater sage-grouse populations cross state boundaries and because there are seven BLM state offices revising their plans, we recommend the Final EIS include a cumulative, cross-boundary effects analysis to assess the combined effects to greater sage-grouse populations and habitats associated with the revisions. Specifically, we recommend the cumulative effects consider current greater sage-grouse population conditions and trends compared against the expected effects of current management practices.

2.4.10 Exceptions/Variances from Non-Fluid Mineral Sage-Grouse Restrictions

* Close loopholes and remove exceptions. The plans contain many new provisions that serve as loopholes and exceptions to habitat protections. We need certainty that crucial habitat will be protected to ensure the species thrives into the future.

Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA The BLM'S additions to MA-SSS-I which explains the PI-IMA "objectives and management actions apply to ecological sites that currently provide greater sage-grouse habitat within the respective PHMA polygons, as well as areas with ecological potential for greater sage-grouse habitat that have not crossed an ecological threshold to a different stable non-greater sage-grouse habitat vegetation community" is appreciated. Although the BLM in the next paragraph identifies a few potential scenarios for when an area within PI-IMA have crossed an ecological threshold where they no longer provide sage-grouse habitat (e.g., monoculture cheat grass, pinyon/juniper woodland), the BLM may want to discuss what factors the BLM will utilize to identify whether or not the sage-grouse habitat has crossed an ecological threshold. Further, the BLM may need some discussion and inclusion of literature identifying when an ecological threshold has been crossed, including literature discussing state and transition models that identify when thresholds have been crossed and what constitutes a stable or non-stable ecological site.

2.4.11 Prioritization of Mineral Leasing

Further, the removal of lease prioritization objective will ensure the BLM's Alternative is more in line with the State's Conservation Plan. Generally, the State encourages development of oil, gas and minerals outside of occupied sage-grouse habitat within Sage-grouse Management Areas, if feasible for the project proponent. However, the State also realizes that, at times, smart project planning, including co-location

or reasonable management stipulations, together with mitigation, may result in an overall increase in the amount and quality of habitat for sage-grouse. For example, the State has been working with project proponents throughout the State to modify development plans, or to set aside funding for habitat restoration projects, that would result in four acres of habitat being restored for everyone acre of habitat disturbed. This general approach of removing the lease prioritization will allow the BLM, the State and project proponents to discuss conservation measures to avoid, minimize, and compensate for impacts to sage-grouse, if a lease is purchased, and if the lease holder fulfills all necessary conditions to explore and develop leased lands. Finally, the myriad of protections already contained in the Alternative and the State Conservation Plan, preclude the necessity for avoiding leases within PHMA. If the BLM fulfills its duty under FLPMA, the Mineral Leasing Act, and the Federal Onshore Oil and Gas Leasing Reform Act of 1987, and uses the protections in this Alternative and the State Conservation Plan, then the BLM can lease lands within PHMA, avoid and minimize impacts to sage-grouse while improving the overall condition of sage-grouse habitat.

Instead of amending the plans by weakening protections, pointedly prioritizing oil and gas development over protected species, BLM should focus on engaging communities in the decisions necessary to implement the plans as they are. Give the plans a chance to work. The recently issues Instruction Memoranda generally retreat from the protections set out in previous guidance to field staff in 2016. The first IM, issued in December 2017, reverses existing policy, directing BLM field offices to prioritize oil and natural gas leasing and drilling projects outside of the most sensitive sage grouse habitat. Instead, it states that BLM "does not need to lease and develop outside of [grouse] habitat management areas before considering any leasing and development within [grouse] habitat." The second IM, issued in January 2018, eliminates requirements for public notice and comment "when conditions worsen and there is a need for action" under adaptive management provisions in the grouse plans. It also shortens the public protest period for oil and gas lease sale parcels to 10 days from 30 days

Under the No-Action Alternative, the Bureau would prioritize oil and gas leasing outside of the PHMAs and GHMAs. This would allow designed habitat areas to be off limits to the harmful impacts of mineral development. The Bureau's Preferred Management Alignment Alternative does the exact opposite. The Preferred Alternative no longer prioritizes oil and gas leasing outside the PHMAs or GHMAs. Under this alternative, mineral development would be able to invade these protected areas and in turn expose the Greater Sage-Grouse and its habitat to the harmful effects. We believe prioritization should be restored in accordance with conservational alternative to preserve the Greater Sage-Grouse.

The prioritization requirement would be retained, unchanged, in Colorado, Idaho, Montana, Nevada, and Oregon. Only in Wyoming might there be limited changes, but not a wholesale revocation (the prioritization requirement would be changed to only apply in PHMAs, not in GHMAs). Again, this raises issues about whether the "rangewide" conservation program that was a hallmark of the 2015 plans will continue as the basis for sage-grouse conservation. Prioritizing oil and gas leasing outside of sage-grouse habitats was a central feature in all of the 2015 plans, and now BLM is planning to abandon this pillar in Utah. Under this plan, it seems impossible for BLM to create a management strategy "that best meets the needs of the resources and values in this area under the BLM multiple use and sustained yield mandate." Utah DEIS at Dear Reader Letter. The 2015 plans are clear as to the need for prioritizing oil and gas leasing and drilling outside sage-grouse habitat and its meaning. For example, the Rocky Mountain Record of Decision (p. 1-25) states: . the ARMPs and ARMPAs prioritize oil and gas leasing and development outside of identified PHMAs and GHMAs. This is to further limit future surface

disturbance and encourage new development in areas that would not conflict with GRSG. This objective is intended to guide development to lower conflict areas and as such protect important habitat and reduce the time and cost associated with oil and gas leasing development by avoiding sensitive areas, reducing the complexity of environmental review and analysis of potential impacts on sensitive species, and decreasing the need for compensatory mitigation. The Rocky Mountain ROD also identifies prioritizing oil and gas leasing and development outside sage-grouse habitat as a "key component" and a "key management response" (pp. 1-18 1-19). In Utah, BLM is to "[p]rioritize the leasing and development of fluid mineral resources outside of GRSG habitat." Utah Greater Sage-Grouse ARMPA at 1-11. Prioritization cannot be based solely on whether BLM has sufficient resources to process leasing nominations or applications for permits to drill in sage-grouse habitat. Rather, there must be a thorough consideration of opportunities to protect habitat. We have these recommendations for how BLM should change its plans relative to prioritization with respect to the oil and gas leasing process, the oil and gas development process, and the application for permit to drill process. 1. Leasing BLM has used specific factors to guide prioritization of leasing outside sage-grouse habitat. For instance, in assessing the December 2017 lease sale for the Vernal Field Office, https://eplanning.blm.gov/epl-front-office/projects/nepa/80165/130450/158729/Final_Vernal_EA.pdf, BLM created a chart evaluating how certain prioritization considerations applied to parcels (existing lease, existing unit, field-EIS, high gas potential, high oil potential), completed site visits to confirm conditions on the ground, and then only included parcels in the lease sale that met the majority of the criteria. We propose that the BLM use the following criteria to prioritize oil and gas leasing outside of sage-grouse habitats: * Intactness/quality of habitat classification of habitat (i.e., priority, important, general); quality of habitat; importance for connectivity or seasonal habitat. * Population trends in applicable zone or biologically significant unit. * Distance from existing disturbance. * Distance from existing infrastructure roads, well pads, pipelines. * Need for additional infrastructure estimated surface disturbance. * Adjacent to existing lease yes/no/proximity. * Within existing oil and gas unit. * Within existing master leasing plan. * Oil potential none, low, moderate, high. * Natural gas potential none, low, moderate, high. BLM will conduct site visits to confirm conclusions, as needed. Decisions to include nominated lease parcels in sage-grouse habitat in lease sales will be based on the following evaluation of criteria: * Parcels that do not have moderate or high potential should not be offered. * Parcels that have high quality habitat, are not in proximity to existing disturbance, and/or require additional infrastructure to be developed should not be offered. * Parcels that are in close proximity to existing disturbance and infrastructure, and are already within an existing oil and gas unit or master leasing plan that has been analyzed in an EIS may be considered for leasing. * Parcels outside priority habitat should be considered for leasing prior to parcels in PHMA. 2. Development BLM will prioritize development outside sage-grouse habitat by considering the following factors: * Intactness/quality of habitat classification of habitat (i.e., priority, important, general); quality of habitat; importance for connectivity or seasonal habitat. * Population trends in applicable zone or biologically significant unit. * Distance from a lek. * Need for new infrastructure estimated surface disturbance. * Ability to use existing well pad and infrastructure. * Oil potential none, low, moderate, high. * Natural gas potential none, low, moderate, high. These factors will apply to both exploratory and other types of development activities. BLM will conduct site visits to confirm conclusions, as needed. 3. Applications for Permit to Drill Decisions to approve applications for permits to drill in sage-grouse habitat will be based on the following evaluation of criteria: * Where applications for permits to drill are in high quality/intact habitat, are not in proximity to existing disturbance, and/or require additional infrastructure to be developed, they will not be prioritized and opportunities will be evaluated to relocate permits. * Where applications for permits to drill are not in areas with high or moderate potential, they will not be prioritized. * Where applications for permits to drill are able to use

existing well pads and infrastructure and otherwise avoid surface disturbance and noise impacts to leks, they are more suitable for processing and approval. * Applications for permits to drill outside priority habitat should be considered for approval prior to parcels in PHMA.

2.4.12 Land Disposal and Exchanges

Page 4-19: Section 4.6. l. Impacts on Greater Sage-Grouse. Land Disposal and Exchanges. In the final sentence of this subsection, it states that GRSG populations could be adversely affected to a greater degree with the removal of GHMA protections. Following that statement, Duchesne County suggests that the BLM restate the facts and statistics associated with the predominate GRSG habitat, leks and populations being within PHMA and such areas are not subject to disposal or exchange in the proposed amendments.

It can be difficult under the standards proposed by BLM to determine if land disposal "will compromise" sage-grouse persistence, or have "no direct or indirect impact" on populations.145 Retaining habitat in federal ownership helps ensure the land will be managed as prescribed in the BLM land use plans, providing certainty. It also will promote connectivity of sage-grouse populations.146 States have not committed to all the same management and approaches as BLM. Moreover, in some cases, such as state trust lands, they are required to manage the lands to maximize revenues, which is likely inconsistent with conserving sage-grouse habitat.

2.4.13 Burial of Transmission Lines

The Bureau would have been required to bury transmission lines unless "not technically feasible" under the No-Action Alternative. Greater Sage-Grouse instinctively steer away from tall structures; it is an innate characteristic of the species. When tall structures, like above transmission lines, are places in its habitat, this interferes with the way species normally functions and causes distress. Unfortunately, the Preferred Management Alignment Alternative allows the possibility for transmission line structures to be placed in amongst sagebrush lands and interfere with the Greater Sage-Grouse populations in Utah.

4-20: 4.6. l Impacts on Greater Sage-Grouse. Burial of Transmission Lines. Duchesne County commends the BLM for recognizing that there may be cases where burial of transmission lines may have more impact on GRSG habitat and populations than overhead lines. Such flexibility, which would allow local managers to evaluate site-scale impacts and minimize impacts at the project level, should be included in the final agency decision.

2.4.14 Habitat Management Area Boundaries

Page 3 1 Paragraph 3 The referenced changes to the landscape are locally and regionally significant. Those changes form a basis for increases in Sage grouse population and improvements to Sage grouse habitat. It appears duplicitous that BLM identifies priority management areas and then ignores improvements to those areas it identified in 2015. BLM needs to assure improvements that occurred since 2015 (and for a decade prior to that) are included in the assessment of Sage grouse habitat. There needs to be a system where the tens of thousands of acres that have been restored or improved are credited against disturbance. This is a specific element of Garfield County's Conservation and Recovery Plan that is more specific but not in conflict with NEPA and must be included in BLM's Sage grouse Conservation and Recovery Plan unless the BLM is specifically barred by law. BLM can provide opportunities through this EIS for those habitat improvements to be credited toward recovery or the improvements can be recognized in site-specific implementation analysis that will follow. But BLM

cannot completely ignore them and simultaneously complying with FLPMA's consistency, cooperation and coordination requirements, CEQ regulations, or a reasonable objective evaluation. This inconsistency exists throughout the document and needs to be resolved. Furthermore Garfield County asserts the positive changes in Sage grouse habitat since 2015 are significant and important. Large portions of BLM's priority habitat management areas are a) not occupied and b) not suitable for occupancy by Sage grouse. Consequently the statistical value of the improved habitat is significantly increased when only occupied or suitable habitat is considered. The State of Utah, and Garfield County in particular, can argue Sage grouse populations and available habitat has significantly increased since 2015. We ask that this paragraph be rewritten to accurately reflect the successful efforts associated with Sage grouse recovery and conservation, including and especially on BLM lands in our area.

3-18: 3.11. Recreation. The last paragraph of this section highlights the need for habitat maps to be considered flexible to allow adaptation to conditions on the ground. The 2015 BLM plan amendments contained mapping that affected the status of recreation travel routes in well-known, historic off-road motorized recreation areas in the Five Mile Pass and Little Sahara sand dunes areas. We applaud the efforts of the BLM to correct this error with this plan amendment and encourage the BLM to recognize that large scale mapping has its limitations and should not preclude legitimate uses of the surface when sage grouse habitat does not truly exist where mapped.

2.4.15 Mitigation

Mitigation You have requested public comment regarding "how the BLM should consider and implement mitigation with respect to the greater sage-grouse, including alternative approaches to requiring compensatory mitigation in BLM land-use plans." Mitigation does provide benefits to species whose habitat is impacted by development. When used as intended, mitigation is a tool that results first in avoidance of impacts to important habitats, then in minimization of unavoidable impacts. When compensatory mitigation is appropriately analyzed and applied as an option to offset residual impacts, there are increased opportunities for landowners to participate in programs intended to improve habitats. The full suite of mitigation options, including compensatory mitigation, must be available to conserve the habitat and populations necessary to avoid a future listing under the ESA. Whether compensatory mitigation strategies are addressed in BLM land-use plans, or through other mechanisms such as guidance or memorandums of understanding, the approach should not diminish opportunities for landowners to work with permitting entities and project proponents to improve greater sage-grouse conservation efforts.

Further, the standard provides a broad list of activities, including avoiding, minimizing, or compensating for impacts by applying beneficial mitigation actions, all of which may improve habitat conditions. The State appreciates this standard, while reminding BLM that project proponents must only be required to, at a minimum, ensure that projects do not cause undue degradation to the landscape. The BLM's statement identifying efforts to coordinate with the State to develop a fully suppOlied Mitigation Strategy is suppOlied as such action will enhance cooperation and coordination between the State, the BLM, and project proponents. As of this letter, the State and BLM have not fully developed or implemented a Mitigation Strategy, although the BLM recently issued IM No. 2018-093, addressing the BLM's policies for using off-site compensatory mitigation. When developing the Alternative, the State believed the BLM would work with the State on a project-by-project basis to implement the principles and strategies contained in the State's Compensatory Mitigation Program. The State of Utah's Compensatory Mitigation Program was established, in part, by the Utah Legislature under Utah Code

79-2501 et. seq., Utah Administrative Rule R634-3 (Compensatory Mitigation Program), and the policy in the 2013 State Plan. In Utah, compensatory mitigation is pmi of a three-step process for conserving sage-grouse habitat, while balancing responsible economic growth and development. Before an organization uses compensatory mitigation, it should take any necessary steps in consultation with the DNR to employ the Management Protocols identified in the 2013 State Plan.

Modifying Mitigation Standards and Compensatory Mitigation The Net-Conservation Mitigation Standard has long been challenged by the State as being unlawful extension of BLM' s authority under FLPMA, ultra-vires, and a violation of NEP A since the concept was a last-minute addition to the 2015 LUPA. The Net Conservation Gain standard has also created confusion and resulted in arbitrary application and interpretation to determine how much conservation or mitigation must occur for a "netgain" to occur. The revised standard which requires the BLM to provide ensure mitigation that improves the condition of greater sage-grouse habitat, may still be subject to challenges under FLPMA. 2-32. However, this standard is easier to measure and account for actions

Net Conservation Gain Must Be Abandoned The Coalition appreciates the BLM's admission that the Net Conservation Gain standard was not publicly reviewed and, therefore, fatally flawed as a component of the 2015 Plans. Id. The net conservation gain standard was one of the reasons that the Coalition filed its petition for review of the 2015 Plan. As the Coalition emphasized in its protest of the 2015 Plan and its scoping comments and cooperating agency materials, the BLM has no authority to require mitigation of public land users that exceeds the undue and unnecessary degradation standard in FLPMA. See 43 U.S.C. Quincy Bahr Sage-Grouse Project Coordinator August 2, 2018 Page 17 1782(b). Moreover, with new policies and directives, the BLM lacks any secondary authority to implement a "net benefit", "net gain", or other standard that improves sage-grouse habitat as a condition for a permit or lease. See BLM Instruction Memorandum 2018-093 (July 24, 2018); see also U.S. Fish and Wildlife Service Mitigation Policy, 83 Fed. Reg. 36472 (July 30, 2018) ("In light of the change in national policy reflected in Executive Order 13783 and Secretary's Order 3349, the comments received by the Service, and concerns regarding the legal and policy implications of compensatory mitigation, particularly compensatory mitigation with a net conservation gain policy, the Service has concluded that it is no longer appropriate to retain references to or mandate a net conservation gain standard in the Service's overall mitigation planning goal within each document. Because the net conservation gain standard is so prevalent throughout the Mitigation Policy, the Service is implementing this conclusion by withdrawing the Mitigation Policy.") In Section 302 of FLPMA, Congress has spoken to the discrete issue of what standard may or may not be applied to federal land management. Chevron U.S.A. Inc. v. Natural Res. Def. Council, 467 U.S. 837, 842 (1984) ("In interpreting an agency's enabling or organic statute, we "employ[ ] traditional tools of statutory construction" to determine "whether Congress has directly spoken to the precise question at issue."). Aside from the wilderness study areas, FLPMA provides that public lands shall be managed to avoid "undue and unnecessary degradation." The courts have found FLPMA to inherently allow some degradation. See Theodore Roosevelt Conservation Partnership v. Salazar, 661 F.3d 66, 76-78 (D.C. Cir. 2011) (FLPMA's unnecessary or undue degradation standard must be read in light of BLM's responsibility under FLPMA to ensure public lands are managed under multiple use and sustained yield.); Gardner v. U.S. Bureau of Land Mgmt., 638 F.3d 1217, 1222-1223 (9th Cir. 2011) (Section 1732(b) does not mandate BLM to adopt restrictions that would completely exclude off-road vehicle use in a specific area.).

Requiring that any change in habitat be accompanied by additional action to improve habitat far exceeds BLM's authority under FLPMA or NEPA. Case law sets similar standards under the Endangered Species Act (ESA) changes to critical habitat. See also Butte Envtl. Council v. U.S. Army Corps of Eng'rs, 620 F.3d 936, 947-48 (9th Cir. 2010) (FWS's determination that critical habitat under the Endangered Species Act would be destroyed was thus not inconsistent with its finding of no 'adverse modification' because the project would affect only a very small percentage of each affected species' critical habitat); see also Rock Creek Alliance v. U.S. Forest Service, 703 F. Supp.2d 1152, 1198 (D. Mont. 2010) (adverse modification of critical habitat under ESA allowable if effects are fully discussed and affected area is relatively insignificant). If the courts allow modification to critical habitat without "net conservation gain" then certainly wildlife habitat management for sage grouse cannot require more. Interpreting FLPMA as giving BLM the authority to require Net Conservation Gain or any improvement at BLM's discretion makes the undue and unnecessary degradation standard in FLPMA meaningless. No court will allow such an interpretation when the law so clearly states public lands shall be managed for undue and unnecessary degradation. Quincy Bahr Sage-Grouse Project Coordinator August 2, 2018 Page 18 B. Policy to Improve the Status of Sensitive Species Does Not Override FLPMA Land Management Standard BLM cannot rely on Manual 6840's sensitive species habitat "improvement" provisions as authority to undercut the law's clear direction. See Manual 6840.1H2a(1) ("It is also in the interest of the public for the BLM to undertake conservation actions that improve the status of such species so that their Bureau sensitive recognition is no longer warranted." (Emphasis added)). The manual only refers to the status of the species as measured by a host of metrics and does not refer to any single factor (i.e. population, habitat, seasonal mortality). FLPMA sets the controlling standard for land management. And, federal law supersedes agency policy so BLM improvement of habitat and species numbers does not mean BLM can impose "improvement" policies over and above the undue and unnecessary degradation standard. Manual 6840 is an agency directive and enjoys little if any deference under established case law. Federal land agencies since 1984 have relied on the decision of Chevron v. Natural Res. Defense Council, 467 U.S. 837 (1984) to justify and defend any decisions. Over the past 15 years, the courts have significantly narrowed the scope of deference accorded to these agency directives. In U.S. v. Mead Corp., 533 U.S. 218, 232 (2000), the Supreme Court held that agency policy in the form of a tariff letter enjoyed little if any deference. Just a few months ago, the Supreme Court set aside a regulation that contradicted the law in SAS Institute Inc. v. Iancu, 138 S.Ct. 1348 (2018) and signaled growing support to reverse Chevron. FLPMA clearly mandates undue and unnecessary degradation as the management standard outside of wilderness study areas. Any management of sensitive species to improve their status must conform to the letter of the law. From these principles, it is clear that the DEIS needs substantial revision. The 2018 DEIS states that a project proponent would "[r]eplace occupied habitat developed outside PHMA by improving habitat in PHMA." DEIS at 2-7. Aside from the fact that the BLM never had, and most recently, has explicitly disclaimed any authority to require improvement of sage-grouse habitat, this provision would burden non-habitat with excessive impacts by removing forage for wildlife and livestock without any corresponding analysis of those impacts. As written, the Alignment Alternative increases development opportunities in non-PHMA while prioritizing mitigation efforts in PHMA without disclosing the secondary effects of that prioritization to livestock permittees or wildlife habitat or other development, such as transmission lines, mineral development, solar facilities or mine operations.

Good mitigation policy and practice is one of the best opportunities to achieve sustainable development and conservation goals. Where impacts cannot be avoided or minimized, well-designed compensatory mitigation programs can achieve the multiple-use, sustained yield objectives.

Do not strip the fundamental mitigation goal of "net conservation gain" from the plans. A no net loss of habitat merely prevents additional habitat loss and is not adequate to achieve long-term conservation of sage-grouse.

Priority habitat for sage grouse can be developed on other Federal lands. Mitigation measures can be associated with drilling to develop more priority habitat at these other locations when exploration and mining of non-energy minerals is necessary. The following methods of mitigation were successfully implemented with drilling in priority habitat areas (occupied areas identified as "Winter" and "Brood Rearing" habitat) on Diamond Mountain: A. Avoid drilling during strutting (Breeding season is April June) B. Phase drilling begin in areas with minimal impact potential C. Avoid wet meadow areas where greater sage-grouse tend to nest D. Locate drill sites with minimal sagebrush E. Locate drill pads near existing roads to minimize the need for new roads F. Reclaim pads with a seed mix beneficial to greater sage-grouse

Under the No-Action Alternative, projects must provide a net conservation gain for Greater Sage-Grouse. This alternative would ensure that all efforts create population growth for the Greater Sage-Grouse. But the Preferred Management Alignment Alternative does not ensure the same. The Preferred Management Alignment Alternative says that projects must improve the condition of Greater Sage-Grouse habitat. This alternative says the Bureau must improve the habitat but not improve Greater Sage-Grouse populations. The alternative does not ensure the Bureau is required to maintain the Greater Sage-Grouse population. A net conservation gain promotes a sustainable population and consulting the conservative checklist to further develop the Mitigation Standard can only benefit grouse conservation efforts.

Maintain a strong "net conservation gain" standard. Sage-grouse habitat is largely found on federally-managed public lands, and in order to offset development and properly manage these lands, the BLM must have a strong science-based plan that includes this standard so as to give the species a chance at long-term recovery. A no net loss of habitat merely prevents additional habitat loss and is not adequate to achieve long-term conservation of sage-grouse.

Maintain or strengthen the mitigation policy. Good policy and practice is one of the best opportunities to achieve sustainable development and conservation goals. Where impacts cannot be avoided or minimized, well-designed compensatory mitigation programs can achieve the multiple-use, sustained yield objectives.

Reduce manageable impacts in sage-grouse habitat. Some threats to sage-grouse are difficult to manage, such as wildfire and invasive species. The federal conservation strategy should compensate for those impacts by emphasizing management of land uses that we can control, such as livestock grazing, which contributes to unnatural fire and the spread of invasive species.

BLM has ample authority to apply the entire mitigation hierarchy, including requiring compensatory mitigation. The 2015 Utah sage-grouse conservation plan provides that mitigation must provide for a "net conservation gain" to the species. Utah DEIS at 2-32. BLM must account for any uncertainty attendant to the mitigation and it will apply the avoid, minimize and then, last, compensate mitigation hierarchy. Id. at 2-33. BLM now proposes to eliminate the net conservation gain standard. It would apply mitigation only to PHMA and "manage activities that result in habitat loss and degradation to improve the condition of Greater Sage-Grouse habitat." Id. at 2-32. BLM would develop a Mitigation Strategy

with the state of Utah, which would be based on the state mitigation approach. Id. at 2-33. The BLM has invited comment on these provisions stating, At the request of the State, the Management Alignment Alternative in this Draft RMPA/EIS proposes a change to compensatory mitigation by modifying the net conservation gain standard that the BLM incorporated into its plans in 2015. The DOI and the BLM have also modified their mitigation policies since the 2015 plans were finalized. The public did not have the opportunity to comment specifically on a net conservation gain approach to compensatory mitigation during the 2015 land use planning process. In addition, the DOI and the BLM are evaluating whether the implementation of a compensatory mitigation standard on public lands is appropriate and consistent with applicable legal authorities. We request public comment about how the BLM should consider and implement mitigation with respect to the Greater SageGrouse, including alternative approaches to requiring compensatory mitigation in BLM land use plans. Id. at ES-8, 2-5, and 2-41. Even if net conservation gain is not continued as the standard, at a minimum the BLM should maintain a "no net loss" mitigation standard. This can be achieved if BLM applies the avoid, minimize, then compensate mitigation hierarchy. BLM's mitigation policies must allow for more than a 1:1 ratio of compensation due to the uncertainty of some mitigation measures. It is crucial that this be a matter of federal policy not just state policy. State plans need to meet this minimum standard and they cannot transfer full authority from the BLM to the state. Key science-based mitigation principles must be maintained that engage stakeholders, with additional assurances maintained that compensatory mitigation is durable and additional, as has been recognized as necessary for effective mitigation programs.

To the extent BLM relies on the State of Utah's sage-grouse mitigation policy, it must ensure that the resulting standards ensure it has the authority to incorporate, implement, and enforce state sage-grouse mitigation programs that meet a recognized set of principles. We recommend that these principles should be consistent with those laid out by The Nature Conservancy in its 2015 report, Achieving Conservation and Development: Applying the Mitigation Hierarchy. In addition, we support compensatory mitigation programs that seek to achieve a "reasonable relationship" between impacts and compensatory mitigation and adequately account for habitat quality, temporal losses, and risk of project failure. The amount and type of compensatory mitigation should be proportional to, and have a reasonable relationship to, direct and indirect impacts.

It has recently been argued by several states that BLM may only use compensatory mitigation to prevent "unnecessary or undue degradation". Under this view, where the impacts of a proposed activity have not been demonstrated to rise to the level of "unnecessary or undue degradation," any authorization of that activity which requires either net benefit or no net loss for the actual impacts would violate FLPMA. The unnecessary or undue degradation standard, however, is just a minimum standard for BLM's land management policy; it does not restrain BLM's discretion to adopt or require mitigation in circumstances that do not rise to the level of "undue or unnecessary degradation" or to implement a higher mitigation standard. As explained above, BLM has numerous authorities supporting its use of mitigation more generally, including the policies and principles underlying FLPMA, the foundational multiple use, sustained yield standard, the authority to promulgate regulations, and the specific authorities applicable to land use plans and project-specific authorizations.

Both FLPMA and the case law thus establish that BLM has ample discretion to go beyond the prevention of unnecessary or undue degradation to seek compensatory mitigation that will meet "the long-term needs of future generations for renewable and non-renewable resources, including, but not limited to, . wildlife and . natural scenic, scientific and historical values." 43 U.S.C. § 1702(c). None of these

authorities distinguish between avoidance, minimization, and compensatory mitigation or prohibit or circumscribe compensatory mitigation; rather, the authorities are broad and support the use of each aspect of mitigation in appropriate circumstances.

Given BLM's broad authority to adopt and impose mitigation to protect sage-grouse, at a minimum, BLM certainly can act to adopt, implement and enforce the state mitigation programs for use on federal land. In doing so, it is critical to ensure that the state mitigation programs employed by BLM follow commonly recognized principles, such as those laid out by The Nature Conservancy in its 2015 report, Achieving Conservation and Development: Applying the Mitigation Hierarchy (2015 TNC Report). These principles include: application of the mitigation hierarchy in a landscape context; policy goals that support conservation and drive accountability; inclusion of stakeholder engagement practices; long-term, durable options; additionality, equivalence, and protection against temporal losses.

it is not clear how BLM would be able to adopt and enforce state mitigation plans, such as the Utah plan, as part of this sage-grouse management plan, even if they meet requirements for an acceptable compensatory mitigation program. Therefore, in addition to completing the necessary supplemental NEPA to evaluate the impacts of the new guidance on the Utah Plan, as discussed below, BLM must also clarify how the IM permits it to continue to uphold its commitment to the states in terms of applying state mitigation plans.

"Substantial changes" to the Management Alignment Alternative required by IM 2018-043 must be evaluated in a supplemental EIS. BLM must prepare a supplemental EIS to evaluate the impacts of Instruction Memorandum (IM) 2018-093, which prohibits BLM from requiring compensatory mitigation. Supplemental EISs are required for "substantial changes in the proposed action that are relevant to environmental concerns" or "significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts." 40 C.F.R. § 1502.9(c)(1)(i), (ii). Because IM 2018-093 is a paradigm shift on mitigation and eliminates one of the pillars upon which the 2015 Sage-grouse Plans and the "not warranted" determination stand, BLM must now prepare a supplemental EIS. In evaluating i99acts on the Utah Draft EIS, IM 2018-093 requires "substantial changes" to the proposed action that must be thoroughly evaluated in a supplemental EIS. While BLM proposes to remove the "net conservation gain" standard in the Management Alignment Alternative, it maintains requirements for compensatory mitigation and relies on it. For example, the Utah Draft EIS provides for exceptions from the surface disturbance cap based on compensatory mitigation: . the 3 percent cap may be exceeded at either scale if a technical team determines that site-specific Greater Sage-Grouse habitat and population information, combined with project design elements (siting, minimization measures, and compensatory mitigation) indicates the project will improve the condition of Greater Sage-Grouse habitat within the proposed project analysis area. Utah DEIS, p. 2-10. Similarly, in discussing the environmental effects of the proposed changes to the existing plan, the Draft EIS states: . the Management Alignment Alternative builds flexibility into the analysis by allowing exceedances of caps if certain condition are met. For example, if site-specific information (e.g., habitat condition, Greater Sage-Grouse use of the area) combined with project design information (i.e., project siting, minimization measures, and compensatory mitigation) indicate the project will improve the condition of Greater Sage-Grouse habitat, the caps can be exceeded" Utah DEIS, p. 4-15. Because IM 2018-093 prohibits BLM from "imposing" compensatory mitigation through "environmental impact statements" and "resource management plans," BLM is arguably obligated to delete these proposed actions from the EIS. These changes are neither "minor" nor "qualitatively within the spectrum of alternatives" evaluated in the Draft

EIS. See Council on Environmental Quality, 40 Most Questions Asked Questions Concerning CEQ's NEPA Regulations at 22, available at https://www.energy.gov/sites/prod/files/G-CEQ-40Questions.pdf. They go to the very heart of the conservation strategy set forth in the ARMPAs and ratified by the "not warranted" determination. See, e.g., 80 Fed. Reg. at 59,881 ("Requiring mitigation for residual impacts provides additional certainty that, while impacts will continue at reduced levels on Federal lands, those impacts will be offset to a net conservation gain standard."). Additionally, IM 2018-093 represents the very sort of "significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts" that demand further analysis. The Draft EIS incorporates compensatory mitigation into the Management Alignment Alternative, and the only other alternative evaluated the no-action would retain the current version of the Utah ARMPA, which contains the net conservation gain standard and compensatory mitigation. Thus, the Draft EIS neither envisions nor evaluates eliminating entirely compensatory mitigation. Further, to the extent that BLM could rely on the range of alternatives originally evaluated for the 2015 Utah ARMPA (which it cannot, as discussed above), those alternatives are of no help. None of those alternatives disclaimed the authority to impose "compensatory mitigation" as a means of offsetting unavoidable impacts on sage-grouse. In fact, compensatory mitigation and the net conservation gain standard were incorporated into all alternatives: "If impacts from BLM management actions and authorized third-party actions that result in habitat loss and degradation remain after applying avoidance and minimization measures (i.e., residual impacts), then compensatory mitigation projects will be used to provide a net conservation gain to the species." Utah ARMPA, Appendix F. In conclusion, IM 2018-093 requires "substantial changes" to the Draft EIS's Management Alignment Alternative that are not evaluated in the Draft EIS or the 2015 Utah ARMPA. Accordingly, BLM must now prepare a supplemental EIS to evaluate the new prohibition on compensatory mitigation.

Development on existing leases should be managed under current regulations, which limit surface occupancy and disturbance. Years of research leave no doubt that sage-grouse do not do well in close proximity to energy development.

Improve plan monitoring and oversight, including providing training to field staff and the necessary incentives to ensure proper implementation. The plans should contain metrics by which conservation success can be measured. Conservation metrics will help in effective management of the habitat and reduce wasting personnel time and limited funds.

The plans contain many new provisions that serve as loopholes and exceptions to habitat protections. We need certainty that crucial habitat will be protected to ensure the species thrives into the future.

The State and BLM must meet prior to finalizing this EIS to identify the proper Mitigation Strategy moving forward, in-light of IM No. 2018-093. At a minimum, the State believes the BLM's action should be consistent with, and not oppose those, being implemented by the State. To ensure alignment, the BLM should state: the Mitigation Strategy will be consistent with the State's Compensatory Mitigation Rule and Conservation Plan. Working with the State to implement the proper mitigation strategy will ensure that sage-grouse habitat be managed in a manner to ensure the protection of ecological and environmental values, preservation and protection of certain public lands in their natural condition, and provision of food and habitat fòr wildlifè and ensure that BLM "manage the public lands under principles of multiple use and sustained yield". By adopting principles in the State's Compensatory Mitigation Program, the BLM will ensure management of public lands...so that they are utilized in the combinations

that will best meet the present and future needs of the American people. After developing the State Mitigation Strategy, the BLM and State should seek public comment on the Strategy prior to issuing a final EIS.

The Preferred Alternative in the Draft EIS proposes to eliminate the "net gain compensatory mitigation standard," which results in a net conservation gain to the species, because it does not align with the state's mitigation program. The Draft EIS did not carry forward the mitigation strategy from the 2015 ARMPA Appendix D. As a result, there are few details in the EIS about how mitigation would be implemented under the Proposed Action. For example, while the Draft EIS does state that projects must improve the condition of the greater sage-grouse habitat, it does not specify what is required under Utah's Compensatory Mitigation Rule and how it will apply to the RMPA. As a result, the Draft EIS does not assess whether the revised mitigation standard would result in a net conservation gain to the species. Mitigation is particularly important because the Proposed Action allows for development increases inside the former GHMA and allows for more exceptions to disturbance and density caps and NSO stipulations in the PHMA. The EPA recommends the Final EIS include the full revised compensatory mitigation strategy.

3.C. Compensatory Mitigation Compensatory mitigation requirements in PHMA habitat should be consistent with Secretarial Order 3360 "Rescinding Authorities Inconsistent with Secretary's Order 3349, 'American Energy Independence'". Any compensatory mitigation standard needs to be limited to PHMA, transparent, effective and statutorily-based. There is no rationale for applying a range-wide mitigation standard. The "net conservation gain" standard in the current plans are fundamentally inconsistent with the Secretary's Order and BLM's Congressional directives. Again, there is no "hard look" at what impact having no mitigation standard outside of priority habitat would actually have on the bird. It's all conjectural. Simplot previously commented that mitigation discussions need to consider a wide variety of opportunities including preservation (such as establishing conservation easements on private land), the establishment of mitigation banks, public-private partnerships, conservation plans, habitat restoration, noxious weed control, fence marking/removal, riparian restoration projects, prescribed fire (where appropriate), fuel breaks, green strips and payment in lieu.

The definition of mitigation in the RMPA/EIS supports the incorporation of a wide range of mitigation actions: "Mitigation. Includes specific means, measures or practices that could reduce, avoid, or eliminate adverse impacts. Mitigation can include avoiding the impact altogether by not taking a certain action or parts of an action, minimizing the impact by limiting the degree of magnitude of the action and its implementation, rectifying the impact by repairing, rehabilitation, or restoring the affected environment, reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action, and compensating for the impact by replacing or providing substitute resources or environments." However, the RMPA/EIS currently does not provide clarification regarding the "amount" of mitigation required on federal land for disturbance in PHMA. This creates a serious legal issue with FLPMA as the law does not require eliminating all residual impacts; whereas the net gain or even a no net loss policy at the project level would run afoul of the agency's multiple-use and unnecessary or undue degradation standards. For example, on page 2-32, under the Modified Mitigation Standard (MA-SSS-3A), which previously referenced "net conservation gain" the RMPA identifies "improving sagegrouse habitat" in regard to the Management Alignment Alternative: "In PHMA, when undertaking BLM management actions, and, consistent with valid existing rights and applicable law, when authorizing third-party actions that result in habitat loss and degradation, the BLM will require and ensure mitigation that

improves the condition of Greater Sage-Grouse habitat, including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, or compensating for impacts by applying beneficial mitigation actions. Exceptions to this standard may be made for vegetation treatments to benefit Utah prairie dog." There is no additional information provided as to the amount of improvement required or where the improvement should occur (project level, BSU, PHMA statewide). As currently stated, "improve" is an ambiguous term that needs additional clarification.

Additional language in the RMPA/EIS on page 2-33 states: "The BLM, in coordination with the State of Utah, will develop a Mitigation Strategy to guide the application of the mitigation approach and hierarchy. The Strategy should be based on the State-level Greater Sage-Grouse mitigation approach to the extent is it consistent with other agency regulations and policies." The State of Utah's Final Compensatory Mitigation Rule R634-4 (Rule) became effective on 4/1/18. In the Rule, the definition of actions required for compensatory mitigation are very narrow and are inconsistent with the range of mitigation actions identified in APPENDIX D MITIGATION STRATEGY: UTAH GREATER SAGE-GROUSE LUPA. The State of Utah rule incorporates the mitigation requirement of providing four acres of functional, protected habitat or corridors for every one acre of permanent disturbance in Sage-Grouse habitat. This approach does not incorporate methods to quantitatively assess habitat function/quality as an alternative mitigation option. As outlined in Simplot's comments to the State of Utah in regards to the Proposed Compensatory Mitigation Rule, a simple 4:1 ratio is arbitrary, has no proportionate nexus to the impact, and ignores functional tools developed by other states to provide a scientifically defensible approach towards mitigation. Moreover, for valid existing rights imposing this mitigation ratio may raise constitutional issues. Requiring the 4:1 ratio in all SGMA's including non-habitat, in many instances will result in a much higher mitigation ratio than 4:1. With the revocation of Secretarial Order 3330, BLM guidance addressing the standard for net conservation gain is no longer valid. There is no basis provided in the definition of mitigation at 40 CFR 1508.20 to include a "net conservation gain" or require an "improvement" in regards to mitigation. FLPMA does not authorize BLM to require compensatory mitigation that goes beyond the impacts that result from third party activities conducted on federal lands. This concern is further supported by the statement on page 2-5 of the RMPA/EIS: "In addition, the DOI and the BLM are evaluating whether the implementation of a compensatory mitigation standard on public lands is appropriate and consistent with applicable legal authorities". Simplot does not support the incorporation of an arbitrary 4:1 mitigation ratio on federal land. Simplot supports the development of a Habitat Quantification Tool (HQT) or equivalent that accounts for all habitat characteristics or attributes that influence SageGrouse habitat selection across multiple scales to produce a habitat unit, generally functional acre, to be used to calculate debits associated with disturbances or credits associated with conservation. Where mitigation is driven by compensating for habitat debits (one habitat debit is equal to one habitat credit), the HQT provides for a quantitative tool that is based on best available science, rather than relying on arbitrary mitigation ratios. In the absence of an HQT, Simplot supports the inclusion of "no net loss" language as long as it's limited to priority habitat similar to that in the proposed Idaho Management Alignment Alternative to be incorporated at the appropriate population management unit level in coordination with the State. As previously stated, the Uintah Population Management Area is well below the recommended 3% percent BSU scale disturbance cap and the incorporation of a "no net loss" standard and other restrictions currently being applied to PHMA would ensure that disturbance would remain low at the BSU.

There is currently no authority or guidance to require a "net conservation benefit" including "improvement" associated with mitigation under FLPMA or in BLM regulation. If compensatory mitigation is incorporated into the Final RMPA/EIS, the application of this tool needs to be statutorily-based and centered on actual on the ground threats to the species. The implementation of these standards needs to be clear and transparent to avoid the appearance that these standards are used to arbitrarily veto projects.

Do not strip the fundamental "net conservation gain" standard. No net loss of habitat merely prevents additional habitat loss and is not adequate for long-term recovery.

In the State, compensatory mitigation actions are measures that create, restore andlor protect functional habitat or habitat corridors to offset the impacts of unavoidable permanent disturbance to sage- grouse habitat. The State's program is voluntary in nature, unless required by regulatory agencies or action. In Utah, the State recommends that for everyone acre of functional sage-grouse habitat permanently disturbed by project proponents, four acres of functional habitats or corridors should be created, restored andlor preserved, as identified in the amended Utah Administrative Rule R634-3. Utah's compensatory mitigation ratio accounts for direct and indirect impacts that may result from permanent disturbance, differences in habitat quality and uncertainty related to mitigation success. This ratio reduces project costs by simplifying the analysis of these factors, while also ensuring effective conservation outcomes. The State and BLM must meet prior to finalizing this EIS to identify the proper Mitigation Strategy moving forward, in-light of IM No. 2018-093. At a minimum, the State believes the BLM's action should be consistent with, and not oppose those, being implemented by the State. To ensure alignment, the BLM should state: the Mitigation Strategy will be consistent with the State's Compensatory Mitigation Rule and Conservation Plan. Working with the State to implement the proper mitigation strategy will ensure that sage-grouse habitat be managed in a manner to ensure the protection of ecological and environmental values, preservation and protection of celiain public lands in their natural condition, and provision of food and habitat for wildlife and ensure that BLM "manage the public lands under principles of multiple use and sustained yield". By adopting principles in the State's Compensatory Mitigation Program, the BLM will ensure management of public lands so that they are utilized in the combinations that will best meet the present and future needs of the American people. After developing the State Mitigation Strategy, the BLM and State should seek public comment on the Strategy prior to issuing a final EIS.

2.4.16 Lek Buffers

LEK BUFFERS: ASSESS AND ADDRESS The DEIS attempts to clarify that lek buffers are not intended to preclude various uses and development, but rather, the buffers are the area where BLM will "assess and address" impacts to sage-grouse within those buffers. See MA -SSS-3H. Appendix B specifies that "[t]he [buffer] distances noted above are starting points, from which local information should be applied to determine if local variations in distances are necessary to address lek persistence." App. B at 1. Neither the body of the DEIS nor the Appendices define the actions it may take to "address" lek persistence or exactly how "lek persistence" will be measured.

The BLM should work with the State of Utah to analyze the potential of further refining buffers using a unit-by-unit or habit-by-habitat approach based on Utah science while recognizing that there is no single distance that may be the appropriate buffer for all populations and habitats across the GRSG range. A more criteria driven process for utilizing justifiable departures when a lek buffer is increased or

decreased that is developed in cooperation with the State is preferred by the Commenters. Finally, it may be helpful to review the management associated with the buffers by analyzing the question of whether or not buffers add anything in the presence of an allocation tied to the strict prescriptive requirements already required in PHMA.

2.4.17 Prioritization of Grazing Permits

Regardless of the proper action of removing the decisions from the Alternative, the BLM may want to provide a clearer written statement better explaining the purpose of removing the above references decisions from the Alternative to ensure the action is supported by the Purpose and Need Statement.

Changing Grazing Systems and Prioritization of Grazing Permits The BLM has aligned Objective SSS-4 and MA-VEG-I with addressing the threat of invasive annual grasslands to sage-grouse by adding the key term, invasive. This change will avoid misinterpretation by future land managers.49 Removing MA-LG-I is appreciated since the presence of sage-grouse should not and cannot be a determining factor into whether livestock grazing can occur in an area. 50 Removing MA-LG-2 and MA-LG-4 is also proper since the BLM should not arbitrarily base review of a permits and monitoring efforts based on whether or not a permit is found within a PHMA.51 Instead, priority should be based on other factors already laid out in BLM's land health and grazing regulations, policies and handbooks. The removal of MALG-5 is also proper since this is a guidance decision that does not and should not be included in a land use plan. The addition of the word "improper" when talking about livestock grazing is an important clarification in the Alternative. The 2015 Amendment falsely assumed and implied that proper livestock grazing could be a main reason for not achieving habitat objectives. The research in Utah, and throughout the west, has actually found that proper livestock grazing practices are key to helping develop and maintain successful habitat conditions. Fmther, the goal of the Alternative is not to punish livestock users, but to limit improper grazing practices that impact Land Health Standards. The addition of improper grazing, coupled with reminding the BLM to manage lands towards Land Health Standards, will ensure that permitees who practice proper livestock grazing techniques are not punished. Similarly, removal ofMA-LG-7, MA-LG-8, and MA-LG-9 are also planning and land health decisions that are already identified as practices in the BLM's land health standard and grazing policies, handbooks and decisions that do not belong in a land use plan. Removing MA-LG-12,14,15,17, and 18 from the Alternative is proper since, once again, the decisions are policy decisions already contained in other pOltions of the Alternative or other BLM policies, regulations, and handbooks. See 2-36,37. Whenever the NEP A is conducted for a vegetation treatment, range improvement project, or relinquishment of a permit, the BLM can, on a case-by-case basis, determine how to use a project or range improvement to conserve, enhance and restore habitats, especially when not all projects or range improvements will be located in occupied sage-grouse habitat.

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2.4.18 Water Developments for Livestock

Clarifying Management of Water Developments for Livestock The State believes the revisions to MA-LG-IO ensure the Alternative comports with State and Federal law. By removing the term, "new developments that divert surface water must be designed to maintain riparian or wet meadow vegetation and hydrology to meet Greater Sage-Grouse needs" the BLM is ensuring that management practices do not conflict with the beneficial use requirements of water in Utah.52 Further, he DEIS at page 2-37 appropriately addresses the removal of MA-LG-15 (aka "No similar action"), but omits to consider the removal of MA-LG-16, and only attempts to address MA-LG-I0, by modifying the wording to: In PHMA, limit authorization of new water developments to projects that have a neutral effect or are beneficial to Greater Sage-Grouse habitat (such as by shifting livestock use away from critical areas.)53 While this language is more appropriate than the No-Action Alternative, BLM should consider also removing MA-LG-16 and 10 in its entirety in the FEIS, and implement a proposed action in the ROD that adopts the recommendation. One of significant problems with the modified language in MA-LG-I0 is its use of the words "critical areas". Such words are not defined by the DEIS, and gives a potential of arbitrary application of such words to limit or eliminate any water development within a PHMA area. In the alternative, the FEIS should consider and the ROD should adopt the removal ofMA-LG-16, and further modify MA-LG-IO so as to say "In PHMA, allow authorization of new water developments that have a neutral effect or a beneficial effect to Greater Sage-Grouse habitat (such as by shifting livestock use away from critical areas, thereby limiting the intensity or duration of the scheduled livestock use around the critical area.)

The LUPAs fail to recognize that many range improvements are associated with water rights owned or held by the permittee. LUPA needs to identify that existing rights will not be impaired or taken. Issue #5, Recommendation 12: Range improvements should not be prohibited per se in any GRSG habitat.

Range improvements are a necessary range management tool. Issue 5: DEIS comments 8, 9, 10: The DEIS at page 2-37 appropriately addresses the removal of MA-LG-15 (aka "No similar action"), but omits to consider the removal of MA-LG-16, and only attempts to address, at page 2-26, MA-LG-10, by modifying the wording to: In PHMA, limit authorization of new water developments to projects that have a neutral effect or are beneficial to Greater Sage-Grouse habitat (such as by shifting livestock use away from critical areas.) While this language is more appropriate than the No-Action Alternative, BLM should consider also removing MA-LG-16 and 10 in its entirety in the FEIS, and implement a proposed action in the ROD that adopts the recommendation. One of significant problems with the modified language in MA-LG-10 is its use of the words "critical areas". Such words are not defined by the DEIS, and gives a potential of arbitrary application of such words to limit or eliminate any water development within a PHMA area. In the alternative, the FEIS should consider and the ROD should adopt the removal of MA-LG-16, and further modify MA-LG-10 so as to say "In PHMA, allow authorization of new water developments that have a neutral effect or a beneficial effect to Greater Sage-Grouse habitat (such as by shifting livestock use away from critical areas, thereby limiting the intensity or duration of the scheduled livestock use around the critical area.)"

Rangeland health standards only require that significant progress is being made to achieve an applicable standard, like PFC; not that the standard be met. See 43 C.F.R. 4180.2(c). It is critical that any guidance language include "or, making significant progress towards" not just meeting PFC, as Section 4180.2(c) already requires. In addition, many "riparian areas" cannot make significant progress or cannot meet PFC with just grazing management, but require some artificial or mechanical means to restore an existing condition to allow the area any potential to achieve PFC. In addition, many other "riparian areas" cannot make significant progress or cannot meet PFC because they are subject, among other things: (1) to upstream activity beyond the management and control of the permittee and BLM; (2) to adjacent activity beyond the management or control of the permittee and/or BLM, like roads, recreational use, ATV use, etc.; (3) to livestock watering gaps or access points; (4) to normal or excess wild horse and burro use; or (5) to ditches and reservoirs authorized under pre-FLPMA Grants or FLPMA Rights-of-Way, wherein the purpose of the area is diverted for other, perhaps higher purposes, including, for example, municipal water supplies. The per se requirement to meet PFC is unwarranted and in many cases irrational.

BLM should consider also removing MA-LG-16 and 10 in its entirety in the FEIS, and implement a proposed action in the ROD that adopts the recommendation. One of significant problems with the modified language in MA-LG-IO is its use of the words "critical areas". Such words are not defined by the DEIS, and gives a potential of arbitrary application of such words to limit or eliminate any water development within a PI-IMA area. In the alternative, the FEIS should consider and the ROD should adopt the removal of MA-LG-16, and further modify MA-LG-IO so as to say "In PHMA, allow authorization of new water developments that have a neutral effect or a beneficial effect to Greater Sage-Grouse habitat (such as by shifting livestock use away from critical areas, thereby limiting the intensity or duration of the scheduled livestock use around the critical area.)

2.4.19 Role of the States in Travel and Transportation Management

Roads and Travel Management Clarifying the Role of the State of Utah and Counties with Respect to Travel Management Planning is greatly appreciated. 2-25. Though the BLM has clarified that it will coordinate with the State with regards to travel management, the State wants to ensure that State's and the counties' rights-of-ways, acquired through R.S. 2477 public use or other means, are preserved and remain open for public use regardless of any travel management decision unless the State or an

individual county determines that a right-of-way should closed or the use on such a right-of-way be modified. Please include language expressly preserving the State's and each counties' ability to manage and maintain roads in open within PHMA since the State and counties within the State own certain right-of-ways arising out of years of public use and/or maintenance.

2.4.20 Range of Alternatives

Page 2 1 Alternatives. Garfield County finds no alternative that is completely consistent with Garfield County's Resource Management Plan and Sage grouse Conservation and Recovery Plan. Item 2b in the 40 Most Asked Questions Regarding NEPA requires that BLM analyze state and local plans even if they are inconsistent with federal law. We believe BLM has opportunities to comply with the County's Sage grouse Conservation and Recovery Plan during site-specific analysis and demand that BLM do so unless they modify this plan to include such analysis. Page 2 2 Bullet Five. Garfield County asserts that alternative B is not wholly consistent with alternatives provided by the State of Utah or the Governor's Office. Evidence of the inconsistency is the fact that the State of Utah filed the lawsuit indicating BLM failed to fully consider their alternative. We suggest the first phrase say "Alternative E was similar to alternatives provided by the State of Utah."

Page 2 41 Section 2.6 Preferred Alternative Garfield County recognizes BLM's role in developing the preferred alternative. However, BLM has not developed any alternative that is consistent with Garfield County's Sage grouse Conservation and Recovery Plan, as required by law. Furthermore BLM has failed to adequately identify analyze and disclose inconsistencies and their efforts to resolve them. If, through the implementation phase, BLM's site-specific analysis will identify, analyze and disclose inconsistencies and will bring BLM's plan program and policy into consistency to the maximum extent allowed by law with County plans, Garfield County does not object. However absent such inconsistencies are identified, analyzed and disclosed in this generalized plan, Garfield County asserts BLM has failed to analyze reasonable alternatives, failed to comply with FLPMA, failed to comply with CEQ regulations, and has created an indefensible document. We object. Page 2 41 Section 2.6 Preferred Alternative Garfield County recognizes the mix and match concept and assumes the final product will be mixed and matched. There is nothing requiring BLM to select one entire alternative or the other, so it would make sense to identify the individual preferred elements from each of the alternatives that likely will be carried forward in the final decision. We strongly recommend and request that BLM evaluate each row of the alternative table and through shading, symbols or other reasonable method disclose the individual feature BLM prefers. We recognize this is somewhat innovative, but it will give the public and the cooperating agencies a much more realistic view of what the probable final decision will look like.

Currently the DEIS has only two alternatives, a "No Action" alternative and the "Management Alignment Alternative." BLM should put forward a third alternative to respond to public scoping and DEIS comments. The Tenth Circuit has considered a situation identical to the path currently adopted by BLM in New Mexico ex rel. Richardson v. Bureau of Land Mgmt., 565 F.3d 683, 709 (10th Cir. 2009). In that case, the BLM only considered two alternatives because a third more protective alternative did not meet the objective of the project. The Tenth Circuit held that the range of alternatives was unreasonable and set aside the BLM decision. To avoid the entire amendments being set aside, BLM needs to craft a reasonable third alternative, and allow the public to comment on the FEIS with the third alternative before signing the Record of Decision. The Coalition's scoping comments, incorporated by reference here, identify several possible changes to the Management Alignment Alternative that would fit the purpose and need of the 2018 Amendment and would also improve the analysis. For example, any

prescription or limitation that is sourced in the NTT Report or the COT Report should be reconsidered due to the extensive scientific controversy regarding conclusions made in those reports and the methodological flaws within. Noise limitations and universal lek buffers are other examples where the standards adopted overshoot the data and published research. VII. THE FORCED TIMELINE HINDERS DOCUMENTATION THAT BLM IS TAKING A HARD LOOK AT IMPACTS The basic purpose of NEPA is to force a hard look at the impacts of the alternatives considered. Manygoats v. Kleppe, 558 F.2d 556, 560 (10th Cir. 1977) ("The thrust of NEPA is that all pertinent environmental data be gathered in one place, i. e., the "statement", there constituting a discussion of all relative environmental impacts of a proposed course or alternative courses of action which reflects that the agency has given all pertinent environmental matters a "hard look" and has made a "good faith, objective, and reasonable presentation of the subject areas mandated by NEPA . ."). Truncating the amount of time the agency dedicates to the analytical component of the NEPA process, therefore, prevents a hard look and risks remand upon judicial review. The Coalition was given a single opportunity to review the administrative draft without any review of the final Administrative Draft EIS. Coalition members were not invited to participate as cooperating agency members at any time, and as of the date of this comment, the Coalition has no signed MOU with the BLM regarding this amendment. The clear reason for the failure to cooperate with the Coalition is the expedited timeline. The litigation currently pending in the Idaho and Montana federal courts to prevent land uses in PHMAs give BLM fair warning that all aspects of the FEIS must be defensive and durable. VIII. ADJUSTING PHMA AREAS AND DOCUMENTING REMOVAL OF SFAS Pursuant to FLPMA, the BLM must "develop, maintain, and when appropriate, revise land use plans" to ensure that land management be conducted "on the basis of multiple use and sustained yield." 43 U.S.C. §§ 1701(a)(7), 1712(a); see also Klamath Siskiyou Wildlands Center v. Boody, 468

BLM SHOULD CONSIDER A THIRD ALTERNATIVE In addition to the proposed agency action, every EIS must "[r]igorously explore and objectively evaluate all reasonable alternatives" to that action. 40 C.F.R. § 1502.14(a). "The existence of reasonable but unexamined alternatives renders an EIS inadequate." Friends of Southeast's Future v. Morrison, 153 F.3d 1059, 1065 (9th Cir.1998). The "heart of the environmental impact statement" are the alternatives proposed. 40 C.F.R. § 1502.14; Or. Natural Desert Ass'n v. Bureau of Land Mgmt., 531 F.3d 1114, 1121 (9th Cir.2008).

This can be accomplished through incorporating the standards in the conservation checklist which has been attached for your convenience into each of the draft resource management plans. We request that the Bureau withdraw and then revise the draft RMPA/EIS for Utah to include this conservation alternative, not just a No-Action Alternative or a Preferred Management Alignment Alternative.

American Bird Conservancy believes the Bureau's Utah plan would weaken existing protection and fail to address foreseeable impacts of mineral extraction. The plan leaves Greater Sage-Grouse at greater risk of becoming endangered, and the Bureau's inclusion of a conservation alternative urgently needed if grouse are to be conserved. We urge the Bureau to withdraw the draft RMPA/EIS to include a conservation alternative to reduce habitat loss and population declines of the Greater Sage-Grouse in Utah.

The Range of Alternatives is Insufficient The Draft EISs only consider one alternative, the "Management Alignment Alternative" and refer to the 2015 Sage-grouse Plans as the "No Action Alternative." This does not meet BLM's obligations under NEPA.

By only meaningfully considering one alternative and not considering alternatives that would be more environmentally protective, BLM has failed to consider a reasonable range of alternatives.

Therefore, if the purpose and need of the 2018 Draft EIS for the Greater Sage-Grouse changes from the purpose and need for the 2015 EIS, then the range of alternatives must necessarily change as well. Even the 2018 Draft EIS recognizes that "[t]he BLM's purpose and need for this planning action helps define the scope of proposed alternative actions . Utah DEIS at ES-2.

Because the 2018 Draft EIS states a different purpose and need compared to the 2015 EIS, BLM, pursuant to Lockyer, must necessarily consider a new range of alternatives to meet that new purpose and need. Under Lockyer, BLM in 2018 cannot tier to alternatives considered for the different purpose and need of the 2015 EIS.

The purpose and need of the 2018 Draft EIS, pursuant to Secretarial Order 3353, is to contribute to economic growth and energy independence, or, in other words, increase development opportunities on public lands. Therefore, BLM cannot base the pro-development alternatives in its 2018 Draft EISs upon the 2015 alternatives that had a purpose and need focused on conservation and avoidance of an ESA listing, not energy independence and economic growth. Because the "range of reasonable alternatives is measured against the 'Purpose and Need' section," Lockyer at 905, the range of alternatives in the 2018 Draft EIS fail to account for the dramatic change in purpose and need compared to the 2015 EIS, which is a violation of NEPA. 40 CFR §1502.13.

By proposing the "Management Alignment Alternative" as the only option to the status quo, BLM has failed to "consider a range of alternatives that covers the full spectrum of possibilities."

BLM must evaluate additional management alternatives. BLM must consider additional alternatives, including alternatives that are more environmentally protective than the Management Alignment Alternative. The purpose and need of the 2015 Sage-grouse Plans is to "conserve, enhance, and restore GRSG habitat by eliminating or minimizing threats to their habitat" (Rocky Mountain Record of Decision, p. 1-21), while the 2018 amendments are based on a purpose to "enhance cooperation with the states." BLM should consider an alternative that is explicitly focused on enhancing cooperation with the states while conserving, enhancing and restoring sage-grouse habitat. For instance, the projection of on-the-ground activities set out in Table ES-1 of the 2018 EISs shows a reduction in restoration efforts, but a more conservation-oriented alternative would consider increasing these projects. Similarly, this alternative would evaluate how to enhance cooperation with the states while retaining more of the core protections and management approaches that made the previous plans the basis for the FWS determination that listing was no longer warranted under the ESA. This alternative would be more environmentally protective and provide more certainty. We have developed a proposed alternative that would accomplish these goals which is included here as Exhibit 1. We ask that the BLM fully consider this alternative and that it be included as an alternative in either the final EIS for this project or in a supplemental EIS. BLM should also have considered alternatives to complete additional analysis of key protective provisions that it is proposing to eliminate through the DEISs: net conservation gain and SFAs. The DEISs state: The public did not have the opportunity to comment specifically on a net conservation gain approach to compensatory mitigation during the 2015 land use planning process. In addition, the DOI and the BLM are evaluating whether the implementation of compensatory mitigation standard on public lands is appropriate and consistent with applicable legal authorities. We request public comment about how the BLM should consider and implement mitigation with respect to the

Greater Sage-Grouse, including alternative approaches to requiring compensatory mitigation in BLM land use plans. See, e.g. Utah DEIS at ES-8. The Management Alignment Alternative in the DEISs for Utah and Wyoming proposes to remove this standard. Utah DEIS at ES-8; Wyoming DEIS at ES-6. Rather than seeking comments only on eliminating this approach, BLM should evaluate an alternative that would retain the approach, while leaving the agency flexibility to determine applicable standards by working with the states. The DEISs also propose eliminating SFAs in Utah, Wyoming, Nevada and Idaho. Utah DEIS at 2-6; Wyoming DEIS at ES-6; Nevada DEIS at 1-8; Idaho DEIS at 2-7. BLM's scoping notice stated that the agency "seeks comments on the SFA designation" in response to the decision in Western Exploration, LLC v. U.S. Dep't of the Interior, 250 F. Supp. 3d 718 (D. Nev. 2017), which found BLM must conduct supplemental NEPA analysis in order to support the designation. 82 Fed. Reg. 47248, 47249 (Oct. 11, 2017). BLM should evaluate the impacts of the SFAs without the previously-proposed mineral withdrawal, which has now been withdrawn, in light of how those designations and the important protective measures they provide (in addition to the withdrawal protections) benefit sage-grouse habitat and how application can be better coordinated with the states. 4. An agency can only tier to an EIS of larger scope; BLM cannot tier its analysis of alternatives in the 2018 Draft EISs to the 2015 EISs since the 2018 Draft EISs are based on a different purpose and need and have a similarly broad scope. Instead of analyzing a full range of alternatives or the impact of its proposed Management Alignment Alternative, BLM seeks to rely on analysis from the 2015 Sage-grouse Plans. The 2018 Draft EISs state that: . issues were analyzed under most resource topics in the 2015 Final EIS, and these types of impacts on these resources are described in the range of alternatives in the 2015 Final EIS. The impacts of implementing the alternatives in this RMPA/EIS are within the range of alternatives previously analyzed. See, e.g. Nevada DEIS at 1-11. The Nevada Draft EIS further states that it "is tiered to the [2015 EIS] … and incorporates by reference all of the descriptions of the affected environment and impacts analyzed in the [2015 EIS]. … Incorporation by reference and tiering provide opportunities to reduce paperwork and redundant analysis in the NEPA process." Nevada DEIS, p. 1-2. While not mentioning tiering explicitly, the Utah DEIS is clearly based on the same rationale, relying to a large degree on the analysis in the 2015 Utah sage-grouse plan. See, e.g., Utah DEIS at 1-6, 2-3, and 4-12. However, an agency may tier a new EIS only to an existing EIS of larger scope. The 2018 Draft EIS for amending the 2015-Sage-grouse Plan as it applies to Utah would affect the same scope as the 2015 EIS. "Tiering is appropriate when the sequence of statements or analysis is: (a) From a program, plan, or policy environmental impact statement to a program, plan, or policy statement or analysis of lesser scope or to a site-specific statement or analysis." 40 CFR §1508.28. Because the 2018 Draft EISs are not of "lesser scope" than the 2015 EISs, NEPA prohibits the BLM from "tiering" to the 2015 EISs. See, 40 CFR §§ 1508.28, 46.140(c). Further, under the Department of the Interior's NEPA regulations, "[a] NEPA document that tiers to another broader NEPA document in accordance with 40 CFR 1508.28 must include a finding that the conditions and environmental effects described in the broader NEPA document are still valid or address any exceptions." 40 C.F.R. § 46.140. The Draft EISs have not made a thorough finding in this regard and cannot justify relying on previous analysis of alternatives. 5. An agency may incorporate documents by reference, but those documents must still be appropriate for the current use and context; BLM cannot incorporate by reference analysis of alternatives from the 2015 sage-grouse plans into these EISs. In addition to indicating that it is tiering to the previous analysis of alternatives, BLM also states it is incorporating the analysis of alternatives in the 2015 plan by reference. In the Utah DEIS approximately forty references are made to documents incorporated by reference. However, in order to incorporate documents by reference, BLM "must determine that the analysis and assumptions used in the referenced document are appropriate for the analysis at hand." 43 C.F.R. § 46.135(a). As discussed above, the analysis of alternatives in the 2015 plans did not relate to the purpose

and need of these amendments and it is not appropriate to reference in this context. Further, as prescribed by the Council on Environmental Quality, "[a]gencies shall incorporate material into an environmental impact statement by reference when the effect will be to cut down on bulk without impeding agency and public review of the action. The incorporated material shall be cited in the statement and its content briefly described." 40 C.F.R. § 1502.21. BLM has not met these requirements either. Simply stating that the previous analysis of alternatives are incorporated by reference does not explain why the analysis is sufficient, what was analyzed, how it pertains to the focus of these amendments, or why it obviates the need for analysis of alternatives in these EISs. Moreover, failing to analyze alternatives in these EISs is not providing the public with a sufficient opportunity to review and evaluate the proposed course of action. BLM has attempted to rely on both authority to tier and authority to incorporate documents by reference without clarification and without actually meeting the applicable standards. BLM cannot simply look to the 2015 plans to avoid completing necessary NEPA analysis. The agency must analyze a reasonable range of alternatives in this NEPA process that addresses the new purpose and need.

Instead of amending the plans by weakening protections, BLM should focus on engaging communities in the decisions necessary to implement the plans as they are. Give the plans a chance to work.

2.4.21 Assumptions and Methodology

Chapter 4 Environmental Consequences We appreciate BLM's efforts to accurately describe environmental consequences. However the nature of landscape scale/statewide analysis creates numerous discrepancies with actual, site-specific impacts. Garfield County asserts many of the assumptions and conclusions drawn in this chapter are inaccurate for lands located in Garfield County. Provisions must be made to a) correct the inaccuracies or b) implement procedures for site-specific analysis that may accurately analyze impacts for proposed projects in the future. Given the desired timeframe, data requirements and difficulties in correcting existing analysis, the only reasonable option appears to be strict consistency, cooperation and coordination with Garfield County's plans as part of the implementation process.

GRAPHIC IN ATTACHMENT: Figure 1 growth in number of leks counted in Utah The total number of male sage grouse counted has also increased during this time. UDWR has identified 429 leks of which 328 are occupied. UDWR has increased the number of leks counted over time from 47 in 1967 to 361 leks in 2012. Figure 2 UDWR's data shows the total number of male grouse counted over time. A regression analysis of the total number of males counted would show a slope that is going up, increasing each year. Table 3.2 in the 2018 draft plan presents the slopes from regression analysis for twelve population areas and for most population areas, the regression slopes are positive. This implies incorrectly, that sage grouse populations are increasing in ten regions in Utah.

GRAPHIC IN ATTACHMENT: Figure 2 total males counted at leks in Utah BLM does not follow their own guidance when applying a regression analysis presented in Table 3.2. BLM should redo this analysis and not count recently discovered leks as part of a population estimate. The appendix for adaptive management calls for BLM to only use data from leks where data has been continuously collected for 20 years. Instead, it appears that BLM in partnership with the state has added additional leks as they are discovered thus bumping up the the total males sage grouse counted over time. We performed a regression analysis on the lek data that UDWR provides. One example demonstrates what we found. If you perform a regression analysis on the last 20 years of data for Rich-Morgan-Summit Counties for

males/lek, the slope is downward. If you conduct a regression analysis for the same 20 years for the same counties counting the total males, the slope is up. The males/lek data show that the populations for most sites in Utah are in decline. BLM incorrectly based its analysis on methods that misrepresent sage grouse populations and, thus, BLM failed to identify problems and take needed action. One of the key products from a linear regression analysis is the calculation of the coefficient of determination (R2) This coefficient ranges from 0 to 1 and is used to see if regression analysis is a strong predictor from the data. An R2 of 0 means that a prediction can't be made and an R2 of 1 means that prediction can be made without error. For the example in the linear regression analysis for Rich-Morgan Summit Counties, the total males had a R2 of 0.02 and the regression analysis for males/lek had an R2 of 0.08 over a twenty year period of the data. Such low R2 numbers indicate that only 2% of the variance of the total males and 8% of variance the males/lek can be predicted. This low R2 occurs because these data are not linear and can not be predicted accurately using linear regression analysis. The sage grouse population numbers follow roughly a ten year cycle of peaks and valleys. For this reason for sage grouse population data linear regression analysis is inappropriate. Recently, Utah experienced a peak in population where males per lek number rose in 2013, 2014, 2015 and 2016. Then in 2017 these numbers experienced a 19% decline on average statewide. The long term population trend which is down has shown peaks and valleys over time that are generally lower in each cycle. The most recent peak at 21 males/lek was much lower than the earlier peak of 28 males per lek. We ask that the DEIS be corrected adding this analysis and grazphs to the final EIS.

The data quality, methodology, and credibility issues of the NTT and COT Reports and the Monograph have been well documented and discussed by this point. See Attach 1, Data Quality Act Petitions 2 by Garfield County, et al. on NTT; Attach. 2, Garfield County, et al. Petition on COT;

Attach. 3, Western Energy Alliance Data Quality Act Petition on Monograph;3 Attach. 3a, Center for Environmental Science, Accuracy and Reliability, Science or Advocacy? Ecology and Conservation of Greater Sage-Grouse: A Landscape Species and Its Habitats: An analysis of the four most influential chapters of the monograph (Feb. 1, 2012) ("CESAR"); Attach. 3b, Wildlife Science International Inc., A Comprehensive Review of Greater Sage Grouse Ecology and Conservation of Landscape Species and Its Habitat and Additional Papers of Relevance, (Feb. 12, 2012) ("WSI"); Attach. 4, M. Maxwell, BLM's NTT Report: Is It the Best Available Science or a Tool to Support a Pre-determined Outcome? (May 20, 2013) ("Maxwell"); Attach. 5, Ramey, et al., A Report on National Greater Sage-Grouse Conservation Measures Produced by the BLM SageGrouse National Technical Team (Sept. 19, 2013) ("Ramey, et al."). The 2015 Plan was based on data with serious methodological flaws, is not the best available science, does not support the BLM's decisions and is arbitrary and capricious. These Garfield County and WEA petitions identified in excruciating detail data quality issues and created genuine scientific controversies regarding the status of the sage-grouse, its habitat needs, the impacts of public land uses on the sage-grouse and its habitat, size of lek buffers and disturbance caps, predation, hunting, impacts of energy development on sage grouse, noise, to name only a few issues. The 2015 Plan and the 2018 DEIS fail to address the scientific controversies. The 2015 responses that generally disagreed were a per se violation of NEPA. Middle Rio Grande Cons. Dist., 294 F.3d at 1230.

NTT, COT and Monograph Flaws Start With Bias and Poor Statistical Analysis After the USFWS determined that the sage-grouse was warranted but precluded from being listed under the ESA, the BLM chartered the Sage-Grouse National Technical Team (NTT) in order to "develop new or revised regulatory mechanisms, through Resource Management Plans (RMPs), to conserve and restore the

GRSG and its habitat on BLM administered lands on a range-wide basis over the long term." NTT Report at 4. The BLM preferred alternative in the 2015 Wyoming Plan was based largely on the NTT Report, other than the changes for net conservation gain, mandatory vegetation objectives, and the sagebrush focal areas (SFAs), which were added after the close of the public comment period. As explained in the 2014 Comments on the DEIS, the 2015 Protests, and the 2015 DQA Petitions, BLM's unquestioning adoption of the NTT, COT, and the Monograph failed to address the significant data quality and technical errors, omissions, actual and potential conflicts of interest, and most importantly, incorrect conclusions regarding sage-grouse status and habitat management.

Monitoring schedules should be set and prioritized by the local office level on an annual or periodic bases based upon staff-levels and budgets. Local offices should not over-obligate their staff with monitoring requirements, but instead provide a framework to ensure all areas are receiving adequate staff time to manage the resource.

Page 4-3: Section 4.3. General Method for Analyzing Impacts. The document states that the Intensity of impacts is to be described using quantitative data where possible and that descriptions such as major, moderate or minor impacts will be avoided. However, there are a number of instances in the Environmental Consequences Chapter where the terms minor, little, low and minimal are used extensively to characterize impacts when it appears that data could be used to quantify the anticipated impact (see, for example, each paragraph on Page 4-26). It appears that acreage data could be used in many of these instances to justify that minor impacts are anticipated.

1.1.1 Assumption One: Sufficient funding and personnel would be available for implementing the final decision. Table ES-1 in the Executive Summary shows a significant decline in all planned habitat restoration and protection activities for FY 18, including conifer removal and invasive species removal. Invasive species removal is already falling far behind the pace needed to adequately restore sagebrush habitat, as shown in a recent Western Association of Fish and Wildlife Agencies Gap Analysis finding that most invasive weed management programs are addressing less than 10% of the average infested acres, while the annual rate of spread of invasive plants, can range from 15-35%. That document states, "[This] [l]ack of effort is due almost entirely to lack of capacity, not expertise."2

1.1.2 Assumption Two: Implementation-level actions necessary to execute the LUP-level decisions in this RMPA/EIS would be subject to further environmental review, including that under NEPA. It is not certain that implementation level actions necessary to execute the LUP-level decisions in the Utah DEIS would be subject to further environmental review. The following Instruction Memorandum (IM) detail guidance for BLM to scale back environmental reviews: IM 2018-034,5 recent guidance issued by BLM governing oil and gas leasing, emphasizes using Determinations of National Environmental Policy Act (NEPA) adequacy instead of NEPA analysis. Permanent IM 2018-014 directs BLM field staff to streamline NEPA reviews of applications for permits to drill federally owned minerals from non-federal surfaces. IM 2018-061 instructs BLM staff members to ensure they are using several tools to make the NEPA process more efficient, including categorical exclusions for certain types of oil and gas development. The following pending legislation could further reduce environmental review required: Pending legislation, H.R. 6106, introduced by Representative Pearce (R NM), would require use of categorical exclusions from NEPA for many oil and gas drilling activities. Pending legislation, H.R. 6088, introduced by Representative Curtis (R-UT), would allow oil and gas companies to obtain authorization to drill in some circumstances without NEPA analysis. Pending legislation, S.1417, introduced by Sen. Hatch (R-

UT) and Sen Heinrich (D-NM), would create categorical exclusions for a wide variety of sage-grouse management activities, such as the use of herbicides and pesticides, mechanical piling and burning, chaining, and broadcast burning. Finally, there has been a large increase in the use of categorical exclusions from NEPA analysis for oil and gas development. For example, in Wyoming, particularly in the Continental Divide-Creston Project Area, categorical exclusions were allowed by section 390 of the Energy Policy Act of 2005 (42 U.S.C. § 15942) are being employed.

1.1.3 Assumption Three: Direct and indirect impacts of implementing the RMPA/EIS would primarily occur on public lands administered by the BLM in the planning area. The Utah DEIS loosens restrictions on oil and gas development on BLM lands in a variety of ways, such as decreasing buffers, removing or modifying disturbance and density caps, opening new areas to development, and eliminating general habitat in Utah. While BLM assumes that impacts would primarily occur on public land, recent scientific research indicates the likelihood of impacts to adjoining private or public lands owned by agencies other than BLM. This study found that the probability of lek collapse was positively related to the density of oil and gas wells located outside of core areas at two distances within 1.6 km and within 4.8 km of the core area boundary.6 These proposed changes would impact future collaborative processes, as expressed by Governor Matt Mead (R-WY), "If we go down a different road now with the sage grouse, what it says is, when you try to address other endangered species problems in this country, don't have a collaborative process, don't work together, because it's going to be changed . To me, that would be a very unfortunate circumstance."7

1.1.4 Assumption Four: The BLM would carry out appropriate maintenance for the functional capability of all developments. As noted in Assumption One, BLM does not have the capacity to carry out appropriate maintenance, and potential budget cuts foretell even greater deficiencies in the future. Moreover, the mere fact that treatment has occurred does not necessarily indicate that the habitat has successfully been restored, rendering Table ES-1 less relevant. As the 2018 U.S. Geological Society (USGS) Synthesis of recent scientific research states, "Restoring sagebrush communities can be difficult, costly and slow." In Desert Survivors v. U.S. Dept. of the Interior,9 in ruling that the FWS erred in failing to list the bi-state GRSG population under ESA, the court held, "the service must offer some rational basis for its conclusions that future conservation efforts will be effective enough to improve the status of the bi-state (grouse) and therefore warrant withdrawal of the proposed listing."10 Assumptions must have a basis in fact.

In Chapter 4, the Utah DEIS acknowledges that a large amount of important data is not available, including comprehensive planning area-wide inventory of wildlife and special status species occurrence and condition and GIS data used for disturbance calculation on private lands. Indeed, the DEIS acknowledges that some impacts of the proposed changes could not be quantified.11 CEQ regulations further require, where data is unavailable a summary of existing scientific evidence relevant to evaluating reasonably foreseeable significant adverse impacts and the agency's evaluation of such impacts.12 The Utah DEISs fail to provide either of these types of information. In addition to not including the results of the Western Association of Fish and Wildlife Agencies (WAFWA) Gap Analysis, the Utah DEIS also does not consider a study published in PLoS ONE by Kitzberger et al. (PLoS ONE study) finding that many parts of the West can expect to see more than five times the area burned during the next 20 years than fires covered in the past 20 years,13 as well as new research on the impact of climate change on sagebrush habitat.14 Lastly, there can also be a 1- to 4-year time lag between development and lek decline.15

Improving the Effects Analysis The Proposed Action includes components drawn from alternatives analyzed in 2015. The Draft EIS does not include a stand-alone effects analysis for the Proposed Action's combined components and instead relies primarily on the effects analysis in the 2015 EIS. Importantly, the 2015 EIS assessed the impacts of the overall management strategy (i.e. the combination of components) for each Action Alternative and did not independently assess the environmental effects of each component of the alternatives. For the Final EIS, we recommend that BLM consider the combined components in the Proposed Action (including recent modifications to compensatory mitigation policy3) to assess its overall impacts to greater sagegrouse populations and trends.

2.4.22 Sage-Grouse

Reduce manageable impacts in sage-grouse habitat. Some threats to sage-grouse are difficult to manage, such as wildfire and invasive species. The federal conservation strategy should compensate for those impacts by emphasizing management of land uses that we can control, such as improperly managed livestock grazing, which contributes to unnatural fire and the spread of invasive species.

Restore degraded sage-grouse habitat. Sage-grouse have already lost nearly half their range to agriculture and development. If there is to be any hope for the different state and federal plans to work together, this loss of habitat must cease. The federal sage-grouse conservation strategy should be updated to support active restoration of areas that can still be used by sage-grouse and other wildlife.

Sage-grouse population trends: The EIS correctly notes that population trends both locally and at a state level are one of the most important indicators of the heath of this species and one of the best indicators of the success or failure of management actions. BLM has adopted the state's use of lek data making management decisions based on the slope of 20 years of male lek counts. Connelly et al. (2004) and Garton et al. (2011) recommend normalizing the data. Neither of the two studies recommend management be based on slope from regression analysis of lek data. Connelly et al. (2003) recommend using a population index that assess the rate of change from one year to the next year. With one exception, BLM has chosen not to follow this advice.

Appendix B of the 2003 land use plan stated, "twenty years was chosen as the appropriate time period to identify trend leks". There is no supporting scientify justification nor peer reviewed journal articles to support this decision. It is an unsupported agency opinion. By averaging data over 20 years, the importance of changes that occur within one year, such as a signicant decline in the recent year, are marginalizied and the importance of such change downplayed. This averaging method misleads leaders, the public, and the media. Instead of normalizing the data and basing population trends on the average number of males per lek, BLM has chosen to use the total number of males counted at leks as a measure of population. Utah, as have many other states, has chosen to count more leks each year. Based on UDWR data, the graph of the growth of the number of leks counted is displayed in Figure 1. This shows roughly a 400% growth in the number of leks counted during the past twenty years.

Sagebrush Characteristics for sage grouse: This draft plan recommends habitat objectives that allow degraded habitat to now meet objectives. A scientific study now being considered for publishing is cited by BLM to guide BLM's recommendations. The standard adopted from Connelly et al. (2000) is based on sagebrush ecological sites that are near of close to their ecological potential. Based on newsletter articles from the University of Utah's agricultural extension service, BLM's new standards are likely based on recent surveys of habitat conditions typical of what is now found in most of the degraded

sagebrush lands in Utah. While most sagebrush habitat has sagebrush that show canopy cover height required, this is not true for the expected perennial native grasses and forbs. Grass and forbs canopy cover is more sparse and lower in height today in most areas than what would be expected for that same ecological site at potential. Table 3 is reprinted here from Connelly et al. (2000), the adopted standard that BLM used west wide. BLM and the state argue that the characteristics in Table 3 are not appropriate for conditions now found in Utah. If sage grouse populations were increasing and at potential, then that argument might have merit. But where sage grouse populations continue to decline, conditions that are less than the standard are likely to be one of the reasons for that decline in population.

necessarily need to look to lesser or completely undisturbed areas. Even if an extremely small portion of one examination area is disturbed, Management Actions 126 and 127 force operators to find undeveloped surfaces to gain the full benefit of the five percent threshold. Thus, the 2015 Plan contradicts the stated objectives.

Conserve all of the most important sage-grouse habitat. For example, winter habitat is particularly important to sage-grouse, mule deer and other wildlife, but the current federal plans fail to protect those areas from harmful land use and development.

BLM acknowledges the changes in Utah could "could result in a site-specific loss of Sage-grouse habitat and displacement from the area of development by local populations."94 It also states that, "Projects that would likely be precluded under the No Action Alternative could proceed under the "2018 proposed amendments."95 It reasons, however, that requiring that impacts improve habitat will offset those concerns. This is problematic because it will presumably be accomplished through compensatory mitigation and is unclear how a project itself would improve habitat. The draft Utah mitigation rule, however, does not provide a preference for offset benefits to accrue within the landscape affected by the project; prioritize projects that provide the greatest benefits, and reduce the greatest threats, to sage-grouse habitat; do not require mitigation for all impacts; does not guarantee against temporal losses; does not use a habitat quantification tool to measure comparability between impacts and offsets.96

Protect sagebrush reserves. It is important, particularly in light of climate change, that land managers set aside areas both where sage-grouse are now and where they will need to go in the future; the current conservation plans fail to provide that direction.

Protect sagebrush reserves. It is important, particularly in light of climate change, that land managers set aside areas both where sage-grouse are now and where they will need to go in the future; the current conservation plans fail to provide that direction.

2.4.23 Non-Sage-Grouse

Section 4.6.3. Impacts on Soil Resources. In the fifth line of this section, there is mention of increased disturbance and compaction of soils associated with a return to cross country motorized vehicle use. Knowing that much of the affected area is in the Little Sahara sand dunes, much of the soil resources are actually sand, which is not subject to compaction and any disturbance is quickly erased by winds. As such, the impacts on soil resources may be overstated.

2.4.24 Livestock Grazing

Out of the 1,319 allotments that BLM manages in Utah, 478 active BLM allotments include sage grouse habitat. Of those in 2012, BLM has determined 78 of these allotments do not meet Rangeland Health Standards (See Figure 1 in the attached comments). 98 of active BLM allotments with sage grouse have not been assessed to determine if they meet these standards. In Utah BLM allotments with sage grouse habitat, BLM has renewed the grazing permit for 756 allotments in Utah (57%) without any management changes, under the 2000 Congressional Appropriations Rider (see Figure 2 in the attached comments). This was not added to the final 2015 plan. We ask that BLM update this data showing how many allotments now don't meet Rangeland Health Standards. For those allotments that fail to meet standards and are making progress towards meeting them, we ask that BLM provide a description of what actions led to this progress and what monitoring validates this conclusion. For the purposes of this plan, only when habitat again meets sage grouse needs should that be called progress. The current plan addresses "improper grazing" in MA-LG-6. Improper grazing occurs in an area when the "area is not meeting or making progress towards achievable habitat objectives and land health standards and the causal factor is livestock." For areas with improper grazing, BLM then requires action to address the problems. Unfortunately, this plan does not require BLM to assess if an allotment has improper grazing when permits are renewed. As a result, there is an inadequate regulatory process. BLM has made addressing improper grazing optional. This is inadequate for sage grouse conservation. As we have seen in the past, BLM often renews permits without assessing if overgrazing is occurring and without public review and NEPA. Because of the magnitude of the number of grazing allotments that have degraded herbaceous plant communities in PHMA, BLM needs to require that all permits be assessed prior to renewal and that decision process offer the public a chance to participate. The final plan should require an assessment of all allotments being renewed to see if improper grazing is occurring.

Using BLM's grazing response index, improper grazing can also be defined as an allotment where the grazing practices lead to a negative GRI score. The grazing response index can indicate proper and improper grazing: "The overall rating of the expected response to grazing is the sum of frequency, intensity and opportunity. A positive value indicates the management is beneficial to the health, structure and vigor of the plants. A negative value indicates that management is harmful. A zero rating is neutral." Any allotment that has grazing longer than two weeks and allows utilization at 50% or more is very likely to have a negative score and, thus, has improper grazing. Using the GRI methods just described, BLM should analyze the grazing practices in those allotments in PHMA and report in the final EIS those allotments with improper grazing. Under affected environment, we ask that the final EIS include both a map and table that describes those allotments in sage grouse habitat which graze during the nesting and brooding season and which graze for periods longer than two weeks and at a utilization level higher than 40%.

There is no record of BLM's previous promises being honored. The Sierra Club is an interested public in a number of BLM grazing allotments and has never received communication from the BLM that documents the action promised (4-86). There is no report of those allotments that have improper grazing and also no information on actions that have been taken. If such information exists, please incorporate it into the final EIS.

NTT Inaccurately Describes the Impacts of Domestic Livestock and Wild Horse Grazing a. Livestock Grazing Impacts The NTT Report unilaterally targets domestic livestock grazing and provides only a cursory analysis of wild horse and other ungulate impacts on rangeland conditions. The 2015 FEIS adopts

the NTT Report for grazing guidance even though the Wyoming EO 2011-5, 2015-041 concluded that appropriate grazing is actually beneficial to sage-grouse habitat. As the Coalition and others have repeatedly emphasized, even USFWS in COT acknowledged that proper grazing could benefit the habitat. The NTT Report betrays sound management principles as it exhaustively lists domestic grazing restrictions, such as fences, exclosures, water developments, vegetation treatments, dispersing grazing animals, changing seasonal pastures, and retiring grazing privileges over three pages. See NTT Report at 14-18. Even more strikingly, the NTT Report begins by listing five potential impacts of "herbivory on sage-grouse and their habitat" and immediately follows that list with a paragraph discussing livestock without addressing the similar effects by wild horses or other ungulates such as antelope, mule deer, or elk. The Report omits contradictory findings that proper livestock grazing actually benefits GRSG habitat and viable populations. J. Cagney, et al., Grazing Influence, Objective Development, and Management in Wyoming's Greater Sage-Grouse Habitat (2010). The 2015 Plan repeat and adopted NTT approach and then made stubble height and canopy binding. As documented in WSI, this treatment of grazing lacked any objective data other than the potential for raptors to perch on fences. The theory that livestock water breeds mosquitos has been largely discounted as the grouse appears to have adapted to the West Nile Virus. Attach. 3b, WSI at 32-33.

TABLE 2-2 IMPLICATIONS ON LIVESTOCK GRAZING 1 Residual Grass Height Not Supported By Science Quincy Bahr Sage-Grouse Project Coordinator August 2, 2018 Page 22 The Coalition appreciates that the Utah plan does not include residual stubble height requirements. To improve the analysis, the Coalition provides the following rationale for leaving grass height requirements out of the final plan. During cooperating agency meetings with the U.S. Forest Service in Wyoming, the Forest Service explicitly stated that the science cited by the 2015 Plans does not support the six inch residual grass height in the Forest Plans, and as a result, the Forest Service was removing that guideline from the Forest Service plan. See Attach. 6, USFS Power Point Presentation. The Forest Service also recognized that as an indicator of nest survival, grass height was premised on a false assumption mainly that grass at successful nests was higher than failed nests because that grass provided better cover. Rather, as the Coalition has repeatedly commented, grass at a failed nest will necessarily be shorter than grass that is allowed to grow for longer at a successful nest. Thus, the six-inch residual stubble height requirement is no longer a part of the Forest Service plan when it was the Forest Service that originally advocated for this stipulation and recommended that Jim Lyons extend it to BLM land. The new Wyoming plan should return to rangeland health standards and guidelines pursuant to BLM authority in 43 C.F.R. part 4100. Attached to these comments is a Cooperating Agency presentation by the U.S. Forest Service that confirms that the Forest Service will abandon any requirement that livestock grazing must be managed to meet a six-inch or four-inch residual grass height. There is no literature that concludes grazing should be limited so as to reach a specified grass height for the benefit of sage-grouse that is precisely what the U.S. Forest Service stated in its cooperating agency meeting. Rather, documented livestock grazing numbers across the West unilaterally show that grouse populations were at their highest when grazing was also at historic highs. This fact alone proves that the intensity of livestock grazing odes not correlate to a threat to sage-grouse habitat or numbers.

Issue #5, Recommendation 5: Any decision from this process should amend all Plans to remove any elements as related to permitted livestock grazing, and to defer GRSG management to the BLM via continued implementation of 43 C.F.R. Part 4100, subpart 4180 (see Issue #2).

Removal of permitted livestock grazing at any level from an allotment should never be a first choice "response" when conditions are not being met. Instead, a suite of options should be available for the agency and permittee to utilize to move towards meeting desired conditions. Issue #5, Recommendation 22: Any language relating to a reduction in grazing use due to allowable use level must be removed. Allowable use levels are not hard-and-fast, particularly as to the methods to monitor such levels, and as to the reason(s) for any failures (which can be inclusive of factors unrelated to livestock grazing, like insects, wild horses, wild burros, and wildlife). In addition, the imposition of allowable use levels impairs the ability for a permittee and BLM to implement adaptive management strategies. If, however, any amended Plan intends to impose allowable use levels, the implementation of such levels should be subject to a "Decision Tree" assessment process, like that prescribed in Idaho, as to the implementation of annual indicators, like allowable use levels. See USDI-BLM-Idaho Instruction Memorandum No. ID-2005-074 dated June 2, 005 (wherein Idaho BLM prescribes the applicable of a "Decision Tree" analysis in implementation of annual indicators, like allowable use levels). Issue #5, Recommendation 23: As shown on page 132 of the Utah Protest Resolution Report, changes to permit should only occur to meet resource objectives outlined in the Proposed Plan after the proper monitoring data and Rangeland Health Assessment and Determination and NEPA analysis has been made, including the associated decisionmaking document as per 43 C.F.R. Part 4100, subpart 4160. Issue 5: DEIS Comment 18, 19: While the proposed alternative in the DEIS appropriately removes any and all reference to SFA (see DEIS at page 2-9, as to MA-LG-16, MA-MR3, MA-MR-12, MA-LR-11), and also removes the requirement of thresholds and responses (see DEIS at page 2-35, as to MA-LG-6), it fails to completely meet the recommendation above. It is critical that BLM consider and analyze this issue in the FEIS, and implement a proposed action in the ROD that adopts the recommendation.

Issue #3: Management direction not consistent with on the ground management, including with adverse implications to private and State lands The GRSG LUPA includes a Management Action that intends to assume jurisdiction over private land and SITLA land. Specifically, MA-LG-3 provides at page 2-22 that "[i]n PHMA, consult, cooperate, and collaborate with other land owners and management agencies (e.g., private and SITLA) to develop plans which provide for landscape level approaches to habitat improvement. Manage unfenced private and SITLA lands within a grazing allotment that are under exchange of use agreements or percent public land use as a single unit that will have the same management as the public lands." As currently exists, the GRSG LUPA in Utah establishes direction to encumber private and state land with the management prescriptions on public land; adversely impairing private land and state land, including the flexibility that such land provides to a livestock operation. Issue 3: Recommendation 3: MA-LG-3 must be removed from Utah's ARMPA. While 43 C.F.R. 4130.3-2(g) and 43 C.F.R. 4130.6-1 speak of authority to issue Percent Public Land and Exchange of Use authorizations on unfenced, intermingled owned or controlled lands, these rules don't speak of authority for the BLM to assume management authority over such private and state lands. LUPA should not attempt to assume jurisdiction over private land or SITLA land, and its attempt to do so particularly via the last sentence in MA-LG-3 is unlawful; implicating takings. Issue 3: DEIS Comment 3: The DEIS at page 2-34 appropriately removes MA-LG-3 (aka "No similar action"). It is critical that BLM consider carry this recommendation forward in the FEIS, and implement a proposed action in the ROD that adopts the removal of MA-LG-3.

Prioritization of land health assessments in sage grouse areas All LUPAs require the prioritization of grazing permit renewals within SFAs, assuming SFAs are sustained during this amendment process. In some cases, BLM requires prioritization of both Land Health Assessments as well as permit renewals.

BLM grazing regulations via 43 C.F.R. 4180.2(c) already requires BLM to make management changes in order for allotments determined to not be meeting rangeland health standards to move towards meeting, additional language covering this is not legally required or rational (see Issue #2). Specifically, the GRSG LUPA in (at least) Utah, includes the following Management Action which demonstrates these flaws consequences: (see MA-LG-2)

Issue #5, Recommendation 5: Any decision from this process should amend all Plans to remove any elements as related to permitted livestock grazing, and to defer GRSG management to the BLM via continued implementation of 43 C.F.R. Part 4100, subpart 4180 (see Issue #2).

Issue #5: LUPAs Repeatedly Elevate Livestock Grazing to Priority Threat Multiple scientific studies document that livestock grazing and sage-grouse conservation can beneficially co-exist. Top threats to GRSG include rangeland wildfire, invasive weeds, and development pressure, not livestock grazing. Livestock grazing is not even in the top-ten list of threats. Yet, despite this, BLM has erroneously imposed landscape-wide regulatory changes on the grazing livestock industry for purposes of conserving habitat for a single species through an inflexible framework that is overly restrictive and fails to account for the site-specific conditions necessary to make informed decisions. The LUPAs elevated livestock grazing as a priority threat, even though improper livestock grazing is listed only as a secondary threat.4 Being only a secondary threat, any decision from this process should amend all Plans to remove any elements as related to permitted livestock grazing, and to defer GRSG management to the BLM via continued implementation of 43 C.F.R. Part 4100, subpart 4180 (see Issue #2) so as to provide focus on "improper grazing" where it may or may not exist, as opposed to "proper grazing". If BLM erroneously decides against this recommendation, it is critical that BLM work closely with key stakeholders to develop grazing strategies that can be applied to LUPAs across the West for consistency (see Issue #3). Our comments below are our best effort of grouping issues that need resolved in any LUPA amendment, with some recommendations on what language should move forward. We encourage Secretary Zinke to provide the same opportunity that was presented by Secretary Salazar to work with our States and national affiliates to further this directive carry-forward the goal, objective or action from the "No-Action Alternative" (aka current 2015 ARMPA) into the intended new, updated 2018 ARMPA.

2.4.25 Fluid Minerals

Impacts of Energy Development Dr. Rob Roy Ramey, Wildlife Science International, and Lex Ivey, Terracognito GIS Services, compiled and analyzed 100 years of data on oil and gas development in the Pinedale Anticline Project Area (PAPA). Rob Roy Ramey, Spatial and Temporal Analysis of Oil and Gas Development, Mitigation, and Greater Sage-Grouse Lek Attendance in the Pinedale Planning Area, Wyoming 1990-2012 (2014) (On file with author). The study also considered data on recent mitigation efforts for GRSG, spatial and temporal changes in oil and gas development, reclamation and restoration, along with GRSG responses (based on 22 years of male GRSG lek attendance data). The research results refute the NTT report and several studies cited in the NTT report (i.e. Holloran, 2005). Ramey suggests a paradigm shift in the relationship between oil and gas development and GRSG habitat selection and population viability. Ramey concludes that data from 1990 to 2012 do not indicate GRSG population decline nor widespread lek abandonment throughout the PAPA. In fact, lek attendance in the PAPA population was consistently above statewide averages and lek attendance did not decline in areas with 3% disturbance within 4 miles of the lek. Ramey concludes that studies currently being used for regulatory decisions with regards to GRSG are outdated and no longer relevant. Dr. Ramey also directly addresses Holloran's 2005 study and found no evidence of a population decline or population

extirpation in the PAPA as predicted by Holloran in 2005. See also Attach 3a, CESAR at 38-39; Attach 3b, WSI at 51-52, 115-120. The DQA petitions also question the premise that energy development harmed sage-grouse or its habitat. Holloran's assumed absence of grouse from a lek meant extirpation when the grouse more likely moved. Id.; Attach. 5, Ramey et al. at 29. This avoidance is not extirpation. More recent research suggests that GrSG return to leks when development intensity drops.

Page 2 16 Garfield County opposes both alternatives regarding no surface occupancies stipulations. Neither of the alternatives is consistent with Garfield County's plans, a violation of federal law. Garfield County suggests that the language be changed such that occupied high-value habitats within PHMA are open to leasing fluid minerals subject to NSO. All other areas within PHMA (unoccupied and medium or low value habitats) should be open for leasing subject to site-specific stipulations. In addition any technical team must use criteria identified in Garfield County's Sage grouse Conservation and Recovery Plan and must provide an opportunity for the review and input of state and local entities.

Waivers, Exceptions, and Modifications for NSO Stipulations The State would like further clarification as to the reasoning for BLM's inclusion of NSO stipulations in Section MA-MR-3. In-lieu of stating that "all PHMA is designated as open to leasing fluid minerals subject to NSO stipulation",28 the BLM should state that "occupied habitats within PHMA is open to leasing fluid minerals subject to NSO. All other areas within PHMA are open for leasing subject to site-specific stipulations, as determined by the technical team, necessary to prevent undue degradation or disturbance to potential sage-grouse habitat within PHMA."

Development on existing leases should be managed per regulations that are currently in place, which limit surface occupancy and disturbance. Years of research leave no doubt that sage-grouse do not do well in close proximity to energy development. More development in the most important habitat will not help conserve the species.

2.4.26 Solid Minerals

Exploratory drilling has been conducted on State mineral leases in Priority Sage Grouse Habitat on Diamond Mountain. This drilling was scheduled so as not to interfere with greater sage-grouse strutting, mating and brood rearing. Restoration of the drill sites included a seed mix which was beneficial to habitat improvement. Sage grouse populations in the area where drilling occurred in 2014 increased the following year, indicating that there was no negative affect on the population by drilling.

Utah Mineral Resources has successfully managed an exploratory drilling program in critical grouse habitat at Diamond Mountain, Utah. This drilling project was conducted on lands with mineral leases through the State of Utah that are adjacent to current BLM phosphate lease lands and lands where there are Pending Phosphate Exploration Permits. This drilling program demonstrated that exploration scheduling can be scheduled at times when grouse are not strutting and nesting. Grouse population observed in the area increased after drilling was concluded. Revegetation of the drill locations and access roads included a seed mix designed to improve grouse habitat. This project clearly demonstrates that phosphate exploration can be successful in areas of sage grouse habitat with minimal impact to the grouse.

Section 3.15.2 states “Information related to mineral potential has generally not changed since completion of the 2015 Final EIS and can be found in Section 3.21.2 on page 3-208.” Aside from the fact

that the statement is false, the information in the 2015 Final EIS is wholly inadequate. The Bureau of Land Management obviously did not for, the 2015 Final EIS nor for this Document, contact its own customers who hold leases and prospecting permits for phosphate. Phosphate has been mined in the Uintah County since 1960; the mine is currently operated by J R Simplot. J R Simplot currently holds three Preference Right Phosphate Leases and another Phosphate Fringe Non Competitive Lease adjacent to its mine. These leases as well as several Phosphate Prospecting Permits held by Utah Mineral Resources LLD, are all within one of the "Primary Habitat Management Areas" from which mining will be disallowed according to the 2015 Final EIS as well as this document. Adjacent to the mine, leases and prospecting permits are mineral lands held by the Utah School and Institutional Trust Lands Administration (SITLA). The SITLA lands are also leased for Phosphate. In 2014 the SITLA lands were drilled and explored for phosphate, the lessee, Utah Mineral Resources (UMR) spent in excess of $1,000,000.00 on their Diamond Mountain Phosphate Project. The results were a measured and indicated phosphate resource of 26.8 million tons and inferred resources of 23.1 million tons with estimated grade of near 20%. The Adjacent lands where UMR holds the prospecting permits have indicated resources of 7.1 million tons and inferred resources of 4 million tons. With implementation of this Plan Amendment the Prospecting Permits and likely any chance of a phosphate mine on the SITLA leases will likely have to be abandoned along with royalty payments to the School Trust of over $40 million. Phosphorus is the second most widely used fertilizer nutrient after nitrogen. Fertilizers account for more than 90% of total phosphate consumption in particular cereals (grains) which are estimated to account for 55% of fertilizer use worldwide. With the continuing decrease of farmable land in the world phosphate production will take an ever increasingly important role in order to feed the world population. Removing potentially important resources without any consideration other than its location within the habitat of a "game bird" is unwise.

3.E. Mineral Withdrawal Simplot supports the exclusion of Sagebrush Focal Areas in the RMPA/EIS and the prior withdrawal of the application to designate approximately 10 million acres of public and National Forest system lands located within Idaho, Montana, Nevada, Oregon, Utah, and Wyoming as Sagebrush Focal Areas (SFAs). In its 2010 finding, the FWS identified a number of specific threats to GRSG in the Great Basin Region; including the widespread present and potential impacts of wildfire, the loss of native habitat to invasive species, and conifer encroachment. Mining was not identified as a primary threat. For that reason, measures that do not have a discernable positive affect on the species or activities that already have adequate regulatory mechanisms in place (e.g., rangeland health standards or section 3809 plans for mining) need to be reevaluated and removed from consideration. Diverting those precious resources from the primary threats of wildfire and invasive species has no rational basis.

Additional analysis and disclosure of the entire range of impacts associated with implementing the Management Alignment Alternative and its effect on the development of phosphate resources in Utah need to be included in the RMPA/EIS.

3.H. Valid Existing Rights Valid existing rights in regard to non-energy leasable minerals needs to be clearly identified in the RMPA/EIS. The RMPA/EIS fails to disclose how valid existing rights are maintained. It appears that restrictions identified in the RMPA/EIS could apply to existing leases and lease modifications within PHMA in KPLA. This is further supported by the language referenced in 'Impacts from management of Phosphate Leases" on page 4-386 of the LUPA/EIS: "In summary, the Proposed Plans close non energy mineral development to new leases that are not contiguous to existing operations, and because it applies the 3 percent disturbance cap at the project level, this would likely

preclude the expansion or development of phosphate mines onto public lands in PHMA." (emphasis added)

As previously stated, clarification needs to be provided in the RMPA/EIS consistent with the language provided in the Idaho and Southwestern Montana Greater Sage-Grouse Proposed LUPA/Final EIS; pg. 4-259 and 4-260: "Unmined phosphate leases have valid existing rights and cannot be closed to development." The Proposed LUPA/Final EIS further states that "An indicator of an impact on non-energy solid leasable minerals is if there were substantial closures to non-energy solid mineral leasing in areas with high potential for non-energy solid mineral development, such as unleased KPLAs." The Idaho Proposed LUPA/Final EIS further states at page 4-265, that "Fringe leases and modifications to existing leases would be allowed in PHMA to satisfy valid existing rights." This assessment is directly comparable to the situation in Utah where 98% of the KPLA (both federal and private surface) is included as PHMA and closed to federal mineral leasing and development. The management direction in the RMPA/EIS conflicts with the rights already accorded under these leases. When a company enters into a mineral lease, that company obtains a right to a noncompetitive lease of any lease modification area. 43 C.F.R. §3510.11. This right is only subject to company's compliance with the restrictions contained within 43 C.F.R. §3510.15. If a company fully complies with those restrictions, the lease modification will be granted. Therefore, the leaseholder also holds the right to modify the lease pursuant to its application.

GIS DATA/MAPS and QUANTITATIVE DATA RELATED TO DIAMOND MOUNTAIN, UINTAH COUNTY, UT MINERAL DEVELOPMENT

These comments provide new information relevant to the EIS and specifically address social and economic resources. It is our position that responsible phosphate exploration and development can take place on Diamond Mountain. Here are our comments which address the social and economic resources of the area: Utah Mineral Resources, LLC (UMR) is a duly registered company in the State of Utah. UMR has active phosphate leases from the State of Utah and a considerable amount of work has been done to define a large phosphate resource. These leases are not in a contiguous block of land and adjacent federal lands are needed to allow future development. UMR has applied for Phosphate Prospecting Permits on the adjoining Federal lands. -Phosphate is one of three basic components of fertilizer-vitally needed to increase crop yields. -Phosphate production is currently a major component of the economy for the Vernal area. -Active phosphate mining is currently underway by Simplot and these mining operations are progressing toward Diamond Mountain. -State phosphate leases and pending phosphate prospecting permits (private surface and Federal minerals) are held by UMR and cover land which adjoin an active phosphate lease held by Simplot. -State lease payments and production royalties benefit the schools of Utah -More than $1,000,000 has been spent drilling, coring and testing the phosphate resource on UMR leases. -A Technical Report (compliant to Canadian NI 43-101 requirements) was prepared by Norwest Corporation in October 14, 2014. -This Technical Report states that measured, indicated and inferred in-place phosphate resources covered by State leases are 59.9 million metric tons. It also states that on adjoining Federal land (where prospecting permits are pending) measured, indicated and inferred in-place phosphate resources are 11.1million metric tons. -The phosphate bed is about 14 feet thick and extends throughout the UMR State lease area as confirmed by drilling. The depth to the phosphate bed ranges from 118.9 to 286.6 feet below the surface and it is approximately 20% P_2O_5. Successful reclamation for phosphate exploration and mining in the Diamond Mountain area has been proven. Simplot surface mining operations have been re-contoured and re-vegetated. Healthy plant growth provided better and needed winter range for big game animals, including elk. UMR successfully

conducted an extensive drilling program on Diamond Mountain. All disturbed areas including drill pads, roads and a lay-down yard were successfully re-vegetated with a seed mix designed to benefit greater sage-grouse. Our understanding is that the Greater Sage-Grouse population increased after the drilling program was completed. We received an Earth Day award for the reclamation work on the project. A very large phosphate resource has been proven based on limited work done to date. Additional Federal lands are needed to help consolidate the scattered State leases. This resource could be developed to provide good jobs and a basic component of food production. This can be accomplished without a negative impact on the greater sage-grouse population on Diamond Mountain.

Development of leasable, non-energy minerals are currently prohibited in areas of greater sage-grouse priority habitat. Non-energy minerals are beneficial to regional economies and developing local resources protects our nation from dependence on foreign minerals. The following are comments relating to the need to keep greater sage-grouse priority habitat open to leasable minerals and locatable minerals. 1. A list of 35 minerals deemed critical to US national security and economy was recently developed. Agricultural minerals (except potash) were not included on the list but play an important role as a foundation for non-energy mineral independence. Three major components of fertilizer are Nitrogen, Phosphorus and Potassium (N P & K). Phosphate rock is the major source of Phosphorus for US agriculture. 2. Most of the US demand for phosphate rock is supplied domestically and known resources such as Diamond Mountain shoud be open to new exploration and mining to assure independence from foreign supply in the future. 3. Exploration, resource development and mining provide jobs in rural communities and are a critical economic element in many regions.

Several Phosphate Prospecting Permits are pending on lands adjacent to existing Federal Phosphate leases and State mineral leases where exploration and mining are currently permitted. Consideration should be made in the range management plan for new exploration and development of non-energy minerals on lands adjacent to current leases, exploration and mining activities. 7. Exploration and development of the phosphate resource at Diamond Mountain began in the 1960's and these activities have been conducted concurrently with greater sage-grouse habitat improvement.

Finally, it needs to be clear that the construction of roads and support facilities needed to support development of leases is allowed. Valid existing rights must be recognized in regard to existing leases. This includes being able to construct roads and facilities needed for development of the lease, and the modification of that lease as provided for in existing rules. Simplot's lease is a contract authorizing it to conduct mining operations on that tract, and granting the right to utilize adjacent lands by executing a lease modification. These rights cannot be suspended, revoked, or modified by the ARMPA. Because existing leases are valid existing rights established with the premise that they will be developed, the acreage associated with existing leases should not be shown as PHMA on maps or used to calculate disturbance and density thresholds.

Valid existing rights need to be clearly identified and consistently addressed in all state plans. Currently there are discrepancies on how valid existing rights are being incorporated into the various state plans. Fringe leases and the development of existing leases should be recognized as a valid existing right and as such should be specifically included in the definition in the glossary. Currently there is no definition for valid existing right in the RMPA/EIS Glossary. Because the premise is that they will be developed (as a valid existing right), the acreage associated with existing leases should not be shown as PHMA or used to calculate disturbance and density thresholds.

'All. Non-Energy Leasable Minerals MA-MR-15/16 in the 2015 LUPA close PHMA to exploring or developing non-energy leasable minerals. Upon further review of the DEIS, the State did not see mention of how the BLM was going to modify this strategy to better align with the 2013 State Plan. The State would encourage a meeting with the BLM to identify strategies for allowing for development of non-energy mineral leasable in areas of non-habitat, or in areas where siting and minimization techniques can be utilized to continue to conserve sage-grouse habitats within PHMA.

3.G. Lack of Information on the Impacts of Prohibiting or Limiting Access to Phosphate Resources Simplot agrees with the recommendation under the Management Alignment Alternative to remove 448,600 acres of designated GHMA along with associated requirements of lek buffers, required design features, net conservation gain, habitat objectives, and leasing prioritization. However, there continues to be no discussion of the consequences of prohibiting or limiting access to hundreds of thousands of acres of high potential phosphate in PHMA in the RMPA/EIS. The RMPA/EIS and supporting analysis fails to discuss the effects on fertilizer availability, fertilizer sources and prices, and implications for national food security. This is further supported by text on page 4-386 in the Utah Greater-Sage-Grouse Proposed PLUPA/Final EIS: "No RFD scenario for phosphate was prepared that quantifies current phosphate reserves on private and public lands and forecasts production of those reserves. In the absence of this information and any proposed plans for leasing and developing federal lands for phosphate, it is not possible to quantify potential economic impacts…" Phosphate is an important mineral in regards to food and national security. Appendix B provides additional information on the importance of phosphate in Utah in regards to national food security. The Proposed LUPA/Final EIS was finalized in June of 2015. At the time of its release, Simplot had three existing leases that were assigned in 2008 and another fringe lease application that had been accepted by the BLM in the Plan area. Additionally, a draft Environmental Assessment (EA) had been completed for a fringe lease application during the analysis period of the LUPA/FEIS. The BLM issued a letter February 18, 2014 to Simplot Phosphates, LLC deferring a decision on the EA until the sage grouse land use plan amendments were completed. As Simplot previously stated, revisions to the ARMPA needed to include a complete and thorough analysis of the economic effects of not developing 88% (186,700 acres) of the federal mineral estate with phosphate potential within the decision area which includes closing 100% (42,700 acres) of the federal mineral estate with high phosphate potential. The impacts from removing this resource needed to be analyzed not only at the national level but also for the impacts to local economies. As described earlier, mining was not identified as a primary threat to the Greater SageGrouse. BLM needs to evaluate what projects or potential projects are actually contemplated during the time horizon of the EIS under current budget constraints and factor that into the analysis, rather than uniformly applying restrictive measures that will do nothing to further the conservation of the bird. Additional clarification needs to be included in the RMPA/EIS as to why the PHMA associated with total surface (acreage associated with the PHMA polygon; regardless of land ownership) increased 56,500 acres and PHMA associated with split estate (acreage where the surface and mineral estates are owned or administered by separate entities) increased 59,100 acres. Further reviews were conducted regarding the impacts of the Management Alignment Alternative on fluid mineral development in the RMPA/EIS as stated, in section 4.6.10 Fluid Mineral Development states: "The BLM Utah reviewed the Reasonable Foreseeable Development scenario (RFD), Appendix R of the 2015 Final EIS, and addressed changes in potential oil and gas exploration and development." However, no additional analysis was completed in the RMPA/EIS to quantify the impacts to leasable minerals from implementing the Management Alignment Alternative; despite the fact that there are at least three existing phosphate leases and a submitted fringe lease application for public lands within the planning area. Additionally, a draft EA has been submitted to the

BLM in support of the fringe lease application. Simplot operations in the Vernal and Rock Springs area provide approximately 300 direct jobs, with annual payroll of approximately $40 million. Almost $60 million is spent for a variety of goods and services. Almost $2 million is paid in local taxes. The quantities of phosphate in the Vernal area are significant, and could provide good paying jobs for many decades, including other mineral developments. In addition, it alleviates the nation's reliance upon international mineral resources.

3.H. Valid Existing Rights Valid existing rights in regard to non-energy leasable minerals needs to be clearly identified in the RMPA/EIS. The RMPA/EIS fails to disclose how valid existing rights are maintained. It appears that restrictions identified in the RMPA/EIS could apply to existing leases and lease modifications within PHMA in KPLA. This is further supported by the language referenced in 'Impacts from management of Phosphate Leases" on page 4-386 of the LUPA/EIS: "In summary, the Proposed Plans close non energy mineral development to new leases that are not contiguous to existing operations, and because it applies the 3 percent disturbance cap at the project level, this would likely preclude the expansion or development of phosphate mines onto public lands in PHMA." (emphasis added)

2.4.27 Lands and Realty

As Simplot noted in previous comments to the ARMPA, the RMPA/EIS continues to fail to disclose the basis by which private lands can be considered in a federal land management planning document. This seems to suggest a de-facto critical habitat designation without a listed species. While section 4 of the ESA can take into consideration conservation efforts on state and private lands to avoid a listing, BLM has no authority under FLPMA to apply land use plan restrictions on private land. The RMPA/EIS applies BLM Sage-Grouse habitat management area definitions, designated through the BLM planning process specifically for BLM administered land to private land; including population areas, PHMA and BSU's. As stated in part in the 2015 Utah Greater Sage-Grouse Proposed LUPA/Final EIS on page 2-4, population areas were "identified by the BLM and Forest Service" that were not entirely consistent with the state-identified SGMAs. Additionally the 2015 Utah ARMPA glossary definitions for "Population Areas" and "Planning Areas" further support the assumption that population areas were established for "all lands" within the planning area including private land. The wording "regardless of jurisdiction" which was added to the definition of Planning Area in the RMPA/EIS Glossary clearly supports this assumption: "geographical area for which resource management plans are developed and maintained regardless of jurisdiction." The term PHMA was identified during the planning process and specific objectives were identified on page 2-3 in the ARMPA to designate PHMA: "Objective SSS-1: Designate PHMA that are large enough to stabilize populations in the short-term and enhance populations over the long-term." The term "designated" continues to be consistently used in conjunction with PHMA throughout the RMPA/EIS. As defined in the RMPA/EIS glossary, in Utah, BSUs are synonymous with PHMA within a geographic area identified as a population area. Because the disturbance criteria and density cap would count all applicable disturbances within PHMA in any given BSU, including those on non-federal land, it appears to impart that the Plan intends to manage uses of non-federal land under the Management Alignment Alternative. This assumption is further supported by language in the RMPA/EIS on pages 2-10 and 2-12 which states: "In PHMA, manage discrete anthropogenic disturbances so they cover less than 3 percent of 1) PHMA associated with a Greater Sage-Grouse population area." "If the 3 percent anthropogenic disturbance cap is exceeded on all lands (regardless of land ownership) within Greater Sage-Grouse PHMA in any given population area (BSU), then no further discrete anthropogenic disturbances (subject to applicable laws and regulations, such as the Mining Law of 1872 [as amended],

valid existing rights, etc.) will be permitted by the BLM within Greater Sage-Grouse PHMA in any given population area (BSU) until the disturbance has been reduced to less than the cap." "Subject to applicable laws and regulations and valid existing rights, if the average density of one energy and mining facility per 640 acres (the density cap) is exceeded on all lands (regardless of land ownership) in PHMA within a proposed project analysis area, then no further disturbance from energy or mining facilities will be permitted by BLM…" Additionally, the language in the Executive Summary on page ES-8 in the RMPA/EIS is implicit in identifying that the intent is to "manage" all PHMA (including private) which accounts for over 95% of Greater Sage-Grouse populations in Utah: "The Management Alignment Alternative focuses management on PHMA to protect the habitats that support over 95 percent of Greater Sage-Grouse populations in Utah." Based on the direction in the RMPA/EIS, the density and disturbance factor applies specifically to PHMA and PHMA should only be used in reference to those lands administered by the BLM as defined in part on page 1-3 in the RMPA/EIS: "PHMA-Areas prioritized for managing Greater Sage-Grouse populations (management is only applicable to actions on BLM-administered lands)…" Additionally the RMPA on page 1-5 states that: "Lands addressed in the RMPA/EIS will be BLM-administered land in Greater Sage-Grouse habitat, including surface and split-estate lands with federal subsurface mineral rights. Any decisions in the RMPA/EIS will apply only to BLM-administered lands." Applying the PHMA habitat designation to lands "regardless of ownership" is not consistent with this direction. Additionally, the glossary definition for PHMA in the RMPA/EIS no longer clarifies that PHMA is specific to "BLM administered Lands" it now appears to include "all": "Areas that have been identified as having the highest conservation value to maintaining sustainable Greater Sage-Grouse populations; they include breeding, late brood-rearing, and winter concentration areas." Also problematic is Figure 2-2b (GRSG Biologically Significant Units and Priority Habitat Management Areas) which applies BSU and PHMA designations to private land and Figure 2-1 (Management Alignment Alternative) on page 2-18 which assigns the PHMA designation to Total Surface (acres); "regardless of land ownership."4

Definitions and management actions associated with BLM habitat designations need to be removed from private land as they apply specifically to BLM administered lands; therefore there is no basis for including private land in density and disturbance calculations.

2.4.28 Wild Horse and Burro

Wild Horses The DEIS states that impacts from wild horses were dismissed from detailed analysis. DEIS at ES-5. The DEIS states that wild horses were properly analyzed in the 2015 FEIS and that "no new insights into the impacts of wild horses and burros, fence collision, recreation, or noise on Greater Sage-Grouse have been developed (Hanser et al. 2018, p. 2)." DEIS at 3-3. The 2015 FEIS stated that In the Rock Springs Field Office, management of wild horses to consider wildlife, watershed, and other resource needs could provide Special Status Species wildlife with adequate forage, habitat cover and water, and could provide habitat protection for special status plants. Water developments to improve herd distribution and manage forage utilization for wild horses could reduce grazing pressure possibly providing additional forage and habitat for special status wildlife. FEIS at 4-263. This is the only language in the 2015 FEIS that assesses impacts of wild horses under the No Action Alternative. The problems with this analysis are profound and many, including: * The 2015 FEIS assumed a 20% population growth rate but studies by the State of Wyoming indicate that some HMAs are growing at 42% or more. Post gather flights of the HMAs in the Rock Springs Field Office indicate that 30 days after gathering the Adobe Town, Salt Wells, and Divide Basin HMAs, wild horse numbers were already above AML. Thus, there is no way the BLM can state that impacts from wild horses have changed because wild horse

numbers have exploded across Wyoming. The impacts are not quantitatively or qualitatively the same as they were in 2015. * The DEIS completely misses the point. Regardless of whether there is new published literature, there are new impacts. The BLM may not rely on the lack of published studies to conclude that there are no new impacts the BLM's duty to take a hard look at the impact of horses on sage-grouse is categorical. Moreover, the BLM must use its expertise in this area to synthesize raw data such as growing horse populations to determine the impacts on sage-grouse. * Secretarial Order provides the BLM with ample justification to reconsider the impacts of wild horses and to adjust AMLs if necessary during a land use planning process. See Secretarial Order 3362 at §b(5)(ii). USFWS recognized that feral equids and ungulates merited different management. COT at 24. COT recommended maintaining AMLs but did not understand the wild horse program or appreciate the fact that BLM has never maintained the AMLs. As acknowledged in April 27, 2018 Report to Congress Management Options for a Sustainable Wild Horse and Burro Program wild horse numbers are double the national AML. Even in Wyoming, which has operated under Consent Decrees, BLM has not maintained AML and is conducting a gather that will not reduce wild horses to AML. The HMAs include PHMA, particularly in Sweetwater County.

Notwithstanding the fact that wild horses graze year-round, directly compete for habitat with GrSG and have documented adverse impacts on vegetation, NTT dedicates less than a page to analyze the effects of wild horses on GRSG habitat. The 2015 Plan did little better providing only that BLM should maintain AML. The NTT Report falls woefully short of adequately addressing the documented impacts of year-round grazing by wild horses on sagebrush and related habitat. See Ex. 5, Ramey et al. at 45, 49 The NTT Report assumes that wild horses be managed within existing AML's but the report makes no mention of reproduction rates, fertility measures, gather frequency, or the basic principles that drive wild horse management. The NTT Report does not describe or distinguish the biological differences in grazing habits and patterns of wild horses and livestock but COT does. COT at ii. Recent DOI Wild Horse report and S.O. 3362 confirms Coalition's comments on this issue from 2014 on. Per individual animal, horses consume more forage than cattle or sheep and remove more of the plant which limits vegetative recovery. COT at 46. Wild horses also travel great distances and act as vectors for invasive plant species. Id. The irreducible conclusion is that wild horses, unlike cattle or sheep, have significant impacts on GRSG habitat that the NTT Report and 2015 Plan do not describe or analyze. Virtually all of the Wyoming BLM AMLs were set in the grazing EIS written in the early 1980s, decades before sage-grouse were first considered to be in decline. Thus reliance on AMLs as having no adverse impact on sage-grouse habitat is seriously flawed. Wyoming HMAs include a significant percent of PHMA, such as in the Salt Wells HMA and the Divide Basin HMA. The 2018 DEIS repeats the errors made in 2015 by assuming AML is sufficient. Unfortunately, SGIT in Wyoming did as well.

Page 2-35: Comparison of Alternatives. MA-LG-6. The county understands that the listed stipulations may need to be enacted when Land Health Standards are not being met. However, we also restate our concern that range conditions are often being deteriorated not just by livestock; but by the presence of wild horses and burros. At stated in Table 3-7 (Pages 3-12 and 3-13), the population of wild horses and burros in Utah Herd Management Areas is estimated at 5,299, while the Appropriate Management Level population is 1,956. This excess wild horse and burro population must be better controlled if Land Health Standards are to be met to the benefit of the grouse. Duchesne County encourages the BLM to include more effective management tools in this plan amendment or by other means to help accomplish this task.

2.4.29 Fire and Fuels

Issue #4: Restoration and Rehabilitation not adequately assessed and May Not Reflect Achievable Conditions The LUPAs have significant flaws in assessing restoration and rehabilitation potential and impacts outside of fire rehabilitation. The documents do not address the need to prioritize areas for restoration where natural disturbance such as fire has occurred. They also do not address the need to evaluate unintended negative consequences, as well as the cost and the likelihood of success in restoration projects. The document also does not discuss areas that have crossed an ecological threshold. Specifically, the GRSG LUPA in (at least) Utah, include the following Management Action which demonstrates these flaws consequences: MA-LG-13: In PHMA, evaluate the role of existing seedings that are currently composed of primarily introduced perennial grasses to determine if they should be restored to sagebrush or habitat of higher quality for GRSG. If existing seedings provide value in conserving or enhancing GRSG habitats, then no restoration will be necessary. Assess the compatibility of these seedings for GRSG habitat during the land health assessments. Issue #4, Recommendation 4: Priorities for re-establishment of sagebrush cover should be re-evaluated with "recently burned native areas" receiving first consideration. The post burn probability of expanding the range of invasive species or noxious weeds makes fire rehabilitation efforts a top priority. Extreme caution must be exercised with any proposal designed to convert nonnative perennial grasslands (especially those within lower elevation Wyoming big sagebrush sites) to a sagebrush dominated habitat with native understory. State and transition models should be utilized when setting project goals. Under current technology and funding, confidence in any conversion attempt is lacking, and any commitment by this planning process to do so is unrealistic; resulting to unachievable expectations. Issue 4: DEIS Comment 4: The DEIS at page 2-36 appropriately removes MA-LG-13 (aka "No similar action"3). It is critical that BLM consider carry this recommendation

Page 3-14: Section 3.8. Wildland Fire Management. It is interesting to note that, since the 2015 BLM plan amendments, the acreage in Utah treated with the goal of improving sage grouse habitat has exceeded the acreage of habitat lost to wildfire. The county looks forward to working with the BLM in the upcoming programmatic EIS projects associated with fuel breaks and habitat restoration. Duchesne County's Resource Management Plan encourages federal agencies to continue such active vegetation management for the benefit of wildlife and to reduce fuel loads in the event of a wildfire.

2.4.30 Travel and Transportation Management

Page 2 38 First Row. Consultation alone with state and local governments regarding transportation facilities is inadequate. NEPA, FLPMA and a host of CEQ regulations require consistency, cooperation and coordination with state and local governments. In addition, BLM manages 0 miles of transportation facilities in Garfield County as reported by the agency under 23 CFR 460. BLM has reported it has no jurisdiction over any road in Garfield County for approximately 20 years. Inasmuch as 23 CFR 460 is a federal reporting requirement and BLM is required to accurately report mileage under its jurisdiction, it can be safely stated that BLM has no management control over roads in Garfield County. Furthermore, BLM is the servient estate where RS2477 rights occupy BLM ground. BLM cannot merely consult with the County; BLM needs to operate without impacting County rights of way and in a spirit of cooperation and coordination. This section needs to be revised.

DEIS at page 2-39 appropriately removes MA-TTM-3 ("No similar action"). BLM should also clarify that any remaining travel management direction would not apply to permitted actions, including the

management of livestock grazing permits. It is critical that BLM carry this recommendation forward in the FEIS, and implement a proposed action in the ROD that adopts the removal of MA-TTM-3.

2.4.31 Cumulative Impacts

BLM's Cumulative Impacts Analysis is Insufficient and Invalid The BLM is required to consider the cumulative environmental impacts to sage-grouse and sage-grouse habitat in the sage-grouse land use plan amendment EIS it has prepared. Cumulative environmental impacts are: The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions. 40 C.F.R. § 1508.7. "Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." Id. Cumulative impacts must be considered in the scope of an EIS. Id. § 1508.25(c). Despite the requirement to consider cumulative environmental impacts in the sage-grouse land use plan amendment EISs, the BLM has failed to do this adequately. For one, the BLM claims that the cumulative effects analysis from the 2015 sage-grouse land use plan amendments meets the cumulative effects analysis requirement that is needed now. As noted, tiering is only appropriate when a subsequent narrower environmental analysis relies on an earlier broader environmental analysis. See 40 C.F.R. § 1508.28 (a) (stating that tiering is appropriate when a program, plan, or policy environmental impact statement is used to support a new analysis of "lessor scope" or which is site-specific). But we do not have that here; the scope of the current analysis is as broad as the 2015 analysis. There is no "step down" present here, therefore the cumulative impacts analysis from the 2015 plans cannot "incorporate[ ] by reference the analysis in the 2015 Final EIS and applicable portions of the 2016 SFA Withdrawal Draft EIS . ." Utah DEIS at 4-32 to -33. In addition, BLM cannot simply incorporate the previous analysis by reference without justifying how it is appropriate and summarizing how it applies, neither of which has been done in the Draft EIS. See, 43 C.F.R. § 46.135(a). BLM also must ensure any incorporation by reference does not impede review by the public, which it surely does here. See 40 C.F.R. § 1502.21. Moreover, the purpose and need for the 2018 EISs differs from that of the 2015 EISs, which underscores why neither tiering nor incorporation by reference is appropriate. Secondly, in each of the six 2018 EISs the BLM lists a number of projects that it claims reflect the cumulative effects impacts that are applicable here. See, e.g., Table 4-4 in the Utah DEIS. But this list of projects fails to incorporate many relevant projects that should be considered in the cumulative effects analysis. In Wyoming, for example, neither the Normally Pressured Lance or Converse County oil and gas projects are listed. See Utah DEIS at Table 4-4, pages 4-47 to -48. These are two mammoth projects, that will involve drilling thousands of oil and gas wells which will have significant impacts on sage-grouse and sage-grouse habitats. See, https://www.blm.gov/programs/planning-and-nepa/plans-in-development/wyoming/npl and https://www.blm.gov/programs/planning-and-nepa/plans-in-development/wyoming/converse-county-oil-and-gas-project. (presenting the Normally Pressured Lance and Converse County EISs). Neither of these projects were considered in the 2015 EISs. In Utah the Greater Chapita Wells Natural Gas Infill Project is not considered in the Utah sage-grouse plan amendment EIS. Utah DEIS at Table 4-4, pages 4-41 to 42. This project could involve the drilling of 2808 natural gas wells in Uintah County, which is prime sage-grouse habitat. See https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=renderDefaultPlanOrProjectSite&projectId=37362. There are other projects missing from the Range Wide Impacts from Past, Present, and Reasonably Foreseeable Future Actions table in the Utah DEIS. Notably, Montana is entirely ignored in the BLM's cumulative impacts analysis, which is clearly impermissible. In addition, while in Wyoming (and the other states), past and upcoming oil and gas lease sales are mentioned, see Utah DEIS at Table 4-4 at 4-47 to -48, the list is incomplete. The June Wyoming lease sale (198,588 acres) is mentioned but neither the upcoming

September (366,151 acres) or December (698,589 acres) lease sales are discussed. See https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=dispatchToPatternPage&currentPageId=125997 and http://rockymountainwild.org/upcoming_lease. The same is true in other states. For example, in Utah, the Utah DEIS says 646 acres of oil and gas leases will be offered in Habitat Management Areas (HMA) in June, but it fails to mention the 158,944 acres (with 45,227 acres that had been previously offered) that will be offered for lease in September. See https://eplanning.blm.gov/epl-front-office/eplanning/planAndProjectSite.do?methodName=renderDefaultPlanOrProjectSite&projectId=103243&dctmId=0b0003e8810c3ec2. The same is true in other states. The BLM should review the list of projects shown in Tables 4-3 or 4-4 (depending on the state) causing cumulative impacts and ensure they are as comprehensive as is required to include "the incremental impact[s] . when added to other past, present, and reasonably foreseeable future actions." We note again the projects we have mentioned were not considered in the 2015 sage-grouse plan amendment EISs. These are "collectively significant actions taking place over a period of time" that must be considered in the cumulative impacts analysis, but which have not been. Under Council on Environmental Quality (CEQ) guidance, BLM must consider the current aggregate effects of past actions in a cumulative impacts analysis. CEQ, Guidance on the Consideration of Past Actions in Cumulative Effects Analysis, available at https://ceq.doe.gov/docs/ceq-regulations-and-guidance/regs/Guidance_on_CE.pdf. This means the BLM must consider what the impacts of implementing the 2015 plans has been on cumulative impacts. BLM cannot just incorporate the 2015 plans by reference as its cumulative effects analysis, rather it must consider the "identifiable present effects of past actions," which the 2015 plans clearly are. Under the 2015 plans BLM has taken hundreds of actions, and in total those actions have had cumulative environmental impacts. An analysis of those cumulative impacts is missing from the current EISs, which is not permissible. "A cumulative impact analysis "must be more than perfunctory; it must provide 'a useful analysis of the cumulative impacts of past, present, and future projects."" N. Plains Res. Council, Inc. v. Surface Transp. Bd., 668 F.3d 1067, 1076 (9th Cir. 2011) (quoting Kern v. U.S. Bureau of Land Mgmt., 284 F.3d 1062, 1075 (9th Cir. 2002) (additional citation omitted). "To be useful to decision makers and the public, the cumulative impact analysis must include "some quantified or detailed information; . general statements about possible effects and some risk do not constitute a hard look absent a justification regarding why more definitive information could not be provided."" 668 F.3d at 1076 (quoting Ocean Advocates v. U.S. Army Corps of Eng'rs, 402 F.3d 846, 868 (9th Cir. 2004)) (additional citation omitted). Here the BLM has offered nothing more than a perfunctory cumulative impacts analysis. There is no useful analysis of past projects; the dozens if not hundreds of approved projects implementing the 2015 sage-grouse plans. There is no quantifiable or detailed information about those projects, and there are not even any general statements about the cumulative impacts of those projects, many of which have undergone a NEPA analysis. Based on the above, it is evident the cumulative impacts analyses in the Utah DEIS is invalid and must be expanded to fully address the cumulative impacts from the amendments.

The Draft EIS does not assess how these proposed amendments in Utah may impact populations in nearby states. Given greater sage-grouse populations cross state boundaries and because there are seven BLM state offices revising their plans, we recommend the Final EIS include a cumulative, cross-boundary effects analysis to assess the combined effects to greater sage-grouse populations and habitats associated with the revisions. Specifically, we recommend the cumulative effects consider current greater sage-grouse population conditions and trends compared against the expected effects of current management practices.

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Appendix 3

Current Conditions of GHMA in Utah

Appendix 3. Current Conditions of GHMA in Utah

Based on public comments, coordination with cooperating agencies, and internal review during the 2018 Draft EIS review process, the BLM has compiled the following information regarding the current status and condition of general habitat management areas (GHMA) across Utah.

As part of this appendix, the BLM looked at five specific items of interest associated with GHMA throughout Utah. Those specific items were BLM management and decision acres, existing mineral developments (Utah DOGM) and leases (BLM corporate data), current disturbances (2015 Final EIS), leks and seasonal Greater Sage-Grouse habitat, and connectivity (USU interim data, 2017). The BLM presented information on these items because they relate to decision space, managerial discretion, habitat availability, linkages, and impacts that reflect the resources and issues facing the continued use of GHMA by Greater Sage-Grouse throughout Utah.

To provide specific areas of analysis, the BLM has grouped GHMA in Utah into the following 10 distinct areas, including an overall statewide analysis, and further analysis has been provided in this appendix:

UTAH'S GHMA GROUPS

- South Slope
- Deadman Bench
- Book Cliffs
- West Tavaputs
- Wasatch Plateau
- Lucerne
- Rich
- Sheeprocks
- Ibapah
- Bald Hills

STATEWIDE

Total Habitat Management Area Acres

- 1,684,820 acres in GHMA
- 5,600,900 acres in priority habitat management areas (PHMA)

BLM Decision Area

- 440,100 of the BLM-administered surface acres are in GHMA
- 178,000 of the BLM-administered mineral estate acres are in GHMA
- 2,079,900 of the BLM-administered surface acres are in PHMA
- 1,319,400 of the BLM-administered mineral estate acres are in PHMA

Existing Utah Division of Oil, Gas, and Mining (DOGM) Wells, All Surface Management Agencies

- 1,695 (85%) of the 2,000 DOGM wells are in GHMA

Authorized BLM Leases

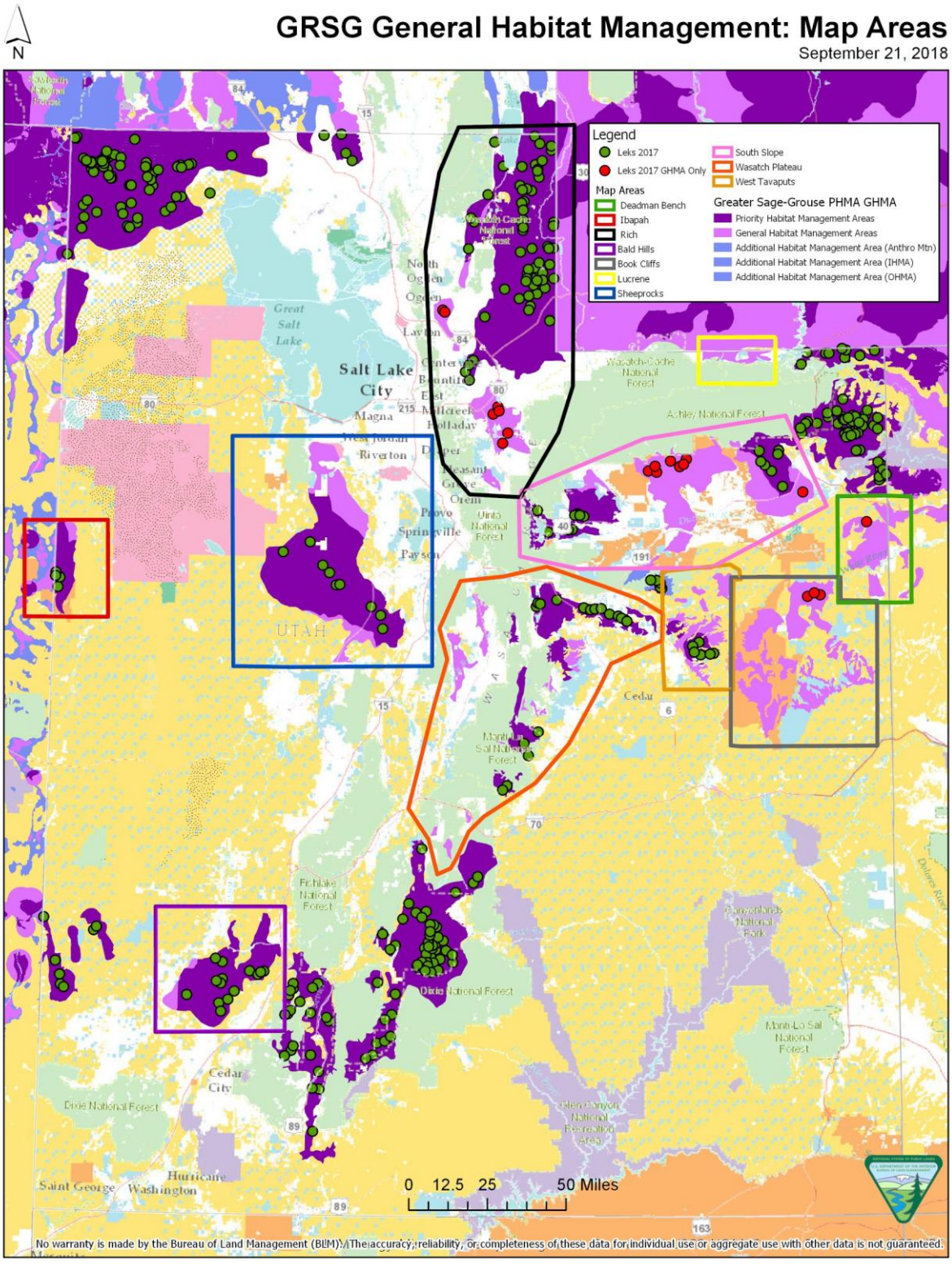
- 245,981 acres leased on GHMA
- 127,949 acres leased on PHMA

Disturbance Acres

- 20,084 (1.2%) acres in GHMA
- 42,383 (0.8%) acres in PHMA

Leks/Seasonal Habitat

- 22 (5%) of the 366 leks that are in Utah's habitat management areas are in GHMA
- 648,695 of the total 4,868,550 seasonal habitat acres in habitat management areas are in GHMA


GRSG General Habitat Management: Map Areas
September 21, 2018
N
Legend
Leks 2017
Leks 2017 GHMA Only
Map Areas
Deadman Bench
Ibapah
Rich
Bald Hills
Book Cliffs
Lucrene
Sheeprocks
South Slope
Wasatch Plateau
West Tavaputs
Greater Sage-Grouse PHMA GHMA
Priority Habitat Management Areas
General Habitat Management Areas
Additional Habitat Management Area (Anthro Mtn)
Additional Habitat Management Area (IHMA)
Additional Habitat Management Area (OHMA)
Salt Lake City
Great Salt Lake
Magna
Riverton
Provo
Springville
Payson
Orem
Layton
Ogden
UTAH
Wasatch-Cache National Forest
Ashley National Forest
Uinta National Forest
Manti-La Sal National Forest
Fishlake National Forest
Dixie National Forest
Cedar City
Saint George
Hurricane
Washington
Canyonlands National Park
Glen Canyon National Recreation Area
0 12.5 25 50 Miles
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.

SOUTH SLOPE AREA

Total Habitat Management Area Acres

- 472,416 acres in GHMA
- 279,615 acres in PHMA

BLM Decision Area

- 49,909 of the BLM-administered surface acres are in GHMA
- 23,374 of the BLM-administered mineral estate acres are in GHMA
- 51,771 of the BLM-administered surface acres are in PHMA
- 66,239 of the BLM-administered mineral estate acres are in PHMA

Existing DOGM Wells All Surface Management Agencies

- 785 (99%) of the 793 DOGM wells are in GHMA

Authorized BLM Leases

- 41,927 acres leased on GHMA
- 7,582 acres leased on PHMA

Disturbance Acres

- 4,718 acres in GHMA
- 1,593 acres in PHMA

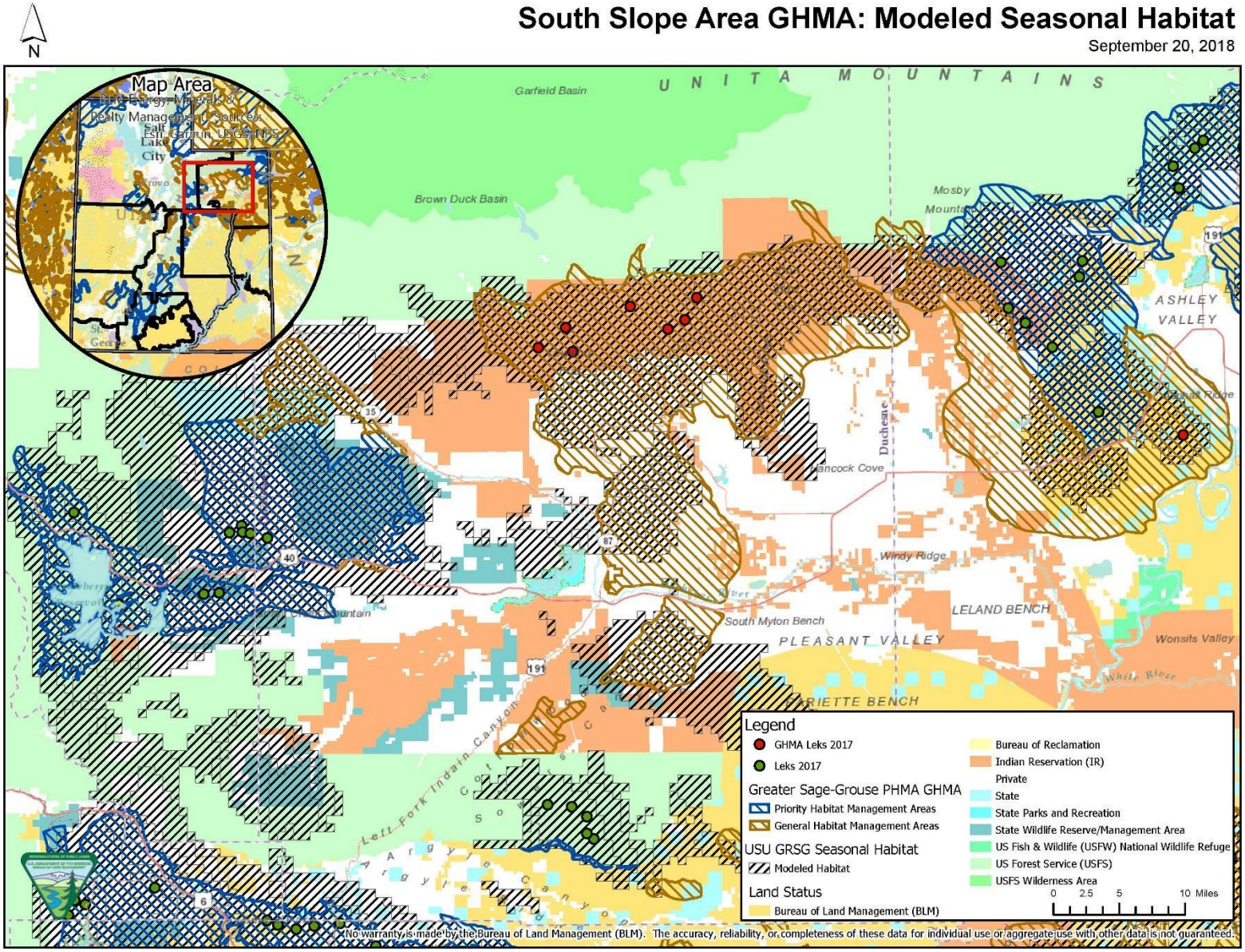
Leks/Seasonal Habitat

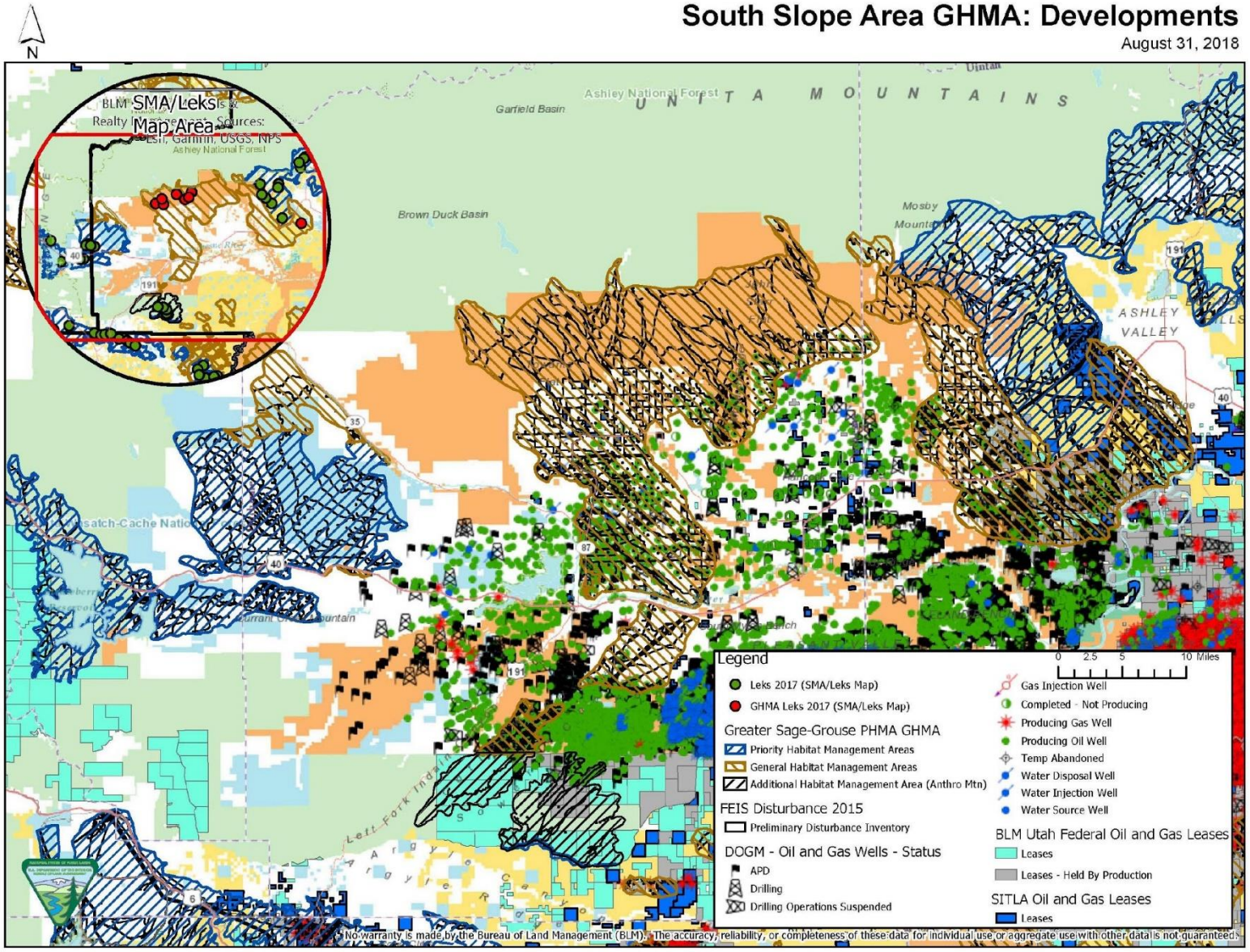
- 8 (33%) of the 24 leks in the habitat management areas are in GHMA
- 302,628 of the total 557,429 modeled seasonal habitat acres are in GHMA

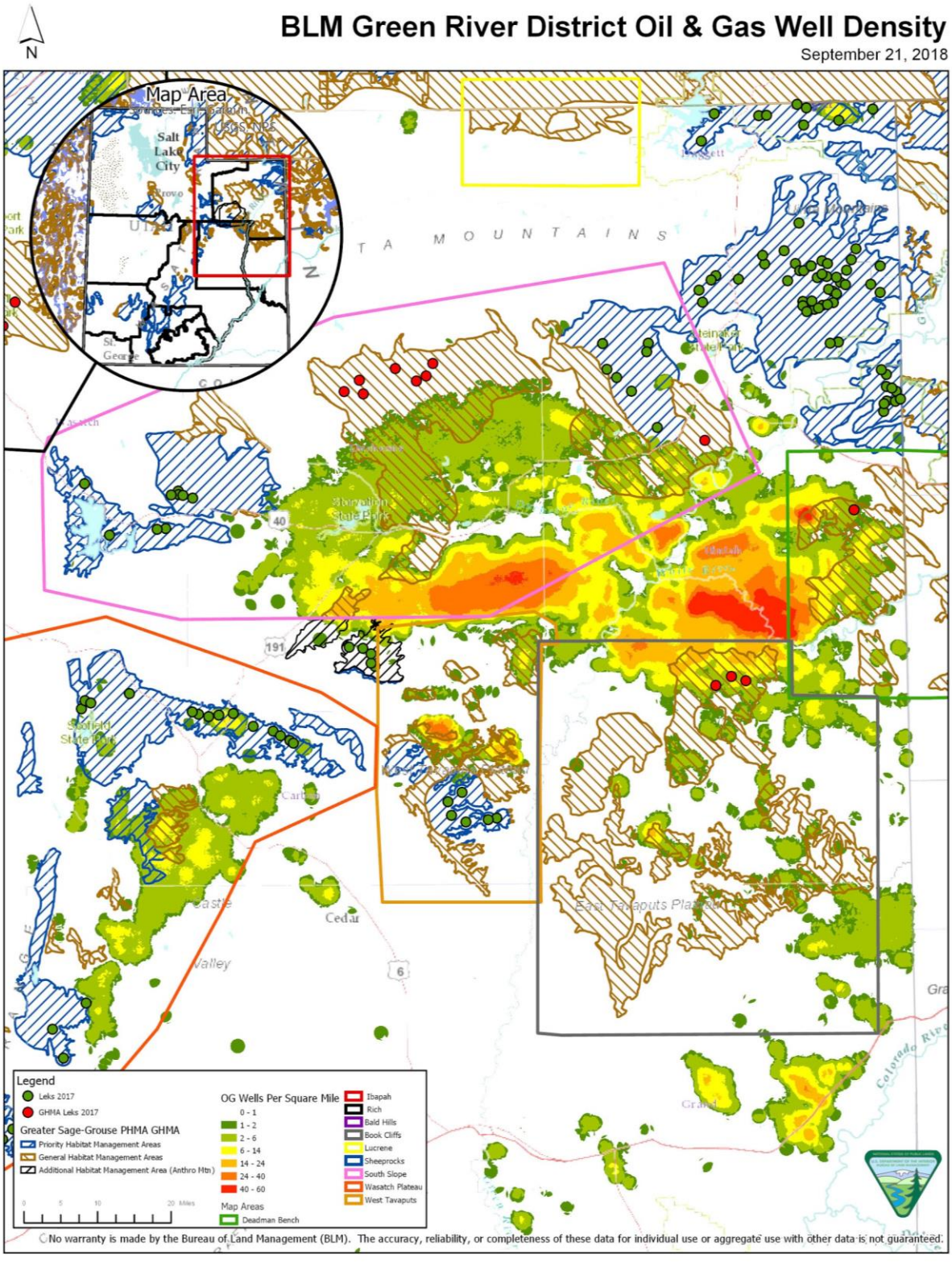
GHMA Contribution to Connectivity

Over the past several years radio-collars and GPS transmitters have been used to document movements of Greater Sage-Grouse on Little Mountain. One female was documented moving just north of the South Slope GHMA area[1] (Utah Division of Wildlife Resources [UDWR] 2018). There are no physical barriers that would pose a substantial hurdle to natural movement into the South Slope GHMA area from the PHMA area just north. The radio-collared birds have also been documented moving west, back and forth from public lands to Ute tribal lands, although none of the birds have moved farther west than Whiterocks Canyon[2] (UDWR 2018). There is high connectivity potential for the Greater Sage-Grouse populations that use the South Slope GHMA area, the PHMA area, and Ute tribal lands.

[1] Brian Maxfield, UDWR Biologist, personal communication
[2] Ibid.


South Slope Area GHMA: Modeled Seasonal Habitat
September 20, 2018
N
Map Area
Garfield Basin
Brown Duck Basin
UNITA MOUNTAINS
Mosby Mountain
ASHLEY VALLEY
Great Ridge
Duchesne
Hancock Cove
Windy Ridge
LELAND BENCH
South Myton Bench
PLEASANT VALLEY
Wonsits Valley
White River
VARIETTE BENCH
Left Fork Indian Canyon
Argyle Canyon
Legend
GHMA Leks 2017
Leks 2017
Greater Sage-Grouse PHMA GHMA
Priority Habitat Management Areas
General Habitat Management Areas
USU GRSG Seasonal Habitat
Modeled Habitat
Land Status
Bureau of Land Management (BLM)
Bureau of Reclamation
Indian Reservation (IR)
Private
State
State Parks and Recreation
State Wildlife Reserve/Management Area
US Fish & Wildlife (USFW) National Wildlife Refuge
US Forest Service (USFS)
USFS Wilderness Area
0 2.5 5 10 Miles
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.


South Slope Area GHMA: Developments
August 31, 2018
N
SMA/Leks Map Area
Ashley National Forest
Garfield Basin
Brown Duck Basin
UINTA MOUNTAINS
ASHLEY VALLEY
Legend
Leks 2017 (SMA/Leks Map)
GHMA Leks 2017 (SMA/Leks Map)
Greater Sage-Grouse PHMA GHMA
Priority Habitat Management Areas
General Habitat Management Areas
Additional Habitat Management Area (Anthro Mtn)
FEIS Disturbance 2015
Preliminary Disturbance Inventory
DOGM - Oil and Gas Wells - Status
APD
Drilling
Drilling Operations Suspended
Gas Injection Well
Completed - Not Producing
Producing Gas Well
Producing Oil Well
Temp Abandoned
Water Disposal Well
Water Injection Well
Water Source Well
BLM Utah Federal Oil and Gas Leases
Leases
Leases - Held By Production
SITLA Oil and Gas Leases
Leases
0 2.5 5 10 Miles
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.


BLM Green River District Oil & Gas Well Density
September 21, 2018
N
Map Area
Salt Lake City
UTAH
Legend
Leks 2017
GHMA Leks 2017
Greater Sage-Grouse PHMA GHMA
Priority Habitat Management Areas
General Habitat Management Areas
Additional Habitat Management Area (Anthro Mtn)
OG Wells Per Square Mile
0 - 1
1 - 2
2 - 6
6 - 14
14 - 24
24 - 40
40 - 60
Map Areas
Deadman Bench
Ibapah
Rich
Bald Hills
Book Cliffs
Lucrene
Sheeprocks
South Slope
Wasatch Plateau
West Tavaputs
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.

DEADMAN BENCH AREA

Habitat Management Area Acres

- 134,671 acres in GHMA
- 0 acres in PHMA

BLM Decision Area

- 100,661 of the BLM-administered surface acres are in GHMA
- 448 of the BLM-administered mineral estate acres are in GHMA
- 0 of the BLM-administered surface acres are in PHMA
- 0 of the BLM-administered mineral estate acres are in PHMA

Existing DOGM Wells All Surface Management Agencies

- 226 DOGM wells are in GHMA

Authorized BLM Leases

- 63,288 acres leased on GHMA
- 0 acres leased on PHMA

Disturbance Acres

- 3,426 acres in GHMA

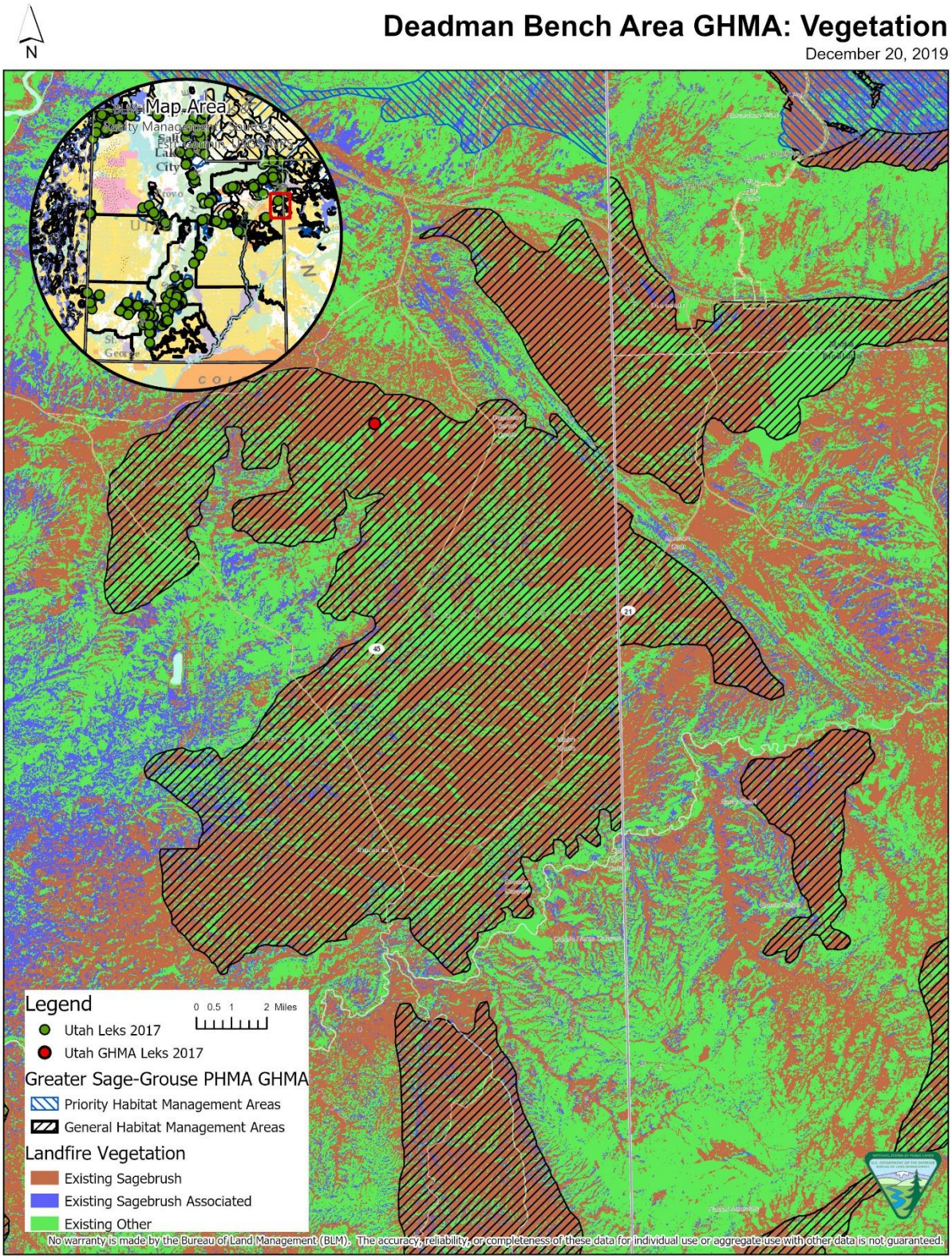
Leks/Seasonal Habitat

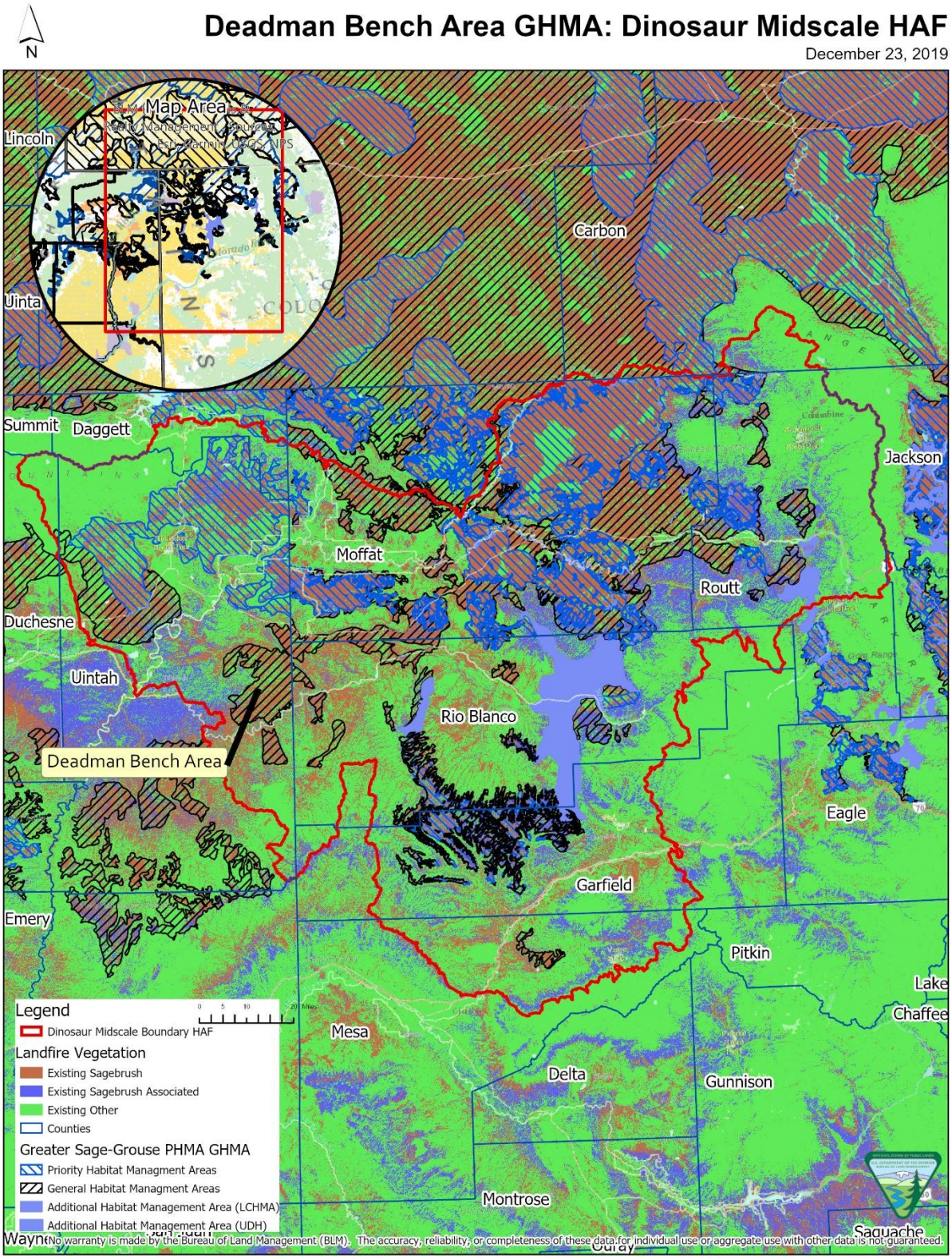
- In the Utah GHMA there is 1 occupied lek
- In the Colorado GHMA there are 5 active leks between 0.8 to 3.0 miles from the State line, as well as 1 inactive lek and 2 historic leks
- In Utah 31,116 of the total 31,116 modeled seasonal habitat acres are in GHMA

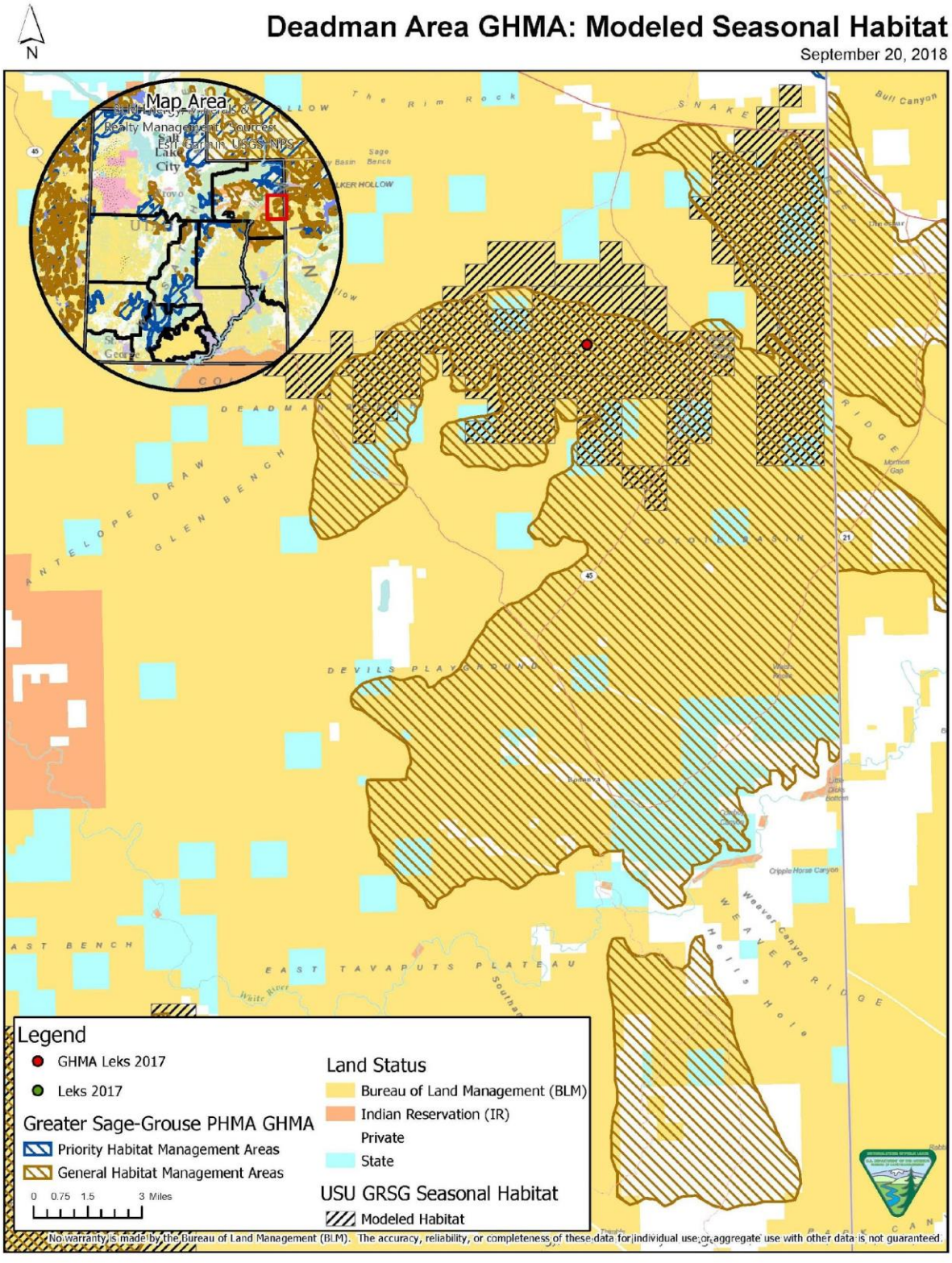
GHMA Contribution to Connectivity

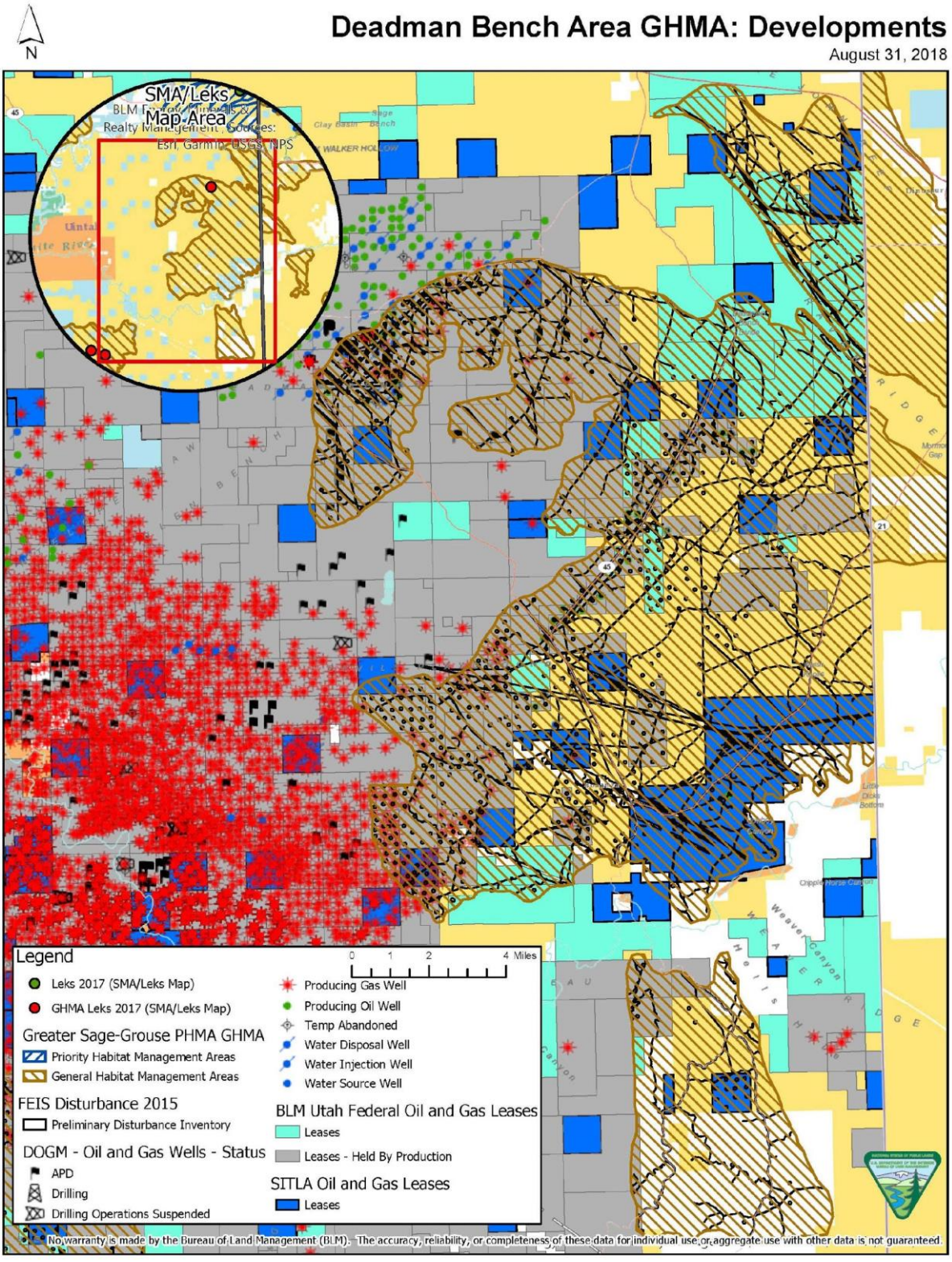
The Deadman Bench is part of the Dinosaur Midscale Habitat Assessment Area which includes lands in Utah, Colorado, and Wyoming. Adjacent lands in Colorado are designated GHMA. Vegetation through the Utah and adjacent Colorado GHMA is a mix of sagebrush, sagebrush associated species, with other non-sagebrush vegetation interspersed. Sagebrush connectivity is present across the area. In 2008, three Greater Sage-Grouse were radio-collared on the North Deadman lek. Two of the birds were found dead north of Highway 40 and the third died near the lek area[3] (UDWR 2018). There are no documented instances of these birds moving to Blue Mountain. Anecdotally, a conservation officer did see Greater Sage-Grouse gliding off the south-facing cliffs of Blue Mountain toward the Deadman Bench area; however, it is unknown if they moved to the Deadman Bench area. Very little is known about the connectivity of the Deadman Bench GHMA population to other populations due to lack of data.

[3] Brian Maxfield, UDWR Biologist, personal communication


N
Deadman Bench Area GHMA: Vegetation
December 20, 2019
Map Area
Legend
0 0.5 1 2 Miles
Utah Leks 2017
Utah GHMA Leks 2017
Greater Sage-Grouse PHMA GHMA
Priority Habitat Management Areas
General Habitat Management Areas
Landfire Vegetation
Existing Sagebrush
Existing Sagebrush Associated
Existing Other
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.


Deadman Bench Area GHMA: Dinosaur Midscale HAF
December 23, 2019
N
Map Area
Lincoln
Uinta
Carbon
Summit
Daggett
Jackson
Moffat
Routt
Duchesne
Uintah
Rio Blanco
Deadman Bench Area
Eagle
Garfield
Emery
Pitkin
Lake
Chaffee
Mesa
Delta
Gunnison
Montrose
Saguache
Wayne
Legend
Dinosaur Midscale Boundary HAF
Landfire Vegetation
Existing Sagebrush
Existing Sagebrush Associated
Existing Other
Counties
Greater Sage-Grouse PHMA GHMA
Priority Habitat Managment Areas
General Habitat Managment Areas
Additional Habitat Management Area (LCHMA)
Additional Habitat Management Area (UDH)
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.


Deadman Area GHMA: Modeled Seasonal Habitat
September 20, 2018
N
Map Area
Reality Management Sources:
Esri, Garmin, USGS, NPS
Legend
GHMA Leks 2017
Leks 2017
Greater Sage-Grouse PHMA GHMA
Priority Habitat Management Areas
General Habitat Management Areas
0 0.75 1.5 3 Miles
Land Status
Bureau of Land Management (BLM)
Indian Reservation (IR)
Private
State
USU GRSG Seasonal Habitat
Modeled Habitat
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.


Deadman Bench Area GHMA: Developments
August 31, 2018
N
SMA/Leks Map Area
Legend
0 1 2 4 Miles
Leks 2017 (SMA/Leks Map)
GHMA Leks 2017 (SMA/Leks Map)
Greater Sage-Grouse PHMA GHMA
Priority Habitat Management Areas
General Habitat Management Areas
FEIS Disturbance 2015
Preliminary Disturbance Inventory
DOGM - Oil and Gas Wells - Status
APD
Drilling
Drilling Operations Suspended
Producing Gas Well
Producing Oil Well
Temp Abandoned
Water Disposal Well
Water Injection Well
Water Source Well
BLM Utah Federal Oil and Gas Leases
Leases
Leases - Held By Production
SITLA Oil and Gas Leases
Leases
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.

BOOK CLIFFS AREA

Habitat Management Area Acres

- 410,924 acres in GHMA
- 0 acres in PHMA

BLM Decision Area

- 136,437 of the BLM-administered surface acres are in GHMA
- 54,253 of the BLM-administered mineral estate acres are in GHMA
- 0 of the BLM-administered surface acres are in PHMA
- 0 of the BLM-administered mineral estate acres are in PHMA

Existing DOGM Wells All Surface Management Agencies

- 262 DOGM wells are in GHMA

Authorized BLM Leases

- 93,390 acres leased on GHMA
- 0 acres leased on PHMA

Disturbance Acres

- 4,787 acres in GHMA

Leks/Seasonal Habitat

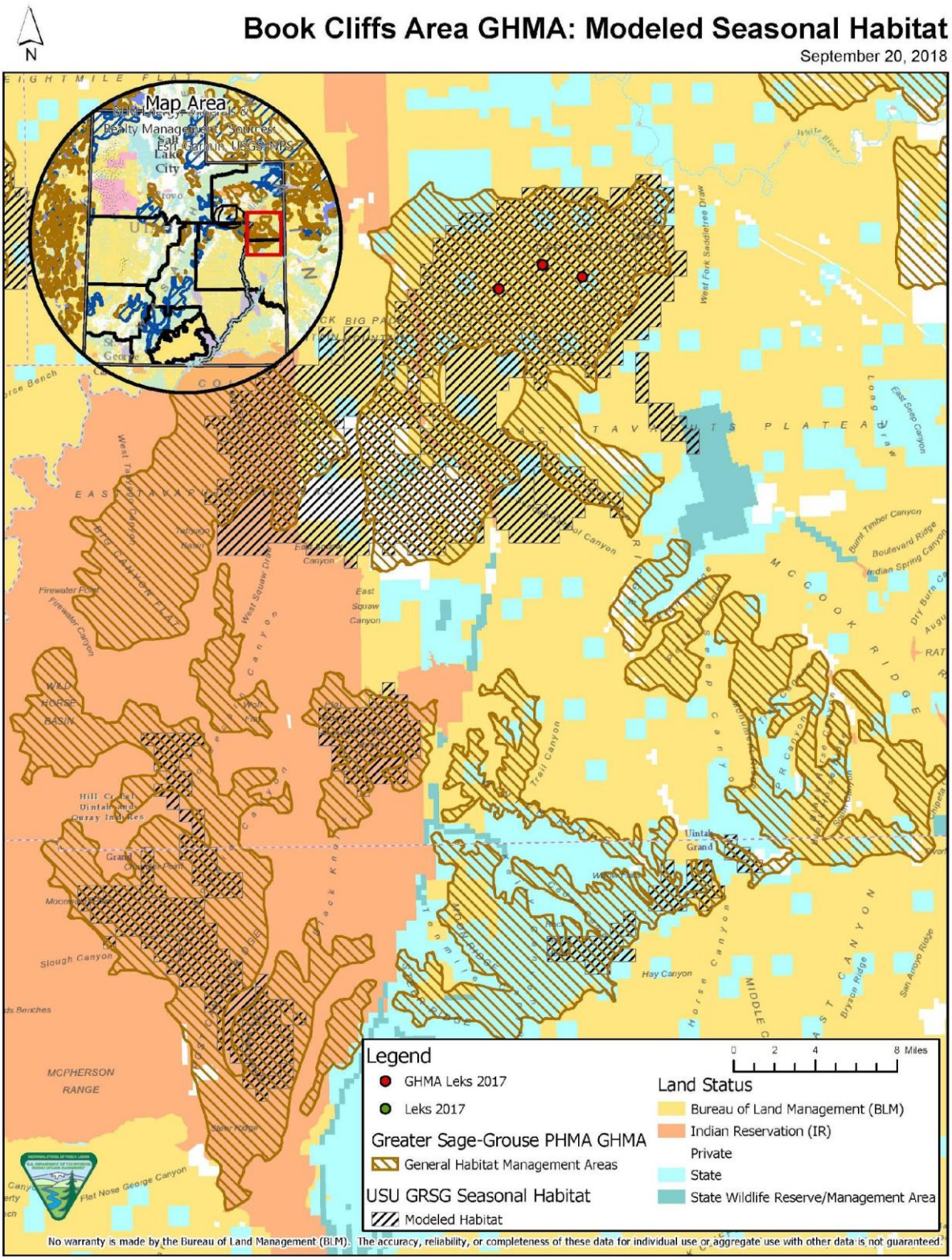
- 3 leks in the GHMA
- 153,243 of the total 153,243 modeled seasonal habitat acres are in GHMA

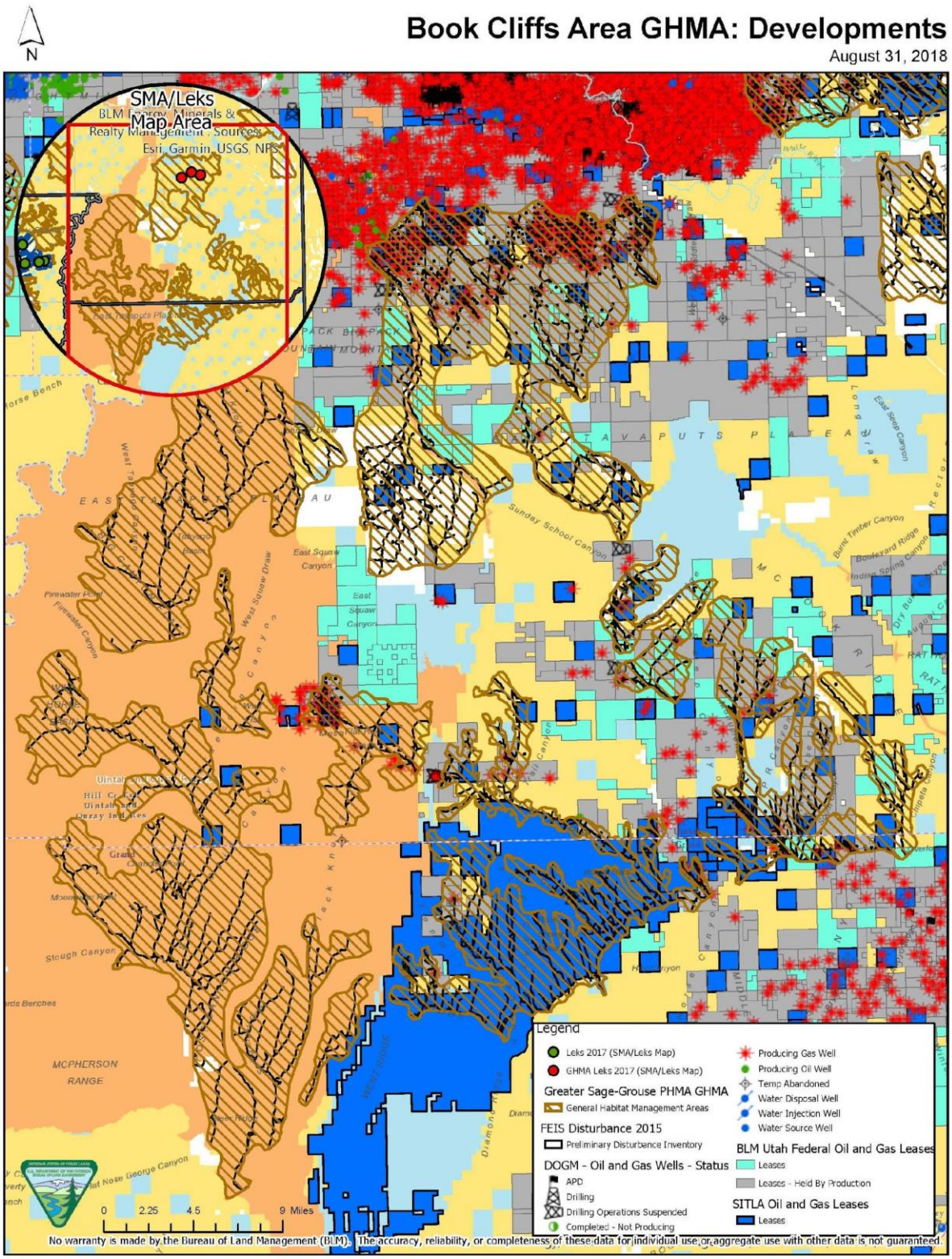
GHMA Contribution to Connectivity

There was one telemetry study done in the Book Cliffs GHMA area on Greater Sage-Grouse in 2007 and 2008. The movement data from the study, indicated that males and broodless hens remained near the leks on East and Middle Bench in the spring and moved approximately 7.7 to 12 miles to Willow Creek and Agency Draw during the summer (Smith 2009). Brood-rearing hens used the Willow Creek area. During the fall, most Greater Sage-Grouse moved back to East and Middle Bench; however, in 2007 and 2008 some males were observed using Agency Draw and Willow Creek in November (Smith 2009). Smith documented a 17.5-mile movement of a hen from Seep Ridge to Ute tribal land; it remained in that area throughout the summer. Greater Sage-Grouse are known to inhabit tribal lands, but very little information is known about the status of these populations and their connectivity to other populations. Other than Smith's movement data, very little is known about the connectivity of the Greater Sage-Grouse population in the Book Cliffs GHMA area.

References

Smith, L. S. 2009. "Greater sage-grouse and energy development in Northeastern Utah: Implications for management. "Thesis, Utah State University, Logan, USA.


Book Cliffs Area GHMA: Modeled Seasonal Habitat
September 20, 2018
N
Map Area
Legend
GHMA Leks 2017
Leks 2017
Greater Sage-Grouse PHMA GHMA
General Habitat Management Areas
USU GRSG Seasonal Habitat
Modeled Habitat
0 2 4 8 Miles
Land Status
Bureau of Land Management (BLM)
Indian Reservation (IR)
Private
State
State Wildlife Reserve/Management Area
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.


Book Cliffs Area GHMA: Developments
August 31, 2018
N
SMA/Leks
Map Area
BLM Energy, Minerals & Realty Management, Sources:
Esri, Garmin, USGS, NPS
Legend
Leks 2017 (SMA/Leks Map)
GHMA Leks 2017 (SMA/Leks Map)
Greater Sage-Grouse PHMA GHMA
General Habitat Management Areas
FEIS Disturbance 2015
Preliminary Disturbance Inventory
DOGM - Oil and Gas Wells - Status
APD
Drilling
Drilling Operations Suspended
Completed - Not Producing
Producing Gas Well
Producing Oil Well
Temp Abandoned
Water Disposal Well
Water Injection Well
Water Source Well
BLM Utah Federal Oil and Gas Leases
Leases
Leases - Held By Production
SITLA Oil and Gas Leases
Leases
0 2.25 4.5 9 Miles
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.

WEST TAVAPUTS AREA

Habitat Management Area Acres

- 99,828 acres in GHMA
- 50,362 acres in PHMA

BLM Decision Area

- 73,751 of the BLM-administered surface acres are in GHMA
- 8,691 of the BLM-administered mineral estate acres are in GHMA
- 22,640 of the BLM-administered surface acres are in PHMA
- 9,278 of the BLM-administered mineral estate acres are in PHMA

Existing DOGM Wells All Surface Management Agencies

- 281 (100%) of the DOGM wells are in GHMA

Authorized BLM Leases

- 36,423 acres leased on GHMA
- 1,078 acres leased on PHMA

Disturbance Acres

- 1,098 acres in GHMA
- 143 acres in PHMA

Leks/Seasonal Habitat

- None of the 6 leks in the habitat management areas are in GHMA
- 34,152 of the total 71,990 modeled seasonal habitat acres are in GHMA

GHMA Contribution to Connectivity

From the 2007–2017 lek counts, the West Tavaputs Plateau population is estimated to range between 56 and 460 birds (14 to 115 males counted on 6 leks)[4] (UDWR 2017). There are seven known leks in the area, six of which have been active over the past 10 years, with an average total male lek attendance of 63[5] (UDWR 2017). There has been a steady increase in West Tavaputs population over the past 10 years, with the past 5 years showing all time high lek counts[6] (UDWR 2017).

Telemetry monitoring suggests the Greater Sage-Grouse are using most of the mid- to high-elevation sagebrush areas on the plateau to meet breeding, nesting, and brood-rearing habitat needs. During winters, birds are moving to three primary locations lower on the plateau: Lower Steer Ridge, Sage Brush Flats, and Harmon Canyon. These wintering areas are relatively short distance migrations (0.3 to

[4] Brian Maxfield, UDWR Biologist, personal communication
[5] Ibid.
[6] Ibid.

3 miles), depending on snow depths. There is evidence that Greater Sage-Grouse sometimes winter north of Nine Mile Canyon and mix with Anthro Mountain Greater Sage-Grouse[7] (UDWR 2018).

Greater Sage-Grouse wintering areas were identified approximately 22 miles east of Anthro Mountain, and some Greater Sage-Grouse from Anthro Mountain were located approximately 6 to 22 miles southeast of Anthro Mountain (Duvuvuei 2013). These wintering areas are in the West Tavaputs GHMA area. Resident Greater Sage-Grouse from the Anthro Mountain population have been documented moving from Anthro Mountain to Bishops Ridge on the Tavaput Mountains[8] (Forest Service 2012; Gruber 2012).

Recent GPS data has indicated movements from Emma Park to the West Tavaputs area[9] (UDWR 2018). Greater Sage-Grouse that were translocated to Anthro Mountain from Parker Mountain and also resident Anthro birds were documented moving from Anthro Mountain to Emma Park and Whitemore Park (Gruber 2012; Duvuvuei 2013). There was also evidence of Greater Sage-Grouse from a neighboring population on Anthro Mountain migrating nearly 25 miles to summer on Emma Park (Coleman 2004).

All of these aforementioned movements may indicate potential connectivity between West Tavaputs, Wasatch Plateau, and Anthro Mountain Greater Sage-Grouse populations, as well as surrounding populations.

References

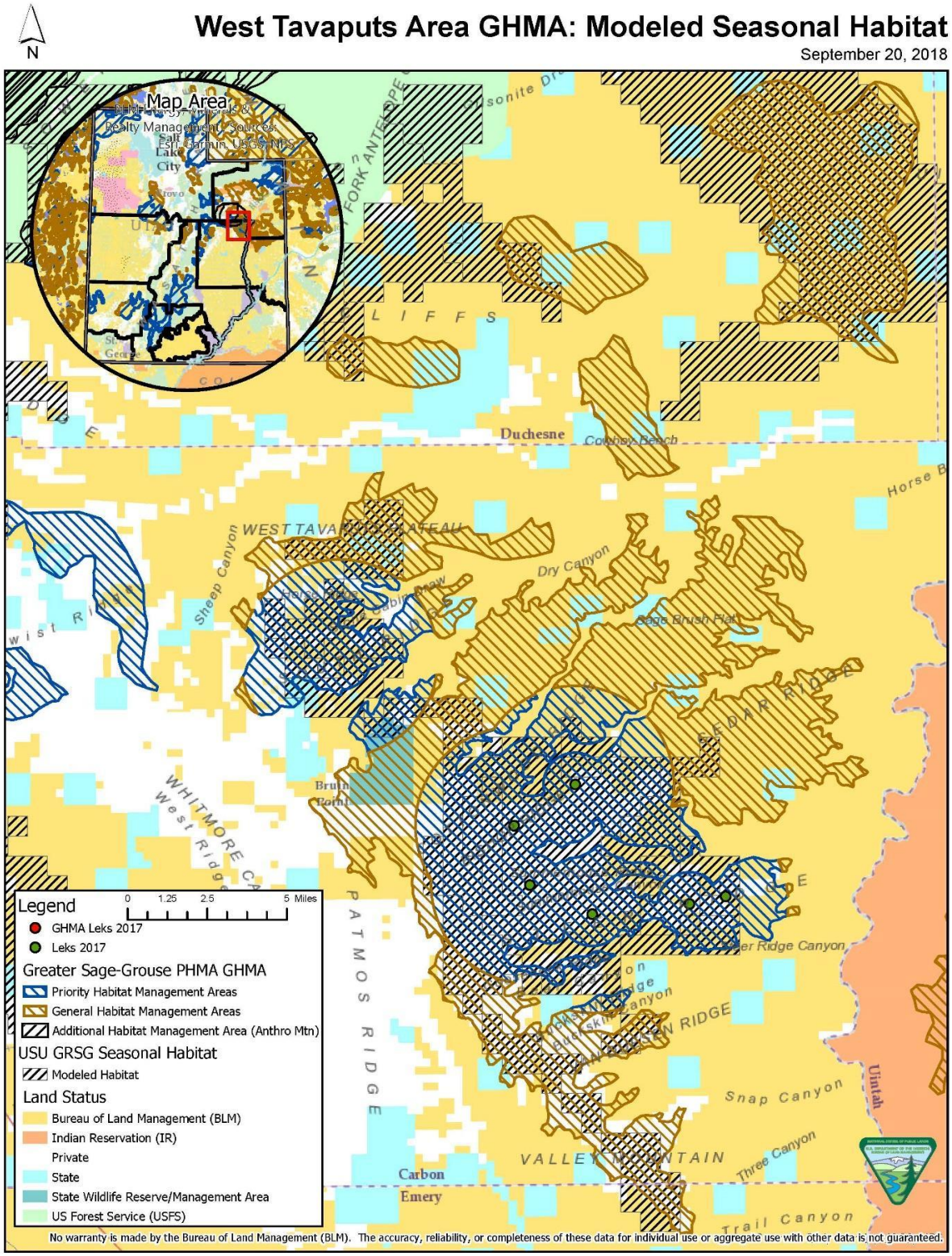
Coleman, T. 2004. Unpublished Report. Anthro Mountain Sage-Grouse Study. Utah Division of Wildlife Resources.

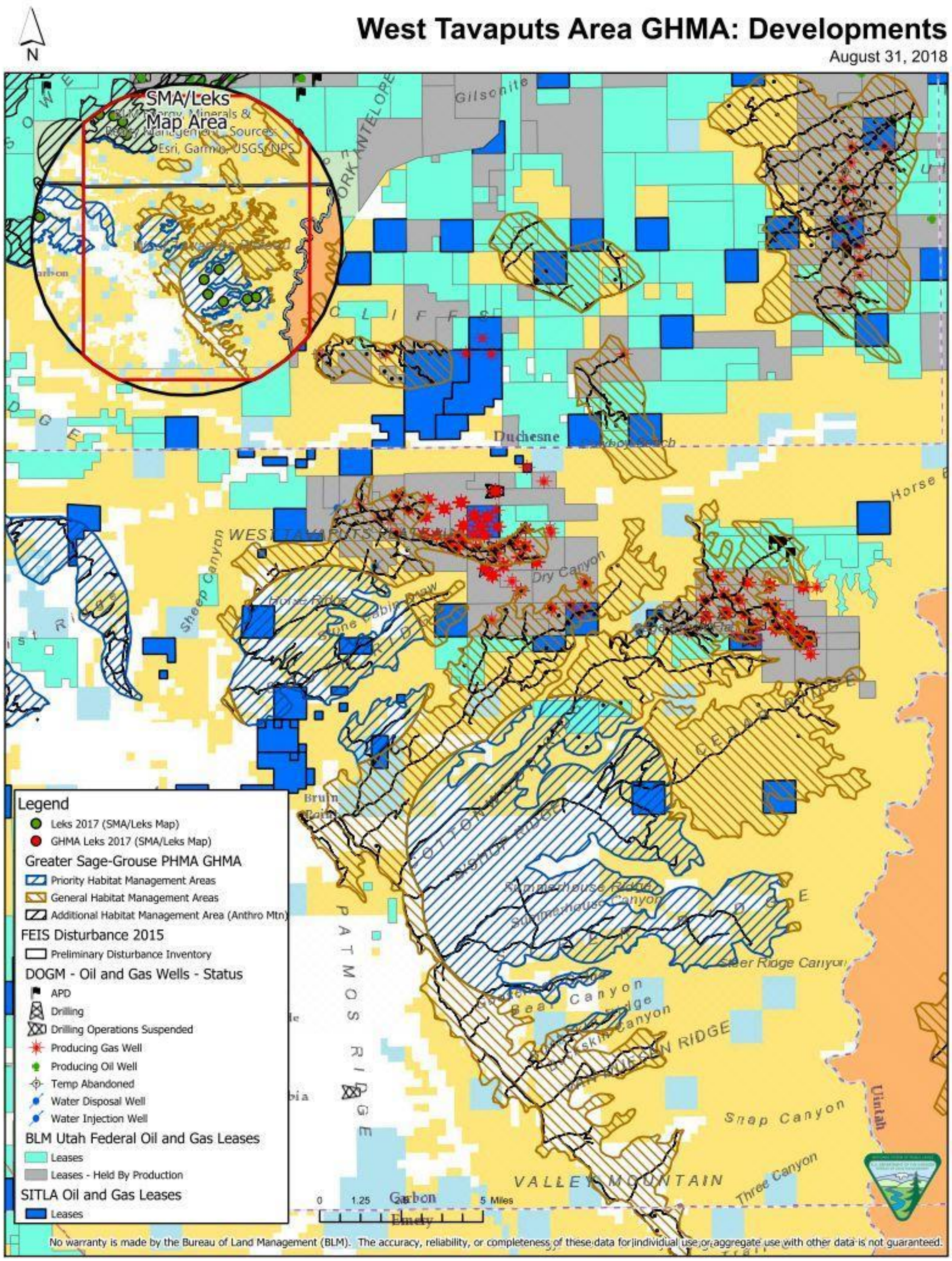
Crompton, B. 2005. The sage-grouse of Emma Park-Survival, production, and habitat use in relation to coalbed methane development. Utah Division of Wildlife Resources.

Duvuvuei, O. V. 2013. Vital rates, population trends, and habitat-use patterns of a translocated greater sage-grouse population: Implications for future translocations. Thesis, Utah State University, Logan, USA.

Gruber, N. W. 2012. Population dynamics and movements of translocated and resident greater sage-grouse on Anthro Mountain, Utah. Thesis, Utah State University, Logan, USA.

[7] Ibid.
[8] Brian Maxfield, UDWR Biologist, personal communication
[9] Ibid.


West Tavaputs Area GHMA: Modeled Seasonal Habitat
September 20, 2018
N
Map Area
Duchesne
Carbon
Emery
Uintah
Legend
0 1.25 2.5 5 Miles
GHMA Leks 2017
Leks 2017
Greater Sage-Grouse PHMA GHMA
Priority Habitat Management Areas
General Habitat Management Areas
Additional Habitat Management Area (Anthro Mtn)
USU GRSG Seasonal Habitat
Modeled Habitat
Land Status
Bureau of Land Management (BLM)
Indian Reservation (IR)
Private
State
State Wildlife Reserve/Management Area
US Forest Service (USFS)
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.


West Tavaputs Area GHMA: Developments
August 31, 2018
N
SMA/Leks Map Area
Legend
Leks 2017 (SMA/Leks Map)
GHMA Leks 2017 (SMA/Leks Map)
Greater Sage-Grouse PHMA GHMA
Priority Habitat Management Areas
General Habitat Management Areas
Additional Habitat Management Area (Anthro Mtn)
FEIS Disturbance 2015
Preliminary Disturbance Inventory
DOGM - Oil and Gas Wells - Status
APD
Drilling
Drilling Operations Suspended
Producing Gas Well
Producing Oil Well
Temp Abandoned
Water Disposal Well
Water Injection Well
BLM Utah Federal Oil and Gas Leases
Leases
Leases - Held By Production
SITLA Oil and Gas Leases
Leases
0 1.25 2.5 5 Miles
Gilsonite
Duchesne
Dry Canyon
Sheep Canyon
Horse
Bear Canyon
Deer Ridge Canyon
Snap Canyon
Three Canyon
VALLEY MOUNTAIN
Carbon
Emery
Uintah
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.

WASATCH PLATEAU AREA

Habitat Management Area Acres

- 115,055 acres in GHMA
- 293,112 acres in PHMA

BLM Decision Area

- 8,813 of the BLM-administered surface acres are in GHMA
- 19,395 of the BLM-administered mineral estate acres are in GHMA
- 20,022 of the BLM-administered surface acres are in PHMA
- 199,213 of the BLM-administered mineral estate acres are in PHMA

Existing DOGM Wells All Surface Management Agencies

- 141 (58%) of the 245 DOGM wells are in GHMA

Authorized BLM Leases

- 10,878 acres leased on GHMA
- 26,227 acres leased on PHMA

Disturbance Acres

- 1,970 acres in GHMA
- 3,755 acres in PHMA

Leks/Seasonal Habitat

- None of the 19 leks in habitat management areas are in GHMA
- 21,748 of the total 217,011 modeled seasonal habitat acres are in GHMA

GHMA Contribution to Connectivity

Radio-collared Greater Sage-Grouse from PHMA in the Emma Park area were recorded migrating west over 14 miles to wintering areas (Crompton 2005). Recent GPS data has indicated movements from PHMA in the Emma Park to the West Tavaputs area[10] (UDWR 2018). Greater Sage-Grouse that were translocated to Anthro Mountain, a neighboring population, from Parker Mountain and also resident radio-collared Anthro Mountain birds were documented moving from Anthro Mountain to Emma Park and Whitemore Park and back to Anthro Mountain[11] (Gruber 2012; Duvuvuei 2013; Forest Service 2018). In 2002, a hen from Anthro Mountain was recorded nesting in Emma Park to overwinter, and then moving back to Anthro Mountain in the spring[12] (Coleman 2004; Forest Service 2018). Even though Anthro Mountain is not encompassed in a habitat management area in the 2015 ROD/ARMPA for the BLM, birds from Anthro Mountain have been documented moving north up to Highway 40 and 6 to 18 miles southeast of Anthro Mountain (Gruber 2012; Duvuvuei 2013). Also, a radio-collared bird that was

[10] Brian Maxfield, UDWR Biologist, personal communication
[11] B. Christensen, US Forest Service, personal communication
[12] Ibid.

translocated to Anthro Mountain from Parker Mountain was recaptured on a lek near Fruitland (Gruber 2012).

All these aforementioned movements may indicate potential connectivity between the West Tavaputs, Wasatch Plateau, and Anthro Mountain Greater Sage-Grouse populations, as well as surrounding populations.

GHMA in the western portion of the Wasatch Plateau is not known to be significantly important in providing habitat for existing populations or for providing connectivity to other populations. In general, physical barriers (i.e., conifer and topography) contribute to these areas being relatively isolated and therefore, pose a substantial hurdle to natural movements and connectivity between any of the nearest Greater Sage-Grouse populations.

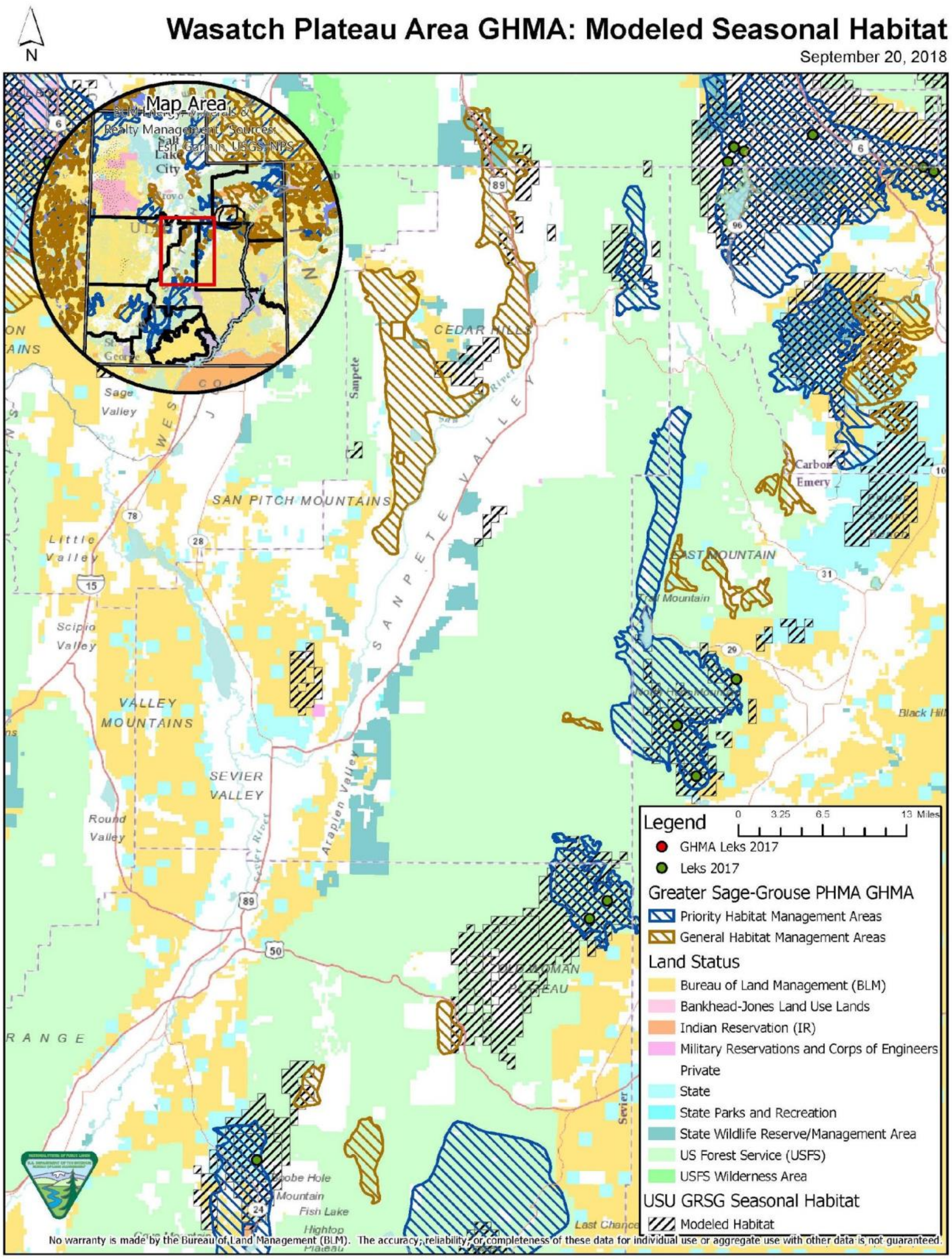
References

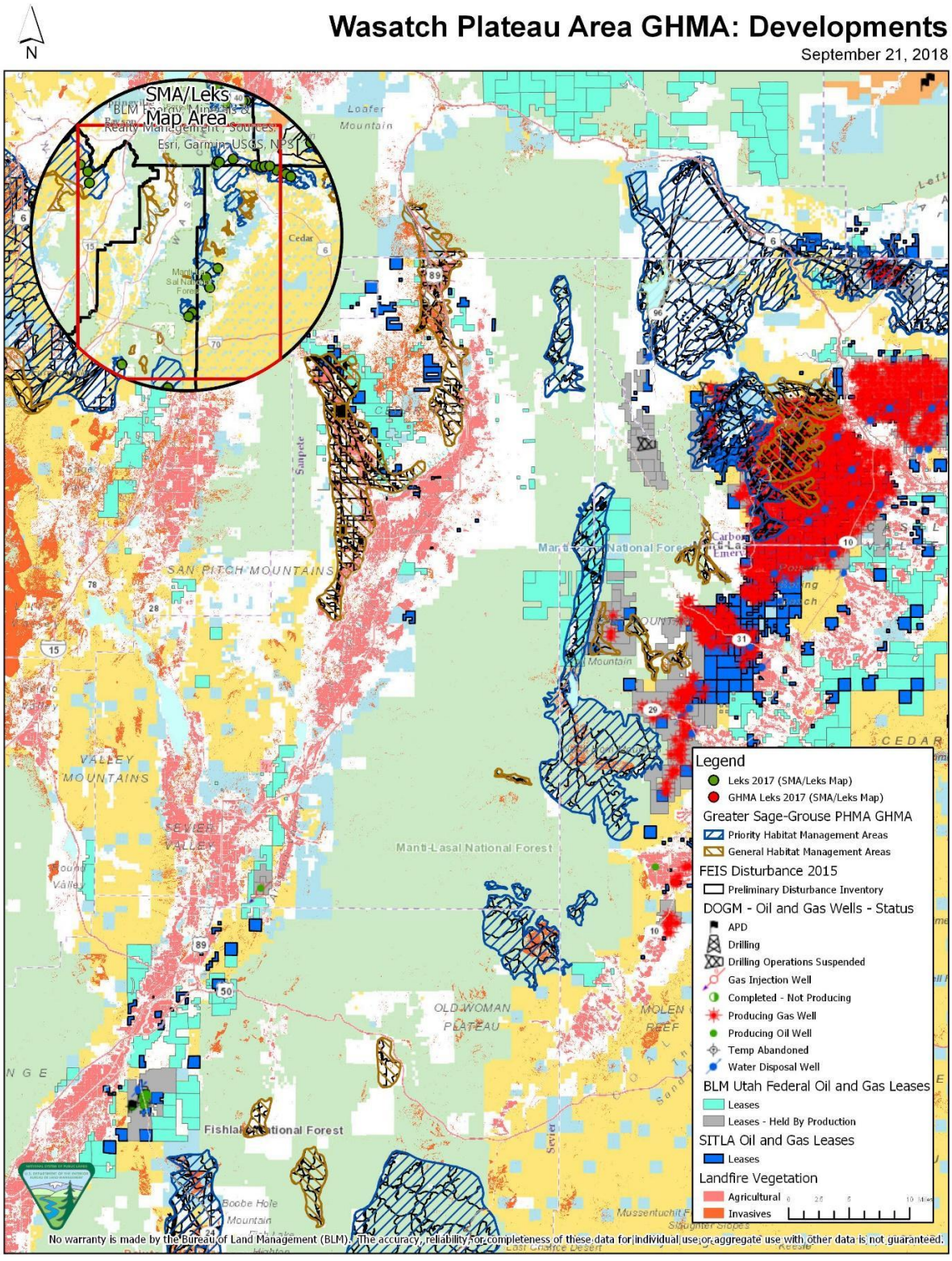
Coleman, T. 2004. Unpublished Report. Anthro Mountain Sage-Grouse Study. Utah Division of Wildlife Resources.

Crompton, B. 2005. The sage-grouse of Emma Park-Survival, production, and habitat use in relation to coalbed methane development. Utah Division of Wildlife Resources.

Duvuvuei, O.V. 2013. Vital rates, population trends, and habitat-use patterns of a translocated greater sage-grouse population: Implications for future translocations. Thesis, Utah State University, Logan, USA.

Gruber, N.W. 2012. Population dynamics and movements of translocated and resident greater sage-grouse on Anthro Mountain, Utah. Thesis, Utah State University, Logan, USA.


Wasatch Plateau Area GHMA: Modeled Seasonal Habitat
September 20, 2018
N
Map Area
Legend
0 3.25 6.5 13 Miles
GHMA Leks 2017
Leks 2017
Greater Sage-Grouse PHMA GHMA
Priority Habitat Management Areas
General Habitat Management Areas
Land Status
Bureau of Land Management (BLM)
Bankhead-Jones Land Use Lands
Indian Reservation (IR)
Military Reservations and Corps of Engineers
Private
State
State Parks and Recreation
State Wildlife Reserve/Management Area
US Forest Service (USFS)
USFS Wilderness Area
USU GRSG Seasonal Habitat
Modeled Habitat
CEDAR HILLS
SAN PITCH MOUNTAINS
SANPETE VALLEY
VALLEY MOUNTAINS
SEVIER VALLEY
Little Valley
Scipio Valley
Round Valley
Sage Valley
Arapien Valley
EAST MOUNTAIN
Carbon
Emery
Black Hill
Fish Lake
RANGE
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.


Wasatch Plateau Area GHMA: Developments
September 21, 2018
N
SMA/Leks Map Area
Legend
Leks 2017 (SMA/Leks Map)
GHMA Leks 2017 (SMA/Leks Map)
Greater Sage-Grouse PHMA GHMA
Priority Habitat Management Areas
General Habitat Management Areas
FEIS Disturbance 2015
Preliminary Disturbance Inventory
DOGM - Oil and Gas Wells - Status
APD
Drilling
Drilling Operations Suspended
Gas Injection Well
Completed - Not Producing
Producing Gas Well
Producing Oil Well
Temp Abandoned
Water Disposal Well
BLM Utah Federal Oil and Gas Leases
Leases
Leases - Held By Production
SITLA Oil and Gas Leases
Leases
Landfire Vegetation
Agricultural
Invasives
SAN PITCH MOUNTAINS
VALLEY MOUNTAINS
SEVEN VALLEY
Manti-Lasal National Forest
OLD WOMAN PLATEAU
MOLEN REEF
Fishlake National Forest
Sanpete
Loafer Mountain
Cedar
Boobe Hole Mountain
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.

LUCERNE AREA

Total Habitat Management Area Acres

- 37,526 acres in GHMA
- 0 acres in PHMA

BLM Decision Area

- 0 of the BLM-administered surface acres are in GHMA
- 12,433 of the BLM-administered mineral estate acres are in GHMA
- 0 of the BLM-administered surface acres are in PHMA
- 0 of the BLM-administered mineral estate acres are in PHMA

Existing DOGM Wells All Surface Management Agencies

- 0 DOGM wells are in GHMA

Authorized BLM Leases

- 0 acres leased on GHMA
- 0 acres leased on PHMA

Disturbance Acres

- 143 (0.4%) acres in GHMA

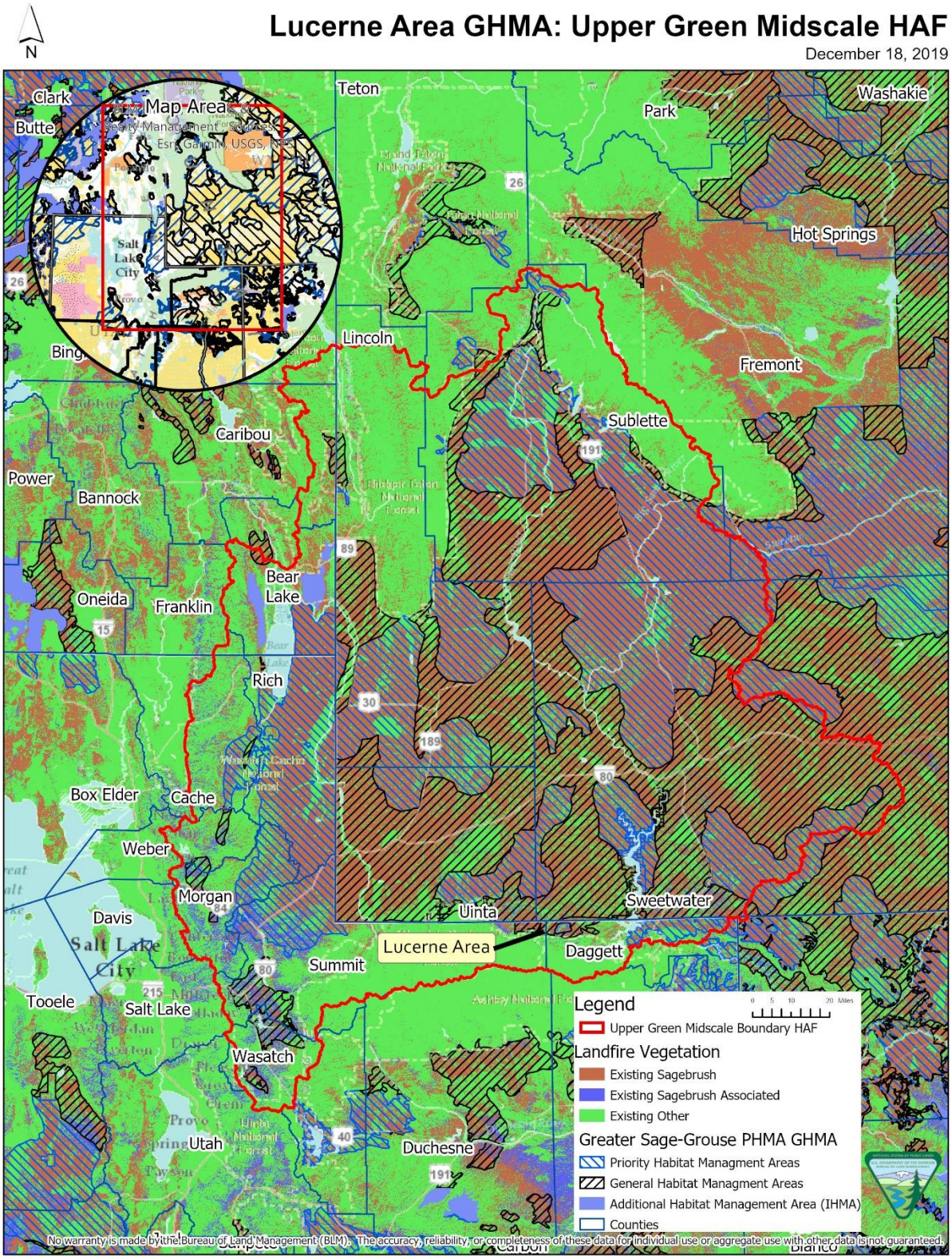
Leks/Seasonal Habitat

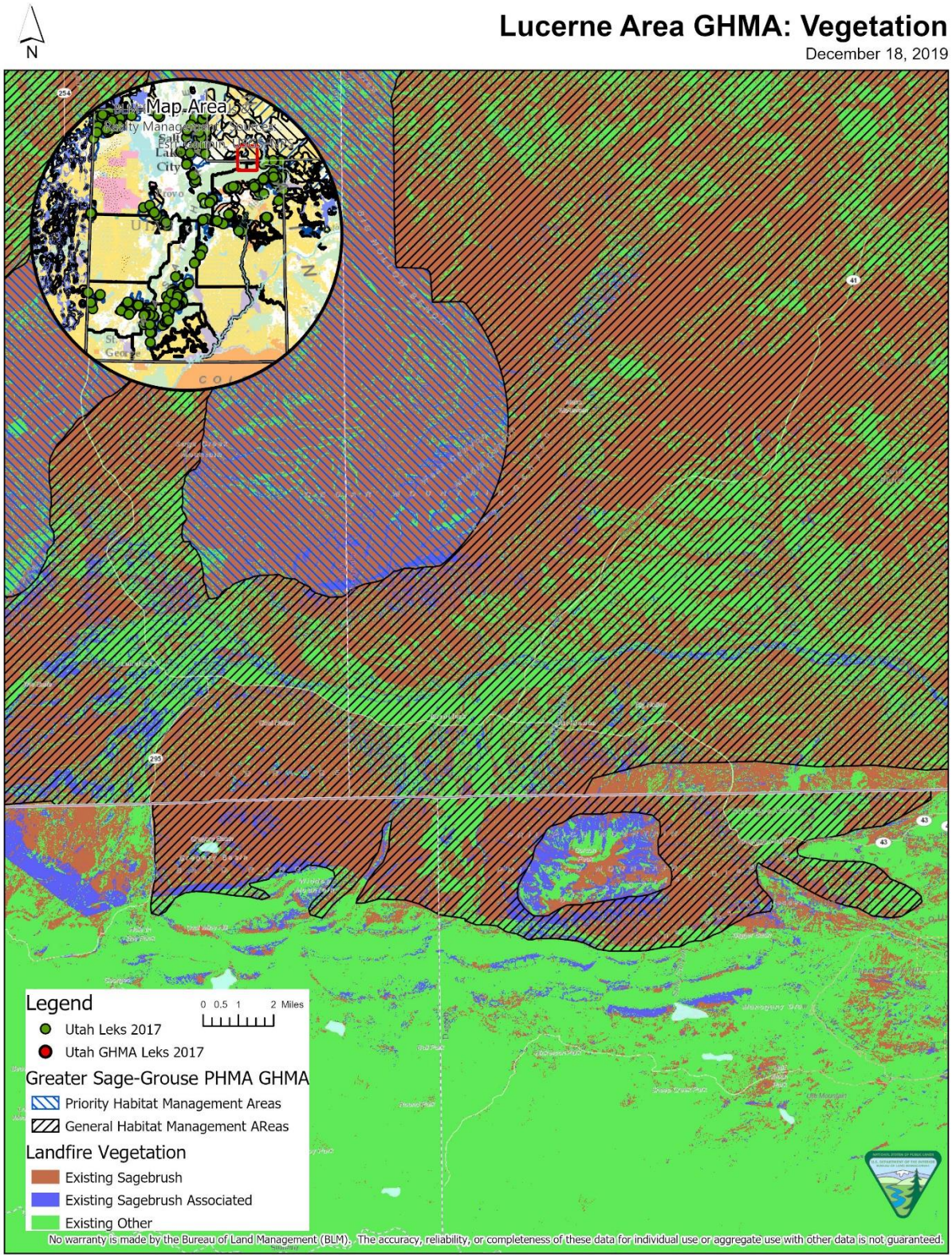
- No leks are in the habitat management areas in Utah
- 5 active leks are outside of Utah but within 10 miles of the Utah-Wyoming-Colorado border
- In Utah 34,390 of the total 34,390 modeled seasonal habitat acres are in GHMA

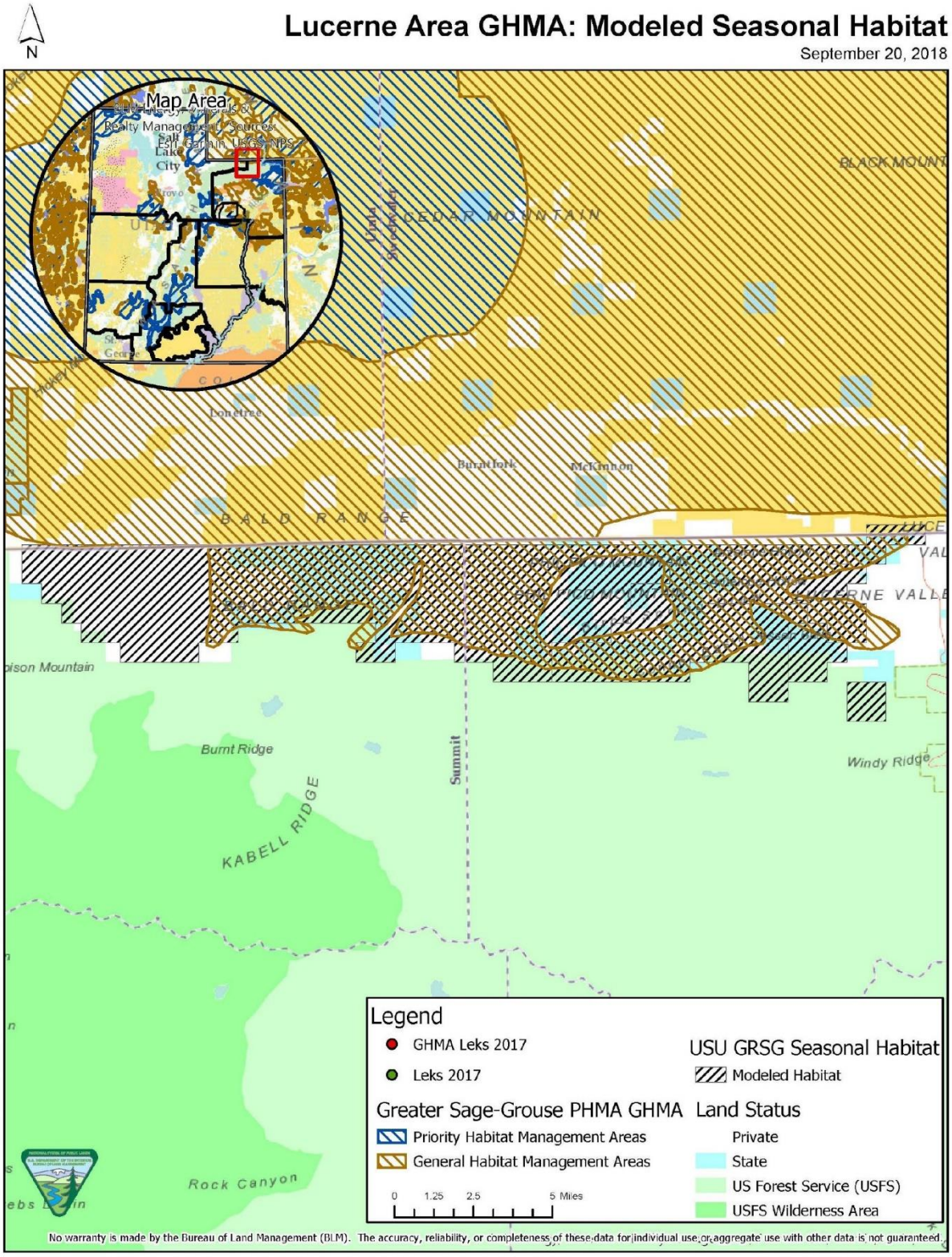
GHMA Contribution to Connectivity

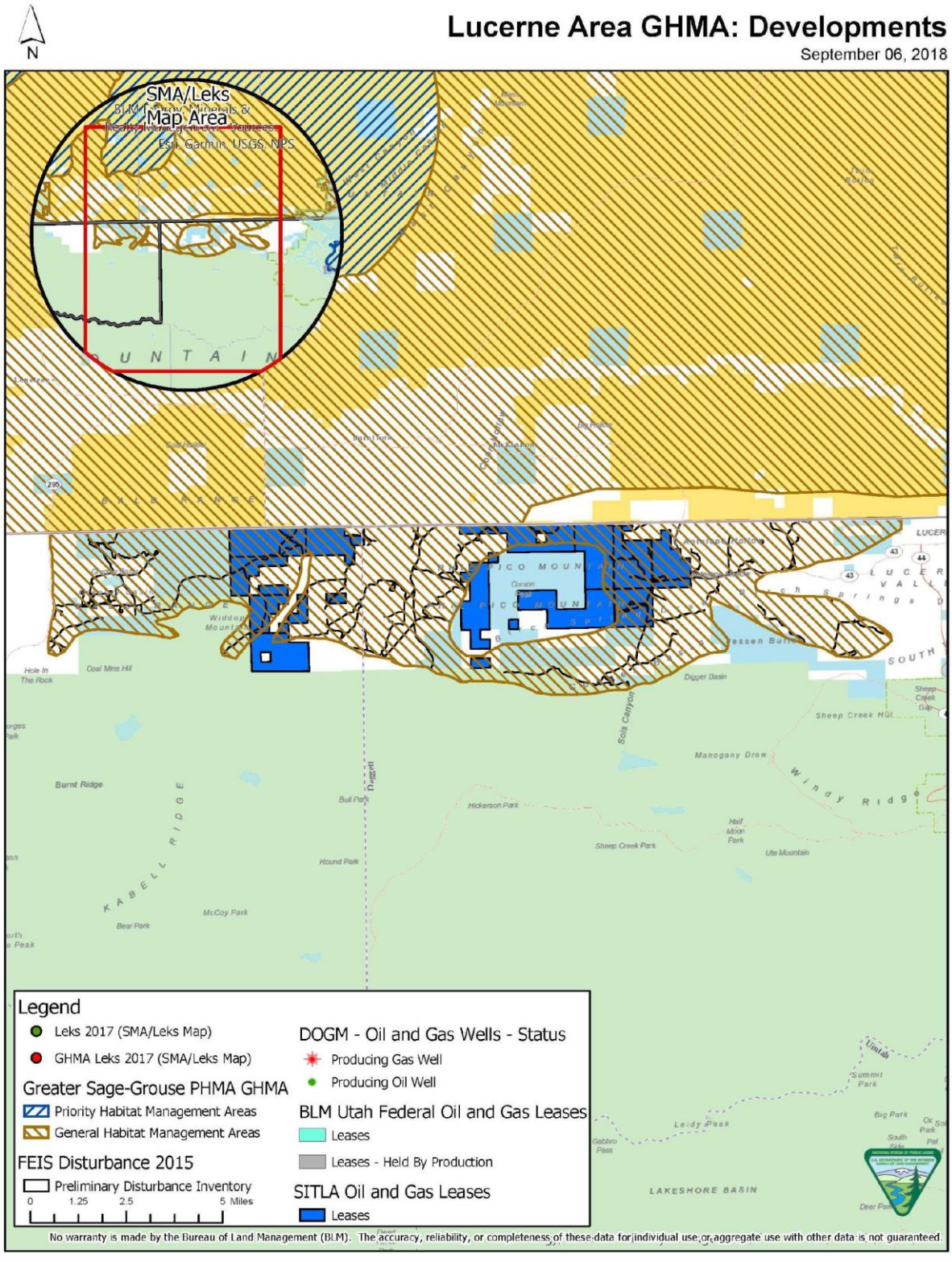
The Lucerne Area is part of the Upper Green River Habitat Assessment Area, which includes lands in Utah, Idaho, Wyoming, and Colorado. Greater Sage-Grouse have been observed using the Bald Knoll area of the Lucerne GHMA, according to UDWR biologist, Brian Maxfield. There is usable sagebrush and brood-rearing habitat in the GHMA area[13] (UDWR 2018). The Lucerne GHMA area is likely an extension of the southernmost Greater Sage-Grouse habitat and population in southwest Wyoming, as there is contiguous sagebrush vegetation and no geographical barriers between the populations. Connectivity to other populations in Utah is unknown due to lack of data, though not likely due to natural barriers.

[13] Brian Maxfield, UDWR Biologist, personal communication


Lucerne Area GHMA: Upper Green Midscale HAF
December 18, 2019
N
Map Area
Clark
Butte
Teton
Park
Washakie
Hot Springs
Fremont
Lincoln
Bing
Caribou
Sublette
Power
Bannock
Bear Lake
Oneida
Franklin
Rich
Box Elder
Cache
Weber
Morgan
Davis
Salt Lake City
Tooele
Salt Lake
Summit
Uinta
Sweetwater
Lucerne Area
Daggett
Wasatch
Utah
Duchesne
Legend
Upper Green Midscale Boundary HAF
Landfire Vegetation
Existing Sagebrush
Existing Sagebrush Associated
Existing Other
Greater Sage-Grouse PHMA GHMA
Priority Habitat Managment Areas
General Habitat Managment Areas
Additional Habitat Management Area (IHMA)
Counties
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.


N
Lucerne Area GHMA: Vegetation
December 18, 2019
Map Area
Legend
0 0.5 1 2 Miles
Utah Leks 2017
Utah GHMA Leks 2017
Greater Sage-Grouse PHMA GHMA
Priority Habitat Management Areas
General Habitat Management AReas
Landfire Vegetation
Existing Sagebrush
Existing Sagebrush Associated
Existing Other
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.


N
Lucerne Area GHMA: Modeled Seasonal Habitat
September 20, 2018
Map Area
BLACK MOUNT
CEDAR MOUNTAIN
BALD RANGE
Burnt Ridge
Summit
Windy Ridge
KABELL RIDGE
Rock Canyon
Legend
GHMA Leks 2017
Leks 2017
USU GRSG Seasonal Habitat
Modeled Habitat
Greater Sage-Grouse PHMA GHMA Land Status
Priority Habitat Management Areas
General Habitat Management Areas
Private
State
US Forest Service (USFS)
USFS Wilderness Area
0 1.25 2.5 5 Miles
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.


Lucerne Area GHMA: Developments
September 06, 2018
N
SMA/Leks
Map Area
Esri, Garmin, USGS, NPS
Legend
Leks 2017 (SMA/Leks Map)
GHMA Leks 2017 (SMA/Leks Map)
Greater Sage-Grouse PHMA GHMA
Priority Habitat Management Areas
General Habitat Management Areas
FEIS Disturbance 2015
Preliminary Disturbance Inventory
0 1.25 2.5 5 Miles
DOGM - Oil and Gas Wells - Status
Producing Gas Well
Producing Oil Well
BLM Utah Federal Oil and Gas Leases
Leases
Leases - Held By Production
SITLA Oil and Gas Leases
Leases
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.

RICH AREA

Total Habitat Management Area Acres

- 197,900 acres in GHMA
- 1,051,000 acres in PHMA

BLM Decision Area

- 300 of the BLM-administered surface acres are in GHMA
- 23,606 of the BLM-administered mineral estate acres are in GHMA
- 167,000 of the BLM-administered surface acres are in PHMA
- 178,400 of the BLM-administered mineral estate acres are in PHMA

Existing DOGM Wells All Surface Management Agencies

- 0 of the 10 DOGM wells are in GHMA

Authorized BLM Leases

- 0 acres leased on GHMA
- 4,448 acres leased on PHMA

Disturbance Acres

- 1,485 acres in GHMA
- 6,039 acres in PHMA

Leks/Seasonal Habitat

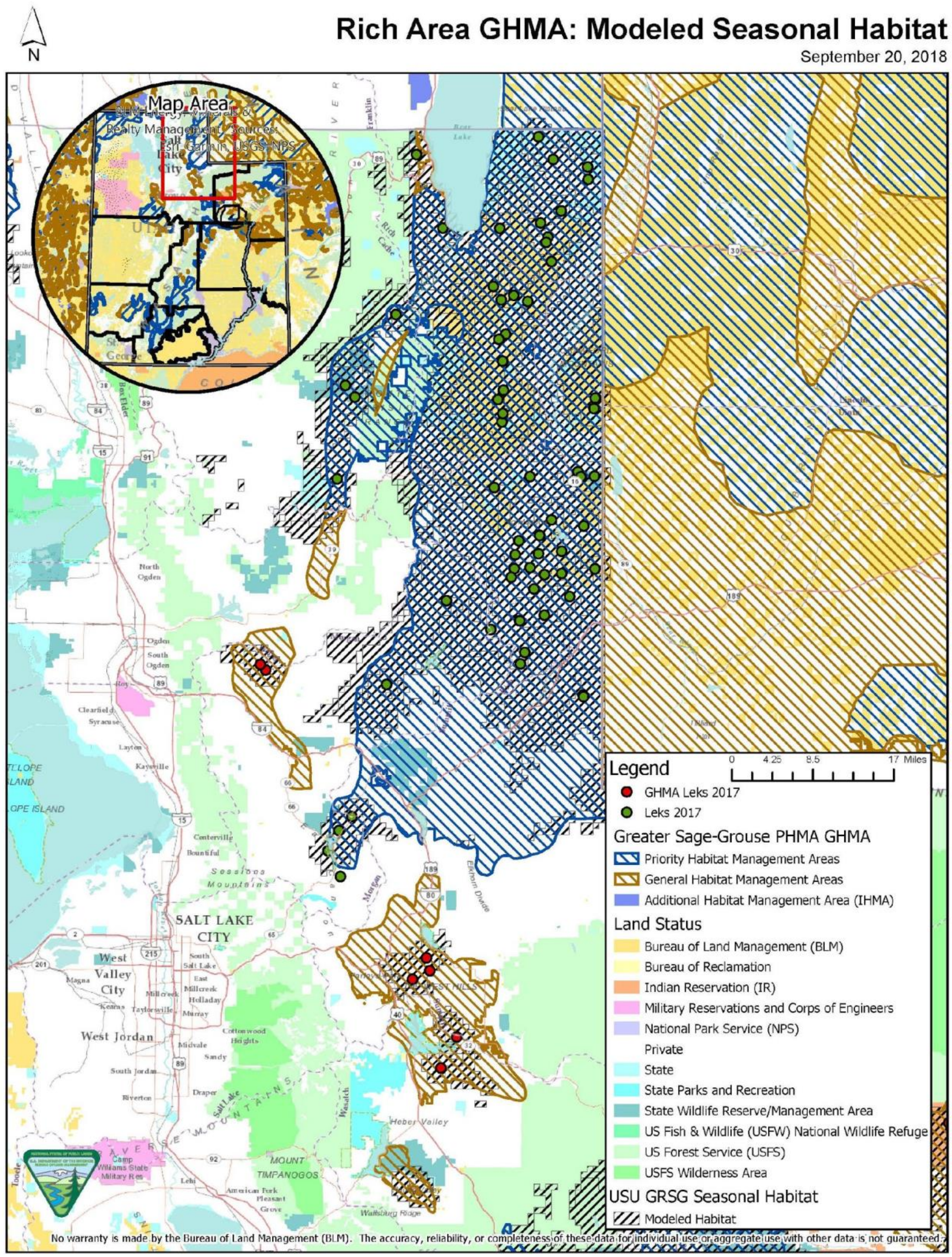
- 7 (10%) of the 67 leks in the habitat management areas are in GHMA
- 60,952 of the total 877,914 modeled seasonal habitat acres are in GHMA

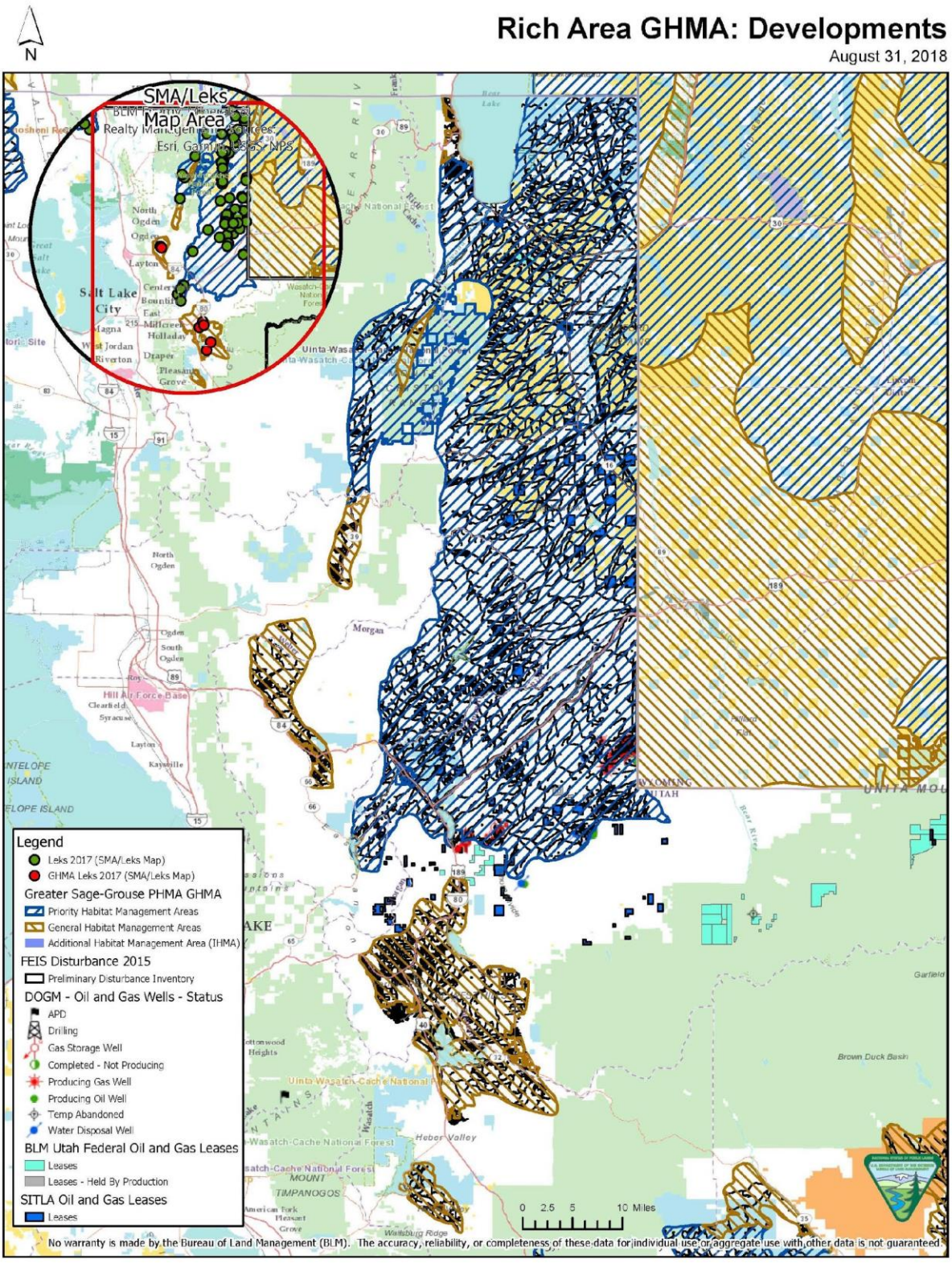
GHMA Contribution to Connectivity

Multiple radio-telemetry studies (VHF and GPS) have been conducted in the Rich area; however, telemetry information has not documented movements to GHMA on the western portion of the Rich area. No birds have been marked in any of the GHMA next to the Rich area (including the GHMA around Jordanelle Reservoir).

Telemetry monitoring conducted in the Morgan-Summit area (25 VHF collars and 10 GPS transmitters) documented that most marked Morgan-Summit birds stayed within a local, small area throughout the year; however, three females moved out of immediate habitat area during the winter. The notable winter movements were two hens that moved southeast, in consecutive years, to GHMA near known leks near Rockport Reservoir and Jordanelle Reservoir. The hens were documented to be with other unmarked hens. It is unknown how important the Jordanelle Reservoir general habitat wintering areas are for the populations in PHMA.

While there is an unquantifiable link between Morgan-Summit area and the Jordanelle Reservoir GHMA, no telemetry information exists for the Jordanelle Reservoir birds (GHMA). Additionally, telemetry information from birds in the Strawberry population, the nearest population, does not document any movements to the GHMA in the Jordanelle Reservoir area. (The BLM status of this habitat has little impact on Greater Sage-Grouse since it is primarily private lands.)


Rich Area GHMA: Modeled Seasonal Habitat
September 20, 2018
N
Map Area
Legend
0 4.25 8.5 17 Miles
GHMA Leks 2017
Leks 2017
Greater Sage-Grouse PHMA GHMA
Priority Habitat Management Areas
General Habitat Management Areas
Additional Habitat Management Area (IHMA)
Land Status
Bureau of Land Management (BLM)
Bureau of Reclamation
Indian Reservation (IR)
Military Reservations and Corps of Engineers
National Park Service (NPS)
Private
State
State Parks and Recreation
State Wildlife Reserve/Management Area
US Fish & Wildlife (USFW) National Wildlife Refuge
US Forest Service (USFS)
USFS Wilderness Area
USU GRSG Seasonal Habitat
Modeled Habitat
SALT LAKE CITY
West Valley City
West Jordan
North Ogden
Ogden
South Ogden
Clearfield
Layton
Kaysville
Centerville
Bountiful
Heber Valley
MOUNT TIMPANOGOS
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.


Rich Area GHMA: Developments
August 31, 2018
N
SMA/Leks Map Area
Legend
Leks 2017 (SMA/Leks Map)
GHMA Leks 2017 (SMA/Leks Map)
Greater Sage-Grouse PHMA GHMA
Priority Habitat Management Areas
General Habitat Management Areas
Additional Habitat Management Area (IHMA)
FEIS Disturbance 2015
Preliminary Disturbance Inventory
DOGM - Oil and Gas Wells - Status
APD
Drilling
Gas Storage Well
Completed - Not Producing
Producing Gas Well
Producing Oil Well
Temp Abandoned
Water Disposal Well
BLM Utah Federal Oil and Gas Leases
Leases
Leases - Held By Production
SITLA Oil and Gas Leases
Leases
0 2.5 5 10 Miles
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.

SHEEPROCKS AREA

Total Habitat Management Area Acres

- 184,500 acres in GHMA
- 646,600 acres in PHMA

BLM Decision Area

- 52,820 of the BLM-administered surface acres are in GHMA
- 34,510 of the BLM-administered mineral estate acres are in GHMA
- 381,100 of the BLM-administered surface acres are in PHMA
- 111,200 of the BLM-administered mineral estate acres are in PHMA

Existing DOGM Wells All Surface Management Agencies

- 0 DOGM wells in Habitat Management Areas

Authorized BLM Leases

- 0 acres leased on GHMA
- 6,869 acres leased on PHMA

Disturbance Acres

- 1,940 acres in GHMA
- 4,322 acres in PHMA

Leks/Seasonal Habitat

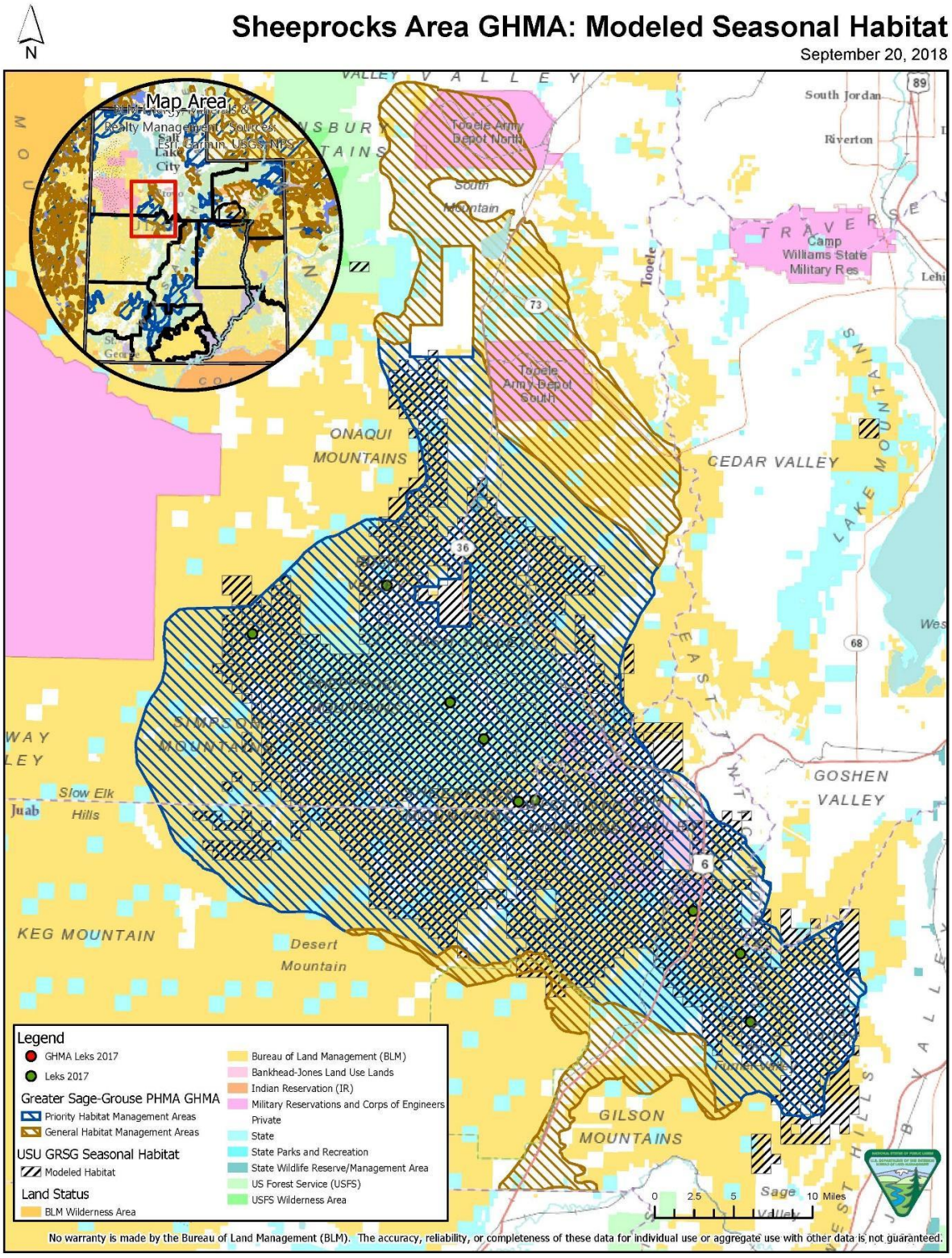
- None of the 9 leks in the habitat management areas are in GHMA
- 2,957 of the total 434,749 modeled seasonal habitat acres are in GHMA

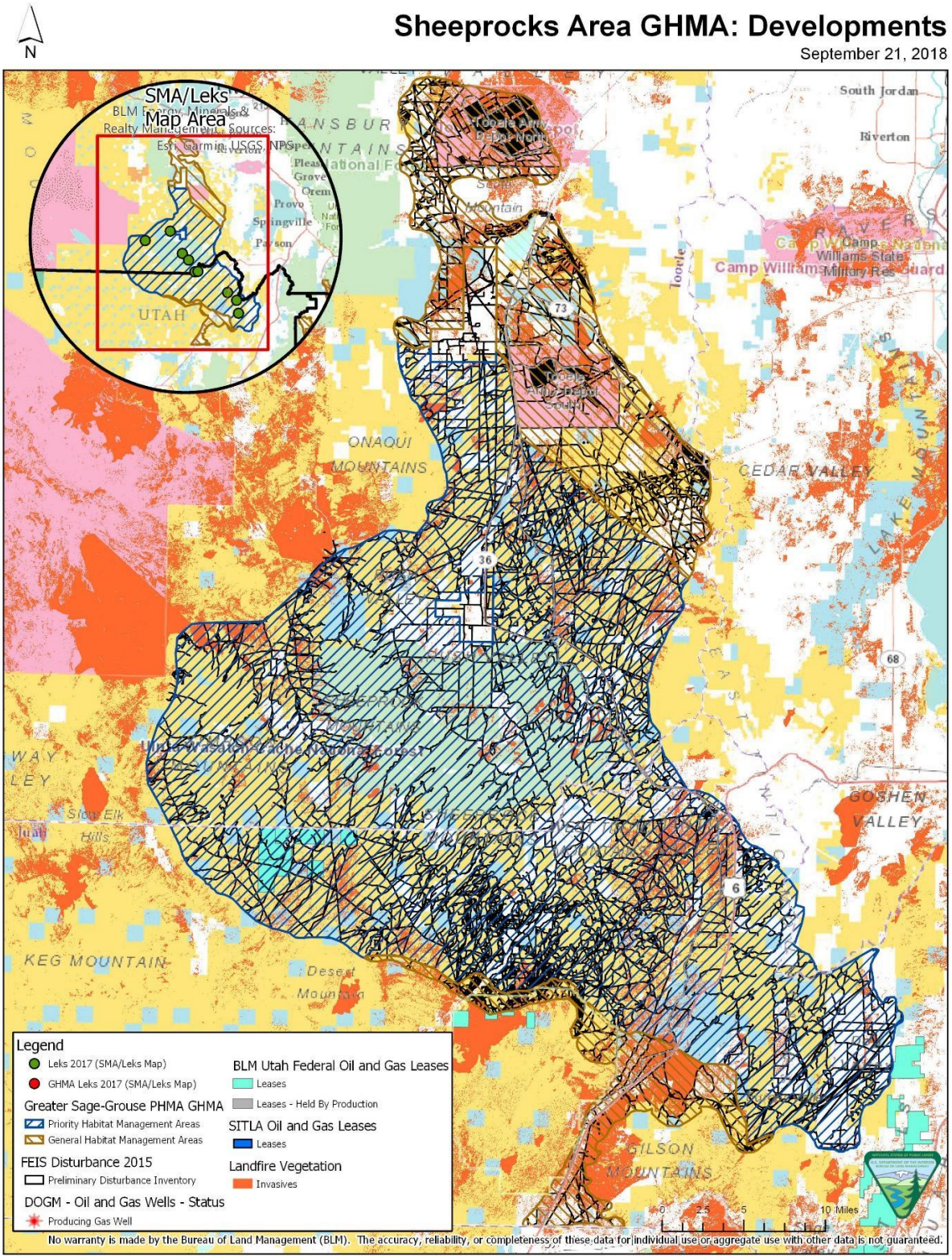
GHMA Contribution to Connectivity

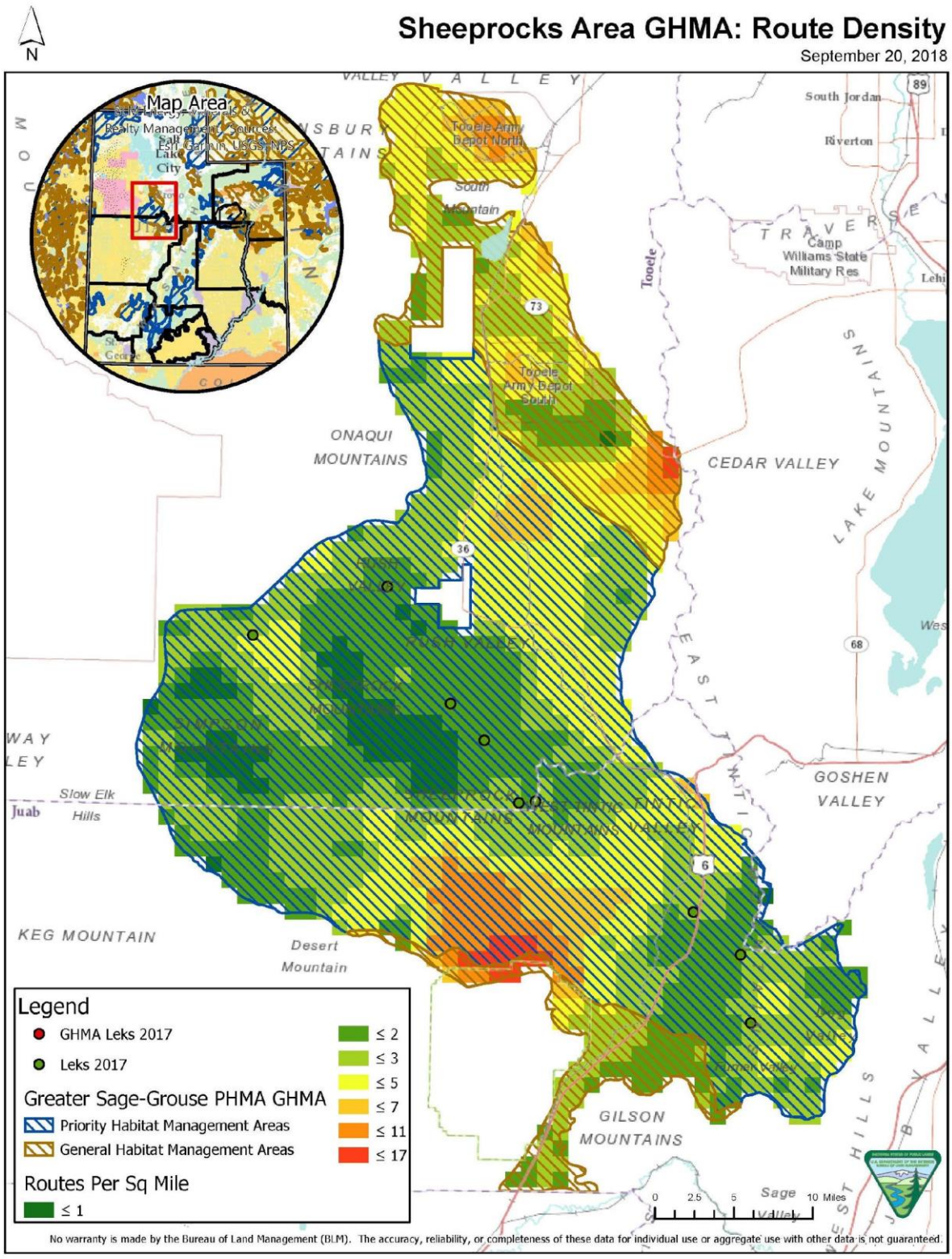
Graduate students have conducted telemetry in the Sheeprocks area for 5 years, and additional telemetry has been conducted opportunistically. Between 2016 and 2018, birds from the Box Elder and Parker Mountain populations have been translocated into the high-quality habitat in the PHMA in the Sheeprocks population.

Translocated and resident birds have been collared to help document movement patterns. Collar data indicate large movements from some translocated birds, though, there are no documented instances of birds moving from the core Sheeprocks area to the Tintic leks or to any other Greater Sage-Grouse populations in the state. Similarly, two years of limited telemetry information from collared Tintic birds do not indicate movements to the core Sheeprocks area; nevertheless, there have been reported sightings of birds in the area between the core Sheeprocks area and the Tintic area.

The GHMA in the Sheeprocks area is not known to be important for providing important habitat for populations or connectivity to other populations. In general, physical barriers pose a substantial hurdle to natural movements of any of the nearest Greater Sage-Grouse populations, for example, the Great Salt Lake, the West Desert, Utah Lake, and the developments and mountains associated with the Wasatch Front.


Sheeprocks Area GHMA: Modeled Seasonal Habitat
September 20, 2018
N
Map Area
Tooele Army Depot North
South Mountain
Tooele Army Depot South
ONAQUI MOUNTAINS
CEDAR VALLEY
SIMPSON MOUNTAINS
GOSHEN VALLEY
Slow Elk Hills
KEG MOUNTAIN
Desert Mountain
GILSON MOUNTAINS
Camp Williams State Military Res
South Jordan
Riverton
Legend
GHMA Leks 2017
Leks 2017
Greater Sage-Grouse PHMA GHMA
Priority Habitat Management Areas
General Habitat Management Areas
USU GRSG Seasonal Habitat
Modeled Habitat
Land Status
BLM Wilderness Area
Bureau of Land Management (BLM)
Bankhead-Jones Land Use Lands
Indian Reservation (IR)
Military Reservations and Corps of Engineers
Private
State
State Parks and Recreation
State Wildlife Reserve/Management Area
US Forest Service (USFS)
USFS Wilderness Area
0 2.5 5 10 Miles
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.


Sheeprocks Area GHMA: Developments
September 21, 2018
N
SMA/Leks Map Area
UTAH
South Jordan
Riverton
Camp Williams
Camp Williams State Military Res Guard
ONAQUI MOUNTAINS
CEDAR VALLEY
GOSHEN VALLEY
KEG MOUNTAIN
GILSON MOUNTAINS
Legend
Leks 2017 (SMA/Leks Map)
GHMA Leks 2017 (SMA/Leks Map)
Greater Sage-Grouse PHMA GHMA
Priority Habitat Management Areas
General Habitat Management Areas
FEIS Disturbance 2015
Preliminary Disturbance Inventory
DOGM - Oil and Gas Wells - Status
Producing Gas Well
BLM Utah Federal Oil and Gas Leases
Leases
Leases - Held By Production
SITLA Oil and Gas Leases
Leases
Landfire Vegetation
Invasives
0 2.5 5 10 Miles
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.


Sheeprocks Area GHMA: Route Density
September 20, 2018
N
Map Area
Legend
GHMA Leks 2017
Leks 2017
Greater Sage-Grouse PHMA GHMA
Priority Habitat Management Areas
General Habitat Management Areas
Routes Per Sq Mile
≤ 1
≤ 2
≤ 3
≤ 5
≤ 7
≤ 11
≤ 17
0 2.5 5 10 Miles
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.
ONAQUI MOUNTAINS
CEDAR VALLEY
LAKE MOUNTAINS
GOSHEN VALLEY
GILSON MOUNTAINS
KEG MOUNTAIN
Desert Mountain
Slow Elk Hills
Tooele Army Depot North
Tooele Army Depot South
South Mountain
Camp Williams State Military Res
South Jordan
Riverton
Tooele
Sage Valley

IBAPAH AREA

Total Habitat Management Area Acres

- 10,800 acres in GHMA
- 88,800 acres in PHMA

BLM Decision Area

- 10,100 of the BLM-administered surface acres are in GHMA
- 0 acres are BLM-administered mineral estate acres are in GHMA
- 48,000 of the BLM-administered surface acres are in PHMA
- 700 of the BLM-administered mineral estate acres are in PHMA

Existing DOGM Wells All Surface Management Agencies

- 0 DOGM wells in Habitat Management Areas

Authorized BLM Leases

- 0 acres leased on GHMA
- 0 acres leased on PHMA

Disturbance Acres

- 81 acres in GHMA
- 455 acres in PHMA

Leks/Seasonal Habitat

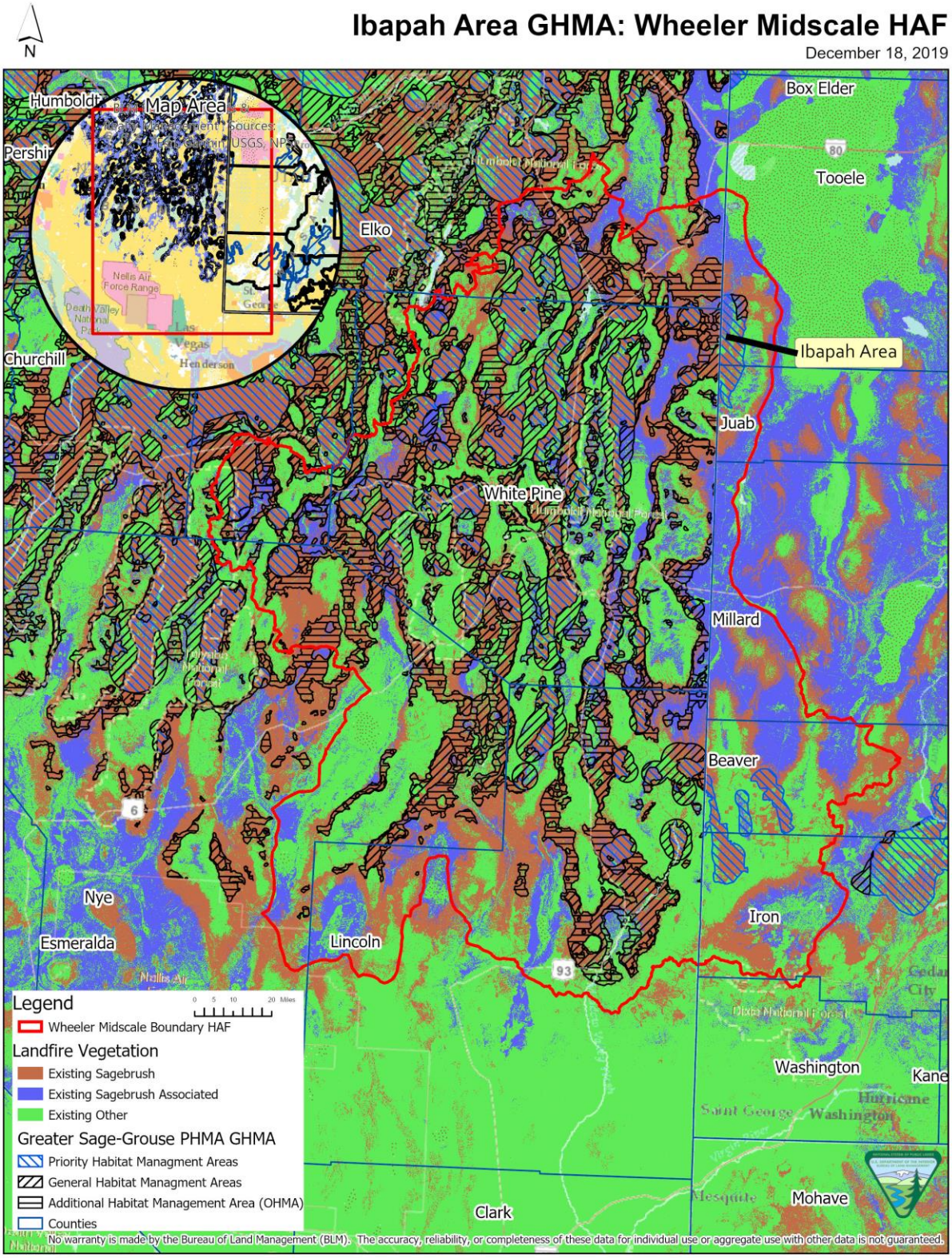
- None of the 4 leks in the habitat management areas are in GHMA in Utah
- 4 occupied leks outside of Utah within 10 miles of the Utah-Nevada border
- In Utah, 3,692 of the total 56,411 modeled seasonal habitat acres are in GHMA

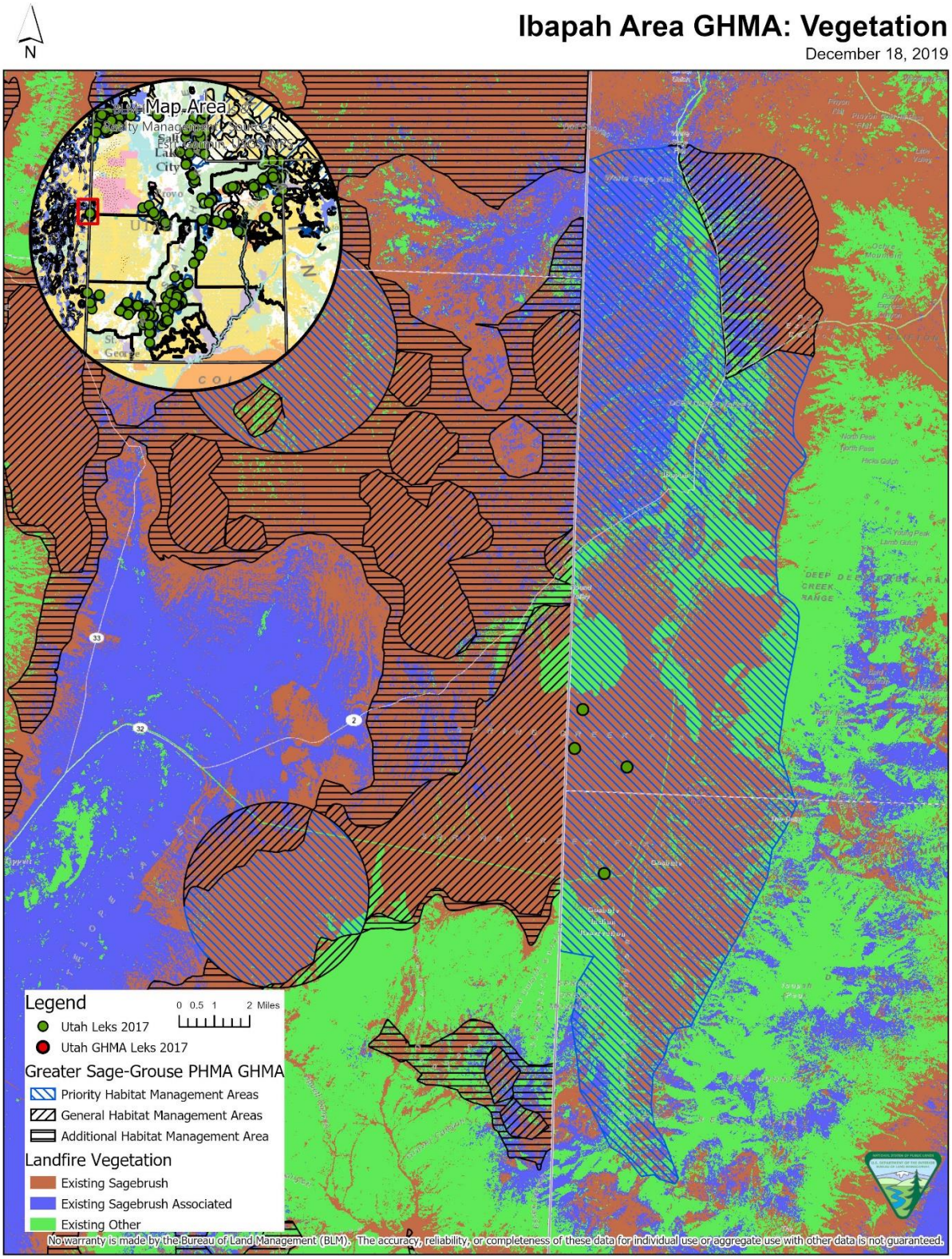
GHMA Contribution to Connectivity

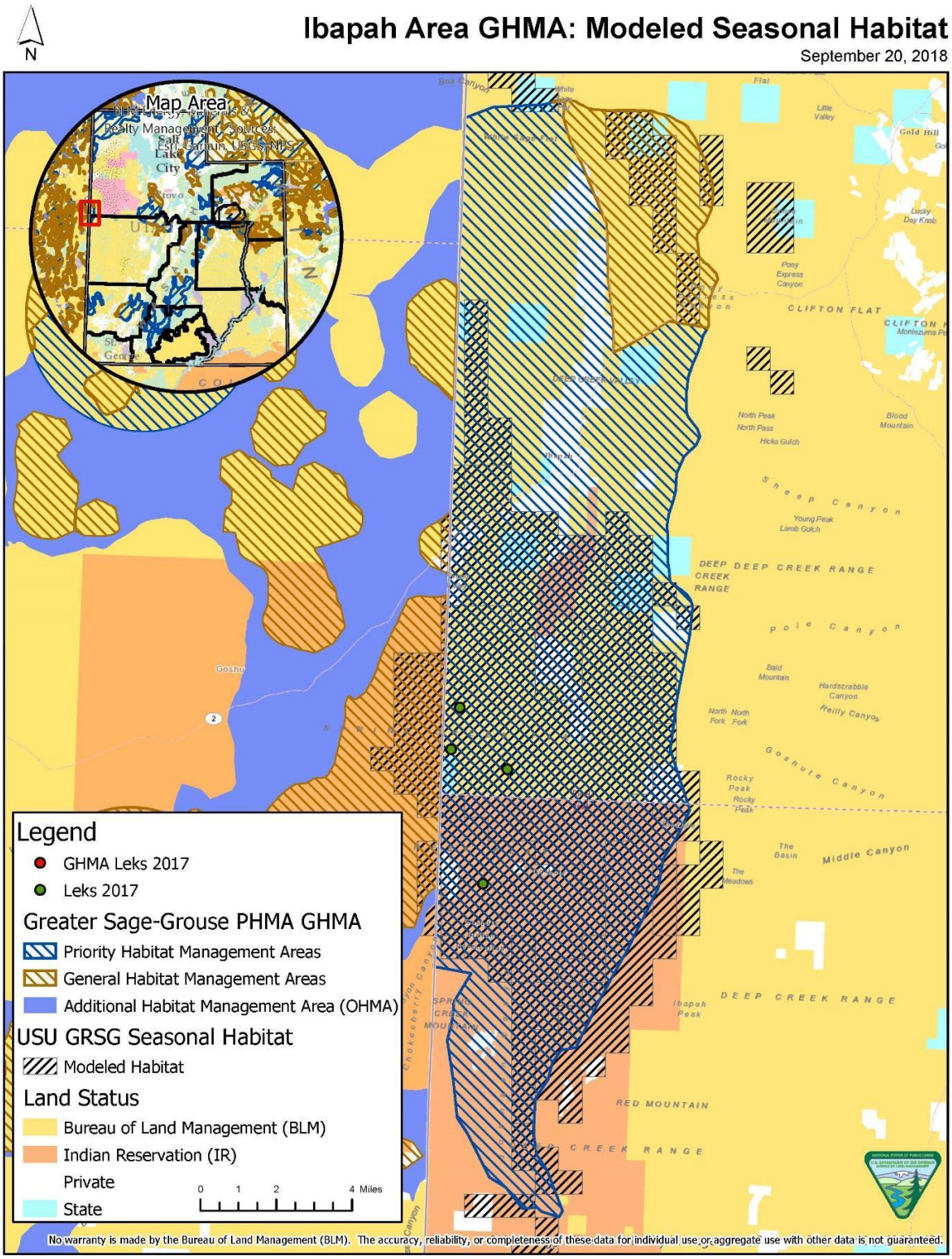
The Ibapah Area is part of Wheeler Midscale Habitat Assessment Area, which includes lands in Utah and Nevada. Habitat across the state jurisdictional boundary in Nevada includes Other Habitat Management Area, GHMA, as well as some PHMA more than 5 miles to the west. The Ibapah Area has limited telemetry (VHF) data (11 birds) from 2005 to 2006 (Robinson 2007). This information suggests that birds primarily use areas close to the leks during nesting, brood-rearing, and wintering; however, the farthest recorded movements were documented during the winter season, where birds moved as far as approximately 10 miles from the nearest lek. Habitat modelling suggests that there is some suitable habitat in the northeast corner of this area, which includes about 81 acres of designated GHMA. Although no birds have been documented in the GHMA in this area, it may still provide some level of habitat. Adjacent areas to the Ibapah GHMA include existing sagebrush, sagebrush associated species, as well as other vegetation interspersed that is not sagebrush. The Ibapah area is not likely to be important for connectivity to the next nearest Greater Sage-Grouse population, the Sheeprocks population area, as it is isolated approximately 60 miles to the east as it is separated by large geographic barriers.

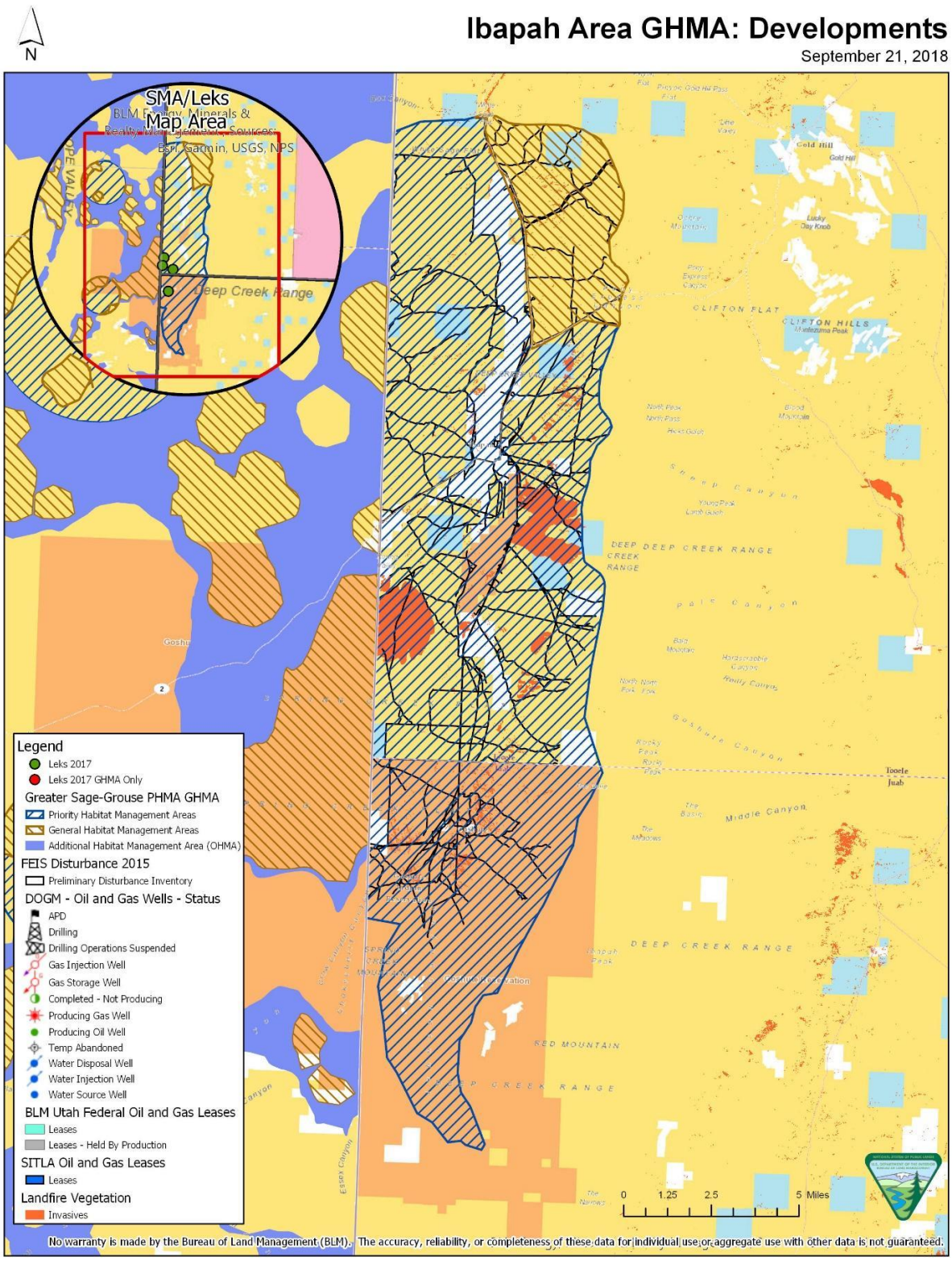
Reference

Robinson, J. D. (2007). Ecology of two geographically distinct Greater Sage-Grouse populations inhabiting Utah's West Desert (Masters Thesis). Utah State University, Logan, Utah.


Ibapah Area GHMA: Wheeler Midscale HAF
December 18, 2019
N
Map Area
Humboldt
Pershing
Elko
Box Elder
Tooele
Ibapah Area
Juab
White Pine
Millard
Beaver
Iron
Nye
Esmeralda
Lincoln
Churchill
Washington
Kane
Clark
Mohave
Legend
Wheeler Midscale Boundary HAF
Landfire Vegetation
Existing Sagebrush
Existing Sagebrush Associated
Existing Other
Greater Sage-Grouse PHMA GHMA
Priority Habitat Managment Areas
General Habitat Managment Areas
Additional Habitat Management Area (OHMA)
Counties
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.


N
Ibapah Area GHMA: Vegetation
December 18, 2019
Map Area
Legend
0 0.5 1 2 Miles
Utah Leks 2017
Utah GHMA Leks 2017
Greater Sage-Grouse PHMA GHMA
Priority Habitat Management Areas
General Habitat Management Areas
Additional Habitat Management Area
Landfire Vegetation
Existing Sagebrush
Existing Sagebrush Associated
Existing Other
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.


Ibapah Area GHMA: Modeled Seasonal Habitat
September 20, 2018
N
Map Area
Legend
GHMA Leks 2017
Leks 2017
Greater Sage-Grouse PHMA GHMA
Priority Habitat Management Areas
General Habitat Management Areas
Additional Habitat Management Area (OHMA)
USU GRSG Seasonal Habitat
Modeled Habitat
Land Status
Bureau of Land Management (BLM)
Indian Reservation (IR)
Private
State
0 1 2 4 Miles
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.
DEEP CREEK RANGE
CLIFTON FLAT
RED MOUNTAIN
Middle Canyon
Goshute Canyon
Sheep Canyon
Pole Canyon
Pony Express Canyon
Ibapah Peak
Gold Hill
Little Valley
Lucky Day Knob
Blood Mountain
North Peak
Hicks Gulch
Young Peak
Lamb Gulch
Bald Mountain
Hardscrabble Canyon
Reilly Canyon
Rocky Peak
The Basin
The Meadows
Ibapah


Ibapah Area GHMA: Developments
September 21, 2018
N
SMA/Leks
Map Area
BLM Energy, Minerals & Realty Management, Sources:
Esri, Garmin, USGS, NPS
Deep Creek Range
Legend
Leks 2017
Leks 2017 GHMA Only
Greater Sage-Grouse PHMA GHMA
Priority Habitat Management Areas
General Habitat Management Areas
Additional Habitat Management Area (OHMA)
FEIS Disturbance 2015
Preliminary Disturbance Inventory
DOGM - Oil and Gas Wells - Status
APD
Drilling
Drilling Operations Suspended
Gas Injection Well
Gas Storage Well
Completed - Not Producing
Producing Gas Well
Producing Oil Well
Temp Abandoned
Water Disposal Well
Water Injection Well
Water Source Well
BLM Utah Federal Oil and Gas Leases
Leases
Leases - Held By Production
SITLA Oil and Gas Leases
Leases
Landfire Vegetation
Invasives
0 1.25 2.5 5 Miles
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.

BALD HILLS AREA

Total Habitat Management Area Acres

- 21,200 acres in GHMA
- 326,400 acres in PHMA

BLM Decision Area

- 8,300 of the BLM-administered surface acres are in GHMA
- 1,241 of the BLM-administered mineral estate acres are in GHMA
- 259,400 of the BLM-administered surface acres are in PHMA
- 5,200 of the BLM-administered mineral estate acres are in PHMA

Existing DOGM Wells All Surface Management Agencies

- 0 DOGM wells in Habitat Management Areas

Authorized BLM Leases

- 0 acres leased on GHMA

Disturbance Acres

- 427 acres in GHMA
- 3,765 acres in PHMA

Leks/Seasonal Habitat

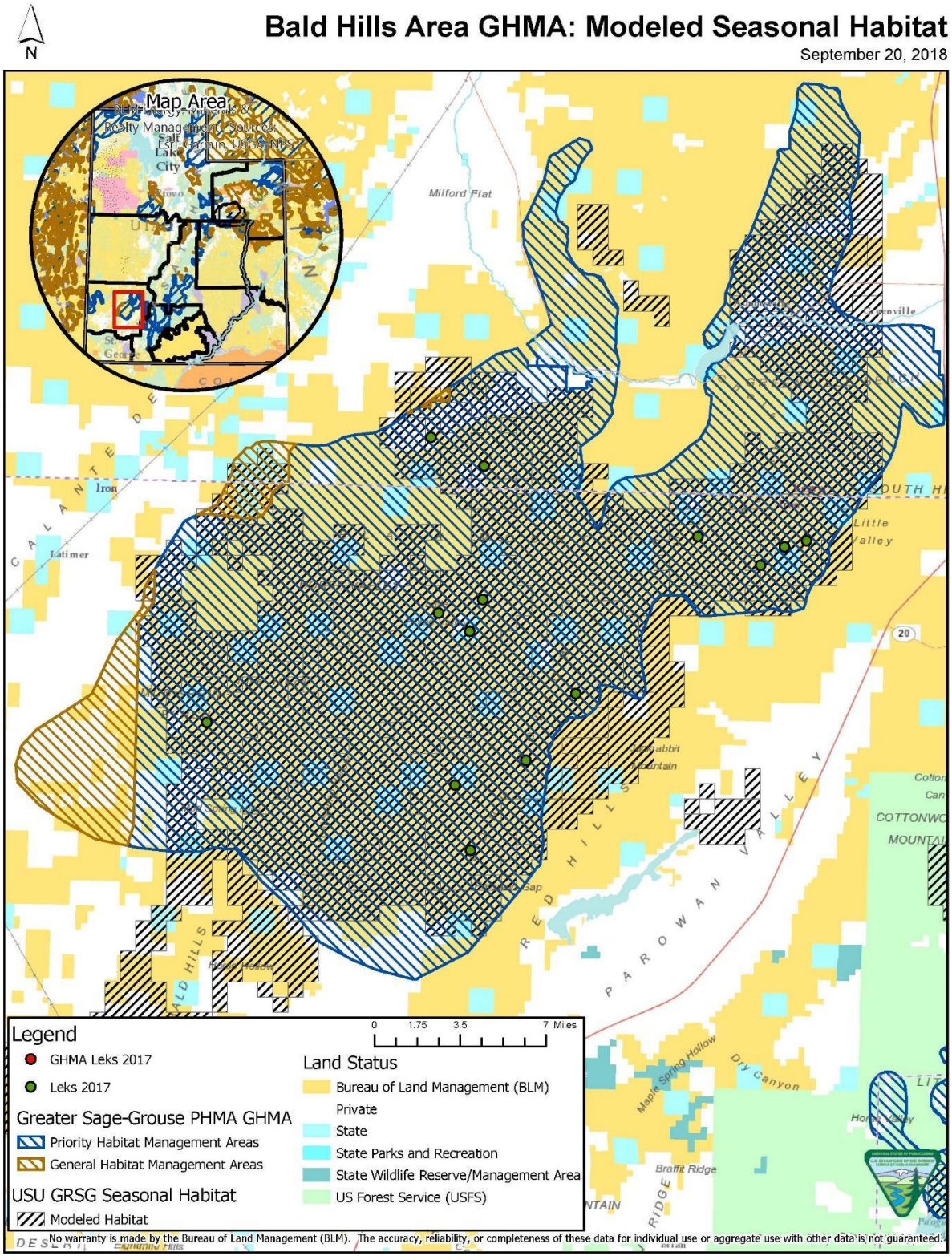
- None of the 14 leks in the habitat management areas are in GHMA
- 3,817 of the total 247,883 modeled seasonal habitat acres are in GHMA

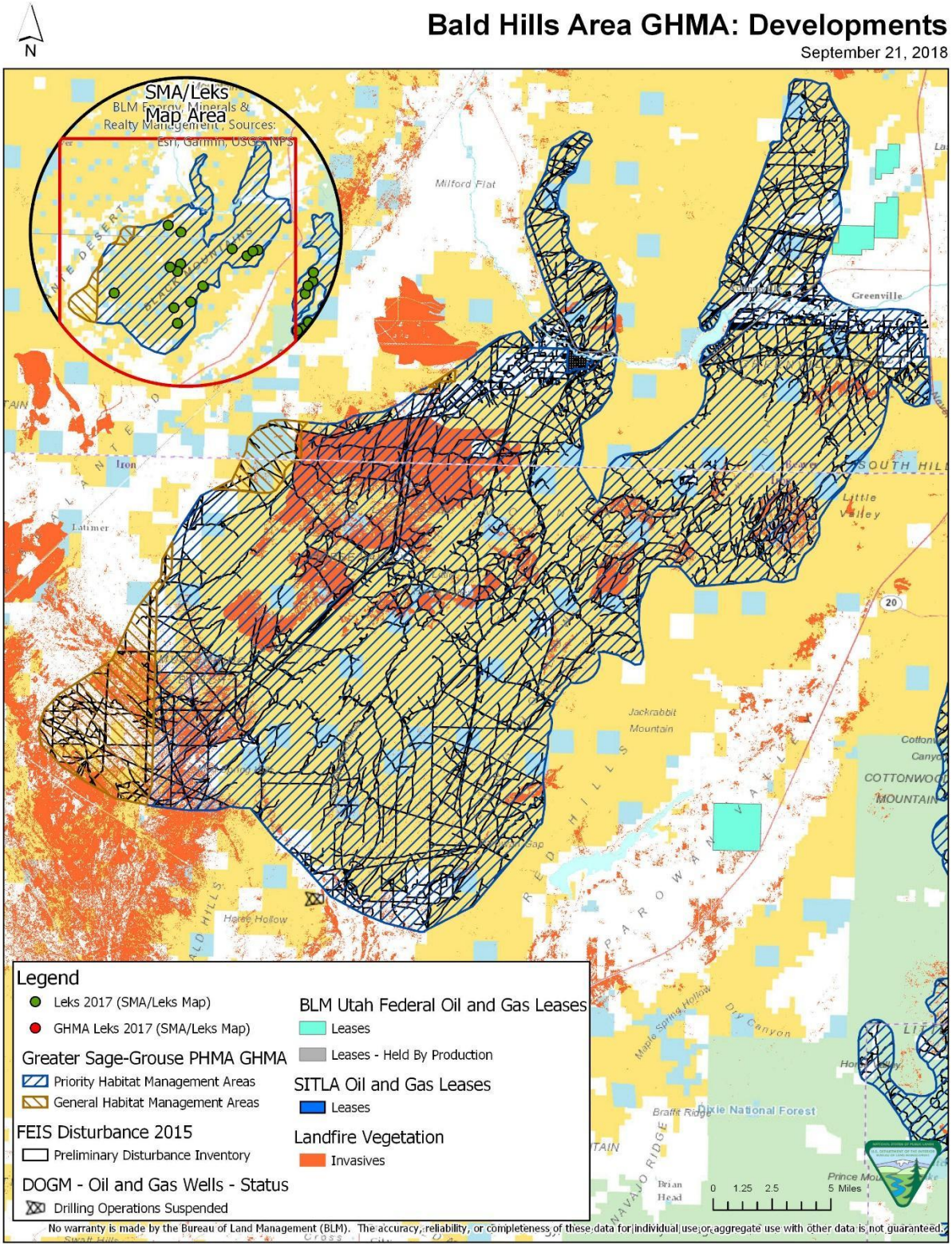
GHMA Contribution to Connectivity

Greater Sage-Grouse GPS and VHF collars have been deployed throughout the Bald Hills Habitat Management Areas. To date, no birds have been documented using the GHMA; however, one study did indicate the relative "high probability" that Greater Sage-Grouse could use this area (Hansen 2016). Moreover, there is no known connectivity between the Bald Hills population of Greater Sage-Grouse and the Hamlin Valley population. Use of the Bald Hills GHMA areas as a corridor to Hamlin Valley would be the only logical reason birds would move into this GHMA area, and the likelihood of this, given habitat constraints, is low. Connectivity opportunities between the PHMA portions of the Bald Hills population and the Panguitch population of Greater Sage-Grouse is a more likely scenario (movement to the east).

Reference

Hansen, Erica P., "Influence of Disturbance on Greater Sage-Grouse Habitat Selection in Southern Utah" (2016). All Graduate Theses and Dissertations. 5231. https://digitalcommons.usu.edu/etd/5231


N
Bald Hills Area GHMA: Modeled Seasonal Habitat
September 20, 2018
Map Area
Realty Management Sources:
Esri, Garmin, USGS, NPS
Milford Flat
Iron
Latimer
Little Valley
20
Rabbit Mountain
RED HILLS
PAROWAN VALLEY
Maple Spring Hollow
Dry Canyon
Braffit Ridge
RIDGE
0 1.75 3.5 7 Miles
Legend
GHMA Leks 2017
Leks 2017
Greater Sage-Grouse PHMA GHMA
Priority Habitat Management Areas
General Habitat Management Areas
USU GRSG Seasonal Habitat
Modeled Habitat
Land Status
Bureau of Land Management (BLM)
Private
State
State Parks and Recreation
State Wildlife Reserve/Management Area
US Forest Service (USFS)
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.


Bald Hills Area GHMA: Developments
September 21, 2018
N
SMA/Leks Map Area
BLM Energy, Minerals & Realty Management, Sources: Esri, Garmin, USGS, NPS
Milford Flat
Greenville
Iron
Latimer
Little Valley
Jackrabbit Mountain
COTTONWOOD MOUNTAIN
Haree Hollow
Maple Spring Hollow
Dry Canyon
Braffit Ridge
Brian Head
Dixie National Forest
Prince Mou
0 1.25 2.5 5 Miles
Legend
Leks 2017 (SMA/Leks Map)
GHMA Leks 2017 (SMA/Leks Map)
Greater Sage-Grouse PHMA GHMA
Priority Habitat Management Areas
General Habitat Management Areas
FEIS Disturbance 2015
Preliminary Disturbance Inventory
DOGM - Oil and Gas Wells - Status
Drilling Operations Suspended
BLM Utah Federal Oil and Gas Leases
Leases
Leases - Held By Production
SITLA Oil and Gas Leases
Leases
Landfire Vegetation
Invasives
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.

Appendix 4

Review of the NTT and COT Report's Relevance to the Planning Process; Incorporation of the NTT, COT, and USGS Summary of Science into the Utah Planning Process

Appendix 4. Review of the NTT and COT Report's Relevance to the Planning Process; Incorporation of the NTT, COT, and USGS Summary of Science into the Utah Planning Process

4.1 BLM NATIONAL TECHNICAL TEAM REPORT (2011)

In 2010, the US Fish and Wildlife Service (USFWS) determined that Greater Sage-Grouse warranted listing under the Endangered Species Act, but was precluded from listing due to other priorities. In response to this determination, the BLM initiated a land use planning process in 2011. To help inform that process the BLM assembled a "National Technical Team" (NTT), comprising state and federal resource specialists and scientists to review the scientific literature available at that time. On December 21, 2011 the NTT finalized a document entitled *A Report on National Greater Sage-Grouse Conservation Measures*, also known as the National Technical Team Report (NTT Report). The report was developed to provide "the latest science and best biological judgement" from the available literature (NTT Report, Introduction, page 5). Though the NTT Report is not itself science, the NTT used the best science available at that time to inform the conservation measures it identified for BLM decision-makers to consider through the land use planning and NEPA process.

On December 27, 2011, the BLM issued policy in Instruction Memorandum 2012-044 requiring BLM offices to "consider all applicable conservation measures when revising or amending its RMPs in Greater Sage Grouse habitat" (IM-2012-44, Policy/Action). The IM clarified a distinction between "all applicable conservation measures" and those included in the NTT Report by noting in the following sentence that "the conservation measures developed by the NTT…must be considered and analyzed, as appropriate, through the land use planning process" (ibid). Each BLM planning effort complied with this policy by including an alternative based entirely on the conservation measures identified by the NTT. This was Alternative B in the 2013 Draft EIS and 2015 Final EIS, and by extension in the 2018 Draft and Final EISs. Through this alternative and corresponding analysis, the BLM complied with its policy for considering the conservation measures in the NTT Report.

It is critical to clarify that neither the NTT nor the BLM's policy intended that the conservation measures in the NTT Report were to be automatically applied across the range without intervening consideration through detailed land use planning and NEPA analysis. In the same paragraph that directs the BLM to "consider all applicable conservation measures" from the NTT Report, IM-2012-044 also notes that "while these conservation measures are range-wide in scale, it is expected that at the regional and sub-regional planning scales there may be some adjustments of these conservation measures in order to address local ecological site variability." Moreover, the NTT understood that the measures in its report would be evaluated alongside competing land use planning considerations and with follow-up environmental analysis relating to the conservation efficacy of its measures. As the NTT Report described, the conservation measures are not themselves management decisions but rather have been prepared "to assist [the BLM] in making management decisions." (NTT Report, Introduction, page 5.) In

other words, "the conservation measures described in [the] report *are not an end point* but, rather, *a starting point* to be used in the BLM's planning processes" (ibid, page 5) (emphasis added).

The principle of local adaptation of scientific results and recommended conservation measures derived from them is present in other documents with Greater Sage-Grouse conservation recommendations. In 2014, three years after the NTT Report, the Department of the Interior requested the US Geological Survey (USGS) prepare a report that compiled and summarized published scientific studies regarding buffer distances around Greater Sage-Grouse habitats. In the report titled *Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review* (Open File Report 2014-1239), USGS scientists note that "responses of individual birds and populations, coupled with variability in land-use patterns and habitat conditions, add variation in research results. This variability presents a challenge for land managers and planners seeking to use research results to guide management and plan for Greater Sage-Grouse conservation measures. Variability between Greater Sage-Grouse populations and their responses to different types of infrastructure can be substantial across the species' range. Logical and scientifically justifiable departures from the 'typical response,' based on local data and other factors, may be warranted when implementing buffer protections or density limits in parts of the species' range" (USGS Open File Report 2014-1239, page 2). A simple statement from the report indicates this variability, where the USGS scientists noted that "there is no single distance that is an appropriate buffer for all populations and habitats across the sage-grouse range" (ibid, pg. 2).

Further, the BLM's policy requiring consideration of the conservation measures in the NTT Report allowed for individual planning efforts to make adjustments to the report's conservation measures. IM-2012-044 states that "the NTT-developed conservation measures were derived from goals and objectives developed by the NTT" and that "these goals and objectives are a *guiding philosophy* that should *inform* the goals and objectives developed for individual land use plans. However, *it is anticipated that individual plans may develop goals and objectives that differ and are specific to individual planning areas*" (emphasis added). The anticipation for variability across the range is even more explicit when the IM notes that "while [the NTT Report's] conservation measures are range-wide in scale, *it is expected* that at the regional and sub-regional planning scales there may be some adjustments of these conservation measures in order *to address local ecological site variability*" (emphasis added). With specific consideration of this variability, each BLM planning and NEPA effort developed and analyzed a range of alternative approaches for Greater Sage-Grouse habitat management in each sub-region/state. Through this process, the BLM considered local and regional differences, analyzing the effect of each alternative approach locally and cumulatively.

As the NTT developed its conservation measures, it did not take into consideration other legal and regulatory requirements associated with land use planning and NEPA. For example, the NTT's range-wide conservation measures did not take into account State or local Greater Sage-Grouse conservation efforts. In its foundational legislation for the BLM, Congress specifically declared that it neither enlarged nor diminished the authority of the states in managing fish and wildlife. In recognizing this role, as well as local knowledge and expertise, Congress directed the BLM to develop its land use plans to "be consistent with State and local plans to the maximum extent" (Federal Land Policy and Management Act {FLPMA}, Section 202 (c)(9)).

Other laws, regulations, and policies were not taken into account by the NTT as they developed their conservation measures. For example, the NTT Report's conservation measure that recommends that

priority Greater Sage-Grouse habitat areas be designated as unsuitable for all surface mining of coal entirely overlooks the specific process to determine unsuitability prescribed in 43 Code of Federal Regulations (CFR) 3461. Elsewhere the NTT Report states that "a 4-mile [no surface occupancy (NSO) stipulation] likely would not be practical given most leases are not large enough to accommodate a buffer of this size, and lek spacing within priority habitats is such that lek-based buffers may overlap and preclude all development" (NTT Report, page 21) and therefore presents a conservation measure to close priority Greater Sage-Grouse habitat areas to fluid mineral leasing. This is not consistent with BLM planning guidance directing planning teams that "when applying leasing restrictions, the least restrictive constraint to meet the resource protection objective should be used" (BLM-H-1601 Appendix C page 24); whether or not a lease is large enough to accommodate a large NSO should not be a consideration if NSO provides the necessary protection.

In recognition of instances where the NTT Report's conservation measures were not consistent with law, regulation, or policy, the BLM's policy direction in IM-2012-044 directs that "when considering the [NTT Report's] conservation measures…BLM offices should ensure that implementation of any of the measures is consistent with applicable statute and regulation. Where inconsistencies arise, BLM offices should consider the conservation measure(s) to the fullest extent consistent with such statute and regulation."

Each BLM planning effort fully considered the broad, range-wide recommendations from the NTT Report through the required NEPA process. This consideration was accomplished, as directed by Congress, using a "systematic interdisciplinary approach to achieve integrated consideration of physical, biological, economic, and other sciences" (FLPMA Section 202(c)(2)). Through careful consideration of the NTT's conservation measures, as well as local expertise, monitoring, partnerships, and other resource and land uses, the BLM developed Greater Sage-Grouse management goals, objectives, and management actions that accounted for the variability of habitat and resources across the range. Through the combination of both the 2015 and 2019 planning processes the BLM complied with the statutory requirement that the BLM resolve, "to the extent practical, inconsistencies between Federal and non-Federal Government plans" (FLPMA Sec. 202(c)(9)). Through these efforts, the BLM has met its statutory and regulatory responsibilities related to its consideration of the conservation measures contained in the NTT Report.

What the NTT Report and its Conservation Measures Are:

- The NTT Report included science-based management considerations for Greater Sage-Grouse to promote sustainable Greater Sage-Grouse populations.
- The conservation measures were to be considered and analyzed through the BLM's land use planning process.
- The conservation measures are range-wide in scale, not accounting for local variability.
- The conservation measures were a starting point to be used in the BLM's planning process.
- The NTT Report was developed by a team of resource specialists and scientists familiar with Greater Sage-Grouse literature.

What the NTT Report and its Conservation Measures Are Not:

- Unlike FLPMA's requirement that the BLM develop and modify Land Use Plans in coordination with state and local plans and policies, the NTT Report was not developed with input from or consideration of plans, policies, or programs of State, Tribal, or local government agencies.
- The conservation measures were not developed using a systematic interdisciplinary approach, as required by FLPMA for land use plans.
- The NTT Report presented conservation measures that would provide food and habitat for one species of wildlife, but did not consider other FLPMA requirements for BLM to manage for other species and resources while also recognizing the need for sources of minerals, food, timber and fiber from public lands.
- The NTT Report is not a land use plan, or an amendment or revision to a land use plan.
- The conservation measures were based on best available science at the time and do not provide for future updates in scientific knowledge or technological advancements.
- When preparing the NTT Report, the NTT did not complete a NEPA analysis on its conservation measures. Instead, the BLM completed NEPA and land use planning processes in 2015 and 2019 to assess the environmental consequences of the NTT Report's conservation measures, as well as alternatives to those measures—and to account for competing land management considerations.

4.2 US FISH AND WILDLIFE CONSERVATION OBJECTIVES TEAM REPORT (2013)

In 2012 the director of the USFWS convened a Conservation Objectives Team (COT) of state and USFWS representatives. The team developed a peer-reviewed report (COT Report) that delineated objectives based on the "best scientific and commercial data available at the time of its release" (COT Report, page ii). The COT Report, released in March 2013, identifies conservation objectives, measures, and options for each of the Greater Sage-Grouse threats assessed. The COT Report also identified Priority Areas for Conservation (PACs) which were identified as "the most important areas needed for maintaining Greater Sage-Grouse representation, redundancy, and resilience across the landscape" (ibid, page 13). Unique compared to the NTT Report, the COT Report identified threats to each PAC, recognizing that threats vary across the range, and therefore corresponding management should vary to address those threats. The preface to the report is clear that the COT report "is guidance only" and that the "identification of conservation objectives and measures does not create a legal obligation beyond existing legal requirements" (ibid, page ii). Further, the preface notes that the objectives "are subject to modification as dictated by new findings, changes in species' status, and the completion of conservation actions" (ibid, page ii).

The COT Report clearly identifies the necessity to adapt Greater Sage-Grouse conservation goals, objectives, and measures due to variability across the range. The COT noted that "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 is not possible at the range-wide scale*" (emphasis added) (COT Report, Section 5- Conservation Objectives, page 31). The COT Report summarizes the relationship between its range-wide conservation goals, objectives, and measures and the state-specific planning efforts, noting that "specific strategies or actions necessary to achieve the following conservation objectives must be developed and implemented at the state or local level, with the involvement of all stakeholders" (ibid).

The BLM received the COT Report when developing its 2013 Draft EIS and fully considered it prior to Draft EIS publication, providing for public review of the BLM's evaluation. Upon receipt of the Report the BLM evaluated the range of alternatives and determined that the threats addressed by the COT Report were all addressed in the range of alternatives; this was presented to the public in Appendix C in the 2013 Draft EIS. The BLM also evaluated the impacts to Greater Sage-Grouse from the alternatives and determined that the COT Report objectives were all addressed within the range of alternatives; this was presented to the public in the 2013 Draft EIS Chapter 2 Table 2.4 (Comparison of Alleviated Threats to GRSG in the Utah Sub-Region).

Following public comments and development of the 2015 Proposed Plan, Section 2.5 of the Final EIS updated the crosswalk between the USFWS threats and the BLM program areas, showing that all the threats for which the BLM has discretion were addressed. Section 2.11.7 notes that all conservation measures and objectives identified in the COT report were considered within the 2015 Final EIS range of alternatives. Finally, a table was added to the 2015 Final EIS Executive Summary that showed the management actions from the 2015 Proposed Plan that addressed the COT Report threats.

On October 2, 2015, the USFWS determined that "listing the sage-grouse as a threatened or endangered species is not warranted…" (Federal Register Vol. 80, No. 191, 59936). One of the rationale for this determination was that "the new Federal land-management paradigm is established in 98 amended Federal Plans that reduce and minimize threats to the species in the most important habitat for the species" (ibid). Through this language, it is clear that the 2015 planning efforts incorporated the recommendations from the COT Report to a degree that met the report's goal of "long-term conservation of sage-grouse and healthy sagebrush shrub and native perennial grass and forb communities by maintaining viable, connected, and well-distributed populations and habitats across their range, through threat amelioration, conservation of key habitats, and restoration activities" (COT Report, page 13).

What the COT Report and its Objectives, Measures and Options Are:

- The COT Report sought to identify reasonable objectives, based upon the best scientific and commercial data available at the time of its release, for the conservation and survival of Greater Sage-Grouse.
- The COT Report is guidance to federal land management agencies, state Greater Sage-Grouse teams, and others developing efforts to achieve conservation for Greater Sage-Grouse.
- The COT Report was clear that its objectives were subject to modification based on new findings, changes in species' status, and the completion of conservation actions.
- The COT Report was developed by a team of state and USFWS representatives selected by their respective state or agency.

What the COT Report and its Objectives, Measures and Options Are Not:

- The COT Report is not a recovery plan, conservation strategy, or conservation agreement.
- The COT Report did not include input from BLM biologists or BLM field staff familiar with local habitat conditions and threats.
- The COT Report is not itself science, but includes objectives, measures, and options that were developed based on science.

- The COT Report was not developed with input from the BLM, its managers, planners, wildlife program leads, or field biologists and as such includes objectives, measures and options that do not consider statutory, regulatory, or policy requirements.
- When preparing the COT Report, the USFWS did not complete a NEPA analysis on its conservation objectives, measures, and options. Instead, the BLM completed NEPA and land use planning processes in 2015 and 2019 to assess the environmental consequences of the COT Report conservation objectives, measures, and options, as well as alternatives to those objectives, measures, options—as they applied to the development of affected BLM land use planning decisions—while accounting for competing land management considerations.

4.3 EXCERPTS FROM THE UT FINAL EIS NOVEMBER 2018

- **Chapter 1: Purpose of and Need for Action**
    - **Section 1.1 Introduction. p. 1-2.** On June 7, 2017, the Secretary issued SO 3353 for the 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, the USFWS, and United States Geological Survey (USGS), to coordinate with the Greater Sage-grouse Task Force, which is comprised of representatives of the governors of each of the 11 states. They also were 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 better balance the BLM's multiple-use mission as directed by SO 3349.
    - **Section 1.4 Planning Criteria. p. 1-5 – 6.** The BLM has identified the following planning criteria:
        - The BLM will comply with all laws, regulations, policies, and guidance related to public lands management and implementing NEPA on BLM-administered lands.
        - On public lands, Greater Sage-Grouse is a state-managed species that depends on sagebrush steppe habitat 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/EIS will be BLM-administered land in Greater Sage-Grouse habitat, including surface and split-estate lands with federal subsurface mineral rights. Any decisions in the RMPA/EIS will apply only to BLM-administered lands.
        - This RMPA/EIS will comply with orders of the Secretary, including SO 3353 (Greater Sage-Grouse Conservation and Cooperation with Western States), which strives for compatibility with state conservation plans.
        - This RMPA/EIS will incorporate, as appropriate, information in a USGS report that identified and annotated Greater Sage-Grouse science published since January 2015 (Carter et al. 2018) and a report that synthesized and outlined the potential management implications of this new science (Hanser et al. 2018).
        - The RMPA will incorporate, as appropriate, local- and state-based science, data, monitoring information, and associated analyses and products.

- This RMPA/EIS will comply with BLM Manual 6840, Special Status Species Management.
- This RMPA/EIS will recognize valid existing rights, including those associated with the Mineral Leasing Act and the 1872 Mining Law. The BLM recognizes that in some circumstances its discretion to deny or regulate a proposed public land use is limited, such as with existing leases, existing contracts, or mining plans of operations. Accordingly, the BLM will ensure that its implementation of the management actions is consistent with the terms and conditions in existing leases or existing contracts, or with the regulations governing mining plans of operation.
- All activities and uses in Greater Sage-Grouse habitat will be managed to achieve land health standards.
- This RMPA/EIS will not amend more restrictive land use allocations or decisions for other resources under existing LUPs, such as wilderness study areas, areas of critical environmental concern, cultural resources, and riparian areas.

- **Chapter 2: Alternatives**
  - **Section. 2.2.1 Varying Constraints on Land Uses and Development Activities. p. 2-2.** Alternative B was based on the conservation measures developed by the National Technical Team planning effort in Washington Office IM 2012-044. As directed in the IM, the conservation measures developed by the National Technical Team must be considered and analyzed, as appropriate, through the land use planning process and NEPA by all BLM state and field offices that contain occupied Greater Sage-Grouse habitat. Most management actions included in Alternative B would have been applied to PHMA.
  - **Section. 2.2.1 Varying Constraints on Land Uses and Development Activities. p. 2-2.** The Proposed LUPA in the 2015 Utah Greater Sage-Grouse Proposed LUPA/Final EIS incorporated guidance from specific State Conservation strategies, as well as additional management based on the National Technical Team recommendations. This alternative emphasized management of Greater Sage-Grouse seasonal habitats and maintaining habitat connectivity to support population objectives.
  - **Section 2.2.1 Varying Constraints on Land Uses and Development Activities. p. 2-2 - 3.** The BLM considered the entire range of alternatives from the 2015 Final EIS to identify issues meriting reconsideration, given the BLM's goal of enhancing alignment with state plans. In this manner, the BLM will continue to appropriately manage Greater Sage-Grouse and its habitat through this planning effort in tandem with the 2015 ROD/ARMPA. Further, additional constraints on land uses or development without a documented need would not meet the purpose of SO 3353. The BLM did not discover new information that would indicate the agency should increase the level of conservation, management, and protection to achieve its land use plan objective. As part of the consideration of whether to amend the 2015 Greater Sage-Grouse LUPs, the BLM partnered with the USGS to review the best available information published since January 2015, develop an annotated bibliography of that Greater Sage-Grouse science (Carter et al. 2018; see Section 3.1), and incorporate the information into this EIS. In addition, SO 3353 directs the BLM to promote habitat conservation, while contributing

to economic growth and energy independence. As analyzed in the 2015 Final EIS, all of the previously analyzed alternatives, including one proposing constraints stricter than the current management plan, were predicted to result in a loss of development opportunities on public lands.

- **Section 2.2.3 Use of Other Habitat Maps for PHMA Designation. p. 2-3 - 4.** During the scoping, some commenters included requests that the BLM use different habitat maps for use in designating PHMA. Some commenters requested expanding current PHMA to include all areas within 5 miles of any occupied lek, while some requested contracting it to include only areas that currently have sagebrush. An approach based on these comments was considered but eliminated from detailed analysis for the reasons discussed below.
  - The request that any area within 5 miles of a lek be included as PHMA relied on one piece of literature that suggested that impacts from development may extend for 5 miles from occupied leks; however, based on a substantial review of literature regarding lek buffers, the USGS recognized "that because of variation in populations, habitats, development patterns, social context, and other factors, for a particular disturbance type, there is no single distance that is an appropriate buffer for all populations and habitats across the Greater Sage-Grouse range" (Manier et al. 2014). Additionally, making areas within 5 miles of occupied leks PHMA would increase disparity with the State's plan and strategies, which is not consistent with the purpose and need. Because of this, an alternative that automatically makes any area within 5 miles of occupied leks PHMA was not analyzed in detail.
- **Table 2-2 Detailed Comparison of Alternatives. p. 2-10 - 46.** US Geological Survey appears.

- **<u>Chapter 3:</u> Affected Environment**
  - **Section 3.1 Introduction. p. 3-1.** The BLM analyzed the management situation in full compliance with its regulations and policies. The BLM evaluated inventory and other data and information, partnering with USGS and coordinating extensively with States, to help provide a basis for formulating reasonable alternatives. The BLM described this process in its Report to the Secretary in response to SO 3353 (Aug. 4, 2017). Among other things, the Report describes how the BLM coordinated "with each State to gather information related to the [Secretary's] Order, including State-specific issues and potential options for actions with respect to the 2015 Greater Sage-Grouse Plans and Instruction Memorandums (IMs) to identify opportunities to promote consistency with State plans." (Report to the Secretary at 3.) This process overlapped to some degree with the BLM's scoping process, which also assisted the BLM in identifying the scope of issues to be addressed and significant issues, and with coordination with the States occurring after the Report.
  - **Section 3.1 Introduction. p. 3-2.** Based on available information, including the USGS reports described below, the BLM has concluded that the existing condition is not substantially different from that of 2015; therefore, the data and information presented in the 2015 Final EIS are incorporated into this RMPA/EIS.

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

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

USGS Reports As part of the consideration of whether to amend some, all, or none of the 2015 Greater Sage-Grouse land use plans, the BLM requested the USGS to develop an annotated bibliography of Greater Sage-Grouse science published since January 2015 (Carter et al. 2018)1 and a report that synthesizes and outlines the potential management implications of this new science (Hanser et al. 2018).

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

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

- **<u>Chapter 4:</u> Environmental Consequences**
  - **Section 4.7 Cumulative Impacts. p. 4-38.** This RMPA/EIS incorporates by reference the analysis in the 2015 Final EISs and the 2016 SFA Withdrawal Draft EIS, which comprehensively analyzed the cumulative impacts associated with these planning decisions under consideration in that process. The 2015 EISs, and to some degree the 2016 SFA EIS evaluated the cumulative impacts associated with the No-Action Alternative in this RMPA/EIS. The Proposed Plan Amendment's effects are effectively within the range of effects analyzed by the 2015 and 2016 EISs. The 2015 Final EISs are quite recent, and the BLM has determined that conditions in the Utah planning area have not changed significantly based, in part, on the USGS science review (see **Chapter 3**), as well as the BLM's review of additional past, present, and reasonably foreseeable actions in 2018.
  - **Section 4.7.1 Range-wide Cumulative Effects Analysis – Greater Sage-Grouse. p. 4-41.** The BLM's assessment that conditions and cumulative impacts have not changed significantly is based, in part, on the USGS science review (see **Chapter 3**) and the BLM's review of additional past, present, and reasonably foreseeable actions in 2018. Since the nature and context of the cumulative effects scenario have not appreciably changed since 2015, and the 2015 plans included analysis by WAFWA MZ across the entire range of the Greater Sage-Grouse, the cumulative effects analysis in the 2015 Final EIS applies to this planning effort and provides a foundation for the BLM to identify any additional cumulative impacts.

    - **Section 4.7.2 Why Use WAFWA Management Zones? p. 4-42.** The cumulative effects analysis area for Greater Sage-Grouse extends beyond a state, political, or planning area boundary to reflect the WAFWA MZs because they encompass areas with similar issues, threats, and vegetative conditions important Greater Sage-Grouse habitat management. Each suite of threats to specific Greater Sage-Grouse populations have been identified in the COT report, 2015 Regional RODs, and the Listing Decision. The 2015 Regional RODs identify how planning level allocation decisions address the identified threats to populations, which are aggregated in this analysis by MZs. The threats vary geographically and may have more or less impact on Greater Sage-Grouse and its habitat in some parts of the MZs, depending on such factors as climate, land use patterns, and topography.
- **Chapter 5: Consultation and Coordination**
    - NTT, COT, and USGS do not appear.
- **Appendix A: Maps**
    - NTT, COT, and USGS do not appear.
- **Appendix B: Applying Lek Buffer Distances**
    - USGS appears; NTT and COT do not appear.
    - US Geological Survey appears.
- **Appendix E: Greater Sage-Grouse Disturbance Cap Guidance**
    - USGS appears; NTT and COT do not appear.
- **Appendix G: Stipulations Associated with Fluid Mineral Leasing – Proposed Plan Amendment**
    - NTT, COT, and USGS do not appear.
- **Appendix I: Adaptive Management**
    - NTT, COT, and USGS do not appear.
- **Appendix K: Greater Sage-Grouse Habitat Baseline and Habitat Update Protocol.**
    - NTT, COT, and USGS do not appear.
- **Appendix 1: Cumulative Effects Supporting Information**
    - NTT, COT, and USGS do not appear.
- **Appendix 2: Responses to Substantive Public Comments on the Draft EIS**
    - NTT, COT, and USGS appear.
    - Conservation Objectives Team appears.
- **Appendix 3: Current Conditions of GHMA in Utah**
    - NTT, COT, and USGS do not appear.
- **Acronyms and Abbreviations**
    - NTT and COT do not appear.
- **Dear Reader, Abstract, Executive Summary, Chapter 6, Glossary, Index**
    - NTT, COT, and USGS do not appear.
    - US Geological Survey appears in Chapter 6 (References)

4.4 EXCERPTS FROM CHAPTER 2 UT FINAL EIS JUNE 2015 FOR NTT AND COT

Page	NTT	COT	USGS
2-3			USGS lek buffer study: The Proposed Plans include a management action to incorporate the lek buffer distances identified in the USGS report *Conservation Buffer Distance Estimates for Greater Sage Grouse—A Review: USGS Open File Report 2014-1239* (Manier et al. 2014) during NEPA analysis at the implementation stage. Although the buffer report was not available at the time of the Draft LUPA/EIS release, applying these buffers was addressed in the Draft LUPA/EIS and is qualitatively within the spectrum of alternatives analyzed.
2-7	Developed one No Action Alternative (Alternative A) and four preliminary action alternatives. The first action alternative (Alternative B) is based on *A Report on National Greater Sage-Grouse Conservation Measures* (NTT 2011), and the second action alternative (Alternative C) is based on proposed alternatives submitted by conservation groups during scoping, including two sub-alternatives for livestock grazing (C1 and C2).		

Page	NTT	COT	USGS
2-8		The direction for managing GRSG habitat in this document is focused on responding to the threats identified by the USFWS in their 2010 warranted but precluded finding on listing the GRSG, as well as their COT report. The USFWS threats do not necessarily align with BLM or Forest Service resource program areas, and are often integrated into several different resource program areas. Table 2.1 provides a cross-walk between each of the 2010 warranted but precluded finding and COT identified threats and the BLM and Forest Service program areas addressing these threats, with references to specific sections of the Proposed Plan Amendments. For the BLM Proposed Plan, see Section 2.6.2. The Forest Service Proposed Plans can be found in Section 2.6.3 (Utah) and Section 2.6.4 (Wyoming).	
2-11			The BLM and Forest Service Proposed Plans consider documents related to the conservation of GRSG that have been released since the publication of the Draft LUPA/EIS. For example, this Proposed Plans consider the USFWS' October 27th, 2014 memorandum *Greater Sage-Grouse: Additional Recommendations to Refine Land Use Allocations in Highly Important Landscapes* and the USGS' November 21st, 2014 report *Conservation Buffer Distance Estimates for Greater Sage-Grouse—A Review* (Manier et al. 2014). Based on these documents, the BLM and Forest Service are proposing to designate SFA to further protect highly valuable habitat and is proposing to include lek-buffer distances when authorizing activities near leks. The BLM and Forest Service also updated the Proposed Plans to reflect new GRSG state conservation strategies, including recent State Executive Orders.

Page	NTT	COT	USGS
2-19			H-Buffers In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will apply the lek buffer-distances identified in the USGS Report *Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review* (Open File Report 2014-1239) in accordance with Appendix F, Applying Lek-Buffer Distances.
2-20			C-Buffers In undertaking BLM management actions, and consistent with valid and existing rights and applicable law in authorizing third-party actions, the BLM will apply the lek buffer-distances identified in the USGS Report *Conservation Buffer Distance Estimates for Greater Sage-Grouse – A Review* (Open File Report 2014-1239) in accordance with Appendix F.
2-26		**MA-FIRE-4** If prescribed fire is used in GRSG habitat, the NEPA analysis for the Burn Plan will address: • why alternative techniques were not selected as a viable options; • how GRSG goals and objectives would be met by its use; • how the COT report objectives would be addressed and met; • a risk assessment to address how potential threats to GRSG habitat would be minimized.	

Page	NTT	COT	USGS
2-43			**GRSG-GEN-ST-006** During lekking (March 1 to April 30) restrict surface disturbing and disruptive activities, including noise at 10 decibels above ambient (not to exceed 20-24 decibels) measured at the perimeter of an occupied lek, to lekking birds from 6:00 pm to 9:00 am within a buffer distance[3] of 3.1 miles. [3] Plan buffer distances reflect lower-interpreted range from Manier, D. J., Z. H. Bowen, M. L. Brooks, M. L. Casazza, P. S. Coates,P. A. Deibert,S. E. Hanser, and D. H. Johnson. 2014. Conservation buffer distance estimates for Greater Sage-Grouse—A review: USGS Open-File Report 2014–1239, 14 p., http://dx.doi.org/10.3133/ofr20141239.
2-58			**GRSG-TDDD-ST-015** During lekking (March 1 to May 15), restrict noise to 10 decibels above ambient (not to exceed 20-24 decibels) measured at the perimeter of an occupied lek to lekking birds from 6:00 pm to 9:00 am within a buffer distance[5] of 3.1 miles. [5] Plan buffer distances reflect lower-interpreted range from Manier, D.J., Bowen, Z.H., Brooks, M.L., Casazza, M.L., Coates, P.S., Deibert, P.A., Hanser, S.E., and Johnson, D.H., 2014, Conservation buffer distance estimates for Greater Sage-Grouse—A review: US Geological Survey Open-File Report 2014–1239, 14 p., http://dx.doi.org/10.3133/ofr20141239.

Page	NTT	COT	USGS
2-73	Alternative B is based on *A Report on National Greater Sage-Grouse Conservation Measures* (NTT report). In August 2011, the BLM convened the Sage-Grouse NTT, which brought together resource specialists and scientists from the BLM, state fish and wildlife agencies, and other federal agencies. The NTT developed a series of science-based conservation measures to be considered and analyzed through the land use planning process. On December 27, 2011, the BLM released IM 2012-044. In accordance with this IM, the BLM must consider all conservation measures developed by the NTT in at least one alternative in the land use planning process. Alternative B fulfills this requirement.		
2-73	Alternative C includes additional conservation measures to those included in the NTT report. This alternative was developed to address issues raised by interested and affected public during the scoping process. Similar to Alternative B, PHMA (**Map 2.2**) would be closed to new leasing, closed to mineral materials disposal, recommended for withdrawal from mineral entry, and exclusion for new ROWs.		

Page	NTT	COT	USGS
2-211	Apply the BMPs identified in Appendix E (of the NTT report) (included as Appendix I of the Draft LUPA/EIS), to the extent allowable by law, unless at least one of the following can be demonstrated in the NEPA analyses associated with the specific project: • A specific design feature is documented to not be applicable to the site-specific conditions of the project/activity; • A proposed design feature or BMP is determined to provide equal or better protection for GRSG or its habitat; • Analyses conclude that following a specific feature will provide no more protection to GRSG or its habitat than not following it, for the specific project being proposed.		

Page	NTT	COT	USGS
2-240		As described in Section 2.11.5, many counties developed their own GRSG maps, often by starting with the UDWR maps and removing private lands and areas not currently sagebrush. The result is maps that differ greatly from those contained in the Draft LUPA/EIS, the state's plan, or the COT report. Some counties further fragment habitat protections by re-categorizing the reduced areas as priority, general or opportunity areas based on current vegetation conditions. By so doing, the resulting areas identified for protection do not include all the seasonal life stages and transition zones for the GRSG populations. They also could encourage development in areas that could easily become habitat with treatment or where development could indirectly impact adjacent area of habitat. Further, omitting private lands overlooks the point that is emerging from research from throughout the west that private lands often provide important GRSG habitats due to the presence of deeper soils and more moisture. Such an approach at mapping is not consistent with maintaining and improving GRSG populations and habitat.	
2-241		**2.11.7 Conservation Objectives Team Report** As part of their comments on the Administrative Draft EIS, the State of Utah commented that the BLM should consider an alternative which focuses on consistency with the COT report. An alternative based on the COT report was not analyzed in detail because all conservation measures and objectives identified in the COT report are considered within the range of alternatives.	

Page	NTT	COT	USGS
2-241		**2.11.8 BLM Policies and Regulations** In addition recommending consideration of an alternative based on the COT report, the State of Utah suggested that the BLM should consider an alternative based on BLM Manual 6840, Special Status Species Management, and rangeland health regulations, found at 43 CFR 4180.2. The BLM did not consider this alternative in detail because under all alternatives the BLM is required to comply with existing laws, rules regulations and policy (see Section 1.7.1, Planning Criteria). In addition, as discussed in the USFWS listing decision, existing regulatory mechanisms, which includes compliance with these existing regulations and policies has not been sufficient to prevent GRSG habitat loss or population declines. As such, an alternative based on compliance with BLM Manual 6840 and rangeland health regulations would substantially similar in design to the No Action Alternative.	

- End of tables of excerpts from the UT GRSG 2015 Final EIS and 2018 Final EIS –

4.5 COT, NTT AND USGS 2018 GENERAL INFORMATION

Outline:

1) COT and NTT Reports
    a) Introduction
    b) Description of each document
    c) How the reports were considered in 2015 and 2019 LUP decision
    d) How/which parts were implemented
2) USGS 2018 Annotated Bibliography: Research on Greater Sage-Grouse since 2015
    a) Description
    b) How it was considered in 2018

1.a. Introduction to COT and NTT reports:

Upon review of the best available science and commercial information, the USFWS concluded in 2010 that the Greater Sage-Grouse warranted protection under the ESA. Two factors leading to the decision to list the species as "warranted but precluded" were threats to habitat and the inadequacy of existing regulatory mechanisms.

1.b.i. Greater Sage-Grouse National Technical Team (NTT). A Report on National Greater Sage-Grouse Conservation Measures. December 2011. https://eplanning.blm.gov/epl-front-office/projects/lup/9153/39961/41912/WySG_Tech-Team-Report-Conservation-Measure_2011.pdf

In 2011, in response to the USFWS 2010 warranted but precluded finding, the BLM initiated a land use planning process and assembled a National Technical Team (NTT) made up of state and federal Greater Sage-Grouse experts to review all of the best available science on Greater Sage-Grouse and habitat impacts and make recommendations for conservation measures that should apply inside Priority Habitats. The report describes the scientific basis for the conservation measures proposed within each BLM program area.

Among the key recommendations of the National Technical Team's final report (NTT 2011) were recommendations to: (1) close Priority Habitats to future mining claims and leasing for oil, gas, and coal; (2) apply four-mile NSO buffers around Greater Sage-Grouse leks for existing oil and gas leases; and (3) cap cumulative habitat disturbance at 3% of the landscape and one industrial site per square-mile.

1.b.ii. Conservation Objectives Team (COT). Greater Sage-Grouse Final Report. February 2013. https://www.fws.gov/greatersagegrouse/documents/COT-Report-with-Dear-Interested-Reader-Letter.pdf

In 2012, at the request of the Greater Sage-Grouse Task Force, a group of state and federal representatives (Conservation Objectives Team (COT)) produced a report that identified the most significant areas for Greater Sage-Grouse conservation (Priority Areas for Conservation (PACs)), the principal threats within those areas, and the degree to which such threats need to be reduced or ameliorated to conserve the Greater Sage-Grouse so that it would not be in danger of extinction or likely to become so in the foreseeable future.

1.c. How COT and NTT were considered in 2015 and 2019 LUP decisions:

2015: As directed in the BLM Washington Office IM 2012-044, the conservation measures developed by the National Technical Team were to be considered and analyzed, as appropriate, through the land use planning and NEPA processes by all BLM state and field offices that contain occupied Greater Sage-Grouse habitat. IM 2012-144 https://www.blm.gov/policy/im-2012-044 also directed the BLM to refine the Preliminary Priority Habitat and Preliminary General Habitat data through the land use planning process. The 2013 Draft Greater Sage-Grouse RMP amendments and revisions/Draft EISs contained one alternative based on the conservation measures developed by the National Technical Team and evaluated through the 2012-2015 planning process. (NOTE – do we need to mention that the COT Report was published in February and the draft EISs were published in August?)

2019: The BLM considered the entire range of alternatives from the 2015 Final EIS to identify issues meriting reconsideration, given the BLM's goal of enhancing alignment with state plans. In this manner, the BLM will continue to appropriately manage Greater Sage-Grouse and its habitat through this planning effort in tandem with the 2015 ROD/ARMPA.

1.d. How/which parts of NTT were implemented (does this mean – incorporated into the 2015 ROD?):

The 2015 Proposed LUPA incorporated management based on the National Technical Team recommendations.

2 USGS 2018 Annotated Bibliography: Research on Greater Sage-Grouse since 2015

2.a. Description:

In June 2017, Secretarial Order 3353 Greater Sage-Grouse Conservation and Cooperation with Western States established a team to review the federal land management agencies' Greater Sage-Grouse Plan Amendments or Revisions completed on or before September 2015. https://www.doi.gov/sites/doi.gov/files/uploads/so_3353.pdf

In 2018, additional constraints on land uses or development without a documented need would not meet the purpose of SO 3353. The BLM did not discover new information that would indicate the agency should increase the level of conservation, management, and protection to achieve its land use plan objective. As part of the consideration of whether to amend the 2015 Greater Sage-Grouse RMPs, the BLM requested the USGS to develop an annotated bibliography of Greater Sage-Grouse science published since January 2015 (Carter et al. 2018; see Section 3.1). In addition, SO 3353 directs the BLM to promote habitat conservation, while contributing to economic growth and energy independence. As analyzed in the 2015 Final EIS, all of the previously analyzed alternatives, including one proposing constraints stricter than the current management plan, were predicted to result in a loss of development opportunities on public lands.

2.b. How USGS Bibliography was considered in 2018

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

4.6 How the 2019 ARMPA Changes Affect Alignment with USFWS Conservation Objectives Team Objectives

This appendix includes a description of the 2013 USFWS Conservation Objectives Team (COT) Report, including how the 2013 Draft EIS and 2015 Final EIS included sections that documented how the report's objectives were all addressed in the considered range of alternatives. The October 2, 2015 USFWS determination that listing Greater Sage-Grouse as threatened or endangered was partially based on the 2015 ARMPAs incorporating management that reduced or minimized threats. This section summarizes an assessment of how the 2019 ARMPA management changes affect alignment with the COT Report objectives. Based on this assessment, the management in the 2019 ARMPA does not change alignment of the BLM Utah's plan with the COT objectives and the corresponding support of the COT Report's goal of "long-term conservation of sage-grouse and healthy sagebrush shrub and native perennial grass and forb communities by maintaining viable, connected, and well-distributed populations and habitats across their range, through threat amelioration, conservation of key habitats, and restoration activities" (COT Report, page 13).

4.6.1 Issue: Sagebrush Focal Area Designations/Withdrawal Recommendation

Removal of the SFAs does not affect meeting the COT objectives. SFAs are not identified as required to meet any specific COT objective, and are not even mentioned in the COT Report. The 2019 ARMPA still manages all the PHMA inside the former SFAs as PHMA, with the associated goals, objectives, and protective management. Removing the SFA recommendation for withdrawal from locatable mineral entry doesn't change impacts to PHMA as there is low potential for such development, and therefore no threat to Greater Sage-Grouse from mining in the Utah SFAs (see 2016 Draft EIS). Further, prioritizing grazing permit renewals and vegetation treatments within SFAs over all other PHMA (or non-sage-grouse habitat within designated PHMA) could have re-directed limited staff time and funding to areas that already provide functioning Greater Sage-Grouse habitat characteristics and away from areas that may have substantial resource concerns, actually resulting in the increased potential for decreased habitat quality and quantity.

4.6.2 Issue: Administering Disturbance and Density Caps

Providing an exception for the disturbance cap does not affect meeting the COT objectives. The COT Report does not specifically call for implementation of a disturbance cap. Rather, the COT objectives discuss the importance of minimizing disturbance to Greater Sage-Grouse habitat.

The 2019 ARMPA retains the 3% disturbance cap as one management tool to minimize disturbance. The 2019 ARMPA does allow for considering disturbance above 3%, but only on condition that a "technical team determines that site-specific Greater Sage-Grouse habitat and population information, combined with project design elements indicates the project *will improve the condition of Greater Sage-Grouse habitat*" and only if the State Director concurs (MA-SSS-3B, emphasis added). These conditions provide for consideration of site specific factors that affect how a project may impact Greater Sage-Grouse, such as "Greater Sage-Grouse abundance and trends, movement patterns, habitat amount and quality, extent and alignment of project disturbance, location and density of existing disturbance, project design options and other biological factors." Consideration of such local factors is consistent with the COT Report's statement that "specific strategies or actions necessary to achieve the…conservation objectives must be developed and implemented at the state or local level" (COT Report, page 31), and later that "addressing energy development and any subsequent successful restoration activities in sagebrush ecosystems *will require consideration of local ecological conditions*" (COT Report, page 43, emphasis added).

The 2019 ARMPA changes to administration of the disturbance cap is in alignment with the COT objectives related to minimizing disturbance and provide for consideration of local ecological conditions.

4.6.3 Issue: Modifying Mitigation Strategy

The COT Report does not include a specific objective with a standard mitigation strategy. However, it does note that "when avoidance is not possible, meaningful minimization and mitigation of the impacts should be implemented" (page 31). It also states that "efforts should be made to restore the components lost within the PAC (e.g., redundancy or representation) in other areas such that there is no net loss of sage-grouse or their habitats" (page 37). The 2019 ARMPA exceeds this standard by committing to "undertake planning decisions, actions and authorizations 'to minimize or eliminate threats affecting the status of [GRSG] or to improve the condition of [GRSG] habitat'" (MA-SSS-3A).

The COT Report and its objectives do not rest the burden of achieving "no net loss" solely on project proponents, merely that mitigation achieves no loss of habitat. The 2019 ARMPA Compensatory Mitigation Strategy is in alignment with and exceeds the COT report's standard of " no net loss". It includes an objective and management action that requires mitigation "improve the condition of GRSG habitat across the planning area" (Objective SSS-2, see also MA-SSS-3A). Achieving that standard by a mix of BLM, state, and voluntary proponent efforts does not negate that the standard would be met, with its corresponding benefits to Greater Sage-Grouse habitat and populations.

4.6.4 Issue: Modifying Habitat Objectives

The COT Report includes general descriptions of Greater Sage-Grouse seasonal habitat needs. It cites several references where various habitat characteristics (vegetation type, density, height, etc.) are detailed. However, the COT chose not to prescribe or recommend a range-wide standard of metrics for habitat characteristics in the COT Report. Instead, the COT objectives are more general, recommending that habitats be managed "in a manner consistent with local ecological conditions that maintains or restores healthy sagebrush shrub and native perennial grass and forb communities and conserves the essential habitat components for sagegrouse (e.g. shrub cover, nesting cover)" (COT Report, page 45 – emphasis added).

Consistent with this approach, the 2019 ARMPA makes changes to the specific habitat objective indicators and values (percent cover, height, composition, etc.) based on peer-reviewed literature specific to Greater Sage-Grouse use of habitats throughout Utah. These changes update the metrics from the 2015 ARMPA based on finalization and publication of the Greater Sage-Grouse habitat characteristics for Utah. These changes are precisely aligned with the COT objective to manage habitats "consistent with local ecological conditions" (COT Report, page 45), as well as modifying the specificity of habitat objectives "as dictated by new findings" (COT Report, page ii).

The 2019 ARMPA Habitat Objectives are in alignment with the COT objectives for habitat.

4.6.5 Issue: Waivers, Exceptions, and Modifications for NSO Stipulations

The COT objective for energy development is that it "should be designed to ensure that it will not impinge upon stable or increasing sage-grouse population trends" (COT Report, page 43). It goes on to note that "addressing energy development and any subsequent successful restoration activities in sagebrush ecosystems *will require consideration of local ecological conditions*, which cannot be prescribed on a range-wide level" (ibid, emphasis added).

The 2019 ARMPA does not change the 2015 fluid mineral leasing no surface occupancy (NSO) stipulation for PHMA. As such, the strategy to avoid any potential detrimental impacts of energy development did not change. However, as described in the 2018 Final EIS, PHMA in Utah includes "high-quality habitat, and may also include areas with poor or potential habitat, and nonhabitat" (2018 Final EIS page 1-4). This is clarified in both Chapter 3 and Appendix K of the 2018 Final EIS, where it describes that "the PHMA boundaries were drawn at a broad scale; thus they include interspersed areas of habitat and non-habitat (see Appendix K of the 2018 Final EIS). Most of the areas of non-habitat are predominantly small tracts of vegetation that could be used for transitional zones or that could be affected by public land uses, in concert with adjacent tracts of habitat. However, some of these non-habitat areas in PHMA are so large that they are unlikely to provide habitat for Greater Sage-Grouse populations" (2018 Final EIS page 3-13). Based on state-wide vegetation data approximately 41 percent of the PHMAs "are associated with vegetation communities that do not include sagebrush as either the dominant vegetation type or as a primary component species" (ibid).

To provide managers the ability to consider local ecological conditions that could include areas of non-habitat within PHMA, the 2019 ARMPA included adjusted exception, waiver, and modification language for the NSO stipulation. This language was not a carte blanche to develop fluid mineral facilities within PHMA but would instead require fact-specific review relating to the potential impacts of each proposed project, an approach that is consistent with the BLM's regulations that require that "a stipulation…shall be subject to modification or waiver only if…proposed operations would not cause unacceptable impacts" (43 CFR 3101.1-4).

The 2019 ARMPA defines specific criteria that must be met and documented at the local level in order for an exception or modification to be considered (see MA-MR-3), including documentation that:

- A proposed well must be located in non-habitat portions of PHMA,
- The non-habitat does not provide important connectivity between habitat areas, and
- The development would not cause indirect disturbance to or disruption of adjacent seasonal habitats that would impair their biological function of providing the life-history or behavioral needs of the Greater Sage-Grouse population.

The exception can only be considered for approval if those identified criteria can be documented based on an evaluation of local ecological conditions. Because of this, no habitat on BLM-administered lands in PHMA could be directly lost to development of oil and gas wells, and no habitat could lose its biological function due to indirect impacts. Any proposed well that would result in such impacts would not be eligible for an exception and would have to conform with the NSO stipulation.

As such, the 2019 ARMPA changes to NSO exception, waiver, and modification language meets the COT objective requirement that energy development "not impinge" on the associated Greater Sage-Grouse population.

4.6.6 Issue: General Habitat Management Areas in Utah

The COT objectives do not specifically address management of GHMA. Instead, they focus on protection of areas defined as Priority Areas for Conservation (PACs). However, the COT Report does note that habitat outside of the PACs "may also be essential, by providing connectivity between PACs (genetic and habitat linkages), habitat restoration, population expansion opportunities, and flexibility for

managing habitat changes that may result from climate change" (COT Report, page 36). It also notes that "conservation of sage-grouse habitats outside of the PACs should be closely coordinated with each state" (ibid).

Consistent with the COT Report language, the BLM coordinated closely with the State of Utah regarding Greater Sage-Grouse habitats outside PHMA. After evaluating those areas, documented in the 2018 Final EIS Appendix 3 (Current Conditions of GHMA in Utah), it was determined the areas within the BLM's jurisdiction didn't meet the COT Reports considerations for protection because they: 1) do not provide connectivity between PACs; 2) do not provide the best opportunities for habitat restoration; 3) correspondingly do not provide opportunities for population expansion; and since most of them are already poor quality, lower in elevation, or impacted by disturbances, 4) they do not provide for flexibility that may result from climate change.

For each GHMA area in Utah the 2018 Final EIS Appendix 3 notes the size, acres within the BLM's jurisdiction, amount of existing disturbance on the ground already effecting the Greater Sage-Grouse population, presence of existing fluid mineral leases (valid existing rights), number of occupied leks, amount of modeled seasonal habitat, and a discussion of how the given GHMA area contributes to connectivity to surrounding Greater Sage-Grouse populations within Utah or to adjacent states based on literature, telemetry studies, and professional judgement of local BLM and state biologists. Based on this evaluation, as well as evaluating lek monitoring data from the State of Utah summarized in Table 3-2 of the 2018 Final EIS, the BLM determined the following regarding the GHMA that was identified in the 2015 ARMPA:

- GHMA was mostly not within BLM's jurisdiction; BLM administers just 26 percent of the surface estate of mapped GHMA, with an additional approximately 10 percent where the BLM jurisdiction is limited to the mineral estate. Most of the best GHMA habitat (e.g., occupied leks, relatively undisturbed, modeled seasonal habitat, etc.) is not administered by the BLM, so identifying it as GHMA in a BLM management plan has no effect on conservation potential.
- GHMA included just 6% of occupied leks in Utah, and those leks contributed just 4.5% of the males counted in 2017. This means that over 95% of the Greater Sage-Grouse population in Utah is protected within PHMA. From a range-wide perspective, GHMA in Utah provides for just 0.25 percent of the Greater Sage-Grouse population.
- Only 5 of the 22 occupied leks in GHMA (22 percent of the GHMA occupied leks and just one percent of the state-wide total occupied leks) were located on BLM-administered surface estate (one in the Deadman Bench area, one in the South Slope area, and three in the Book Cliffs area), with 3 others in areas where BLM jurisdiction is limited to the mineral estate.
- All the GHMA occupied leks on BLM surface estate were in areas with substantial existing disturbance above that which literature notes will result in long-term persistence of Greater Sage-Grouse population, as well as existing fluid mineral leases (see map on Appendix 3 page App-3-7, showing existing well density throughout the Green River District), as well as maps on pages App-3-6, App-3-10, and App-3-13).
- Unlike GHMA in surrounding states, GHMA in Utah did not provide habitat connectivity between areas of PHMA. Maps and connectivity summaries in the 2018 Final EIS Appendix 3 describe how, outside the areas in the Uintah Basin that are either not within the BLM's jurisdiction or are already heavily impacted by existing fluid mineral development, GHMA did

not include any occupied leks and is comprised of small scatted, poor quality habitat of mixed jurisdiction on the periphery of PHMAs. There is no telemetry or anecdotal evidence of birds using GHMA to move between Greater Sage-Grouse populations in southern, central, or northern Utah (e.g., birds moving from GHMA in Bald Hills to Hamlin Valley, birds moving from GHMA in Sheeprocks to any other population, or birds moving from GHMA in Carbon to Uintah or Parker Mountain). While a recent study (Cross et. al., 2017) suggests that there is a genetic connection from the Parker Mountain population in central Utah to several other populations in the region, that study did not consider or evaluate whether the connection is due to natural migration or the fact that the State of Utah has translocated birds from the strong Parker Mountain population (which is in PHMA) to augment, support, and recover populations through the state. As such, there is no clear evidence that GHMA in Utah has provided natural connectivity between PHMA.

- The management and impacts associated with GHMA in the 2015 ARMPA did not substantially change in the 2019 ARMPA. Labeling an area GHMA did not provide any protection; it is the management associated that determines whether a resource will be protected. The 2015 ARMPA included limited management of GHMA management, including MA-SSS-5 and a few other measures scattered through other actions. Like the 2015 ARMPA, the 2019 ARMPA retained all management in the plans that pre-date 2015, and also retained the requirement to replace habitat lost to development. The 2019 ARMPA still requires that "outside of PHMA…acres of seasonal habitat…lost to habitat degradation actions…are replaced by creating/improving…habitat within PHMA" (MA-SSS-6). There is no difference in the effect of changes in the mitigation strategy between the 2015 and 2019 ARMPAs; Greater Sage-Grouse habitat available in the state would not decrease.
- The 2015 ARMPA language for buffers and required design features (RDFs)/best management practices (BMPs) contains exceptions that could allow disturbances to continue in GHMA, especially if such disturbance is co-located with existing authorizations. Because of the substantial amount of existing development and leases already held by production (see maps in 2018 Final EIS pages App-3-6, App-3-10, and App-3-13), impacts have already occurred, as evidenced by the declining populations in these areas (2018 Final EIS Table 3-2). The presence of exceptions to buffers and RDFs, combined with the existing impacts already seen through monitoring is what led the BLM to disclose in the 2015 Final EIS that the proposed plan (which became the 2015 ARMPA) "could result in human alteration, direct loss, and fragmentation of seasonal [Greater Sage-Grouse] habitats, which, in most cases, have already been fragmented by mineral development activities. Fragmentation could further limit the amount of usable habitat available for the small and declining population of [Greater Sage-Grouse] that occupy this area [GHMA]" (2015 Final EIS, page 4-119). Given the conclusion of continued declines, the 2018 Final EIS concluded that the changes in management of Greater Sage-Grouse habitat outside of PHMA "would continue, if not accelerate these effects" (2018 Final EIS, page 4-21).

In 2013, the COT Report stated that "effective conservation strategies are predicated on identifying key areas across the landscape that are necessary to maintain redundant, representative, and resilient populations" (page 13). In Utah, the BLM has limited managerial jurisdiction for Greater Sage-Grouse habitat outside PHMA. For the areas where the BLM does have jurisdiction there are very few leks and associated populations, there is a lack of documented connectivity between PHMA that uses the former

GHMA areas, and there are already substantial impacts to habitat and populations already present or likely due to the presence of valid existing rights.

The removal of GHMA and the 2019 ARMPA changes in management of Greater Sage-Grouse habitat outside PHMA are consistent with the COT objectives.

4.6.7 Issue: Considering Exceptions to Greater Sage-Grouse Restrictions in PHMA

One of the key COT objectives is to "retain sage-grouse habitats within PACs" (COT Report page 37). As noted above, the 2018 Final EIS defined PHMA in Utah as including "high-quality habitat, and may also include areas with poor or potential habitat, and nonhabitat" (2018 Final EIS page 1-4). The 2018 Final EIS Chapter 3 and Appendix K show that PHMA is not all Greater Sage-Grouse habitat where it states "the PHMA boundaries were drawn at a broad scale; thus they include interspersed areas of habitat and non-habitat (see Appendix K of the 2018 Final EIS). Most of the areas of non-habitat are predominantly small tracts of vegetation that could be used for transitional zones or that could be affected by public land uses, in concert with adjacent tracts of habitat. However, some of these non-habitat areas in PHMA are so large that they are unlikely to provide habitat for Greater Sage-Grouse populations" (2018 Final EIS page 3-13). In fact, based on state-wide vegetation data approximately 41 percent of the PHMAs "are associated with vegetation communities that do not include sagebrush as either the dominant vegetation type or as a primary component species" (ibid). Depending on the activity and the local conditions it is possible that development could occur in PHMA and not directly or indirectly impact habitat.

Rather than re-draw PHMA boundaries to include only habitat, the 2019 ARMAP objectives and management actions were applied to both habitat and non-habitat areas within PHMA unless specific conditions were documented. First, the proposed development must occur in non-habitat. Second, after evaluation of local ecological conditions both criteria in MA-SSS-1 have to be documented:

- the non-habitat does not provide important connectivity between seasonal habitats; and
- direct and indirect impacts on adjacent seasonal habitats (disturbance to or disruption of) that would impair their biological function of providing the life-history or behavioral needs of the Greater Sage-Grouse population are eliminated through project design (e.g., minimize sound, preclude tall structures, require perch deterrents), as demonstrated in the project's NEPA document.

If it were documented and disclosed that the project would not directly impact habitat or indirectly effect the function of adjacent habitat, there would be no need to apply management intended to protect habitat since all habitat in the area would continue to provide for the species' needs.

This exception was included in the Proposed Plan in the 2015 Final EIS but was removed from applying to PHMA between the Final EIS and the 2015 ROD. The 2018 Final EIS re-evaluated this exception and determined that, given the nature of PHMA in Utah and the conditions that must be met to consider granting an exception, it was consistent with the COT Report language that "local ecological conditions" (page 43) must be considered.

The exception language requires that protective management actions would apply to areas of Greater Sage-Grouse habitat or in non-habitat with the potential to indirectly effect the functionality of adjacent habitats. As such, the exception would only apply it can be documented that the project avoids habitat,

and that local ecological conditions are such that the function that that habitat would not indirectly impaired by activities that may be permitted in adjacent non-habitat areas. Because the exception could only be granted if habitat were avoided and functionality of adjacent habitat were ensured, this change in the 2019 ARMPA is still consistent with the COT objective to retain Greater Sage-Grouse habitats within PACs.

4.6.8 Issue: Adaptive Management

The COT Report recommends developing and implementing a monitoring plan to track the success of conservation plans. It notes that "without this information… there is no capacity to adapt if current management actions are determined to be ineffective" (ibid). The COT Report suggested development and implementation of adaptive management actions "if the monitoring determines that current management actions are ineffective" (COT Report page 35). However, the COT Report did not identify any specific criteria to monitor or recommend any management responses.

Consistent with COT recommendations, the 2015 ARMPA included an adaptive management approach complete with specific triggers and responses (see 2015 ARMPA MA-SSS-7 and Appendix I). The 2019 ARMPA carried this strategy forward with a few adjustments based on lessons-learned from implementing the strategy. The 2015 ARMPA requires a knee-jerk response, broadly applying suggested management changes before determining if those changes even related to the cause of the declines. The 2019 ARMPA provides for a more responsive approach, as suggested by the COT Report language. Were a trigger to be identified as been met, indicating that current management were somehow ineffective in maintaining current populations, monitoring data would be evaluated to determine which component of habitat or which threat or combination of threats were the problem. Responsive management would then be tailored to what monitoring data indicates is the problem. This approach is consistent with the COT Report's language that recommends monitoring data be gathered to help guide management changes.

Another change to the adaptive management strategy in the 2019 ARMPA was providing for returning the adaptively changed management to that of the original 2019 ARMPA if "ten-year population trends reflect natural fluctuations anticipated for the area" (MA-SSS-7). This provides for returning management priorities if the affected population recovers, allowing for staff and budget priorities to again be evaluated based on needs of similarly properly functioning habitat and populations statewide. Absent this change, any population that exceeds an adaptive management trigger would forever remain in a prioritized state until a plan amendment is completed, even if the population recovers and is functioning consistent with normal population cycles.

Finally, the 2019 ARMPA provided for removing Greater Sage-Grouse management in the unlikely event that adaptive management efforts fail and the entire population is extirpated. This management could only be applied "if all the leks in an area that has met a hard trigger are not active for ten year, becoming unoccupied by definition" (MA-SSS-7). In such an event, the area would obviously no longer quality as a "priority habitat management area" since there would be no birds using the area. If, and only if such conditions are met, the PHMA and associated management would be removed to enable managerial focus to be prioritized to areas that still have Greater Sage-Grouse.

All of these changes in the 2019 ARMPA are consistent with the COT Report's language of adjusting management in direct response to collection and evaluation of monitoring data.

4.6.9 Issue: Prioritization of Mineral Leasing

The COT appropriately recognizes that energy "development results in sage-grouse population declines." The specific effects of energy development on Greater Sage-Grouse and its habitat are analyzed in detail in the 2015 Final EIS (see pages 4-16 through 4-29), which was incorporated into the analysis of the 2018 Final EIS. The COT objective is that "energy development should be designed to ensure that it will not impinge upon stable or increasing sage-grouse population trends" (COT Report, page 43). One of the suggested conservation measures states plans should "identify areas where leasing is not acceptable, or not acceptable without stipulations for surface occupancy that maintains sage-grouse habitats" (COT Report, page 43). Both the 2015 ARMPA and the 2019 ARMPA align with this objective by requiring an NSO stipulation on all PHMA.

Additionally, the analysis in the 2015 Final EIS Chapter 4, incorporated into the 2018 Final EIS by reference, shows that prioritization objective can be eliminated while still maintaining sufficient protections for the Greater Sage-Grouse. Further analysis included in the 2018 Final EIS correctly points out that prioritization is not the same as a closure, and at best would merely temporarily defer a parcel in PHMA from leasing to a later date. The mineral leasing prioritization objective provides no certain or durable protection to PHMA, while the NSO lease stipulation does, which is more consistent with BLM policy.

The removal of the lease prioritization objective does not remove a stipulated protection, and it also increases alignment with BLM policy, increases conformance with state and local plans, and does not change the alignment of the 2019 ARMPA with the COT objective.

4.6.10 Issue: Land Disposal and Exchanges

The COT Report addresses land disposal and exchanges under the heading "Ex-Urban Development," with the objective to "limit urban and exurban development is sage-grouse habitats and maintain intact native sagebrush plant communities" (COT Report, page 50). The 2015 ARMPA aligned with this objective by retaining all lands in PHMA and GHMA in federal management unless one of two conditions could be demonstrated: 1) the disposal will provide a net conservation gain, or 2) the disposal will have no direct or indirect adverse impacts on the conservation of the Greater Sage-Grouse. The 2019 ARMPA carried this action forward with a few adjustments to incorporate lessons learned during the implementation of the 2015 ARMPA.

During implementation of the 2015 ARMPA, potential land tenure adjustments raised some managerial concerns with MA-LR-9. For example, if a land exchange would provide an increase in habitat for a species listed as threatened or endangered, but not Greater Sage-Grouse, this action would preclude the BLM from taking that action. Also, there are many situations where the BLM administers parcels so small that they do not provide enough habitat individually to support any seasonal functions without relying on adjacent habitats outside BLM jurisdiction. In such a condition the surrounding habitat on non-BLM-administered lands could be developed resulting in the loss of all habitat functionality, but because the parcel is still in PHMA or GHMA it could not be disposed due to habitat, which no longer exists.

First, the 2019 ARMPA removed GHMA from MA-LR-9 since it was removed from the BLM's plan for the reasons noted above. Second, the language related to "net conservation gain" was changed to "improve the condition of GRSG habitat" to align with the updated mitigation standard in Objective SSS-

2 and MA-SSS-3A. Finally, the second criteria was revised from stating that a land tenure adjustment would "have not direct or indirect adverse impact on conservation of GRSG" to instead note that such adjustments would "not compromise the persistence of GRSG populations within a PHMA." This change maintains the requirement that analysis be conducted for land tenure adjustments to ensure that the changes do not compromise the purpose for the PHMA, namely that PHMA is large enough "to stabilize populations in the short-term and enhance populations in the long-term" (Objective SSS-1).

These changes in the 2019 ARMPA do not alter the alignment with the COT objective that land tenure adjustments in PHMA are "limited" and that they "maintain intact native sagebrush plant communities," which is required as a function of "not [compromising] the persistence of GRSG populations within a PHMA."

4.6.11 Issue: Managing Habitat to Manage Predation

Though the COT Report includes a summary of the threat to Greater Sage-Grouse from predation, it does not include any specific objectives related to predation. The closest COT objectives related to managing habitat as a form of managing predation is under the PAC objectives that note to "restore and rehabilitate degraded sage-grouse habitats in PACs" (COT Report, page 37) and the Pinyon-juniper Expansion objective to "remove pinyon-juniper from areas of sagebrush that are most likely to support sage-grouse (post-removal) at a rate that is at least equal to the rate of pinyon-juniper incursion" (COT Report, page 47). Habitat treatments, including conifer removal that may include corvid nests as added to MA-SSS-3D and MA-VEG-2, align with these objectives.

Additionally, managing predation on Greater Sage-Grouse from other wildlife is an action that is under the management of the State of Utah, and therefore the BLM has no management actions it can take outside of habitat restoration and conservation.

The 2019 ARMPA follows the COT Report objectives related to managing habitat to decrease predation on Greater Sage-Grouse.

4.6.12 Issue: Burial of Transmission Lines

The COT objective for transmission lines is included in the COT Report's "infrastructure" section and simply states, "avoid development of infrastructure within PACs" (COT Report, page 51). The 2015 ARMPA makes all PHMA an avoidance area for all rights-of-way, including transmission lines. Such infrastructure would be "avoided if possible," and if not possible they would be "placed in designated corridors where technically feasible…unless using a different alignment better minimizes impacts on GRSG" (2015 ARMPA MA-LR-2). The 2019 ARMPA also includes this same management. However, the 2015 ARMPA management action goes on to note that "outside designated corridors, new transmission lines must be buried where technically feasible." The 2019 ARMPA revised this action to remove the blanket requirement to consider burying all transmission lines outside corridors, and instead modified the clarifying language that lines would be "placed in designated corridors where technically feasible…unless using a different alignment or construction method (e.g., burial) better minimizes impacts on GRSG" (2019 ARMPA MA-LR-2). This still provides for the option to consider burial as a mitigation approach without requiring that all proposals for new transmission lines consider the technical feasibility of burial. This minor change in management retains the requirement to avoid transmission lines in PHMA, but appropriately defers development of alternative approaches to the

project-level where site-specific issues can be considered. This minor change does not alter the alignment with the 2019 ARMPA is in alignment with the COT Report's objective for infrastructure.

4.6.13 Issue: Modifying Habitat Management Area Boundaries

The COT Report clearly anticipates updating boundaries with the objective that "PAC boundaries should be adjusted based on new information regarding habitat suitability and refined mapping techniques, new genetic connectivity information, and new or updated information on seasonal range delineation" (COT Report, page 37). Language was already in the 2015 ARMPA addressing such adjustments. The 2019 ARMPA added additional detail to clarify PHMA boundary adjustments through the process of collecting and incorporating new information. Additional detail on this is included in the 2018 Final EIS, Section 1.5.2 and in MA-SSS-1. This clarification in the 2019 ARMPA is consistent with the COT objectives.

4.6.14 Issue: Application of Lek Buffers

Buffers are not mentioned in any COT objectives or conservation measures. They are, however, mentioned in the COT Report in the energy development section. That section states, that "if avoidance is not possible within PACs…development should only occur in non-habitat areas…with an adequate buffer that is sufficient to preclude impacts to sage-grouse habitat from noise, and other human activities" (COT Report, page 43).

Avoidance is the primary tool in both the 2015 and 2019 ARMPAs. In addition to the NSO stipulation for development associated with new developments, both plans contain a disturbance cap (MA-SSS-3B), density requirements (MA-SSS-3C), noise restrictions (MA-SSS-3E), tall structure restrictions (MA-SSS-3F), seasonal restrictions (MA-SSS-3G), and required design features (MA-SSS-3I). Additionally, both ARMPAs include management for areas already leased for fluid minerals to minimize impacts to the extent consistent with existing lease rights (see MA-MR-5, MA-MR-6, and MA-MR-7). Given the direct and limited use of buffers in the COT Report, the changes to buffers in the 2019 ARMPA are consistent with the COT objectives for fluid minerals.

The 2015 ARMPA provided direction to apply lek buffer-distances. However, the appendix describing how to apply the buffers was not clear or consistent on whether the buffers were an analysis tool to "evaluate impacts to leks" or "address the impacts to leks as identified in the NEPA analysis" or were a more restrictive tool within which any development would be precluded (e.g., "relocate [projects] outside the applicable lek buffer-distances"). The 2015 ARMPA planning process clearly did not use the buffers as land use plan allocations – areas mapped where development was to be strictly precluded. If that was the intent, such closures or exclusion areas would have been shown on the various minerals and ROW maps. Instead, the 2015 ARMPA appendix includes specific language that "justifiable departures to decrease or increase from [the] distances, based on local data, best available science, landscape features, and other existing protections (e.g., land use allocations, state regulations) may be appropriate for determining activity impacts" (2015 ARMPA, Appendix B, page B-1 – emphasis added). This indicates the flexibility to adjust buffers sizes, as well as whether or not buffers were even needed, given the potential presence of "other existing protections."

The 2019 ARMPA clarifies how to "apply" the lek buffers. The 2019 ARMPA carries forward the land use plan allocations from the 2015 ARMPA (e.g., NSO for fluid minerals, closure to mineral materials and non-energy leasable minerals, avoidance for ROWs), as well as the other management actions that

minimize threats (e.g., all the sub-bullets of MA-SSS-3). Application of restrictive buffers would be duplicative given that land use plan allocations avoid impacts from most new development, and that the minimizing measures address specific aspects of development (e.g., disturbance cap, density restrictions, noise restrictions, tall structure restrictions, seasonal restrictions). Instead, the 2019 ARMPA clarifies that the buffers are tools, within which to assess and address "impacts on leks and associated nesting habitats" and to only apply "additional conservation measures… (e.g., locating the action outside of the applicable lek buffer-distance(s))" if the impacts resulting from the activity, in context of "local data, best available science, landscape features, and other existing protections" could affect lek persistence.

The COT objectives for disturbances from minerals, mining, or infrastructure is to avoid the activity in PACs. The 2019 ARMPA mainly accomplishes this through land use plan allocations, applying management to specific aspects of impact to Greater Sage-Grouse for activities that are not otherwise precluded. The buffers provide a tool to analyze specific projects to determine how the entire suite of management protects sensitive breeding and nesting areas, while also providing a failsafe if impacts remain that could result in the loss of leks. This is consistent with the COT objectives for avoiding impacts to Greater Sage-Grouse populations and their habitats.

4.6.15 Issue: Grazing Systems and Prioritization of Grazing Permits

The COT Report includes a table that characterizes threats to Greater Sage-Grouse by population. One of the threats assessed included grazing. For all 12 Utah populations assessed, threats from grazing were identified as "not known to be present" (see COT Report, Table 2, pages 16 through 29).

The COT Report objective for livestock grazing in general is to "conduct grazing management…in a manner consistent with local ecological conditions that maintains or restores healthy sagebrush shrub and native perennial grass and forb communities and conserves the essential habitat components for sage-grouse (e.g. shrub cover, nesting cover)" (COT Report, page 45). It goes on to note that "areas which do not currently meet this standard should be managed to restore these components." There are also objectives for range management structures ("avoid or reduce the impact of range management structures on sage-grouse"), and fences ("Minimize the impact of fences on sage-grouse populations"). The 2019 ARMPA livestock grazing management aligns with these objectives.

The 2019 ARMPA has the necessary direction to conduct grazing consistent with local ecological conditions in order to maintain or restore vegetation to provide the essential habitat components for Greater Sage-Grouse. Objective SSS-3 is specific to managing vegetation in PHMA in order to "maintain or restore vegetation to provide habitat for lekking, nesting, brood rearing, and winter habitats." The objective includes the Habitat Objectives Table that includes "indicators, characteristics, values and desired seasonal habitat conditions…to inform the wildlife habitat component of the Land Health Standards evaluation process (LHS, 43 CFR 4180.2)." The ARMPA states that "results from the LHS evaluation should be used to support BLM in land use authorization processes" and that "BLM land use authorizations will contain terms and conditions regarding the actions needed to achieve or make progress toward achieving habitat objectives and land health standards."

The 2019 ARMPA specifically addresses how to manage grazing in areas that do not currently meet the vegetation objectives. MA-LG-6 directs that "in PHMA, when an area is not meeting or making progress towards achievable habitat objectives and Land Health Standards, and the causal factor is livestock grazing (i.e., improper livestock grazing), implement changes in grazing management through grazing

authorization modifications, or allotment management plan implementation." Obviously the specific modification will depend on the local ecological factors and nature of the departure from LHS, but MA-LG-6 provides several examples of the types of modifications that could be considered. The management action includes an additional requirement that multiple potential modifications be analyzed for the authorizing officer to consider immediately and over the course of the permit. This action is consistent with the COT objective.

The 2019 ARMPA includes specific management to address the COT objectives regarding range improvements and fences. MA-LG-10 requires that existing and new water developments have a neutral or beneficial effect to Greater Sage-Grouse habitat. MA-LG-16 addresses minimizing impacts from fences based on a variety of risk factors from literature.

Several livestock grazing management actions from the 2015 ARMPA were removed in the 2019 ARMPA for the reasons summarized below. The grazing actions were reviewed specifically in context of the COT Report's objectives and the COT's characterization of the threat to Greater Sage-Grouse from grazing in Utah. Because of the nature of the threat, those management actions that did not specifically address one of the COT objectives were removed. In addition, the 2015 ARMPA included several management actions in the livestock grazing section that were already addressed in existing agency regulations, policies, or that were duplicative of management actions in other sections of the ARMPA or the original RMPs. Since these actions would continue to be implemented whether or not they appear in the land use plan, they were removed. Further, most of these actions tend to address management on livestock grazing in general, rather than focusing on the threat to Greater Sage-Grouse from improper livestock grazing.

The 2019 ARMPA livestock grazing objectives and management actions are consistent with the COT report.

4.6.16 Issue: Management of Water Developments for Livestock

The COT Report background for range management structures includes water developments. The COT objective is to avoid or reduce the impact of range management structures on Greater Sage-Grouse. The 2015 ARMPA included two management actions that addressed water developments for livestock, one that addressed new water developments (MA-LG-10) and one that addressed existing water developments (MA-LG-11). These were consolidated into one action and superfluous or repetitive concepts were removed to simplify the action to clearly address management of water developments, whether new or existing, to be managed for a neutral or beneficial effect to Greater Sage-Grouse. This change does not alter the consistency with the COT objective; the 2019 ARMPA is still consistent with the COT report.

4.6.17 Issue: Clarifying the Role of the State of Utah and Counties with Respect to Travel Management Planning

Clarifying who needs to be included in coordination for implementation-level travel management planning is not addressed in the COT Report, therefore the changes clarifying this in the 2019 ARMPA would have no effect on alignment with the COT objectives.

4.6.18 Issue: Clarifying the Role of the BLM, State of Utah, and Counties with Respect to Predator Control

Clarifying the role of governmental parties in predator control is not addressed in the COT Report. Therefore the changes in the 2019 ARMPA clarifying this would have no effect on alignment with the COT objectives.

4.6.19 Issue: Management of Surface Coal Mining

The COT objective for mining is to "maintain stable to increasing sage-grouse populations and no net loss of sage-grouse habitats in areas affected by mining" (COT Report, page 49). The COT Report goes on to recommend avoiding new mining activities and/or any associated facilities within occupied habitats, as well as avoiding leasing in Greater Sage-Grouse habitats until other seasonal habitats can be restored to habitats used by Greater Sage-Grouse.

The 2015 ARMPA stated that "PHMA is essential habitat for maintaining [Greater Sage-Grouse] for purposes of the suitability criteria" (MA-MR-18). However, as described in the 2018 Final EIS, PHMA in Utah includes "high-quality habitat, and may also include areas with poor or potential habitat, and nonhabitat" (2018 Final EIS page 1-4). This is clarified in both Chapter 3 and Appendix K of the 2018 Final EIS, where it describes that "the PHMA boundaries were drawn at a broad scale; thus they include interspersed areas of habitat and non-habitat (see Appendix K of the 2018 Final EIS). Most of the areas of non-habitat are predominantly small tracts of vegetation that could be used for transitional zones or that could be affected by public land uses, in concert with adjacent tracts of habitat. However, some of these non-habitat areas in PHMA are so large that they are unlikely to provide habitat for Greater Sage-Grouse populations" (2018 Final EIS page 3-13). Based on state-wide vegetation data approximately 41 percent of the PHMAs "are associated with vegetation communities that do not include sagebrush as either the dominant vegetation type or as a primary component species" (ibid).

The 2019 ARMPA revised MA-MR-18 to reflect the fact that because all PHMA isn't habitat, all PHMA cannot be essential habitat. This change in language did not alter the alignment with the COT objectives since potential surface coal mining leases or associated mine plans would need to incorporate minimization measures identified in MA-SSS-3 (e.g., disturbance cap, noise and tall structure restrictions, mitigation, etc.). These measures would be applied to maintain stable to increasing Greater Sage-Grouse populations, as determined through site-specific analysis considering local ecological conditions.

The 2019 ARMPA is consistent with the COT report.

4.6.20 Issue: Decisions that Require Analysis of Specific Alternatives during Implementation

No COT objectives require analysis of specific alternatives during project reviews, therefore the removing management actions in the 2019 ARMPA that require consideration of such alternatives would have no effect on alignment with the COT objectives.

The 2015 ARMPA included several management actions that did not identify goals, objectives, or any allowable use or action necessary to achieve a desired condition, as required by the BLM planning handbook. Instead, several management actions merely identified direction for future implementation planning efforts. For example, MA-TTM-3 included nine bullets that just identified how future travel management planning should be conducted and what type of alternatives should be considered during

those efforts. Based on guidance in the BLM's planning handbook, Appendix C, instructions on how to conduct implementation efforts and what alternatives should be considered is not a land use plan decision. Instead, such future efforts are required to comply with laws, regulations, and agency policies in place at the time those efforts are conducted. In addition, the range of alternatives considered in those efforts should be driven by the issues identified during scoping. An RMP is not the place to identify what alternatives should be considered in future efforts before any action has been considered by the agency or requested by the public. Because of this, these types of management actions were removed in the 2019 ARMPA.