STATE OF WYOMING
EXECUTIVE DEPARTMENT
EXECUTIVE ORDER

Order 2019-3
(Replaces 2015-4 and 2017-2)

GREATER SAGE-GROUSE CORE AREA PROTECTION

WHEREAS, the Greater sage-grouse (*Centrocercus urophasianus*), an iconic western species that inhabits much of the sagebrush-steppe habitat in Wyoming and serves as an umbrella species for sagebrush obligate species, including many of the state's species of greatest conservation need; and

WHEREAS, the sagebrush-steppe habitat type is abundant across the State of Wyoming, with the greatest populations of Greater sage-grouse across its range; and

WHEREAS, the United States Department of the Interior has determined that listing the Greater sage-grouse range-wide as a threatened or endangered species is not warranted, placing management authority for the species with the State of Wyoming; and

WHEREAS, the listing of the Greater sage-grouse would have a significant, adverse effect on land and natural resource management, and the economy of the State of Wyoming, including the ability to generate revenues from State lands, and could have negative unintended consequences to the species itself; and

WHEREAS, the listing of the Greater sage-grouse would have a significant, adverse effect on the custom and culture of the State of Wyoming, and would substantially obstruct and conflict with ongoing and effective collaborative efforts to conserve Greater sage-grouse; and

WHEREAS, the State of Wyoming recognizes the necessity of a robust and scientifically rigorous system of monitoring and has developed and implemented a Greater sage-grouse Core Area Protection strategy, including mechanisms to evaluate emerging science, data and information resulting in updated management recommendations from the Sage Grouse Implementation Team; and

WHEREAS, Wyoming's Greater sage-grouse Core Area Protection strategy protects significant quantity and quality of Greater sage-grouse habitat across the state and has been shown to represent approximately 84% of Wyoming's Greater sage-grouse; and

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WHEREAS, the State of Wyoming, the Bureau of Land Management (2019 BLM ARMPA), the U.S. Forest Service, other land management agencies and private landowners have coordinated Greater sage-grouse Core Area Protection conservation actions across their boundaries which encompass approximately 15 million acres of habitat for the Greater sage-grouse in Wyoming; and

WHEREAS, Candidate Conservation Agreements with Assurances (CCAA) on private lands, complemented by Candidate Conservation Agreements (CCA) on public lands through the U.S. Fish and Wildlife Service, as well as the Sage-Grouse Initiative (SGI) through the Natural Resources Conservation Service on private lands, provide regulatory certainty and are a proven means of investing in the future of rural land management; and

WHEREAS, the Wyoming State Legislature, federal, state and local agencies, industry, conservation organizations, and landowners have dedicated significant time and resources to conserve Greater sage-grouse populations in Wyoming; and have shown the capacity and authority to protect and manage for the species and its habitats on all lands by establishing oversight mechanisms and implementing management stipulations, and

WHEREAS, in consideration of the recommendations from the statutorily established Sage Grouse Implementation Team (W.S. § 9-19-101), this Executive Order is the State of Wyoming's primary regulatory mechanism to conserve the Greater sage-grouse and preclude the need for listing the bird as a threatened or endangered species pursuant to the Endangered Species Act of 1973;

NOW, THEREFORE, Executive Orders 2015-4 and 2017-2 is hereby replaced by this Executive Order. In consideration of the recommendations of the Sage-Grouse Implementation Team and pursuant to the authority vested in me by the Constitution and Laws of the State, and to the extent such actions are consistent with the statutory obligations and authority of each individual agency, including those found in the Wyoming Regulatory Takings Act, W.S. § 9-5-301 through 9-5-305, I, Mark Gordon, Governor of the State of Wyoming, do hereby issue this Executive Order providing as follows:

1. Agencies and departments of the State of Wyoming (including, but not limited to: Wyoming Game and Fish Department, Office of State Land and Investments, Department of Environmental Quality, State Engineer's Office, Industrial Siting Council, Department of Transportation, Oil and Gas Conservation Commission) shall, consistent with their statutory authority, prioritize the maintenance and enhancement of Greater sage-grouse habitats and populations inside Core Population Areas, Connectivity Areas, and Winter Concentration Areas. State agencies shall follow the procedures outlined in this Executive Order, while recognizing that adjustments to the stipulations may be necessary based upon local conditions, opportunities, and limitations. The goal is to maintain habitat and minimize future disturbance by locating proposed disturbances within areas already disturbed or naturally unsuitable (Appendix A, Appendix E).

2. Agencies and departments of the State of Wyoming shall, consistent with their statutory authority, recognize that protections in areas of non-core population areas, while less restrictive than Core Population Areas, should be recognized and managed in a manner consistent with this Executive Order (Appendix E).

3. Valid existing rights shall be recognized and respected. Activities existing or permitted in Core Population Areas prior to August 1, 2008, and activities existing or permitted prior to the date of Executive Order 2015-4 (July 29, 2015) and within Core Population Areas added as a result of Executive Order 2015-4 will not be required to be managed under Core Population Area density and disturbance thresholds (Appendix D). Examples of existing activities include oil and gas, mining, agriculture, processing facilities, housing, state and federal highways, and other uses that were in place prior to the development of the Core Population Areas and other delineated habitats. Federal and state permitted activities, within a defined project boundary (such as a recognized federal oil and gas unit, drilling and spacing unit, mine permit, subdivision plat, state or federal highway right-of-way, utility right-of-way, grazing allotment etc.), shall be allowed to continue within the existing boundary even if the use exceeds recommended density and disturbance thresholds (Appendix A, Appendix E).

4. It is critical that existing land uses and landowner activities continue to occur in Core Population Areas, particularly agricultural activities on private lands. Functioning ranches and agricultural lands provide crucial ecological and habitat services to wildlife. The failure or loss of these areas could have damaging implications to wildlife and their habitats. For the most part, activities on private lands are not subject to state or federal agency review or approval. Only those activities which state agencies are required by state or federal law to review or approve are subject to this Executive Order. Existing land uses and landowner activities deemed to have negligible or no impacts to Greater sage-grouse are exempt from review for consistency under this Executive Order (Appendix G).

5. Land uses and activities proposed inside Core Population Areas for which stipulations have not been developed in this Executive Order may be authorized on a case-by-case basis only when it can be demonstrated to the satisfaction of the permitting agency, and based upon recommendations made by the Wyoming Game and Fish Department that the activity will not create negative impacts to Greater sage-grouse populations (Appendix E).

6. Development shall be conducted in a manner that recognizes and achieves an order of avoidance, minimization and where appropriate, compensatory mitigation to assure the long-term sustainability of Greater sage-grouse populations and habitats. Development consistent with the stipulations set forth this Executive Order shall be deemed sufficient to demonstrate that the activity will not exceed Greater sage-grouse thresholds (Appendix E).

7. Where feasible through voluntary efforts, seek opportunities to expand populations and habitats for Greater sage-grouse in Wyoming (Appendix A, Appendix C).

8. Habitat enhancement and reclamation within Greater sage-grouse habitat is vital to restoring function to habitat disturbed by human activities or where enhancement may increase carrying capacities. Conducting enhancements and completing reclamation activities during the appropriate time of year may include granting stipulation relief, and should be evaluated on a case-by-case basis with an emphasis on habitat improvement for Greater sage-grouse (Appendix C, Appendix E).

9. Where consistent with the Greater sage-grouse conservation goals set forth herein, a non-regulatory approach should be used to influence management actions and activities within

Executive Order delineated habitats. Permit stipulations should reflect unique localized conditions, including soils, vegetation, development type, predation, climate, and other local realities (Appendix A, Appendix E).

10. Fire suppression efforts and invasive species control and management in Core Population Areas should be emphasized, recognizing that other local, regional, and national suppression priorities may take precedence. Public and firefighter safety remains the number one priority for all fire management activities. (Appendix C).

11. The State of Wyoming supports applied research to continue to understand the ecology and needs of Greater sage-grouse, including management-based alternatives to habitat management. Further, the State of Wyoming will develop appropriate local, science-based standards to manage disturbance in delineated and mapped winter concentration areas (Appendix C).

12. To ensure continued sustainability of Wyoming's economy, incentivizing and prioritizing development outside of Core Population Areas shall be a priority. State and federal agencies, with other relevant stakeholders, should work collaboratively to develop a strategic plan to achieve a beneficial balance between Greater sage-grouse protection and Wyoming's economy. Incentives, prioritization of projects outside of Core Population Areas, and coordinated permit processes should be considered (Appendix A).

13. State and federal agencies, including the U.S. Fish and Wildlife Service, Bureau of Land Management, U.S. Forest Service, Wyoming Game and Fish Department, and other stakeholders shall work collaboratively to ensure a uniform and consistent application of this Executive Order to maintain and enhance Greater sage-grouse habitats and populations (Appendix A).

14. The State of Wyoming will support voluntary enrollment and expanded coverage for federal, state and local conservation programs, including conservation easements, improvements and investments by the U.S. Department of Agriculture, U.S. Department of the Interior, and other agencies where appropriate. These efforts should be focused and prioritized to take place in Core Population Areas (Appendix A).

15. Local Working Groups will continue to be engaged through the Local Working Group Charter (Appendix A).

16. The State of Wyoming will engage in adaptive management that will include the involvement of state and federal land management and regulatory agencies as appropriate (Appendix I).

17. The State of Wyoming shall monitor and document Greater sage-grouse populations, conservation actions and development activities to ensure that permitted activities under this authority do not result in negative impacts to Greater sage-grouse outside cyclical trends. State agencies shall report all conservation and development activities occurring within Greater sage-grouse Core Population Areas no later than 31 March annually for the previous calendar year to the Office of the Governor. (Appendix E, Appendix H).

18. Absent compelling information that adjustments are necessary to protect the integrity of the Greater sage-grouse Core Area Protection strategy, these Core Population Areas, Connectivity Areas, delineated and mapped Winter Concentration Areas, and protective stipulations identified in this Executive Order shall not be altered for a minimum of 5 years from the date of this Executive Order (Appendix B, Appendix E).

19. The State of Wyoming will manage and implement a compensatory mitigation procedure that recognizes the need for replacement, durability, additionality and other factors to assure the long-term sustainability of Greater sage-grouse and their habitats (Appendix F).

20. This Executive Order, together with its attachments, constitutes Wyoming's strategy for the conservation of the Greater sage-grouse and their habitats. Appendices A through I are expressly adopted and incorporated by reference herein, and each shall have the full force and effect of this Executive Order. Amendment to any Appendix may be made without requirement that the full Executive Order be amended, provided the process follows the procedures outlined herein (Appendix A).

Given my hand and the Executive Seal of the State of Wyoming this 21st day of August, 2019.

Mark Gordon
Governor

APPENDIX A
COORDINATION AND AGENCY COOPERATION

Background

The State of Wyoming, federal land management agencies, local governments, private landowners and other stakeholders or parties have coordinated Greater sage-grouse conservation actions across jurisdictional boundaries which encompass approximately 15 million acres of habitat for the Greater sage-grouse in Wyoming. Together, these entities utilize their combined capacity and authority to protect and manage for the species and its habitat on all lands by establishing oversight mechanisms and implementing management stipulations.

Successful conservation of Greater sage-grouse requires a shared stewardship vision among states, local governments, private citizens, landowners, federal land management agencies, and partners to ensure that each state can manage the habitat within its borders for the particular needs of its landscapes and communities. In addition to cross-jurisdictional coordination among Wyoming and state wildlife agencies across the sagebrush ecosystem, the coordination responsibilities outlined in this Appendix shall guide inter-government consultation and cooperative efforts. This appendix also provides the framework to integrate the contributions from the various collaborative stakeholders and working groups aimed at informing agency policy on Greater sage-grouse conservation.

Amendments to EO and Appendices

Executive Order 2019-3 (EO) states that Appendices A through I shall have the full force and effect of the Executive Order. The EO is formatted in a manner to allow for amendments to any appendix without requirement that the full document be amended. Adjustments to the EO and its appendices may be made at any time provided that the process follows the procedures outlined herein. Anyone, including the governor, may ask the Sage Grouse Implementation Team (SGIT) to review new, compelling information to determine if it merits adjustment to the EO or appendices. Upon review, SGIT shall develop a formal recommendation for the governor's consideration, reserving any approval for adjustments to the EO or appendices at the governor's discretion.

Roles and Authorities

State of Wyoming

Under Wyoming State statutes, all wildlife within Wyoming is declared property of the State and managed by the Wyoming Game and Fish Department under the direction of the Wyoming Game and Fish Commission (Wyoming Statutes §§ 23-1-103, -302, and -401). The State of Wyoming's primary strategy to conserve Greater sage-grouse and its habitat is set forth by Executive Order 2019-3, Greater Sage-Grouse Core Area Protection (collectively known as the "Core Area Protection Strategy," or State

Strategy), as authorized under the Wyoming Constitution and laws of the State. All actions taken under EO 2019-3 must be consistent with the statutory obligations and authority of each individual state agency that include those found in the Wyoming Regulatory Takings Act under Wyoming Statutes §§ 9-5-301 through -305.

Sage Grouse Implementation Team (SGIT)

EO 2019-3 and Wyoming's Core Area Protection Strategy are informed by the recommendations of the Sage Grouse Implementation Team as authorized under Wyoming statutes § 9-19-101. SGIT is a collaborative working group appointed by the governor to make recommendations to maintain and enhance Greater sage-grouse populations and habitats. It is comprised of state and federal agencies, representatives of local governments, members of Local Working Groups and private citizens.

Local Governments

Counties are political subdivisions of the State and are statutorily granted enumerated powers to be exercised to promote the general welfare of the public. For example, Wyoming statutes § 18-5-201(a) grants counties the authority to regulate and restrict land use and development in the unincorporated area of the county through zoning and comprehensive planning to limit impact to wildlife, such as Greater sage-grouse.

Per Wyoming Statute § 18-5-208(a), a county involved in federal land planning and management is "deemed to have special expertise on all subject matters for which it has statutory responsibility, including but not limited to, all subject matters directly or indirectly related to the health, safety, welfare, custom, culture and socio-economic viability of a county." Counties regularly advocate for county interests related to wildlife management, state species, recreation, private property rights, water rights or leasehold rights as pursuant to Wyoming Statute § 9-4-218(a).

Private Landowners

Landowners have authority over activities occurring on private lands for the most part. The requirements under this EO do not apply to private lands unless a particular activity requires a permit or authorization from a government entity.

Local Sage-Grouse Working Groups (LWGs)

LWGs are charged with developing and facilitating implementation of local conservation plans for the benefit of Greater sage- grouse, their habitats, and whenever feasible, other species that use sagebrush habitats. LWGs are facilitated by the Wyoming Game and Fish Department and are integral to the decision-making process. LWGs may influence agency policy but they do not have the authority to change policies mandated by state or federal law. There are eight LWGs currently active throughout Wyoming:

1. Bates Hole/Shirley Basin
2. Big Horn Basin
3. Northeast
4. South-Central
5. Southwest
6. Upper Green River Basin
7. Upper Snake River Basin
8. Wind River/Sweetwater River

Adaptive Management Working Group

The Greater sage-grouse adaptive management plan provides a means of addressing and responding to unintended negative impacts to Greater sage-grouse and its habitat before consequences become severe or irreversible. The Statewide Adaptive Management Working Group was established in consultation with SGIT to provide appropriate adaptive management guidance for BLM, Forest Service, USFWS, NRCS and the State of Wyoming. Local technical specialists, in conjunction with Local Working Groups, work with the Statewide Adaptive Management Working Group to initiate a response strategy to meet Greater sage-grouse conservation objectives. The Statewide Adaptive Management Working Group meets annually to review all data collected in the prior year regarding Greater sage-grouse populations and habitats.

Federal Agencies

As federal land management agencies, the BLM and USFS manage Greater sage-grouse habitat as part of the agencies' multiple use missions under applicable regulations.

Bureau of Land Management (BLM)
The BLM manages Greater sage-grouse habitat as part of the agency's multiple use mission under the Federal Land Policy and Management Act (FLPMA). Current management in Wyoming is provided for in Greater sage-grouse Resource Management Plans Amendment.

United States Forest Service (USFS)
The USFS manages Greater sage-grouse habitat as guided by the National Forest Management Act (NFMA). Current management for Greater sage-grouse conservation in Wyoming is provided for in Greater sage-grouse Land and Resource Management Plans Amendment.

United States Fish and Wildlife Service (USFWS)
Under the Endangered Species Act (ESA), the United States Fish and Wildlife Service administers protective and recovery requirements for threatened and endangered species as well as the ecosystems upon which they depend. The USFWS' "not-warranted" determination for Greater sage-grouse relies on the effective implementation and reporting of federal and state land-use plans. To support these efforts,

the USFWS actively works with federal, state, industry and conservation partners, manages national wildlife refuges for ecosystem health, funds new research and provides on the ground support for private landowners through its Fish and Wildlife Partners program and Greater sage-grouse Candidate Conservation Agreement with Assurances (CCAAs) and the companion agreements for BLM and USFS lands.

Natural Resources Conservation Service (NRCS)
The Natural Resources Conservation Service offers technical and financial assistance to help agricultural producers voluntarily conserve private lands and associated leased lands. This assistance helps producers plan and implement a variety of conservation activities or practices that address natural resource concerns on their agricultural operations. NRCS' Sage Grouse Initiative is part of Working Lands for Wildlife (WLFW), through which NRCS provides specific technical and financial assistance to help ranchers restore and protect habitat for Greater sage-grouse.

Coordination

State Agencies

EO 2019-3 directs all State of Wyoming permitting agencies to comply with the Core Area Protection Strategy during the permitting process, including consultation with the Wyoming Game and Fish Department. These state agencies include, but are not limited to:

- Office of State Land and Investments
- Department of Environmental Quality
- State Engineer's Office
- Industrial Siting Council
- Department of Transportation
- Oil and Gas Conservation Commission

Consistent, cross-jurisdictional coordination is key to Wyoming's Core Area Protection Strategy. State agencies are expected to collaborate with all relevant stakeholders -- private citizens, landowners and federal agencies, other state wildlife management agencies across state lines, etc. -- to conserve Greater sage-grouse and its habitat across the species' range regardless of land ownership under the following principles:

General Core Area Protection Strategy Directives

1. Where consistent with the Greater sage-grouse conservation goals set forth by EO 2019-3, a non-regulatory approach should be used to influence management actions and activities within EO-delineated habitats. Wyoming's Core Area Protection Strategy is based on the principle that conservation of important habitat essential to the maintenance of Greater sage-grouse and activities important to the State's economy are not mutually exclusive. Protective measures are designed to avoid, minimize and mitigate impacts to the species with compensatory mitigation employed only where avoidance and minimization are either inadequate or impossible.
2. State agencies must prioritize the maintenance and enhancement of Greater sage-grouse habitats and populations inside Core Population Areas, Connectivity Areas, and Winter Concentration Areas in a manner consistent with their statutory authority. State agencies are also responsible for application of non-Core Area stipulations for development (Appendix E).
3. State agencies should consider incentives, prioritization of projects outside of Core Population Areas and coordinated permit processes (Appendix E).
4. State agencies must also recognize that adjustments to stipulations may be beneficial based upon local conditions, opportunities and limitations. For example, the State's permitting process shall allow for alterations in certain cases, such as seasonal use adjustments (Appendix E).
5. The State shall work collaboratively to ensure a uniform and consistent application of EO 2019-3 requirements to maintain and enhance Greater sage-grouse habitat and populations.
6. State-federal coordination, in concert with coordination efforts that include other relevant stakeholders, should collaboratively maintain a beneficial balance between Greater sage-grouse protection and Wyoming's economy.

Additional Permitting Directives

Appendix E (Permitting) outlines detailed permitting coordination requirements that include the process for state permit review and determining project compliance with EO 2019-3.

Data Coordination Directives

The State will collect Greater sage-grouse population and habitat trend data, identify data gaps and research needs, incorporate new information from ongoing research, and recommend adaptive management actions as needed. The State will further work with federal partners, researchers, managers, and conservation organizations to aggregate all relevant, non-proprietary data collected in Greater sage-grouse habitats throughout Wyoming (Appendix H).

Federal Agency Coordination

BLM and USFS

Through the Office of the Governor and as informed by the recommendations provided by SGIT, EO 2019-3 requires that the State of Wyoming cooperate with the federal government regarding federal

Through the Office of the Governor and as informed by the recommendations provided by SGIT, EO 2019-3 requires that the State of Wyoming cooperate with the federal government regarding federal land use issues concerning multiple use of federal lands in Wyoming pursuant to Wyoming Statute § 9-1-207. In turn, the federal agencies consult with the State and local governments to carry forth their responsibilities and mandates under FLPMA, NFMA, and applicable regulations.

Consistent cross-jurisdictional coordination across state and federal land management boundaries is crucial to ensure the landscape-scale viability of the species and is the touchstone for the Wyoming Core Area Protection Strategy. Recognizing the importance of coordinated management across boundaries, both the BLM and USFS have entered into Memoranda of Understanding/Agreement with the State of Wyoming to outline the commitments and responsibilities of both parties. These agreements aim to enhance the management and protection of Greater sage-grouse and its habitat on federally managed public lands.

State agencies shall work with federal land management partners to adhere to their respective federal directives under Greater sage-grouse plan amendments to:

1. Perform timely reviews on proposed projects in Greater sage-grouse habitat on public lands managed by the BLM and USFS to determine whether the proposed projects comply with the State's Core Area Protection Strategy (Appendix E).
2. Work jointly with the federal agencies to provide guidance if compliance would require the implementation of avoidance, minimization or compensatory mitigation measures. Should mitigation measures be determined to be required, the State will apply the Compensatory Mitigation Framework as outlined by Appendix F (Compensatory Mitigation).
3. Follow coordination guidance as applicable under existing or future Memoranda of Understanding or Agreements.

USFWS

Candidate Conservation Agreements with Assurances (CCAA) on private lands, complemented by Candidate Conservation Agreements (CCA) on public lands through the USFWS, provide regulatory certainty and are a proven means of investing in the future of rural land management. CCAAs are a proven means to encourage voluntary conservation actions and measures. State agencies should participate in these efforts to the fullest extent possible.

The USFWS Conservation Efforts Database (CED) collects information from partners about the various types and distribution of conservation activities and to evaluate their effectiveness in reducing or eliminating threats contributing to sagebrush habitat loss and degradation across the ecosystem. This standardized way of collecting information allows USFWS to work with partners and stakeholders to monitor implementation and aid in assessing the long-term benefits realized through effective implementation of conservation efforts. In Wyoming, all conservation efforts from non-federal partners are first recorded in the Wyoming CED for further reporting to the USFWS CED (Appendix H).

In partnership with other federal agencies, the states, Tribes, and affected industries, USFWS works with project proponents on mitigation to address a variety of resource challenges. The majority of the USFWS existing authorities for engaging in mitigation processes are advisory by recommending measures that will assist agencies and project proponents to avoid, minimize and compensate for impacts to fish and wildlife. These efforts complement the State of Wyoming's compensatory mitigation framework to assist industry with meeting the State's mitigation requirements (Appendix F). Credit sales from mitigation and conservation banks approved by USFWS are reported via the online Regulatory In-Lieu Fee and Bank Information Tracking System (RIBITS).

NRCS

NRCS' Greater sage-grouse efforts are part of Working Lands for Wildlife (WLFW), through which NRCS provides regulatory certainty and invests in the future of rural land management. NRCS offers technical and financial assistance to help agricultural producers voluntarily conserve private lands and associated leased land by targeting Environmental Quality Incentives Program (EQIP) and Agricultural Conservation Easement Programs (ACEP) funds to achieve biological outcomes for sage-grouse while helping ranchers achieve agricultural sustainability.

Sage Grouse Implementation Team (SGIT)

The Sage Grouse Implementation Team is comprised of representatives from state and federal agencies, industry, and non-governmental organizations. SGIT members are appointed by the governor and they work collaboratively to protect the Greater sage-grouse under EO 2019-3. The team meets approximately six times a year to discuss current Greater sage-grouse related issues under the direction of the SGIT chairperson. The public is invited to attend these meetings.

Local Governments

As directed by EO 2019-3, state agencies, local governments (including counties, municipalities and conservation districts), federal agencies and other stakeholders shall work collaboratively to ensure a uniform and consistent application of the EO to maintain and enhance Greater sage-grouse habitat and populations. In consideration of the statutory duties under Wyoming law as they apply to local governments, these collaborative efforts shall be inclusive to allow coordination across jurisdictional boundaries. Careful consideration shall be made to consult local land use and natural resource plans based, where adopted, as state agencies implement the EO and federal agencies manage Greater sage-grouse habitat on public lands.

Private Landowners

With as much advance notice as practicable and in accordance with state agency rules and regulations, state permitting agencies are encouraged to coordinate with landowners directly affected by agency actions resulting from Executive Order 2019-3.

Local Working Groups (LWGs)

LWGs are an instrumental means to engage stakeholders directly affected by the policies set forth by Wyoming's Strategy. They provide a forum to share localized information, expertise and knowledge. By charter, they are expected to communicate and engage with state and federal agencies, landowners and other interested parties to identify and prioritize issues affecting Greater sage-grouse in their area.

Adaptive Management Working Group

Upon any indication of a potential triggering situation, the Adaptive Management Working Group shall notify holders of permits, leases, rights of way or easements of the situation and involve them in the Causal Factor Assessment and Response Strategy development (Appendix I).

APPENDIX B
MAPS

Descriptions

Core Population Areas, Connectivity Areas and Winter Concentration Areas

Core Population Areas, Connectivity Areas and Winter Concentration Areas represent approximately 83% of the Greater sage-grouse population, on approximately 24% of the surface area of the State of Wyoming (15.2 million acres). Current Core Population Areas were developed in 2008 with revisions and were last updated in 2015 (Figure 1).

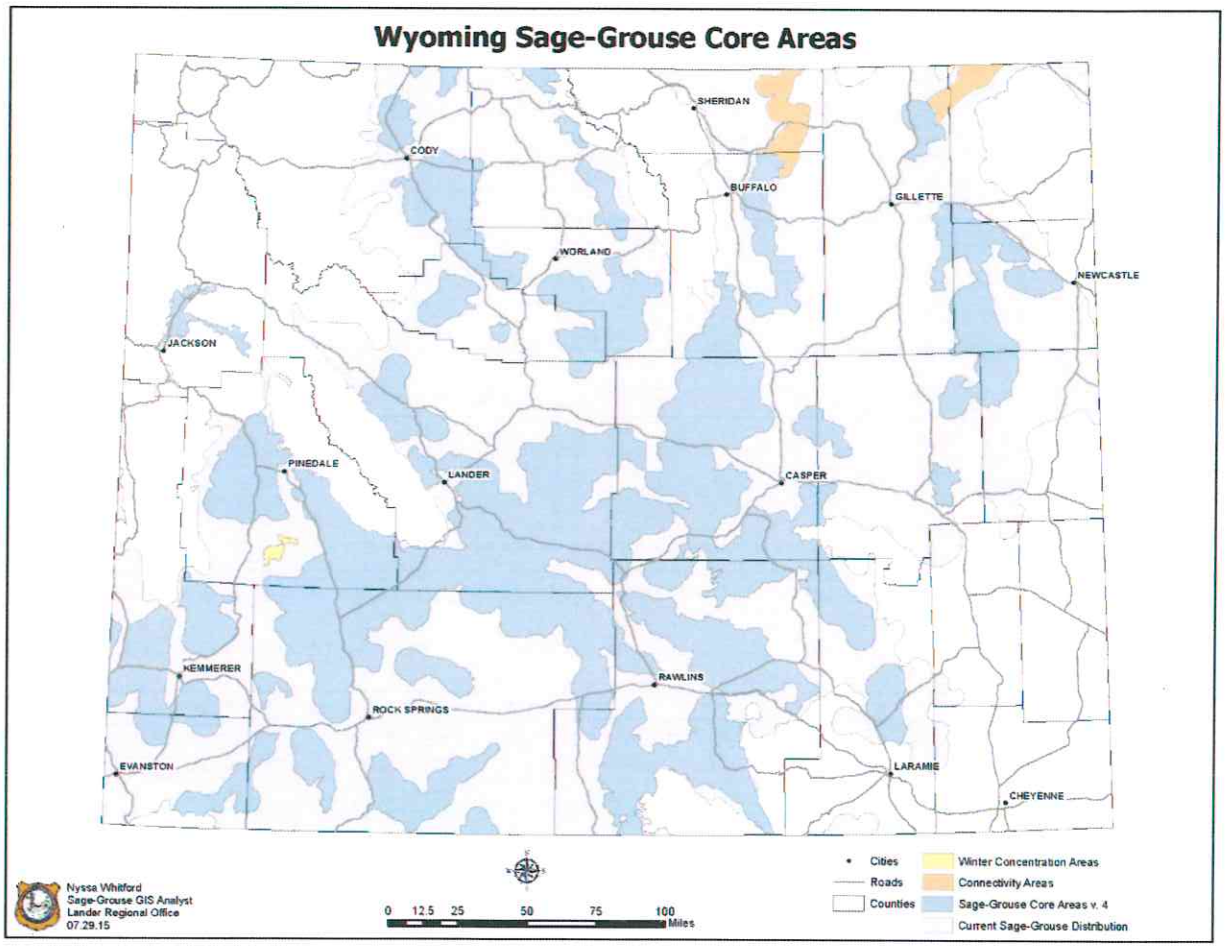

Figure 1: Wyoming Greater sage-grouse Core Population Areas, Connectivity Areas and Winter Concentration Areas

Development of Core Population Area Maps

To develop Core Area Population maps, a kernel density function is applied to the lek location and attendance data to determine Greater sage-grouse density distribution (Figure 2). The red areas represent the breeding habitat for 65% of Greater sage-grouse in Wyoming based on lek size and location. The maps illustrate population proportions at a given time, not trends over time. More details concerning the methodology used to establish Core Area Population maps can be found in Appendix E (Permitting).

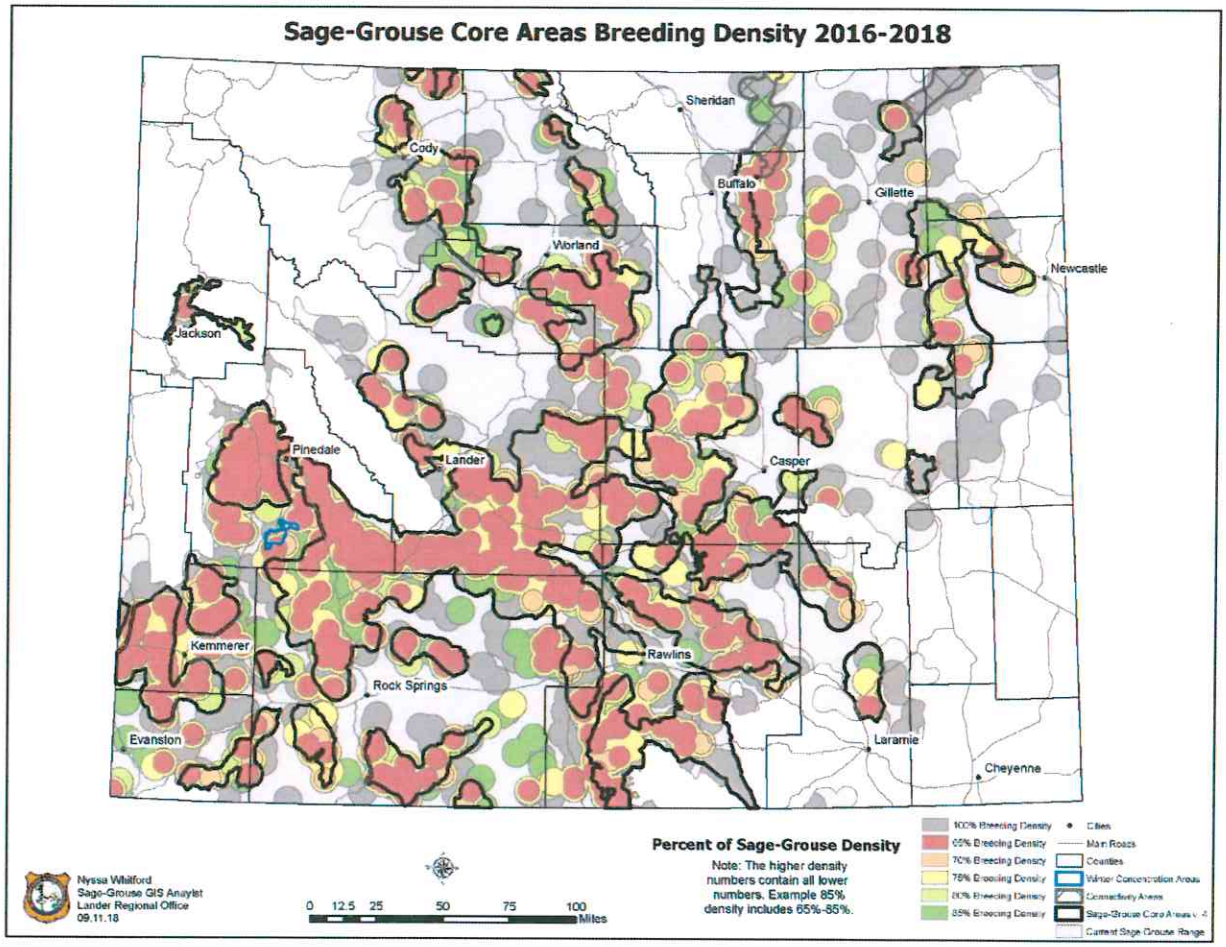

Figure 2: Density Function Density Overlaid with Core Population Areas

Northeast Wyoming Core Population Areas

Northeast Wyoming is ecologically limited in terms of ability to produce dense stands of sagebrush, thereby requiring additional consideration of local conditions and habitat selection by Greater sage-grouse. , Appendix C describes many of these considerations and distinct parameters for activities such as vegetation treatments, however there are no distinct stipulations to be applied to development for northeast Wyoming Core Population Areas outside of the standard requirements (Appendix E).

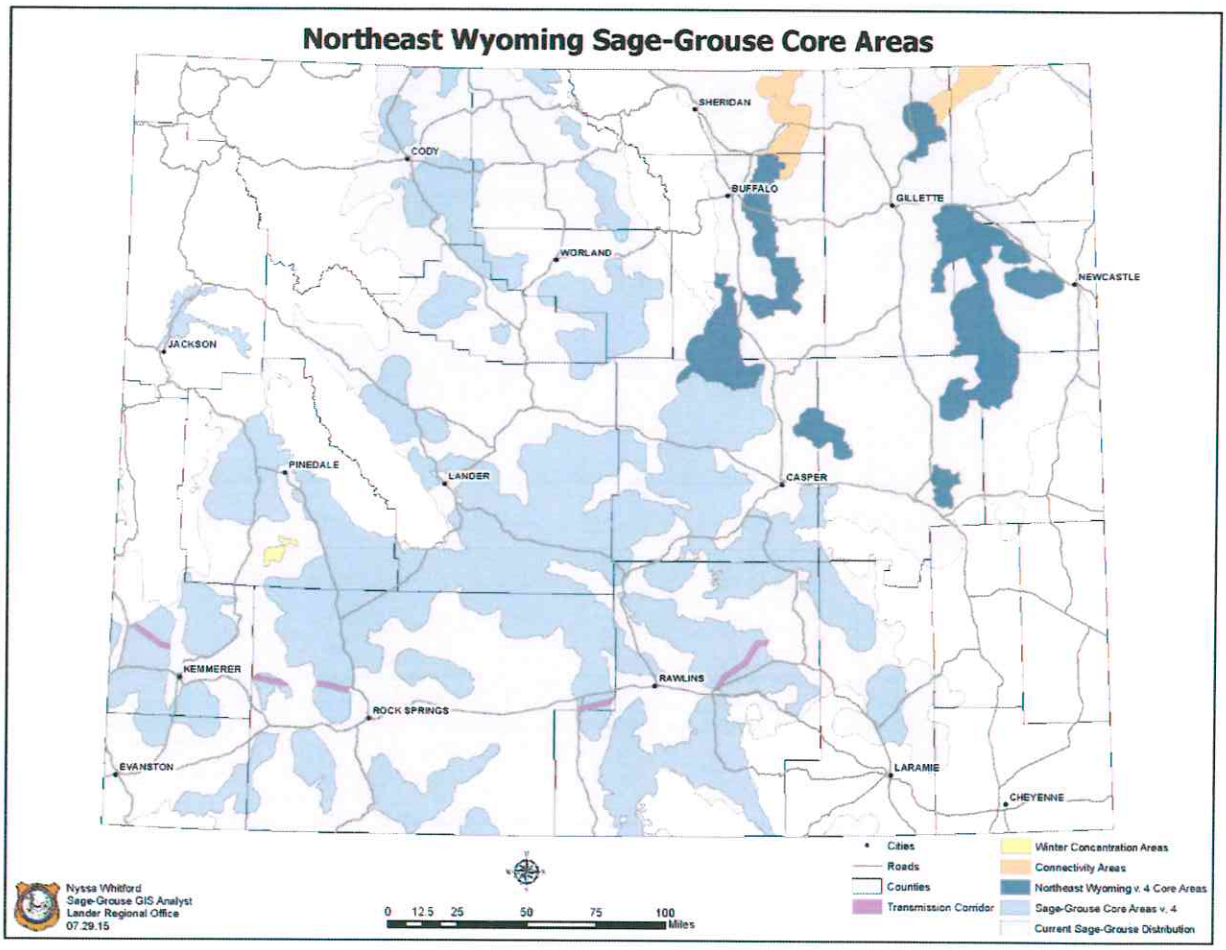

Figure 3: Northeast Wyoming Core Population Areas (based on NE Wyoming Local Working Group boundaries.)

Transmission Corridors

A two mile-wide transmission line corridor has been established through Core Population Areas in south central and southwestern Wyoming to avoid and minimize negative impacts to Greater sage-grouse (Figure 4).

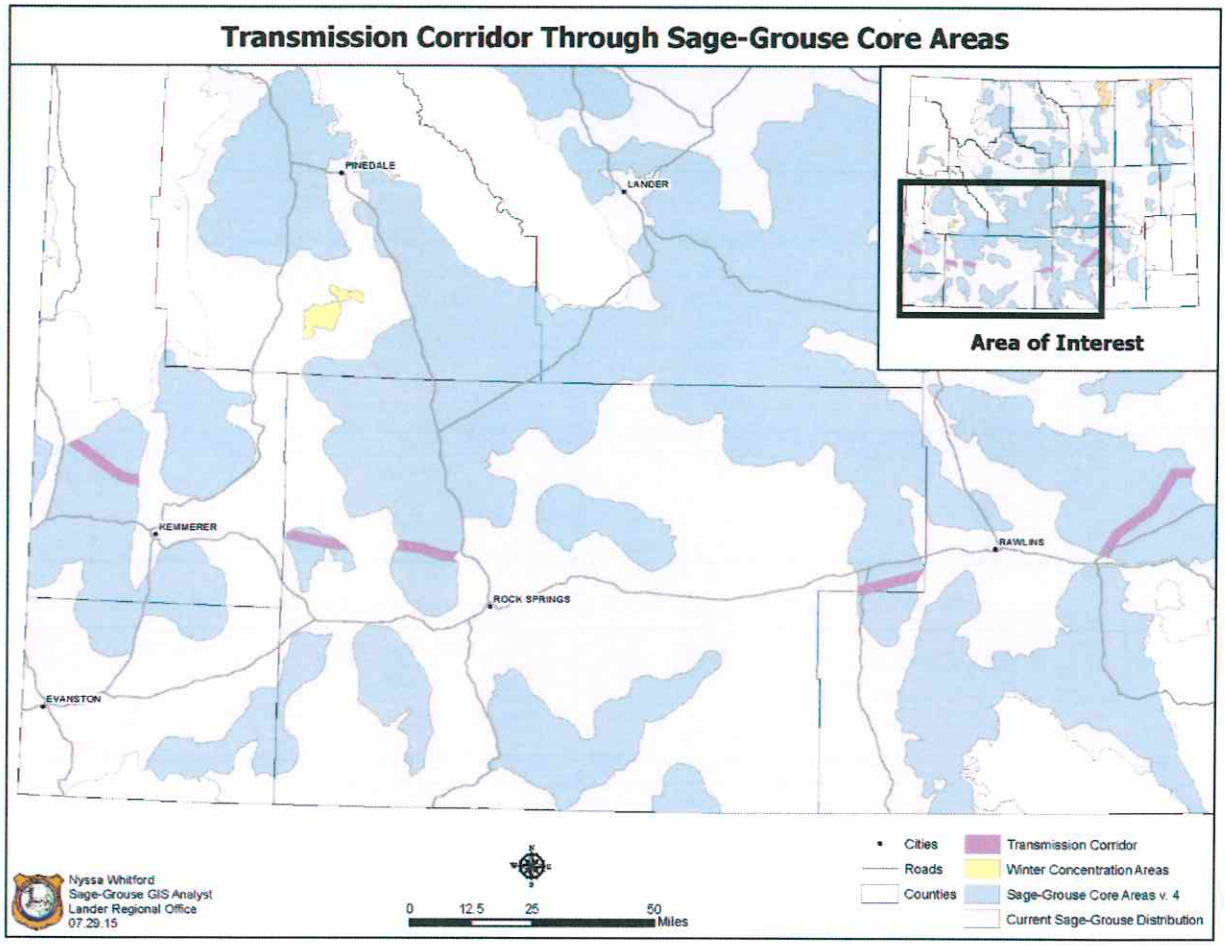

Figure 4: Transmission Corridor through Greater sage-grouse Core Population Areas

APPENDIX C
PROJECT-LEVEL HABITAT DEFINITIONS, WILDFIRE, HABITAT TREATMENTS, MONITORING AND RECLAMATION

Greater sage-grouse require different seasonal habitats distributed over large areas to complete their life cycle. All of these habitats consist of, are associated with, or are immediately adjacent to sagebrush. An abbreviated description of a complex system cannot incorporate all aspects of, or exceptions to, what habitats a local Greater sage-grouse population may or may not utilize.

Habitat definitions in this appendix primarily inform the Density Disturbance Calculation Tool (DDCT) process but may also have applicability in project siting. Definitions for Executive Order 2019-3 delineated habitats (e.g. - Core, non-Core, etc.) can be found in Appendix E.

DDCT Habitat Definitions

The following definitions are used to inform the DDCT process and post-disturbance actions such as reclamation.

"Suitable" habitats are within the delineated range of Greater sage-grouse, and are:

1. Existing habitats with 5% or greater sagebrush canopy cover as measured by the point intercept method. "Sagebrush" includes all species and sub-species of the genus *Artemisia* except the sub-shrub species: *frigida* (fringed sage), *pedatifida* (birdfoot sage), or

2. Riparian, wet meadow (native or introduced) or areas of alfalfa or other suitable forbs (brood rearing habitat) within 275 meters of sagebrush habitat with 5% or greater sagebrush canopy cover (for roosting/loafing). Areas further than 275 meters from sagebrush may be considered suitable where pellet counts, documented sightings, or other defensible proof of sage-grouse use can be provided; or

3. Reclaimed or restored habitat containing 5% or greater sagebrush canopy cover, with site-appropriate desirable grass and forb cover and frequency (see Reclamation Monitoring section); or

4. Natural and man-made wetlands and historically (pre-2008) irrigated areas, excluding row crops, in stream and river valleys further than 275 meters from sagebrush habitat. These areas are considered "suitable" habitat for DDCT purposes. These areas may also be considered suitable habitat for credit calculation purposes where pellet counts, documented sightings or other defensible proof of sage-grouse use can be provided.

"Transitional" habitat is land that has been previously disturbed or burned resulting in less than 5% sagebrush cover but is actively managed to provide functional habitat within 10 years. Lands managed to meet or move towards "suitable" definition for reclaimed or restored habitat (5% sagebrush canopy, appropriate grass and forb cover and frequency), including reclamation, may be considered "transitional" when valid, reliable, and repeatable trend data show vegetation is moving towards the definition of "suitable" and a management plan is developed. Trend is established by a minimum of five years of data. On potential "transitional" sites, the Wyoming Game and Fish Department (WGFD) and

other relevant partners will be included in management plan development and a technical team may be needed (see Wildfire section for discussion of technical teams).

Habitats that are classified as "transitional" will not count as disturbance in DDCT calculations of EO 5% threshold. However, "transitional" sites that do not meet the definition of "suitable" within 10 years will be considered "disturbed."

"Disturbed" habitat is land that has been converted from formerly suitable habitat to grasslands, croplands, energy development, mining, or other disturbance resulting in less than 5% sagebrush canopy cover. These areas may provide habitat at some time in the future through succession, reclamation, or restoration.

The following items are guidelines for determining disturbed habitat for the DDCT process:

a. Long-term removal occurs when habitat is physically removed through activities that replace suitable habitat with long-term occupancy of unsuitable habitat such as a road, well pad or active mine.

b. Short-term removal occurs when vegetation is removed in small areas, but restored to suitable habitat within 5-10 years, such as a successfully reclaimed pipeline or a successfully reclaimed pit.

c. Suitable habitat between three or more short- or long-term disturbances may be considered disturbed due to proximity. Disturbances less than 1.2 miles apart (0.6 miles from each activity) will be consolidated and reflected in the DDCT as industrialized areas. Exceptions may be provided on a site-by-site basis.

d. Lands in northeastern Wyoming are ecologically limited in terms of sagebrush production and the ability to sustain dense stands of sagebrush (canopy cover rarely exceeds 15% as measured by Line Intercept). Lands in northeastern Wyoming where sagebrush was removed prior to 1994 for the purposes of grassland agriculture which still do not have 5% or greater sagebrush cover may be exempt from counting as "disturbed" for DDCT purposes. Lands that were converted after 1994 that still do not have 5% or greater sagebrush canopy cover will be counted as "disturbed" in DDCT. Determinations will be based on orthophoto interpretation.

"Unsuitable" habitat is land within the historic range of Greater sage-grouse that did not, does not, and will not provide Greater sage-grouse habitat due to natural ecological conditions (e.g.- badlands, canyons or forests). This also includes those permanent disturbances such as existing reservoirs and municipal boundaries. This may also be referred to as "non-habitat."

Relationship between Executive Order 2019-3 Definitions and the Habitat Assessment Framework

The Sage-grouse Habitat Assessment Framework (HAF; Stiver et al 2015)[1] is specifically designed to capture information about sage-grouse habitat across multiple scales and during different seasons, whereas EO definitions are used to inform the DDCT process or general reclamation standards. The HAF is a multi-scale habitat tool designed to establish indicators to inform managers of sage-grouse habitat quality and potential needs across different seasonal habitats at multiple scales.

Sage-grouse habitat selection is primarily driven by availability and local conditions, therefore requiring a local perspective with regard to numerical values found in HAF Table 4-7. Tables in the HAF use Habitat Indicators to generalize Habitat Suitability Characteristics based on range-wide science that represents attributes most commonly selected by sage-grouse (e.g.- 15-25% sagebrush canopy cover). Additionally, HAF numerical values are broken down by seasonal habitat type and information is collected via different methodologies in the HAF and DDCT.

HAF glossary definitions for "suitable, marginal, potential, unsuitable, and non-habitat" are similar to those listed above. However, HAF definitions also consider survival and reproduction rates and have different temporal qualifiers whereas EO definitions are focused on changes to amounts of suitable habitat.

EO definitions primarily used to inform the status of Core Area thresholds (5%, 1/640). For mitigation projects (Appendix F), the HAF and DDCT are used concurrently to develop an overall picture of the project in terms of habitat quality and quantity.

Multi-scale concepts and general habitat selection information from the HAF can be beneficial to managers but must be considered and applied in the appropriate context. For purposes of DDCT analysis and this Executive Order, the numerical values in the HAF do not apply and are not strictly synonymous with "suitable" habitat as defined above. Managers considering habitat attributes such as sagebrush canopy cover must remain cognizant of which process, HAF or DDCT, is being applied and which monitoring questions are being addressed.

Reclamation

Reclamation Monitoring for DDCT Process

Reclaimed sites, or reclamation areas, are sites where topsoil has been removed by anthropogenic activities and have subsequently undergone at least one of the following: replacement of topsoil, re-contouring, or replanting of vegetation. Common monitoring techniques should provide adequate information to managers regarding progression, and potential need for additional action, on reclaimed sites.

For reclamation sites in Core and Connectivity Areas where there is uncertainty regarding whether or not they qualify as "suitable" habitat for DDCT purposes, the following guidelines shall be followed.

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[1] The HAF can be found at: https://www.fs.fed.us/sites/default/files/sage-grouse-habitat-assessment-framework.pdf.

1. If the reclaimed area has 5% or greater sagebrush canopy cover with appropriate grass and forb communities, it is to be considered "suitable".
    a. Sites which contain a bunchgrass component in the reference site, appropriate Ecological Site Description, or in pre-disturbance data must contain at least one bunchgrass.
2. If the reclaimed area has less than 5% sagebrush cover but is within 60 meters of existing "suitable" habitat, use appropriate methodologies to determine cover and frequency of site-appropriate desirable forbs and grasses for the site.
    a. Sites that contain two or more desirable grass species (including a bunchgrass component where appropriate) and two or more desirable forb species, in great enough abundance to meet or exceed 70% of plant community frequency and cover described on the reference site, within the appropriate Ecological Site Description, or in pre-disturbance species data will be considered "suitable".
    b. If reclaim does not meet 2(a) it may be considered for "transitional" status, pending development of management plan and WGFD approval. See "transitional" definition above.

Monitoring Resources

Suggested resources for developing monitoring plans include but are not limited to: Technical Reference 1734-4 – Sampling Vegetation Attributes; Technical Reference 1734-6 – Interpreting Indicators of Rangeland Health; Technical Reference 6710-1 – Sage-Grouse Habitat Assessment Framework; and the Monitoring Manual for Grassland, Shrubland, and Savanna Ecosystems, 2nd Edition, Volumes I and II.

Habitat Restoration and Enhancement

Habitat restoration sites are those which have been previously disturbed but are not currently required to be changed in any way (e.g.- a reclamation site from 1950). Habitat enhancement sites are those which show a diminished level of functionality but still contain some, or all, of the typical attributes of sage-grouse habitat (e.g.- a site with abundant sagebrush but few forbs).

In some instances, habitats naturally degrade over time or still show impacts of historical activities. In these cases, restoration or enhancement activities may provide improved functionality to habitat on sites that are capable of producing more desired attributes than in their current state. Examples may include, but are not limited to: historic sagebrush treatments, poor historic reclamation, historic wildfire scars, and areas where plant community shifts have limited habitat quality. In general terms, these types of stable state systems will require significant inputs to alter ecological conditions (e.g.- shifting a rhizomatous grass community towards a bunchgrass community, re-establishing sagebrush, etc.).

Similarly, previously reclaimed areas have not always followed expected successional routes, or returned to pre-disturbance plant communities in time intervals expected. Size, age, methods used to create the disturbance and to reclaim it, and objectives of the original reclamation should be considered when assessing reclaimed areas for functionality and restoration or enhancement potential.

Restoration or enhancement projects are highly encouraged in all areas and should be prioritized based on feasibility of restoration activities and likelihood of success. Sites targeted for enhancement (e.g.- invasive species treatment, sagebrush treatment, inter-seeding, etc.) should utilize the best available science and be coordinated with WGFD and other relevant agencies.

Restoration or enhancement projects are not currently part of the Mitigation Framework (Appendix F). They are also not directly tied to DDCT calculations. However, restoration of some sites may contribute to reductions in overall DDCT calculations for some projects. Proponents should work with WGFD on these types of projects.

Wildfire

Wildfire poses a significant threat to sage-grouse habitat in many areas. Fire suppression efforts should be emphasized in Core Areas and coordination of local, regional, and national suppression efforts are key to fire response. Where available, a team member with knowledge regarding sagebrush habitat should be added to fire crews. Public and firefighter safety remain the number one priority for all fire management activities.

Following wildfire, lands shall be considered "disturbed" pending an implemented management plan with trend data showing the area returning to functional Greater sage-grouse habitat as outlined above in the "transitional" definition.

Following a wildfire, a Technical Team or Adaptive Management Working Group will be established, if not already in place. A team should be comprised of appropriate representatives from State and Federal agencies, Local Working Groups, Conservation Districts, Weed and Pest, non-governmental organizations, and private landowners. This team will be charged with developing a plan for: restoration, post-fire activities, and data collection to inform metrics outlined above in the "transitional" definition (Appendix I).

In the event an accidental fire is started on a project location by proponent operations (Appendix E) and expands to impact adjacent suitable habitat, the project proponent is strongly encouraged to work with a Technical Team to reduce or eliminate long-term impacts of habitat loss. Fires that occur under this scenario will be considered disturbance until a post-fire management plan is developed and accepted by the State and trend data shows the area is meeting the definition of "transitional" habitat.

Habitat Treatments

Sagebrush Habitat Treatments in Core and Connectivity Areas

Sagebrush habitat treatments include, but are not limited to: prescribed fire, mowing, chemical treatment, and strip removal. The following requirements apply to all forms of sagebrush habitat treatment:

- Treatments that result in sagebrush eradication are considered disturbance for DDCT purposes;
- Treatments that reduce canopy cover to less than 5% are considered disturbance for DDCT purposes;
- Treatments improve overall functionality of habitat (with consideration to scale at which functionality will be realized);
- Treatments follow the WGFD Vegetation Treatment Protocols (2019).

Prescribed fire can be used as a tool to improve sagebrush habitat in some instances. In addition to the requirements above, the use of prescribed fire is allowed in Core Areas when:

- Pre-fire data and a post-fire plan exist; coordinate with WGFD and local fire crews, including federal partners where necessary;
- Adequate contingencies are included in the post-fire plan for invasive species and/or restoration activities.

The use of fire in northeast Wyoming is not recommended (Appendix B). Northeast Wyoming is ecologically limited in terms of sagebrush production and sagebrush canopy cover rarely exceeds 15% (as measured by Line Intercept method). In addition to the requirements above, fire should not be used in northeast Wyoming unless:

- The treatments would not reduce canopy cover below 15% (as measured by Line Intercept method); or
- The treatments that would reduce cover below 15% must provide compelling evidence treatment would result in improved habitat function for sage-grouse.

Current WGFD Vegetation Treatment Protocols (2019) outline detailed information regarding treatment design and other considerations. Treatments that do not meet the requirements above may be considered on a site-by-site basis, and in some instances may qualify for "transitional" status (e.g.- escaped prescribed fire); approval by WGFD is required before such treatments can be undertaken or before "transitional" status is approved.

Other Habitat Treatments and Habitat Treatments in Non-Core Areas

Projects that would restore or enhance habitats outside of Core Areas can have beneficial impacts and are encouraged. Other Core Area habitat treatments (e.g.- juniper removal, mesic meadow/riparian improvement, etc.) designed to improve sage-grouse habitats, either directly or indirectly, are encouraged. Treatments that target invasive annual grasses, noxious weeds, or other problematic plant species are considered de minimis in most instances (Attachment G).

Habitat projects outside of Core Areas, Connectivity Areas, or Winter Concentration Areas are not subject to the requirements above but these requirements are highly recommended for consideration when designing projects in sagebrush habitats.

APPENDIX D
VALID EXISTING RIGHTS

Valid existing rights shall be recognized and respected. Activities existing or permitted in Core Population Areas prior to August 1, 2008, and activities existing or permitted prior to the date of Executive Order 2015-4 (July 29, 2015) and within Core Population Areas added as a result of Executive Order 2015-4 will not be required to be managed under Core Population Area density and disturbance thresholds (Appendix E).

Examples of existing activities include oil and gas, mining, agriculture, processing facilities, housing, state and federal highways, and other uses that were in place prior to the development of the Core Population Areas and other delineated habitats. Federal and state permitted activities, within a defined project boundary (such as a recognized federal oil and gas unit, drilling and spacing unit, mine permit, subdivision plat, state or federal highway right-of-way, utility right-of-way, grazing allotment etc.), shall be allowed to continue within the existing boundary even if the use exceeds recommended thresholds (Appendix E). Proponents of new activities within boundaries such as above are required to submit a Density Disturbance Calculation Tool (DDCT) for purposes of tracking disturbance. If the proposed activity DDCT is at or above Executive Order thresholds, the project proponent, Wyoming Game and Fish Department (WGFD) and the permitting agency will identify opportunities to avoid or minimize impacts to Greater sage-grouse in accordance with Appendix E.

Permits

For information regarding existing permits, expired permits and permit renewal, please see the Permitting section in Appendix E.

Drilling and Spacing Units

Core Population Areas

For an oil and gas activity located in Core Population Area to be allowed, per the exemptions granted in Executive Order 2019-3, the bottom hole location (BHL) must be governed by an approved Wyoming Oil and Gas Conservation Commission (WOGCC) order(s) for spacing and applicable increased density/additional wells issued prior to August 1, 2008. WOGCC staff will determine whether an oil and gas activity meets this requirement. Activities that meet this requirement will be permitted in accordance with the language in the following section regarding Pre-existing Oil and Gas Units.

For an oil and gas activity located in Core Population Area added as a result of Executive Order 2015-4, the BHL must be governed by an approved WOGCC order(s) for spacing and applicable increased density/additional wells issued prior to July 29, 2015. The WOGCC will determine whether an oil and gas activity meets this requirement. Activities that meet this requirement will be permitted in accordance with the language in the following section regarding Pre-existing Oil and Gas Units.

Additionally, Executive Order 2019-3 states that "Federal and state permitted activities, within a defined project boundary... shall be allowed to continue within the existing boundary even if the use exceeds recommended density and disturbance thresholds." This statement is intended to be consistent with the statement in the following section regarding Pre-existing Oil and Gas Units: "... are not subject to new Greater Sage-grouse mitigation measures contained in Appendix E of this Executive Order with the

exception that unit operators cannot initiate activities resulting in new surface occupancy within 0.6 miles of the perimeter of an occupied Greater sage-grouse lek."

Non-Core Population Areas

In non-Core Population Areas, oil and gas activities occurring between 0.25 miles and 2 miles from the perimeter of an occupied lek that have an approved WOGCC order(s) for spacing and applicable increased density/additional wells issued prior to August 1, 2008 will be granted relief from seasonal use stipulations. This determination will be made by WOGCC staff. The 0.25-mile No Surface Occupancy (NSO) requirement will still apply in non-Core Population Areas.

Pre-Existing Oil and Gas Units

For the purposes of this section "Pre-existing Oil and Gas Units" means oil and gas units established prior to August 1, 2008 or oil and gas units established after August 1, 2008 but prior to July 29, 2015 in Core Population Areas changed by Executive Order 2015-4.

In administering oil and gas plans of development in Core Population Area, logical and systematic planning will occur in accordance with the terms of oil and gas unit agreements for Pre-existing Oil and Gas Units and the goals of this Executive Order. This will be accomplished by concentrating activity within existing unit boundaries even if disturbance and density exceed Executive Order thresholds within the DDCT assessment area.

Each situation should be addressed with flexibility and an understanding of the local landscape, habitats and other factors.

Pre-existing Oil and Gas Units within Core Population Area or non-Core Population Area are not subject to new Greater sage-grouse mitigation measures contained in Appendix E of this Executive Order with the exception of the NSO stipulations.

For oil and gas development approved under the annual plan of development and associated surface disturbance proposals by the unit operator, the unit operator is required to complete the DDCT process including the appropriate worksheet when submitting those applications. It is understood that the level of existing and future development in Pre-existing Oil and Gas Units may exceed Executive Order thresholds.

The DDCT results and worksheet completed for Pre-existing Oil and Gas Unit activity will be used solely to track disturbance data inside the unit boundary to obtain baseline data for use in Executive Order monitoring and to calculate existing and future planned disturbance. Proponents and agencies are still expected to minimize surface disturbance whenever possible and follow all other existing, applicable lease stipulations. As projects are completed, as-built footprints will be collected and the disturbance layer updated with the as-built information.

For project proposals located outside unit boundaries, wherein a DDCT assessment area for the project proposal encompasses parts of Pre-existing Oil and Gas Units, disturbance will be based upon the existing disturbance, annual plans of development, or other relevant information regarding development provided by the unit operator, the Bureau of Land Management Reservoir Management Group or other credible sources of information such as the Wyoming Oil and Gas Conservation

Commission. In the absence of an annual plan of development or other relevant information, the unit affected will be considered fully developed for the purpose of calculating existing disturbance per the DDCT process.

For new development inside the boundary of Pre-existing Oil and Gas Units that are not directly related to oil and gas development (e.g., vegetation treatment or gravel pits), the project proponent will be required to comply with all aspects of this Executive Order.

Mining

Leasable Coal Mining Operations

Coal mining activities authorized prior to October 2, 2015 and included within the approved permit boundary will be allowed to continue under the regulatory and permit-specific terms and conditions authorized under the Wyoming Environmental Quality Act (WEQA) and the Surface Mining Control and Reclamation Act of 1977 (SMCRA) as administered by the Wyoming Department of Environmental Quality (WDEQ).

Leasable, Locatable, and Saleable Non-Coal Mining Operations

Non-coal solid mineral mining activities within a permit boundary approved prior to August 1, 2008, and activities permitted prior to the date of the Executive Order 2015-4 (July 29, 2015) and within Core Population Areas added as a result of Executive Order 2015-4 are not subject to Greater sage-grouse stipulations in Core or Non-core Population Areas.

Leasable non-Coal Minerals Operations

Leasable non-coal minerals are defined by Federal Law, a variety of which are mined in Wyoming (e.g.- Sodium, phosphate, potassium, etc.). Mining activities for solid non coal leasable minerals within a permit boundary are authorized under any of the following; the Minerals Leasing Act of 1920 as amended, 43 CFR Parts 3500 or 3600 (or under a Wyoming state mineral lease or a private fee lease), and the Wyoming non-coal rules and regulations.

Locatable non-Coal Minerals Operations

Locatable Minerals are defined by federal Law, a variety of which are mined in Wyoming (e.g.- bentonite, gold, gypsum, uranium, and certain rare earth metals). Mining activities for locatable minerals within a permit boundary are authorized under the General Mining Law of 1872 as amended, 43 CFR Subpart 3809 or 36 CFR Part 228 Subpart A, and the Wyoming non-coal rules and regulations.

Saleable non-Coal Minerals Operations

Saleable minerals are defined by Federal Law, a variety of which are mined in Wyoming (e.g. sand and gravel). Mining activities for saleable minerals within a permit boundary approved prior to August 1, 2008 are authorized under The Materials Act of 1947 as amended, 36 CFR Part 228 Subpart C, and the Wyoming non-coal rules and regulations.

Existing Corridors (Roads, Transmission and Pipelines)

Existing, permitted/authorized corridors and rights-of-way (ROWs) for roads, power lines, pipelines, and other utilities (e.g.- water, sewer) are considered valid existing rights. For permitting information on corridors and ROWs, please see Appendix E. For information on de minimis activities for utility

corridors, please see Appendix G. Activities within ROWs or corridors for transmission and distribution power lines, substations, pipelines and other utilities established and authorized prior to August 1, 2008 are not subject to Greater sage-grouse stipulations contained in Appendix E of this Executive Order.

Activities within ROWs for state and federal highways established and authorized by Wyoming Department of Transportation and the Federal Highway Administration prior to August 1, 2008 are not subject to Greater sage-grouse stipulations contained in Appendix E of this Executive Order.

APPENDIX E
GREATER SAGE-GROUSE POPULATION AREAS, PERMITTING PROCESS, AND STIPULATIONS FOR DEVELOPMENT

Beginning in 2007, the Sage Grouse Implementation Team was charged with three primary tasks: (1) identification of areas where Greater sage-grouse and their habitats would be most effectively conserved, (2) development of a strategy to reduce or eliminate potential threats to the species, and (3) development of methodology to evaluate, document and track potential impacts over time. The following describes those efforts to date.

Greater Sage-Grouse Population Areas

Establishment of Greater Sage-Grouse Core Population Area

Greater sage-grouse lek location and attendance data as identified through modeling of bird populations and habitat were overlaid with areas of valid existing rights to produce the Greater sage-grouse Core Population Area map for Wyoming (Appendix B). This iterative process consisted of a series of reviews conducted in the field by Local Working Groups (LWGs) and others with a thorough understanding of local Greater sage-grouse use to assure that areas included as a core habitat were a true representation of actual conditions on the ground. Similar processes were used in 2010 and 2015 to refine the Core Population Area mapping, resulting in the current Core Population Areas (Appendix B).

A kernel density function was applied to the lek location and attendance data to develop the final Greater sage-grouse density maps and later adjustments (Appendix B). The red areas represent the breeding habitat for 65% of Greater sage-grouse in Wyoming based on lek size and location. The maps illustrate population proportions at a given time, not trends over time. This method was based on breeding birds and did not take into account late brood-rearing and wintering seasonal habitats. During the 2010 revision of Core Population Area boundaries in Wyoming, both late brood-rearing and winter use were considered in the process and most of these seasonal habitats associated with birds in the existing Core Population Area were included in the final product. The eight LWGs assisted in the revision process by using highly detailed habitat imagery (1 meter National Agriculture Imagery Program (NAIP) imagery) and reviewing new lek and development data. These activities were open to the public and other interests throughout the process.

The resultant 2008, 2010 and 2015 Core Population Areas encompass approximately 83% of the Greater sage-grouse population, on approximately 24% of the surface area of the State of Wyoming (Appendix B).

Non-Core Population Area

Non-Core Population Area is habitat located outside of Core Population and Connectivity Areas, and is within the current distribution of Greater sage-grouse in Wyoming (Appendix B). Development scenarios in Non-Core Population Area are more flexible, but should still be designed and managed to maintain populations, and habitats. Wyoming's conservation strategy requires habitat connectivity and movement between populations in Core Population Areas.

Connectivity Areas

Connectivity areas are recognized as areas important for maintaining the transmission of genetic material between populations. These areas have been identified as the most likely dispersal routes used by Greater sage-grouse to travel between potentially isolated populations in Wyoming to populations in neighboring states. Viable connectivity areas reduce the threat of creating isolated populations in Wyoming and adjacent populations in neighboring states. Connectivity areas are managed to limit anthropogenic development and have been delineated to increase the likelihood of natural immigration/emigration important for maintaining genetic variability in Core Population Areas.

Winter Concentration Areas

The identification of Core Population Areas is intended to capture all seasonal requirements for Greater sage-grouse; however, there is recognition that in some cases Core Population Areas may not capture all Greater sage-grouse needs. Specifically, Winter Concentration Areas, defined as places where large numbers of Core Populations Area Greater sage-grouse congregate and persistently occupy between December 1 and March 14, should be identified and protected. Identification of Winter Concentration Areas should be based on habitat features and repeated observations of winter use by biologically significant numbers of Greater sage-grouse (e.g.- groups of greater than or equal to 50 Greater sage-grouse) using a data driven statistically rigorous modeling approach (e.g.- validated Resource Selection Function).

Permitting Process

General Process

The first point of contact for addressing Greater sage-grouse Core Population Area issues for state permit application should be the Wyoming Game and Fish Department (WGFD). Project proponents should contact WGFD at least 45-60 days prior to submitting their application. Proposed projects requiring a density/disturbance calculation analysis are submitted through the Density Disturbance Calculation Tool (DDCT) website. The Wyoming Geographic Information Science Center (WYGISC) will complete the technical review and forward to WGFD for policy review. WGFD will work with the project proponent to determine appropriate avoidance and minimization measures.

WGFD will send the complete analysis package (DDCT results, map book, and worksheet) and recommendations to the appropriate permitting agencies and project proponent. All appropriate consultation with federal agencies and other state agencies will occur as described in Appendix A. WGFD recommendations will be included. Project proponent shall have access to all information used in developing recommendations. Where possible and when requested by the project proponent, state agencies shall provide the project proponent with potential development alternatives other than those contained in the project proposal.

DDCT Process

Density and Disturbance Calculation

The DDCT[2] is a spatially based tool that calculates both the average density of disruptive activities and total surface disturbance within the area affected by the project, also known as the DDCT assessment area. The DDCT assessment area is created based on an initial radius around projects proposed in Greater sage-grouse Core Population Areas, and subsequent radius around any occupied Core Population Area leks within the initial radii (Figures 1-2).

A 4-mile radius is used to identify 75% of the Greater sage-grouse use around a lek. Any portion of the analysis area not found in Core Population Areas is removed (Figure 3). Disturbance and density will be analyzed for the DDCT assessment area as a whole and for each individual Core Population Area lek boundary within the DDCT assessment area.

All activities will be evaluated within the context of maximum allowable density and disturbance of suitable Greater sage-grouse habitat (Appendix C for definition of suitable Greater sage-grouse habitat and disturbance of suitable Greater sage-grouse habitat) within the DDCT assessment area (Figure 4). This tool allows for better siting of projects rather than averaging the density/disturbance calculation per section.

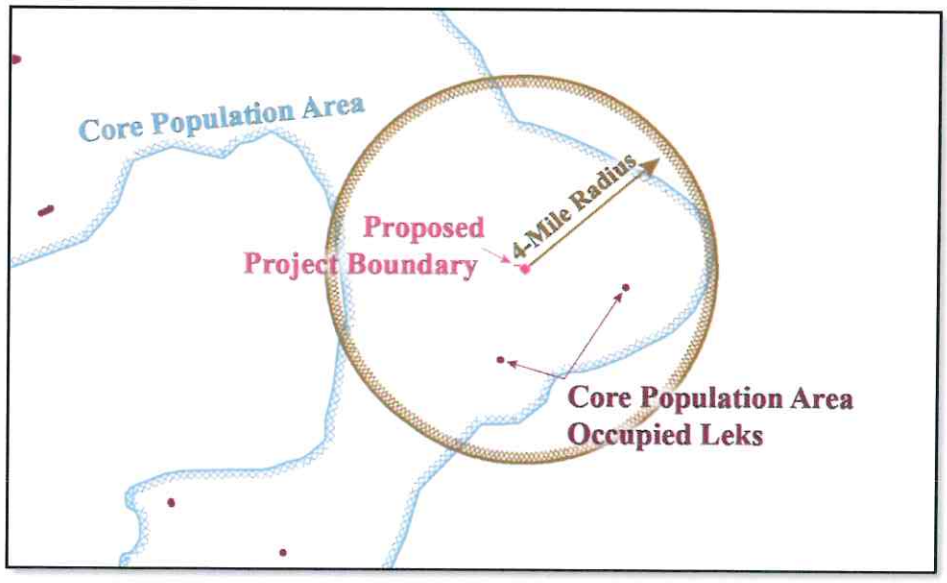

Figure 1: DDCT assessment area step 1 (proposed project boundary)

[2] The DDCT can be found at: http://ddct.wygisc.org.

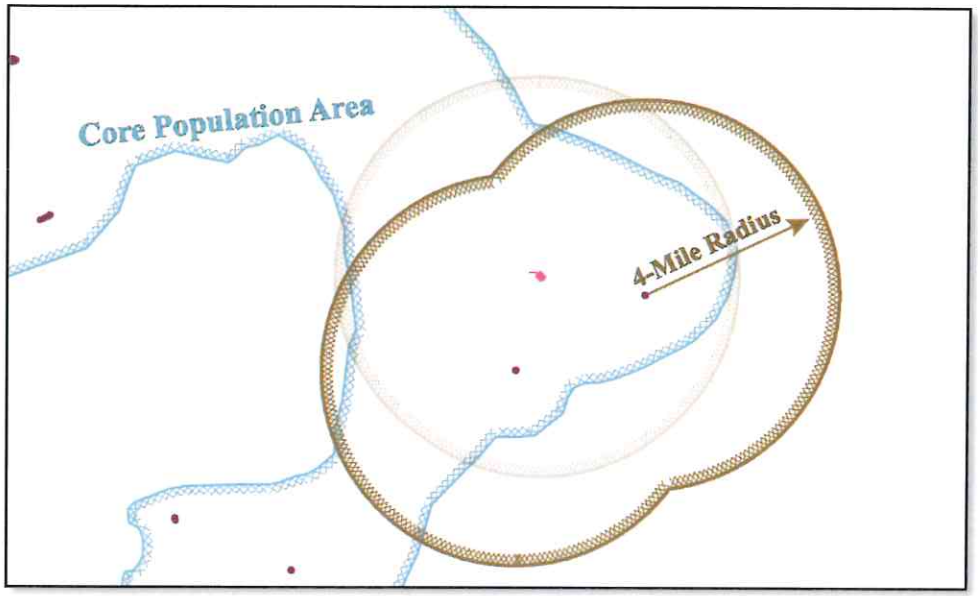

Figure 2: DDCT assessment area step 2 (lek boundaries)

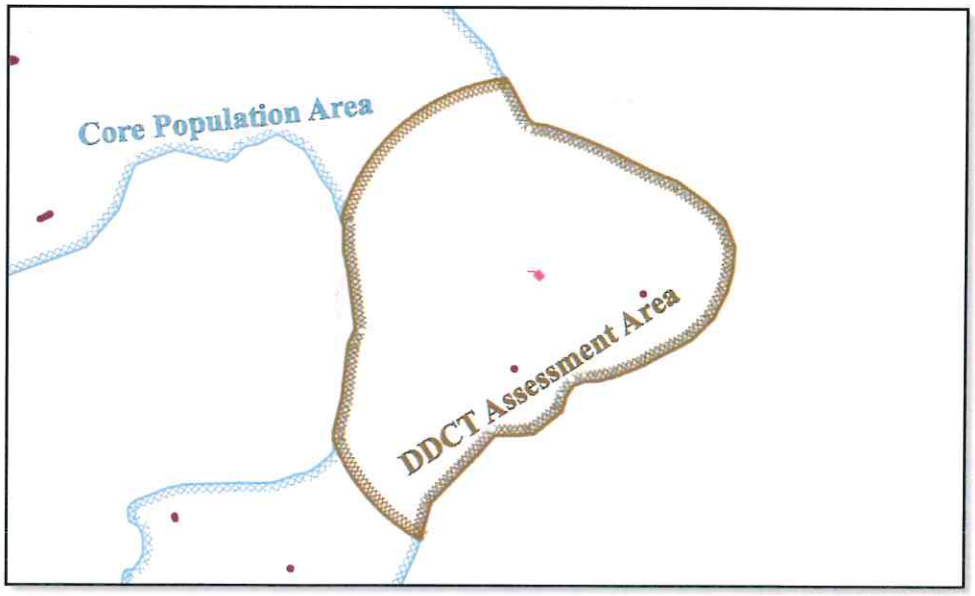

Figure 3: DDCT assessment area step 3 (remove non-Core Population Areas)

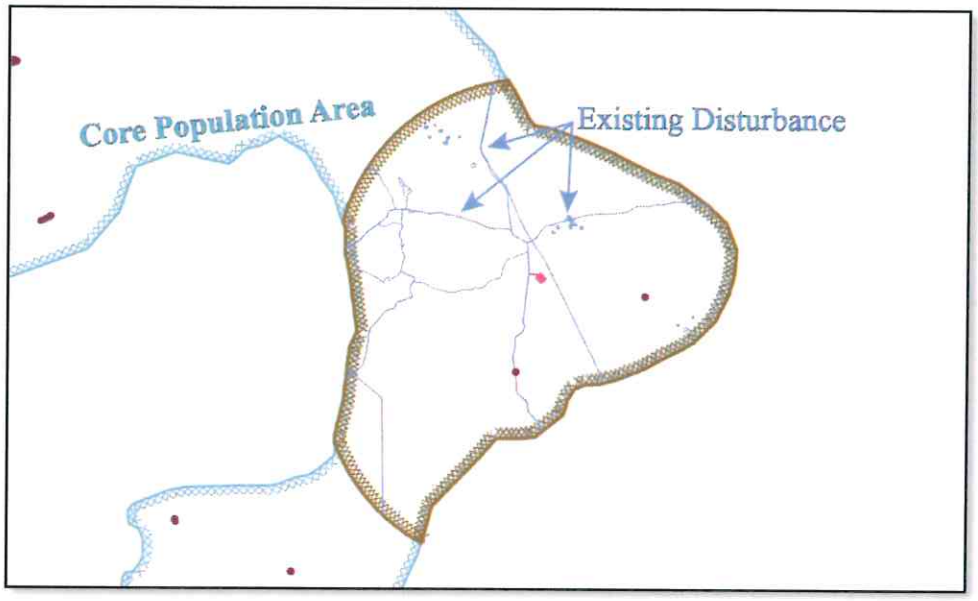

Figure 4: Existing and proposed disturbance in the DDCT assessment area

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

Density and Disturbance Analysis
The total number of discrete applicable features (oil and gas well pads and associated infrastructure, active mines) as well as the total disturbance acres within the DDCT assessment area will be determined through an evaluation of:

- Existing disturbance (Greater sage-grouse habitat that is disturbed due to existing anthropogenic activity and wildfire).
- Approved permits (that have approval for on the ground activity) not yet implemented.
- Validation of the digitized disturbance through on the ground evaluation.

Avoid, Minimize, Mitigate

Assessment of all projects in Core Population Areas, Connectivity Areas, or Winter Concentration Areas will strive to avoid impacts first, minimize unavoidable impacts second and apply compensatory mitigation in accordance with Appendix F where necessary. Agency coordination will be completed in accordance with Appendix A.

Preferred development plans avoid negative impacts in Core Population Areas and other Executive Order-delineated habitat used by Greater sage-grouse through compliance with Executive Order thresholds and stipulations for development. This maximizes protections for both Greater sage-grouse and sagebrush habitat. Avoidance can be both spatial and temporal.

When development occurs within Core Population Areas and other Executive Order-delineated habitats used by Greater sage-grouse, all reasonable options should be pursued to minimize impacting suitable habitat to the greatest extent practicable. This may result in new disturbance within Executive Order delineated habitats, but the disturbance is managed to result in minimal discernable impacts at the population level.

It is recognized that incentivizing development in Non-Core Population Areas may result in greater impacts to Greater sage-grouse that use this habitat. The DDCT process is not used in Non-Core Population Areas, however, project proponents are strongly encouraged to incorporate minimization measures in development plans in Non-Core Population Areas where impacts to Greater sage-grouse can be meaningfully reduced.

Permit Expirations and Renewals

If the permit for which a proponent has applied expires, another DDCT analysis is required before issuing a new permit. An additional DDCT is not required for permit extensions or renewals when no changes are being authorized.

The Executive Order in effect at the time of a complete formal application will remain in effect through the final permit.

Exceptions

There are situations where exceptions to the stipulations in this Appendix are warranted. Project proponents can request relief from stipulations from WGFD. WGFD will work with the project proponent to review site and project specific factors and identify avoidance and minimization measures. WGFD will evaluate the exception request, including coordination with other agencies as described in Appendix A, and make a recommendation to the permitting agency. When Compensatory Mitigation is required WGFD shall include the amount of compensation required, consistent with Appendix F, in its recommendations.

Process Deviation or Undefined Activities

Development proposals incorporating less restrictive stipulations or activities that are not covered by these stipulations may be considered depending on site-specific circumstances. The proponent must have data demonstrating that the alternative development proposal will avoid negative impacts to Greater sage-grouse in Core Population Areas. Proposals to deviate from standard stipulations will be considered by a team including WGFD and the appropriate land management and permitting agencies, with input from the USFWS. To deviate from standard stipulations project proponents need to demonstrate that the project development would meet at least one of the following conditions:

- No suitable habitat is present in one contiguous block of land that includes at least a 0.6 mile buffer between the project area and suitable habitat;
- No Greater sage-grouse use occurs in one contiguous block of land that includes at least a 0.6 mile buffer between the project area and adjacent occupied habitat, as documented by total absence of Greater sage-grouse droppings and an absence of Greater sage-grouse activity for the previous ten years; or

- Implementation of a development/mitigation plan that has demonstrated through previous research avoids negative impacts to Greater sage-grouse. The demonstration must be based on monitoring data collected and analyzed with accepted scientific based techniques.

Exempt Activities

Production and maintenance activities are exempt from seasonal use stipulations. The applicable permitting agency is responsible for determining if an action is or is not a production and maintenance activity.

A list of exempt ("de minimis") activities, including standard uses of the landscape is available in Appendix G.

General Stipulations

Applicable state agencies shall review projects requiring an authorization that are located in a Greater sage-grouse habitat and apply the stipulations in this section as appropriate.

Core Population Areas

These stipulations are designed and intended to maintain existing suitable Greater sage-grouse habitat by permitting development activities in Core Population Areas in a way that will avoid negative impacts to Greater sage-grouse.

General stipulations are recommended to apply to all activities in Core Population Areas, with the exception of exempt ("de minimis") actions defined herein (Appendix G) or specifically identified activities. The specific industry and/or activity stipulations are considered in addition to the general stipulations.

Surface Disturbance

Surface disturbance will be limited to 5% of suitable Greater sage-grouse habitat per an average of 640 acres over the entire DDCT assessment area. The DDCT process will be used to determine the level of disturbance. Distribution of disturbance may be considered and approved on a case-by-case basis. Habitat should be identified in a seasonal and landscape context, on a case-by-case basis, outside the 0.6 mile buffer around occupied leks. This will incentivize proponents to locate projects in unsuitable habitat to avoid creating additional disturbance acres. The primary focus should be on protection of suitable habitats and minimizing habitat fragmentation. See Appendix C for a description of suitable, unsuitable habitat and disturbance.

Surface Occupancy

Within 0.6 miles of the perimeter of occupied Greater sage-grouse leks there will be no surface occupancy (NSO). NSO, as used in these recommendations, means no permanent surface facilities including roads shall be placed within the NSO area. Other activities may be authorized with the application of appropriate seasonal stipulations, provided the resources protected by the NSO are not adversely affected.

For example, underground utilities may be permissible if installation is completed outside applicable seasonal stipulation periods and significant resource damage does not occur. Seasonal protections are to be determined on principal usage of site by Greater sage-grouse. The primary purpose of the 0.6 restriction around leks is to avoid disturbing lekking Greater sage-grouse and to maintain habitat integrity. This necessitates the limitation of traffic or infrastructure that would encourage human activity around occupied leks.

Seasonal Use

Activities will be allowed from July 1 to March 14 outside of the 0.6 mile perimeter of an occupied lek in Core Population Areas where breeding, nesting and early brood-rearing habitat is present.

> *Powder River Basin Coal Bed Methane Plugging Operations:* Plugging of Coal Bed Methane wells in the Powder River Basin is allowed May 15 to March 1 and between 8 am and 6 pm from March 1 to May 15.
>
> *Special Considerations:* Where credible data support different timeframes for these seasonal restrictions, dates may be shifted 14 days prior to or subsequent to the above dates, but not both.

Transportation

Locate new collector or arterial roads that will have relatively high levels of activity (accessing multiple wells, housing development) greater than 1.9 miles from the perimeter of occupied Greater sage-grouse leks. Locate new local roads used to provide facility site access and maintenance greater than 0.6 miles from the perimeter of occupied Greater sage-grouse leks. Construct roads to minimum design standards needed for production activities.

Collector or arterial roads are single-lane or double-lane roads, with travel ways 12 to 24 feet in width. They collect traffic from local roads and connect to arterial roads or public highways. They are operated for intermittent or constant service.

Local roads are single-lane roads with travel ways 12 to 14 feet in width. They connect terminal facilities, such as well sites, to collector, local, arterial, or other higher-class roads. They are operated for low-volume traffic.

Use of existing collector, arterial, and local roads is encouraged where the construction of new roads can be avoided and where impacts to Greater sage-grouse can be minimized. Project-specific travel management plans are encouraged where high levels of new traffic on existing roads (e.g.- hauling product and/or waste) will occur within 1.9 miles of the perimeter of occupied Greater sage-grouse leks.

Noise

Sound levels at leks, due to new project noise individually or cumulatively from anthropogenic sources, should not exceed 10 decibels (dB) above baseline sound levels at the perimeter of a lek during the breeding season (March 1 to May 15), 6 pm to 8 am. Baseline sound levels should be determined prior to project initiation. Sound level measurement and monitoring protocols available from the WGFD should be used to measure and report sound levels.

Lek Monitoring

Proponents of new projects are expected to coordinate with the WGFD to determine which leks need to be monitored and what data should be reported by the proponent. Certain leks may be exempted from monitoring activities pending WGFD coordination.

Reclamation

Reclamation should re-establish grasses, forbs, and shrubs during interim and final reclamation commensurate with pre-disturbance plant communities, ESDs, or reference sites. Seed mixes should be tailored to local plant communities and conditions. Landowners should be consulted on desired seed mixes on private lands. Operators are required to control noxious and invasive species, including annual grasses and are encouraged to work with local Weed and Pest districts on control efforts.

Non-Core Areas Within 2 Miles of an Occupied Lek

Surface Disturbance

There are no limitations to disturbance outside the 0.25 mile no surface occupancy buffer.

Surface Occupancy

Within 0.25 miles of the perimeter of occupied Greater sage-grouse leks there will be NSO. NSO, as used in these recommendations, means no permanent surface facilities including roads shall be placed within the NSO area. Other activities may be authorized with the application of appropriate seasonal stipulations, provided the resources protected by the NSO are not adversely affected. For example, underground utilities may be permissible if installation is completed outside applicable seasonal stipulation periods and significant resource damage does not occur.

Seasonal Use

Activity will be allowed from July 1 to March 14 outside of the 0.25 mile perimeter of an occupied lek and within 2 miles from the perimeter of the occupied lek where breeding, nesting and early brood-rearing habitat is present. Activities in unsuitable habitat may also be approved year-round (including March 15 to June 30) on a case-by-case basis. Activities may be allowed during seasonal closure periods as determined on a case-by-case basis.

> *Powder River Basin Coal Bed Methane Plugging Operations:* Plugging of Coal Bed Methane wells in the Powder River Basin is allowed May 15 to March 1 and between 8 am and 6 pm from March 1 to May 15.
>
> *Special Considerations:* Where credible data support different timeframes for these seasonal restrictions, dates may be shifted 14 days prior to or subsequent to the above dates, but not both.

Connectivity Areas

Surface Disturbance

Surface disturbance should be limited to 5% of suitable Greater sage-grouse habitat over the entire DDCT assessment area. The DDCT process will be used to determine the level of disturbance.

Surface Occupancy

For protection of connectivity corridors, a NSO buffer of 0.6 miles around occupied leks or their documented perimeters is required.

Seasonal Use

A March 15 to June 30 timing limitation stipulation is required within nesting habitat within 4 miles of occupied leks.

> *Powder River Basin Coal Bed Methane Plugging Operations:* Plugging of Coal Bed Methane wells in the Powder River Basin is allowed May 15 to March 1 and between 8 am and 6 pm from March 1 to May 15.

Winter Concentration Areas

Seasonal Use

In delineated and mapped Winter Concentration Areas, new activities will be allowed March 15 to November 30.

SPECIFIC STIPULATIONS
(To be applied in addition to general stipulations)

Oil and Gas

Oil and gas well pads and associated infrastructure densities are not to exceed an average of one pad per square mile (1/640 acres) and suitable habitat disturbance does not to exceed 5% within the DDCT assessment area. As an example, the number of well pads within a two mile radius of the perimeter of an occupied Greater sage-grouse lek should not exceed 11, distributed preferably in a clumped pattern in one general direction from the occupied lek.

Geophysical Exploration

Geophysical exploration may be permissible in accordance with identified seasonal use stipulations in Greater sage-grouse population areas. Staging areas should be located outside of Core Population Areas, or evaluated through the DDCT process if within Core Population Areas.

Mining

For development drilling or ore body delineation drilled on tight centers (approximately l00 feet by 100 feet), the disturbance area will be delineated by the external limits of the development area. Assuming a widely-spaced disturbance pattern, the actual footprint will be considered the disturbance area.

Any Greater sage-grouse monitoring results will be reported annually in the mine permit annual report and to WGFD.

The number of active mining development areas (e.g., operating equipment and significant human activity) is not to exceed an average of one site per square mile (1/640 acres) within the DDCT.

Vegetation removal and topsoil stripping should be limited to the minimum disturbance required by the project. All topsoil stripping and vegetation removal in suitable habitat is limited to July 1 and March 14 in Core Areas. Production and maintenance activities (surface mining) between March 15 and June 30 are considered permissible once the vegetation is removed outside the seasonal stipulations. Initial disturbance in unsuitable habitat between March 15 and June 30 may be approved on a case-by-case basis. It is important that the "viability" of the topsoil is maintained. Further reclamation monitoring guidelines are outlined in Appendix C.

In Core Population Areas, it is understood that there will be exceptions for minimal impacts due to existing mines as they expand their existing operations through modified mine plans.

Overhead Power Lines

It will be necessary to construct significant new transmission infrastructure to transport electricity generated in Wyoming to out-of-state load centers. There will be new distribution and transmission lines that will need to be built to service existing approved projects.

Transmission lines are power lines designed and constructed to support voltages greater than 36 kilovolts (kV) and are generally designed to help move electricity from a power plant or generation source to substations.

Distribution lines are power lines, energized at voltages from 2.5kV to 35kV, and used to distribute electricity to residential, industrial, and commercial customers. Residential and agricultural distribution lines are discussed in Appendix G.

For purposes of consistency with this Executive Order there is established a transmission line corridor through Core Population Areas in south central and southwestern Wyoming as illustrated in Appendix B. This two mile-wide corridor represents the State of Wyoming's preferred alternative for routing electric transmission lines across the southern portion of the state while reducing impacts to Core Population Areas and other natural resources.

New transmission lines constructed within corridors identified in this Executive Order (Appendix B) or within one half-mile either side of existing or permitted (prior to August 1, 2008) 115 kV or larger transmission lines, creating a corridor no wider than 1-mile shall be considered consistent with this Executive Order if construction occurs within the corridor between July 1 and March 14 (or between July 1 and December 1 in delineated and mapped Winter Concentration Areas).

New transmission lines constructed within 0.5 miles either side of 115kV or larger transmission lines in existence or permitted prior to the date of this Executive Order 2015-4 (July 29, 2015) and within Core Population Areas added as a result of this Executive Order 2015-4, creating a corridor no wider than 1-mile, shall be considered to be consistent with this Executive Order if construction occurs within the

corridor between July 1 and March 14 (or between July 1 and December 1 in delineated and mapped Winter Concentration Areas).

New transmission lines outside the above described corridors but within Core Population Areas should be authorized or conducted only when it can be demonstrated that the activity will avoid negative impacts to Greater sage-grouse. If it is absolutely necessary to site new distribution and transmission lines through a Core Population Area outside of an existing corridor, lines should be sited to minimize negative impact on Greater sage-grouse or their habitats, and preferentially consider siting along or adjacent to existing long-term linear disturbance features whenever possible (e.g.- along existing occupied above ground utilities or roads).

Proponents are encouraged to apply appropriate Best Management Practices (BMPs) specific to electric utility facilities; otherwise, locate overhead lines at least 0.6 miles from the perimeter of occupied Greater sage-grouse leks.

Lines permitted but not located in an Executive Order transmission corridor will be counted towards the 5% disturbance calculation (line disturbance is equal to right-of-way (ROW) width multiplied by length and includes all access roads, staging areas, and other permanent surface disturbance associated with construction outside of the ROW).

Underground Rights of Way

The State of Wyoming and federal management agencies have worked to develop utility corridors in current Resource Management Plans (RMPs). One of the primary purposes of these utility corridors is to encourage placement of future linear development (e.g.- pipelines, water lines, fiber optics, etc.) adjacent to existing infrastructure to reduce habitat fragmentation.

It is the intent of this Executive Order to continue to incentivize co-location of new pipelines in RMP-designated utility corridors. New pipelines proposed in RMP established utility corridors will be required to complete DDCT calculations prior to construction. The pipeline proponents are not expected to meet Executive Order thresholds within the utility corridor, but the project construction would be subject to appropriate seasonal timing stipulations. The locations of permanent above-ground facilities (e.g.- block valves, compressors, etc.) will be subject to Executive Order thresholds if located outside the designated corridor. Pipelines outside RMP-designated utility corridors, but in Core Population Areas, are required to comply with the 5% disturbance per the DDCT analysis.

Installing underground utilities and pipelines using plowing techniques that eliminate the need for reclamation will be allowed from July 1 to March 14. Plowing underground lines will be allowed year-round within state and federal highway right-of-ways, except where activity will occur within 0.6 miles of an occupied lek where human disturbance should be avoided from 6:00 pm to 8:00 am during the breeding season (March 1 to May 15).

Commercial Wind or Solar Energy Development

Commercial wind and solar development is not recommended in Greater sage-grouse Core Population Areas, but will be re-evaluated on a continuous basis as new science, information and data emerges.

APPENDIX F
COMPENSATORY MITIGATION FRAMEWORK

Scope

Core Population Areas have been mapped to include additional habitat beyond that strictly necessary to prevent listing of Greater sage-grouse. Development consistent with the stipulations set forth in Executive Order (EO) 2019-3 Appendix E are sufficient to avoid negative long-term impacts to Greater sage-grouse.

If a project complies with the stipulations contained in EO 2019-3 for Greater sage-grouse conservation (for example, in non-Core Population Areas: 0.25 mile No Surface Occupancy, timing limitations; and, for example, in Core Population Areas: 0.6 mile No Surface Occupancy, 5% surface disturbance threshold), no compensatory mitigation is required by the State of Wyoming. Any project that will require credits and debits and has a federal nexus will be coordinated with the federal agency that is involved with the permitting effort pursuant to the specific sections in approved Bureau of Land Management (BLM) Resource Management Plan Amendments and United States Forest Service (USFS) Land Management Plans.

The BLM, USFS, U.S. Fish and Wildlife Service (USFWS), and Natural Resources Conservation Service (NRCS) have agreed to use this Mitigation Framework as stated in the Memorandum of Understanding with the State of Wyoming.

Background

Greater sage-grouse are a landscape species, meaning that they occupy and use a variety of seasonal habitats (including some which may be considered marginal or less than ideal) in an interconnected manner. The Wyoming Greater sage-grouse Core Area Protection Strategy addresses tolerances of the species to disturbance, disruption and loss of habitat and is designed to avoid and minimize impacts before allowing deviations. Any activity that requires a state permit and fails to comply with the stipulations of EO 2019-3 may be denied. Those activities requiring a state permit, but fail to comply with the stipulations of EO 2019-3 and are not denied will be required to provide compensatory mitigation for impacts to Greater sage-grouse. Consistent with EO 2019-3, the preferred method of resolution of conflicts will be avoidance and minimization, where possible.

Unlike historic banking for wetlands and some other habitats, the Greater sage-grouse compensatory mitigation process is grounded in available credits being part of a complete functional landscape and the availability and assurance of all seasonal habitats within that area. The connection between seasonal habitat needs and reduced disturbance and disruption for Greater sage-grouse remains imperfect; for instance, areas with lower quality habitat may still be important within landscapes and are often integral to landscape function.

Ultimately, the goal of the State of Wyoming is to maintain intact sagebrush landscapes that will adequately provide a variety of habitat needs for Greater sage-grouse and other sagebrush obligate species. This goal includes the efforts of federal agencies as demonstrated by close coordination with the Approved Resource Management Plan (BLM) and Land Management Plan (USFS) amendments and revisions to create a comprehensive and consistent regulatory mechanism.

Compensatory mitigation may be accomplished in two primary manners. The first are "conservation credits," which maintain existing habitats in a landscape context, provide for long- term management consistent with the needs of the species, and remove potential threats to the species from human activities. The second are "restoration credits," which may be used to restore habitats that have been lost or severely impacted and did not meet the habitat needs of the species. Full suitability of lost or severely impacted sites may take decades. However, to provide incentives to restore habitats impacted by historic activities, restoration credits will be given to sites that have improved from lost or severely impacted to functional condition that demonstrates a positive trend toward suitability (over a period of five years), and is currently occupied by Greater sage-grouse. Restoration credits must demonstrate functionality and occupation before any credits are awarded.

Conservation credits are created by removing or limiting a threat to Greater sage-grouse or their habitat for the full duration of the impact or in perpetuity. Restoration credits are created by converting disturbed or low quality habitat to suitable Greater sage-grouse habitat. In some cases, both may occur on the same landscape and should be accounted for accordingly.

Conservation Credits

All credits offered as compensatory mitigation for Greater sage-grouse must be evaluated on a landscape scale, and not as an "acre of habitat-for-an acre of habitat trade." A credit, whether through a bank, exchange or other mechanism represents a unit of a functional and intact landscape, and must have relativity to all of the essential habitats required by the species. Inherent in this requirement is the assimilation of indirect credits to the species that are not readily measured, but contribute to the fully functional landscapes. Simply put, an acre of nesting habitat is of no value to the species if it does not have proximity to breeding areas, brood-rearing areas, and winter habitats. Conversely, an acre with little actual use by Greater sage-grouse, but still meets the ecological potential for the site, such as a rocky crag, is part of the functional landscape and should not be regarded as diminished value. These sites within the overall landscape remove potential threats and provide protection from the placement of disruptive activities.

In order for a land parcel to be considered for Greater sage-grouse "conservation credits," it must be demonstrated that the lands in question meet the following biological requirements:

1. The geographic area designated for credits must have active use by Greater sage-grouse.
2. The geographic area designated for credits must include the habitat attributes identified as essential for perpetuation of Greater sage-grouse, consistent with the ecological potential for the landscape in question.
3. The geographic area designated for credits must be able to support Greater sage-grouse, or have reliable access to all seasonal habitats for the species (breeding and nesting, early brood-rearing, late brood-rearing, winter).
4. The geographic area designated for credits must have active breeding areas (leks) within the landscape. (Generally, the credits should be located within 5.3 miles of an active lek. However, there may be circumstances that may be considered which would allow credits in unique circumstances such as restoration credits.)
5. The area must meet the Greater sage-grouse habitat suitability definition in EO 2019-3 Appendix C.

Further, in order for a landscape to be considered for Greater sage-grouse credits, it must meet the following disturbance tolerances for the species:

6. The area designated for credits must be consistent with the tolerances of EO 2019-3 (for example, surface disturbance < 5%, one oil and gas or mining activity per 640 acres on average for the modified Density/Disturbance (MDD) area, collector or arterial roads > 1.9 miles from the perimeter of a lek, no surface occupancy < 0.6 miles from the perimeter of a lek). MDD Areas that exceed 5%, but do not exceed 10% may be eligible for credits; however, the credit will be discounted by 10%. The discount may be removed from unused credit acreage if the disturbance is shown to fall below 5%.

Finally, in order for a landscape to be considered for Greater sage-grouse credits, it must be able to show that it can meet the following tests for durability and risk reduction:

7. The credits must persist for the duration of any offsetting impacts and associated activities or be permanent in nature. Credits that do not meet the durability requirements below will be discounted by 10%.
8. The credits must be adequately secured by reserve accounts additional acreage or by adequate financial assurances to replace any loss of the original credits.

All state agencies required to review permit applications for compliance with EO 2019-3, Greater Sage-Grouse Core Area Protections, shall accept credits from Greater sage-grouse compensatory mitigation providers approved by the U.S. Fish and Wildlife Service before the date of this EO or the credit providers approved after the date of this EO, should the State permitting agency determine that compensatory mitigation credits are required.

Requirements for conservation credit eligibility are outlined in Table 1.

Table 1: Conservation Credit Eligibility Requirements

Category	Credit Condition	Credit Requirements
Occupancy	Mandatory	The credit is occupied by Greater sage-grouse.
Disturbance	Mandatory	Disturbance within the area to be considered for credits must be below 10% and 1 per 640 as measured by a modified Density Disturbance Calculation Tool (DDCT) process.
Disturbance	Potential Credit Adjustment	Disturbance within the area to be considered for credits is below 5% and 1 per 640 acres as measured by a Modified Density Disturbance (MDD) process. If disturbance is between 5.01% and 9.99% as measured by the MDD Process, the credit will be discounted by 10%.
Durability	Mandatory	The credit exists for the life of the project impact.
Durability	Potential Credit Adjustment	The credit has permanent protection. For non-private lands, this would require a conservation credit lease term of not less than 50 years, with a renewal option at the end of the term. On private land, credits that do not have permanent protection, but are 50 years or greater with a renewal option at the end of the term, will be discounted by 10% per acre.
Financial Assurances/Replacement	Mandatory	Credits include the financial assurances or replacement credits, as appropriate, to guarantee the implementation and effectiveness of compensatory mitigation measures and to cover their administration, durability, monitoring, and reporting.
Habitat Suitability	Mandatory	Habitat suitability must be functional for Greater sage-grouse as verified by an ecological site potential assessment and habitat assessment through the Habitat Assessment Framework (HAF), EO 2019-3 Appendix C suitability definition, or other similar habitat analysis. Methodologies must provide adequate information to inform bird use, habitat

		availability, juxtaposition to other seasonal habitats, and overall habitat quality.
Habitat Suitability	Mandatory	Habitat suitability is greater than 5% sagebrush cover or other EO 2019-3 Appendix C suitability definition.
Additionality	Mandatory	Credits will not be allowed where habitat conservation is otherwise required by law, regulation, permit, or other condition.
Landscape Support	Potential Credit Adjustment	The area proposed for credit must be within a landscape that provides access to all seasonal habitats where potential threats have been ameliorated or removed. Private lands that meet these criteria would receive a landscape context credit increase not to exceed 15%. Any areas not adequately conserved will be discounted from the total increase. Any landscape credit adjustment must be approved by the credit-certifying entity and should be figured in a manner that reflects specific habitat values (for example, the number of leks, the lek population, enhanced credit value based on credit location in relation to protecting a lek, quality of habitat, removal of multiple threats).
Risk Reduction	Mandatory	The credit includes a description of: 1. The outcomes of compensatory mitigation measures and the performance standards to be met for the duration of the credit life. Credit descriptions should include the types and amounts of resources that will be restored, established, enhanced, and/or preserved, and how these outcomes will address species' conservation needs at the landscape scale. 2. The baseline condition prior to disturbance and future disturbance threats affecting the compensatory mitigation credits (For example: are there 4 seasonal habitats located within 4 miles? What are the existing disturbance thresholds? What is the potential for future development?). 3. The durability of the compensatory mitigation measures and how the credit

		sites will be maintained (for example, offset for life of disturbance or perpetuity). 4. The monitoring and reporting program that will be used to report credit conditions and trends of resources at all relevant scales, to assess the effectiveness of compensatory mitigation measures, and to identify any need for adaptive management. 5. The triggers for adapting management, if necessary, in order to achieve the outcomes of the compensatory mitigation measures. 6. The implementation plan for the enhancement, restoration or funding of compensatory mitigation measure(s) that includes: • Specifications for implementing the compensatory mitigation measures (for example, timing, method, source materials, specific geographic area). • The schedule and plan to maintain compensatory mitigation measures for the duration of the impacts. 7. The accounting and reporting process for tracking measures/funds/credits.

Restoration Credits

Compensatory mitigation may be achieved through actions that improve or restore existing landscapes, or areas within landscapes, from a condition that does not currently support Greater sage-grouse, or does not meet the needs of species reflected through HAF assessments, or other defensible habitat assessments which are consistent with the ecological potential for the site. Restoration credits would only be achieved when the proponent can show that site conditions have been changed from an "unsuitable" condition to a condition that is stable, functional, occupied and trending towards the normal range of variability of appropriate Ecological Site Descriptions, as defined by Appendix C, and where Greater sage-grouse occupy the site.

Credits will be awarded when a disturbed site conforms to the appropriate Ecological Site Description and is maintained in a stable state and trend toward optimal Greater sage-grouse habitat for a period of five years. A restoration credit must also meet all the Categories in Table 1 except for the Habitat Suitability category.

Improvement will be measured as a functional change in the landscape, and generally will be in the form of credit generation as outlined above. Proponents are required to annually submit data to show that the credit is not regressing. Restoration credits must adhere to the quality parameters outlined for conservation credits. Any action that is required by law, permitting and reclamation agreements, contracts, or other requirements is not eligible for conservation credits.

Debits for Impacts to Greater sage-grouse

The primary emphasis of the Wyoming Greater sage-grouse Core Area Protection Strategy is to avoid and minimize impacts to the species first. Since the inception of Wyoming's strategy, those efforts have been employed across the state, and have been effective in avoiding and reducing impacts and threats to the species. However, there are cases when avoidance and minimization still do not meet EO 2019-3 thresholds, primarily due to pre-existing disturbance. In those cases, where projects cannot be denied due to valid existing rights, and where avoidance and minimization does not adequately address impacts to Greater sage-grouse, compensatory mitigation may be an appropriate method to assure maintenance and enhancement of the species and its required habitats.

The Wyoming Mitigation Framework is based upon biological, legal, and policy requirements for mitigation, including the debit and/or credit principles of replacement, landscape support and vulnerability, durability of mitigation measures, indirect effects from activities, additionality, and timeliness. Table 1 contains an outline of the credit parameters. The concepts of replacement, indirect effects, habitat assurance and habitat vulnerability are considered in debit requirements for activities in Core Population Areas, as described and shown in Table 2.

1. *Replacement*: Replacement is a physical and biological metric that will replace an impacted acre with an equal or greater amount of habitat where threats have been removed or abated. Replacement is calculated on an acre-to-acre basis (based on the footprint of the activity), and is a factor of one-to-one.
2. *Indirect Effects*: Indirect effects are those impacts arising out of an action that extend beyond the actual footprint of the action itself. This includes factors that may cause avoidance or abandonment of habitats not directly impacted. Indirect effects have been calculated through various means over time, and are generally greater in closer proximity to the activity, with a declining effect with distance. Based on the footprint of the activity, indirect effects will be assigned a factor of two-to-one for all actions.
3. *Habitat Assurance:* Potential losses to habitat, populations, or both, must be adequately offset by a greater security of habitats and populations where threats have been removed or abated. Because GSG require large intact landscapes, show great fidelity to habitat, and do not respond well to blind transplants, it is necessary to assure that compensatory mitigation is robust and adequate to reliably remove threats to the species. Based upon the policy of the State of Wyoming, habitat assurance will be assigned (on an acre-to-acre basis) a factor of two-to-one for all actions.
4. *Habitat Vulnerability:* Actions that occur in highly vulnerable or limiting habitat types (for example, wet meadows, high-quality nesting habitat, lands that provide severe winter relief, and other vulnerable habitats identified and confirmed within the DDCT area) will likely be impossible to replace. These areas should be avoided. Where avoidance is not possible, additional debits would be assigned to these habitats on an acre-to-acre basis with a factor of five-to-one.

Other considerations relative to debits, including durability, additionality, timeliness and other factors are adequately addressed in the calculation of credits and should not be applied to both debits and credits. For instance, a credit must show durability for the life of the impact, and thus is reduced appropriately to meet that standard. Specific to the concern of additionality, that determination is not a calculation, but a requirement that the credit not be given for an action that would be otherwise required.

In order to assure the perpetuation of the species, any action that meets the need for compensatory mitigation in Core Population Areas debits will be assessed based upon the criteria and the threshold exceeded. Table 2 identifies how the replacement, indirect effect, habitat assurance and habitat vulnerability debit factors are calculated for activities in Core Population Areas.

Table 2: Debit Requirements for Activities in Core Population Areas

Activity in Core Population Areas	**Debits**
New disturbance in compliance with EO 2015-4 thresholds	0 debits
New disturbance exceeding the 5% disturbance threshold and occurring more than 0.6 miles from an occupied lek	5 debits per acre
Any new disturbance within 0.6 miles from an occupied lek and new collector or arterial roads within 1.9 miles from an occupied lek	10 debits per acre
Greater than 1 activity per 640 acres	10 debits total per activity
Short-term impact (seasonal stipulation relief)	10 debits per activity, per year
Habitat vulnerability (discretionary)	Potential 5 debits per acre of vulnerable habitat

Short-Term Impacts

Short-term impacts that require compensatory mitigation (for example, activities during seasonal stipulations or other actions that require less than one year occupancy) will be assessed by the event and not on a per-acre basis. Short-term impacts will be assessed 10 debits per activity, per year.[1]

Compensatory Mitigation in non-Core Population Areas

For surface occupancy within (less than) 0.25 miles from an occupied lek in non-Core, compensatory mitigation will be calculated on an acre-to-acre basis (based on the footprint of the activity in suitable habitat within the 0.25 mile buffer) with a factor of 2:1.

[1] Project proponents should be aware that the BLM has an exception waiver modification criteria process that may be applied to projects on BLM land.

The compensatory mitigation requirement for short-term impacts applies to Non-Core Population Areas. It is the policy of EO 2019-3 to incentivize developments of all types outside of Core Population Areas, including through stipulation waivers and other incentives.

Table 3: Debit Requirements for Activities in non-Core Population Areas

Activity in Non-Core Population Areas	**Debits**
New disturbance in compliance with EO 2015-4 thresholds	0 debits
Within .25 miles from an occupied lek	2 debits per acre of suitable habitat
Short-term impact (seasonal stipulation relief)	10 debits per activity, per year

APPENDIX G
EXEMPT ("DE MINIMIS") ACTIVITIES

The following exemptions apply to all delineated Greater sage-grouse areas identified in this Executive Order: Core, Winter Concentration Areas, and Connectivity. Exemptions are not required in non-Core Population Areas.

General

1. Emergency response and public health and safety issues.

2. Authorized or required cultural, paleontological, and biological resource surveys.

Agriculture

It is important that agricultural practices are not unduly interrupted. Agriculture can provide benefits to a number of wildlife species, including Greater sage-grouse and help deter fragmentation of seasonal habitats. The following agricultural practices are considered exempt ("de minimis"):

1. Existing animal husbandry practices (including branding, docking, herding, trailing, etc.).

2. Existing farming practices and irrigation. Conversion of suitable sagebrush habitats is not considered de minimis.

3. Maintenance or modification of existing fence.

4. New fencing more than 0.6 miles from the perimeter of an occupied lek. New fences or new stretches of fences, with high potential for collisions should be marked or be designed to minimize risk. Construction within 0.6 miles is permitted so long as construction does not occur from March 15 to June 30 or on the lek itself; coordination with WGFD is strongly suggested.

5. Drilling and outfitting of agricultural water wells or development of other agricultural water sources (including tank installation, pumps, and agricultural water pipelines), more than 0.6 miles from the perimeter of an occupied lek. Construction within 0.6 miles is allowed from July 1 through March 14, after a habitat evaluation has occurred, and provided development does not occur on the lek. New tanks shall have escape ramps.

6. Construction of agricultural reservoirs, less than 10 surface acres and more than 0.6 miles from the perimeter of an occupied lek. Construction within 0.6 miles is allowed from July 1 through March 14, after a habitat evaluation has occurred, and provided that development does not occur on the lek. Treatment for West Nile Virus is encouraged.

7. Grazing operations that utilize recognized management approaches (allotment management plans, Natural Resources Conservation Service grazing plans, prescribed grazing plans, etc.).

It is Wyoming's primary premise that grazing activities are compatible with Greater sage- grouse conservation and may improve or compliment habitat for Greater sage-grouse. Properly managed grazing maintains or enhances Wyoming rangelands and helps sustain a diversity of plant species important to Greater sage-grouse habitat, and therefore populations.

On federal land, the State of Wyoming will collaborate with appropriate Federal agencies and the permit/lease holder(s) to: (1) develop appropriate Greater sage-grouse habitat conservation objectives; (2) define a framework for evaluating situations where Greater sage-grouse objectives are not being achieved to determine if a causal relationship exists between improper grazing (by wildlife, wild horses or livestock) and Greater sage-grouse conservation objectives; and (3) identify and implement appropriate site-based action to achieve Greater sage-grouse conservation objectives.

If grazing adjustments are believed necessary to achieve Greater sage-grouse conservation objectives, coordination among land management agencies and permit/lease holders shall take place. Monitoring data will, at a minimum: reflect five years of information, include rangeland health assessments, and require conclusion or action to be based on three out of five consecutive years of data (e.g.- years 1-2-3, years 2-3-4, years 3-4-5). These requirements may be waived in case of a catastrophic event such as fire. Further, the State recognizes there is a distinction between conservation objectives and land health standards and that it is possible to achieve land health standards while not achieving Greater sage-grouse conservation objectives and vice-versa. Federal agency participation in the implementation of this Executive Order in no way precludes them from managing federal surface for rangeland health.

Maintenance and Utilities

Some utilities are obligated by current regulation to serve customers with safe and reliable service. However, utilities must also comply with agency stipulations for Greater sage-grouse. In order to avoid impacting operational abilities of these companies, agencies, and landowners, certain practices are considered de minimis. Additionally, it is important that other routine maintenance, by agencies, utilities, or private landowners, is not impacted. As such, the following practices are considered de minimis:

1. Drilling and outfitting of residential water wells (including covered storage tank installation, pumps, and water pipelines) more than 0.6 miles from the perimeter of an occupied lek. Construction within 0.6 miles of an occupied lek is allowed from July 1 through March 14, after a habitat evaluation has occurred, and provided development does not occur on the lek.

2. Construction of residential or agricultural electrical distribution lines more than 0.6 miles from the perimeter of an occupied lek. Construction within 0.6 miles of an occupied lek is allowed when: a habitat evaluation has occurred, lines are not constructed on the lek itself, and construction takes place between July 1 and March 14.

3. Preventative or required maintenance to existing private or county roads within the right-of-way (blading/smoothing, filling pot holes, graveling, culvert replacement, right-of-way maintenance, cattle guard maintenance, etc.) are considered "de minimis". Road construction activities (vertical or horizontal realignment, roadway widening, new construction, bridge replacement,

etc.) are not considered "de minimis" and may require completion of a Density/Disturbance Calculation Tool (DDCT) analysis (Pendleton 2015).

4. General and operational maintenance activities of existing power lines and associated facilities, so long as the electric utility follows appropriate/applicable BMPs for electric utilities (APLIC 2015). Coordination of ongoing activities with the WGFD is encouraged.

Habitat

Habitat projects may directly or indirectly benefit sage-grouse. The following habitat related projects are considered de minimis:

1. Construction of aquatic habitat improvements, less than ten wetland or water surface acres, more than 0.6 miles from the perimeter of an occupied lek. Construction within 0.6 miles is allowed from July 1 through March 14, after a habitat evaluation has occurred, and provided development does not occur on the lek.

2. Spring development: if the spring is protected with fencing and enough water remains at the site to provide mesic (wet) vegetation. Fences should be constructed to be highly visible to Greater sage-grouse (i.e., buck-and-rail, steeljack, etc.) and/or marked to minimize collision potential.

3. Authorized herbicide applications; pesticide treatments for grasshoppers/Mormon crickets following Reduced Agent and Area Treatment (RAATs) protocol; vector treatments for other diseases such as West Nile Virus. All treatments must be done in accordance with regulations and labels. Coordination with Weed & Pest Districts is encouraged. See Appendix C – Habitat for guidance on vegetation treatment projects.

4. Conifer removal projects more than 0.6 miles from the perimeter of an occupied lek. Conifer removal within 0.6 miles is allowed from July 1 through March 14.

5. Reclamation seeding.

APPENDIX H
DATA COLLECTION AND REPORTING

Collecting and analyzing data is essential in assessing the influence of Executive Order 2019-3. The State of Wyoming should collect and analyze Greater sage-grouse population and habitat trend data, identify data gaps and research needs and recommend adaptive management actions as needed (Appendix I). The State will further work with federal partners, researchers, managers, and conservation organizations to aggregate all relevant, non-proprietary data being collected in sage-grouse habitats throughout the state. These compiled data will be analyzed and reported annually to establish the effect on populations and habitats of all activities pursued under purview of this Executive Order.

All state agencies shall report permitting actions, conservation efforts and population data by March 31 annually. Population and habitat trends relative to development and conservation activities, identified data gaps and research needs, and adaptive management recommendations will be reported by the State no later than April 30 annually for the previous calendar year.

Federal agencies are expected to contribute permitting actions, conservation efforts and other relevant reports annually (Appendix A).

Population Monitoring Data

Sage-grouse populations are monitored via: 1) lek counts and surveys, 2) harvest statistics, and 3) data derived from wing collections from harvested birds. Lek data can be analyzed in many ways, but is primarily used to estimate the average number of peak male sage-grouse per active lek. This provides a trend of sage-grouse populations over time and should be interpreted concurrently with the number of active vs. inactive leks.

Harvest statistics are collected via a voluntary hunter survey after the September hunting season and provide an estimate of the number of birds harvested, number of hunters, and the number of hunter days spent afield. Hunters voluntarily submit sage-grouse wings, allowing Wyoming Game and Fish Department (WGFD) biologists to estimate chick production/recruitment from the ratio of the number of chicks per hen. Greater sage-grouse population data is reported by WGFD in an annual Job Completion Report.

Conservation Efforts Data

Conservation efforts to benefit sage-grouse and their associated habitat are conducted by a wide variety of public and private entities. Conservation efforts will be recorded in the Wyoming Conservation Efforts Database and be reported to the U.S. Fish and Wildlife Service Conservation Efforts Database.

Permitting Data

Agencies are involved in permitting and may have data to report related to regulated activities include, but are not limited to:

- Office of State Land and Investments
- Department of Environmental Quality
- State Engineer's Office
- Industrial Siting Council
- Department of Transportation

- Oil and Gas Conservation Commission
- Game and Fish Department

These agencies will provide data related to the Sage Grouse Implementation Team (SGIT) on regulated activities occurring in Greater sage-grouse population areas in a consistent and useable manner. It is acknowledged that agency systems are generally designed to track regulated activities and may not be set up to track activities related to Executive Order 2019-3. Therefore, some data that is desirable may not be available at the present time without the dedication of additional resources.

The following is a list of items that may be tracked and reported by the agencies listed in this section.

- Permits
- Exceptions
- Exemptions
- Disturbance
- Violations
- Reclamation
- Compensatory mitigation credit

Federal agencies recognize the importance of providing permitting related data to SGIT. Federal agencies are expected to provide permitting data (e.g.- NEPA decisions, permits, exceptions, waivers, modifications) in accordance with the timeline in this Appendix.

Data Analyses

The State should analyze compiled data annually and will work with SGIT to identify data and information gaps necessary to effectively assess Greater sage-grouse habitat conditions, population trends and overall effectiveness of Executive Order 2019-3.

APPENDIX I
WYOMING GREATER SAGE-GROUSE ADAPTIVE MANAGEMENT PLAN

The Wyoming Greater sage-grouse adaptive management plan provides a means of addressing and responding to unintended negative impacts to Greater sage-grouse and their habitat before consequences become severe or irreversible. The plan uses science-based soft and hard response triggers and addresses multiple scales of data through an Adaptive Management Working Group. Figure 1 describes the Wyoming Adaptive Management Plan workflow to help visualize these interactions.

Adaptive Management Working Group and Technical Team

A Statewide Adaptive Management Working Group (S-AMWG) was established in consultation with the SGIT to provide an appropriate means for state and federal agencies to cooperatively assess and address abnormal fluctuations in populations and habitats should those events occur. Members of this team include representatives of BLM, Forest Service, USFWS, NRCS (as appropriate) and an equal number of representatives from the State of Wyoming (as appropriate).

Generally, Local Working Groups (LWG) will identify when and where a trigger may be tripped and communicate a need for review to the S-AMWG. In consultation with the Local Working Group, the S-AMWG would then assemble a Technical Team comprised of local specialists best equipped to develop a response strategy aimed at reversing the trigger. The primary purpose of this Technical Team is to evaluate potential causal factors and where appropriate, suggest a response strategy to address the factor(s).

In some instances, a single causal factor may be unidentifiable (e.g.- drought combined with a fire) or beyond control of management (e.g.- weather). Upon any indication of a potentially tripped trigger, the Adaptive Management Working Group shall notify holders of permits, leases, rights of way or easements of the situation and involve them in the causal factor assessment and response strategy development.

The Adaptive Management Working Group will meet annually to review all data collected in the prior year regarding Greater Sage-grouse populations and habitats to continue to refine assessments and responses until the trigger is no longer tripped.

Adaptive Management Triggers

Adaptive management triggers are essential for identifying when changes might be needed in order to continue meeting Greater sage-grouse Conservation objectives laid out in Executive Order 2019-3 and federal land management plans. The trigger data will be analyzed annually as soon as it becomes available. Soft and hard triggers are based on three metrics:

1. Number of active leks;
2. Acres of available habitat; and
3. Population trends based on annual lek counts.

Soft Triggers

Soft triggers are indicators that management may not be achieving the intended results or that unanticipated changes to populations or habitats have occurred that might place habitats or populations at risk. The soft trigger is any departure from normal trends in habitat or population in any given year. Metrics include, but are not limited to: annual lek counts, wing counts, aerial surveys, habitat monitoring, and Density Disturbance Calculation Tool (DDCT) evaluations.

For population metrics, normal population trends are calculated as the five-year running average of annual population counts. This framework calls for management changes if monitoring identifies negative population and habitat anomalies in order to avoid crossing a hard trigger threshold.

Hard Triggers

Hard triggers are indicators that management is not achieving desired conservation results. Hard triggers would be considered a catastrophic indicator that the species is not responding to conservation actions, or that a larger-scale impact or set of impacts is having a negative effect. Within the range of normal population variables (five-year running average of annual population counts), hard triggers shall be determined to take effect when two of the three metrics exceed 60% of normal variability for the area under management in a single year, or when any of the three metrics exceeds 40% of normal variability for a three year time period within a five year range of analysis. A minimum of three consecutive years in a five-year period is used to determine trends (e.g.- years one, two and three, years two, three and four, years three, four and five).

Adaptive Management Response

Soft Trigger Response

Soft triggers require immediate monitoring and surveillance to determine what caused the trigger (aka causal factors) and may require cutting back on activities in the short- or long-term, as allowed by law. If a specific project's activities are identified as the causal factor, then the project level adaptive management strategies will identify appropriate responses. If causal factors are not attributable to a specific project, then the management agency in consultation with the AMWG will implement an appropriate response strategy or make adjustments at a larger regional or state-wide level.

Should review of the monitoring data identify that multiple soft triggers have been tripped in one core area, or the same triggers have been tripped across multiple core areas, the Technical Team will be tasked with verifying the scope and intensity of the trends. Once the analysis of the trends has been completed by the technical team and reported back to the AMWG, the AMWG will make recommendations to the appropriate land managing agency regarding an interim adaptive management strategy to be implemented.

Hard Trigger Response

Where it is suspected that a hard trigger has been tripped, it should be reported to the appropriate LWG for review and confirmation. Upon determination that a hard trigger has been tripped, the LWG should

notify the S-AMWG. Within 14 days of notification from the LWG that a hard trigger has been tripped, the AMWG will convene to develop an *interim response strategy*, or review suggested strategies from the LWG, and start an assessment to determine the causal factor(s).

Should a hard trigger be tripped, the trigger and any recommended adaptive management strategy being implemented will be shared with the appropriate neighboring state(s). Should the need arise for implementation of a multi-state adaptive management strategy, the AMWG will coordinate to develop an effective response.

Interim Strategy

An interim response strategy will be developed, and implemented to the extent permitted by law, within 90 days of determination that a hard trigger has been tripped. The Technical Team will be consulted to identify the scope and scale of the interim strategy. Based on the recommendation of the AMWG, the federal agencies should implement an interim response strategy through an Instruction Memorandum or other management mechanisms to direct management until the causal factor(s) and appropriate response(s) can be determined.

The interim response strategy should consist of appropriate management measures undertaken at the project stage, supported by the best available science, to address the specific metric which has been tripped and may include deferral of some activities as appropriate. If it has been identified that more than one core area has the same hard triggers being tripped, or is trending towards triggers being tripped, the interim strategy will be implemented at the appropriate scale.

Causal Factor Assessment

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

Small Leks

Small leks will be given separate consideration. Due to geographic variations, a definition of "small" is not provided; determination of "small" will be made by the AMWG based upon recommendations of the scientific community.

Generally, "small" is considered 10 or fewer males for a three year time period within a five year range of analysis. If a trigger is hit based upon such a lek, then the AMWG will evaluate the site-specific circumstances and determine appropriate remedial action.

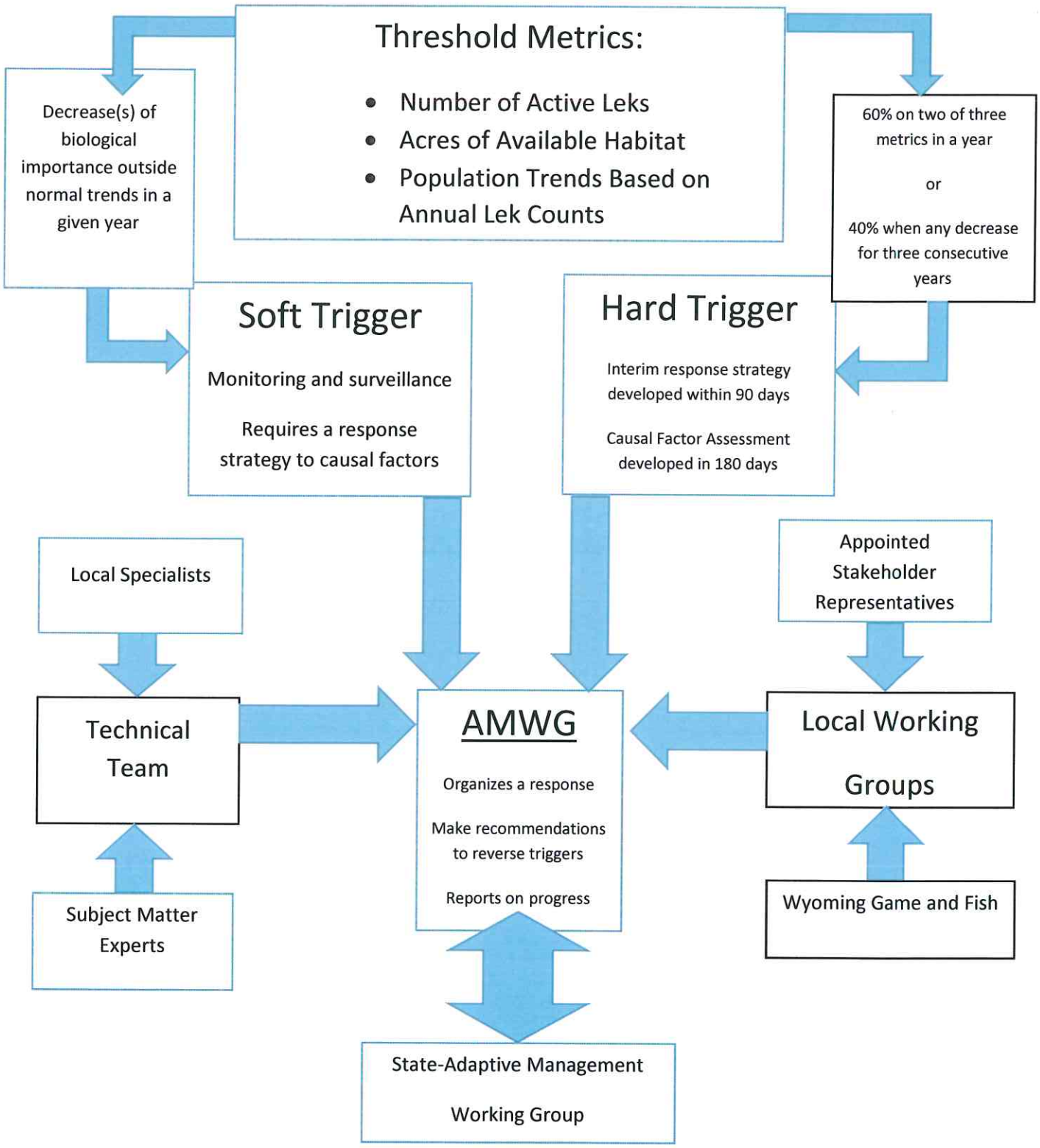

Figure 1: Wyoming Adaptive Management Workflow Diagram