# 6.0 Mitigation

This Mitigation Strategy has been developed by the BLM and the USFS to establish guidelines describing when compensatory mitigation would be warranted, how it would be evaluated at the site-specific scale, what options have been outlined for implementing the compensatory mitigation outcomes, where this mitigation could occur, and what impacts it could have on other resources.

## 6.1 Introduction

Landscape-scale mitigation is an approach to mitigating impacts to resources and values managed by the agencies in order to plan and provide for multiple use and sustained yield of resources on public lands. This landscape-scale mitigation approach is being initiated for this programmatic EIS to identify potential compensatory mitigation opportunities to be selected during site-specific analysis of development proposals.

This introduction provides the background of the regulations as well as a summary of the affected resources and proposed Project. The subsequent sections discuss the federal agencies mitigation hierarchy, their management goals and objections, the OG-committed design features, the additional mitigation proposed through this EIS, and finally the general approach to compensatory mitigation that would occur during site-specific proposals. Any compensatory mitigation enacted on the site-specific proposals must be commensurate to the expected impacts, and demonstrate timeliness and additionality when compared to the action alternatives.

Mitigation is an approach to reduce impacts to resources and values managed by the agencies in order to plan and provide for multiple use and sustained yield of resources on public lands. This landscape-scale mitigation approach is being initiated for this programmatic EIS to identify potential mitigation opportunities (including sites and measures) to be selected during site-specific analysis of development proposals.

### 6.1.1 Regulatory Background

In September 2015, the BLM issued the Record of Decision and Approved Resource Management Plan Amendment for Greater Sage-grouse and the USFS issued the Greater Sage-grouse ROD for Northwest Colorado and Wyoming that included a commitment to create a mitigation strategy to establish guidelines for the protection of resources under agency management. Additionally, the BLM has issued a mitigation handbook, and the USDOI issued IM No. WY-2012-032 implementing the Wyoming Reclamation Policy. These documents are described in more detail below and provide the basis for development of this mitigation section:

- Mitigation Handbook H-1794-1: a manual and handbook issued by the BLM on December 22, 2016, to provide policies, procedures, and instructions for the development of mitigation strategies, planning and implementation.
- Approved Resource Management Plan Amendment Appendix C – Required Design Features: an appendix to the BLM Approved Resource Management Plan Amendment for Greater Sage-grouse released in September 2015. This appendix establishes requirements for the design of lands and realty, range management, fluid minerals, coal exploration, wild horses, travel management, vegetation management, wildfire and fuels management, noise, and West Nile virus in sage-grouse PHMA and GHMA.
- Approved Resource Management Plan Amendment Appendix F – Mitigation Guidelines for Surface-Disturbing and Disruptive Activities on Wyoming BLM Lands: an appendix to the BLM Approved Resource Management Plan Amendment for Greater Sage-grouse released in

September 2015. This appendix provides a compilation of practices employed by the BLM to mitigate impacts from surface disturbance.

- Greater Sage-grouse ROD Appendix B – Mitigation Strategy: an appendix to the USFS Greater Sage-grouse ROD for Northwest Colorado and Wyoming including Land Management Plan Amendments for the TBNG issued on September 2015. This appendix states that the USFS will require mitigation resulting in a net conservation gain to the greater sage-grouse in authorizing third-party actions with the potential to remove or degrade greater sage-grouse habitat.
- Mitigation Policy (600 DM 6): a new chapter added to the USDOI Departmental Manual on October 23, 2015. This chapter sets forth the USDOI policy and provides guidance to bureaus and offices on the implementation of mitigation measures associated with the management of federal lands, waters, and other natural and cultural resources under the jurisdiction of the Department, including the use of best available science and landscape-scale approaches.
- Instruction Memorandum No. WY-2012-032: an IM dated March 27, 2012, implementing Wyoming Reclamation Policy. The Associate State Director implemented the Wyoming Reclamation Policy, which identifies ten reclamation requirements that must be addressed when developing reclamation proposals for surface disturbing activities.

## 6.1.2 Public Land Uses and Affected Resources

The public lands in the CFO primarily are used for livestock grazing, mineral extraction, and recreation (camping, hiking, hunting, and OHV use where allowed). The CFO provides 462 leases for the grazing of cattle, sheep, horses, bison, and goats on 1.4 million acres of public lands (BLM 2007b). Mineral leases allow for the extraction of coal, geothermal resources, oil and gas, and other solid leasable material such as bentonite, phosphates, trona, and uranium. Recreational use of public lands in the CFO includes relatively unregulated use of rural lands including four Special Recreation Management Areas, two National Back Country Byways and miles of NHTs.

Resources that likely would be impacted by the Converse County Oil and Gas Project would be biological, heritage, and visual in nature. Biological resources generally would relate to terrestrial wildlife habitat with an emphasis on sage grouse, raptors, and migratory birds. Impacts to cultural resources and resources of Native American concern would directly affect cultural resources of all types as well as the integrity of the viewshed for many of these types of resources, including in the vicinity of the NHTs and the Pine Ridge area. More information on impacts to these areas and resources can be found in Chapters 4.0 and 5.0 of the EIS.

## 6.1.3 Converse County Oil and Gas Project

### 6.1.3.1 Description of Converse County Project Area

The Project is an oil and natural gas exploration and development project proposed by an OG comprised of Anadarko, Chesapeake Energy Corporation, EOG Resources, Inc., Devon Energy, and SM Energy.

The CCPA comprises an area of approximately 1.5 million acres in Converse County, Wyoming. Approximately 6 percent of the CCPA is public lands administered by the BLM, 4 percent is administered by the USFS within the TBNG, seven percent is administered by the State of Wyoming, and the remaining 83 percent is privately owned. The BLM administers the minerals underlying approximately 64 percent of the land surface within the CCPA. The CCPA is dominated by rolling plains with sagebrush shrubland and grassland as the dominant vegetation communities.

Existing oil and gas infrastructure within the CCPA consists of the following (WOGCC 2015b):

- 1,520 productive wells on 1,366 well pads;
- 16 waste water disposal well pads;

- 1,822 miles of access roads;
- 5 gas plants;
- 1 central processing facility;
- 18 compression facilities;
- 1 equipment/pipe storage yard;
- 1 workforce facility;
- 6 freshwater makeup ponds;
- 1,184 miles of gas gathering and trunk pipelines;
- 538 miles of oil gathering and trunk pipelines; and
- 911 miles of overhead electrical distribution lines.

Approximately 20 pipeline operators service the various oil and gas fields within the CCPA. The greatest concentration of gathering pipelines occurs in the southeastern and northwestern portions of the CCPA. In the center of the CCPA four co-located gas trunk pipelines run north to south passing through the USFS administrative boundary for the TBNG. Rocky Mountain Power and Niobrara Electric provide power to the CCPA through 911 miles of electrical distribution lines. Of the 911 miles of electrical distribution lines, 779 are owned and operated by Rocky Mountain Power (Rocky Mountain Power 2015) and 132 are owned and operated by Niobrara Electric (Niobrara Electric 2015).

Planned federal oil and gas development in the CCPA includes those facilities described in the NEPA documents for the following previously approved development projects:

- Mowhawk EA: up to 32 wells on 6 well pads;
- Scott Field EA: up to 150 wells on 40 well pad;
- Spearhead Ranch EA: up to 224 wells on 56 well pads;
- Highland Loop Road EA: up to 148 wells on 37 well pads;
- East Converse EA: up to 72 wells on 18 well pads; and
- Samson Hornbuckle EA: up to 288 wells on 48 well pads.

Based on the foregoing documents and accounting for the mineral ownership in the area, an estimated 1,663 wells remain to be drilled on 361 new well pads in addition to the 1,520 existing wells in the CCPA (as of January 9, 2015). Infrastructure also would be constructed to support the 1,633 new wells as disclosed in the above NEPA documents.

#### 6.1.3.2 Description of Proposed Development of the CCPA

The OG proposes to explore and develop potentially productive subsurface formations underlying the CCPA. Planned activities include the following:

- 5,000 oil and natural gas wells on 1,500 multi-well pads at a rate of 500 well per year for a period of 10 years;
- 455 additional pads for production, water source, and disposal wells;
- 1,580 miles of new well pad access roads;
- 390 miles of collector roads;
- 874 acres of construction and production facilities; and

- 17,272 acres of linear facilities (oil and gas pipelines, water pipelines, and electrical distribution lines).

#### 6.1.3.3 Summary of Proposed Surface Disturbance within the CCPA

The existing oil and gas infrastructure occupies approximately 13,819 acres (0.9 percent) of the CCPA. Planned oil and gas infrastructure would disturb an additional 10,253 acres (0.7 percent) of the CCPA. The Proposed Action would disturb 52,667 acres in addition to the existing and planned development resulting in 5.1 percent of the CCPA disturbed by existing and future development. Impacts to resources from development are analyzed in Chapter 4.0 of the EIS.

## 6.2 Mitigation Hierarchy

The mitigation hierarchy involves three levels of action to limit the negative impacts of development projects that are applied in the following order: avoidance, minimization, rectification, reduction, and compensation.

### 6.2.1 Avoidance

Avoidance of valued resources during project siting and/or execution requires early screening of biodiversity, ecological services, cultural resources, and other identified resources of value as well as analysis of alternate locations for siting or schedule adjustments. Development in areas where NSO, CSU, and timing limitation stipulations apply should be avoided per the guidance in the CFO RMP, the USFS TBNG LRMP, the BLM Approved Resource Management Plan Amendment, and the USFS Land Management Plan Amendments. Resources within the CCPA to be spatially and temporally avoided include the following:

- Class 1 and Class 2 waters – CSU within 500 feet to 0.25 mile
- Cultural resources
- Highly erosive soils
- Slopes greater than 40 percent and soils susceptible to mass failure.
- Historic trails
  - NSO on selected parcels along the Bozeman and Oregon trails as identified in Appendix W of the BLM ROD and Approved Casper RMP (BLM 2007b) and on trail traces mapped in the CFO GIS database
  - CSU within 0.25 mile or the visual horizon of trail remains, and extending to the viewshed foreground (out to a maximum of 3 miles)
- Mountain plover
  - 0.25-mile buffer around occupied mountain plover nests
  - Conditions of approval on APDs from April 10 to July 10 where populations are known to occur
- Prairie dog town complexes
  - Prohibit construction and drilling from March 1 through August 31 if black-footed ferrets are present in the TBNG
- Raptor nests
  - Bald Eagle – 1-mile NSO buffer from February 1 to July 31
  - Bald Eagle winter roosts – 1-mile NSO buffer from November 1 to March 31

- Golden Eagle – 0.25-mile NSO buffer from February 1 to July 31
- Merlin – 0.25-mile NSO buffer from April 1 to August 15
- Ferruginous Hawk – 0.25-mile NSO buffer from March 1 to July 31
- Swainson's Hawk – 0.25-mile NSO buffer from March 1 to July 31
- Burrowing Owls – 0.25-mile NSO buffer from April 15 to August 31
- Other raptors – 0125-mile buffer from February 1 to July 31

- Raptor artificial nesting structures February 1 to July 31
  - Ferruginous Hawk – 0.5-mile NSO buffer plus 0.5 mile seasonal buffer
  - Golden Eagle – 0.5-mile NSO buffer
- Sage grouse, leks, core areas, nesting, early brood-rearing, wintering habitats, PHMAs, and GHMAs
  - NSO or no surface disturbing activities on or within a 0.6 mile radius of the perimeter of occupied sage-grouse leks
  - No surface disturbing and/or disruptive activities within PHMA from March 15 to June 30 to protect sage-grouse breeding, nesting, and early brood rearing habitat
  - No surface disturbing and/or disruptive activities within PHMAs (connectivity only) from March 15 to June 30 to protect breeding, nesting, and early brood-rearing habitats within 4 miles of the lek or lek perimeter of any occupied sage-grouse lek
  - No surface disturbing and/or disruptive activities from March 15 to June 30 to protect sage-grouse nesting and early brood rearing habitats within 2 miles of the lek or lek perimeter of any occupied lek located outside PHMAs
  - NSO within 0.25 mile of occupied leks. Avoid human activity between 8 PM and 8 AM from March 1 to May 15 within GHMAs
  - Avoid surface disturbing activities in suitable nesting and early brood rearing habitats within 2 miles of occupied leks or in identified nesting and brood rearing habitats outside of the 2-mile buffer from March 15 to July 15 within GHMAs
  - Construction of new oil and gas development is prohibited within 0.25 mile of display grounds within GHMAs
  - No construction or drilling within 2 miles of active display grounds from March 1 to June 15 within GHMAs
  - Limit new noise levels to 10 dBA above ambient noise (existing activity included) measured at the perimeter of a lek from 6 PM to 8 AM from March 1 to May 15
  - Avoid surface disturbance in winter concentration areas from December 1 to March 15
- Sharp-tailed grouse
  - Construction of new development is prohibited within 0.25 mile of active display grounds in the TBNG
  - Construction and drilling is not permitted within 1 mile of active display grounds from March 1 to June 15 on the TBNG
- Special management areas
- Special status plant species – NSO on designated critical habitat
- Springs and wells

  - CSU within 500 feet
  - Swift fox dens – no construction or drilling within 0.25 mile of dens from March 1 to August 31
- Waterbodies – NSO within 500 feet; and
- Wetlands and riparian areas – NSO within 500 feet

### 6.2.2 Minimization

Minimization is defined as measures taken to limit the degree or magnitude of the action and its implementation (BLM 2016d). It requires making reasonable predictions of impacts that would remain after avoidance has been applied and looking for minimization opportunities throughout the life of the project. Minimization measures would best be achieved in conjunction with monitoring and adaptive management. This EIS identifies existing requirements, regulatory guidelines, OG-committed design features, and additional mitigation measures (Section 6.6) designed to minimize impacts.

### 6.2.3 Rectification

Rectification involves repairing, restoring, or rehabilitating impacts to a resource that cannot be avoided or adequately minimized. The type and amount of rectification would depend on the importance, sensitivity, and scarcity of the resource as well as existing land use plan or policy protection measures. Rectification would take place as soon as possible after the onset of the impacts.

### 6.2.4 Reduction

Impact reduction typically involves actions taken over time to reduce or eliminate impacts to resources that cannot be avoided or adequately minimized or rectified. Much like rectification, the type and amount of rectification would depend on the importance, sensitivity, and scarcity of the resource as well as existing land use plan or policy protection measures and would take place as soon as possible after the onset of the impacts.

### 6.2.5 Compensation

Compensatory mitigation is the final step in the mitigation hierarchy and aims to compensate for residual impacts that cannot be avoided or adequately minimized. Compensation is the act of replacing or providing substitute resources or environments (BLM 2016d). Compensation goals often involve no net loss or measurable net gain to offset project impacts. Typically compensatory mitigation would target the same resources or ecosystem services that are impacted, but that is not always the case. Occasionally the target resources or ecosystem services could be different from what was impacted if it is judged to be of a higher priority.

When impacts that exceed RMP thresholds cannot be avoided or adequately minimized to an acceptable degree, compensatory mitigation may be necessary. It can either be conducted by the project applicant or the applicant can pay another party to conduct the mitigation. Compensatory mitigation likely would be required if residual impacts were to result in any of the conditions discussed below.

#### 6.2.5.1 Laws, Regulations, Policies, and Land Use Plan Objectives

If residual impacts affect the ability to comply with laws, regulations, policies, and/or land use plan objectives compensatory mitigation would be warranted to offset the impact(s). This category would apply to the request for exceptions to timing limitation stipulations under Alternative B. The selected forms of mitigation should consider other agency, tribal, state, and local laws, regulations, and policies and the beneficial or negative effects that could occur from the selected forms of mitigation.

#### 6.2.5.2 Mitigation and the NEPA Process

If residual effects are to resources that are considered important, scarce, sensitive, or have a protective legal mandate identified through a NEPA process warranting compensatory mitigation, the compensatory mitigation would be warranted.

#### 6.2.5.3 Types of Compensatory Mitigation

There are four types of compensatory mitigation typically used; restoration, establishment, enhancement, and preservation (BLM 2016d). All are focused on benefiting a resource value.

Restoration

Restoration mitigation can be used to return or re-establish an area containing a valuable resource, or resources to pre-disturbance conditions or a condition equal to baseline conditions. This could apply to important wildlife habitat, river segments, or a culturally important location. Complete restoration could take considerable time and would be subject to environmental conditions.

Establishment

Establishment mitigation is the creation of an environment that is conducive to the existence of a resource value. This is accomplished through the manipulation of physical, chemical, and/or biological characteristics in an area that did not previously support the resource value.

Enhancement

Enhancement mitigation is used to improve an area that supports a resource value. The resource value can be biological, cultural, or human use of the land (i.e., recreational or visual).

Preservation

Preservation mitigation is used to develop a plan for long-term protection of a resource value from future impacts through legal or physical mechanisms. This would often include a reduction or exclusion of an action that is incompatible with the desired condition necessary for the resource value.

## 6.3 Federal Agency Management Goals and Objectives

The overall goal of this mitigation section is to provide guidance for the development of mitigation measures during subsequent site-specific evaluation of development proposals for the Project. Mitigation is organized to address the following specific objectives:

- Identify the goals and objectives of the BLM CFO RMP and the 2015 Approved Resource Management Plan Amendment, and the USFS TBNG LRMP and the Greater Sage-grouse ROD;
- Identify resources that would be impacted by development; and
- Identify key conservation opportunities.

### 6.3.1 BLM Casper Field Office

The goals and objectives of the BLM CFO involve the management of the following eight resource topics as listed in the ROD and Approved Casper RMP as amended in 2012.

1. Physical Resources;
2. Mineral Resources;
3. Fire Management and Ecology;

4. Biological Resources;
5. Heritage and Visual Resources;
6. Land Resources;
7. Special Management Areas; and
8. Socioeconomic Resources.

Six of the eight resource topics could be affected by oil and gas development and are discussed in Sections 1.2.1.1 through 1.2.1.6

### 6.3.1.1 Physical Resources

Goal PR:1 Minimize the impact of management actions in the planning area on air quality by complying with all applicable air quality laws, rules, and regulations.

Objectives:

PR:1.1 Comply with applicable state and federal AAQS for criteria pollutant concentration levels associated with management actions.

PR:1.2 Maintain concentrations of PSD pollutants associated with management actions in compliance with the applicable increment.

Goal PR:2 Implement management actions within the scope of the BLM's land-management responsibilities to improve air quality as practicable.

Objectives:

PR:2.1 Reduce visibility-impairing pollutants in accordance with the reasonable progress goals and timeframes established within the State of Wyoming's Regional Haze State Implementation Plan.

PR:2.2 Reduce atmospheric deposition levels below generally accepted level of concern and level of acceptable change.

Goal PR:5 Maintain or improve surface water and groundwater resources consistent with applicable state and federal standards and regulations.

Objectives:

PR:5.1 Maintain watershed, wetland, and riparian functions to support surface-flow regimes and water quality.

PR:5.2 Minimize or control contributions of nonpoint source pollution from public lands to receiving waterbodies, with particular attention being paid to special management waters (i.e., water quality limited segment) established by the State of Wyoming.

PR:5.3 Improve control of sources of pollutants on federal lands that may threaten drinking-water sources.

Goal PR:6 Provide for physical and legal availability of water to facilitate authorized uses on public lands and to protect and provide conservation of those waters.

Objectives:

PR:6.2 Improve opportunities for water conservation. Apply water conservation measures to all developments, where practical.

PR:6.4 Develop and implement a procedure for conversion of abandoned oil and gas wells to livestock and wildlife water supply use.

Goal PR:7 Bring all watersheds to their full potential conditions.

Objectives:

PR:7.2 Improve protection for surface water and groundwater sources.

#### 6.3.1.2 Biological Resources

Goal BR:1 Manage for the biological integrity of terrestrial and aquatic ecosystems to sustain vegetation, fish, wildlife, and special status species, while providing for multiple uses of BLM-administered lands.

Objectives:

BR:1.1 Maintain a diversity and distribution of plant species, habitats, seral stages, and types (e.g., age, structure, cover classes, density), including forests and woodlands, grasslands, mountain shrublands, sagebrush (all subspecies), riparian/wetland areas, and desert shrublands.

BR:1.6 Maintain internal (BLM) and external support for managing invasive and noxious plant species using an integrated approach for the detection, control, or eradication of new infestations.

BR:1.7 Continue coordination of invasive and noxious plant species detection and control activities across jurisdictional and political boundaries and include provisions for invasive and noxious plant species management for all BLM-funded or authorized actions.

BR:1.8 Maintain adequate baseline information regarding the extent and control of invasive and noxious plant species to make informed decisions, evaluate effectiveness of management actions, and assess progress toward goals to improve invasive and noxious plant species management.

BR:1.14 Maintain or improve the continuity and productivity of wildlife habitats to support the WGFD wildlife population objectives.

BR:1.15 Maintain and improve seasonal habitats (e.g., concentration areas, migration corridors, etc.) of fish, wildlife, and special status species on a landscape scale.

BR:1.17 Maintain special status species plant communities in natural patterns on a landscape scale and maintain special status plant species' habitats in proper functioning condition, including natural diversity (i.e., composition and mosaics) and recognizing the impacts of natural processes (i.e., fire).

Goal BR:2 Manage all BLM actions or authorized activities to sustain plant, fish, and wildlife populations and their habitats and to avoid contributing to the listing of or jeopardizing the continued existence or recovery of special status species and their habitats.

Objectives:

BR:2.1 Minimize adverse impacts and mitigate unavoidable impacts to plant, fish, wildlife, and special status species and their habitats from BLM actions and authorized activities.

Goal BR:4 Manage terrestrial and aquatic ecosystems to provide sustainable recreational and educational benefits to the public.

Objectives:

BR:4.1 Improve public awareness and support, including partnerships, for the conservation, restoration, and management of vegetation, fish, wildlife, and special status species programs.

BR:4.2 Provide wildlife and wildlife habitat outreach and educational materials to the public on an annual basis.

#### 6.3.1.3 Heritage and Visual Resources

Goal HR:1 Preserve and protect cultural and paleontological resources and ensure that they are available for appropriate use by present and future generations.

Objectives:

HR:1.1 Develop project or site-specific treatment plans or other protective measures for special areas or cultural resources in areas of high risk for development or at high risk for adverse impacts.

HR:1.2 Consult with Native American tribal governments at the leasing stage for proposed land uses having the potential to impact cultural resources identified as having tribal interests or concerns.

Goal HR:3 Promote stewardship, conservation, and appreciation of cultural and paleontological resources.

Objectives:

HR:3.1 Maintain and enhance programs that provide opportunities for scientific research of cultural and paleontological resources.

HR:3.2 Improve educational opportunities and public outreach programs.

HR:3.3 Develop and maintain interpretation of cultural and paleontological resources in areas of high public interest and access.

Goal HR:4 Establish a working relationship with Native American tribes.

Objectives:

HR:4.1 Maintain proactive consultation with Native Americans, as appropriate, to identify resource types or places that may be impacted by BLM authorizations or actions.

Goal HR:5 Manage public lands in a manner that will maintain the overall scenic (visual) quality of these lands.

Objectives:

HR:5.1 Class II: Retain the existing character of the landscape. The level of change should be low. Management activities should be seen, but not attract attention of the casual observer. The basic elements of form, line color, and texture found in the predominant natural features of the characteristic landscape should be repeated.

HR:5.2 Class III: Partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

HR:5.3 Class IV: Provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the focus of the viewer's attention; however, every attempt should be made to minimize the impacts of these activities through careful location, minimizing disturbance, and repeating elements.

#### 6.3.1.4 Land Resources

Goal LR:1 Manage the acquisition, disposal, withdrawal, and use of public lands to meet the needs of internal and external customers and to preserve important resource values.

Objectives:

LR:1.3 Maintain availability of public lands to meet the habitation, cultivation, trade, mineral development, recreation, and manufacturing needs of external customers and the general public.

Goal LR:3 Manage public lands to meet transportation and ROW needs.

Objectives:

LR:3.1 Make public lands available to meet the needs of major ROW customers (e.g., an intrastate pipeline).

LR:3.2 Make public lands available to meet the needs for smaller ROW (e.g., roads or pipelines for oil fields).

#### 6.3.1.5 Special Management Areas

Goal SD:10 Manage the Sand Hills Management Area to maintain the integrity of soils and vegetation and to protect highly erosive soils and watershed values.

Goal SD:14 Manage historic trails for long-term heritage and educational values and to enhance the public experience.

Objectives:

SD:14.1 Sites associated with historic trails will be interpreted and developed as needed.

SD:14.2 Maintain compatible recreational use with historic trail values.

Goal SD:16 Reduce imminent threats from natural or human-caused deterioration or potential conflicts with other resource uses.

Objectives:

SD:16.1 Maintain an inventory and evaluate trail segments for contributing or non-contributing status and include this information in a revised trails management plan.

SD:16.3 Maintain setting for those contributing trail segments where setting is an aspect of integrity by utilizing viewshed management tools.

SD:16.4 Develop activity plans for contributing trails segments and associated sites identified as high risk for adverse impacts.

#### 6.3.1.6 Socioeconomic

Goal SR:1 Provide opportunities to develop national energy resources on BLM-administered lands within the planning area.

Goal SR:3 Provide opportunities to sustain the cultural, social, and economic viability of local and regional communities by using decision-review processes that include considerations of various potential impacts of BLM decisions, including housing, employment, population, fiscal impacts, social services, cultural character, and municipal utilities.

Goal SR:5 Reduce potential risks associated with known hazards resulting from human activity, including, but not limited to, health and safety issues and other sensitive resource values.

### 6.3.2 USFS Thunder Basin National Grassland Goals and Objectives

The goals and objectives of the USFS TBNG involve the management of grassland that is consistent with the USFS mission of sustaining the health, productivity, and diversity of the land to meet the needs of present and future generations. The four goals and associated objectives are discussed in Sections 1.2.2.1 through 1.2.2.4.

#### 6.3.2.1 Goal 1: Ensure Sustainable Ecosystems

Promote ecosystem health and conservation using a collaborative approach to sustain the Nations forests, grasslands and watersheds.

Goal 1.a: Improve and protect watershed conditions to provide the water quality and quantity and soil productivity necessary to support ecological functions and intended beneficial water uses.

Objectives:

1. Within 10 years, identify watershed conditions to provide baseline data sufficient to meet the following objectives:
    - Improve 20 percent of 6th Hydrologic Unit Code (sub-watershed) level watersheds from Class II to Class I, or from Class III to Class II. Maintenance of unimpaired watersheds and restoration of impaired watershed are high priorities.
    - Achieve a 20 percent reduction in acres of eroded or disturbed soils by Forest Service permitted or management actions.
    - Achieve a 20 percent reduction in the amount of degraded waterbodies, such as dam impoundments by Forest Service permitted or management actions.
2. Implement management practices that will move at least 80 percent of riparian areas and woody draws toward self-perpetuating tree and shrub communities within site capability.
3. At least 80 percent of the perennial streams will meet or move toward proper functioning condition.
4. Within 15 years, identify, maintain, and/or improve stream flows for at least 10 percent of stream segments having high resource values within watersheds.
5. Throughout the life of the Plan, ensure proper plugging of abandoned wells to prevent cross contamination of aquifers (e.g., seismograph holes, water wells, etc.).

Goal 1.b: Provide ecological conditions to sustain viable populations of native and desired non-native species and to achieve objectives for MIS.

Objectives:

1. As scientific information becomes available, jointly develop with the USFWS and other agencies conservation and recovery strategies for plant and animal species, listed as threatened or endangered under the ESA, and implement established conservation or recovery strategies over the life of the Plan.
2. Within 15 years, demonstrate positive trends in population viability, habitat availability, habitat quality, population distribution throughout the species range within the planning area, and other factors affecting threatened, endangered, sensitive species and MIS.
3. Develop and implement conservation strategies for Forest Service sensitive species, as technical information becomes available.
4. Within 15 years, conserve populations of species at risk and rare communities by demonstrating positive trends in habitat availability and quality, or any other applicable factors affecting species at risk.
5. Identify rare plant and animal communities, inventory them, and develop associated management strategies to conserve them. Support the development and implementation of State and Regional Conservation Plans as they apply to the grassland or forest units.
6. Within 10 years, provide sufficient habitat for MIS to reduce adverse impacts on populations during droughts.
7. Establish scientifically credible monitoring programs, develop survey methods, and initiate baseline and trend surveys for populations, habitats and/or ecological conditions to contribute to viability of threatened and endangered species, species at risk, and MIS.
8. Complete and initiate implementation of conservations strategies for globally rare plant species (G2-3 rankings) including Barr's milkvetch and other high priority species in cooperation with other conservation agencies and organizations.
9. Conduct target surveys for globally rare plant species (Barr's milkvetch, smooth goosefoot, Ute ladies' tresses) and other rare plant species with viability concerns.

Goal 1.c: Increase the amount of forests and grasslands restored to or maintained in a healthy condition with reduced risk and damage from fires, insects and diseases, and invasive species.

Objectives:

1. Within 10 years, implement management practices, including prescribed fire, that will move all affected landscapes toward desired vegetation composition and structure as described in Geographic Area direction.
2. Over the next 15 years, retain only those range structures (fences and water developments) that achieve resource management (i.e., wildlife habitat, botanical, range management, visual quality, and recreation) goals and objectives.
3. Within 5 years, develop and implement cooperative noxious weeds and undesirable non-native or invasive species management plans in consultation with appropriate partners and agencies.
4. Within 3 years, develop and implement a certified noxious weed-free forage program in consultation with appropriate state agencies.
5. Within 10 years, limit further expansion of areas affected by noxious weeds.
6. Within 10 years, implement an integrated prevention and pest control management program for noxious weeds and undesirable non-native or invasive plant species.
7. Immediately initiate hazardous material cleanup on identified sites.

8. In a timely manner, review PSD permit applications, and make recommendations where needed to reduce impacts to those Congressionally designated Class I areas specified in the Federal Clean Air Act as subject to air quality related values.

#### 6.3.2.2 Goal 2: Multiple Benefits to People

Provide a variety of uses, values, products, and services for present and future generations by managing within the capability of sustainable ecosystems.

Goal 2: Multiple Benefits to People Provide a variety of uses, values, products, and services for present and future generations by managing within the capability of sustainable ecosystems.

Goal 2.a: Improve the capability of the Nation's forests and grasslands to provide diverse, high-quality outdoor recreation opportunities.

Objectives:

1. Annually maintain or reconstruct 20 percent of National Grassland trails to regional standards.
2. Over the next 15 years, provide readily available information concerning recreation opportunities for developed, historic, and cultural sites.
3. Within 5 years, provide appropriate directional signing to key recreation sites and inform people about the public access routes to national grasslands and national forests.
4. Within 10 years, complete site and recreation plans, including rehabilitation and re-vegetation strategies. As demand warrants, increase recreational opportunities where compatible with resource objectives. These opportunities may include trails, campgrounds, and interpretation.
5. Within 5 years, draft and begin implementing a science and marketing based interpretive program strategy that uses a variety of communication media. The purpose of the strategy will be to effectively use communication principles and methods based in the field of interpretation to:
    - Communicate with target audiences regarding management concerns or issues, changes in management direction, and specific projects
    - Enhance visitor's recreation experiences by identifying and implementing interpretive projects that highlight national grassland and forest resources and management.
6. Provide non-motorized and motorized trails for a wide variety of uses and experiences.
7. Manage trail systems to minimize conflicts among users.
8. When appropriate, authorize special use permits for outfitter-guide services on National Forest System lands.
9. Through partnerships, encourage, establish, and sustain a diverse range of recreational facilities and services on National Forest System lands. Encourage outfitters and guides who support interpretive and educational awareness of grassland ecosystems or who provide services to people with disabilities.
10. When appropriate, designate, and manage outfitted camp locations.

Goal 2.b: Improve the capability of wilderness and protected areas to sustain a desired range of benefits and values.

*Wilderness Objective:*

1. Within 5 years of Congressional designation, revise or develop wilderness plans to emphasize recreational, aesthetic, and educational experiences consistent with values of those areas.

*Heritage Sites Objectives:*

1. Within 5 years, develop and implement a heritage inventory strategy and implementation schedule to survey and evaluate sites, in support of management actions and activities as agreed upon with the SHPO, Tribal Historic Preservation Offices and to include compliance with laws Sec. 106 and Sec. 110 of the NHPA.
2. Within 5 years, assess identified sites eligible for the NRHP in conjunction with SHPO and Tribal Historic Preservation Offices and provide interpretation for NRHP sites where appropriate and consistent with developed preservation plans.
3. Within 3 years, identify and protect traditional cultural properties in consultation with federally recognized American Indian tribes.
4. Within 10 years, update prehistoric, ethnographic, and historic overviews.
5. Educate, interpret, and promote partnerships to increase public awareness, protect heritage resources, and further the goals of research.

*Special Areas Objective:*

1. Within 5 years, develop and implement a management and monitoring plan for each Research Natural Area.

2.c. Improve the capability of the Nation's forests and grasslands to provide a desired sustainable level of uses, values, products, and services.

*Livestock Grazing Objectives:*

1. Annually, provide forage for livestock on suitable rangelands. Annual grazing levels will be adjusted, as needed, during periods of drought or for other conditions.
2. As needed, revise allotment management plans to meet desired vegetative conditions described in Geographic Areas and to implement all appropriate management plan direction.

*Geologic and Paleontologic Resources Objectives:*

1. Within 15 years, inventory and evaluate 20 percent of high potential paleontological formations.
2. Within 15 years, develop conservation plans for significant geological and paleontological sites.
3. Within 15 years, provide interpretation for at least 20 percent of important geological and paleontological sites, consistent with the conservation plans.

*Mineral and Energy Resources Objectives:*

1. Ensure reclamation provisions of operating plans are completed to standard.
2. Honor all valid existing legal mineral rights.

*Miscellaneous Products Objective:*

1. Provide appropriate opportunities to satisfy demand for miscellaneous products (special forest and grassland products, such as mushrooms, floral products and medicinal plants) through environmentally responsible harvest and collection methods on National Forest System Lands.

*Scenery Objective:*

1. Implement practices that will meet, or move the landscape character toward scenic integrity objectives.

*Special Uses Objective:*

1. Ensure all special use permits are meeting requirements for customer service and are in compliance with the terms of their permits or contracts.

*Wildlife, Fish, and Plant Use Objectives:*

1. Within 10 years, identify, manage, develop, and interpret appropriate watchable wildlife and plant viewing sites.
2. Within 10 years, support native and desirable non-native plant, fish, and wildlife populations by meeting or making measurable progress towards desired vegetative composition and structure, as described in Geographic Area direction.

#### 6.3.2.3 Goal 3: Scientific and Technical Assistance

Develop and use the best scientific information available to deliver technical and community assistance and to support ecological, economic, and social sustainability.

Goal 3.a: Improve the knowledge base provided through research, inventory, and monitoring to enhance scientific understanding of ecosystems, including humans, to support decision-making and sustainable management of the Nation's forests and grasslands.

Objectives:

1. Implement inventory and monitoring systems to provide scientific information and decision support across all land ownerships.
2. Provide research results and tools through technology transfer to support effective management, protection, and restoration of ecosystems.
3. Assess potential habitat capability at the local level for management indicator species by identifying existing or establishing new reference areas and implementing long-term monitoring. Some reference areas will need to be managed for multiple-year accumulation of vegetation and litter for those management indicator species of high structure grasslands and sagebrush habitats.
4. Assess the potential impacts of the construction of impoundments in upper watersheds on hydrologic flows and patterns on downstream habitat on the sturgeon chub and other sensitive native fish species.
5. Assess the condition of watersheds containing aquatic habitats of sensitive fish species that are found primarily in clear-water streams and rivers.

#### 6.3.2.4 Goal 4: Effective Public Service

Ensure the acquisition and use of an appropriate corporate infrastructure to enable the efficient delivery of a variety of uses.

Goal 4.a: Improve the safety and economy of the Forest Service roads, trails, facilities, and operations and provide greater security for the public and employees.

Objectives:

1. Within 5 years, identify travel opportunities and restrictions, including designating motorized travel-ways and areas, to meet land management objectives. Provide reasonable access for use of the national grasslands and national forests.
2. Within 5 years, provide site-specific maps and information showing closures, restrictions, and opportunities for motorized and non-motorized use using a science-based Roads Analysis process.
3. Within 5 years, identify the minimum Forest Service road system for administration, utilization, and protection of National Forest system lands and resources, while providing safe and efficient travel and minimizing adverse environmental effects.
4. Where appropriate, encourage and authorize recreation opportunities for people with disabilities.

4.b. Provide appropriate access to National Forest System lands and Forest Service programs.

*Land Ownership and Access Objectives:*

1. Within 3 years, develop and implement approved land ownership adjustment plan in response to resource management and public needs. The plan shall be coordinated, reviewed, and updated annually.
2. Within 3 years, develop and implement a 5-year ROWs Acquisition Program in response to resource management programs and access needs. This 5-year plan will be coordinated, reviewed, and updated annually.

*Unauthorized Uses Objective:*

1. Take appropriate law enforcement or administrative actions on all unauthorized uses.

*Public and Organizational Relations Objectives:*

1. Provide opportunities for federally recognized American Indian tribes to participate in planning and management of the national grasslands and national forests, especially where tribes have claimed special geographic, historical, or cultural interest.
2. Work in cooperation with federal, state, and county agencies, individuals, and nongovernment organizations for control of noxious weeds and invasive species and animal damage.
3. Create and foster partnerships with other agencies, accredited educational and research institutions, and other appropriate public and private sector organizations to further the goals of research, education, protection, and interpretation.
4. Cooperate with the appropriate state and federal agencies in balancing desired wildlife and fish population objectives with desired habitat conditions.
5. Identify opportunities for partnerships to provide new recreational fisheries and/or waterfowl and wetlands habitat.

### 6.3.3 Combined Goals and Objectives from the BLM Record of Decision and Approved Resource Management Plan Amendment and the USFS Greater Sage-grouse Record of Decision and Land Management Plan Amendment

Goal: Conserve, recover, and enhance sage-grouse habitat on a landscape scale consistent with local, state, and federal management plans and policies, as practical, while providing for multiple use of BLM administered lands and National Forest System lands.

Objectives:

1. In cooperation with State of Wyoming and its agencies, local governments, private landowners, local sage-grouse working groups, partners and stakeholders, develop site-specific conservation strategies to maintain or enhance sage-grouse habitats and habitat connectivity.
2. Enhance quality/suitable habitat to support the expansion of sage-grouse populations on federally administered lands within the planning areas.
3. Manage sage-grouse seasonal habitats and maintain habitat connectivity to support population objectives set by the State of Wyoming in cooperation with the agencies.
4. Identify and prioritize opportunities for habitat enhancement and conservation within sage-grouse core habitat areas based on threats and the ability to manage sage-grouse habitat.
5. Restore native (or desirable) plants and create landscape patterns which most benefit sage-grouse.
6. Develop specific objectives to conserve, enhance or restore sage-grouse priority habitat based on Ecological Site Descriptions (Forest Service may use other methods) and BLM land health evaluations (including within wetland and riparian areas) taking into account site history (historic treatments or habitat manipulations) that have changed the soil chemistry possibly altering the Ecological Site Description. If an effective grazing system that meets sage-grouse habitat requirements is not already in place, analyze at least one alternative that conserves, restores, or enhances sage-grouse habitat in the NEPA document prepared for grazing management (Doherty et al. 2010; Williams et al. 2011).
7. Establish measurable objectives related to sage-grouse habitat from baseline monitoring data, Ecological Site Descriptions (Forest Service may use other methods), or land health assessments/evaluations.
8. Manage for vegetation composition and structure consistent with ecological site potential (Forest Service may use other methods) to achieve sage-grouse seasonal habitat objectives.
9. Incorporate available site information collected using the Sage-grouse Habitat Assessment Framework or similar methods to evaluate existing resource conditions and to develop any necessary resource solutions in cooperation with State of Wyoming and its agencies, the local governments, private landowners, project proponents, partners, and stakeholders.
10. Incorporate management practices that will provide for maintenance and/or enhancement of sage grouse habitats, including specific attention to maintenance of desired understories of sagebrush plant communities. When developing objectives for residual cover and species diversity, identify the ecological site types within the planning area and refer to the appropriate Ecological Site Descriptions (Forest Service may use other methods).
11. In determining appropriate management actions that will be considered, refer to the document, “Grazing Influence, Management, and Objective Development in Wyoming's Greater Sage-grouse Habitat” (Cagney et al. 2010) for guidance.
12. Identify PHMAs and GHMAs for each Western Association of Fish and Wildlife Agencies (WAFWA) management zones (MZ) across the current geographic range of greater sage-

grouse that are large enough to stabilize populations in the short term and enhance populations over the long term. Greater sage-grouse habitat in this planning area overlaps 2 WAFWA MZs: (1) MZ I-Great Plains and (2) MZ II-Wyoming Basin.

13. Protect PHMAs and GHMAs from anthropogenic disturbance that will reduce distribution or abundance of greater sage-grouse.

14. Priority will be given to leasing and development of fluid mineral resources, including geothermal, outside of PHMA and GHMA. When analyzing leasing and authorizing development of fluid mineral resources, including geothermal, in PHMA and GHMA, and subject to applicable stipulations for the conservation of greater sage-grouse, priority will be given to development in non-habitat areas first and then in the least suitable habitat for greater sage-grouse. The implementation of these priorities will be subject to valid existing rights and any applicable law or regulation, including, but not limited to, 30.S.C. 226(p) and 43 CFR 3162.3-1(h). Where a proposed fluid mineral development project on an existing lease could adversely affect greater sage-grouse populations or habitat, the BLM will work with the lessees, operators, or other project proponents to avoid, reduce and mitigate adverse impacts to the extent compatible with lessees' rights to drill and produce fluid mineral resources. The BLM will work with the lessee, operator, or project proponent in developing an APD for the lease to avoid and minimize impacts to sage-grouse or its habitat and will ensure that the best information about the greater sage-grouse and its habitat informs and helps to guide development of such federal leases.

15. In all sagebrush focal areas and PHMAs, the desired condition is to maintain a minimum of 70 percent of lands capable of producing sagebrush with 10 to 30 percent sagebrush canopy cover. The attributes necessary to sustain these habitats are described in Interpreting Indicators of Rangeland Health (BLM Tech Ref 1734-6).

16. The habitat objectives will be part of the sage-grouse habitat assessment to be used during land health evaluations (see Monitoring Framework). These habitat objectives are not obtainable on every acre within the designated greater sage-grouse habitat management areas. Therefore, the determination on whether the objectives have been met will be based on the specific site's ecological ability to meet the desired condition identified in the table.

## 6.4 OG-Committed Design Features

In addition to federal and state regulatory requirements and guidance the OG has committed to adhering to the following additional design features.

### 6.4.1 Air Quality

- During dry periods, all appropriate measures shall be taken to control fugitive dust. These measures may include, but are not limited to, the application of water or chemical dust suppressants. Dust control measures would be subject to surface landowner approval.
- Speed limits (e.g., 25 miles per hour 40 km per hour) would be posted along all access roads and enforced during construction and maintenance activities to reduce airborne fugitive dust.
- Operators would use Tier 2 drill rigs when drilling wells for the Converse County Project. This does not apply to water rigs, workover rigs, or casing rigs.

### 6.4.2 Cultural Resources, Historic Trails, and Resources of Native American Concern

There are no OG-committed design features for this resource.

### 6.4.3 Geology and Mineral Resources

There are no OG-committed design features for this resource.

### 6.4.4 Hazardous Materials, Solid Waste, and Public Health and Safety

- The Operators would place dumpsters at each construction site to collect and store garbage and refuse, and they would ensure that all refuse and garbage is transported to a State-approved sanitary landfill for disposal.
- SPCC plans would be implemented and adhered to in a manner such that spills or accidental releases of oil would be remediated. An orientation would be conducted by the Operators to make project personnel aware of the potential impacts that can result from accidental spills, and to ensure they know the appropriate response when a spill occurs.

### 6.4.5 Land Use

There are no OG-committed design features for this resource.

### 6.4.6 Lands and Realty

There are no OG-committed design features for this resource.

### 6.4.7 Noise

There are no OG-committed design features for this resource.

### 6.4.8 Paleontological Resources

There are no OG-committed design features for this resource.

### 6.4.9 Range Resources

- The operators may install temporary fencing around the outer disturbed perimeter of the well site, in accordance with committed surface use agreements.
- Operators would inform employees and contractors regarding land ownership boundaries and any restrictions for on and off-road vehicle activity by employees and contract workers to the immediate area of authorized activity or existing roads and trails.

### 6.4.10 Recreation

- Operators would inform employees and contractors regarding land ownership boundaries and any restrictions for on and off-road vehicle activity by employees and contract workers to the immediate area of authorized activity or existing roads and trails.

### 6.4.11 Socioeconomics and Environmental Justice

There are no OG-committed design features for this resource.

### 6.4.12 Soils

- Final roadway alignments may include but not be limited to erosion control measures to stabilize steeper slopes and to prevent loss of soil. These measures could include as conditions dictate hay bales, shallow swales and ditches, rock/rip rap embankments, and culvert outlet protection. Potential soil erosion would be controlled at culvert outlets with appropriate structures. Catch basins, roadway ditches, and culverts would be cleaned and maintained regularly.
- Operators would identify unstable slopes and local factors that can induce slope instability. Special construction techniques would be used where applicable in areas of steep slopes, erodible soil, and stream channel crossings.

- Where appropriate, operators would consult with private surface owners within the project area and coordinate reclamation efforts to meet committed surface use agreements.

### 6.4.13 Transportation and Access

There are no OG-committed design features for this resource.

### 6.4.14 Vegetation

- State- or county-listed noxious weeds resulting from disturbance associated with the proposed project would be controlled in accordance with guidelines established by the USEPA, BLM, USFS, or appropriate authorities. Prior to the use of any herbicide on federal surface, the applicator would have a commercial applicators license and a current approved Pesticide Use Proposal for the chemical being applied, submitted to and approved by BLM or USFS. When project activities occur on private surface estate, operators would adhere to committed surface use agreements.
- Seeding would occur in the next appropriate seeding season following the completion of surface disturbing activities, generally within 180 days of the last well being completed on the pad. In the fall, seeding would take place after September 15 and prior to ground frost, and in the spring after the frost has left the ground and prior to June 1. Seed mixes would be prescribed either by the surface owner or the BLM. Where appropriate, operators would adhere to committed surface use agreements on private lands.
- Prior to re-seeding, compacted areas would be scarified by ripping or chiseling to loosen compacted soils where underlying material would not degrade topsoil. Any required monitoring for reclamation success would be conducted in coordination with the BLM or USFS. When project activities occur on private surface estate, operators would adhere to committed surface use agreements.
- On all areas to be reclaimed on federally administered surface estate, seed mixtures would be required to be site-specific, composed of native or other appropriate BLM- or USFS-approved species, and would be required to include species promoting soil stability. Livestock palatability and wildlife habitat needs would be given consideration in seed mix formulation. BLM or USFS guidance for native seed use is BLM Manual 1745 (Introduction, Transplant, Augmentation, and Reestablishment of Fish, Wildlife, and Plants), and EO No. 11987 (Exotic Organisms). Seed mixtures on privately owned surface estate would be determined through coordination with the landowner. When project activities occur on private surface estate, operators would adhere to committed surface use agreements.
- Interseeding, secondary seeding, or staggered seeding may be required to accomplish revegetation objectives. During rehabilitation or areas in important wildlife habitat, provision would be made for the establishment of native species, if determined to be beneficial for the habitat affected. Follow-up seeding or corrective erosion control measures may be required on areas of surface disturbance which experience reclamation failure. When project activities occur on private surface estate, operators would adhere to committed surface use agreements.
- Any mulch used would be certified weed free and free from mold or fungi. Mulch may include native hay, small grain straw, wood fiber, live mulch, cotton, jute, synthetic netting, and rock. Straw mulch should contain fibers long enough to facilitate crimping and provide the greatest cover. When project activities occur on private surface estate, operators would adhere to committed surface use agreements.
- Operators would monitor noxious weed occurrence on the project area and implement a noxious weed control program in cooperation with the BLM or USFS, and Converse County. Weed-free certification would be required for grain or straw used for mulching re- vegetated areas. When project activities occur on private surface estate, operators would adhere to committed surface use agreements.

### 6.4.15 Visual Resources

- New roads and pipeline corridors, to the extent safe and practicable, would follow contours and use topography as screening. New pipelines would be combined with existing or proposed roads, where safe, practical and feasible. Where appropriate, operators would consult with private surface owners to locate facilities to accommodate and meet committed surface use agreements.

### 6.4.16 Water Resources

- The location of new water wells on privately owned surface estate would be coordinated with the landowner.
- Streams, wetlands, and riparian areas disturbed during project construction would be restored to as near pre-project conditions as practical, and if impermeable soils contributed to wetland formation, soils would be compacted to reestablish impermeability.
- Reclamation activities would begin on disturbed wetland areas after completion of project activities. Disturbed channel beds would be reshaped to their approximate original configuration.

### 6.4.17 Wetland and Riparian Areas

There are no OG-committed design features for this resource.

### 6.4.18 Wildlife and Aquatic Biological Resources

- Unless otherwise agreed to by the AO in writing, power lines would be constructed in accordance with the APLIC Suggested Practices for Avian Protection on Power Lines—The State of the Art in 2006 (APLIC 2006) or equivalent based on third-party power providers' Avian Protection Plans.
- Well locations and associated road and pipeline routes would be selected and designed to avoid disturbances to areas of high wildlife value (e.g., raptor nest sites, wetland areas) where safe and practical.
- If existing information is not current, field evaluations for greater sage-grouse leks and/or nests may be conducted by a qualified biologist prior to the start of activities in potential greater sage-grouse habitat. These field evaluations for leks and/or nests would be conducted if project activities are planned in potential greater sage-grouse habitat between March 15 and June 30. The Operators would coordinate with agency biologists to ensure that such surveys are conducted using proper survey methods.
- Subject to third-party power providers' Avian Protection Plans, raptor perching deterrents would be used on power lines structures within 0.5 mile of active sage-grouse leks to minimize raptors perching in the immediate area of the lek and reduce the potential for increased raptor predation during the sage-grouse breeding season.

## 6.5 Proposed Mitigation for the Converse County Oil and Gas EIS Project

The Converse County Oil and Gas EIS establishes mitigation measures in addition to the regulations, goals and objectives, BMPs, and OG-committed design features to reduce or eliminate impacts to the resources analyzed in Chapter 4.0. The following is a summary of proposed mitigation measures by resource. For more information regarding the impacts these measures address or the overall effectiveness see the Chapter 4.0 resource sections.

### 6.5.1 Air Quality

AQ-1 If located on BLM surface estate, gas plants and compressor stations will be located at least 2,000 meters from residences or other occupied dwellings.

### 6.5.2 Cultural Resources, Historic Trails, and Resources of Native American Concern

CR-1 A qualified professional archaeologist will monitor surface disturbing activities during construction in areas that may contain buried cultural materials. A site specific monitoring and discovery plan may be developed for large or complex undertakings or areas known to contain buried cultural sites.

CR-2 Avoidance areas will be fenced or otherwise marked prior to construction activities. Flagging or other marking will be removed once construction is completed in an area.

CR-3 Mandatory training will be provided to all construction personnel and contractors regarding cultural resources and the federal regulations that protect them.

CR-4 For areas most likely to contain resources of Native American Concern, tribal monitors will monitor sediment-disturbing activities during construction.

### 6.5.3 Geology and Mineral Resources

There are no proposed mitigation measures for this resource.

### 6.5.4 Hazardous Materials, Solid Waste, and Public Health and Safety

There are no proposed mitigation measures for this resource.

### 6.5.5 Land Use

There are no proposed mitigation measures for this resource.

### 6.5.6 Lands and Realty

There are no proposed mitigation measures for this resource.

### 6.5.7 Noise

There are no proposed mitigation measures for this resource.

### 6.5.8 Paleontological Resources

PALEO-1: On the ground surveys will be conducted by a qualified, permitted BLM consulting paleontologist to determine the presence or absence of paleontological resources in any areas of surface disturbance currently ranked PFYC 3-5 (moderate to high). Recommendations will be made, and the appropriate mitigation and monitoring measures will follow.

PALEO-2: The operator will suspend all activities in the vicinity of such discovery until notified to proceed by the BLM AO and will protect the discovery from damage or looting. However, the operator may not be required to suspend all operations if activities can be adjusted to be continued elsewhere or otherwise avoid further impacts to a discovered locality.

PALEO-3: The BLM AO will evaluate, or will have evaluated, such discoveries as soon as possible, but not later than 10 working days after being notified. Appropriate measures to mitigate effects to significant paleontological resources will be determined by the BLM AO after consulting with the operator.

PALEO-4: Within 10 days, the operator will be allowed to continue construction through the site or will be given the choice of either (1) following the BLM AO's instructions for stabilizing the fossil resource in place and avoiding further disturbance to the paleontological resources, or (2) following the BLM AO's instructions for mitigating impacts to the fossil resource prior to continuing construction. Stabilization will be conducted by a BLM-qualified and permitted paleontologist.

### 6.5.9 Range Resources

RANGE-1: All rangeland improvements in the vicinity of construction activities will be documented prior to initiating construction activities. Any improvements moved or damaged will be returned to their original location or pre-damaged or better condition according to the BLM, USFS, or landowner standards.

RANGE-2: All incidents resulting in livestock injury or fatality will be reported to the livestock operator, and the affected livestock operator will be compensated at fair market value, as determined by the USDA using the U.S. Standards for grades of feeder cattle.

RANGE-3: The oil and gas operator will communicate and coordinate construction schedules with livestock operators to allow adequate time and opportunity for livestock operators to make adjustments to pasture rotation, particularly during calving/lambing seasons.

RANGE-4: Where deemed necessary, the oil and gas operator will install signage and gates to notify of trespass and secure privately owned lands.

### 6.5.10 Recreation

There are no proposed mitigation measures for this resource.

### 6.5.11 Socioeconomics and Environmental Justice

SOC-1 The OG will meet at least annually with the BLM and representatives of the state and local governments to discuss near-term and mid-term development plans. Additional coordination meetings also will be conducted if situations/conditions arise that will substantially accelerate or retard development in the CCPA.

### 6.5.12 Soils

SOIL-1: Soils will be analyzed by a qualified soil scientist prior to disturbance to determine soil characteristics, vegetation composition and ground cover, proposed seed mixtures and application rates, and the need for potential soil amendments.

SOIL-2: To the maximum extent possible, disturbance to soils with limiting characteristics will be avoided.

SOIL-3: The upper 12 inches of the soil will be separated, salvaged, and used when revegetating disturbed areas.

SOIL-4: Surface runoff control structures wil be installed to limit erosion and sediment loading.

SOIL-5: If more than one month will pass between the end of construction and initiation of reclamation, erosion controls will be applied to disturbed areas.

SOIL-6: During reclamation, areas that have been compacted will be decompacted to the full depth of compaction by subsoiling, paraplowing, or parabolic ripping. Where soils are shallow, scarification will be the chosen method. Compaction depth will be determined on a case-by-case basis by an environmental inspector or soil scientist. Each operator will be responsible for decompacting soils on their developed leases.

SOIL-7: Fertilizers and/or other amendments will be used as needed to improve revegetation and reclamation success.

### 6.5.13 Transportation and Access

TRANS-1 Cooperative road management plans will be developed among the operators, Converse County, the state of Wyoming, and private landowners that will address maintenance requirements and responsibilities, as well as highlight potential areas of enhanced safety concern.

TRANS-2 Pipelines will be buried at road crossings. The operator will bury all pipelines crossing county roads to a minimum depth of 5 feet.

TRANS-3 Passing areas will be constructed as directed by the AO.

TRANS-4 Heavy and/or slow-moving equipment will be used only at night or during non-peak driving times. Flaggers and/or flag cars will be used to alert non-Project traffic of upcoming Project equipment.

TRANS-5 Additional permanent and temporary signage will be placed along roadsides to alert motorists of upcoming construction vehicles.

TRANS-6 Signage will be installed in areas of heavy equipment and heavy truck traffic.

### 6.5.14 Vegetation

VEG-1 The OG will organize native seed collection efforts to increase native local seed stock.

VEG-2 Prior to surface disturbance, the oil and gas operator will arrange for infestations of noxious weeds and invasive plant species to be mapped and submitted to the land manager to develop a treatment plan.

*Special Status Plant Species*

SSPS-1 Known individuals and populations of Ute ladies'-tresses orchid and areas identified as suitable habitat through consultation with the USFWS will be avoided. If potential habitat cannot be avoided, two years of surveys in suitable habitat will be required and consultation with USFWS may be necessary.

SSPS-2 Species requiring surveys will be identified by the BLM and USFS during the APD process. For species identified as requiring surveys, site- and species-specific surveys will be conducted. The timing and methodology of the surveys will be determined by the BLM or USFS in consultation with the appropriate agency. Surveys will be conducted in areas identified as suitable habitat. If individuals or populations are identified during surveys, species-specific avoidance through design modifications will be developed and implemented in consultation with the appropriate agency. For species that cannot be avoided, species-specific mitigation will be developed in consultation with the appropriate agency. If species or habitat avoidance remains infeasible, impact minimization and further mitigation measures could be developed in consultation with the operator, BLM, USFS, and USFWS prior to construction.

### 6.5.15 Visual Resources

VIS-1: Pinyon-juniper and conifer woodlands will be removed only when necessary for construction and operation. If removal is necessary, edges of any clearings will be feathered to mimic the natural characteristic of the landscape.

VIS-2: BLM environmental colors (Standard Environmental Color Chart CC-001; BLM 2014e) will be used for surface coatings of permanent structures. Color selection will be based on site-specific assessment.

VIS-3: Topography and vegetation will be utilized to the greatest extent possible to screen views from trails and other KOPs.

VIS-4: During reclamation, disturbed areas will be recontoured to pre-disturbance contours.

VIS-5: Crossings of trails by linear Project components will be at right angles with structures set as far back from the crossing as possible. ROWs and structures should be appropriately screened.

VIS-6: Lighting at facilities will be minimized to the greatest extent permitted by OSHA regulations, and lights will be down-shielded to reduce night glare and light pollution.

### 6.5.16 Water Resources

WR-1 Existing stream crossings will be utilized wherever practicable and use of the crossings will be incorporated during site-specific design. All stream crossings utilized for Project development or production will be maintained by the applicable operator.

WR-2 The OG will develop and utilize an Unanticipated Pipeline Release Standard Operating Procedure coupled with a pipeline volume and flow monitoring system for the underground water supply and disposal pipelines.

GW-1 All new water supply wells will be located 2,000 feet or more from existing water wells, springs, wetlands, and riparian areas.

### 6.5.17 Wetland and Riparian Areas

There are no proposed mitigation measures for this resource.

### 6.5.18 Wildlife and Aquatic Biological Resources

*Terrestrial*

WLF-1: Surface disturbance will be avoided at wildlife water developments during final siting and development. If avoidance is not possible, the loss of any permanently impacted wildlife water developments will be offset by installing new developments of equal capacity, in coordination with the appropriate state wildlife agency and federal land management agencies.

WLF-2: All stacks, trenches, and other open structures (including water tanks) will be covered with wildlife enclosure covers and/or wildlife escape ramps will be installed in pits, trenches, and tanks to prevent entrapment and/or drowning. Any existing or proposed open poles or fence posts will be covered or filled with sand, soil, or gravel to prevent entrapment. “Bird cones” will be installed on open-vent stacks.

WLF-3: If reserve pits or other open pits for storage of water or other fluids are used, they will be fenced and covered with netting (properly installed, monitored, and maintained).
NOTE: This mitigation applies to Alternative B only.

WLF-4: New power lines, roads, pipelines, and other structures will be collocated with other existing disturbance (e.g., roads, pipelines, railroads), where possible. Additionally, new power lines will be buried where feasible.

WLF-5: Noise reduction mufflers will be used on construction equipment, drilling equipment, and other motors/compressor used during drilling and production. Also, temporary walls and distance will be considered for use to reduce sound levels in important habitats.

WLF-6: New structures, including fences, will be designed and built to reduce hazards to big game and to allow big game movement throughout the year. This will not include fences designed to specifically exclude wildlife.

*Migratory Birds*

MIG-1 When surface-disturbing activities must occur during the avian breeding season (February 1 to July 31), a qualified biologist will conduct nest searches no more than 7 days prior to these activities. Active nests will be identified and protected in accordance with the applicable BLM, USFS, USFWS, and/or the WGFD guidance.

MIG-2 Disturbance within portions of the CCPA that are identified by federal or state wildlife management agency biologists as located in forest and woodland habitat areas will be avoided. Downed woody debris greater than 3 inches in diameter (not including merchantable timber) will be left in place.

*Special Status Wildlife Species*

SSWS-1: A vehicle speed limit of 15 mph will be implemented on roads without posted speed limits in areas of occupied sage-grouse habitat.

SSWS-2: A Raven Management Plan will be developed that outlines active adaptive management strategies for controlling raven predation and nesting within the CCPA, including the post–construction monitoring for ravens and removal of raven nests.

SSWS-3: Bird diverters/markers will be installed on fencing in PHMA.

SSWS-4: Coordination with all applicable federal and state wildlife management agencies will occur prior to application of any herbicides.

SSWS-5: A 0.25-mile no surface use buffer will be maintained in any areas identified as occupied special status bat roosts.

SSWS-6: Any areas where herbicides would be used for vegetation treatment will be searched for bat roosts prior to spraying, and a 0.5-mile no-spray buffer will be established around roost sites.

SSWS-7: Surveys will be conducted for Preble's meadow jumping mouse prior to surface disturbance based on the protocol identified in the BLM Casper RMP Biological Opinion. Surveys will take place in suitable habitats in areas where surface disturbance is to occur. If the species is located, additional coordination with the BLM, USFS, and USFWS will be required prior to surface disturbing activities.

*Aquatic Biology*

ABR-1: When avoidance of perennial streams with game and special status fish populations will not be feasible and a culvert will be required during construction, flow will be maintained in a portion of the stream to allow unrestricted fish passage. Any plan for dewatering the stream at the culvert site must be approved by the appropriate federal and state agencies. Culvert size and type will be selected to facilitate the continued and long-term connectivity and movement of target aquatic species. If the culvert is to be in place during Project construction and operation, approval must be obtained from the federal or state agency management authority. An alternative crossing method may be required.

ABR-2: If spawning areas for game and special status fish species are known to occur at streams proposed for vehicle crossing or culvert construction, instream disturbance will be scheduled to avoid the spawning period. The exact dates for avoidance will be determined through discussions with WGFD and the appropriate federal land management agency (i.e., BLM, or

USFS). All disturbed areas will be restored to pre-construction conditions prior to the next spawning season.

ABR-3: Pipeline crossings of blue ribbon (North Platte River) and red ribbon (LaPrele Creek) streams, if required, will be accomplished by boring underneath the stream. Pipeline crossings for other perennial streams proposed for trenching will be considered on a case-by-case basis through discussions with WGFD. If trenching is approved, WGFD will determine if a construction avoidance period will be required for fish spawning. All disturbed areas will be restored to pre-construction conditions.

ABR-4: Hydrostatic test waters from pipeline construction will not be released to stream channels. Test waters will be dispersed onto upland areas using proper erosion and sediment control techniques.

ABR-5: If surface water is withdrawn, it will not be moved between HUC-8 watersheds. If vehicles and equipment are moved between multiple HUC8 watersheds, all equipment will be decontaminated, which would occur before arrival at a Project site. Decontamination will consist of either of these actions: 1) Drain all water from equipment and compartments; clean equipment of all mud, plants, debris, and aquatic organisms; and dry equipment for specified time by season (5 days in June through August, 18 days in March through May, and 3 days in December through February when temperatures are at or below freezing). A field monitor will be present to ensure that the cleaning was completed prior to vehicle and equipment moving to other streams and drainages.

*Special Status Aquatic Species*

SSAS-1: Where habitat for special status aquatic species cannot be avoided as a surface water source for well development activities, approval will be required from the federal agency responsible for managing the lands and WGFD responsible for managing special status species in Wyoming. Agency approval will ensure that water withdrawal methods will avoid or minimize entrainment or impingement effects to early life stages of special status fish species.

## 6.6 General Approach to Compensatory Mitigation

As stated in Section 6.1, the overall goal of this mitigation section is to establish guidelines describing when compensatory mitigation would be warranted, how it would be evaluated at the site-specific scale, what options have been outlined for implementing the compensatory mitigation outcomes, and where this mitigation could occur.

Compensatory mitigation is to be developed with a focus on a landscape-scale approach. This approach is to consider resource values associated with the relevant geographic area of those affected resources. The approach is to identify current and future mitigation needs, types of specific sites, and measures that will help the agencies meet their management objectives. It also is to focus on identifying measures that will achieve the greatest benefit and, when possible, provide mitigation to multiple resource values. Each proposed compensatory mitigation action must provide durability, offsetting the expected impact in both time and space. Actions must be focused on the outcome, incorporate implementation and effectiveness monitoring tied to performance standards that reflect the agency management guidance, and include provisions for adaptive management by the agencies.

### 6.6.1 Impacts Warranting Compensatory Mitigation

Residual impacts that may require compensatory mitigation have been identified as those that would affect the Pine Ridge area (Alternative B only), the setting along contributing segments of historic trails, or important greater sage-grouse habitats. The degree of the impact would be analyzed through desktop

analysis and ground surveys conducted during future site-specific NEPA during the APD stage of development. The following are options for implementing compensatory mitigation.

## 6.6.2 Implementation of Compensatory Mitigation

### 6.6.2.1 Cultural Resources

The State Protocol between the BLM and Wyoming SHPO (BLM and SHPO 2014) provides some guidance on compensatory mitigation. For historic trails, compensatory mitigation can be completed along trail segments and at trail-related sites that are experiencing residual impacts, or along adjacent segments and sites, or non-adjacent segments and sites. Compensatory mitigation should provide a public benefit, such as through increased accessed, information collection, or education, and it must be appropriate to the scale and scope of the residual effect that is being mitigated. BLM Manual 6280 emphasizes that compensatory mitigation for impacts to NHTs, specifically, must benefit the NHT and be conducted within the NHT Management Corridor (BLM 2012e).

Potential compensatory mitigation strategies for historic trails could include the following:

- Complete NRHP nomination forms for previously undocumented sections of historic trails
- Complete Historic American Buildings Survey documentation for NRHP-eligible buildings that are directly associated with historic trails
- Complete Historic American Engineering Record documentation for NRHP-eligible structures (e.g., bridges at water crossings) that are directly associated with historic trails
- Complete Historic American Landscapes Survey documentation for NRHP-eligible segments of historic trails and surrounding viewsheds
- Work with willing private landowners to establish conservation easements along NRHP-eligible segments of historic trails
- Work with willing landowners to purchase lands that contain NRHP-eligible trail segments and are accessible by the public, and establish measures to protect and interpret those segments
- If available, restore a historic trail segment (by removing modern intrusions and/or overgrown vegetation, rock slides, and other natural impacts) under the guidance of a trained historic trail specialist
- Conduct an archaeological inventory of a previously unrecorded segment of historic trail that is at least as long as the segment that is experiencing residual effects, and/or an inventory of a previously undocumented or inadequately documented site that is directly associated with a historic trail
- Conduct archaeological testing or excavation at a site that is directly associated with a historic trail and is experiencing residual effects from a CC EIS-related project
- Create interpretive signage for a historic trail segment or trail-related site where it can be viewed by the public
- Create a brochure or book about the historic trail and ensure distribution to schools, libraries, and historical museums and groups in Converse County
- Create a website, podcast, or video about the historic trail and impacts to and preservation and stewardship of it, to be hosted on the BLM's website, with an electronic link shared with chambers of commerce, museums, trails advocacy groups, and other organizations that conduct historical outreach and interpretation in Converse County

Compensatory mitigation used to offset impacts to the Pine Ridge area would be developed through Section 106 consultation.

#### 6.6.2.2 Wildlife

The Record of Decision and Approved RMP Amendment (BLM 2015b) states that when authorizing third-party actions that would result in greater sage-grouse habitat loss and degradation, the BLM would require and ensure mitigation that would provide a net conservation gain to the species (i.e., the actual benefit or gain above baseline conditions). For this reason and because the PHMAs (as mapped in Core Area Version 3) are already well above the 5 percent disturbance threshold, compensatory mitigation applied to the PHMAs must be considered for Alternative B to achieve a net conservation gain. Mitigation actions that would benefit greater sage-grouse and PHMAs include the following:

- Re-establish sagebrush and the appropriate grass component through seeding, transplant, and fertilization in areas that have experienced either human or natural disturbance;
- Remove pinon and juniper growth that is encroaching into sagebrush habitat;
- Enhance GHMAs known to contain leks to PHMA quality;
- Enhance sagebrush bunchgrass communities in nesting and brood-rearing habitats; and
- Establish conservation easements adjacent to PHMAs and enhance the habitat to PHMA quality.

The system for calculating debits and credits will comply with the State of Wyoming EO 2015-4. The 2017 MOU among the USDOI BLM, the USFS, the USFWS, the USDA, NRCS, and the State of Wyoming to Promote a Cohesive and Consistent Conservation Strategy for the Greater Sage-grouse and its Habitat in Wyoming establishes the relationship between the Wyoming greater sage-grouse compensatory mitigation framework and federal plans, and provides the basis for cooperation between the agencies that will be used when applying compensatory mitigation.

Appropriate compensatory mitigation mechanisms include mitigation banks and exchanges, funds, and approved authorized operator-responsible compensatory mitigation measures. The approval of operator-responsible compensatory mitigation measures would require a plan to be submitted to the BLM that would define/include the following:

- Targeted resource and location;
- Baseline conditions (to support the need for selection of the resource and location);
- Mitigation action(s) to be taken (including a schedule and an adaptive management component with triggers);
- Measurable successful outcomes;
- Assessment of the durability of the successful outcome;
- Monitoring plan that would be active for the life of the disturbance being mitigated; and
- Proof of financial assurances.

The BLM would be responsible for reviewing the mitigation plan and working with the operator to assure a successful approach through the mitigation plan.