

Chapter 2

**Alternatives**



Public Lands USA: Use, Share, Appreciate





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## CHAPTER 2 ALTERNATIVES

### 2.1 Introduction

Chapter 2 describes the five alternatives evaluated in detail in the Oil and Gas Development RMPA/EIS, which includes the No Action Alternative (Alternative A) and four action alternatives (Alternatives B, C, D, and E). Section 2.2 summarizes key changes made between the draft and final EIS. Section 2.3 describes how the alternatives were developed. The five alternatives are described in detail in Section 2.4 and are depicted on maps provided at the end of this Chapter. A comparison of the five alternatives is presented in Section 2.6 with extensive detailed side-by-side comparisons provided in Tables 2-1 through 2-22. Table 2-23 provides a summary of consolidated acres by alternative for the entire field office. Table 2-24 provides a similar summary for the Dinosaur Trail Master Lease Plan (MLP) area. The alternatives that were considered but eliminated from detailed analysis are described in Section 2.5. Those alternatives were eliminated because the BLM determined that their proposed management approach did not meet the purpose and need for the RMPA/EIS or were not feasible due to technical, legal, or policy considerations.

In this EIS, the BLM has developed and assessed reasonable alternatives that meet the purpose and need identified in Chapter 1. During this process, the BLM explored and objectively evaluated reasonable alternatives, and according to 40 CFR Part 1502.14 (a), explained why certain alternatives were eliminated from detailed study. It is the BLM's position that the presented alternatives use sound and prudent judgment and are feasible from a technical and economic standpoint. In addition to the action alternatives, 40 CFR Part 1502.14 (d) directs federal agencies to include a No Action Alternative. The No Action Alternative is the only alternative that does not need to respond to the purpose and need for the action. Alternatives are not management decisions; conversely alternatives represent a reasonable approach to manage resources and resource uses. The action alternatives presented in this EIS reflect a range of development and management use, and resource protections. The alternatives are responsive to issues identified during the scoping period to meet established planning criteria (outlined in Chapter 1), and provide resource management goals and objectives. All alternatives are intended to minimize adverse impacts on physical, biological, and socioeconomic resources from oil and gas development while providing for a level of resource use and development consistent with current laws, regulations, and BLM policies.

As part of the planning process, the public commented on the Draft RMPA/EIS. Based on these comments, the BLM drafted a new Alternative E which combines elements of Alternatives A, B, C, and D (40 CFR Part 1502.14 (e)). The BLM presents Alternative E as the Proposed Amendment. Following the Proposed RMPA and Final EIS, a Record of Decision (ROD) will be prepared and will contain the decisions that will guide future management of lands administered by the WRFO.

Acres presented have been calculated using Geographic Information System (GIS) data provided by the BLM; the results may differ from the 1997 White River RMP, the 2007 RFD Scenario and the Draft RMPA/EIS due to advancement of GIS technology, refinement in the precision of the mapping of various datasets over time, and variations in the selection of data sets utilized for calculations.

### 2.2 Summary of Changes to the Proposed RMPA and Final EIS

The Draft RMPA/EIS was published in August 2012, and the public comment period closed in January 2013. The BLM received 19,686 submissions of which 19,408 were form letters and 278

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were unique letters. From these submissions, the BLM identified 2,066 substantive comments and 1,208 non-substantive comments. These comments touched a wide range of issues and were both favorable and non-favorable. The WRFO carefully evaluated these comments which are presented in Appendix K with the BLM responses to the comments.

The Proposed RMPA/Final EIS contains changes that have occurred since the publication of the Draft RMPA/EIS resulting from public comments, policy changes, and additional studies or other information. A summary of key changes is provided below. These changes or additions to the text have been shaded to better assist the public in identifying the differences between the Draft and Final EIS. Comment responses in Appendix K provide additional details regarding changes made to the Proposed RMPA/FEIS.

The BLM determined that NEPA supplementation, as described at 40 CFR 1502.9, was not necessary based on the changes described below or any other changes that have occurred between the Draft and Final EIS. None of these changes were found to present significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.

### **Air Quality**

The Air Resources Management Plan has been replaced with the Comprehensive Air Resources Protection Protocol (Appendix J) which will provide consistent guidance throughout Colorado on how the BLM will protect air resources from adverse impacts associated with BLM authorized or permitted actions. A LN will be attached to new oil and gas leases to provide notice to operators of air analysis and mitigation requirements that will be determined on a case by case basis at the permitting stage.

### **Soil and Water Resources**

A Water Resource Monitoring Plan (Appendix I) has been developed to outline current water monitoring efforts throughout the Piceance Basin and to identify opportunities for future monitoring. When submitting a development plan, operators will also submit a water management plan (by lease or unit) that describes predicted water use, storage needs, recycling or treatment options, and disposal methods for fresh and produced water. The purpose and exception, modification, and waiver language for the CSU-2 stipulation (Appendix A) was revised to include not only soil and water resource concerns but also riparian and wildlife resources.

### **Vegetation**

The WRFO clarified that all surface disturbing activities related to oil and gas development that are authorized after the signing of the ROD would be subject to the reclamation standards included in the WRFO Surface Reclamation Plan (Appendix D). For existing authorizations, the WRFO Surface Reclamation Plan would be used as guidance for Reclamation Plans that are submitted as per Onshore Order No. 1. The reclamation success criterion was revised.

### **Fish and Wildlife – Big Game**

The WRFO adjusted the big game timing limitation thresholds. For Alternative E, acute thresholds were within the range considered between Alternatives B and C whereas collective thresholds were the same as those considered for Alternative B. All reclamation within a leaseholding would be subject to the success criteria outlined in the WRFO Surface Reclamation Plan when operating within the threshold concept and operators would be given a 5 year grace period (from the time the ROD is signed) to comply with the threshold allowances.

### **Fish and Wildlife – Raptors**

Surface occupancy would not be allowed within 990 feet of functional nest sites of non-special status raptor species, which is an increase from the 1/8 mile no surface occupancy (NSO) stipulation previously considered for this group of raptors.

### **Fish and Wildlife – Grouse**

The BLM explained that the final decisions for how to manage sage-grouse (including whether to amend those decisions included in this RMPA) would be made in the Northwest Colorado BLM Greater Sage-Grouse EIS (Section 1.3.3). Management decisions were updated to refer to sage-grouse habitat as classified by CPW as either priority or general habitat. Threshold allowances intended to accommodate directional drilling from multi-well pads (and associated exceptions to timing limitations) may not apply to activities that could be reasonably scheduled (e.g., exploratory wells, routine maintenance) to avoid important seasonal use activities of sage-grouse. Sagebrush canopy cover and height requirements were updated based on information from CPW.

### **Fish and Wildlife – Migratory Birds**

The BLM's list of Priority Migratory Birds was emphasized for management in addition to those species identified as BLM sensitive species, FWS Birds of Conservation Concern, and Colorado Partners in Flight high priority species.

### **Fish and Wildlife – Fish**

In regards to efforts to increase in-stream flows, the BLM clarified that it would work cooperatively with the Colorado Water Conservation Board and interested private water rights owners to achieve those goals.

### **Special Status Plant Species**

Potential habitat for federally listed, proposed, or candidate plants would not be managed as a ROW avoidance area or with an NSO stipulation. Instead a LN was developed to inform operators that surveys would be conducted within potential habitat and it was possible that those surveys would determine that the area was either occupied or suitable habitat, which would then be managed as such.

### **Paleontological Resources**

The list of formations currently classified as PFYC 5 was updated.

### **Visual Resources**

The areas surrounding communities were not carried forward from Alternatives B and C as areas of primary concern (sensitive landscapes) since communities within the WRFO are managed at different VRM classes.

### **Minerals**

Discussion of Section 17 or Section 39 Mineral Leasing Act lease suspensions was moved from Table 2-17 to Section 1.4.6 since this is existing law and not necessary to repeat as an RMP decision. We clarified that while the use of reserve production and completion/re-completion pits would be discouraged, onsite burial of drill cuttings meeting COGCC standards would be allowed. The BLM would adopt the Dinosaur Trail MLP, which would include phased leasing. Management Goals, Objectives, and Actions for the leasing and development of the oil and gas resources within

the proposed Dinosaur Trail MLP are described in the newly added Table 2-17a Records 24 through 46. Management Actions for the Dinosaur Trail MLP include postponing the issuance of oil and gas leases within sage-grouse habitat or in areas with low oil gas potential until after the Northwest Colorado Greater Sage-Grouse RMPA and RMP Revision RODs are issued. The Management Actions also require Master Development Plans and CSUs for visual resources, night skies, and soundscapes. A LN was developed to inform lessees that federal regulations restrict the commercial use of National Park Service roads, including the Harpers Corner Road. Table 17a Records 39 through 46 are unique to the Dinosaur Trail MLP and are also found in relevant resource decision sections in Tables 2-1 through 2-22.

### **Lands and Realty**

Timing limitation stipulations identified in Appendix A could be applied as Terms and Conditions to oil and gas associated ROW grants. In addition, ROW holders would be expected to follow a similar process as oil and gas operators in regards to use of the WRFO Surface Reclamation Plan. The Rangely District Hospital R&PP lease would subject to an NSO stipulation. Lease Notice 18 was added to Appendix A for the Rio Blanco Project Site withdrawal.

### **Special Designations**

The White River Riparian ACEC would be managed with an NSO stipulation.

### **Lands with Wilderness Characteristics**

New criteria was developed for evaluating the manageability of lands which were found to possess wilderness characteristics (Section 2.4.6.2) and assigned areas to a management class (i.e., Tier 1, 2, or 3). Areas will be managed with either NSO, CSU, or no stipulations based on management class.

## **2.3 Alternatives Development**

The BLM used several sources of input, including existing decisions in the 1997 White River RMP and the 2007 RFD scenario to develop alternatives. Early in the process, the BLM established a list of preliminary planning criteria (Preparation Plan Analysis [BLM 2006a]; see Section 1.4.1) and preliminary management concerns. Then, the public scoping process, conducted from June 14, 2006 to September 30, 2006, provided an opportunity for interested members of the public and local governments, as well as other resource and land management agencies, to comment on the planning process and/or management concerns. From the comments received, the BLM identified the key planning issues to be addressed in the Draft RMPA/EIS. After the issues had been identified and documented in the Scoping Report (BLM 2007a), the BLM prepared the Analysis of the Management Situation (BLM 2007b). The Analysis of the Management Situation provides a profile of resources and resource uses in the WRFO Planning Area, a description of the existing management situation as it pertains to the oil and gas program, and an analysis of the opportunities to modify the existing management situation to best respond to the changing conditions in the WRFO Planning Area. After this analysis, the BLM further developed the preliminary planning criteria identified in the Preparation Plan Analysis based on the planning issues identified through the public scoping process and consistent with the BLM's resource management concerns and opportunities identified in the Analysis of the Management Situation. This process enabled the BLM to identify planning challenges facing the WRFO in developing preliminary alternatives. These planning challenges include:

- Developing alternatives that consider and evaluate a broad range of foreseeable oil and gas development scenarios (e.g., between 550 and 2,556 well pads, with an average of eight wells per pad, projected in the 2007 RFD Scenario [BLM 2007]).
- Managing the intensity (“how much”), extent (“where”), and timing (“when”) of impacts from increased development.
- While considering the following:
  - The high percentage of federal mineral estate already leased in the WRFO Planning Area (i.e., 73 percent of leasable acres in the WRFO Planning Area are leased, including 92 percent of leasable acres within the MPA).
  - Terms of existing leases could be inadequate to afford sufficient resource protection and management considering increased projections for the intensity and extent of development.
  - The potential for significant impacts from the anticipated level of oil and gas development (e.g., wildlife habitat, air and water quality, regional economy).

The BLM conducted a series of three work sessions to develop preliminary alternatives with an Interdisciplinary (ID) Team comprising of BLM staff, local and state cooperating agencies, and federal agency partners. During the initial work session, the BLM introduced themes for four preliminary alternatives (Alternatives A, B, C, and D) that addressed the issues and planning challenges identified through the BLM’s preplanning and public scoping. Then, the BLM presented the preliminary concepts for a management scenario of each preliminary alternative for discussion and input.

During the second work session, the BLM presented the preliminary alternative themes that had been refined based on ID Team input received during the first work session. The BLM also introduced draft management goals and objectives and overall management approach characteristics in each of the preliminary alternatives for key resources and resource uses. ID Team members were given the opportunity to review and provide comments on draft goals and objectives and the preliminary alternatives. The BLM refined the preliminary alternatives based on comments received.

A third work session was held to review the BLM responses to ID Team comments and to present the four draft alternatives to be considered in detail in the Draft RMPA/EIS. Throughout the process, the ID Team identified and discussed other alternatives (i.e., management options) that were considered possible management approaches to resolving resource management issues and conflicts. These options, discussed in detail in Section 1.5, were eliminated from further analysis because the BLM determined that they either did not meet the purpose and need for the RMPA or were not feasible due to technical, legal, and policy considerations.

### 2.3.1 Alternative Components

The alternatives described in this chapter represent a range of management options to address the key issues (presented in Chapter 1), and to manage resources and resource uses to achieve resource management goals in light of the projected increase in oil and gas development in the WRFO Planning Area. Each alternative comprises: (1) management goals and objectives and (2) allowable uses and management actions.

### 2.3.1.1 Management Goals and Objectives

As part of the land use planning process, the BLM, with input from relevant agencies and the public, identifies desired outcomes expressed in terms of specific goals and objectives for resources and resource uses. Desired outcomes are the future conditions expected to be produced by implementation of identified management actions. Goals and objectives provide overarching direction for the BLM's actions in most effectively meeting legal mandates, numerous regulatory responsibilities, national policy, and other resource or social needs. Management goals are broad statements of desired outcome, but are generally not measurable. An example of such a management goal would be to preserve and protect cultural and historic resources to ensure those resources are available for appropriate uses by present and future generations.

Management objectives identify more specific desired outcomes for resources, and should include a measurable or quantifiable component and an established timeframe for achievement, if possible. Objectives are anticipated to achieve the stated management goals. An example of such a management objective would be to reduce imminent threats to cultural and historic resources from natural or human-caused deterioration or potential conflict with oil and gas activities.

### 2.3.1.2 Allowable Uses and Management Actions

The five alternatives are distinguished by the type and degree of constraints described as allowable uses and management actions undertaken to achieve the desired outcomes. Allowable uses identify surface lands and federal subsurface oil and gas mineral estate where uses are allowed, including any protective measures that would be needed to meet desired outcomes, and could exclude certain land uses to protect resource values. For example, protective measures that are consistent with the mineral rights granted by the lease could be imposed on the location of access routes, well sites, and facility sites or on the timing of geophysical exploration, well drilling, or other operations. Allowable uses could result from lease stipulations (e.g., lands open to leasing with an NSO stipulation), Conditions of Approval (COA) from the surface management agency's review and environmental analysis of the proposed operations, Notices to Lessees, Onshore Orders, or regulations.

The RMPA/EIS does not revise oil and gas leasing decisions made in the 1997 White River RMP. Rather, the alternatives presented consider additional allowable uses through COAs applied to existing leases or lease stipulations that could be applied to newly leased lands or other land use authorizations pursuant to this RMPA/EIS. For some allowable uses considered in the alternatives, the BLM may offer exceptions, waivers, modifications, or suspensions as appropriate to achieve desired outcomes and comply with management actions (see Appendix A).

Management actions represent the actions anticipated to achieve desired outcomes. These actions include proactive measures or limitations intended to guide day-to-day activities occurring on public land (e.g., limiting vehicle use on BLM vehicle access networks in areas of concentrated development to that directly associated with oil and gas development, production, and maintenance).

### 2.3.1.3 Reasonable Foreseeable Development Scenario

In 2007 the BLM prepared an updated RFD Scenario (BLM 2007) to project the maximum levels and types of industry activity, and the associated surface disturbance that could occur on all land ownerships in the WRFO Planning Area (see discussion of the BLM's update of the 1997 RFD Scenario in Section 1.2.2). More specifically, the 2007 RFD Scenario considers the number of well pads and estimates acres of surface disturbance for the unconstrained (baseline) scenario that is not

limited by the number of drilling rigs available, natural gas prices, or other conditions that could otherwise constrain development.

The WRFO's unconstrained 2007 RFD Scenario is based on two key assumptions: (1) all potentially productive areas, except those areas designated as closed to leasing by law, regulation, or executive order, are open to leasing and development; and (2) only standard lease terms and conditions would be imposed, affording minimum protections to other important resource values. In conjunction with land use constraints (e.g., NSO stipulations), management actions, and BLM expertise, the 2007 RFD Scenario was also used to project the approximate number of wells, well pads, and surface disturbance that could be developed under the constrained scenarios for each alternative. The 2007 RFD Scenario assumes approximately 12 acres of total disturbance (including roads and pipelines) per well pad. Together, the allowable uses, management actions, and 2007 RFD Scenario form the basis of the impact analysis of alternatives considered in the RMPA/EIS (presented in Chapter 4).

The RFD Scenario is a “tool prepared by an interdisciplinary group of technical and scientific specialists” that “serves as an analytical baseline for identifying and quantifying direct, indirect, and cumulative impacts, which provide the premise for formulating alternatives to a proposed action and strategies for mitigating adverse impacts” (WO-IM-2004-89). The Interior Board of Land Appeals (IBLA) has decided that “Where BLM establishes a reasonably foreseeable development scenario for the purposes of land use planning and environmental review, that scenario is not a land use decision establishing a binding maximum to which BLM must conform. A subsequent decision to exceed such a scenario does not violate the land use plan, FLMPA, or the rules at 43 CFR Subpart 1610” (DOI OHA 2008).

## **2.4 Alternatives Analyzed in Detail**

This section summarizes the five alternatives analyzed in detail in this Proposed RMPA/Final EIS. These alternatives present a range of reasonable management actions that were analyzed to assist decision-makers and the public in understanding the potential environmental consequences of each alternative. The five alternatives are:

- Alternative A (No Action Alternative) – Management under this alternative would retain the current management goals, objectives, and direction specified in the 1997 White River RMP. However, it updates the 20-year development projection from the 1997 White River RMP to reflect the rate of about 220 new drilling permits per year. Resources and resource programs would be analyzed at a level of development projected in the 2007 RFD Scenario (BLM 2007) of up to 550 well pads with an associated long-term disturbance of 6,600 acres.
- Alternative B – This alternative evaluates limiting the duration and overall extent of development activities to maintain existing resource conditions throughout all phases of development. It emphasizes conservation and protection of other resources and resource uses, concurrently with oil and gas production. Implementation of Alternative B could result in up to 1,100 well pads. Associated surface disturbance resulting from this level of development would total 13,200 acres. The BLM would encourage clustered development and prompt reclamation by offering exceptions to wildlife timing limitations if disturbance associated with development remained within defined thresholds.
- Alternative C – This alternative emphasizes the short-term use of the environment while maintaining and enhancing long-term community function and ecological integrity. Disturbance thresholds would be higher and more exceptions and modifications to lease

stipulations could be granted compared to Alternative B. This alternative projects development of up to 1,800 well pads with an associated surface disturbance totaling 21,600 acres.

- Alternative D – Management under this alternative would include emphasizing the production of oil and gas resources. Development would still occur under the environmental protection afforded by applicable laws, regulations, and BLM policy. Implementation of Alternative D is assumed to result in up to 2,556 new well pads with an associated surface disturbance of approximately 30,700 acres.
- Alternative E (Proposed Amendment) – Management of oil and gas development under this alternative combines elements of Alternatives A, B, C, and D. In acknowledging a trend for an increasing number of wells per pad, Alternative E reflects surface disturbance associated with development that would be similar to Alternative B (1,100 well pads or 13,200 acres) while allowing for well numbers anticipated under Alternative C (15,040 wells). The majority of development is expected to occur within the MPA, with approximately 972 well pads within the MPA and 128 well pads outside the MPA.

Additional environmental analyses would be conducted, as appropriate, for project- and site-specific actions proposed in the geographic area currently defined as the WRFO Planning Area. However, the site-specific evaluations would be facilitated by the planning and programmatic evaluation of impacts disclosed in the Final EIS supporting the ROD and approved RMPA.

Although the assumptions regarding the level of development associated with the alternatives represent reasonable projections of what could occur, actual development may vary significantly from the projections presented due to the large number of variables involved (e.g., number of wells, rate of drilling of wells, viability of directional drilling, the price of natural gas). For example, development intensity would vary based on management actions and requirements under each alternative considered in this Proposed RMPA/Final EIS. Alternatively, technological improvements could allow for a higher average number of wells per pad. Regardless of the alternative adopted in the approved ROD, existing lease stipulations attached to existing oil and gas leases would continue to apply to those leases. New or additional lease stipulations would apply only to lands leased pursuant to the ROD.

The BLM would require specific lease stipulations, best management practices (BMPs), and COAs that would protect other important resource values.

The BLM could apply mitigation measures to surface use activities associated with existing land use authorizations as a COA. The BLM has the discretion to modify surface operations to change or add specific mitigation measures when supported by scientific analysis. All mitigation/conservation measures not already required as stipulations would be analyzed in a site-specific NEPA document, and be incorporated, as appropriate, into conditions of approval of the permit, plan of development, and/or other use authorizations. In discussing surface use rights, 43 CFR 3101.1-2 states that the lessee has the right “to use so much of the leased lands as is necessary to explore for, drill for, mine, extract, remove and dispose of all the leased resource” but lessees are still subject to lease stipulations, nondiscretionary statutes, and “such reasonable measures as may be required by the authorized officer to minimize adverse impacts to other resource values, land uses or users not addressed in the lease stipulations at the time operations are proposed”. Lessees are also required to conduct operations in a manner that not only “results in maximum ultimate economic recovery of oil and gas with minimum waste” but also “protects other natural resources and environmental quality” (43 CFR 3162.1). While it would not be consistent with lease rights granted to preclude any

development of the lease, the BLM may require relocation of proposed operations by more than 660 feet and may prohibit surface disturbing operations for more than 60 days when such action has been deemed necessary, through a site-specific NEPA analysis, to minimize adverse impacts to other resource values, land uses, or users.

New lease stipulations resulting from the ROD and approved RMPA could be applied to other oil and gas related authorizations (i.e., other than oil and gas leases) as COAs in order to maintain or achieve desired resource conditions. Also, lease suspensions could be used as a tool by the BLM as an incentive to operators to proactively manage drilling activities and operations.

Tables 2-1 through 2-22 present the goals and objectives developed for each alternative and a comparison of allowable uses and management actions for each alternative by resource. Maps 2-1 through 2-5 depict the major management elements of each alternative. In some cases, the BLM had not made a decision or identified a management action for a resource or resource use in the 1997 White River RMP. In these cases, “no similar action” is identified for the No Action Alternative in Tables 2-1 through 2-22. The following subsections highlight the major components of each alternative.

### 2.4.1 Management Guidance Common to All Alternatives

This section describes the management goals, objectives and actions for resource conditions and programs, and decisions that would apply to the WRFO management under all alternatives, including reclamation, BMPs, and Colorado Public Land Health Standards. Tables 2-1 through 2-22 detail the proposed actions, and each table includes: (1) continuing management goals; (2) continuing management objectives; and (3) allowable uses and management actions common to all alternatives, which are discretionary actions or decisions carried forward from the 1997 White River RMP that would be implemented under each alternative. Additional information on applicable laws, policy and Legal Authorities and Mandates, are found in the Management Situation Analysis, available online ([http://www.blm.gov/co/st/en/BLM\\_Programs/land\\_use\\_planning/rmp/white\\_river/documents.html](http://www.blm.gov/co/st/en/BLM_Programs/land_use_planning/rmp/white_river/documents.html)) or at the WRFO. Wilderness Study Areas (WSAs) and Harpers Corner Road (totaling 83,300 acres) would remain closed to leasing under all alternatives.

#### 2.4.1.1 Reclamation

For Alternatives B through E, the BLM has developed a standards-based reclamation plan (Appendix D) as required by Onshore Oil and Gas Order No. 1 (issued under 43 CFR 3160; BLM 2007d). The WRFO Surface Reclamation Plan is intended to complement current reclamation guidance found in the Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (Gold Book; DOI and USDA 2007). In addition to final reclamation, the WRFO Surface Reclamation Plan describes two distinct phases of interim reclamation—Phase I and Phase II. Phase I reclamation occurs immediately after road and pad construction is completed, and includes the stabilization and protection of soil resources from erosion and proper storage of topsoil so that it remains viable and available for redistribution during later stages of reclamation. Phase II reclamation involves recontouring the site to the minimum necessary area (e.g., the working surface of a well pad). Both phases of reclamation emphasize the establishment of desired vegetation to minimize soil erosion, limit noxious weed establishment, allow for successional processes, and provide specified components of wildlife habitat over the productive life of the well pad. Final reclamation is the last phase described in the WRFO Surface Reclamation Plan, and calls for restoration of the entire site to its original landform. In general, a well site must be recontoured to its original contour or a contour that blends with the surrounding landform. Stockpiled topsoil must be evenly redistributed, and the site must be revegetated to achieve final reclamation. The WRFO

Surface Reclamation Plan includes implementation timeframes and standards (i.e., success criteria) that must be met in order for Phase I or Phase II reclamation and final reclamation to be deemed successful. All surface disturbing activities related to oil and gas exploration and development on BLM-administered lands would be subject to reclamation recommendations and requirements included in the WRFO Surface Reclamation Plan.

#### **2.4.1.2 Best Management Practices and Conservation Measures**

For all alternatives, the BLM would apply and use BMPs and conservation measures (Appendix B), as needed in specific situations, to ensure adequate protection of resource values. BMPs and conservation measures could be applied as a COA at the time of permitting of oil and gas drilling or related operations or other activities and could include a variety of measures to minimize impacts over the short- or long-term, including timing limitations or avoidance areas for land use authorizations. All alternatives would encourage the use of multiple well placements.

#### **2.4.1.3 Colorado Public Land Health Standards**

Under all alternatives, the BLM would continue to monitor and assess public land health in accordance with the Colorado Public Land Health Standards (BLM 1997b). Standards of land health are an expression of levels of physical and biological condition or degree of function required for healthy and sustainable lands.

#### **2.4.1.4 Management Goals**

Management goals were defined for each resource and resource use category that the BLM must address in the planning process. The management goals for each resource management category and land use program are presented in Tables 2-1 through 2-22. Management goals are typically focused on maintaining, improving, and enhancing existing resource conditions, avoiding adverse impacts, and complying with applicable state and federal standards and regulations. Establishing management goals aids the BLM in developing management objectives, and allowable uses and management actions. There are 22 resources, or resource use, categories with management goals found in the Comparison of Alternative Tables 2-1 through 2-22.

#### **2.4.1.5 Management Objectives**

Management objectives provide a guideline for developing management actions. There are 22 resources or resource use categories and are found in the Comparison of Alternative Tables 2-1 through 2-22. The management objectives that are common to all alternatives are listed first under each of the Management Objectives sections and apply to the five alternatives for each prospective resource when appropriate.

#### **2.4.1.6 Allowable Uses and Management Actions**

Allowable uses identify surface lands and federal subsurface oil and gas mineral estate where uses are allowed, including any restrictions that would be needed to meet desired outcomes, and could exclude certain land uses to protect resource values. Allowable uses and management actions that are applicable or common to all alternatives are listed in the Comparison of Alternative Tables 2-1 through 2-22. Record numbers were not changed between the draft and proposed RMPA/EIS; therefore, common allowable uses and management action are listed first under each resource section when appropriate.

### 2.4.1.7 Resource Management and Monitoring Protocol

A timely, cost-effective, scientifically valid, and publicly accepted approach to monitoring the effectiveness of land management decisions and practices was desired as part of the RMPA. To meet this need, the BLM, in collaboration with Colorado State University, and with input from the U.S. Geological Survey, developed BLM Technical Note 439 (Boone et al. 2011), which proposes a resource management and monitoring protocol (RMMP) for a semiarid landscape with extensive oil and gas potential. Once all phases are complete, the RMMP will include specific protocols and models for using remote sensing, other geospatial technologies and fieldwork as an integrated monitoring approach; a series of metrics judged by experts as likely to reflect important changes in landscapes over time; and a means to report the results of the RMMP to the public, to operators, and within the BLM.

The RMMP itself is not a decision-making tool but it is rather a means to inform decisions by providing an integrated approach to monitoring and a mechanism to understand the effects of decision making. The RMMP proposes specific monitoring needs to meet its objectives, but also provides a framework for considering all other resource-specific monitoring (e.g., water quality, air quality, reclamation success) so that management decisions can be evaluated from an interdisciplinary perspective on a landscape scale. The RMMP is intended to be dynamic and both metrics and protocols for data collection may change over time without additional land use planning or NEPA.

Implementation of the RMMP will occur in phases. While there are over 30 proposed metrics presented in BLM Technical Note 439, the WRFO will initially focus on the subset of these metrics that provide the most efficient and effective way to inventory, monitor, and report surface disturbance and reclamation activities and to understand the landscape condition and trend. In addition to any RMMP specific metrics, the WRFO will also focus on the six core indicators of the BLM's Assessment, Inventory, and Monitoring Strategy (AIM) as described in BLM Technical Note 440 (MacKinnon et al. 2011). These six core indicators are recommended wherever the BLM implements quantitative vegetation and soil monitoring and include the amount of bare ground, vegetation composition, the presence and cover of nonnative invasive plant species, the presence and cover of plant species of management concern, vegetation height, and the proportion of soil surface in large intercanopy gaps.

To fully integrate the RMMP into daily workflows, the BLM is working with USGS Fort Collins Science Center to create a data management system (DMS) for the WRFO similar to other web-based tracking systems developed in Wyoming (e.g., the Jonah Infill DMS). The DMS will provide an interface for management and specialist review of development activities (including surface disturbance and reclamation efforts, which can be viewed spatially and tracked via reports), related monitoring, and described effects. Further, the DMS will provide a mechanism for sharing condition and trend metrics within the BLM and with interested stakeholders and the public, simultaneously.

The Land Use Planning Handbook directs that plans should be periodically evaluated (at a minimum every 5 years). Evaluation is the process of reviewing the land use plan and determining whether decisions and NEPA analysis are still valid and whether the plan is being implemented. Specifically, plans are evaluated to determine if: (1) decisions remain relevant to current issues, (2) decisions are effective in achieving (or making progress toward achieving) desired outcomes, (3) any decisions that need to be revised, (4) decisions that need to be dropped from further consideration, and (5) any areas that require new decisions. Data collected as part of the RMMP will help to inform the plan evaluation.

## 2.4.2 Alternative A (No Action Alternative)

Alternative A (Map 2-1) represents the No Action Alternative detailed in Tables 2-1 through 2-22. The management focus for Alternative A is the current management goals, objectives, and direction as stated in the 1997 White River RMP with modifications through plan maintenance consistent with 43 CFR 1610.5-4. Only approved decisions from the 1997 RMP are listed for Alternative A. During a project proposals' site-specific NEPA analysis, resource specialists have applied COAs to mitigate project specific impacts; some of these COAs may be found in Alternatives B-D as proposed management actions. Although these COAs may have been used currently, they were not decisions vetted through the land use planning process and therefore are listed as "No similar action" under Alternative A. The alternative also continues current allowable uses and management actions for resources and resource programs under the levels and locations of future oil and gas development projected in the 2007 RFD Scenario (BLM 2007).

Under Alternative A, approximately 1,696,000 acres of BLM oil and gas federal mineral estate are identified as open to leasing; 455,500 acres are open with standard lease terms, and 1,240,500 acres are subject to lease stipulations (see Appendix A), including NSO (157,100 acres) stipulations, Controlled Surface Use (CSU) (583,900 acres) stipulations and timing limitations (1,006,500 acres). (Timing limitations may overlap CSU and NSO areas so the individual stipulations will not sum to the total acres open to leasing.) Implementation of Alternative A is assumed to result in up to 4,603 new wells on 550 new well pads and approximately 6,600 acres of associated disturbance from well pads, roads, and other facilities (i.e., gas plants, pipelines, and other infrastructure) during the 20-year period of analysis.

The following discussion presents the management actions, implemented under Alternative A, by key resource. A complete list of management goals, objectives, and actions intended to minimize impacts on the physical, biological, and socioeconomic resources is found in the Comparison of Alternatives Tables 2-1 through 2-22; Alternative A.

### 2.4.2.1 Other Management Actions Considered in Alternative A

#### Air and Atmospheric Values

Operators would be required to achieve at least 50 percent reduction from uncontrolled fugitive dust emissions by using watering or other control measures on collector, resource, and local roads.

#### Soil and Water Resources

Fragile soils on slopes greater than 35 percent and saline soils derived from Mancos Shale would be managed with a CSU stipulation on oil and gas leasing. Surface discharge of produced water that meets state standards for water quality would be allowed if the required National Pollutant Discharge Elimination System (NPDES) are obtained. In addition, evaporation facilities for the disposal of produced water would be considered with mitigation on a case-by-case basis. Further, operators would be required to manage oil and gas activities in a manner that retains upland health (as defined by Colorado Public Land Health Standards for Uplands, Standard 1).

#### Vegetation

The management goal for plant communities would be to maintain healthy, diverse, and sustainable rangeland and woodland plant communities. Also, the goal for noxious and invasive weeds would be to manage noxious weeds so they cause no further negative environmental, aesthetic, or economic impacts. Surface disturbing activities would be avoided in priority riparian habitats, unless environmental analysis determined that (1) the proposed activity would not degrade or

forestall attainment of proper functioning condition of the riparian area; or (2) impacts could be mitigated to meet minimum objectives for the system. Management of riparian areas and wetlands would be based on the rating system for riparian areas as identified in the 1997 White River RMP.

### **Fish and Wildlife – Big Game**

The BLM's management goal for big game wildlife habitat would be to continue sustaining big game populations at a level commensurate with multiple-use objectives and the population objectives of the Colorado Division of Wildlife (CPW). The acute effects (a definition of acute versus collective effects is provided in Section 2.4.3.1) of well construction and development on big game habitat would be reduced through application of timing limitations on acute disturbance. Exceptions, waivers, or modifications may be granted, as described in Appendix A. The BLM could also apply timing limitations to surface use activities associated with existing land use authorizations as a COA. No offsite compensatory mitigation for disturbance of big game habitat would be required under this alternative.

Road abandonments and seasonal closures during periods of animal occupation would be used as management tools, to the extent practical, to limit effective road densities to an average maximum 1.5 miles of road per square mile on big game critical habitats and 3 miles of road per square mile on remaining big game ranges.

### **Fish and Wildlife – Raptors**

The management goal for raptor habitat is to maintain the short-term utility and promote the continued long-term development and availability of suitable raptor habitats, including prey base, nest sites, and other special habitat features necessary to help stabilize or allow increases in regional raptor populations.

### **Fish and Wildlife – Grouse**

The management goal for sage-grouse habitat would be to restore, maintain or expand native sage-grouse populations at levels commensurate with objectives set by CPW. The management objectives would achieve this goal by reducing disruption of important seasonal-use activities associated with grouse production and recruitment. Management actions for sage-grouse include prohibition of surface occupation and surface disturbing and disruptive activities within 1/4 mile of active and inactive lek sites (as directed in the 1997 White River RMP and reflected in existing lease stipulations). An active lek or strutting ground site shows evidence of use by displaying males in the last five years and an inactive lek shows evidence of use within the last 10 years. Exceptions, waivers, or modifications may be granted (see Appendix A). The BLM could apply this mitigation measure to surface use activities associated with existing land use authorizations as a COA. In addition, timing limitations would be applied to surface disturbing use activities in sage-grouse winter concentration areas, and in nesting habitat if 10 percent or more of suitable nesting habitat associated with an individual lek would be adversely influenced.

Surface occupation and long-term conversion or adverse modification of suitable sage-grouse habitat would be avoided, as described in Table 2-6. Vegetation treatment widths would generally not be allowed to exceed 200 feet. Treatment areas should be interspersed with equal or larger intervals of suitable cover. Cumulative adverse manipulations would not be allowed to exceed 10 percent of suitable nesting habitat within 2 miles of a lek. Disruptive surface use activities would be prohibited during the seasonal use periods identified: (1) December 16 through March 15 in winter concentration areas; and (2) April 15 through July 7 in nesting habitat if 10 percent or more of suitable nesting habitat associated with an individual lek is adversely influenced.

### **Livestock Grazing**

The BLM would use mitigation to minimize cumulative impacts of other resource uses to livestock grazing (including reduction in operation capabilities and production performance). Under this alternative, the BLM would not apply any specific management actions aimed at adjusting oil and gas activities to allow for continued implementation of existing grazing permits or leases, and would not make any recommendations for compensatory mitigation when oil and gas activities preclude effective implementation of a grazing plan.

### **Lands and Realty**

Land use authorizations (e.g., right-of-way grants, leases, and permits) would be considered on a case-by-case basis but denied in areas where a land use (or uses) would be excluded, with the exception of short-term land use permits involving no development, and projects that are consistent with management objectives for the area. The BLM would continue to designate major right-of-way corridors on public lands that would meet public, industry, and environmental needs.

## **2.4.3 Alternative B**

The implementation of Alternative B (Map 2-2) would limit the overall extent of development activities and duration in order to maintain existing resource conditions throughout all phases of development (i.e., from initial construction through post-production). The management focus for Alternative B is the conservation and protection of other resource uses while allowing for continued production of oil and gas resources. The BLM would apply additional management actions to further protect the environment for these resources. The BLM would have the discretion to modify surface operations to change or add specific mitigation measures when supported by scientific analysis. All mitigation/conservation measures not already required as lease stipulations would be analyzed in a site-specific NEPA document, and be incorporated, as appropriate, into COAs of the permit, plan of development, and/or other use authorization.

Under Alternative B approximately 1,696,000 acres of BLM oil and gas federal mineral estate are identified as open to leasing and subject to lease stipulations (see Appendix A), including NSO (757,200 acres) stipulations, CSU (296,300 acres) stipulations and timing limitations (1,696,000 acres). Implementation of Alternative B is assumed to result in up to 9,191 new oil and gas wells on 1,100 new well pads and 13,200 acres of associated disturbance from well pads, road and other facilities during the 20-year period of analysis.

The BLM considered issues identified during the scoping period, the established planning criteria, and resource management goals and objectives in formulating this alternative. The following discussion presents the management actions by key resource. A complete list of management goals, objectives, and actions intended to minimize impacts on the physical, biological, and socioeconomic resources is found in the Comparison of Alternatives Tables 2-1 through 2-22; Alternative B.

### **2.4.3.1 Managed Development Approach**

The managed development approach utilized under Alternative B is a significant distinction from Alternative A. A key element of the managed development approach evaluated under this alternative is limiting the spatial extent of surface disturbance. Limitations would be achieved in part by managing the extent of big game seasonal range subjected to cumulative adverse behavioral effects (e.g., harassment, avoidance) attributable to oil and gas activities. The managed development approach offers operator incentives for concentrated development. This approach includes establishing big game and sage-grouse thresholds for cumulative adverse behavior effects to be

applied by each Game Management Unit (GMU), as defined by CPW, and by leaseholder (e.g., a threshold of a certain percentage of big game crucial winter range occurring within a leaseholding).

The overall vision for a managed development approach described for this alternative would be to concentrate, cluster, co-locate, and consolidate surface facilities and other ground disturbing activities to manage the acute or collective degree of effects (defined below) from the proposed development. This would result in:

- Reduced behavioral impacts on wildlife by limiting the overall extent and duration of development activities and applying closely monitored reclamation that maintains community function and ecological integrity in the short- and long-term;
- Localizing surface disturbance and gaining economy of scale in infrastructure (e.g., limiting temporal and spatial extent of areas with increased sedimentation; indirect reduction in fugitive dust by improving dust-control effectiveness; ability to apply controls on sedimentation/air-borne particulates throughout the development field);
- More focused, timely, and complete reclamation;
- Increased efficiency in mutual BLM and industry monitoring;
- Improved ability to develop and apply effective mitigation for impacts to air, water, and soil;
- Improved ability to quantify impacts that could degrade water quality; and
- Greater ability to avoid conflicts with recreation experience.

### **Fish and Wildlife – Big Game**

Under Alternative B, the BLM's management goal for big game habitat would be to manage big game habitat utility and suitability to sustain at least 90 percent of CPW's long-term population objective throughout active development. In the managed development approach, all behavioral effects would be defined as either acute or collective effects as follows:

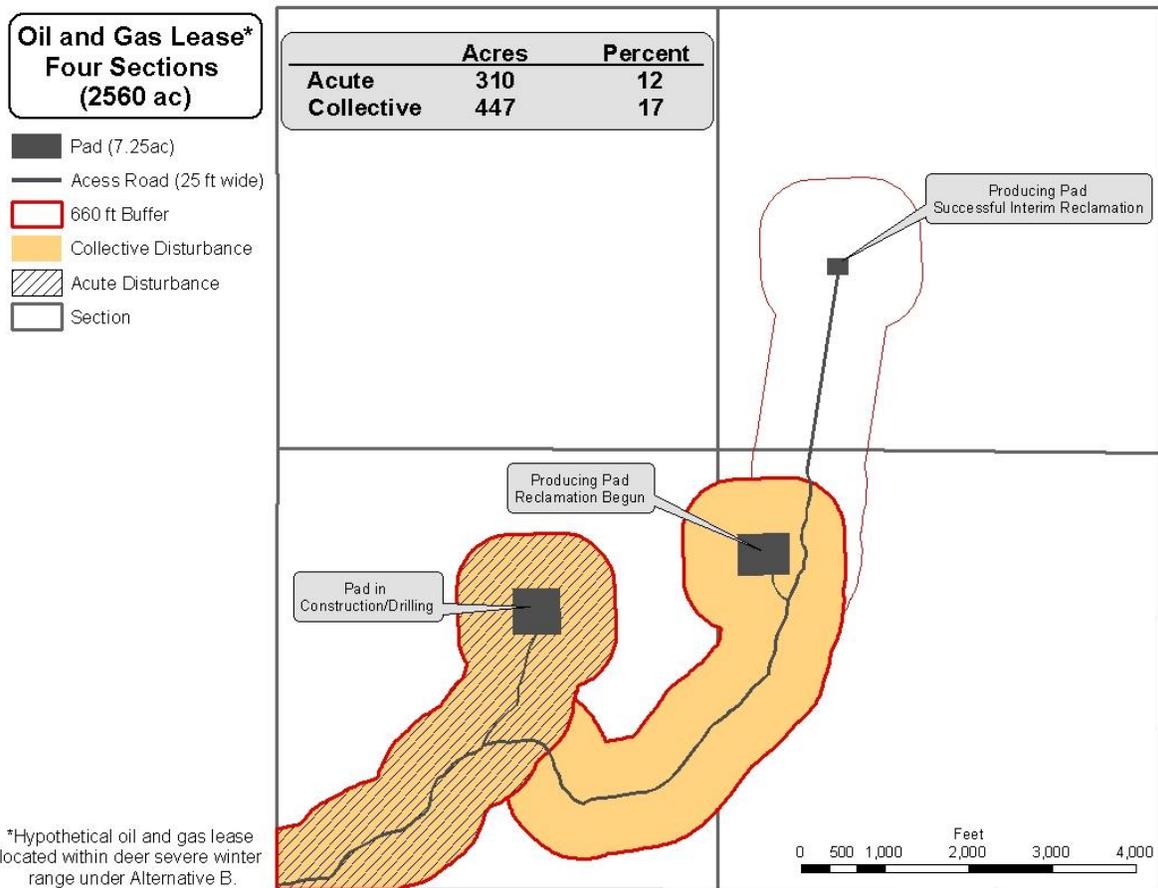
- Acute effects are characterized by concentrated, intensive activity associated with construction, drilling, and completion. The area of acute effects would be defined by the physical footprint of those concentrated, intensive activities associated with, for example, pad and pipeline construction and well drilling and completion operations, buffered by approximately 660 feet on winter ranges and approximately 1,300 feet on summer ranges. The area of acute effects would be exempted from timing limitations as long as the thresholds for collective and acute effects are met. In short, the threshold allowances are a predetermined percentage of each seasonal range within a lease-holding. To qualify for timing limitation exceptions, fluid mineral development activity, as measured by the area encompassed by 660 foot-buffers surrounding development features (i.e., routes, pipelines, pads) within a leaseholding, must not exceed the acreage represented by those threshold allowances. Minor work involving lower intensity activity (e.g., installation of production facilities, reclamation) within the area of remaining collective effects would generally be subject to timing limitations.
- Collective effects are characterized by development-related activities up until the time that successful reclamation is achieved and maintenance and production activity at the location is minimal, and may include but is not necessarily limited to: access routes; well pads not fully constructed or reclaimed to interim standards; and wells receiving frequent visitation

(i.e., an average greater than seven vehicle trips per week). The area of collective effects would be defined as the footprint of the development-related activities surrounded by a buffer of approximately 660 feet on winter ranges and approximately 1,300 feet on summer ranges. Access or other features and facilities used in common would be pro-rated for each operator.

- For existing leases, Section 17 or Section 39 Mineral Leasing Act (MLA) lease suspensions, depending on the justification and circumstances, would be directed by the Authorized Officer or consented to by the lessee of active oil and gas leases in the interest of the conservation of natural resources or in cases where the lessee is prevented from operating by matters beyond the reasonable control of the lessee.
- New and existing oil and gas unit agreements would be developed or amended, with the consent of the unit working interest owners, to best conform to the objectives of the Concentrated Development Plan (CDP). Multi-unit phase development planning involving one or more operators working cooperatively with the BLM, and possibly utilizing other amended agreements for units and new unit agreements, may be required to achieve an acceptable level of conformance.

Figure 2-1, Hypothetical Development Activity, provides a scenario for illustrating the concept of acute and collective effects using Alternative B thresholds. Under this scenario, the disturbance buffers for acute and collective effects are shown.

Figure 2-1. Hypothetical Development Activity



Thresholds for cumulative adverse behavior effects would differ for acute and collective effects. If the extent of disturbance associated with an oil and gas operator's activities remained under established thresholds, seasonal wildlife stipulations for big game crucial winter range and other sensitive big game habitats would be excepted within the acute effect area portion of the leaseholding, thereby allowing industry the flexibility to continue development as long as resource objectives are met. Adverse effects that exceed established thresholds for cumulative adverse behavioral effects would nullify the timing limitation exception and subject all leaseholding development to timing limitations, as applied through established lease stipulations or COAs. Reclamation would be used as the criterion for removing acreage from the threshold computation. More specifically, pads would need to be successfully reclaimed to interim standards and activity at the site must be reduced to low frequency, maintenance mode. Other activities, such as evaluation of project-specific effects, monitoring, and enforcement under the managed development approach, would be outlined as per guidance in the BLM Technical Note 439 (Boone et al. 2011).

All seasonal big game ranges within the WRFO would be subject to timing limitations that could extend to up to 120 days on defined big game ranges within established windows (presented in Table 2-4). Timing limitations would be applied through COAs for existing leases and through stipulations on new leases. Timing limitations were developed based on adaptive management and the BLM's professional judgment, and in coordination with CPW and other land management agencies. However, exceptions to timing limitations would be offered contingent on development remaining within the following thresholds in Alternative B for acute and collective cumulative adverse behavioral effects (evaluated by total leaseholdings and by company within a GMU):

- Thresholds for acute effects
  - 10 percent of deer winter range;
  - 10 percent of deer severe winter range;
  - 10 percent of deer summer range;
  - 10 percent of deer winter concentration areas;
  - 5 percent of deer severe winter range/winter concentration areas; and
  - 0 percent of CPW defined Restricted Development Areas.
- Thresholds for collective effects
  - 20 percent of deer winter range;
  - 20 percent of deer severe winter range;
  - 20 percent of deer summer range;
  - 20 percent of deer winter concentration areas; and
  - 10 percent of deer severe winter range/winter concentration areas.

Threshold limits may be incrementally adjusted by the BLM, in coordination with CPW, based on animal response or the influence of compensatory mitigation in meeting long-term population objectives, as determined through monitoring.

In addition to the above, collective effects on big game habitat in areas defined by CPW as Restricted Development Areas would be limited to 5 percent with no allowance for acute effects during the period of animal occupation. Restricted Development Areas are those geographic areas that offer high value as big game habitat (as determined by CPW) or those that must remain

relatively free of development influences to serve as experimental controls for long-term population or effects monitoring (e.g., North Ridge, Yellow Creek, and Story-Sprague Gulch).

### **Fish and Wildlife – Grouse**

The managed development approach would also be applied to sage-grouse habitat under Alternative B. The overarching management goal for sage-grouse would be to restore, maintain, or enhance habitat conditions and features conducive to the maintenance or expansion of native grouse population abundance and distribution, as in Alternative A. In addition, there would be an added management goal to maintain or expand the number of greater sage-grouse lek complexes (as defined by Western Association of Fish and Wildlife Agencies [WAFWA]) in each identified population within the WRFO Planning Area. Based on the total federally administered lease or unit holdings within a defined sage-grouse population area, the extent of sage-grouse habitat subject to cumulative adverse habitat and behavioral effects (i.e., reduced habitat extent/continuity, harassment/avoidance) attributable to oil and gas development would not be allowed to exceed the following thresholds:

- 10 percent of occupied habitat mapped as showing evidence of occupation in the last five years within 4 miles of active or inactive leks.
- 20 percent of sage-steppe communities used solely for winter functions or occupied habitat greater than 4 miles from an active or inactive lek.
- 25 percent of suitable (but unoccupied) habitat within 4 miles of an active or inactive lek.
- Any land base identified as critical to any given sage-grouse subcomplex (as defined by CPW) would be subject to additional conservation measures in an effort to retain an effective source population of grouse in the subcomplex. These measures could include (but would not be limited to) well pad density limits, strict development schedules and timeframes, and facility siting that could involve moves (i.e., of surface disturbing activities) of more than approximately 660 feet. Additional conservation measures could be applied as COA at the time of permitting of oil and gas drilling or related operations or other activities.

For sage-grouse habitat, the extent of adverse behavioral effects is defined as collective development activity buffered by approximately 660 feet, in addition to any habitat parcels that become physically or behaviorally isolated by development features and are unavailable for effective use by sage-grouse (e.g., barriers to movement). Cumulative development-related effects that exceed any of the thresholds would nullify the threshold allowance and, thereby, subject all lease development to timing limitations as applied through lease stipulations or COA that exceed 60 days (i.e., nesting/early brood functions—April 1 through July 15; winter use areas—December 1 through March 15). For effectiveness in achieving management objectives for sage-grouse, the BLM would encourage the voluntary application of this strategy to sage-grouse habitat on private holdings. Acreage on fee land holdings below the occupied habitat threshold that are considered by CPW to be of comparable or higher sage-grouse value could be substituted for federally-administered acreage with the approval of the WRFO Authorized Officer.

In addition to the threshold criteria for cumulative adverse behavior effects described above, surface occupation and long-term conversion or adverse modification of suitable sage-grouse habitat (as described in Table 2-6) would be limited to 2 percent of that habitat available within a leaseholding.

### 2.4.3.2 Other Management Actions Considered in Alternative B

#### Air and Atmospheric Values

Alternative B includes more stringent emission controls than Alternative A. Some of these stringent emission controls reflect existing state and federal regulations that would be implemented earlier than would otherwise be required, particularly with regard to emissions from drill rig and compressor engines. Other controls included in Alternative B involve a variety of control techniques to reduce fugitive dust and carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), volatile organic compounds (VOC), hazardous air pollutants (HAP), and greenhouse gas (GHG) emissions. Alternative B evaluates state-of-the-art emission controls such as green completion technology and glycol dehydrators with 90 percent reductions in emissions. Both of these technologies achieve very large reductions in VOC, HAP, and GHG emissions. A listing of emission controls specific to Alternative B is found in Table 2-1.

#### Soil and Water Resources

Surface discharge of produced water would not be allowed under Alternative B; rather, injection of produced water from federal oil and gas leases would be required. Evaporation facilities for the disposal of produced water would not be allowed from federal oil and gas leases. Further, Alternative B includes avoidance or exclusion of surface disturbing activities on saline soils and steep slopes to reduce disturbance in these areas and shift disturbance to less sensitive ground. Surface disturbing activities would be prohibited in the following areas: (1) mapped 100-year floodplains; (2) areas within 500 feet of perennial waters, springs, water wells, and wetland/riparian areas; and (3) areas within 100 feet from the inner gorge of ephemeral channels. In addition, all potentially impacting land use activities would be denied in priority riparian habitats (see Map 3-2 Land Cover Types).

Areas of concentrated development (resulting from operator election to comply with voluntary thresholds for cumulative adverse behavior effects) would require implementation of: (1) produced water piping infrastructure to transport water to off-site treatment and disposal locations; (2) water supply piping infrastructure to support drilling and construction activities; and (3) detailed planning for access routes in specific geographic areas, incorporating the use of existing pipeline corridors and roadways for new pipelines (see Table 2-2).

#### Vegetation

The goal of Alternative B would be to manage vegetation communities to restore, maintain, or enhance vegetation community health, composition, and diversity to benefit multiple resources and their uses (consistent with ecological site potential) in areas with oil and gas activities. Also, the goal for managing noxious and invasive weeds would incorporate weed prevention and control measures into all phases of oil and gas activities to stop or reduce the spread of noxious and invasive plant species (see Table 2-3).

The BLM would require interim and final reclamation for oil and gas activities under Alternative B. The success criteria for interim and final reclamation would be 100 percent basal vegetation cover of the desired plant community (DPC), as defined by the ecological site description or in the absence of such, would have a minimum of 30 percent basal vegetative cover or 90 percent foliar cover. In areas already leased, a program would be developed in cooperation with current leaseholders to apply, where appropriate, the most current reclamation standards and practices to existing well pads, roads, and pipelines in annual increments that would allow for completed interim or final reclamation of active and inactive right-of-way corridors, and producing or plugged and abandoned wells and access routes within 20 years.

### **Fish and Wildlife – Big Game**

Similar to the No Action Alternative (Alternative A), road abandonment and use limitations under Alternative B would be used to limit effective road densities in the long-term to an average maximum 1.5 miles of road per square mile in higher value big game habitat (i.e., defined severe winter range, severe winter range/winter concentration areas, and summer ranges) and 3 miles of road per square mile on other big game ranges (see Table 2-4). In addition, vehicle use on BLM vehicle access networks (including existing roads, trails, and ways) in areas of concentrated development would be temporarily limited, where logistically practicable, to that associated directly with oil and gas development, production, and maintenance.

Big game habitat enhancement/compensation practices to help offset forage losses and cause advantageous shifts in animal distribution (i.e., away from concentrated development areas) would remain consistent with the maintenance of climax or disclimax vegetation extent and community-specific successional perturbation rates (e.g., fire-return intervals).

Wildlife movement corridors defined by CPW, modified siting of surface facilities and application of activity restrictions (i.e., up to 60-day activity deferment) would be used as a management tool to secure big game movement between and within seasonal ranges. There is no similar action under Alternative A.

Off-site mitigation would be required for any surface disturbance at a rate of 3 acres of mitigation for each acre of habitat disturbed. A mitigation fund would be established to receive industry contributions for wildlife-specific mitigation projects. Contributions would be carried over from one government fiscal year to the next. Federal mineral estate within all CPW State Wildlife Areas (SWAs) would be open to oil and gas leasing with an NSO stipulation. On existing land use authorizations, COAs that emulate the intent of these stipulations would be applied to the extent allowable (i.e., consistent with rights granted on existing leases).

### **Fish and Wildlife – Raptors**

The management goal is to maintain the short-term utility and promote the continued long-term development and availability of suitable raptor habitats, including prey base, nest sites, and other special habitat features necessary to allow increases in regional raptor populations, where appropriate (see Table 2-5).

### **Fish and Wildlife – Grouse**

The management objectives for sage-grouse habitat include maintaining the utility of occupied grouse habitats, and to work in cooperation with industry to plan development that would confine activity to discrete geographic areas with simple and common access requirements in order to: (1) reduce the areal extent of occupied habitat subjected to acute disturbance during the period of use; and (2) minimize the long-term influences on potential habitat that, with restoration work, could allow expansion of sage-grouse distribution and compensate for reductions in the extent of suitable habitat (see Table 2-6). Special management and operation plans would be required in defined sage-grouse population areas identified by CPW to establish protocols to authorize exceptions or modifications to activity or surface use restrictions. These plans would be developed jointly by the BLM, CPW, and the leaseholder. Also, surface occupation and surface disturbing activities within 0.6 mile of active and inactive leks would be prohibited; with narrow criteria for exception or modification (see Appendix A). If existing facilities are located within 0.6 mile of such leks, alternate access routes would be devised and/or surface facilities removed to the extent practicable within five years of approval of the ROD for this RMPA/EIS. On existing land use

authorizations, COAs that provide the same level of protection as these stipulations would be applied to the extent allowable (i.e., consistent with rights granted on existing leases).

Unless qualifying for an exception by working within the disturbance threshold criteria (as described in Section 2.4.3.1), surface disturbing and disruptive activities would be prohibited from January 1 through March 15 in winter concentration areas for sage-grouse, and April 15 through July 7 within suitable nesting/early brood habitat occurring within 4 miles of active and inactive leks, or in defined habitat parcels greater than 4 miles from leks that have supported nest/early brood functions within the five previous years. The BLM would also use lease notices as a tool for notifying operators of management actions that mimic lease stipulations (e.g., greater than approximately 660 feet; greater than 60-day activity deferrals).

The BLM would defer oil and gas leasing decisions on about 96,100 acres of sage-grouse habitat (Blue Mountain) north of U.S. Highway 40 (US 40) until the effects of oil and gas development on sage-grouse behavior and habitat utility in this area are sufficiently understood to manage energy development in a manner that would, with a reasonable level of certainty, maintain viable populations of grouse in the long term.

Under this alternative, protocols and criteria for lessees would be established to implement compensatory mitigation to offset reductions in sage-grouse habitat capacity. In coordination with CPW and industry, an adaptive method (based on monitoring) would be developed and implemented to quantify direct and indirect effects on sage-grouse as the basis for applying compensatory mitigation to achieve or maintain long-term population objectives.

### **Livestock Grazing**

Under this managed development approach, the BLM would actively facilitate voluntary collaboration between oil and gas operators and grazing permittees to mitigate economic impacts to grazers, and provide flexibility in management of livestock grazing on allotments temporarily affected by oil and gas development activities. Under this alternative, the BLM would encourage compensatory mitigation by oil and gas operators when oil and gas activities preclude effective implementation of a grazing plan, commensurate with the impact on the livestock operation (see Table 2-16).

### **Lands and Realty**

No new designated ROW corridors would be established under Alternative B (DOE and BLM 2008). Upgrades to existing pipelines would be permitted in existing rights-of-ways when pipeline capacity is not available. Pipeline construction would not be allowed from December 1 through April 30 (see Table 2-20).

## **2.4.4 Alternative C**

Alternative C (Map 2-3) emphasizes short-term use of the environment (i.e., in the construction/development phase) and the maintenance and enhancement of long-term community function and ecological integrity (from initial construction to post-production). The management focus for Alternative C is similar to Alternative B (conservation and protection of other resource uses while allowing for continued production of oil and gas resources); however, Alternative C places management emphasis on maintaining long-term community function and ecosystem integrity. For example, disturbance thresholds for acute effects (i.e., short-term impacts associated with well construction, drilling, and completion) under this alternative would be higher, and more

exceptions and modifications to lease stipulations may be granted. The BLM's ability to add or change mitigation measures would be the same as Alternative B.

Alternative C identifies approximately 1,696,000 acres of BLM oil and gas federal mineral estate open to leasing and subject to lease stipulations (see Appendix A), including NSO (387,600 acres) stipulations, CSU (400,400 acres) stipulations and timing limitations (1,696,000 acres).

Implementation of Alternative C is assumed to result in up to 15,042 new oil and gas wells on 1,800 new well pads and 21,600 acres of associated disturbance from well pads, roads and other facilities during the 20-year period of analysis.

The BLM considered issues identified during the scoping period, the established planning criteria, and resource management goals and objectives in formulating this alternative. The following discussion presents the management actions by key resource. A complete list of management goals, objectives, and actions intended to minimize impacts on the physical, biological, and socioeconomic resources is found in the Comparison of Alternatives Tables 2-1 through 2-22; Alternative C.

#### **2.4.4.1 Managed Development Approach**

##### **Fish and Wildlife – Big Game**

Alternative C is similar to Alternative B in that both alternatives include development thresholds. Under Alternative C, the BLM's management goal for big game habitat would be to manage big game habitat utility and suitability to sustain at least 70 percent (versus 90 percent in Alternative B) of CPW's long-term population objective throughout active development. All seasonal big game ranges within the WRFO would be subject to timing limitations that could extend up to 90 days (versus 120 days in Alternative B) within established windows (presented in Table 2-4). Timing limitations would be applied through COAs for existing leases and through stipulations on new leases. Similar to Alternative B, exceptions to timing limitations would be offered contingent on development remaining within the following thresholds for acute and collective cumulative adverse behavior effects (evaluated by total leaseholdings within a GMU):

- Acute effects
  - 25 percent of deer winter range;
  - 25 percent of deer severe winter range;
  - 25 percent of deer summer range;
  - 25 percent of deer winter concentration areas; and
  - 10 percent of deer severe winter range/winter concentration areas.
- Collective effects
  - 25 percent of deer winter range;
  - 25 percent of deer severe winter range;
  - 25 percent of deer summer range;
  - 25 percent of deer winter concentration areas; and
  - 20 percent of deer severe winter range/winter concentration areas.

The area of acute effects would be defined by the physical footprint of those concentrated, intensive activities associated with, for example, pad and pipeline construction and well drilling and

completion operations, buffered by approximately 660 feet on all seasonal ranges. As mentioned above, disturbance thresholds for acute effects (i.e., short-term impacts associated with well construction, drilling, and completion) under this alternative would be higher, potentially increasing the extent of short-term impacts to resources and resource uses in some cases. As was noted under Alternative B, threshold limits could be incrementally adjusted by the BLM, in coordination with CPW, based on animal response or the influence of compensatory mitigation in meeting long-term population objectives, as determined through monitoring.

Similar to Alternative B, collective effects in areas defined by CPW as Restricted Development Areas would be limited to 5 percent; however, allowance for acute effects during the period of animal occupation may be granted under this alternative.

### **Fish and Wildlife – Grouse**

The managed development approach described in Alternative B would be applied to the Northwest Colorado greater sage-grouse population under Alternative C; however, more liberal provisions would be applied to the Piceance-Parachute-Roan (PPR) greater sage-grouse population (see Table 2-6). For the PPR population, the extent of sage-grouse habitat subject to cumulative adverse habitat and behavioral effects (e.g., reduced habitat extent/continuity, harassment/avoidance) attributable to oil and gas development would not exceed the following thresholds:

- 20 percent of occupied habitat mapped as showing evidence of occupation in the last five years within 4 miles of active or inactive leks (subject to concurrence of CPW).
- 25 percent of suitable but unoccupied habitat within 4 miles of an active or inactive lek or occupied habitat greater than 4 miles from an active or inactive lek.
- Any land base identified as critical to any given sage-grouse subcomplex (defined by CPW) would be subject to additional conservation measures in an effort to retain an effective source population of grouse in the subcomplex. These measures include, but would not be limited to, well pad density limits, strict development schedules and timeframes, and facility siting that could involve moves of more than approximately 660 feet.

For the PPR greater sage-grouse population, the extent of adverse behavioral effects is defined by collective development activity buffered by approximately 330 feet, (versus approximately 660 feet in Alternative B) in addition to any habitat parcels that become physically or behaviorally isolated by development features and are unavailable for effective use by sage-grouse. Cumulative development-related effects that exceed either threshold would nullify the threshold allowance and, thereby, subject all lease development to timing limitations as applied through lease stipulations or COAs that exceed 60 days (i.e., nesting/early brood functions, April 15 through July 7; winter use areas, January 1 through March 15).

As under Alternative B, the BLM would encourage the voluntary application of this strategy to sage-grouse habitat on private holdings. Acreage on fee land holdings below the occupied habitat threshold that are considered by CPW to be of comparable or higher sage-grouse value could be substituted for federally administered acreage with the approval of the WRFO Authorized Officer.

Under Alternative C, surface occupation and long-term conversion or adverse modification of the following sage-grouse habitats would be avoided (rather than limited to 2 percent as in Alternative B): (1) sagebrush-dominated stands with less than or equal to 35 percent canopy, less than or equal to 30 inches in height, and less than or equal to 4 miles from a lek; or (2) any

sagebrush-dominated stand on slopes less than or equal to 20 percent in defined winter use areas or stands showing evidence of winter use.

#### **2.4.4.2 Other Management Actions Considered in Alternative C**

##### **Air and Atmospheric Values**

The air quality management goals for Alternative C are the same as those described in Alternative B. Alternative C (and Alternative B) considers more stringent air emission controls than Alternative A. Some of these stringent emission controls reflect existing state and federal regulations that would be implemented earlier than would otherwise be required, particularly with regard to emissions from drill rig and compressor engines. Other controls included in Alternative C (as under Alternatives B) involve a variety of control techniques to reduce fugitive dust and CO, NO<sub>x</sub>, VOC, HAP, and GHG emissions. Alternative C would require that VOC emissions from new glycol dehydrators be reduced by achieving at least 90 percent control of VOC emissions. A listing of emission controls specific to Alternative C is found in Table 2-1.

##### **Soil and Water Resources**

Surface discharge of produced water would not be approved for new projects (see Table 2-2). Existing surface discharges, approved under previous land use plans or authorizations, would be allowed to continue as long as they do not change or exceed water volumes or water quality specified during approval or cause excessive erosion with discharge of the produced waters. Evaporation facilities for the disposal of produced water would not be approved on public lands. Surface disturbing activities would be avoided and would require mitigation (rather than prohibited as in Alternative B) in the following areas: (1) mapped 100-year floodplains; (2) areas located within 500 feet of perennial waters, springs, water wells, and wetland/riparian areas; and (3) areas located within 100 feet from the inner gorge of ephemeral channels.

##### **Vegetation**

The management goal for Alternative C (as under Alternative B), would be to manage vegetation communities to restore, maintain, or enhance vegetation community health, composition, and diversity to benefit multiple resources and their uses (consistent with site potential) in areas with oil and gas activities. The BLM would require interim and final reclamation for oil and gas activities under both Alternative C and Alternative B (see Table 2-3). However, the success criteria for interim and final reclamation would vary between these alternatives.

The success criteria for interim and final reclamation under this alternative would be 80 percent basal vegetation cover (compared to 100 percent in Alternative B) of the DPC, as defined by the ecological site or in the absence of such, a default DPC would have a minimum of 20 percent basal vegetative cover or 70 percent foliar cover. As under Alternative B, a program would be developed in cooperation with current leaseholders to apply to areas already leased, where appropriate, the most current reclamation standards and practices to existing well pads, roads, and pipelines in annual increments that would allow for completed interim or final reclamation of active and inactive right-of-way corridors, producing or plugged and abandoned wells, and access routes within 20 years.

##### **Fish and Wildlife – Big Game**

As under Alternative C, the management goal would be to provide habitat of sufficient utility and suitability to sustain at least 70 percent of CPW's long-term big game population objectives throughout active development (see Table 2-4). Road abandonment and use limitations would be

used to limit effective road densities to an average maximum 1.5 miles of road per square mile in higher value big game habitat and 3 miles of road per square mile on other big game ranges. In areas of concentrated development, vehicle use on BLM vehicle access networks (including existing roads, trails, and ways) would be temporarily limited, where logistically practicable, to that associated directly with oil and gas development, production, and maintenance.

Under this alternative (as under Alternative B), big game habitat enhancement/compensation practices to help offset forage losses and to shift animal distribution away from concentrated development areas would remain consistent with the maintenance of climax or disclimax vegetation extent (or those guidelines established in the RMPA) and community-specific successional perturbation rates (e.g., fire-return intervals).

As under Alternative B, modified siting of surface facilities and application of activity restrictions (i.e., up to 60-day activity deferment) under Alternative C would be used as a management tool in wildlife movement corridors defined by CPW to secure big game movement between and within seasonal ranges.

Under Alternative C, protocols and criteria for lessees, cooperating agencies, or affected stakeholders would be established to implement compensatory mitigation to offset reductions in big game habitat capacity. In coordination with the CPW and industry, an adaptive method (based on monitoring) would be developed and implemented to quantify direct and indirect effects on big game as the basis for applying compensatory mitigation to achieve or maintain long-term population objectives.

Federal mineral estate within the Oak Ridge, Square S Summer Range unit of Piceance Creek, and Jensen SWAs would be open to oil and gas leasing with an NSO stipulation. On existing land use authorizations, COAs that reflect the intent of these stipulations would be applied to the extent allowable.

### **Fish and Wildlife – Raptors**

The management goal is to maintain the short-term utility and promote the continued long-term development and availability of suitable raptor habitats, including prey base, nest sites, and other special habitat features necessary to maintain regional raptor populations (see Table 2-5).

### **Fish and Wildlife – Grouse**

The BLM management objective for sage-grouse habitat would remain very similar to Alternative B, except that the BLM would limit overall reductions in habitat utility (rather than maintain) of occupied grouse habitats and maintain effective continuity of ridgeline habitats (particularly in the PPR greater sage-grouse population area). Surface occupation and surface disturbing activities within 0.6 mile of active and inactive lek strutting grounds would be avoided under Alternative C (see Table 2-6). The BLM would seek leaseholder cooperation in developing plans for existing facilities within 0.6 mile of such leks that minimize disruption of sage-grouse lek functions and, where detrimental, removing or modifying surface facilities. In instances where habitat modification within 0.6 mile is unavoidable, disruption of lek activity would be reduced by applying one or more of the following COAs:

- Locating facilities or features beyond line-of-sight.
- Imposing a timing limitation from March 1 to May 15.

- Imposing daily limitations that allow disturbance from two hours after sunrise to sunset, with restrictions most stringently applied during the period two hours before and after sunrise. This measure would be applied only as a last resort or for activity deemed minor and temporary.

Similar to Alternative B, surface disturbing and disruptive activities would be prohibited from January 1 through March 15 in winter concentration areas, and April 15 through July 7 within suitable nesting/early brood habitat occurring within 4 miles of active and inactive leks or in defined habitat parcels greater than 4 miles from leks that have supported nest/early brood functions within the five previous years, unless qualifying for an exception by working within the disturbance threshold criteria (as described in Section 2.4.3.1).

Under Alternative C (and Alternative B), the BLM would defer oil and gas leasing decisions on about 96,100 acres of sage-grouse habitat north of US 40 (Blue Mountain) until the effects of oil and gas development on sage-grouse behavior and habitat utility in this area are sufficiently understood to manage energy development in a manner that would, with a reasonable level of certainty, maintain viable populations of grouse in the long-term.

### **Livestock Grazing**

The BLM would actively pursue opportunities to facilitate voluntary collaboration between oil and gas operators and grazing permittees to provide flexibility in management of livestock grazing on allotments temporarily impacted by oil and gas development activities, and to enhance reclamation success. Under Alternative C livestock grazing in affected allotments could be temporarily suspended or modified (for portions of or entire allotments) throughout the period of intensive oil and gas development if oil and gas activity increases to a level where the two activities are incompatible. Under Alternative C (as under Alternative B), compensatory mitigation by oil and gas operators commensurate with the impact on the livestock operation could be recommended when oil and gas activities preclude effective implementation of a grazing plan (see Table 2-16).

### **Lands and Realty**

New designated ROW corridors would be established only when the capacities of existing pipeline corridors (including energy corridors established by the West-Wide Energy Corridor Programmatic EIS) have been exhausted (see Table 2-20). There would be a seasonal restriction on construction of pipelines (as in Alternative B) and companies would be encouraged to request smaller right-of-way widths for pipeline installation, as well as placing pipelines under newly constructed roads.

### **Special Designations**

The management goal of Alternative C, as in Alternative B, is to protect the integrity of unique resource values, preserve historical significance, and provide opportunity for other uses, where appropriate for WSAs and ACECs (see Table 2-21).

## **2.4.5 Alternative D**

Alternative D (Map 2-4) emphasizes the production of oil and gas resources under the environmental protection for other resources afforded by applicable laws, regulations, and BLM policy. The management focus of Alternative D is the development of oil and gas resources. The BLM would not apply management actions to provide environmental protection for other resources other than what is consistent with applicable laws and policy (e.g., Clean Air Act regulations, Section 7 of the Endangered Species Act [ESA], NPDES guidelines). The BLM's ability to add or change mitigation measures would be the same as Alternative B.

Under Alternative D approximately 1,696,000 acres of BLM oil and gas federal mineral estate are identified as open to leasing; 444,800 acres are open with standard lease terms, and 1,251,200 acres subject to lease stipulations (see Appendix A), including NSO (257,100 acres) stipulations, CSU (469,300 acres) stipulations and timing limitations (1,002,100 acres). Implementation of Alternative D is assumed to result in up to 21,200 new oil and gas wells on 2,556 new well pads and about 30,700 acres of associated disturbance from well pads, roads and other facilities during the 20-year period of analysis.

The BLM considered issues identified during the scoping period, the established planning criteria, and resource management goals and objectives in formulating this alternative. The following discussion presents the management actions by key resource. A complete list of management goals, objectives, and actions intended to minimize impacts on the physical, biological, and socioeconomic resources is found in the Comparison of Alternatives Tables 2-1 through 2-22; Alternative D.

### **2.4.5.1 Other Management Actions Considered in Alternative D**

#### **Air and Atmospheric Values**

Alternative D requires the same air emission controls as described under Alternative B. These are more stringent than air emission controls described under Alternative A. A listing of emission controls specific to Alternatives B and D is found in Table 2-1. Under Alternative D, at least 50 percent of gas compression at compressor stations would be powered by electric motors.

#### **Soil and Water Resources**

Surface discharge of produced water that meets state standards for water quality would be allowed (see Table 2-2). Individual projects would be considered on a site-specific basis. However, surface discharge of produced water that results in a conversion of ephemeral to perennial or intermittent stream systems would not be approved. Surface disturbing activities would be subject to a CSU stipulation in the following areas: (1) mapped 100-year floodplains; (2) areas located within 500 feet of perennial waters, springs, water wells, and wetland/riparian areas; and (3) areas located within 100 feet from the inner gorge of ephemeral channels. As under Alternative A, landslide areas, as identified in United States Department of Agriculture (USDA) NRCS Web Soil Survey, would be open to oil and gas leasing with an NSO stipulation. An NSO stipulation would be applied to surface disturbing activities associated with all other land use authorizations, permits, and leases granted in these areas. Surface disturbing activities would also be avoided in areas with identified saline soils. These areas would be open to leasing with a CSU stipulation that would require operators to consider the stability and productivity of these soils in surface use plans. In addition, natural slopes greater than or equal to 50 percent would be open to oil and gas leasing with an NSO stipulation. An NSO stipulation would be applied to surface disturbing activities associated with all other land use authorizations, permits, and leases granted in these areas.

#### **Vegetation**

The management goal for Alternative D (as well as Alternatives B and C) is to manage vegetation communities to restore, maintain, or enhance vegetation community health, composition, and diversity to benefit multiple resources and their uses (consistent with ecological site potential) in areas with oil and gas activities. The success criteria for final reclamation under Alternative D would be 60 percent basal vegetation cover of the DPC, as defined by the ecological site or in the absence of an appropriate ecological site description, a default DPC would have a minimum of 5 percent basal vegetative cover or 40 percent foliar cover (see Table 2-3).

Surface disturbing activities would be avoided in priority riparian habitats, unless environmental analysis determined that: (1) the proposed activity would not degrade or forestall attainment of proper functioning condition of the riparian area; and (2) if the riparian areas could not be avoided, impacts could be mitigated to meet minimum objectives for the system.

### **Fish and Wildlife – Big Game**

The management goal for big game habitat would be to provide habitat of sufficient utility and suitability to sustain at least 50 percent of CPW's long-term big game population objectives throughout active development (see Table 2-4). As under Alternative A, the acute effects of well construction and development on big game habitat would be reduced through application of timing limitations on acute disturbance under this alternative. Exceptions may be granted, as presented in Appendix A. The BLM could apply timing limitations to surface use activities associated with existing land use authorizations as a COA.

Specific management actions to manage collective effects in CPW Restricted Development Areas or surface disturbance of CPW SWAs would not be applied. Additionally, modified siting of surface facilities and application of activity restrictions in CPW wildlife movement corridors would not be used as a management tool under this alternative.

Big game habitat enhancement/compensation practices to help offset forage losses and effect advantageous shifts in animal distribution (i.e., away from concentrated development areas) would remain consistent with the maintenance of climax or disclimax vegetation extent (or those guidelines established in the RMPA) and community-specific successional perturbation rates (e.g., fire-return intervals), as under Alternatives B and C. However, no offsite compensatory mitigation for disturbance of big game habitat would be pursued.

No management actions for limiting effective road densities or vehicle use on BLM vehicle access networks would be applied under this alternative.

### **Fish and Wildlife – Raptors**

The management goal for raptors under Alternative D would be complying with laws, regulations, policies such as the Migratory Bird Treaty Act (MBTA), Bald and Golden Eagle Protection Act (BGEPA), the ESA, and BLM policies for sensitive species (see Table 2-5).

### **Fish and Wildlife – Grouse**

The management goal for sage-grouse under Alternative D would be the same as Alternative B with the exception of the PPR greater sage-grouse population, which would be managed to maintain a minimum 50 percent of the most current population objectives established by CPW or as delegated to the local working groups and a minimum 50 percent of the most current distribution in terms of the number of lek complexes (see Table 2-6). Similar to Alternative A, surface occupation and long-term conversion or adverse modification of sage-grouse habitat would be avoided as described in Table 2-6. A management objective for sage-grouse habitat under Alternative D would be to reduce disruption of important seasonal-use activities associated with grouse production and recruitment, similar to Alternative A.

Surface occupation and surface disturbing activities would be prohibited within 1/4 mile of active and inactive lek sites as under Alternative A. Exceptions, waivers, or modifications may be granted (see Appendix A). Surface disturbing and disruptive activities would be prohibited during the

seasonal use periods identified: (1) January 15 through March 15 in winter concentration areas; and (2) April 15 through June 15 in suitable nesting/early brood habitat within 4 miles of an active lek.

### **Livestock Grazing**

The management goal for Alternative D would be to manage oil and gas activities in a manner that minimizes adverse effects on livestock grazing operations and maintains rangeland health. As in Alternative C, livestock grazing in affected allotments could be temporarily suspended or modified (for portions of or entire allotments) throughout the period of intensive oil and gas development if oil and gas activity increases to a level where the two activities are incompatible (see Table 2-16). As under Alternatives B and C, compensatory mitigation by oil and gas operators commensurate with the impact on the livestock operation could be recommended when oil and gas activities preclude effective implementation of a grazing plan (see Table 2-16).

### **Lands and Realty**

Similar to Alternative C, new designated ROW corridors would be established only when the capacities of existing pipeline corridors have been exhausted (see Table 2-20).

## **2.4.6 Alternative E (Proposed Amendment)**

Alternative E (Map 2-5) combines elements from Alternatives A, B, C, and D to allow for short-term use of the environment (i.e., in the construction/development phase) necessary for the continued production of oil and gas resources while also conserving and protecting other resources. In the Proposed Amendment, we have clarified which records are assumptions for analysis rather than decisions (e.g., Table 2-1). Other records have not been carried forward (“no similar action”) because they are part of existing policy or law and not necessary to repeat as an RMP decision (e.g., lease suspensions under the MLA). The BLM’s ability to add or change mitigation measures would be the same as Alternative B.

Alternative E identifies approximately 1,696,000 acres of BLM oil and gas federal mineral estate open to leasing and subject to lease stipulations (see Appendix A), including NSO (405,600 acres) stipulations, CSU (461,800 acres) stipulations and timing limitations (1,696,000 acres). Implementation of Alternative E is assumed to result in up to 15,040 new oil and gas wells on 1,100 new well pads and 13,200 acres of associated disturbance from well pads, roads and other facilities during the 20-year period of analysis.

The BLM considered issues identified from public comments, the established planning criteria, and resource management goals and objectives in formulating this alternative. The following discussion presents the management actions by key resource. A complete list of management goals, objectives, and actions intended to minimize impacts on the physical, biological, and socioeconomic resources is found in the Comparison of Alternatives Tables 2-1 through 2-22; Alternative E.

### **2.4.6.1 Managed Development Approach**

#### **Fish and Wildlife – Big Game**

Alternative E is similar to Alternatives B and C in that both alternatives include development thresholds. Under Alternative E, the BLM’s management goal for big game habitat would be the same as Alternative A which is to ensure that the necessary habitat components and conditions are present to sustain big game populations at levels commensurate with multiple-use objectives and state-established population objectives (rather than between 50 to 90 percent of CPW’s long-term population objectives as under Alternatives B, C, and D).

Mapping used in conjunction with the threshold alternatives is a simplified version of CPW's 2012 Natural Diversity Information Source (NDIS) mule deer data. Implementation of a threshold management system requires timely tracking of fluid mineral development and the application/calculation of buffers in a GIS framework. Operation and interpretation of this system would have been severely complicated by NDIS mapping's extensive range overlap, so a simplified version composed of discrete polygons was developed in coordination with CPW staff. This mapping prioritizes mule deer and their ranges in the following hierarchy: severe winter range, summer range, winter concentration area, general winter range. This mapping would be capable of incorporating routine CPW updates (Map 2-7). Since Map 2-7 no longer contains areas where different seasonal ranges overlap, we have dropped thresholds associated with "deer severe winter range/winter concentration areas" in Alternative E.

All seasonal big game ranges within the WRFO would be subject to timing limitations that could extend up to 120 days (as in Alternative C), however timing limitations could begin on December 1 (as in Alternative B) rather than on January 1 for the various winter ranges. Timing limitations would be applied through COAs for existing leases when warranted by an environmental analysis and through stipulations on new leases. Similar to Alternatives B and C, exceptions to timing limitations would be offered contingent on development remaining within the following thresholds for acute and collective cumulative adverse behavior effects (evaluated by total leaseholdings within a GMU):

- Acute effects
  - 20 percent of deer winter range;
  - 15 percent of deer severe winter range;
  - 15 percent of deer summer range; and
  - 20 percent of deer winter concentration areas.
- Collective effects
  - 20 percent of deer winter range;
  - 20 percent of deer severe winter range;
  - 20 percent of deer summer range; and
  - 20 percent of deer winter concentration areas.

The area of acute effects would be defined by the physical footprint of those concentrated, intensive activities associated with, for example, pad and pipeline construction and well drilling and completion operations, buffered by approximately 660 feet on all seasonal ranges. As mentioned above, disturbance thresholds for acute effects (i.e., short-term impacts associated with well construction, drilling, and completion) under this alternative would be higher than Alternative B but lower than Alternative C. Unlike Alternatives B and C, threshold limits could not be incrementally adjusted by the BLM, in coordination with CPW, based on animal response or the influence of compensatory mitigation in meeting long-term population objectives.

Similar to Alternative C, collective effects in areas defined by CPW as Restricted Development Areas would be limited to 5 percent with an allowance for acute effects during the period of animal occupation; however, only North Ridge would be identified as a Restricted Development Area.

### **Fish and Wildlife – Grouse**

A managed development approach similar to that described in Alternatives B and C would be applied to all greater sage-grouse populations within the WRFO; however, development thresholds would be 10 percent of suitable habitat within mapped Priority Habitat and 20 percent of suitable habitat within mapped General Habitat. The 2 percent surface disturbance cap (i.e., facility occupation and unreclaimed surface) would be adopted from Alternative B. Exceptions to timing limitations may not be offered in instances where fluid mineral development can be reasonably scheduled to avoid interfering with important seasonal use activities of sage-grouse (e.g., exploratory, obligation wells, routine and non-emergency production, operation, and maintenance activities).

#### **2.4.6.2 Other Management Actions Considered in Alternative E**

Under Alternative E, the BLM would manage oil and gas activities to protect air resources from adverse impacts associated with BLM authorized or permitted actions in accordance with the methodology and provisions outlined in the Comprehensive Air Resource Protection Protocol (CARPP, see Appendix J). A lease notice will be attached to new oil and gas leases to provide notice to operators of analysis and mitigation requirements that will be determined on a case-by-case basis at the permitting/development stage.

### **Soil and Water Resources**

As part of the plan of development, operators would also submit a water management plan by lease or unit that describes predicted water use, storage needs, recycling or treatment, and disposal methods for fresh and produced water. Surface discharge of produced water that meets state water quality standards may be allowed as would the use of evaporation facilities to dispose of produced water; individual projects would be considered on a site-specific basis. Surface disturbing activities would be avoided and may require mitigation (rather than prohibited as in Alternative B) in the following areas: (1) mapped 100-year flood plains; (2) areas located within 500 feet of perennial waters, springs, water wells, and wetland/riparian areas; and (3) areas located within 100 feet from the inner gorge of ephemeral/intermittent channels. An NSO stipulation would be applied within 1/2 mile from public water supplies from groundwater. Also, primary and secondary protection zones for public water supplies would require plans for oil and gas development that include protections for drinking water sources. Impaired stream segments in the MPA would be protected by applying a 500 foot NSO stipulation buffer.

Similar to Alternative A, landslide areas would be managed with an NSO stipulation; however saline soils would be managed with a CSU stipulation (as in Alternative D). Management of natural slopes from 35 to 50 percent and areas within mapped floodplains or within 500 feet of perennial waters, springs, water wells, or wetland/riparian areas would be managed with CSU stipulations (as in Alternative C).

### **Vegetation**

All surface disturbing activities related to oil and gas development authorized after signing of the ROD for the Oil and Gas Development RMPA would be subject to the standards included in the WRFO Surface Reclamation Plan (see Appendix D). For existing authorizations, the WRFO Surface Reclamation Plan would be used as guidance for reclamation plans submitted per Onshore Order No. 1.

The success criteria for interim and final reclamation under this alternative would be 80 percent similarity of desired foliar cover, bare ground, and forb and/or shrub density in relation to the

identified DPC. In the absence of a specified DPC data, an agreed upon reference site or AIM data would serve as the DPC. The reclaimed plant community must contain at least five desirable plant species and no one species may exceed 70 percent relative cover.

### **Fish and Wildlife – Big Game**

As under Alternative C, road abandonment and use limitations would be used to limit effective road densities to an average maximum 1.5 miles of road per square mile in higher value big game habitat and 3 miles of road per square mile on other big game ranges. Well access routes would be unavailable for public vehicular access, including BLM permittees not expressly associated with oil and gas development, production, monitoring, or maintenance; exceptions would be evaluated on a case-by-case basis in the context of disturbance thresholds established for each seasonal range and leaseholding.

Similar to Alternative B, federal mineral estate within the Oak Ridge, Piceance Creek (all units), and Jensen SWAs would be open to oil and gas leasing with an NSO stipulation.

### **Fish and Wildlife – Raptors**

Surface occupancy would not be allowed within 990 feet of functional nest sites of non-special status raptors; or within 1/4 mile of nests of special status raptor species and burrowing owls; or within 1/2 mile of nests of golden eagle, prairie falcon, bald eagle, ferruginous hawk, peregrine falcon, or northern goshawk. Timing limitation stipulations would be applied from:

- February 1 through August 15 or until dispersal of young within 1/4 mile of non-special status species or burrowing owl nests; or within a 1/2 mile of nests of special status raptors, golden eagle, prairie falcon, peregrine falcon, or northern goshawk; or within 1 mile of ferruginous hawk nests;
- November 15 through July 31 within 1/2 mile of bald eagle nests; and
- November 15 through March 15 within 1/4 mile of winter hunting perches or 1/2 mile of bald eagle critical night roosts.

### **Fish and Wildlife – Grouse**

Similar to Alternative B, surface occupancy and surface-disturbing and disruptive activities within 0.6 mile of occupied strutting grounds (i.e., leks) would be prohibited. To the extent practicable, alternate access routes would be devised for existing facilities within 0.6 mile of a lek and/or surface facilities would be removed.

Surface occupation and long-term conversion or adverse modification of the following sage-grouse habitats would be limited to 2 percent: (1) sites that are characterized by, or capable of redeveloping (e.g., burns) sagebrush-dominated stands with less than or equal to 50 percent canopy, less than or equal to 40 inches in height, and less than or equal to 4 miles from a lek; or (2) any sites that are characterized by, or capable of redeveloping sagebrush-dominated stand on slopes less than or equal to 20 percent in defined winter use areas or stands showing evidence of winter use.

Similar to Alternative B, surface disturbing and disruptive activities would be prohibited from December 1 through March 15 in important winter use areas, and April 1 through July 15 within suitable nesting/early brood habitat occurring within 4 miles of active and inactive leks or in defined habitat parcels greater than 4 miles from leks that have supported nest/early brood functions within 10 previous years.

Rather than deferring oil and gas leasing decisions on sage-grouse habitat north of US 40 (Blue Mountain) (as under Table 2-6 Record 12, Alternatives B and C), Alternative E proposes a phased leasing approach within the Dinosaur Trail MLP (Table 2-17a Record 34). Leasing within the Dinosaur Trail MLP would progress in phases to address resource values and concerns. Leasing would first occur in the southern portion of the MLP, where the oil and gas occurrence potential is rated medium to high. Leasing within sage-grouse habitat, areas of low oil and gas potential, or areas adjacent to Dinosaur National Monument would occur once the BLM has completed additional analysis and planning. Within sage-grouse habitat in the MLP, sage-grouse management would be emphasized and leasing would only occur after the BLM has issued the Record of Decision for the Northwest Colorado Greater Sage-Grouse RMPA (193,000 acres). In areas of the MLP that are outside of sage-grouse habitat, but are within either low oil and gas potential or adjacent to Dinosaur National Monument Headquarters leasing would only occur after the BLM has completed a RMP Revision and determined whether or not leasing is appropriate given considerations such as the potential impacts to visual resources, night skies, and soundscapes (25,300 acres).

### **Fish and Wildlife – Migratory Birds**

The BLM would avoid modifying higher value habitats or, where impractical, minimize the disruption of migratory bird nesting activity by scheduling or prioritizing vegetation clearing, construction, and concentrated activities to avoid involving higher value habitats during the core migratory bird nesting season. Limitations on seasonal activities would be applied as a 60-day COA from May 15 to July 15.

### **Special Status Plant Species**

Areas within 660 feet of occupied and suitable habitat for federally listed, proposed, and candidate species and areas within 330 feet of occupied and suitable habitat for BLM sensitive species would be managed with NSO stipulations. A lease notice would be used to inform operators of the possibility of occupied or suitable habitat being located during surveys conducted within potential habitat. All areas within 330 feet of occupied habitat for federally listed and proposed species would be exclusion areas for new ROWs.

### **Cultural Resources**

Oil and gas exploration and development activities that produce vibrations would be restricted with a CSU stipulation within 660 feet of rock art or standing architecture such as cabins, rock structures, or wickiups.

### **Visual Resources**

A CSU will be applied within 660 feet of Dinosaur National Monument to help reduce impacts to viewsheds, night skies and soundscapes.

### **Livestock Grazing**

Livestock grazing in affected allotments could be temporarily suspended or modified (for portions of or entire allotments) throughout the period of intensive oil and gas development if oil and gas activity increases to a level where the two activities are incompatible (see Table 2-16). As under Alternatives B through D, compensatory mitigation by oil and gas operators commensurate with the impact on the livestock operation could be recommended when oil and gas activities preclude effective implementation of a grazing plan (see Table 2-16).

### **Minerals**

The BLM would discourage the use of reserve production, and completion/re-completion pits. However, onsite burial of drill cuttings that meet COGCC 900 Series Rule would be allowed. Rather than requiring Concentrated Development Plans (as under Alternatives B, C, and D), the BLM would encourage industry to submit development plans that would direct time-referenced, managed activities intended to concentrate development, promote effective reclamation, and to reduce the cumulative adverse resource effects attributable to oil and gas activities.

The BLM would adopt the Dinosaur Trail MLP (see Section 3.1.2). Leasing within the MLP would progress in phases to address resource values and concerns, require Master Development Plans, and have CSU stipulations for visual resources, night skies, and soundscapes.

### **Recreation**

Anderson Gulch and LO7 Hill would be open to leasing with an NSO stipulation while 3 Mile Gulch would be managed with a CSU stipulation in order to continue to provide backcountry/middlecountry oriented recreational opportunities as oil and gas development increases. These areas will be managed to preserve public access, limit resource damage, and retain the physical, social and managerial conditions of these recreation setting classifications while still allowing for the production of oil and gas resources.

### **Lands and Realty**

As under Alternative A, land use authorizations would be denied in exclusion areas with the exception of short-term land use permits involving no development and projects that are consistent with management objectives for the area.

New designated ROW corridors would be established only when the capacities of existing pipeline corridors (including energy corridors established by the West-Wide Energy Corridor Programmatic EIS) have been exhausted (as under Alternatives C and D). Timing limitation stipulations identified in Appendix A could be applied as Terms and Conditions to oil and gas-associated ROW grants.

### **Special Designations**

All ACECs would be managed with an NSO stipulation with the exception of Coal Oil Rim, Oil Spring Mountain, and East Douglas Creek ACECs which would be managed with a CSU stipulation.

### **Lands with Wilderness Characteristics**

Land use planning for lands with wilderness characteristics involves first conducting an inventory to determine if any portions of the WRFO meet the overall criteria for wilderness character (see Section 3.9) and then determining how those areas should be managed. The BLM may choose to (1) protect wilderness characteristics as a priority over other multiple uses; (2) emphasize other multiple uses while applying management restrictions to reduce impacts to wilderness characteristics; or (3) emphasize other multiple uses as a priority over protecting wilderness characteristics (BLM Manual 6320). When deciding how lands with wilderness characteristic units should be managed, the BLM is required to consider whether the lands can be effectively managed to protect their wilderness characteristics and evaluate not only valid existing lease rights in the area but also access to state or private inholdings, the presence of other resources, development potential, resource availability, economic importance, and compatibility with protection.

## Chapter 2 – Alternatives

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In determining the boundaries for lands with wilderness characteristic units, the inventory guidance (BLM Manual 6310) states that “undeveloped ROWs and similar undeveloped possessory interests (e.g., mineral leases) are not treated as impacts to wilderness characteristics because these rights may never be developed”. As such, many of the identified lands with wilderness characteristics units within the WRFO have existing oil and gas leases within their boundaries. If an oil and gas lease is not developed (or held by production) within 10 years, then the lease expires. The WRFO examined whether leases were currently held by production and the development potential within the area. It was assumed that leases within areas of low potential for oil and gas development that are not currently held by production were likely to expire. For leases within moderate to high potential areas for oil and gas development, it was assumed that leases were less likely to expire and, even if they did, that there would be continued interest in the future for leasing and development.

After careful consideration of the manageability factors and resource values and uses, the WRFO assigned areas within each lands with wilderness characteristics unit to specific management classes. Management decisions vary based on whether the areas within the units fall within Tiers 1, 2, or 3 (Table 2-22). All or portions of an individual lands with wilderness characteristics unit may be assigned to any management class based on the following manageability descriptions (Map 2-6).

Tier 1 areas will be managed to protect wilderness characteristics as a priority over other multiple uses. These areas include those lands within the lands with wilderness characteristics units where at least 5,000 contiguous acres are not encumbered by existing leases (e.g., lands with wilderness characteristics units 1, 2, 19, 20, 21, 24, and 29). These acreage conditions are based on the minimum size criteria outlined in BLM Manual 6310 for identifying whether or not a given area can be considered a land with wilderness characteristic polygon. Additionally, any unleased acreage or leased acreage within low potential areas that are contiguous with a WSA (i.e., not separated by a wilderness road) will also be managed as Tier 1 areas (e.g., lands with wilderness characteristics units 26, 32, 33, and 34). Eastern portions of lands with wilderness characteristics units 32 and 34 that are currently leased will be managed as Tier 2 areas instead of Tier 1 areas to allow for access to private inholdings. No Tier 1 areas will be identified within designated ROW corridors (Map 3-17).

Tier 2 areas will be managed to emphasize other multiple uses while applying management restrictions to reduce impacts to wilderness characteristics. If portions of a land with wilderness characteristic polygon are managed as a Tier 1 area, then the remainder of the unit which is currently leased in areas of moderate to high oil and gas potential would be managed as Tier 2 areas (e.g., lands with wilderness characteristics units 1, 2, 20, 21, 29, and 32). Lands with wilderness characteristics unit 16 has more than 5,000 acres that are currently not leased however these areas are not contiguous with each other, thus the entire unit will be managed as a Tier 2 area. Lands with wilderness characteristics units 22, 25, and 27 are within the Dinosaur Trail MLP and will be managed as Tier 2 areas.

Tier 3 areas will be managed to emphasize other multiple uses as a priority over protecting wilderness characteristics. Tier 3 areas include those lands with wilderness characteristics units where less than 5,000 acres are currently unleased (e.g., lands with wilderness characteristics units 3, 4, 7, 10, 15, 28, 30, 31, and 35) or occur within the MPA (e.g., lands with wilderness characteristics units 5, 8, 11, 13, 17, and 19). Lands with wilderness characteristics units 6a, 6b, and 6c will also be managed as Tier 3 areas which is consistent with management of the remainder of those units within in the Vernal Field Office.

## **2.5 Alternatives Considered but Not Carried Forward for Detailed Analysis**

The following alternatives were considered as possible management approaches but were eliminated from detailed analysis because the BLM determined that they either did not meet the purpose and need for the RMPA/EIS (see Section 1.2), or were not practical or feasible alternatives due to technical, economic, and legal and policy considerations. These alternatives include: (1) Current Management using 1997 RFD Scenario, (2) Phased Development in the Piceance Basin, (3) Single Well Pads, (4) Reduced or Limited Pace of Oil and Gas Drilling, (5) Limit on Number of Well Pads or Wells, and (6) Limiting Cumulative Total Surface Disturbance.

The specific rationale for dismissing each from further consideration is described below.

### **2.5.1 Current Management using 1997 Reasonable Foreseeable Development Scenario**

The BLM considered an alternative that reflected the continuation of current management under the projections for oil and gas activity presented in the 1997 RFD Scenario. However, the BLM determined that such an alternative would not meet the purpose and need for the RMPA/EIS, which is, in part, to address the substantial changing oil and gas resource conditions in the WRFO Planning Area and the need to manage the impacts of the projected increase in oil and gas activity in relation to other resources within the WRFO Planning Area (see Section 2.3.1.3 for a description of the BLM’s 2007 RFD Scenario [BLM 2007]). For the purpose of this analysis, the newly developed 2007 RFD Scenario will replace the 1997 RFD Scenario for all alternatives including the No Action Alternative.

### **2.5.2 Phased Development in the Piceance Basin**

The BLM considered applying the concepts for “phased development” of oil and gas resources that were considered in the Roan Plateau RMPA (BLM 2007c) as an alternative to addressing the duration, intensity, and extent of development activity in the Piceance Basin. Traditionally, “phased development” refers to prescribing the sequence of drilling operations by geographic area to allow for the development of certain areas while resting or temporarily restricting development of other areas. Subsequent development occurs as areas developed earlier are completed and reclaimed. The phased development approach evaluated in the Roan Plateau RMPA (BLM 2007c) included: (1) restricting drilling operations to prescribed geographical development areas at any one time and prohibiting shifting operations to the next development area until reclamation is complete; and (2) limiting total surface disturbance at any one time to a specific acreage. After further consideration, the BLM determined that phased development was not feasible for the WRFO Oil and Gas RMPA/EIS, since the majority of acres within the Planning Area are already leased; it would not meet the purpose and need (see Section 1.2).

Restricting drilling operations to prescribed development areas based on geography would have limited effectiveness in managing the impacts of the projected increase in oil and gas activity in relation to management objectives for other resources, as resource conditions vary across the WRFO Planning Area. Further, restricting drilling operations to prescribed geographical development areas could cause delays in the production of energy resources. In the WRFO Planning Area (and different from the Roan Plateau Planning Area), 80 percent of leasable acres are already leased, including 93 percent of leasable acres with high oil and gas occurrence potential. If only a limited number of wells were allowed to be drilled each year, some lessees would be prevented from developing their lease even as they were paying rental fees on the acreage they are leasing.

Also, if more than one party leases an area and only a limited number of wells were allowed during a given timeframe, the BLM would have the responsibility for choosing which lessee could drill. The BLM would also have the responsibility for deciding which areas to develop first. Establishing criteria for making such decisions would be difficult because the BLM would have to prioritize some resources or resource uses over others, which could conflict with the BLM's mandate of multiple use.

Phased development would also cause delays in production of energy resources, and would not respond to supply and demand economics. As a result of phased development, gas production might occur slowly enough so that the pipeline companies might find it not economically feasible to build the infrastructure needed to transport gas to market.

Under a phased development approach based on geographical development areas, the number and miles of roads and the amount of infrastructure could also increase if developed and sized for each phase as compared to a party's entire leaseholding. Roads, support facilities, and pipelines might also be better planned and sited as part of an area-wide development plan.

Although the BLM eliminated this phased development alternative from detailed analysis based on the rationale presented above, key elements of Alternatives B and C are a "managed development" approach (Sections 2.4.3.1 and 2.4.4.1) for addressing the duration, intensity, and extent of development activity in the Piceance Basin. Although still aimed at limiting spatial disturbance, the managed development approach differs from the traditional "phased development" approach in that limitation of the spatial extent of surface disturbance is achieved by managing the extent of impacts to sensitive wildlife habitats rather than limiting total surface disturbance to a specific geographic area, or specific acreage regardless of habitat or terrain. Further, reclamation of a particular wildlife habitat, rather than a geographic area, is used as the criterion for removing acres of habitat from the disturbance threshold computation.

### 2.5.3 Single Well Pads

The BLM considered an alternative that would evaluate the impacts of the use of (only) single well pads, as was considered in the 1997 White River RMP (BLM 1997a). However, information obtained from oil and gas operators in updating the 2007 RFD Scenario (BLM 2007) indicated most oil and gas companies plan to implement technology for multi-well drilling from each well pad, as this has become economically feasible. Federal regulations (43 CFR §3160) require lessees to attain maximum economic recovery of the leased resource. The regulations also require the operator to exercise due care and diligence to assure that leasehold operations do not result in undue damage to surface or subsurface resources or surface improvements. Therefore, an alternative based on single well pads was dropped from detailed analysis as it would not meet the economic criteria of the federal regulations or reduce impacts.

### 2.5.4 Reduced or Limited Pace of Oil and Gas Drilling

The BLM considered an alternative to set or control the pace of oil and gas development but determined, through a review of the federal regulations, that the holders of federal oil and gas leases have the right to develop those leases; consequently, it was dropped from detailed analysis as it does not meet the purpose and need in terms of responding to the changing conditions (i.e., the projected increase in oil and gas activity) within the WRFO Planning Area. 43 CFR §3101.1-2 states "the lessee shall have the right to use so much of the leased lands as is necessary to explore for, drill for, mine, extract, and dispose of all the leased resource in a leasehold." The 43 CFR §3160 regulations also require lessees to attain maximum economic recovery of the leased resource, and for

leaseholders to conduct their operations in a manner that prevents undue and unnecessary impact. It is not possible at a planning level to determine whether a lease would actually be developed, and if it is what well spacing or level of development would be necessary to achieve the requisite maximum economic recovery of the oil and gas resource. Well spacing can vary from development area to development area. The pace of development would vary significantly between these scenarios. Pace of development, including reduced or limited rates of development, would be more appropriately projected and evaluated in project- or field-specific NEPA analysis.

### **2.5.5 Limit on Number of Well Pads or Wells**

As stated in the previous section, federal regulations state that the holders of federal oil and gas leases have the right to develop those leases; consequently, this alternative was dropped from detailed analysis due to policy considerations. 43 CFR §3101.1-2 states “the lessee shall have the right to use so much of the leased lands as is necessary to explore for, drill for, mine, extract, and dispose of all the leased resource in a leasehold.” The 43 CFR §3160 regulations also require lessees to attain maximum economic recovery of the leased resource. The number of well pads or wells would be more appropriately projected and evaluated in project- or field-specific NEPA analysis. Instead of limiting the number of wells or well pads, Alternatives B and C apply thresholds that could ultimately limit the number of wells or well pads that are developed.

### **2.5.6 Limiting Cumulative Total Surface Disturbance**

The BLM considered an alternative that would limit the total acreage of surface disturbance associated with oil and gas activities at any one time. However, such an alternative would be difficult to apply equitably and monitor across the WRFO Planning Area, and would have limited effectiveness in achieving management objectives, as resource conditions vary throughout the planning area. The BLM would have to decide which areas to develop at any given time. In an area with multiple lessees, the BLM would also have to choose which lessee could drill at any given time, which could conflict with granted lease rights. This alternative is not consistent with the BLM’s oil and gas leasing policies and regulations and could restrict the economic development of leases. Instead of limiting cumulative total surface disturbance, Alternatives B and C apply thresholds which may ultimately limit the number of acres that are disturbed.

### **2.5.7 Greater Sage-Grouse National Technical Team Report Alternative**

The BLM published a Notice of Intent in the Federal Register on December 9, 2011, initiating a range-wide planning process for sage-grouse that would analyze the National Technical Team Report Alternative in detail. The BLM Northwest Colorado District Office is in the process of completing an Environmental Impact Statement and possible Plan Amendment that will consider and analyze this alternative in detail, and will address BLM-managed lands in the White River Field Office planning area. The Oil and Gas Development RMP Amendment does address management of greater sage-grouse but only in the context of decisions related to oil and gas development. The National Technical Team (NTT) Report presented guidance related to the fluid minerals program but also a wide range of other land use programs including travel and transportation management, recreation, lands and realty, range, wild horses, solid minerals, locatable minerals, salable minerals, vegetation treatments, and fire management. Addressing changes to other programs besides fluid minerals and the creation of special designations is outside the scope of this planning effort. Further, the BLM is not making allocation decisions related to areas open or closed to oil and gas leasing during this planning effort. Therefore, the Greater Sage-Grouse NTT Report Alternative has been considered but eliminated from detailed analysis for this planning process.

## 2.5.8 Master Leasing Plans Submitted by Citizen Groups

In August 2010, the Wilderness Society, the Southern Utah Wilderness Alliance, the Center for Native Ecosystems, and the Colorado Environmental Coalition submitted recommendations that the BLM prepare an Eastern Book Cliffs/Piceance Basin MLP and a Dinosaur Lowlands MLP. The Eastern Book Cliffs/Piceance Basin MLP proposal encompasses 847,500 acres within areas managed by the WRFO and the Vernal Field Office (VFO). The Dinosaur Lowlands MLP proposal encompasses 999,400 acres within areas managed by the WRFO, the VFO, and the Little Snake Field Office (LSFO).

In the Oil and Gas Development Draft RMPA/EIS, the BLM provided an extensive discussion of these two MLP proposals in Appendix I, which is incorporated by reference into this FEIS. In summary, there are four criteria to consider when evaluating MLPs. The BLM has determined that both MLP proposals meet three of the four criteria since there is a majority federal mineral interest; the oil and gas industry has expressed a specific interest in leasing and there is a moderate or high potential for oil and gas development confirmed by the discovery of oil and gas in the general area; and additional analysis or information is needed to address likely resource impacts. Neither MLP proposal meets the criterion that a substantial portion of the area is not currently leased.

Even if the proposals do not meet the criteria, the BLM may still choose to prepare MLPs or similar plans. The WRFO Oil and Gas Development RMPA/EIS is different than other types of amendments or plan revisions since the sole purpose of the planning effort is to examine management decisions related to oil and gas development. Thus, the BLM is able to conduct a much more detailed analysis of a range of development levels and management actions through the RMPA/EIS across the entire planning area. Since the RMPA/EIS considers protective measures designed to minimize resource conflicts both inside and outside of both the MPA and the MLPs, the WRFO does not intend to further develop either the Dinosaur Lowlands MLP or the Eastern Bookcliffs/Piceance Basin MLP.

However, the BLM has taken another hard look at the Dinosaur Lowlands MLP and adjusted the boundaries to create a new MLP proposal, the Dinosaur Trail MLP. The Dinosaur Trail MLP not only meets all four of the criteria outlined in WO-IM-2010-117 but also considers what areas are most likely to have the greatest resource conflicts. In creating the Dinosaur Trail MLP, the BLM also considered management feasibility of well-established and developed fields (e.g., the Coal Oil Basin and White River Dome areas) and did not include them in the MLP area.

## 2.6 Comparison of Alternatives

A detailed comparison of alternatives is presented in Tables 2-1 through 2-22. In order to guide the reader in reviewing the RMPA/EIS, each land use planning decision under each resource or resource program heading is given a record number. It should be noted that not all resources or resource uses presented in Chapter 3 (Affected Environment) or Chapter 4 (Environmental Consequences) of this Proposed RMPA/Final EIS are included in Tables 2-1 through 2-22. This is because revision of some decisions and management actions included in the 1997 White River RMP do not relate to an increase in oil and gas exploration, development, and production, or the potential effects of that increase on other resources or resource uses, and, thus, are beyond the scope of this Proposed RMPA/Final EIS.

## **Chapter 2 – Alternatives**

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Table 2-23 at the end of this chapter provides a comparison of acreages affected by management actions for each alternative by table and record number. Table 2-24 provides a summary of the proposed lease stipulations and associated acreage within the Dinosaur Trail MLP area. The environmental consequences of allowable uses and management actions proposed under each alternative are analyzed in Chapter 4.

### 2.6.1 Comparison of Alternatives List of Tables

Table 2-1	Comparison of Alternatives – Air and Atmospheric Values
Table 2-2	Comparison of Alternatives – Soil and Water Resources
Table 2-3	Comparison of Alternatives – Vegetation
Table 2-4	Comparison of Alternatives – Fish and Wildlife – Big Game
Table 2-5	Comparison of Alternatives – Fish and Wildlife – Raptors
Table 2-6	Comparison of Alternatives – Fish and Wildlife – Grouse
Table 2-7	Comparison of Alternatives – Fish and Wildlife – Migratory Birds
Table 2-8	Comparison of Alternatives – Fish and Wildlife – Fish
Table 2-9	Comparison of Alternatives – Special Status Animal Species
Table 2-10	Comparison of Alternatives – Special Status Plant Species
Table 2-11	Comparison of Alternatives – Wild Horse Management
Table 2-12	Comparison of Alternatives – Cultural Resources
Table 2-13	Comparison of Alternatives – Paleontological Resources
Table 2-14	Comparison of Alternatives – Visual Resources
Table 2-15	Comparison of Alternatives – Forestry and Woodland Products
Table 2-16	Comparison of Alternatives – Livestock Grazing
Table 2-17	Comparison of Alternatives – Minerals
Table 2-17a	Comparison of Alternatives – Minerals: Master Leasing Plans – Dinosaur Trail
Table 2-18	Comparison of Alternatives – Recreation
Table 2-19	Comparison of Alternatives – Comprehensive Trails and Travel Management
Table 2-20	Comparison of Alternatives – Lands and Realty
Table 2-21	Comparison of Alternatives – Special Designations
Table 2-22	Comparison of Alternatives – Lands with Wilderness Characteristics
Table 2-23	Consolidated Acres by Alternative
Table 2-24	Consolidated Lease Stipulation Acres – Dinosaur Trail MLP Alternative E

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Table 2-1. Comparison of Alternatives – Air and Atmospheric Values

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Management Goals</b>					
1	No similar goal.	Manage oil and gas activities to comply with all applicable local, state, tribal, and federal laws, regulations, standards, and implementation plans.			Manage oil and gas activities to protect air resources from adverse impacts associated with BLM authorized/permitted actions in accordance with the methodology and provisions outlined in the Comprehensive Air Resource Protection Protocol (CARPP) (see Appendix J).
2	No similar goal.	Manage oil and gas activities to protect air quality and, within the scope of the BLM’s authority, minimize emissions that cause or contribute to violations of air quality standards or that negatively impact air quality-related values (AQRVs) (e.g., acid deposition, visibility).			
3	No similar goal.	Manage oil and gas activities to minimize emissions of greenhouse gases.			

Chapter 2 – Alternatives

Table 2-1. Comparison of Alternatives – Air and Atmospheric Values

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Management Objectives</b>					
4	No similar objective.	Intensify air quality monitoring within the WRFO.			Work cooperatively with local, state, federal, and Tribal agencies to enhance air monitoring efforts in order to provide a broader measure of spatially distributed air pollutant concentrations for the purposes of evaluating atmospheric conditions with respect to ambient air quality standards and air quality related values.
5	The BLM actions shall be implemented in a manner to minimize impacts.	Efforts taken to manage oil and gas activities to allow for minor increases in emissions output, while not causing or contributing to any violations of ambient air quality standards.	Efforts taken to manage oil and gas activities to allow for moderate increases in emissions output, while not causing or contributing to any violations of ambient air quality standards.	Manage oil and gas activities to meet ambient air quality standards.	Limit air quality degradation from authorized activities on BLM-administered lands by providing appropriate analyses for compliance with applicable Colorado and National Ambient Air Quality Standards, applicable federal, state, and local air quality laws, rules, regulations, and implementation plans, and applicable federal land management guidance documents (e.g., FLAG 2010).

Chapter 2 – Alternatives

Table 2-1. Comparison of Alternatives – Air and Atmospheric Values

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Allowable Uses and Management Actions</b>					
6	No similar action.			At least 50 percent of gas compression at compressor stations would be powered by electric motors <sup>(1)</sup> .	Same as Alternatives A-C.
7	Collector and local roads would be required to achieve at least 50 percent reduction from uncontrolled fugitive dust emissions by using watering or other control measures <sup>(1)</sup> .	In the MPA, proper road design, construction, and surfacing on collector and local roads (see BLM Manual Section 9113) would be required to achieve at least 84 percent reduction from uncontrolled fugitive dust emissions (using a combination of gravel, chemical suppression, watering, or other control measures). Collector and local roads in planning units other than the MPA would be required to achieve at least 50 percent fugitive dust control effectiveness <sup>(1)</sup> .			In the MPA, proper road design, construction, and surfacing on collector and local roads (see BLM Manual Section 9113) would be required to achieve at least 80 percent reduction from uncontrolled fugitive dust emissions (using a combination of gravel, chemical suppression, watering, or other control measures). Collector and local roads in planning units other than the MPA would be required to achieve at least 50 percent fugitive dust control effectiveness <sup>(1)</sup> .
8	Resource roads would be required to achieve at least 50 percent reduction from uncontrolled fugitive dust emissions by using watering or other control measures <sup>(1)</sup> .	In the MPA, proper road design, construction, and surfacing on resource roads (see BLM Manual Section 9113) would be required to achieve at least 80 percent reduction from uncontrolled fugitive dust emissions (using a combination of chemical suppression, watering, or other control measures). Resource roads in planning units other than the MPA would be required to achieve at least 50 percent fugitive dust control effectiveness <sup>(1)</sup> .			

**Chapter 2 – Alternatives**

**Table 2-1. Comparison of Alternatives – Air and Atmospheric Values**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
9	Venting would be allowed in accordance with Notice to Lessees (NTL-4A) <sup>(1)</sup> .	Well completions and recompletions would require use of green completion technology unless the need for an exemption could be documented. During well completions that do not use green completion technology, flaring of natural gas would be required. Venting of natural gas would not be allowed, except during emergency situations.			Well completions and recompletions would require use of green completion technology unless the need for an exemption could be documented. During well completions that do not use green completion technology, flaring of natural gas would be required. Venting of natural gas would not be allowed, except during emergency situations. Requirements would be consistent with NSPS OOOO Regulations.
10	During construction activities, watering of construction areas and associated resource roads would be required. In addition, fugitive dust control plans would be required <sup>(1)</sup> .	In addition to fugitive dust control plan implementation, construction sites and resource roads would be treated with water and/or a chemical dust suppressant during construction and drilling activities so that no dust plume is visible from construction sites or behind vehicles. All vehicles would abide by company or public speed restrictions. At construction sites, interim reclamation would be required within two years.			

Chapter 2 – Alternatives

Table 2-1. Comparison of Alternatives – Air and Atmospheric Values

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
11	Glycol dehydrators, condensate and produced water tanks, and other VOC emission sources would be required to meet applicable Colorado Department of Public Health and Environment (CDPHE), Air Quality Control Commission (AQCC), and U.S. Environmental Protection Agency (EPA) emission standards <sup>(1)</sup> .	<p>The VOC emissions from glycol dehydrators would be reduced by at least 90 percent from uncontrolled emission levels, while VOC emissions from condensate tanks and produced water tanks would be reduced by at least 95 percent from uncontrolled emission levels<sup>(1)</sup>.</p> <p>Emission controls would be required for glycol dehydrators, condensate tanks, and produced water tanks, without regard to the location of the equipment or the quantity of uncontrolled VOC emissions from the equipment.</p>			
12	No similar action.	<p>In coordination with the CDPHE, EPA, FS, NPS, local county agencies, and oil and gas industry, expand air quality monitoring efforts within the WRFO, particularly for ozone. There are two new air quality monitors within the WRFO (one in Meeker and one in Rangely); the BLM will seek funding to continue operation of these monitors for a minimum of three years after the ROD is signed.</p>			<p>Work cooperatively with local, state, federal, and Tribal agencies to enhance air monitoring efforts in order to provide a broader measure of spatially distributed air pollutant concentrations for the purposes of evaluating atmospheric conditions with respect to ambient air quality standards and air quality related values.</p>

Chapter 2 – Alternatives

Table 2-1. Comparison of Alternatives – Air and Atmospheric Values

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
13	No similar action.				Develop Conditions of Approval (COAs) for project specific surface-disturbing activities to prevent BLM permitted actions from causing or contributing to exceedances of ambient air quality standards or causing significant adverse impacts on air quality related values.
14	Drill rig engines and fracturing (frac) pump engines would meet EPA requirements <sup>(1)</sup> .	Within 1 year of the ROD, all new and existing drill rig and frac pump engines would be required to meet EPA Tier 4 Nonroad Diesel Engine Emission Standards or meet equivalent emission standards, regardless of when they begin operation in the WRFO.	Within 1 year of the ROD, all new and existing drill rig and frac pump engines would be required to meet EPA Tier 2 Nonroad Diesel Engine Emission Standards or meet equivalent emission standards. By 2015, all new and existing drill rig engines would meet EPA generator set Tier 4 (or more stringent) emission standards. Additional protection measures may be implemented to meet emission standards <sup>(1)</sup> based upon future modeling conducted under Appendix J, Air Resources Management Plan, of this RMPA/EIS.	Same as Alternative B.	Drill rig engines and fracturing (frac) pump engines would meet EPA requirements. See Appendix J, Section 3.5 Mitigation regarding COAs where the BLM might require all new and existing drill rig engines to meet EPA generator set Tier 4 (or more stringent) emission standards at the Project-level stage by year 2015.

**Chapter 2 – Alternatives**

**Table 2-1. Comparison of Alternatives – Air and Atmospheric Values**

<b>Record Number</b>	<b>Alternative A</b>	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative D</b>	<b>Alternative E (Proposed)</b>
15	Engines at field compression facilities would be required to meet applicable CDPHE, AQCC regulations and EPA emission standards <sup>(1)</sup> .	New and existing natural gas-fired reciprocating internal combustion engines at field compression facilities would be required to meet CDPHE, AQCC Regulation No. 7 emission standards for new and relocated engines, regardless of when the engines begin operation in the WRFO. Compliance with applicable EPA emission standards for all types of engines would also be required.	New engines (and engines relocated into the WRFO) at field compression facilities would be required to meet CDPHE, AQCC Regulation No. 7 emission standards for new and relocated engines. Compliance with applicable EPA emission standards for all types of engines would also be required.	Same as Alternative B.	Engines at field compression facilities would be required to meet applicable CDPHE, AQCC regulations and EPA emission standards.
16	Forty percent of well pads would use three-phase gathering systems to transport natural gas, condensate, and produced water to consolidated facilities where dehydration, temporary tank storage, and truck loading would occur <sup>(1)</sup> .	Ninety percent of well pads would use three-phase gathering systems to transport natural gas, condensate, and produced water to consolidated facilities where dehydration, temporary tank storage, and truck loading would occur <sup>(1)</sup> .	Eighty percent of well pads would use three-phase gathering systems to transport natural gas, condensate, and produced water to consolidated facilities where dehydration, temporary tank storage, and truck loading would occur <sup>(1)</sup> . Within five years of signing of the ROD, all multi-well pads would be required to use three-phase gathering systems and consolidated facilities.	Same as Alternative B.	Where feasible, promote the use of three-phase gathering systems to transport natural gas, condensate, and produced water to consolidated facilities where dehydration, temporary tank storage, and truck loading would occur.

Chapter 2 – Alternatives

Table 2-1. Comparison of Alternatives – Air and Atmospheric Values

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
17	Produced water evaporation ponds at gas plants would achieve at least 90 percent VOC control effectiveness through the use of VOC removal prior to water discharge to the pond, oil/water separation, air stripping/sparging combined with carbon adsorption and thermal oxidation, or other VOC control strategies <sup>(1)</sup> .				Produced water evaporation ponds at gas plants would achieve at least 90 percent VOC control effectiveness through the use of VOC removal prior to water discharge to the pond, oil/water separation, air stripping/sparging combined with carbon adsorption and thermal oxidation, or other VOC control strategies <sup>(1)</sup> . At Project-level analyses, the BLM will evaluate possible emissions control effectiveness for permitting any actions and any requirements would be applied as COAs.

**Chapter 2 – Alternatives**

**Table 2-1. Comparison of Alternatives – Air and Atmospheric Values**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
18	No similar action.	Manage Air Resources within the Planning Area in accordance with the Air Resources Management Plan in Appendix J.			Implement the adaptive management strategy for protecting air resources, to include the actions above, as well as, tracking project specific emissions for comparison against the most recent regional air quality model results to provide context for any contemporaneous development period, and providing an annual activity and air quality summary report of BLM activities as described in the CARPP (Appendix J).
19	No similar action.				A Lease Notice (as shown in Appendix A) will be attached to new oil and gas leasing agreements to provide notice to operators of analysis and mitigation requirements that will be determined on a case by case basis at the permitting/development stage.

**Chapter 2 – Alternatives**

**Table 2-1. Comparison of Alternatives – Air and Atmospheric Values**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
20	No similar action.				Participate in, conduct, or require air modeling analyses as described in the CARPP (see Appendix J) as part of a comprehensive strategy to prevent BLM permitted activities from causing or contributing to violations of ambient air quality standards or causing significant adverse impacts on air quality related values.

**NOTE:**

<sup>(1)</sup>This record or portion of record is considered to be an assumption used for impact analysis; is not a decision. Record was not deleted in order to preserve continuity between draft and final and to avoid confusion.

Chapter 2 – Alternatives

Table 2-2. Comparison of Alternatives – Soil and Water Resources

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Management Goals</b>					
1	Maintain and improve water quality and quantity in order to be compatible with existing and anticipated uses, to comply with applicable state and federal water quality standards, and to meet the goals contained in Standard Five of the Standards for Public Land Health.	Maintain or improve surface and groundwater quantity and quality consistent with applicable state and federal standards and regulations.			Maintain and improve water quality and quantity in order to be compatible with existing and anticipated uses, to comply with applicable state and federal water quality standards, and to meet the goals contained in Standard 5 of the Colorado Public Land Health Standards.
2	No similar goal.	Prevent, control, or remediate sources and causes of water pollution on federal lands in cooperation with other federal, local, and state agencies and private entities.			
3	Identify treatments for fragile watershed areas that are contributing to water quality problems (accelerated erosion and salt contributions) in the Colorado River Basin.	Identify and implement treatments for fragile watershed areas and minimize or control elevated levels of salt and sediment contribution from federal lands to river systems in the Planning Area.			
4	Prevent impairment of soil productivity due to accelerated erosion and physical or chemical degradation resulting from surface use activities.	Prevent impairment of soil productivity due to accelerated erosion and physical or chemical degradation resulting from surface use activities and maintain or improve soil productivity, including retention of topsoil quality and reestablishing soil capability, potential, and functionality when disturbed.			

**Chapter 2 – Alternatives**

**Table 2-2. Comparison of Alternatives – Soil and Water Resources**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Management Objectives</b>					
5	No similar objective.	Manage surface land use with oil and gas activities to maintain the timing, magnitude, and duration of peak, high, and low flows by minimizing surface disturbance, erosion, and sedimentation of streams.			
6	No similar objective.	Manage oil and gas activities to maintain the hydrologic and water quality conditions needed to support riparian and wetland areas; water quality standards; stream channel integrity; minimize levels of salt and sediment loading in watersheds; and complement meeting or achieving BLM's Colorado Public Land Health Standards.			
7	No similar objective.	Maintain surface and groundwater quality to achieve or exceed standards promulgated by the State Water Quality Control Commission.			
8	No similar objective.	Manage oil and gas activities to maintain soil quality and reestablishing soil function when disturbed.			
<b>Allowable Uses and Management Actions</b>					
9	Fragile soils on slopes greater than 35 percent and saline soils derived from Mancos Shale, as identified in the 1997 White River RMP and updated with better mapping (385,000 acres), will be managed with a CSU stipulation on oil and gas leasing (see Appendix A).	No similar action.		Same as Alternative A.	Same as Alternatives B and C.

Chapter 2 – Alternatives

Table 2-2. Comparison of Alternatives – Soil and Water Resources

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
10	When topsoil is stockpiled on slopes exceeding five percent, construct a berm or trench below the stockpile.	Require a temporary protective surface treatment on all disturbed areas not required for operation and on soil piles immediately after the road and pad construction is completed. Surface treatments would vary depending on the local site conditions and changes in erosion control technology, but may include mulch, matting, netting, and/or tackifiers. This requirement would be added as a Lease Notice (LN) to leases and applied as a COA for new authorizations.		Stockpiled soil must have erosion control measures implemented to keep soil on the location (such as silt fences, wattles, or other measures). This requirement would be added as a LN to leases and applied as a COA for new authorizations.	No similar action.
11	No similar action.	Development in designated surface and groundwater source water protection zones for public water supplies such as those identified by the Source Water Protection Plans for the towns of Meeker and Rangely would require a plan that addresses drinking water sources. This requirement would be added as a LN to leases and applied as a COA for new authorizations.		Approval of APDs and project planning would consider surface and groundwater source water protection zones for public water supplies.	Development in designated surface and groundwater source water protection zones for public water supplies (i.e., those identified by the Source Water Protection Plans for the towns of Meeker and Rangely) including new sole source aquifers as defined in the Safe Water Drinking Act would require a plan that addresses drinking water sources. This requirement would be added as a LN to leases.

Chapter 2 – Alternatives

Table 2-2. Comparison of Alternatives – Soil and Water Resources

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
12	No similar action.	Surface occupancy would not be allowed in the following areas: (1) mapped 100-year floodplains (22,100 acres); (2) areas within 500 feet of perennial waters, springs, water wells, and wetland/riparian areas (55,300 acres); and (3) areas 100 feet from the inner gorge of ephemeral channels. Surface occupancy would be granted if an environmental analysis showed water resources would not be impacted or when the land-use authorization holder or lease holder and the BLM have arrived at acceptable plan for mitigation of anticipated impacts. The area within wetlands and ephemeral channels would be identified during site-specific analysis.	A CSU stipulation would be applied to oil and gas leases and land use authorizations to avoid the following areas: (1) mapped 100-year floodplains; (2) areas within 500 feet from perennial waters, springs, water wells, and wetland/riparian areas; and (3) areas 100 feet from the inner gorge of ephemeral channels. With existing leases or renewed authorizations, COAs would be applied to approvals to protect surface water resources in these areas. The area within mapped 100-year floodplain comprises 22,100 acres. Areas within 500 feet of perennial waters, springs, wells, and wetland/riparian areas comprise 55,300 acres. Wetlands and ephemeral channels would be identified during site-specific analysis.		A CSU stipulation would be applied to oil and gas leases and land use authorizations to avoid the following areas: <ul style="list-style-type: none"> <li>▪ mapped 100-year floodplains (22,100 acres);</li> <li>▪ areas within 500 feet from perennial waters, springs, water wells, and wetland/riparian areas (79,400 acres); and</li> <li>▪ areas 100 feet from the inner gorge of ephemeral and/or intermittent stream channels (these would be identified during site-specific analysis).</li> </ul>

Chapter 2 – Alternatives

Table 2-2. Comparison of Alternatives – Soil and Water Resources

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
13	BLM actions affecting surface waters will be conducted in compliance with state and federal law, including the State of Colorado’s National Pollutant Discharge Elimination System (NPDES), Anti-Degradation Policy, State Water Quality Standards, and the U.S. Army Corps of Engineers, Section 404 permit requirements, and Section 319 (Non-point Source Management Program) of the Clean Water Act (CWA).	Surface discharge of produced water that meets state standards for water quality would not be allowed. Injection of produced water from federal oil and gas leases would be required. This requirement would be added as an LN to leases and applied as a COA for new authorizations.	Surface discharge of produced water that meets state standards for water quality would not be approved for new projects. Existing surface discharges, approved under previous land use plans or authorizations, would be allowed to continue as long as they do not change or exceed water volumes or water quality specified during approval. This requirement would be added as an LN to leases and applied as a COA for new authorizations.	Surface discharge of produced water that meets state standards for water quality would be allowed. Individual projects would be considered on a site-specific basis. Surface discharge of produced water that results in a conversion of ephemeral to perennial or intermittent stream systems would not be approved. This requirement would be added as an LN to leases and applied as a COA for new authorizations.	The BLM actions affecting surface waters will be conducted in compliance with state and federal laws, including: <ul style="list-style-type: none"> <li>▪ State of Colorado’s National Pollutant Discharge Elimination System (NPDES);</li> <li>▪ Anti-Degradation Policy;</li> <li>▪ State Water Quality Standards;</li> <li>▪ U.S. Army Corps of Engineers, Section 404 permit requirements; and</li> <li>▪ Section 319 (Non-point Source Management Program) of the Clean Water Act (CWA).</li> </ul> Surface discharge of produced water that meets state standards for water quality would be allowed. Individual projects would be considered on a site-specific basis.

Chapter 2 – Alternatives

Table 2-2. Comparison of Alternatives – Soil and Water Resources

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
14	Management actions support the goals provided as indicators in Standard 1 of the Standards for Public Land Health.	Operators would be required to manage oil and gas activities in a manner that does not allow negative impacts on upland health (as defined by indicators for Colorado Public Land Health Standards for Uplands, Standard 1 [BLM 1997b]).	Operators would be required to manage oil and gas activities in a manner that limits and/or reduces negative impacts on upland health (as defined by indicators for Colorado Public Land Health Standards for Uplands, Standard 1 [BLM 1997b]).	Operators would be required to manage oil and gas activities in a manner that retains upland health (as defined by Colorado Public Land Health Standards for Uplands, Standard 1 [BLM 1997b]).	Management actions support the goals provided as indicators in Standard 1 of the Colorado Public Land Health Standards.
15	Landslide areas (as identified in USDA SCS Order III Soil Surveys) would be open to oil and gas leasing with an NSO stipulation (38,600 acres). An NSO stipulation will be applied to all surface-disturbing activities associated with land use authorizations, permits, and leases issued on BLM administered lands.	Areas within 100 feet of mapped landslide areas would be open to oil and gas leasing with an NSO stipulation (46,400 acres). An NSO stipulation would be applied to surface-disturbing activities associated with all other land use authorizations, permits, and leases granted in these areas.	Areas within 50 feet of mapped landslide areas would be open to oil and gas leasing with an NSO stipulation (42,500 acres). An NSO stipulation would be applied to surface-disturbing activities associated with all other land use authorizations, permits, and leases granted in these areas.	Landslide areas as identified in the USDA NRCS Web Soil Survey (WSS) would be open to oil and gas leasing with an NSO stipulation (38,600 acres).	

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**Table 2-2. Comparison of Alternatives – Soil and Water Resources**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
16	No similar action.	Areas within 100 feet of saline soils (i.e., greater than 8 mmhos/cm) as defined by the Natural Resource Conservation Service (NRCS), with the exception of the Coal Oil Basin exemption area north of Rangely, would be open to leasing with an NSO stipulation (45,300 acres).	Areas with identified saline soils, with the exception of the Coal Oil Basin exemption area north of Rangely, would be open to leasing with an NSO stipulation (34,100 acres).	Identified saline soils would be open to leasing with a CSU stipulation that would require operators to consider the stability and productivity of these soils in surface use plans (44,300 acres).	Identified saline soils would be open to leasing with a CSU stipulation that would require operators to consider the stability and productivity of these soils in surface use plans of operations for oil and gas activities (44,300 acres).

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Table 2-2. Comparison of Alternatives – Soil and Water Resources

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
17	No similar action.	Natural slopes greater than or equal to 25 percent but less than 35 percent would be open to oil and gas leasing with a CSU stipulation (279,900 acres). A CSU stipulation would be applied to surface-disturbing activities associated with all land use authorizations, permits, and leases granted in these areas that are associated with oil and gas development. Natural slopes greater than or equal to 35 percent would be open to oil and gas leasing with an NSO stipulation (353,000 acres, this acreage also includes slopes greater than 50 percent). An NSO stipulation would be applied to surface-disturbing activities associated with all other land use authorizations, permits, and leases associated with oil and gas development in these areas. Surface occupancy would be granted if an environmental analysis showed that they would not impact the features identified	Natural slopes greater than or equal to 35 percent but less than 50 percent would be open to oil and gas leasing with a CSU stipulation (231,500 acres). A CSU stipulation would be applied to surface-disturbing activities associated with all land use authorizations, permits, and leases granted in these areas that are associated with oil and gas development. Natural slopes greater than or equal to 50 percent would be open to oil and gas leasing with an NSO stipulation (114,200 acres). An NSO stipulation would be applied to surface-disturbing activities associated with all other land use authorizations, permits, and leases associated with oil and gas development in these areas. Surface occupancy would be granted if an environmental analysis showed that they would not impact the features identified or when the land-use authorization holder or a lease holder and the BLM	Natural slopes greater than or equal to 50 percent would be open to oil and gas leasing with an NSO stipulation (114,200 acres). Land use authorizations, permits, and leases associated with oil and gas development in areas on slopes greater than 50 percent would be excluded. Surface occupancy would be granted if an environmental analysis showed that they would not impact the features identified or when the land-use authorization holder or a lease holder and the BLM have arrived at acceptable plan for mitigation of anticipated impacts.	On natural slopes greater than or equal to 35 percent but less than 50 percent, a CSU stipulation (231,500 acres) would be applied to surface-disturbing activities associated with all land use authorizations, permits, and leases granted in these areas that are associated with oil and gas development. On natural slopes greater than or equal to 50 percent an NSO stipulation (114,200 acres) would be applied to surface-disturbing activities associated with all land use authorizations, permits, and leases associated with oil and gas development. Surface occupancy could be granted if an environmental analysis showed that the proposal would not impact the features identified or when the land-use authorization holder or lease holder and the BLM have arrived at acceptable plan for mitigation of anticipated impacts.

Chapter 2 – Alternatives

Table 2-2. Comparison of Alternatives – Soil and Water Resources

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
		or when the land-use authorization holder or a lease holder and the BLM have arrived at acceptable plan for mitigation of anticipated impacts.	have arrived at acceptable plan for mitigation of anticipated impacts.		
18	No similar action.	Encourage, through planning, the implementation of produced water piping infrastructure to transport water to treatment and disposal locations.		Produced water piping would be analyzed when operators propose it.	Same as Alternative A.
19	No similar action.	Encourage, through planning, the implementation of water piping infrastructure to support construction, drilling, treatment, recycling, storage and completion activities.		Fresh and/or recycled water piping for use in construction, drilling, and completion activities would be analyzed when the operators propose it.	<p>When submitting a development plan, operators will submit a water management plan by federal lease or unit area(s) that describes:</p> <ul style="list-style-type: none"> <li>▪ Predicted water use for drilling, construction, and operations;</li> <li>▪ Storage needs and methods;</li> <li>▪ Recycling, treatment; and</li> <li>▪ Disposal methods for fresh and produced water needed to develop or explore identified mineral resources.</li> </ul> <p>Plans would be subject to BLM approval.</p>

**Chapter 2 – Alternatives**

**Table 2-2. Comparison of Alternatives – Soil and Water Resources**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
20	No similar action.	Encourage, through planning, the implementation of detailed access route plans for specific geographic areas.		Locations of access routes (collector and local) would be determined and analyzed during project approvals.	Same as Alternatives B and C.
21	No similar action.	Encourage, through planning, the use of existing pipeline corridors and roadways for new pipelines.		The use of existing pipeline corridors and roads are requested and may be required depending on site-specific analysis.	
22	No similar action.	Use of evaporation facilities for the disposal of produced water from federal leases would not be allowed. This requirement would be added as a LN to new leases.	Use of evaporation facilities for disposal of produced water would not be allowed on public lands.	Use of evaporation facilities for the disposal of produced water would be evaluated on a case-by-case basis. (Note: Same as Table 2-17 Record 10.)	
23	No similar action.	Areas within 1/2 mile of groundwater public water supply wells for the town of Dinosaur, Dinosaur National Monument Headquarters, the town of Massadona, the town of Meeker and the primary protection area that includes the primary aquifer for Meeker would be open to oil and gas leasing with an NSO stipulation (1,500 acres).		Same as Alternative A.	Same as Alternatives B and C.
24	No similar action.	Areas within 500 feet of state 303 (d) listed impaired stream segments in the MPA which currently includes Duck Creek tributary to Yellow Creek, Yellow Creek from Barcus Creek to the White River, Piceance Creek from Willow Creek to Hunter Creek, Piceance Creek from Ryan Gulch to the White River, and Black Sulphur Creek within the Mesaverde play area would be open to oil and gas leasing with an NSO stipulation (2,500 acres).		Same as Alternative A.	Same as Alternatives B and C.

Chapter 2 – Alternatives

Table 2-3. Comparison of Alternatives – Vegetation

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Management Goals</b>					
<b>Plant Communities (including Remnant Vegetation Associations)</b>					
1	No similar goal.	Maintain the proper ecosystem function necessary to achieve DPC in areas with oil and gas activities.			
2	No similar goal.	Assess sites to identify weed establishment risks, analyze potential treatment of sites at high-risk of weed establishment/spread, and identify prevention practices.			
3	Maintain healthy, diverse, and sustainable rangeland and woodland plant communities.	Manage vegetation communities to restore, maintain, or enhance vegetation community health, composition, and diversity to benefit multiple resources and their uses (consistent with ecological site potential).			Manage vegetation communities to restore, maintain, or enhance vegetation community health, composition, and diversity to benefit multiple resources and their uses (consistent with ecological site description).
<b>Riparian Areas and Wetlands</b>					
4	Insure that riparian areas on BLM land are in proper functioning condition.	Ensure that riparian areas and wetlands on BLM-administered lands are in or making progress toward, proper functioning condition.			
<b>Noxious and Invasive Weeds</b>					
5	In accordance with the White River Resource Area Noxious Weed Management Plan, manage noxious weeds so they cause no further negative environmental, aesthetic, or economic impacts.	Incorporate weed prevention and control measures into all phases of oil and gas activities to stop or reduce the spread of noxious and invasive plant species.			Incorporate Integrated Pest Management practices including Early Detection Rapid Response into all phases of oil and gas activities to stop or reduce the spread of noxious and invasive plant species.

Chapter 2 – Alternatives

Table 2-3. Comparison of Alternatives – Vegetation

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Management Objectives</b>					
<b>Plant Communities (including Remnant Vegetation Associations)</b>					
6	No similar objective.	Manage oil and gas activities to maintain, restore, and enhance upland vegetation communities, riparian areas, and wetlands to facilitate meeting or progressing toward meeting Colorado Public Land Health Standards and DPC.			
7	No similar objective.	Maintain, restore, and enhance vegetation communities to facilitate a healthy mix of successional stages in areas with oil and gas activities (consistent with ecological site potential).			Maintain, restore, and enhance vegetation communities to facilitate a healthy mix of successional stages in areas with oil and gas activities (consistent with ecological site description or identified desired plant community).
8	The genetic integrity of native species in ACECs and RVAs will be maintained.	Protect the ecological integrity of unique plant communities.			Protect the ecological integrity of unique plant communities, with particular emphasis on maintaining the genetic integrity of native species in RVAs. (Note: Also see Table 2-21 Record 6.)
<b>Riparian Areas and Wetlands</b>					
9	No similar objective.	Manage oil and gas activities for maintenance, restoration, and enhancement of riparian areas and wetlands to facilitate meeting or progressing toward meeting, Colorado Public Land Health Standards through achievement of proper functioning condition.			

Chapter 2 – Alternatives

Table 2-3. Comparison of Alternatives – Vegetation

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Noxious and Invasive Weeds</b>					
10	No similar objective.	Control the spread of noxious and invasive weeds associated with oil and gas activities by using appropriate management actions (eradicate, contain, suppress). Involve appropriate partners (local, county, state, federal, and public land users) to facilitate timely and successful completion of each action.			Control the spread of noxious and invasive weeds found on the most current State and County Noxious Weed priority lists, associated with oil and gas activities by using appropriate management actions (eradicate, contain, suppress). Involve appropriate partners (local, county, state, federal, and public land users) to facilitate timely and successful completion of each action.

Chapter 2 – Alternatives

Table 2-3. Comparison of Alternatives – Vegetation

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Allowable Uses and Management Actions</b>					
<b>Plant Communities</b>					
11	A CSU stipulation will be imposed on all land use activities that involve aspen, serviceberry and chokecherry communities north of Highway 40 (61,540 acres) as a means of maintaining the distribution, condition, and functional capacity of high priority wildlife habitats.	Aspen, serviceberry, and chokecherry communities associated with Blue Mountain (57,600 acres) would be managed with a CSU stipulations in order to maintain the distribution, condition, and functional capacity of deciduous browse, and aspen communities integral to high priority big game and dusky grouse (formerly known as blue grouse) habitats. Prior to authorizing activities in this area, the applicant would be required to submit a plan of development that would demonstrate that: <ul style="list-style-type: none"> <li>▪ Associations have been avoided to the extent possible;</li> <li>▪ Special reclamation measures or design features would promote accelerated recovery and establishment of desirable plant community components;</li> <li>▪ The potential or capacity of the area to support viable, self-sustaining aspen, serviceberry, and chokecherry communities has not been diminished; and</li> <li>▪ Involvement of community derived values are mitigated through project life commensurate with projected impacts.</li> </ul> Surface disturbance or occupation within aspen, serviceberry, and chokecherry communities may be prohibited.			
12	Activities proposed within riparian habitats will be analyzed to determine whether the identified management objectives could be met. Those activities that do not meet the objectives will be modified to meet the objectives or will be denied.	Proposed activities would be analyzed to determine whether the objectives for the particular plant community affected could be met if the activity were approved. If plant community objectives could not be met, the BLM could deny the request or could require specific mitigation measures for the activity to ensure that plant community objectives are met.			

Chapter 2 – Alternatives

Table 2-3. Comparison of Alternatives – Vegetation

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
13	The use of native or non-native plant species for reclamation will be addressed in site-specific project analysis.	All surface disturbing activities related to oil and gas exploration and development on BLM-administered lands would be subject to reclamation standards included in the WRFO Surface Reclamation Plan. Reclamation is dynamic and the WRFO Surface Reclamation Plan will be revised through time to incorporate updated reclamation practices.			All surface disturbing activities related to oil and gas exploration and development on BLM-administered lands authorized after the signing of the ROD for the Oil and Gas Development RMPA would be subject to reclamation standards included in the WRFO Surface Reclamation Plan. For all such exploration and development authorized prior to the signing of the ROD, the WRFO Surface Reclamation Plan would be used as guidance for Reclamation Plans submitted as per Onshore Order No. 1. Reclamation is dynamic and the WRFO Surface Reclamation Plan will be revised through time to incorporate updated reclamation practices.

Chapter 2 – Alternatives

Table 2-3. Comparison of Alternatives – Vegetation

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
14	No similar action.	The BLM would require final reclamation as well as long term maintenance of ROWs as defined in the WRFO Surface Reclamation Plan (see Appendix D).			The BLM would require final reclamation of abandoned wells and access routes including long-term (until termination of land use authorization) maintenance (e.g., weed control, vegetation establishment) of ROWs as defined in the WRFO Surface Reclamation Plan (see Appendix D).
15	No similar action.	The BLM would require reclamation that would result in a functioning vegetation community, established on the reclaimed site, that is capable of persisting on the site without continued intervention and would allow for successional processes progressing toward a healthy mid-seral or late-seral community. An exception could be granted for wildlife habitat areas where a specific cover type/seral stage is needed.		The BLM would require interim and final reclamation that achieves DPC through the use of prescribed seed mixes.	The BLM would require reclamation that would result in a functioning vegetation community, established on the reclaimed site, that is capable of persisting on the site without continued intervention and would allow for successional processes progressing toward a healthy mid-seral or late-seral community. An exception could be granted for areas where a specific cover type/seral stage is needed (e.g., wildlife habitat, fire management).

Chapter 2 – Alternatives

Table 2-3. Comparison of Alternatives – Vegetation

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
16	Vegetation in selected areas will be disturbed by permitted surface-disturbing activities or would be manipulated to achieve an improved ecological condition and/or improved forage production.	In areas where a pinyon-juniper component has expanded into previous fire-disclimax (mid-seral) shrublands or is invading other ecological sites or sites degraded by cheatgrass domination, the BLM would utilize vegetation removal associated with oil and gas activities and related infrastructure combined with tailored reclamation to achieve specific management objectives.		Same as Alternative A.	Same as Alternatives B and C.
17	Only native plant species will be used for reseeding disturbed areas within the Blue Mountain/Moosehead Geographic Reference Area (GRA), Wilderness Study Area, and within designated Areas of Critical Environmental Concern. Native plants species would be strongly encouraged in the remainder of the Resource Area for reseeding disturbed areas that are not threatened by establishment of exotic or noxious plant species. Naturalized plant species will be allowed for reseeding on “at-risk” and “unhealthy” rangelands and grazable woodlands.	Only native plant species would be used for reseeding disturbed areas within the Blue Mountain/Moosehead GRA and all WSAs and ACECs. Site-specific reclamation plans would be developed based on ecological site, DPC, and ecological integrity of the surrounding community. The BLM would require the use of native plant materials and seeds in all reclamation activities unless the use of non-native, non-invasive, introduced plant species would benefit the ecological integrity of the site.		Same as Alternative A.	The BLM would require the use of native plant materials and seeds in all reclamation activities unless the use of non-native, non-invasive introduced plant species would benefit the ecological integrity or meet specified management objectives of the site. Site-specific reclamation plans would be developed based on ecological site, DPC, and ecological integrity of the surrounding community.

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Table 2-3. Comparison of Alternatives – Vegetation

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
18	Acceptable DPCs will be managed in ecological status of high-seral or healthy mid-seral for all rangeland plant communities. An exception may be provided for wildlife habitat areas where specific cover types are needed. The required cover type in those wildlife habitat areas will be the DPC. The ecological status of a DPC in specified wildlife habitat areas could be lower than high seral. In which case, the DPC will be managed, at a minimum, to maintain an at-risk rating and have a stable to improving trend in ecological status.	Acceptable DPCs would be managed to achieve an ecological status of late-seral or healthy mid-seral for all rangeland plant communities. Interim and final reclamation for oil and gas activities would have success criteria of 100 percent potential foliar cover and/or potential basal cover must be at least 50 percent of the DPC. In the absence of specified DPC data, the default minimum potential foliar cover must be 90 percent and/or potential basal cover must be 30 percent. Vegetative cover values for woodland or shrubland sites are based on the capability of those sites in an herbaceous state. The resulting plant community must contain at least five desirable plant species, at least three of which must be a forb or shrub, each comprising at least 5 percent relative cover. No one species may exceed 70 percent relative cover in	Acceptable DPCs would be managed to achieve an ecological status of late-seral or healthy mid-seral for all rangeland plant communities. Interim and final reclamation for oil and gas activities would have success criteria of 80 percent potential foliar cover and/or potential basal cover must be at least 25 percent of the DPC. In the absence of specified DPC data, the default minimum potential foliar cover must be 70 percent and/or potential basal cover must be 20 percent. Vegetative cover values for woodland or shrubland sites are based on the capability of those sites in an herbaceous state. The resulting plant community must contain at least five desirable plant species, at least two of which must be a forb or shrub, each comprising at least 3 percent relative cover. No one species may exceed	Acceptable DPCs would be managed to achieve an ecological status of late-seral or healthy mid-seral for all rangeland plant communities. Interim and final reclamation for oil and gas activities would have success criteria of 60 percent potential foliar cover and/or potential basal cover of the DPC. In the absence of specified DPC data, the default minimum potential foliar cover must be 40 percent and/or potential basal cover must be 5 percent. Vegetative cover values for woodland or shrubland sites are based on the capability of those sites in an herbaceous state. The resulting plant community must contain at least five desirable plant species, at least one of which must be a forb or shrub, each comprising at least 2 percent relative cover. No one species may exceed 70 percent relative cover in the resulting plant	Acceptable DPCs would be managed to achieve an ecological status of late-seral or healthy mid-seral for all rangeland plant communities. Interim and final reclamation for oil and gas activities would have success criteria of 80 percent similarity of desired foliar cover, bare ground, and forb and/or shrub density in relation to the identified DPC. In the absence of specified DPC data, an agreed upon reference site or AIM data would serve as the DPC. Vegetative cover values for woodland or shrubland sites are based on the capability of those sites in an herbaceous state. The resulting plant community must contain at least five desirable plant species and no one species may exceed 70 percent relative cover in the resulting plant community to ensure that site species diversity is achieved.

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Table 2-3. Comparison of Alternatives – Vegetation

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
		the resulting plant community to ensure that site species diversity is achieved. Desirable species include those defined by the range site or seeded in the BLM approved mix, consistent with the WRFO Surface Reclamation Plan (see Appendix D).	70 percent relative cover in the resulting plant community to ensure that site species diversity is achieved. Desirable species include those defined by the range site or seeded in the BLM approved mix, consistent with the WRFO Surface Reclamation Plan (see Appendix D).	community to ensure that site species diversity is achieved. Desirable species include those defined by the range site or seeded in the BLM approved mix, consistent with the WRFO Surface Reclamation Plan (see Appendix D).	Desirable species include native species from the surrounding site, species listed in the range/ecological site description, or species from the BLM approved seed mix consistent with the WRFO Surface Reclamation Plan (see Appendix D). Reclamation data will be submitted via the most current BLM approved data management system.
<b>Riparian Areas and Wetlands</b>					
19	Management of riparian areas and wetlands would be based on the rating system for riparian areas identified in Appendix D Tables 2-9 through 2-11 of the 1997 White River RMP <sup>(1)</sup> .	Management of riparian areas and wetlands would be based on the rating system for riparian areas identified in Appendix D, Tables 2-9 through 2-11 of the 1997 White River RMP. Riparian systems have been reprioritized according to risk factors associated with oil and gas activities. The following systems would be ranked as high priority: Bitter Creek, Fawn Creek (all), Piceance Creek, Bear Creek, and Big Duck Creek. The following systems would be ranked as medium priority: West Creek, Joe Bush Gulch, Segar Gulch, East Hunter Creek, West Hunter Creek, Middle Fork Stewart, Box Elder, and Corral Gulch. The following systems would be ranked as low priority: Collins Gulch and Cascade Gulch. Any 303 (d) (CWA) listed systems could be considered high or medium priority depending on its resource value. The remaining systems would retain the priority rankings as identified in Appendix D of the 1997 White River RMP.			

**Chapter 2 – Alternatives**

**Table 2-3. Comparison of Alternatives – Vegetation**

<b>Record Number</b>	<b>Alternative A</b>	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative D</b>	<b>Alternative E (Proposed)</b>
20	Surface disturbing activities would be required to avoid riparian/wetland habitat.	Surface-disturbing activities would not be allowed in priority riparian/wetland habitats (NSO on 1,600 acres).	Surface-disturbing activities would be avoided in riparian and wetland habitats (and potential habitats) unless environmental analysis determined that the proposed activity would not, or could be conditioned to not, degrade or forestall attainment of the proper functioning condition of the riparian and wetland areas (CSU on 1,600 acres).	Surface-disturbing activities would be avoided in priority riparian habitats unless environmental analysis determined that the proposed activity would not degrade or forestall attainment of proper functioning condition of the riparian area. If the riparian areas could not be avoided, impacts could be mitigated to meet minimum objectives for the system (CSU on 1,600 acres).	This action has been included in Table 2-2 Record 12. (Note: Also see CSU-02-E in Appendix A.)
21	Existing activity and/or facilities that are negatively affecting the proper functioning condition of a riparian or wetland habitat may be required to undertake remedial mitigation, or relocate activities outside the high and medium priority riparian habitats upon authorization renewal or amendment.	Authorized surface-disturbing activities determined to negatively affect riparian or wetland habitat would be required to relocate activities outside of riparian habitat and restore functional condition of riparian/wetland habitat.	Authorized surface-disturbing activities and/or facilities that are negatively affecting riparian or wetland habitat would be required to immediately undertake mitigation and, if impacts are not mitigated, then relocate activities/facilities outside riparian/wetland habitat.	Same as Alternative A.	Authorized surface-disturbing activities and/or facilities that are found to be negatively affecting riparian or wetland habitat may be required to undertake mitigation and, if impacts are not mitigated, then relocate activities/facilities outside riparian/wetland habitat.

Chapter 2 – Alternatives

Table 2-3. Comparison of Alternatives – Vegetation

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Noxious and Invasive Weeds</b>					
22	<p>Three contiguous areas encompassing 497,900 acres would be maintained as weed-free zones. Weed management would be emphasized through cooperation with private land owners and state and county governments. The areas would be identified on the ground with signs. The following special conditions would be attached to use authorizations approved within these areas:</p> <ul style="list-style-type: none"> <li>▪ All construction equipment and vehicles would be cleaned prior to entering BLM Weed-Free Zones.</li> <li>▪ All hay, straw, unprocessed feed, and seed used in BLM Weed-Free Zones must be certified free of specified noxious weeds listed in Colorado Weed-Free Forage Certification Standards.</li> <li>▪ All authorized users of disturbed areas would be required to inventory for noxious weeds in both the spring and fall.</li> </ul>				
23	No similar action.	When noxious weeds and/or invasive winter annuals (e.g., cheatgrass) are present, prior to seeding, they would be treated/controlled to reduce their presence to a level that would not impair revegetation efforts.			
24	No similar action.	<p>On BLM lands, noxious weeds on the Colorado Department of Agriculture’s State Weed List A would be eliminated; noxious weeds on the Colorado Department of Agriculture’s State Weed B and C Lists would be controlled; and the spread of invasive species within the permitted area of direct and indirect use (as defined in Appendix D) would be controlled and prevented. The following COAs would be attached to land use authorizations:</p> <ul style="list-style-type: none"> <li>▪ All equipment that may act as a vector for weeds shall be washed before entering the WRFO. Equipment would also be washed (e.g., with a portable pressure washer) when leaving and/or moving between work-sites if the pre-disturbance weed inventory indicated the presence of undesirable invasive or noxious weeds and there is a risk of transporting these weed seeds or root propagules;</li> <li>▪ Certified weed-free mulches, as per state guidelines, would be used;</li> <li>▪ All seed applied on BLM public lands would comply with BLM policy regarding seed testing and certified quality;</li> </ul>	<p>On BLM lands, noxious weeds on the Colorado Department of Agriculture’s State Weed List A would be eliminated; noxious weeds on the Colorado Department of Agriculture’s State Weed B and C Lists would be controlled; and invasive species within the permitted area of direct use would be controlled. The following COAs would be attached to land use authorizations:</p> <ul style="list-style-type: none"> <li>▪ All equipment that may act as a vector for weeds shall be washed before entering the WRFO.</li> </ul>	Same as Alternatives B and C.	

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Table 2-3. Comparison of Alternatives – Vegetation

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
		<ul style="list-style-type: none"> <li>▪ All authorized users of disturbed areas including rights-of ways would be required to inventory the entire project area for noxious weeds and invasive species in both the spring and fall through final abandonment. Results of surveys would be provided to the BLM as described in Appendix D;</li> <li>▪ Operators would prepare and implement weed management plans for projects consistent with the WRFO Surface Reclamation Plan (see Appendix D); and</li> <li>▪ Operators to the extent possible would ensure all products placed on public lands (e.g., materials from gravel pits/quarries) are free of noxious weeds, including seeds or root material, listed on Colorado Department of Agriculture’s State Weed List for A and B listed species.</li> </ul>		<p>Equipment would also be washed (e.g., with a portable pressure washer) when leaving and/or moving between work-sites if the pre-disturbance weed inventory indicated the presence of undesirable invasive or noxious weeds and there is a risk of transporting these weed seeds or root propagules.</p> <ul style="list-style-type: none"> <li>▪ Weed-free mulches would be used, per state guidelines.</li> <li>▪ Noxious weeds, including seeds or root material, listed on Colorado Department of Agriculture’s State Weed List for A and B listed species and invasive species, as found on site as prescribed by the Authorized Officer, would be eliminated.</li> </ul>	
25	No similar action.	Sterile hybrids or sterile cereal annual grasses would not generally be approved for use on public lands for reclamation efforts.		Sterile hybrids or cereal grasses could be used on public lands for reclamation efforts where approved by the BLM.	

Table 2-3-12

Chapter 2 – Alternatives

Table 2-3. Comparison of Alternatives – Vegetation

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
26	No similar action.	A reclamation status report for each site would be submitted electronically to the WRFO annually until it is determined that reclamation of the site has met all required objectives of the particular reclamation phase. Every third year, a vegetation monitoring report should accompany the status report. (See Appendix D, Section 4.2 for the minimum components to be included in the report.)			A reclamation status report for each site would be submitted electronically to the WRFO annually until it is determined that reclamation of the site has met all required objectives of the particular reclamation phase. (See Appendix D, Section 4.2 for the minimum components to be included in the report.)
<b>Remnant Vegetation Associations</b>					
27	A NSO stipulation will also be placed on known and potential habitat of BLM sensitive plants and remnant vegetation associations occurring outside ACECs (4,520 acres for RVAs).	Remnant vegetation associations (RVAs) would be open to oil and gas leasing with an NSO stipulation (3,600 acres). An NSO stipulation would be applied to surface-disturbing activities associated with all other land use authorizations, permits, and leases granted in these areas. Exception, modification, and waiver language varies by alternative.			In RVAs an NSO stipulation (4,800 acres) would be applied to all land use authorizations, permits, and leases associated with oil and gas development. (Note: See Table 2-10 Record 16 for BLM sensitive plant species.)
28	No similar action.	Identified ponderosa pine stands and unique or ecologically intact sagebrush communities would be managed as RVAs with an NSO stipulation (630 acres).			(Note: Included in Table 2-3 Record 27.)

**Chapter 2 – Alternatives**

**Table 2-3. Comparison of Alternatives – Vegetation**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
29	Reclamation of surface disturbance resulting from authorized activities within RVAs will use only locally gathered or genetic stock from locally gathered native species. In cases where locally gathered native species are not available, the impact of using non-local native species on the genetic integrity of native species will be evaluated and mitigated through site-specific environmental analysis.	Reclamation of surface disturbance resulting from authorized activities within RVAs would use only locally gathered or genetic stock from locally gathered native species. Locally collected seed or genetic stock from locally gathered seed would be used for reclamation and available in adequate quantity for reclamation needs prior to issuance of the notice to proceed. If such seed is not available in adequate quantity, then collection from the site of disturbance would be required. All seed collection, storage, or increase would be conducted in accordance with approved collection, storage, and seed increase protocols. If three growing seasons pass without adequate collection to provide the quantity necessary for reclamation needs, the impact of using non-local native species on the genetic integrity of native species would be evaluated by the BLM and mitigated through site-specific environmental analysis.		Same as Alternative A.	Same as Alternatives B and C. (Note: See Table 2-21 Record 17 for ACECs.)

**NOTE:**

<sup>(1)</sup>This record or portion of record is considered to be an assumption used for impact analysis; is not a decision. Record was not deleted in order to preserve continuity between draft and final and to avoid confusion.

Chapter 2 – Alternatives

Table 2-4. Comparison of Alternatives – Fish and Wildlife – Big Game

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Management Goal</b>					
1	Ensure that big game habitats provide components and conditions necessary to sustain big game populations at levels commensurate with multiple-use objectives and state-established population objectives.	Provide habitat of sufficient suitability (i.e., forage and cover resources appropriate to the support of big game) and utility (i.e., the effective availability of suitable habitat for use as modified by behavioral [e.g., avoidance] or physical [e.g., fencing] impediments to that use) to sustain at least 90 percent of CPW’s long-term big game population objectives throughout active development.	Provide habitat of sufficient utility and suitability to sustain at least 70 percent of CPW’s long-term big game population objectives throughout active development.	Provide habitat of sufficient utility and suitability to sustain at least 50 percent of CPW’s long-term big game population objectives throughout active development.	Same as Alternative A.
<b>Management Objectives</b>					
2	Provide the forms, distribution, and extent of vegetation cover and forage that satisfy the physiological and behavioral requirements of big game.	Provide the forms, distribution, and extent of vegetation cover and forage that satisfies the physiological requirements and behavioral constraints (i.e., habitat utility) of big game.			

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Table 2-4. Comparison of Alternatives – Fish and Wildlife – Big Game

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
3	Reduce the duration, extent, and intensity of manageable forms of animal harassment during crucial timeframes, and avoidance-induced disuse of suitable habitats considered limited in supply and/or critical in fulfilling special functions.	Reduce and limit to prescribed geographic and/or habitat-based thresholds the duration, expanse, intensity, and frequency of big game harassment and avoidance-induced disuse (i.e., loss of utility of habitat) across all suitable habitats.		Reduce the duration, expanse, intensity, and frequency of big game harassment and avoidance-induced disuse of critical habitats.	Same as Alternatives B and C.
<b>Allowable Uses and Management Actions</b>					
4	Significant reductions in essential winter forage bases would be minimized by limiting cumulative treatment of suitable sagebrush forage types on deer winter ranges and pronghorn overall ranges. Cumulative reductions of suitable forage types would be limited to 50 percent of suitable habitat within a 1 mile radius and would not exceed 20 percent of the total type within individual GRAs identified within the 1997 White River RMP. Treatment of suitable sagebrush forage types on deer severe winter range and pronghorn winter ranges would be confined, where possible, to suboptimal stands and excess cover types. Cumulative reductions of suitable forage types on deer severe winter range and pronghorn winter range would be limited to 20 percent within a 1 mile radius where involvement is unavoidable.			No similar action.	Significant reductions in essential winter forage bases would be minimized by limiting cumulative treatment of suitable sagebrush forage types on deer winter ranges and pronghorn overall ranges. Cumulative reductions of suitable forage types would be limited to 50 percent of suitable habitat within a 1 mile radius and would not exceed 20 percent of the total type within individual GMUs. Treatment of suitable sagebrush forage types on deer severe winter range and pronghorn winter ranges would be confined, where possible, to

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Table 2-4. Comparison of Alternatives – Fish and Wildlife – Big Game

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
					suboptimal stands and excess cover types. Cumulative reductions of suitable forage types on deer severe winter range and pronghorn winter range would be limited to 20 percent within a 1 mile radius where involvement is unavoidable.
5	No similar action.	Big game habitat enhancement/compensation practices to help offset forage losses and effect advantageous shifts in animal distribution (i.e., outside concentrated development areas) would remain consistent with the maintenance of climax or disclimax vegetation extent (or those guidelines established in the 1997 RMP) and community-specific successional perturbation rates (e.g., fire-return intervals). Treatment for the restoration of disclimax shrubland communities or restoration efforts targeting communities where understories are dominated by invasive annuals would not be limited.			
6	No similar action.	In wildlife movement corridors defined by CPW, modified siting of surface facilities and application of activity restrictions (i.e., up to 60-day activity deferment) would be used, where appropriate, as a management tool to enable secure big game movement between and within seasonal ranges.		Same as Alternative A.	Same as Alternatives B and C.

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Table 2-4. Comparison of Alternatives – Fish and Wildlife – Big Game

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
7	Road abandonments and seasonal closures during periods of animal occupation would be used, to the extent practical, to limit effective road densities to an average maximum 1.5 miles per square mile on big game critical habitats and 3 miles per square mile on remaining big game ranges. Restrictions could be temporarily excepted to achieve special management needs (e.g., increase harvest). These road density objectives would be developed through site-specific travel management or integrated activity plans. Special COAs would be applied through the environmental analysis process to preclude or discourage continued vehicular traffic on linear ROWs within closed areas.	In areas of concentrated development (e.g., the geography encompassing acute/collective activity), vehicle use on BLM vehicle access networks (including existing roads, trails, and ways), where logistically practicable, would be temporarily limited to that associated directly with oil and gas development, production, and maintenance. Use by other BLM authorized land users could be considered, as determined by the Authorized Officer, consistent with big game management objectives. To be effective, this mitigation should control the use of vehicle access networks in areas of concentrated development rather than relying on controls applied to individual well access routes. Road abandonment and use limitations would be used to limit effective road densities in the long term to an average maximum 1.5 miles per square mile in higher value big game habitat (i.e., defined severe winter range, severe winter range/winter concentration areas and summer ranges) and 3 miles per square mile on other big game ranges.		No similar action.	In areas of concentrated development (e.g., the geography encompassing acute/collective activity), vehicle use on BLM vehicle access networks (including existing roads, trails, and ways), where logistically practicable, would be temporarily limited to that associated directly with oil and gas development, production, and maintenance. Use by other BLM authorized land users could be considered, as determined by the Authorized Officer, consistent with big game management objectives. To be effective, this mitigation should control the use of vehicle access networks in areas of concentrated development rather than relying on controls applied to individual well access routes. Road abandonment and use limitations would be used to limit effective road densities in the long term to an

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**Table 2-4. Comparison of Alternatives – Fish and Wildlife – Big Game**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
					average maximum 1.5 miles per square mile in higher value big game habitat (i.e., defined severe winter range and summer range) and 3 miles per square mile on other big game ranges.
8	No similar action.	The design of utility corridors would be required to avoid the need for regular vehicular access for inspection by the ROW holder/lessee and would be conditioned by the holder/lessee to effectively preclude all subsequent vehicular travel throughout the term of the grant/lease. In the event continued access is required, the corridor would remain closed to public vehicular access and the holder/lessee would be responsible for installing and maintaining effective vehicle deterrents that would be functional beyond final abandonment of the grant/lease.		Same as Alternative A.	Same as Alternatives B and C.
9	No similar action.	In areas under an existing lease, a program would be developed in cooperation with current leaseholders to apply (where appropriate) the most current reclamation standards and practices to existing well pads, roads, and pipelines. These standards and practices would be applied in annual increments that would allow for completed interim or final reclamation of active and inactive ROW corridors and producing, plugged, and abandoned wells and access routes within 20 years. This action would be most relevant to the Douglas/Evacuation Creek, Coal Oil Basin, Indian Valley, Crooked Wash, and White River Dome areas.		Same as Alternative A.	Same as Alternatives B and C. (Note: Same as Table 2-17 Record 14.)
10	No similar action.	A mitigation fund would be established to receive and carry over (i.e., across government fiscal years) industry contributions for wildlife-specific mitigation projects.		Same as Alternative A.	

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Table 2-4. Comparison of Alternatives – Fish and Wildlife – Big Game

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
11	No similar action.	On a case-by-case basis and in addition to standard interim and final reclamation measures, special reclamation components or techniques would be prescribed to restore or provide supplemental forage species that would aid in meeting big game objectives (e.g., deciduous browse). While these additional forage species could be non-native species, species used would not be invasive or prone to persist in the community for more than a decade (e.g., non-native leguminous forbs).		Same as Alternative A.	On a case-by-case basis and in addition to standard interim and final reclamation measures, special reclamation components or techniques would be prescribed to restore or provide supplemental forage species that would aid in meeting big game objectives (e.g., deciduous browse). Native species would be used as general rule, but where unavailable or considered beneficial, non-native species with established value to big game that have no demonstrated tendency to persist as a dominant forb constituent on reclaimed lands for extended timeframes (e.g., more than 10 years) or disperse beyond the treatment area could be used.

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Table 2-4. Comparison of Alternatives – Fish and Wildlife – Big Game

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
12	<p>Permitted land use activities that may disrupt animal behavior or habitat utility during sensitive time frames will be subject to timing limitations on severe winter ranges (all species), elk and pronghorn production areas, and deer and elk summer ranges designated as critical habitat.</p> <p>Timing limitation stipulations would be applied, as follows, to all surface disturbing activities associated with land use authorizations, permits, and leases issued on BLM administered lands:</p> <ul style="list-style-type: none"> <li>▪ May 15 through June 30 in elk production areas (12,700 acres).</li> <li>▪ December 1 through April 30 in big game severe winter range (446,000 acres).</li> <li>▪ May 15 through August 15 in deer and elk summer range, (376,400 acres) after direct and indirect</li> </ul>	<p>All seasonal big game ranges within the WRFO would be subject to the following timing limitations. These timing limitations would be applied through lease stipulations or as COAs that could extend up to 120 days within the following windows, unless otherwise noted from:</p> <ul style="list-style-type: none"> <li>▪ December 1 through April 30 in defined big game severe winter range, severe winter range/winter concentration areas, and winter concentration areas (493,500 acres);</li> <li>▪ May 15 through August 15 in defined big game summer range (437,900 acres); and</li> <li>▪ Defined big game winter range (847,200 acres): deferrals of up to 90 days within the period December 1 through April 30 in stratified zones of seasonal use (refined set of seasonal use timeframes</li> </ul>	<p>All seasonal big game ranges within the WRFO would be subject to the following timing limitations. These timing limitations would be applied through lease stipulations or as COAs that could extend up to 90 days within the following windows, unless otherwise noted from:</p> <ul style="list-style-type: none"> <li>▪ January 1 through April 30 in defined big game severe winter range and severe winter range/winter concentration areas (379,500 acres);</li> <li>▪ May 15 through August 15 in defined big game summer range (437,900 acres); and</li> <li>▪ Defined big game winter range and winter concentration areas (961,200 acres): deferrals of up to 60 days within the period January 1 through April 30 in stratified zones of seasonal use (refined set of seasonal</li> </ul>	<p>Same as Alternative A.</p>	<p>All seasonal big game ranges within the WRFO would be subject to the following timing limitations. These timing limitations would be applied through lease stipulations or as COAs that could extend up to 120 days within the following windows, unless otherwise noted from:</p> <ul style="list-style-type: none"> <li>▪ December 1 through April 30 in defined big game severe winter range (673,100 acres);</li> <li>▪ May 15 through August 15 in defined big game summer range (420,300 acres); and</li> <li>▪ Defined big game winter range and winter concentration areas (604,500 acres): deferrals of up to 60 days within the period of December 1 through April 30 in stratified zones of seasonal use (refined set of seasonal use timeframes developed in coordination with CPW).</li> </ul>

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Table 2-4. Comparison of Alternatives – Fish and Wildlife – Big Game

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
	<p>impacts on suitable summer range habitats exceed 10 percent of that available within the individual GMU.</p> <ul style="list-style-type: none"> <li>▪ May 1 through June 30 in pronghorn production areas (0 acres).</li> </ul> <p>Exceptions, waivers, or modifications could be granted (see Appendix A).</p>	<p>developed in coordination with CPW). Exceptions, waivers, or modifications could be granted (see Appendix A), but the criteria would be narrowly defined and timing limitations would typically be applied regardless of weather conditions (i.e., address of chronic influences).</p> <p>In an effort to encourage clustered development and reduce the extent of seasonal ranges subject to cumulative adverse behavioral effects (i.e., harassment, avoidance) attributable to oil and gas development, exceptions to timing limitations would be offered contingent on development remaining within the following thresholds (evaluated by deer seasonal range encompassed by an entity's<sup>(1)</sup> total leaseholdings within a GMU).</p>	<p>use timeframes developed in coordination with CPW). Exceptions, waivers, or modifications could be granted (see Appendix A), but the criteria would be narrowly defined and timing limitations would typically be applied regardless of weather conditions (i.e., address of chronic influences).</p> <p>In an effort to encourage clustered development and reduce the extent of seasonal ranges subject to cumulative adverse behavioral effects (i.e., harassment, avoidance) attributable to oil and gas development, exceptions to timing limitations would be offered contingent on development remaining within the following thresholds (evaluated by deer seasonal range encompassed by an entity's<sup>(1)</sup> total leaseholdings within a GMU).</p>		<p>Exceptions, waivers, or modifications could be granted (see Appendix A), but the criteria would be narrowly defined and timing limitations would typically be applied regardless of weather conditions (i.e., address of chronic influences).</p> <p>In an effort to encourage clustered development and reduce the extent of seasonal ranges subject to cumulative adverse behavioral effects (i.e., harassment, avoidance) attributable to oil and gas development, exceptions to timing limitations would be offered contingent on development remaining below the following threshold allowance (based on deer seasonal range encompassed by an entity's<sup>(1)</sup> total leaseholdings within a GMU). The threshold allowances are a predetermined percentage of each seasonal range within a leaseholding (i.e., listed</p>

Table 2-4-8

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Table 2-4. Comparison of Alternatives – Fish and Wildlife – Big Game

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
		<p>Acute Thresholds:</p> <ul style="list-style-type: none"> <li>▪ 10 percent of deer winter range;</li> <li>▪ 10 percent of deer severe winter range;</li> <li>▪ 10 percent of deer summer range;</li> <li>▪ 10 percent of deer winter concentration area; and</li> <li>▪ 5 percent of deer severe winter range/winter concentration area.</li> </ul> <p>The area of <u>acute effects</u> would be defined by the physical footprint of those concentrated, intensive activities associated with, for example, pad and pipeline construction and well drilling and completion operations, buffered by 660 feet on winter ranges and 1,300 feet on summer ranges.</p> <p>Collective Thresholds:</p> <ul style="list-style-type: none"> <li>▪ 20 percent of deer winter range;</li> <li>▪ 20 percent of deer severe winter range;</li> </ul>	<p>Acute Thresholds:</p> <ul style="list-style-type: none"> <li>▪ 25 percent of deer winter range;</li> <li>▪ 25 percent of deer severe winter range;</li> <li>▪ 25 percent of deer summer range;</li> <li>▪ 25 percent of deer winter concentration area; and</li> <li>▪ 10 percent of deer severe winter range/winter concentration area.</li> </ul> <p>The area of <u>acute effects</u> would be defined by the physical footprint of those concentrated, intensive activities associated with, for example, pad and pipeline construction and well drilling and completion operations, buffered by 660 feet on all seasonal ranges.</p> <p>Collective Thresholds:</p> <ul style="list-style-type: none"> <li>▪ 25 percent of deer winter range;</li> <li>▪ 25 percent of deer severe winter range;</li> <li>▪ 25 percent of deer summer range;</li> </ul>		<p>below). To qualify for timing limitation exceptions, fluid mineral development activity, as measured by the area encompassed by 660-foot buffers surrounding development features (i.e., routes, pipelines, pads) within a leaseholding, must not exceed the acreage represented by those threshold allowances.</p> <p>Acute Thresholds:</p> <ul style="list-style-type: none"> <li>▪ 20 percent of deer winter range;</li> <li>▪ 15 percent of deer severe winter range;</li> <li>▪ 15 percent of deer summer range; and</li> <li>▪ 20 percent of deer winter concentration area.</li> </ul> <p>The area of <u>acute effects</u> would be defined by the physical footprint of those concentrated, intensive activities associated with, for example, pad and pipeline construction and well drilling and completion</p>

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Table 2-4. Comparison of Alternatives – Fish and Wildlife – Big Game

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
		<ul style="list-style-type: none"> <li>▪ 20 percent of deer summer range;</li> <li>▪ 20 percent of deer winter concentration area; and</li> <li>▪ 10 percent of deer severe winter range/winter concentration area.</li> </ul> <p>The area of <u>collective effects</u> would include the area of <u>acute effects</u> in addition to all residual and incomplete lease development activities buffered as above, including but not limited to: access corridors, multiple well pads awaiting further drilling or not meeting interim reclamation success criteria, (as defined in the WRFO Reclamation Plan) linear ROWs that support vehicle traffic after final reclamation, and facilities receiving frequent visitation (i.e., an average greater than seven vehicle trips per pad per week).</p> <p>The area of <u>acute effects</u> would be exempt from big game seasonal timing</p>	<ul style="list-style-type: none"> <li>▪ 25 percent of deer winter concentration area; and</li> <li>▪ 20 percent of deer severe winter range/winter concentration area.</li> </ul> <p>The area of <u>collective effects</u> would include the area of <u>acute effects</u> in addition to all residual and incomplete lease development activities buffered as above, including but not limited to: access corridors, multiple well pads awaiting further drilling or not meeting interim reclamation success criteria, (as defined in the WRFO Reclamation Plan) linear ROWs that support vehicle traffic after final reclamation, and facilities receiving frequent visitation (i.e., an average greater than seven vehicle trips per pad per week).</p> <p>The area of <u>acute effects</u> would be exempt from big game seasonal timing limitations as long as lease development activities are managed within the</p>		<p>operations, buffered by 660 feet on all seasonal ranges.</p> <p>Collective Thresholds:</p> <ul style="list-style-type: none"> <li>▪ 20 percent of deer winter range;</li> <li>▪ 20 percent of deer severe winter range;</li> <li>▪ 20 percent of deer summer range; and</li> <li>▪ 20 percent of deer winter concentration area.</li> </ul> <p>The area of <u>collective effects</u> would include the area of <u>acute effects</u> in addition to all residual and incomplete lease development activities buffered as above, including but not limited to: access corridors, multiple-well pads awaiting further drilling or not meeting interim reclamation success criteria (as defined in the WRFO Reclamation Plan), linear ROWs that support vehicle traffic after final reclamation, and facilities receiving frequent visitation (i.e., an average greater than</p>

Table 2-4-10

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Table 2-4. Comparison of Alternatives – Fish and Wildlife – Big Game

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
		<p>limitations as long as lease development activities are managed within the thresholds for <u>collective</u> and <u>acute effects</u>. Minor work involving lower intensity activity (e.g., installation of production facilities, reclamation) within the area of remaining <u>collective effects</u> would generally be subject to Timing Limitations. Adverse effects that exceed either threshold would nullify the timing limitation exemptions and subject all leaseholding development to timing limitations as established above.</p> <p>Threshold limits could be incrementally adjusted by BLM, in coordination with CPW, based on animal response or the influence of compensatory mitigation in meeting long-term population objectives, as determined through monitoring.</p> <p>Construction activity that is unrelated to the exercise of</p>	<p>thresholds for <u>collective</u> and <u>acute effects</u>. Minor work involving lower intensity activity (e.g., installation of production facilities, reclamation) within the area of remaining <u>collective effects</u> would generally be subject to Timing Limitations. Adverse effects that exceed either threshold would nullify the timing limitation exemptions and subject all leaseholding development to timing limitations as established above.</p> <p>Threshold limits could be incrementally adjusted by the BLM, in coordination with CPW, based on animal response or the influence of compensatory mitigation in meeting long-term population objectives, as determined through monitoring.</p> <p>Construction activity that is unrelated to the exercise of lease rights would continue to be subject to timing limitations as established</p>		<p>seven vehicle trips per pad per week).</p> <p>The area of <u>acute effects</u> would be exempt from big game seasonal timing limitations as long as lease development activities are managed within the threshold allowance for both <u>collective</u> and <u>acute effects</u>. Minor work involving lower intensity activity (e.g., installation of production facilities, reclamation) within the area of remaining <u>collective effects</u> would be subject to Timing Limitations, where practical. Adverse effects that exceed either threshold would nullify the timing limitation exemptions and subject all leaseholding development to timing limitations as established above.</p> <p>It is WRFO’s intent that threshold limits be refined when necessary and through appropriate means, based on animal response or the influence of compensatory mitigation in meeting long-</p>

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Table 2-4. Comparison of Alternatives – Fish and Wildlife – Big Game

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
		<p>lease rights would continue to be subject to timing limitations as established above. Development activities that may affect adjoining leaseholders' acreage would be assessed against the proponent's threshold calculation. Access or other features and facilities used in common would be prorated by operator. All reclamation in a leaseholding will be subject to Appendix D reclamation criteria when operating within the threshold concept.</p>	<p>above. Development activities that may affect adjoining leaseholders' acreage would be assessed against the proponent's threshold calculation. Access or other features and facilities used in common would be prorated by operator. All reclamation in a leaseholding will be subject to Appendix D reclamation criteria when operating within the threshold concept.</p>		<p>term population objectives, as determined through monitoring. Construction activity that is unrelated to the exercise of lease rights would continue to be subject to timing limitations as established above. Development activities that may affect adjoining leaseholders' acreage would be assessed against the proponent's threshold calculation. Access or other features and facilities used in common may be prorated by operator. All reclamation in a leaseholding will be subject to Appendix D reclamation criteria when operating within the threshold concept. A grace period of 5 years from the time of the RMPA ROD approval would be provided to allow compliance in the event leaseholder/operator activity exceeds threshold allowances at the time of ROD approval.</p>

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Table 2-4. Comparison of Alternatives – Fish and Wildlife – Big Game

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
13	No similar action.	In areas defined by CPW as Restricted Development Areas (North Ridge, Yellow Creek, and Story-Sprague Gulch; approximately 53,200 acres), <u>collective effects</u> would be limited to 5 percent with no allowance for <u>acute effects</u> during the period of animal occupation. Restricted Development Areas are those geographic areas that offer inordinately high value as big game habitat (as determined by the CPW) or those that must remain relatively free of development influences to serve as experimental controls for long-term population or effects monitoring (e.g., North Ridge).	In areas defined by CPW as Restricted Development Areas (North Ridge and Yellow Creek; approximately 36,700 acres), <u>collective effects</u> would be limited to 5 percent. Allowance for <u>acute effects</u> during the period of animal occupation could be granted. Restricted Development Areas are those geographic areas that offer inordinately high value as big game habitat (as determined by the CPW) or those that must remain relatively free of development influences to serve as experimental controls for long-term population or effects monitoring (e.g., North Ridge).	Same as Alternative A.	In areas defined by CPW as Restricted Development Areas (e.g., North Ridge, approximately 10,700 acres), <u>collective effects</u> would be limited to 5 percent. Allowance for <u>acute effects</u> during the period of animal occupation could be granted. Restricted Development Areas are those geographic areas that offer inordinately high value as big game habitat (as determined by the CPW) or those that must remain relatively free of development influences to serve as experimental controls for long-term population or effects monitoring (e.g., North Ridge).

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**Table 2-4. Comparison of Alternatives – Fish and Wildlife – Big Game**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
14	No similar action.	<p>Well access routes would be unavailable for public vehicular access (e.g., public access not expressly associated with natural gas facility development and maintenance), including BLM permittees not expressly associated with oil and gas development, production, monitoring, and maintenance. No exceptions would be considered.</p> <p>Access developed for well and facility access would generally be subject to complete abandonment once its intended use is complete.</p>	<p>Well access routes would be unavailable for public vehicular access (e.g., public access not expressly associated with natural gas facility development and maintenance), including BLM permittees not expressly associated with oil and gas development, production, monitoring, and maintenance. Exceptions would be evaluated on a case-by-case basis in the context of disturbance thresholds established for each seasonal range and leaseholding.</p> <p>Access developed for well and facility access would generally be subject to complete abandonment once its intended use is complete.</p>	Same as Alternative A.	Same as Alternative C.

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**Table 2-4. Comparison of Alternatives – Fish and Wildlife – Big Game**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
15	No similar action.	Where appropriate and supported by an environmental analysis, habitat disturbed by a project would be required to be mitigated off-site at a rate of 3 acres of mitigation for each acre of disturbance.	Protocols and criteria for lessees, cooperating agencies, or affected stakeholders would be established to implement compensatory mitigation to offset reductions in big game habitat capacity (e.g., year-round drilling). In coordination with CPW and industry, an adaptive method (based on monitoring) would be developed and implemented to quantify direct and indirect effects on big game as the basis for applying compensatory mitigation to achieve or maintain long-term population objectives.	Same as Alternative A.	Same as Alternative C.

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**Table 2-4. Comparison of Alternatives – Fish and Wildlife – Big Game**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
16	<p>An NSO stipulation will be applied to the Oak Ridge State Wildlife Area as a means of precluding the effects of mineral development on locally significant big game habitats and populations.</p> <p>Surface occupancy is not allowed on federal lands within the designated perimeter of the Oak Ridge State Wildlife Area (9,300 acres).</p>	<p>Federal mineral estate within the Oak Ridge (including associated BLM lands designated in the 1997 RMP), Jensen, and Piceance Creek (all units) State Wildlife Areas would be open to oil and gas leasing with an NSO stipulation (20,900 acres). On existing land use authorizations, COAs that reflect the intent of these stipulations would be applied to the extent allowable.</p>	<p>Federal mineral estate within the Oak Ridge (including associated BLM lands designated in the 1997 RMP), Square S Summer Range unit of Piceance Creek, and Jensen SWAs would be open to oil and gas leasing with an NSO stipulation (18,200 acres). On existing land use authorizations, COAs that reflect the intent of these stipulations would be applied to the extent allowable.</p>	No similar action.	<p>Federal mineral estate within the Oak Ridge (including associated BLM lands designated in the 1997 RMP), Jensen, and Piceance Creek (all units) State Wildlife Areas would be open to oil and gas leasing with an NSO stipulation (20,900 acres).</p>

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**Table 2-4. Comparison of Alternatives – Fish and Wildlife – Big Game**

<b>Record Number</b>	<b>Alternative A</b>	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative D</b>	<b>Alternative E (Proposed)</b>
17	No similar action.	Clearing, occupation, and long-term seral or type conversions of aspen, Douglas-fir, spruce-fir, mature pinyon -juniper woodlands, chokecherry stands, and arborescent stands of Gambel oak would be avoided to the extent practicable (through aggressive use of moving surface facilities and right-of-way corridors up to 660 feet to avoid key vegetation types).	The extent and continuity of coniferous forest, aspen, chokecherry (with special emphasis on stands within 1,300 feet of water on summer ranges), mature pinyon -juniper woodlands, and arborescent stands of Gambel oak would be maintained as much as practicable through avoidance (through aggressive use of moving surface facilities and ROW corridors up to 660 feet to avoid key vegetation types). Authorized exceptions would be subject to special reclamation or management practices to ensure that long-term community integrity is regained as soon as possible.	No similar action.	Same as Alternative C.

NOTE:

<sup>(1)</sup>The primary lessee, unit operator, or other common entity, that provides BLM the most cohesive and effective source with interest in developing the federal mineral estate and performing reclamation.

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**Chapter 2 – Alternatives**

**Table 2-5. Comparison of Alternatives – Fish and Wildlife – Raptors**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Management Goal</b>					
1	Maintain the short-term utility and promote the continued long-term development and availability of suitable raptor habitats, including prey base, nest sites, and other special habitat features necessary to help stabilize or allow increases in regional raptor populations.	Maintain the short-term utility and promote the continued long-term development and availability of suitable raptor habitats, including prey base, nest sites, and other special habitat features necessary to allow increases in regional raptor populations, where appropriate.	Maintain the short-term utility and promote the continued long-term development and availability of suitable raptor habitats, including prey base, nest sites, and other special habitat features necessary to maintain regional raptor populations.	Comply with laws, regulations, policies (i.e., Migratory Bird Treaty Act, Eagle Protection Act, the Endangered Species Act [ESA], BLM policy for sensitive species, etc.).	Same as Alternative B.
<b>Management Objectives</b>					
2	No similar objective.	Reduce the risk of direct mortality by removing or modifying potentially harmful features or preventing raptor access to hazards.			
3	No similar objective.	Prevent any potential for disruptions to ongoing raptor nest attempts that have potential to fail or reduce the success of annual breeding efforts.	Minimize disruptions to ongoing raptor nest attempts that have potential to fail or reduce the success of annual breeding efforts.		

**Chapter 2 – Alternatives**

**Table 2-5. Comparison of Alternatives – Fish and Wildlife – Raptors**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
4	Maintain the short-term utility and promote the continued long-term development and availability of suitable raptor habitats, including prey base, nest sites, and other special habitat features necessary to help stabilize or allow increases in regional raptor populations.	Maintain the short-term utility and promote the continued long-term development and availability of suitable raptor habitats, including prey base, nest sites, and other special habitat features necessary to help stabilize or allow increases in regional raptor populations, particularly those species where regional declines have been detected.	Maintain the short-term utility and minimize long-term modifications in the extent and continuity of woodland/forest stands that show indications or have a documented history of nesting use.	Maintain the short-term utility of suitable raptor nest habitat.	Maintain the short-term utility and minimize long-term modifications in the extent and continuity of woodland/forest stands that show indications or have a documented history of nesting use as a means of maintaining the long-term development and availability of woodland raptor habitats, including prey base, nest sites, and other special habitat features necessary to help maintain regional woodland raptor populations.
<p><b>Allowable Uses and Management Actions</b></p> <p><i>(Note: See also Table 2-9 Special Status Animal Species, under the heading Special Status Raptors for a discussion of avoidance and mitigation measures.)</i></p>					
5	New construction or modification of above ground electric transmission facilities will be required to incorporate the most current raptor protection guidelines. Where appropriate, conductor separation will be employed rather than features that discourage perching.	The most current raptor protection guidelines would be incorporated into power line designs in an attempt to prevent raptor electrocution (e.g., Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006 [APLIC 2006]). Where perching deterrence is not an issue (e.g., sage-grouse or black-footed ferret habitats), providing adequate conductor separation would be the preferred method of protection.			

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Table 2-5. Comparison of Alternatives – Fish and Wildlife – Raptors

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
6	No similar action.	Physical barriers would be used to prevent the use of or contact with stored fluids that may pose a risk to raptors. These barriers would be installed immediately after a drilling rig has moved off-site and would remain in place through completion and until the pits are reclaimed. Methods could include netting or other alternative methods that effectively prevent use and that meet BLM approval. The use of “bird-balls” would be discouraged.			
7	No similar action	Where appropriate, power line design would be required to incorporate features that enhance conductor visibility and reduce the potential for line strikes (e.g., swan diverters).			
8	Land use activities that involve long-term, undesirable reductions or fragmentation of aspen, spruce fir, Douglas-fir, or oakbrush communities will be avoided to the extent possible. This can be accomplished through relocation and design modifications developed on a site-specific and case-by case basis. Where unavoidable, special reclamation measures will be required to accelerate reestablishment of former plant community characteristics.	Long-term, undesirable reduction or deterioration in the extent or continuity of aspen, spruce-fir, Douglas-fir, or mature pinyon -juniper woodland communities would be avoided through facility relocation of up to 660 feet and design modifications developed on a site-specific basis.		No similar action.	Same as Alternatives B and C.

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**Table 2-5. Comparison of Alternatives – Fish and Wildlife – Raptors**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
9	Development proponents will be required to perform raptor nest inventories in affected nest habitats when proposed land use influence exceeds 100 acres. When possible, inventories will allow for a full nesting sequence for investigation prior to project implementation.	Development proponents conducting raptor nest inventories in affected nest habitats would be required to provide survey information consistent with the most current WRFO raptor survey protocols. Consultants performing raptor nest surveys must demonstrate, to the BLM Authorized Officer, their professional expertise and experience in conducting raptor nest surveys and in producing credible reports and analysis. When possible, inventories would allow for an investigation of a full nesting sequence prior to project implementation.			
10	Permitted land use activities within 1/4 mile of functional nest sites of cavity, cliff, and ground nesting species and within 1/2 mile of functional nest sites of special-status and tree-nesting species will be subject to relocation or design modifications to preclude, or reduce to acceptable levels, long-term reduction or deterioration of nest and foraging habitat.	Permitted land use activities within 1/4 mile of functional raptor nest sites (including woodland sites) or within 1/2 mile of the nests of special-status raptor species would be subject to relocation or design modifications to preclude, or reduce to acceptable levels, surface occupancy or use that reduces or deteriorates the extent and continuity of nest and foraging habitat.	No similar action.	Same as Alternatives B and C.	

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Table 2-5. Comparison of Alternatives – Fish and Wildlife – Raptors

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
11	<p>Disruptive land use activities will not be allowed within the following specified radii of active raptor nest sites during the period from nest territory establishment to dispersal of young from nest (83,300 acres):</p> <ol style="list-style-type: none"> <li>1) Non-special status species: 1/4 mile; and</li> <li>2) Special status species: 1/2 mile.</li> </ol> <p>Disruptive surface occupation or adverse habitat modification will be prohibited within 1/4 mile of functional nest sites of special status species (i.e., listed, proposed, candidate, and BLM sensitive) and 1/8 mile of other members of the raptor (20,900 acres). (Note: See Table 2-9 Records 28 and 30 for special status raptors.)</p>	<p>Surface occupancy would not be allowed within 1/8 mile of functional nest sites of northern saw-whet, long-eared, and great-horned owls, or within 1/4 mile of functional nest sites of Cooper’s, sharp-shinned, red-tailed, and Swainson’s hawks; flammulated, and pygmy owls; northern harrier; and osprey, or within 1/2 mile of golden eagle and prairie falcon (147,300 acres). Exceptions, waivers, or modifications could be granted (see Appendix A).</p> <p>Surface-disturbing and disruptive activities would not be allowed within 1/4 mile of active nest sites of northern saw-whet, flammulated, pygmy, long-eared, and great-horned owls, or within 1/2 mile of active nest sites of Cooper’s, sharp-shinned, red-tailed, and Swainson’s hawks; golden eagle; northern harrier; prairie falcon; and osprey during the period from nest</p>	<p>Surface occupancy would not be allowed within 1/8 mile of functional nest sites of those raptors that are not considered special-status or within 1/4 mile of functional nest sites of golden eagle and prairie falcon (44,800 acres). Exceptions, waivers, or modifications could be granted (see Appendix A).</p> <p>Surface-disturbing and disruptive activities would not be allowed within 1/4 mile of active nest sites of those raptors that are not considered special-status or within 1/2 mile of active nest sites of golden eagle and prairie falcon during the period from nest territory establishment to dispersal of young from nest (145,000 acres).</p> <p>The BLM could apply these mitigation measures to surface use activities associated with existing land use authorizations as a COA.</p>	<p>Same as Alternative A (with different exception, modification, and waiver language [see Appendix A]).</p>	<p>Surface occupancy would not be allowed within 990 feet of functional nest sites of those raptors that are not considered special-status or within 1/2 mile of functional nest sites of golden eagle and prairie falcon (120,700 acres). Surface-disturbing and disruptive activities would not be allowed within 1/4 mile of active nest sites of those raptors that are not considered special-status or within 1/2 mile of active nest sites of golden eagle and prairie falcon during the period from nest territory establishment to dispersal of young from the nest (145,000 acres).</p>

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**Table 2-5. Comparison of Alternatives – Fish and Wildlife – Raptors**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
		territory establishment to dispersal of young from nest (281,400 acres). The BLM could apply these mitigation measures to surface use activities associated with existing land use authorizations as a COA.	Note: See also Special Status Species, Table 2-9 under the heading Special Status Raptors for a discussion of avoidance and mitigation measures.		

**Chapter 2 – Alternatives**

**Table 2-6. Comparison of Alternatives – Fish and Wildlife – Grouse**

<b>Record Number</b>	<b>Alternative A</b>	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative D</b>	<b>Alternative E (Proposed)</b>
<b>Management Goal</b>					
1	Restore, maintain, or enhance habitat conditions and features conducive to the maintenance or expansion of native grouse populations.	Restore, maintain, or enhance habitat conditions and features conducive to the maintenance or expansion of native grouse population abundance and distribution, and in particular, maintain or expand the number of greater sage-grouse lek complexes (WAFWA-defined) in each identified population within the WRFO Planning Area.	Same as Alternative B, with the exception of the PPR population of greater sage-grouse, for which the management goal would be to maintain a minimum 50 percent of the most current population objectives established by the CPW or as delegated to the local working groups.	Same as Alternative B, with the exception of the PPR population of greater sage-grouse, for which the management goal would be to maintain a minimum 50 percent of the most current population objectives established by the CPW or as delegated to the local working groups and a minimum 50 percent of the current distribution in terms of the number of lek complexes.	Same as Alternative B.
<b>Management Objectives</b>					
2	No similar objective.	Restore the suitability of former sage-grouse habitat that suffers from successional advance or depauperate understory development to help offset impacts of oil and gas development.			
3	No similar objective.	In cooperation with industry, plan development so as to confine activity to discrete geographic areas with simple and common access requirements in order to: (1) reduce the areal extent of occupied habitat subjected to acute disturbance during the period of use; and (2) minimize the long-term influences on potential habitat that, with restoration work, could allow expansion of sage-grouse distribution and compensate for reductions in the extent of suitable habitat.		Same as Alternative A.	Same as Alternatives B and C.

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Table 2-6. Comparison of Alternatives – Fish and Wildlife – Grouse

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
4	Reduce disruption of important seasonal-use activities associated with grouse production and recruitment.	Maintain sufficient undisturbed or minimally disturbed greater sage-grouse and Columbian sharp-tailed grouse habitats to provide for long-term species sustainability within the WRFO Planning Area.		Same as Alternative A.	Maintain sufficient undisturbed or minimally disturbed native grouse habitats to provide for long-term species sustainability within the WRFO Planning Area.
5	No similar objective.	Maintain the utility of occupied grouse habitats and, particularly in the PPR population area, maintain effective continuity of ridgeline habitats.	Limit overall reductions in habitat utility of occupied grouse habitats and, particularly in the PPR population area, maintain effective continuity of ridgeline habitats.	Reduce losses in habitat utility of occupied grouse habitats and, particularly in the PPR population area, maintain effective continuity of ridgeline habitats.	Same as Alternative C.

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Table 2-6. Comparison of Alternatives – Fish and Wildlife – Grouse

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Allowable Uses and Management Actions</b>					
6	No similar action.	Lands would be made available for sage-grouse habitat enhancement/compensation efforts by industry and other wildlife interests to help offset behavioral or physical loss of habitat and, where appropriate, effect advantageous shifts in animal distribution (i.e., outside concentrated development areas). Consideration of public land treatment would remain consistent with the maintenance of climax or disclimax vegetation extent (or those guidelines established in the RMPA/EIS) and community-specific successional perturbation rates (e.g., fire-return intervals). There would be no treatment limit on the restoration of disclimax shrubland communities or restoration efforts targeting communities whose understories are dominated by invasive weeds.			Lands would be made available for sage-grouse habitat enhancement/compensation efforts by industry and other wildlife interests to help offset behavioral or physical loss of habitat and, where appropriate, effect advantageous shifts in animal distribution (i.e., outside concentrated development areas). Consideration of public land treatment would remain consistent with the maintenance of climax or disclimax vegetation extent and community-specific successional perturbation rates (e.g., fire-return intervals). There would be no treatment limit on the restoration of disclimax shrubland communities or restoration efforts targeting communities whose understories are dominated by invasive weeds.

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Table 2-6. Comparison of Alternatives – Fish and Wildlife – Grouse

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
7	No similar action.	<p>Employment of noise-reduction methods would be required on development facilities (e.g., drilling and completion equipment, compressors, and gas processing facilities) that have potential to generate noises that may adversely influence sage-grouse reproductive functions (i.e., lekking and nesting). Appropriate methods could include:</p> <ul style="list-style-type: none"> <li>▪ Increasing separation of noise-generating equipment and sensitive habitat (e.g., locating compressor stations at least 2,500 feet from leks);</li> <li>▪ Enclosure of facilities;</li> <li>▪ Installation of hospital-grade muffling devices;</li> <li>▪ Orientation of noise projection away from sensitive habitats; or</li> <li>▪ Siting facilities to take advantage of natural barriers or vegetation filters.</li> </ul>			<p>Employment of noise-reduction methods would be required on development facilities (e.g., drilling and completion equipment, compressors, and gas processing facilities) that have the potential to generate noises that may adversely influence sage-grouse reproductive functions (i.e., lekking and nesting). Appropriate methods could include, but would not be limited to:</p> <ul style="list-style-type: none"> <li>▪ Abiding by current BMPs;</li> <li>▪ Increasing separation of noise-generating equipment and sensitive habitat (e.g., locating compressor stations at least 2,500 feet from leks);</li> <li>▪ Enclosure of equipment;</li> <li>▪ Installation of hospital-grade muffling devices;</li> <li>▪ Orientation of noise projection away from sensitive habitats; or</li> </ul>

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**Table 2-6. Comparison of Alternatives – Fish and Wildlife – Grouse**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
					<ul style="list-style-type: none"> <li>▪ Siting facilities to take advantage of natural barriers or vegetation filters.</li> </ul>
8	No similar action.	<p>The following methods would be used to minimize the frequency and extent of long-term vehicular activity (production phase) on sage-grouse ranges and to help maintain effective continuity along ridgeline habitats: (1) project siting considerations; (2) using development designs that reduce production facilities on the pad and maximize interim reclamation opportunity; and (3) employing practices that accelerate development and maintenance of vegetative cover that provides for ground movements through or across surface developments. Practices that accelerate the recovery of functional sagebrush canopies (e.g., sagebrush seeding and/or transplanting, fencing) on surface disturbance associated with oil and gas development would be required to be incorporated during interim and final (particularly pipeline) reclamation.</p>			

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**Table 2-6. Comparison of Alternatives – Fish and Wildlife – Grouse**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
9	No similar action.	In defined sage-grouse population areas identified by CPW, special management and operation plans would be required to establish protocols to authorize exceptions or modifications to activity or surface use restrictions. These plans would be developed jointly by BLM, CPW, and the leaseholder.		Same as Alternative A.	In defined sage-grouse population areas identified by CPW, special management and operation refinements (e.g., integral with Wildlife Mitigation Plans) may be required to establish protocols to authorize exceptions or modifications to activity or surface use restrictions. These refinements would be developed jointly by BLM, CPW, and the leaseholder/operator, and as appropriate, other regulatory or scientific entities, within the framework of the threshold strategy (see Table 2-6 Record 16).

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Table 2-6. Comparison of Alternatives – Fish and Wildlife – Grouse

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
10	<p>Disruptive surface use activities will be prohibited in the following areas during the seasonal use periods identified:</p> <ul style="list-style-type: none"> <li>▪ December 16 through March 15 in winter concentration areas; and</li> <li>▪ April 15 through July 7 in nesting habitats when 10 percent or more of suitable nesting habitat associated with an individual lek is adversely influenced (152,500 acres).</li> </ul>	<p>Unless qualifying for an exception by working within the disturbance threshold criteria, surface-disturbing and disruptive activities would be prohibited in the following areas during the seasonal use periods identified:</p> <ul style="list-style-type: none"> <li>▪ December 1 through March 15 in important winter use areas (260,300 acres); and</li> <li>▪ April 1 through July 15 within suitable nesting/early brood habitat occurring within 4 miles of active and inactive leks, or in defined habitat parcels greater than 4 miles from leks that have supported nest/early brood functions within five previous years (152,500 acres).</li> </ul>	<p>Unless qualifying for an exception by working within the disturbance threshold criteria, surface-disturbing and disruptive activities would be prohibited in the following areas during the seasonal use periods identified:</p> <ul style="list-style-type: none"> <li>▪ January 1 through March 15 in important winter use areas (260,300 acres); and</li> <li>▪ April 15 through July 7 within suitable nesting/early brood habitat occurring within 4 miles of active and inactive leks, or in defined habitat parcels greater than 4 miles from leks that have supported nest/early brood functions within five previous years (152,500 acres).</li> </ul>	<p>Surface-disturbing and disruptive activities would be prohibited in the following areas during the seasonal use periods identified:</p> <ul style="list-style-type: none"> <li>▪ January 15 through March 15 in important winter use areas (260,300 acres); and</li> <li>▪ April 15 through June 15 in suitable nesting/early brood habitat within 4 miles of an active lek (152,500 acres).</li> </ul>	<p>Unless qualifying for an exception by working within the disturbance threshold criteria (see Table 2-6 Record 16), surface-disturbing and disruptive activities would be prohibited in the following areas during the seasonal use periods identified:</p> <ul style="list-style-type: none"> <li>▪ December 1 through March 15 in those areas most currently defined by CPW as serving important winter use functions for sage-grouse (450,100 acres); and</li> <li>▪ April 1 through July 15 in suitable sage-grouse nesting/brood-rearing habitat within most-currently mapped Priority or General Habitat (450,100 acres).</li> </ul>

**Chapter 2 – Alternatives**

**Table 2-6. Comparison of Alternatives – Fish and Wildlife – Grouse**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
11	No similar action.	The BLM would utilize lease notices as the vehicle for imposing management actions that mimic lease stipulations (i.e., >660-foot moves, >60-day activity deferrals) on sage-grouse habitat features that are variable through time (e.g., leks), and/or may undergo distributional shifts through time (e.g., expansion onto restored ranges).		Same as Alternative A.	Same as Alternatives B and C. (Note: See lease notice (LN-05) in Appendix A.)
12	No similar action.	The BLM would defer oil and gas leasing decisions on about 96,100 acres of sage-grouse habitat (Blue Mountain) north of U.S. Highway 40 (US 40) until the BLM, with consensus from its federal and State agency partners, determines that effects of oil and gas development on sage-grouse behavior and habitat utility in the area are sufficiently understood to manage coincident energy development in a manner that would, with a reasonable level of certainty, maintain the long-term viability of sage-grouse populations in affected habitat.		Same as Alternative A.	Same as Alternative A. (Note: See Table 2-17a Record 34.)

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Table 2-6. Comparison of Alternatives – Fish and Wildlife – Grouse

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
13	Comparable or superior varieties of sagebrush should be established within occupied sage-grouse ranges in those instances where sagebrush conversion or removal has exceeded 500 acres. The extent and level of reestablishment effort will not exceed 20 percent of converted acreage at mature canopy densities of ≤15 percent.	Unless specifically authorized exceptions are granted in coordination with CPW, local accessions of sagebrush (i.e., material collected on-site or seed propagated from “local” collections) would be used where appropriate and as specified by the BLM to accelerate the redevelopment of sagebrush where canopies have been removed or adversely modified. The extent and level of reestablishment would generally not exceed mature canopy densities of 20 percent.	Unless specifically authorized exceptions are granted in coordination with CPW, local accessions of sagebrush (i.e., material collected on-site or seed propagated from “local” collections) would be used where appropriate and as specified by the BLM to accelerate the redevelopment of sagebrush where canopies have been removed or adversely modified. The extent and level of reestablishment would generally not exceed mature canopy densities of 10 percent and if considered appropriate, would be intermittently (i.e., areal extent less than 50 percent) applied along linear ROWs.	Same as Alternative A.	Unless specifically authorized exceptions are granted in coordination with CPW, local accessions of sagebrush (i.e., material collected on-site or seed propagated from “local” collections) would be used where appropriate and as specified by the BLM to accelerate the redevelopment of sagebrush where canopies have been removed or adversely modified. The extent and level of reestablishment would be designed to generally not exceed initial mature canopy densities of 10 percent and, if considered appropriate, would be intermittently (i.e., areal extent less than 50 percent) applied along linear ROWs.

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**Table 2-6. Comparison of Alternatives – Fish and Wildlife – Grouse**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
14	No similar action.	Protocols and means for lessees, cooperating agencies, or affected stakeholders to implement compensatory mitigation to offset reductions in sage-grouse habitat capacity (i.e., behavioral and physical) would be established. In coordination with CPW, industry, and as appropriate, other scientific or regulatory entities, an adaptive method (based on monitoring) would be developed and implemented that would quantify direct and indirect effects on sage-grouse as the basis for establishing a compensatory mitigation guidelines to maintain viable population levels and/or achieve long-term population objectives.		Same as Alternative A.	Same as Alternatives B and C.

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Table 2-6. Comparison of Alternatives – Fish and Wildlife – Grouse

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
15	<p>Long-term seral or type conversions of all aspen, Douglas-fir, spruce-fir, and deciduous shrub communities <b>should</b> be avoided. Where unavoidable, special stipulations requiring reclamation measures to maintain site potential, restore desired plant composition, and/or accelerate development of the community’s desired seral state <b>will</b> be applied. Seral manipulations of aspen and conifer types would be limited to those specifically designed to enhance or perpetuate stand diversity or achieve riparian management objectives. Where practical, manipulation extent would maintain a minimum of 50 percent of individual stands in mature to over-mature age classes.</p>	<p>Long-term seral or type conversions of all aspen, Douglas-fir, spruce-fir, and deciduous shrub communities as important components of dusky grouse habitats would be avoided. Where unavoidable, special COAs requiring reclamation practices that maintain site potential, restore desired plant composition, and/or accelerate development of the community’s desired seral state would be applied.</p> <p>Seral manipulations of aspen and conifer types would be limited to those specifically designed to restore natural successional processes or achieve riparian management objectives. Where applicable, manipulations would maintain a minimum 50 percent of an individual stand in mature to over-mature age classes.</p>		Same as Alternative A.	<p>Long-term seral or type conversions of all aspen, Douglas-fir, spruce-fir, and deciduous shrub communities as important components of dusky grouse habitats would be avoided. Where unavoidable, special COAs requiring reclamation practices that maintain site potential, restore desired plant composition, and/or accelerate development of the community’s desired seral state would be applied. Seral manipulations (e.g., vegetation treatments) of aspen and conifer types would be limited to those specifically designed to restore natural successional processes or achieve riparian management objectives. Where applicable, manipulations would maintain a minimum 50 percent of an individual stand in mature to over-mature age classes.</p>

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Table 2-6. Comparison of Alternatives – Fish and Wildlife – Grouse

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
16	Vegetation treatment widths should generally not exceed 200 feet. Treatment areas should be interspersed with equal or larger intervals of suitable cover. Cumulative adverse manipulations will not be allowed to exceed 10 percent of suitable nest habitat within 2 miles of a lek.	<p>Based on the collective federally-administered lease or unit holdings within a defined sage-grouse population area, the extent of sage-grouse habitat subject to cumulative adverse habitat and behavioral effects (i.e., reduced habitat extent/continuity, harassment/avoidance) attributable to oil and gas development would not exceed the following thresholds:</p> <ul style="list-style-type: none"> <li>▪ 10 percent of occupied habitat mapped as showing evidence of occupation in last 5 years within 4 miles of active or inactive leks (subject to concurrence of CPW);</li> <li>▪ 20 percent of sage-steppe communities used solely for winter functions or occupied habitat greater than 4 miles from an active or inactive lek; and</li> <li>▪ 25 percent of suitable but unoccupied habitat within 4 miles of an active or inactive lek.</li> </ul> <p>An identified land base key to any given subcomplex (defined by CPW) would be subject to</p>	<p>Meeker and Northwest Colorado greater sage-grouse populations:</p> <ul style="list-style-type: none"> <li>▪ Same as Alternative B.</li> </ul> <p>PPR greater sage-grouse population:</p> <ul style="list-style-type: none"> <li>▪ Based on the collective federally administered lease or unit holdings within a defined sage-grouse population area, the extent of sage-grouse habitat subject to cumulative adverse habitat and behavioral effects (i.e., reduced habitat extent/continuity, harassment/avoidance) attributable to oil and gas development would not exceed the following thresholds: <ul style="list-style-type: none"> <li>○ 20 percent of occupied habitat mapped as showing evidence of occupation in last 5 years within 4 miles of active or inactive leks (subject to concurrence of CPW; and</li> </ul> </li> </ul>	<p>Meeker and Northwest Colorado greater sage-grouse populations:</p> <ul style="list-style-type: none"> <li>▪ Same thresholds as Alternative B.</li> <li>▪ PPR greater sage-grouse population.</li> <li>▪ Same thresholds as Alternative A.</li> </ul> <p>Cumulative development-related effects that exceed any of the thresholds would nullify the threshold allowance and, thereby, subject all lease development to timing limitations as applied through lease stipulations or COAs that exceed 60 days (i.e., nesting/early brood functions, April 15 through June 15; winter use areas, January 15 through March 15).</p>	<p>In an effort to encourage clustered development, accommodate year-round well development, and reduce the extent of sage-grouse range subject to cumulative adverse modification and behavioral effects (e.g., avoidance) attributable to fluid mineral development, exceptions to timing limitations may be offered contingent on development effects remaining within the following threshold allowances (evaluated by the most-currently mapped Priority and General Habitats encompassed by an entity's<sup>(1)</sup> total leaseholdings within a CPW-defined sage-grouse population or sub-population area). The extent of sage-grouse habitat subject to cumulative adverse habitat and behavioral effects (i.e., reduced habitat extent/continuity, harassment/</p>

Table 2-6-12

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Table 2-6. Comparison of Alternatives – Fish and Wildlife – Grouse

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
		<p>additional conservation measures in an effort to retain an effective source population of grouse in the subcomplex. These measures may include, but would not be limited to: well pad density limits, strict development schedules and timeframes, and facility siting that may involve moves of more than 660 feet.</p> <p>The extent of adverse behavioral effects is defined by collective development activity buffered by 660 feet, in addition to any habitat parcels that become physically or behaviorally isolated by development features and are unavailable for effective use by sage-grouse (e.g., barriers to movement).</p> <p>Development activity includes, but is not limited to:</p> <ul style="list-style-type: none"> <li>▪ Construction, drilling, and completion operations;</li> <li>▪ Trunk and gathering pipeline construction and reclamation;</li> <li>▪ Access routes;</li> <li>▪ Wells receiving frequent visitation (i.e., average of more than seven vehicle trips per pad per week); and</li> </ul>	<ul style="list-style-type: none"> <li>○ 25 percent of suitable but unoccupied habitat within 4 miles of an active or inactive lek or occupied habitat greater than 4 miles from an active or inactive lek.</li> </ul> <p>An identified land base key to any given subcomplex (defined by CPW) would be subject to additional conservation measures in an effort to retain an effective source population of grouse in the subcomplex. These measures may include, but would not be limited to: well pad density limits, strict development schedules and timeframes, and facility siting that may involve moves of more than 660 feet.</p> <p>The extent of adverse behavioral effects is defined by collective development activity buffered by 330 feet, in addition to any habitat</p>		<p>avoidance) attributable to oil and gas development would not exceed the following thresholds:</p> <ul style="list-style-type: none"> <li>▪ 10 percent of suitable habitat within most-currently mapped Priority Habitat (or equivalent habitat classification system adopted by CPW and BLM); and</li> <li>▪ 20 percent of suitable habitat within most-currently mapped General Habitat (or equivalent habitat classification system adopted by CPW and BLM).</li> </ul> <p>An identified land base key to any given subcomplex (defined by CPW) may be subject to additional conservation measures in an effort to retain an effective source population of grouse in the subcomplex. These measures may include, but would not be limited to: well pad density limits,</p>

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Table 2-6. Comparison of Alternatives – Fish and Wildlife – Grouse

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
		<ul style="list-style-type: none"> <li>▪ Well pads not fully developed or reclaimed to interim standards.</li> </ul> <p>Reclaimed habitat that does not meet minimum functional habitat properties would be assessed against the threshold.</p> <p>Reclamation success on sage-grouse habitats would be contingent on evidence of successful establishment of desired sagebrush forms on disturbed acreage or achieving minimum functional capacity to serve sage-grouse cover and forage needs based on site capability and seasonal habitat use and allowing, where appropriate, for surrogate (e.g., herbaceous) forms of cover as per Appendix A, “Structural Habitat Guidelines” from Colorado Greater Sage-grouse Conservation Plan (Colorado Greater Sage-Grouse Steering Committee 2008).</p> <p>Cumulative development-related effects that exceed any of the thresholds would nullify the threshold allowance and, thereby, subject all lease development to timing limitations as applied</p>	<p>parcels that become physically or behaviorally isolated by development features and are unavailable for effective use by sage-grouse.</p> <p>Development activity includes, but is not limited to:</p> <ul style="list-style-type: none"> <li>▪ Construction, drilling, and completion operations;</li> <li>▪ Trunk and gathering pipeline construction and reclamation;</li> <li>▪ Access routes;</li> <li>▪ Wells receiving frequent visitation (i.e., average of more than seven vehicle trips per pad per week); and</li> <li>▪ Well pads not fully developed or reclaimed to interim standards.</li> </ul> <p>Reclaimed habitat that does not meet minimum functional habitat properties would be assessed against the threshold. Reclamation success on sage-grouse</p>		<p>strict development schedules and timeframes, and facility siting that may involve moves of more than 660 feet.</p> <p>The extent of adverse behavioral effects is defined by collective development activity or facility footprint buffered by 660 feet, in addition to any habitat parcels that become physically or behaviorally isolated by development features and are unavailable for effective use by sage-grouse (e.g., barriers to movement).</p> <p>Development activity includes, but is not limited to:</p> <ul style="list-style-type: none"> <li>▪ Pad and access construction, drilling, and completion operations;</li> <li>▪ Trunk and gathering pipeline construction and reclamation;</li> <li>▪ Unrestricted access tracks along right-of-way corridors;</li> </ul>

Table 2-6-14

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Table 2-6. Comparison of Alternatives – Fish and Wildlife – Grouse

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
		<p>through lease stipulations or COAs that exceed 60 days (i.e., nesting/early brood functions, April 1 through July 15; winter use areas, December 1 through March 15). For effectiveness in achieving management objectives for sage-grouse, the BLM would encourage the voluntary application of this strategy to private holdings. Acreage on fee land holdings below the occupied habitat threshold that are considered by CPW to be of comparable or higher sage-grouse value could be substituted for federally administered acreage with the approval of the WRFO Authorized Officer.</p> <p>Sage-grouse thresholds would be considered separately but would also be integral with more expansive big game summer range thresholds.</p> <p>Additional conservation measures could be applied as COAs at the time of permitting of oil and gas drilling or related operations or other activities.</p>	<p>habitats would be contingent on evidence of successful establishment of desired sagebrush forms on disturbed acreage or achieving minimum functional capacity to serve sage-grouse cover and forage needs based on site capability and seasonal habitat use and allowing, where appropriate, for surrogate (e.g., herbaceous) forms of cover as per Appendix A, “Structural Habitat Guidelines” from Colorado Greater Sage-grouse Conservation Plan (Colorado Greater Sage-grouse Steering Committee 2008).</p> <p>Cumulative development-related effects that exceed either threshold would nullify the threshold allowance and thereby subject all lease development to timing limitations as applied through lease stipulations or COAs that exceed 60 days (i.e., nesting/early</p>		<ul style="list-style-type: none"> <li>▪ Wells receiving frequent visitation (i.e., average of more than seven vehicle trips per pad per week); and</li> <li>▪ Well pads not fully developed or reclaimed to interim standards.</li> </ul> <p>Reclaimed habitat that does not meet minimum functional habitat properties would be assessed against the threshold. Reclamation success on sage-grouse habitats would be contingent on evidence of successful establishment of desired sagebrush forms on disturbed acreage or achieving minimum functional capacity to serve sage-grouse cover and forage needs based on site capability and seasonal habitat use and allowing, where appropriate, for surrogate (e.g., herbaceous) forms of cover as per Appendix A, “Structural Habitat Guidelines” from Colorado Greater Sage-</p>

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Table 2-6. Comparison of Alternatives – Fish and Wildlife – Grouse

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
			<p>brood functions, April 15 through July 7; winter use areas, January 1 through March 15).</p> <p>For effectiveness in achieving management objectives for sage-grouse, the BLM would encourage the voluntary application of this strategy to private holdings. Acreage on fee land holdings below the occupied habitat threshold that are considered by CPW to be of comparable or higher sage-grouse value could be substituted for federally administered acreage with the approval of the WRFO Authorized Officer.</p> <p>Sage-grouse thresholds would be considered separately but would also be integral with more expansive big game summer range thresholds.</p> <p>Additional conservation measures could be applied as COAs at the time of permitting of oil and gas drilling or related</p>		<p>grouse Conservation Plan (Colorado Greater Sage-Grouse Steering Committee 2008).</p> <p>Cumulative development-related effects that exceed any of the threshold allowances would nullify the exceptions and subject all lease development to established timing limitations (see Table 2-6 Record 10) applied through lease stipulations or COAs that exceed 60 days (i.e., nesting/early brood functions, April 1 through July 15; winter use areas, December 1 through March 15).</p> <p>For effectiveness in achieving management objectives for sage-grouse, the BLM would encourage the voluntary application of this strategy to private holdings. Acreage on fee land holdings below the occupied habitat threshold that are considered by CPW to be of comparable or higher sage-grouse value</p>

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Table 2-6. Comparison of Alternatives – Fish and Wildlife – Grouse

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
			operations or other activities.		<p>could be substituted for federally administered acreage with the approval of the WRFO Authorized Officer.</p> <p>Sage-grouse thresholds would be considered separately but would also be integral with more expansive big game thresholds.</p> <p>Additional conservation measures could be applied as COAs at the time of permitting of oil and gas drilling or related operations or other activities.</p> <p>Threshold allowances are intended to accommodate directional, multi-well drilling technologies that can be managed to dramatically reduce long-term impacts on grouse populations and habitat. Threshold strategies and TL exceptions may not be offered in instances (e.g., exploratory, obligation wells, routine and non-emergency</p>

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Table 2-6. Comparison of Alternatives – Fish and Wildlife – Grouse

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
					production, maintenance, and operation activities) where fluid mineral development activity can be reasonably scheduled to avoid interfering with important seasonal use activities of sage-grouse.
17	<p>Surface occupation and long-term conversion or adverse modification of the following sage-grouse habitat would be avoided:</p> <ul style="list-style-type: none"> <li>▪ Sagebrush stands with ≤50 percent canopy, ≤30 inches in height, and ≤2 miles from a lek;</li> <li>▪ Sagebrush stands with ≤30 percent canopy, ≤30 inches in height, and &gt;2 miles from a lek on occupied summer ranges;</li> <li>▪ Any sagebrush stands on slopes ≤20 percent in defined winter concentration areas; and</li> <li>▪ Sagebrush stands on slopes ≤20 percent showing evidence of winter use.</li> </ul>	<p>Surface occupancy and long-term conversion or adverse modification of the following sage-grouse habitat (220,300 acres) would be limited to 2 percent of that habitat available within a leaseholding:</p> <ul style="list-style-type: none"> <li>▪ Sagebrush-dominated stands with ≤35 percent canopy, ≤30 inches in height, and ≤4 miles from a lek; and</li> <li>▪ Any sagebrush-dominated stand on slopes ≤20 percent in defined winter use areas or stands showing evidence of winter use.</li> </ul> <p>In coordination with CPW, avoidance areas could be refined consistent with site-specific evaluation of seasonal use functions (e.g., nesting versus general summer/fall use functions).</p>	<p>Surface occupancy and long-term conversion or adverse modification of the following sage-grouse habitat would be avoided:</p> <ul style="list-style-type: none"> <li>▪ Sagebrush-dominated stands with ≤35 percent canopy, ≤30 inches in height, and ≤4 miles from a lek; and</li> <li>▪ Any sagebrush-dominated stand on slopes ≤20 percent in defined winter use areas or stands showing evidence of winter use.</li> </ul> <p>In coordination with CPW, avoidance areas could be refined consistent with site-specific evaluation of seasonal use functions (e.g., nesting versus general summer/fall use functions).</p>	Same as Alternative A.	<p>Surface occupancy and long-term conversion or adverse modification of the following sage-grouse habitat (450,700 acres) within a leaseholding would be limited to 2 percent within each of most-currently mapped Priority and General Habitats that are characterized by, or capable of redeveloping (e.g., burns) sagebrush-dominated stands:</p> <ul style="list-style-type: none"> <li>▪ With ≤50 percent canopy and ≤40 inches in height; and</li> <li>▪ On slopes ≤20 percent in defined winter use areas or stands showing evidence of winter use.</li> </ul> <p>In coordination with CPW, these areas and habitats</p>

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Table 2-6. Comparison of Alternatives – Fish and Wildlife – Grouse

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
		<p>Reclaimed habitat that does not meet minimum functional habitat properties would be assessed against the acreage limitation (as addressed in Table 2-6, Record 16).</p>			<p>could be refined consistent with site-specific evaluation of seasonal use functions and updated information or science, including functionally equivalent habitat classification systems adopted by the BLM and CPW. Reclaimed habitat that does not meet minimum functional habitat properties would be assessed against the threshold acreage limitation (as addressed in Table 2-6, Record 16).</p>

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Table 2-6. Comparison of Alternatives – Fish and Wildlife – Grouse

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
18	Disruptive surface occupation or adverse habitat modification within 1/4 mile of active strutting grounds will be prohibited. (3,600 acres).	Surface occupancy and surface-disturbing and disruptive activities within 0.6 mile of active (i.e., used by displaying males in the previous 5 years) and inactive (i.e., evidence of use within previous 10 years, but not within previous 5 years) strutting grounds (i.e., leks) would be prohibited, with narrow criteria for exception or modification (14,100 acres) (see Appendix A). If existing facilities are within 0.6 mile of such leks, alternate access routes would be devised and/or surface facilities removed to the extent practicable within 5 years of approval of the ROD.  The BLM could apply this mitigation measure to surface use activities associated with existing land use authorizations as a COA.	Surface occupancy and surface-disturbing and disruptive activities within 0.6 mile of active and inactive strutting grounds would be avoided. If existing facilities are within 0.6 mile of such leks (17,400 acres), leaseholder cooperation would be sought in developing plans that minimize disruption of sage-grouse lek functions and, where detrimental, removing or modifying surface facilities.  In those instances where habitat modification within 0.6 mile is unavoidable, disruption of lek activity would be reduced by applying one or more the following COAs: <ul style="list-style-type: none"> <li>▪ Locating facilities or features beyond line-of-sight.</li> <li>▪ Imposing a timing limitation from March 1 to May 15.</li> </ul>	Same as Alternative A.	Surface occupancy and surface-disturbing and disruptive activities within 0.6 mile of active (i.e., used by displaying males in the previous 5 years) and inactive (i.e., evidence of use within previous 10 years, but not within previous 5 years) strutting grounds (i.e., leks) would be prohibited, with narrow criteria for exception or modification (14,100 acres) (see Appendix A). If existing facilities are within 0.6 mile of such leks, alternate access routes would be devised and/or surface facilities removed to the extent practicable within 5 years of approval of the ROD.

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**Table 2-6. Comparison of Alternatives – Fish and Wildlife – Grouse**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
			As a last resort or for activity deemed minor and temporary, impose daily limitations that allow disturbance from two hours after sunrise to sunset, with restrictions most stringently applied during the period two hours before and after sunrise.		
19	No similar action.	Occupation or removal of suitable sagebrush cover within 990 feet of mapped brood foraging areas (as part of summer-fall habitat) and wet meadow habitats encompassed by or contiguous with suitable occupied, vacant, or potential sage-grouse habitat would be avoided.	Occupation or removal of suitable sagebrush cover within 660 feet of mapped brood foraging areas (as part of summer-fall habitat) and wet meadow habitats encompassed by or contiguous with suitable occupied, vacant, or potential sage-grouse habitat would be avoided.	Same as Alternative A.	Occupation or removal of suitable sagebrush cover within 660 feet of mesic or wet meadow habitats encompassed by the most-currently mapped Priority Habitat for sage-grouse would be avoided.

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**Table 2-6. Comparison of Alternatives – Fish and Wildlife – Grouse**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
20	Adapted forms of succulent forbs should be included in seed mixes applied to surface disturbances on grouse brood ranges.	Consistent with existing land use decisions, native forms of adapted forbs, with recognized utility as sage-grouse forage or cover, would be included in interim and final seed mixes applied to surface disturbances in suitable and potentially suitable grouse habitats that are occupied from March through September.	Consistent with existing land use decisions, adapted forms of forbs with recognized utility as sage-grouse forage or cover would be included in interim and final seed mixes applied to surface disturbances in suitable sage-grouse nesting/early brood-rearing and mapped late brood habitats. Native forms would be used as general rule, but where unavailable or considered beneficial and consistent with existing land use decisions, non-native species with established value to sage-grouse that have no demonstrated tendency to persist more than 10 years or disperse beyond the treatment area could be used.	Same as Alternative A.	Consistent with existing land use decisions, adapted forms of forbs with recognized utility as sage-grouse forage or cover would be included in interim and final seed mixes applied to surface disturbances in suitable sage-grouse nesting/early brood-rearing and late brood habitats. Native species would be used as a general rule, but where unavailable or considered beneficial, non-native species with established value to sage-grouse that have no demonstrated tendency to persist as a dominant forb constituent on reclaimed lands for extended timeframes (e.g., more than 10 years) or disperse beyond the treatment area could be used.

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**Table 2-6. Comparison of Alternatives – Fish and Wildlife – Grouse**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
21	No similar action.	Surface occupancy and surface-disturbing and disruptive activities within 0.4 mile of active (i.e., used by displaying males in the last 5 years) strutting grounds (i.e., leks) of Columbian sharp-tailed grouse would be prohibited (15 acres). Surface-disturbing and disruptive activities would be prohibited within 1.25 miles of active leks or mapped nesting habitat for Columbian sharp-tailed grouse from March 1 through July 30 and in important, CPW-defined, winter range habitat from December 1 through March 15 (1,500 acres). Exceptions, waivers, or modifications could be granted (see Appendix A).			Surface occupancy and surface-disturbing and disruptive activities within 0.4 mile of active (i.e., used by displaying males in the last 5 years) strutting grounds (i.e., leks) of Columbian sharp-tailed grouse would be prohibited (15 acres). Surface-disturbing and disruptive activities would be prohibited within 1.25 miles of active leks or mapped nesting habitat for Columbian sharp-tailed grouse from March 1 through July 30 and in important, CPW-defined, winter range habitat from December 1 through March 15 (1,500 acres).

NOTE:

<sup>(1)</sup>The primary lessee, unit operator, or other common entity, that provides BLM the most cohesive and effective source with interest in developing the federal mineral estate and performing reclamation.

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Chapter 2 – Alternatives

Table 2-7. Comparison of Alternatives – Fish and Wildlife – Migratory Birds

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Management Goal</b>					
1	No similar goal.	Avoid adverse impacts on migratory birds to the extent practicable and minimize detrimental alteration of their habitat consistent with the Migratory Bird Treaty Act and Executive Order 13186.			Avoid adverse impacts on migratory birds to the extent practicable and minimize detrimental alteration of their habitat consistent with the Migratory Bird Treaty Act, Executive Order 13186, and the Memorandum of Understanding between the FWS and BLM “To Promote the Conservation of Migratory Birds” (April 2010).
<b>Management Objectives</b>					
2	No similar objective.	Reduce the risk of direct mortality by removing or modifying potentially harmful features or preventing access by migratory birds to hazards.			

**Chapter 2 – Alternatives**

**Table 2-7. Comparison of Alternatives – Fish and Wildlife – Migratory Birds**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
3	No similar objective.	Prevent the unintentional take of migratory birds and adverse alterations in priority habitat types that are attributable to oil and gas activities.	Apply conservation measures to avoid or minimize the unintentional take of migratory birds attributable to oil and gas development and minimize adverse alterations in nesting habitat, with specific focus on BLM sensitive species, U.S. Fish and Wildlife Service (FWS) Birds of Conservation Concern, and the Colorado Partners in Flight high priority species for the Colorado Plateau and Southern Rocky Mountains physiographic regions.	To the extent practicable, reduce the unintentional take of migratory birds attributable to oil and gas activities on BLM sensitive species and FWS Birds of Conservation Concern.	Apply conservation measures to avoid or minimize the unintentional take of migratory birds attributable to oil and gas development and minimize adverse alterations in nesting habitat, with specific focus on BLM sensitive species, U.S. Fish and Wildlife Service (FWS) Birds of Conservation Concern, BLM Priority Migratory Birds, and the Colorado Partners in Flight high priority species for the Colorado Plateau and Southern Rocky Mountains physiographic regions.

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Table 2-7. Comparison of Alternatives – Fish and Wildlife – Migratory Birds

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Allowable Uses and Management Actions</b>					
4	<p>Pits remaining after the drilling period which store or are expected to store production fluids will be wired or netted to prevent or discourage entry by larger birds as they are attracted to sources of water, including raptors and waterfowl. At a minimum wire will be stretched over the entire length and breadth of the pit at intervals not exceeding three feet, and made permanently conspicuous either by choice of material or installation of flagging material evenly distributed across the pit at a minimum rate of one flag per 18 square feet.</p>		<p>Operators would be required to prevent migratory bird use of, or access to, reserve pits that store or are expected to store fluids that may pose a risk to birds, as defined in the Migratory Bird Treaty Act, from the time the drilling rig is removed from the pad, throughout completion operations, and until any such storage facilities are removed or fully reclaimed. The BLM's preferred method involves the use of properly installed and maintained netting that prevents aerial and ground entry and remains free of the pit surface at all times (e.g., including during snow load sag). Unless the method is standardized and integrated with the proposed action, it would be the responsibility of the operator to notify the BLM, at least 2 weeks prior to the scheduled date for removal of the drilling rig, of the method to be used to prevent impacts on birds. The BLM-approved method would be applied within 5 days after the drilling rig is removed. All lethal and non-lethal events that involve migratory birds would be reported immediately to the FWS Special Agent in Grand Junction, Colorado.</p>		

Chapter 2 – Alternatives

Table 2-7. Comparison of Alternatives – Fish and Wildlife – Migratory Birds

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
5	No similar action.	<p>Facility and ROW siting would avoid direct involvement (i.e., surface occupancy and vegetation clearing) of those habitat associations identified as having higher value for nesting migratory birds via the application of COAs (i.e., less than 660-foot moves):</p> <ul style="list-style-type: none"> <li>▪ Mature arboreal oakbrush;</li> <li>▪ Riparian (all elevations);</li> <li>▪ Spruce-fir (including Douglas-fir);</li> <li>▪ Aspen;</li> <li>▪ Mature stands of pinyon-juniper;</li> <li>▪ Potential natural community (PNC), late seral and good condition mid-seral Wyoming and mountain big sagebrush communities; and</li> <li>▪ Localized habitat parcels that support BLM sensitive species and FWS Species of Conservation Concern (e.g., mat/Gardner saltbush association-sage sparrow, loggerhead shrike; Utah</li> </ul>	<p>Facility and ROW siting would minimize the direct involvement (i.e., surface occupancy and vegetation clearing) of those habitat associations identified as having higher value for nesting migratory birds through the application of COAs (i.e., less than 660-foot moves) or moves negotiated during on-site inspections:</p> <ul style="list-style-type: none"> <li>▪ Mature arboreal oakbrush;</li> <li>▪ Riparian (all elevations);</li> <li>▪ Spruce-fir (including Douglas-fir);</li> <li>▪ Aspen;</li> <li>▪ Mature stands of pinyon-juniper;</li> <li>▪ PNC, late seral and good condition mid-seral Wyoming and mountain big sagebrush communities; and</li> <li>▪ Localized habitat parcels that support BLM sensitive species and FWS Species of Conservation Concern</li> </ul>	<p>Facility and ROW siting would minimize the direct involvement (i.e., surface occupancy and vegetation clearing) of those habitats occupied by BLM sensitive species and FWS Species of Conservation Concern (e.g., mat/Gardner saltbush association-sage sparrow, loggerhead shrike; Utah juniper/black sagebrush-gray vireo; aspen-red-naped sapsucker, flammulated owl; mixed conifer-olive-sided flycatcher, Williamson’s sapsucker; pinyon-juniper-black-throated gray warbler; mixed deciduous shrub-Virginia’s warbler; big sagebrush-Brewer’s sparrow) through the application of COAs (i.e., less than 660-foot moves) or moves negotiated during on-site inspections.</p>	<p>Facility and ROW siting would minimize the direct involvement (i.e., surface occupancy and vegetation clearing) of those habitat associations identified as having higher value for nesting migratory birds through the application of COAs (i.e., less than 660-foot moves) or moves negotiated during on-site inspections:</p> <ul style="list-style-type: none"> <li>▪ Mature arboreal oakbrush;</li> <li>▪ Riparian (all elevations);</li> <li>▪ Spruce-fir (including Douglas-fir);</li> <li>▪ Aspen;</li> <li>▪ Mature stands of pinyon-juniper;</li> <li>▪ PNC, late seral and good condition mid-seral Wyoming and mountain big sagebrush communities; and</li> <li>▪ Localized habitat parcels that support BLM sensitive species, BLM Priority Migratory Birds, and FWS Species of Conservation Concern</li> </ul>

Chapter 2 – Alternatives

Table 2-7. Comparison of Alternatives – Fish and Wildlife – Migratory Birds

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
		juniper/black sagebrush-gray vireo).	(e.g., mat/Gardner saltbush association-sage sparrow, loggerhead shrike; Utah juniper/black sagebrush-gray vireo).		(e.g., mat/Gardner saltbush association-sage sparrow, loggerhead shrike; Utah juniper/black sagebrush-gray vireo).
6	No similar action.	Vegetation clearing, facility construction, and concentrated operational activities (e.g., drilling, completion, utility installation) would not be allowed during the core migratory bird nesting season (May 15 to July 15; applied as 60-day TL stipulation) Applies to the entire WRFO.	Vegetation clearing, facility construction, and concentrated operational activities (e.g., drilling, completion, utility installation) would not be allowed in higher value habitats (described above and as determined during on-site inspections) and would be avoided as much as practicable in remaining habitats during the core migratory bird nesting season (May 15 to July 15) (818,100 acres).	Minimize disruption of migratory bird nesting activity by siting or prioritizing vegetation clearing, facility construction, and concentrated operational activities (e.g., drilling, completion, utility installation) to avoid the involvement of higher value habitats (e.g., siting on edge-of-type, avoiding better developed/more mature/more extensive and contiguous habitat parcels, consolidating with pre-existing disturbance), particularly during the core migratory bird nesting season (May 15 to July 15). Applies to 818,100 acres.	Avoid or, where impractical, minimize the disruption of migratory bird nesting activity by scheduling or prioritizing vegetation clearing, facility construction, and concentrated operational activities (e.g., drilling, completion, utility installation) to avoid involvement of better quality nesting habitats (e.g., siting on edge-of-type, avoiding better developed/more mature/more extensive and contiguous habitat parcels, consolidating with pre-existing disturbance) during the core migratory bird nesting season (generally from May 15 to July 15; applied as 60 day COA with the potential for 2-week shifts depending on elevation) (818,100 acres).

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**Chapter 2 – Alternatives**

**Table 2-8. Comparison of Alternatives – Fish and Wildlife – Fish**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Management Goal</b>					
1	No similar goal.	In cooperation with CPW, manage public land to provide sufficient quantity and quality of fisheries habitat and to maintain or enhance fish populations and biological diversity.			
<b>Management Objective</b>					
2	Improve current and potential stream fisheries to help increase populations of sport and native fishes.	Reduce cumulative oil and gas-related influences on systems that support or contribute to aquatic habitats to discountable levels and restore such habitats adversely affected by past development.	Reduce cumulative oil and gas-related influences on systems that support or contribute to aquatic habitats supporting native fisheries and BLM sensitive species (e.g., fish and amphibians) to discountable levels and restore such communities adversely affected by past development.	Manage oil and gas development activity to facilitate meeting Colorado Public Land Health Standards for Riparian Systems, Standard 2 and for Special Status, Threatened and Endangered, and Other Designated Species, Standard 4.	Same as Alternative C.

Chapter 2 – Alternatives

Table 2-8. Comparison of Alternatives – Fish and Wildlife – Fish

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Allowable Uses and Management Actions</b>					
3	No similar action.	Apply COAs to oil and gas development activity that prevents or, where avoidance is impractical, minimizes deterioration (e.g., surface disturbance/occupation, seasonal barriers to passage, contamination, sedimentation) of riparian, channel, and aquatic conditions in all lotic and lentic aquatic systems (e.g., measures that enhance vegetation expression and reestablishment, installation of protective fencing, use of impermeable reserve pit liners or fluid containment systems, facility relocation, Aquatic Nuisance Species [ANS] decontamination).	Apply COAs to oil and gas development activity that prevents or, where avoidance is impractical, minimizes deterioration (e.g., surface disturbance/occupation, seasonal barriers to passage, contamination, sedimentation) of riparian, channel, and aquatic conditions in lotic and lentic aquatic systems that support native aquatic communities (e.g., measures that enhance vegetation expression and reestablishment, installation of protective fencing, use of impermeable reserve pit liners or fluid containment systems, facility relocation, ANS decontamination).	Apply COAs to oil and gas development activity that prevents or, where prevention is impractical, minimizes deterioration (e.g., surface disturbance/occupation, seasonal barriers to passage, contamination, sedimentation) of riparian, channel, and aquatic conditions in lotic and lentic aquatic systems that support BLM sensitive species (e.g., measures that enhance vegetation expression and reestablishment, installation of protective fencing, use of impermeable reserve pit liners or fluid containment systems, facility relocation).	Same as Alternative C. (Note: Also see CSU-02-E in Appendix A.)

**Chapter 2 – Alternatives**

**Table 2-8. Comparison of Alternatives – Fish and Wildlife – Fish**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
4	No similar action.	In cooperation with current leaseholders, identify and apply restorative measures to previously authorized (or unauthorized) oil and gas development facilities or influences that are reducing or have potential to reduce the extent or adversely influence the physical or biological components of aquatic habitats associated with sport fisheries, BLM sensitive aquatic species, and native non-game aquatic vertebrate populations (e.g., channel modifications or obstructions, unlined pits in contributing valley alluvium, road/pipeline crossings that inhibit stream recovery, abandoned piping and material, road/pipeline runoff, culverts that inhibit fish passage, unreclaimed well pads, equipment or infrastructure associated with non-producing wells).	In cooperation with current leaseholders, identify and apply restorative measures to previously authorized (or unauthorized) oil and gas development facilities or influences that are reducing or have the potential to reduce the extent or adversely influence the physical or biological components of aquatic habitats associated with BLM sensitive aquatic species (e.g., channel modifications or obstructions; unlined pits in contributing valley alluvium; road/pipeline crossings that inhibit stream recovery, abandoned piping and material, road/pipeline runoff; culverts that inhibit fish passage; unreclaimed well pads, equipment or infrastructure associated with non-producing wells).	Same as Alternative A.	Same as Alternative C. (Note: Same as Table 2-9 Record 24.)

Chapter 2 – Alternatives

Table 2-8. Comparison of Alternatives – Fish and Wildlife – Fish

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
5	Acquisition of water rights to meet minimum instream flow requirements of public land cold water fisheries will be pursued in cooperation with CPW and Colorado Division of Water Resources.	The BLM will work cooperatively with the Colorado Water Conservation Board to identify private water rights owners who may be interested in voluntarily working with the CWCB to improve stream flow conditions for all native fisheries through leases, donations, or sales of their water rights.	The BLM will work cooperatively with the Colorado Water Conservation Board to identify private water rights owners who may be interested in voluntarily working with the CWCB to improve stream flow conditions for BLM-sensitive fish species through leases, donations, or sales of their water rights.	No similar action.	The BLM will work cooperatively with the Colorado Water Conservation Board to identify private water rights owners who may be interested in voluntarily working with the CWCB to improve stream flow conditions for all native fisheries through leases, donations, or sales of their water rights. The BLM will cooperate with the CWCB and CPW to establish instream flow water rights on streams that support native and special status fisheries, noting that these fisheries are coextensive with all sport-water fishery opportunities in the WRFO. (Note: Same as Table 2-9 Record 25.)

Chapter 2 – Alternatives

Table 2-9. Comparison of Alternatives – Special Status Animal Species

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Management Goals</b>					
1	No similar goal.	Manage public land to maintain, restore, improve, or enhance habitats to conserve, recover, and maintain populations of federally endangered, threatened, proposed, and candidate species, and to preclude the need for federal listing of proposed and candidate species; Colorado state endangered, threatened, and special-status species; or BLM sensitive species.			
2	No similar goal.	Participate in achieving national goals for black-footed ferret recovery by establishing a viable population of free-ranging black-footed ferrets (i.e., no fewer than 30 breeding adults) in the northwestern Colorado/northeastern Utah nonessential experimental population area.			
<b>Management Objectives</b>					
3	No similar objective.	Maintain, restore, or enhance wildlife habitat in coordination and consultation with other local, state, and federal agencies consistent with other agency plans, policies, and agreements.	Same as Alternative A.		
4	No similar objective.	Maintain, restore, or enhance special-status species wildlife habitat, in coordination and consultation with FWS and other local, state, and federal agencies, consistent with other agency plans, policies, and agreements.			
5	No similar objective.	The BLM-administered lands within designated ferret management areas would be managed to enhance black-footed ferret survival and recruitment by maintaining or enhancing the capability of the sites to achieve national ferret recovery objectives.			
6	No similar objective.	Activities within the Wolf Creek Ferret Management Area would be conducted with the objective of maintaining at least 15,500 acres of occupied prairie dog habitat on BLM-administered lands.			
<b>Allowable Uses and Management Actions</b>					
<b>Black-footed Ferret and White-tailed Prairie Dog</b>					
7	No similar action.	Use of newly developed well access routes in black-footed ferret habitat would be limited to activities associated directly with oil and gas development, production, and maintenance. Access routes would be reduced to minimum standards during production and eliminated upon project completion.			
8	No similar action.	The placement of aboveground power lines within sight of habitat showing past or recent evidence of prairie dog occupation would be avoided. Raptor deterrents would be installed, where appropriate, on power lines within 1/4 mile of occupied and suitable (including unoccupied) prairie dog habitat.			
9	No similar action.	The BLM would consider acquisition, from willing landowners, of private mineral and surface estate with high black-footed ferret habitat value within ferret management areas and would apply applicable management provisions and lease notice and lease stipulations pertinent to oil and gas development activities.			

**Chapter 2 – Alternatives**

**Table 2-9. Comparison of Alternatives – Special Status Animal Species**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
10	No similar action.	<p>To limit disturbance to prairie dogs during the breeding and young-rearing period, surface-disturbing and disruptive activities on prairie dog colonies would be avoided from March 1 to May 1.</p> <p>The BLM could apply this mitigation measure to surface use activities associated with existing land use authorizations as a COA.</p>		<p>To limit disturbance to prairie dogs during the breeding period, surface-disturbing activities on prairie dog colonies would be avoided during the breeding period of March 1 to April 1 as a COA.</p> <p>The BLM could apply this mitigation measure to surface use activities associated with existing land use authorizations as a COA.</p>	<p>To limit disturbance to prairie dogs during the breeding and young-rearing period, surface-disturbing and disruptive activities on prairie dog colonies would be avoided from March 1 to May 1.</p>

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Table 2-9. Comparison of Alternatives – Special Status Animal Species

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
11	<p>Within the Wolf Creek and Coyote Basin ferret management areas (53,200 acres), surface-disturbing and disruptive activities associated with land use authorizations, permits, and leases issued on BLM-administered lands will be subject to a CSU stipulation (see Appendix A) that incorporates those provisions established in A Cooperative Plan for Black-footed Ferret Reintroduction and Management, Wolf Creek and Coyote Basin Management Areas, Moffat and Rio Blanco Counties, Colorado (Wolf Creek Work Group et al. 2001).</p>	<p>No similar action.</p>	<p>Same management as Alternative A applied to all ferret management areas (58,600 acres).</p>	<p>Same management as Alternative A.</p>	<p>Within all ferret management areas (58,600 acres), surface-disturbing and disruptive activities associated with land use authorizations, permits, and leases issued on BLM-administered lands would be subject to a CSU stipulation (see Appendix A) that incorporates those provisions established in A Cooperative Plan for Black-footed Ferret Reintroduction and Management, Wolf Creek and Coyote Basin Management Areas, Moffat and Rio Blanco Counties, Colorado (Wolf Creek Work Group et al. 2001).</p>

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Table 2-9. Comparison of Alternatives – Special Status Animal Species

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
12	No similar action.	About 6,000 acres along Snake John Reef (between the Utah border and the town of Dinosaur) would be identified as part of the WRFO’s black-footed ferret management area. This area is a natural and logical extension of the Snake John Reef Management Area in Utah, which is currently managed for black-footed ferret recovery and occupied by ferrets. The Snake John Reef area would be subject to the same oil and gas development provisions ultimately adopted (through this RMPA/EIS) for the Wolf Creek/Coyote Basin black-footed ferret management area.	Same as Alternative B (pending concurrence of Wolf Creek Work Group).	Same as Alternative A.	About 6,000 acres along Snake John Reef (between the Utah border and the town of Dinosaur) would be identified as part of the WRFO’s black-footed ferret management area (pending concurrence of the Wolf Creek Work Group). This area is a natural and logical extension of the Snake John Reef Management Area in Utah, which is currently managed for black-footed ferret recovery and occupied by ferrets. The Snake John Reef area would be subject to the same oil and gas development provisions as the Wolf Creek/Coyote Basin black-footed ferret management area.
13	No similar action.	Seismic activity would be avoided within 1/2 mile of active prairie dog colonies, particularly from March 1 to July 1.	Seismic activity would be avoided within active prairie dog colonies, particularly from March 1 to July 1.	Same as Alternative A.	Same as Alternative C.

Chapter 2 – Alternatives

Table 2-9. Comparison of Alternatives – Special Status Animal Species

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
14	Motorized vehicle use in ferret recovery areas will be limited to existing roads and trails prior to development of a travel management plan. Development of a travel management or integrated activity plan will implement effective road and trail density goals of 1.5 miles per square mile within the ferret recovery areas.	Motorized vehicle use associated with oil and gas development within the Wolf Creek black-footed ferret management area (including Coyote Basin and Snake John Reef units) would be restricted to designated roads and trails. Effective road and trail densities of no more than 1.5 miles per square mile would remain open for public vehicular travel in these areas.	Same as Alternative B (pending concurrence of Wolf Creek Work Group).	Same as Alternative A.	Motorized vehicle use associated with oil and gas development within the Wolf Creek black-footed ferret management area (including Coyote Basin and Snake John Reef units) would be restricted to authorized roads and trails area. Effective route and trail densities of no more than 1.5 miles per square mile would remain open for public vehicular travel in these areas.

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Table 2-9. Comparison of Alternatives – Special Status Animal Species

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
15	<p>Development of lease parcels that involve prairie dog ecosystems that constitute potential habitat for wild or reintroduced populations of the federally endangered black-footed ferret could require one or more of the following conservation measures prior to and during lease development:</p> <ul style="list-style-type: none"> <li>▪ Performing site-specific habitat analysis and/or participating in ferret surveys (Note: the Black-footed Ferret Reintroduction Plan modified the 1997 White River RMP such that operators are no longer required to conduct black-footed ferret survey/clearances).</li> <li>▪ Participating in the preparation of a surface use plan of operations with BLM, FWS, and CPW to</li> </ul>	<p>Areas within 1/2 mile of active, suitable, and inactive prairie dog colonies would be open to oil and gas leasing with an NSO stipulation (166,200 acres).</p> <p>The BLM could apply this mitigation measure to surface use activities associated with existing land use authorizations as a COA. This NSO stipulation would not be applied to surface use activity in the Coal Oil Basin Exemption Area (the Rangely Oil Field).</p>	<p>Development of lease parcels that include mapped prairie dog towns could require the following conservation measures prior to and during lease development:</p> <ul style="list-style-type: none"> <li>▪ Participating in the preparation of a surface use plan of operations with BLM, FWS, and CPW to integrate and coordinate long-term lease development with measures necessary to minimize adverse impacts on black-footed ferrets or their habitat.</li> <li>▪ Abiding by special daily and seasonal activity restriction on construction, drilling, product transport, and service activities.</li> <li>▪ Incorporating special modifications to facility siting, design, construction, and operation.</li> <li>▪ Providing in-kind compensation for habitat loss and/or displacement (e.g., special on-site</li> </ul>	No similar action.	Same as Alternative C.

Table 2-9-6

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Table 2-9. Comparison of Alternatives – Special Status Animal Species

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
	<p>integrate and coordinate long-term lease development with measures necessary to minimize adverse impacts on black-footed ferrets or their habitat.</p> <ul style="list-style-type: none"> <li>▪ Abiding by special daily and seasonal activity restrictions on construction, drilling, product transport, and service activities.</li> <li>▪ Incorporating special modifications to facility siting, design, construction, and operation.</li> <li>▪ Providing in-kind compensation for habitat loss and/or displacement (e.g., special on-site rehabilitation/ revegetation measures or off-site habitat enhancement).</li> </ul>		<p>rehabilitation/revegetation measures or off-site habitat enhancement).</p>		

Chapter 2 – Alternatives

Table 2-9. Comparison of Alternatives – Special Status Animal Species

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Endangered Fish of the Upper Colorado River Basin</b>					
16	No similar action.	To minimize the risk of entrapment of endangered fishes at diversion and intake structures, the BLM could require that screens or baffles be incorporated, as identified through ESA Section 7 consultation with the FWS.			
17	Maintain or improve bank, channel, and floodplain processes associated with designated critical habitats for listed and candidate fishes of the Upper Colorado River Basin.	Require that any surface use activity be consistent with the restoration or maintenance of proper functioning condition on BLM-administered riverine parcels that are designated critical habitat for Colorado pikeminnow (100-year floodplain), consistent with parcel potential.			
18	No similar action.	Critical or occupied habitat for federally listed fish species (e.g., 100-year floodplain of the White River below Rio Blanco Lake) would be open to oil and gas leasing with an NSO stipulation (1,100 acres). An NSO stipulation would be applied to surface-disturbing and disruptive activities associated with all land use authorizations, permits, and leases issued on BLM-administered public lands. No exceptions would be granted. The BLM could apply this mitigation measure to surface use activities associated with existing land use authorizations as a COA.	Critical or occupied habitat for federally listed fish species (e.g., 100-year floodplain of the White River below Rio Blanco Lake) would be open to oil and gas leasing with an NSO stipulation (1,100 acres). An NSO stipulation would be applied to surface-disturbing and disruptive activities associated with all land use authorizations, permits and leases issued on BLM-administered lands. Exceptions including, but not limited to the following, could be granted (see Appendix A): <ul style="list-style-type: none"> <li>▪ Pipelines could not be constructed in sites identified by the CPW or FWS as important for Colorado pikeminnow reproduction and recruitment of young.</li> <li>▪ Pipelines transporting potential contaminants would be equipped with automatic shut off valves and may be required to be double-walled where they cross the White River’s 100-year floodplain or the lower mile of its larger perennial tributaries (e.g., Piceance Creek, Yellow Creek, Crooked Wash).</li> <li>▪ Proponent would be required to prepare a spill/leak contingency plan that would be integrated with BLM’s biological assessment to the FWS.</li> </ul>		

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Table 2-9. Comparison of Alternatives – Special Status Animal Species

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>BLM Sensitive Aquatic Vertebrates, including Native Cutthroat Trout</b>					
19	Colorado River cutthroat trout habitat would be open to oil and gas leasing and permitted surface use activities with a CSU stipulation (97,000 acres). See Appendix A.	Native cutthroat trout habitat would be open to oil and gas leasing and permitted surface use activities with a CSU stipulation (108,900 acres). Exceptions, waivers, or modifications could be granted and vary by alternative (see Appendix A).			Native cutthroat trout habitat would be open to oil and gas leasing and permitted surface use activities with a CSU stipulation (108,900 acres).
20	No similar action.	The BLM-administered portions of Black Sulphur Creek would be managed as Colorado River cutthroat trout recovery waters subject to CSU provisions for native cutthroat fisheries (2,700 acres).		Same as Alternative A.	Same as Alternatives B and C.
21	No similar action.	Pursue acquisition or cooperative management of privately owned fisheries to compensate for cumulative impacts on aquatic habitats and/or promote recovery of BLM sensitive aquatic species. Where appropriate (e.g., where public lands are unavailable), recognize permanent stream restoration or improvements on private lands in the context of habitat banking.		Same as Alternative A.	Same as Alternatives B and C.

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**Table 2-9. Comparison of Alternatives – Special Status Animal Species**

<b>Record Number</b>	<b>Alternative A</b>	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative D</b>	<b>Alternative E (Proposed)</b>
22	No similar action.	Apply COAs to oil and gas development activity that prevents or, where impractical, minimizes deterioration (surface disturbance/occupation or seasonal barriers to passage, contamination, and sedimentation) of riparian, channel, and aquatic conditions in lotic and lentic aquatic systems (e.g., measures that enhance vegetation expression and reestablishment, installation of protective fencing, use of impermeable reserve pit liners or fluid containment systems, facility relocation).	Apply COAs to oil and gas development activity that prevents or, where impractical, minimizes deterioration (surface disturbance/occupation or seasonal barriers to passage, contamination, and sedimentation) of riparian, channel, and aquatic conditions in lotic and lentic aquatic systems that support native aquatic communities (e.g., measures that enhance vegetation expression and reestablishment, installation of protective fencing, use of impermeable reserve pit liners or fluid containment systems, facility relocation).	Apply COAs to oil and gas development activity that prevents or, where impractical, minimizes deterioration (surface disturbance/occupation or seasonal barriers to passage, contamination, and sedimentation) of riparian, channel, and aquatic conditions in lotic and lentic aquatic systems that support BLM sensitive species (e.g., measures that enhance vegetation expression and reestablishment, installation of protective fencing, use of impermeable reserve pit liners or fluid containment systems, facility relocation).	Apply CSU-02-E and/or COAs to oil and gas development activity that prevents or, where impractical, minimizes deterioration (surface disturbance/ occupation or seasonal barriers to passage, contamination, and sedimentation) of riparian, channel, and aquatic conditions in lotic and lentic aquatic systems that support native aquatic communities (e.g., measures that enhance vegetation expression and reestablishment, installation of protective fencing, use of impermeable reserve pit liners or fluid containment systems, facility relocation).

**Chapter 2 – Alternatives**

**Table 2-9. Comparison of Alternatives – Special Status Animal Species**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
23	No similar action.	Require specialized reclamation techniques (e.g., seeding and soil conditioning techniques, reclamation protection, application of interim reclamation standards and monitoring) that promote or accelerate the establishment of interim ground cover sufficient to reduce sediment contribution to discountable levels in aquatic systems that support sport fisheries and native aquatic vertebrates.	Require specialized reclamation techniques (e.g., seeding and soil conditioning techniques, reclamation protection, application of interim reclamation standards and monitoring) that promote or accelerate the establishment of interim ground cover sufficient to reduce sediment contribution to discountable levels in aquatic habitats supporting native fisheries and BLM sensitive species (e.g., fish and amphibians). Remaining aquatic habitats would be managed to reduce sediment contribution to levels that do not compromise proper functioning condition.	Require specialized reclamation techniques (e.g., seeding and soil conditioning techniques, reclamation protection, application of interim reclamation standards and monitoring) that promote or accelerate the establishment of interim ground cover sufficient to reduce sediment contribution to levels that do not compromise proper functioning condition of aquatic habitats supporting BLM sensitive fish.	Same as Alternative C.

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**Table 2-9. Comparison of Alternatives – Special Status Animal Species**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
24	No similar action.	In cooperation with current leaseholders, identify and apply restorative measures to previously authorized (or unauthorized) oil and gas development facilities or influences that are or have potential to reduce the extent or adversely influence the physical or biological components of aquatic habitats associated with sport fisheries, BLM sensitive aquatic species, and native non-game aquatic vertebrate populations (e.g., channel modifications or obstructions, unlined pits in contributing valley alluvium, road/pipeline crossings that inhibit stream recovery, abandoned piping and material, road/pipeline runoff, culverts that inhibit fish passage, unreclaimed well pads, equipment or infrastructure associated with non-producing wells).	In cooperation with current leaseholders, identify and apply restorative measures to previously authorized (or unauthorized) oil and gas development facilities or influences that are or have the potential to reduce the extent or adversely influence the physical or biological components of aquatic habitats associated with BLM sensitive aquatic species (e.g., channel modifications or obstructions; unlined pits in contributing valley alluvium; road/pipeline crossings that inhibit stream recovery; abandoned piping and material; road/pipeline runoff; culverts that inhibit fish passage; unreclaimed well pads, equipment, or infrastructure associated with non-producing wells).	Same as Alternative A.	Same as Alternative C. (Note: Same as Table 2-8 Record 4.)

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Table 2-9. Comparison of Alternatives – Special Status Animal Species

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
25	Acquisition of water rights to meet minimum in-stream flow requirements of public land cold water fisheries would be pursued in cooperation with CPW and Colorado Division of Water Resources.	Pursue agreements with the state or privately controlled water right holders to increase in-stream flows necessary for proper functioning condition of affected systems (i.e., possibly higher volumes than those considered minimal to support native fisheries).	Pursue agreements with the state or privately controlled water right holders to increase in-stream flows necessary for proper functioning condition of affected systems (i.e., possibly higher volumes than those considered minimal to support BLM sensitive fish species).	No similar action.	The BLM will work cooperatively with the Colorado Water Conservation Board (CWCBC) to identify private water rights owners who may be interested in voluntarily working with the CWCBC to improve stream flow conditions for BLM-sensitive fish species through leases, donations, or sales of their water rights. The BLM will cooperate with the CWCBC and CPW to establish instream flow water rights on streams that support native and special status fisheries. (Note: Same as Table 2-8 Record 5.)

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Table 2-9. Comparison of Alternatives – Special Status Animal Species

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Special Status Raptors</b>					
26	Bald eagle nest, roost, and perch habitat would be open to oil and gas leasing with a CSU stipulation (930 acres). See Appendix A.	<p>Identified bald eagle nest, roost, and perch habitat would be open to oil and gas leasing and permitted surface use activities with a CSU stipulation (930 acres). Exceptions, waivers, or modifications could be granted (see Appendix A).</p> <p>Use authorization would be contingent on the following conditions:</p> <ul style="list-style-type: none"> <li>▪ Mature and regenerating cottonwood communities would be avoided;</li> <li>▪ Special reclamation techniques would be required to accelerate recovery and for reestablishment of habitat commensurate with deterioration;</li> <li>▪ Long-term site potential as a properly functioning riverine riparian community would be maintained or restored; and</li> <li>▪ Short- and long-term utility as bald eagle habitat would be maintained.</li> </ul>		No similar action.	<p>Identified bald eagle nest, roost, and perch habitat would be open to oil and gas leasing and permitted surface use activities with a CSU stipulation (930 acres).</p> <p>Use authorization would be contingent on the following conditions:</p> <ul style="list-style-type: none"> <li>▪ Mature and regenerating cottonwood communities would be avoided;</li> <li>▪ Special reclamation techniques would be required to accelerate recovery and for reestablishment of habitat commensurate with deterioration;</li> <li>▪ Long-term site potential as a properly functioning riverine riparian community would be maintained or restored; and</li> <li>▪ Short- and long-term utility as bald eagle habitat would be maintained.</li> </ul>

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Table 2-9. Comparison of Alternatives – Special Status Animal Species

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
27	No similar action.	Minimize the risk of line-strikes by enhancing the visibility of static lines and/or conductors with best available technology in areas of concentrated bald eagle use or movement corridors.		Same as Alternative A.	Same as Alternatives B and C.
28	Surface occupancy would not be allowed within 1/4 mile of identified nests of special status raptors, including listed, proposed, or candidate species (10,700 acres) for listing under the Endangered Species Act and BLM sensitive species. Exceptions, waivers, or modifications could be granted (see Appendix A).	Surface occupancy would not be allowed within 1/4 mile of functional nests of burrowing owls, or within 1/2 mile of functional nests of bald eagle, ferruginous hawk, peregrine falcon, and northern goshawk (29,700 acres). Surface occupancy would also not be allowed within 330 feet of abandoned bald eagle nests (i.e., unoccupied for five consecutive years but with all or part of the nest remaining). (60 acres). No exceptions would be granted. The BLM could apply these mitigation measures to surface use activities associated with existing land use authorizations as a COA.	Surface occupancy would not be allowed within 1/4 mile of functional nests of federal endangered, threatened, proposed, and candidate raptor species; Colorado state endangered, threatened, and special-status raptor species; or BLM sensitive raptor species (10,700 acres). Surface occupancy would also not be allowed within 330 feet of abandoned bald eagle nests (i.e., unoccupied for five consecutive years but with all or part of the nest remaining). (60 acres). Exceptions could be granted (see Appendix A). The BLM could apply these mitigation measures to surface use activities associated with existing land use authorizations as a COA.	Surface occupancy would not be allowed within 1/4 mile of functional nests of federal endangered, threatened, proposed, and candidate raptor species; Colorado state endangered, threatened, and special-status raptor species; or BLM sensitive raptor species (10,700 acres). Exceptions, waivers, or modifications could be granted (see Appendix A). The BLM could apply these mitigation measures to surface use activities associated with existing land use authorizations as a COA. Exceptions could be granted (see Appendix A).	Surface occupancy would not be allowed within 1/2 mile of functional nests of special status raptor species (29,700). Surface occupancy would also not be allowed within 330 feet of abandoned bald eagle nests (i.e., unoccupied for five consecutive years but with all or part of the nest remaining). (60 acres).

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Table 2-9. Comparison of Alternatives – Special Status Animal Species

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
29	Disruptive forms of permitted land uses that will occur within 1/2 mile of identified winter roosts and concentration areas and active nest sites during respective use periods will not be allowed. No surface occupancy stipulations will be applied to areas within 1/4 mile of functional nest sites and identified winter roosts and concentration areas (1,000 acres). (Note: See Table 2-9 Record 30 for timing limitations associated with bald eagle winter roosts and concentration areas.)	Surface occupancy would not be allowed within 1/4 mile of identified bald eagle critical night roosts (as defined by the FWS). (1,000 acres). No exceptions would be granted. The BLM could apply this mitigation measure to surface use activities associated with existing land use authorizations as a COA.	Surface occupancy would not be allowed within 1/4 mile of identified bald eagle critical night roosts (as defined by the FWS). (1,000 acres). Exceptions, waivers, or modifications could be granted (see Appendix A). The BLM could apply this mitigation measure to surface use activities associated with existing land use authorizations as a COA.	Same as Alternative A.	Surface occupancy would not be allowed within 1/4 mile of identified bald eagle critical night roosts (as defined by the FWS). (1,000 acres).

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Table 2-9. Comparison of Alternatives – Special Status Animal Species

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
30	<p>Timing limitation stipulations would be applied, as follows, to all surface disturbing activities associated with land use authorizations, permits, and leases issued on BLM administered lands:</p> <ul style="list-style-type: none"> <li>▪ December 15 through July 15 or until fledgling and dispersal of young, within 1/2 mile of identified bald eagle nests (800 acres);</li> <li>▪ February 1 through August 15 or until fledgling and dispersal of young, within 1 mile of identified nests for ferruginous hawks (66,900 acres);</li> <li>▪ February 1 through August 15 or until fledgling and dispersal of young, within 1/2 mile of identified BLM sensitive raptor nests (19,800 acres); and</li> </ul>	<p>Timing limitation stipulations would be applied as follows to all permitted surface use activities through various use authorizations or leasing processes from:</p> <ul style="list-style-type: none"> <li>▪ November 15 through July 31 within 1/2 mile of identified bald eagle nests (800 acres);</li> <li>▪ February 1 through August 15 or until fledgling and dispersal of young, within 1/2 mile of identified nests of peregrine falcon, northern goshawk, and burrowing owl, or within 1 mile of identified ferruginous hawk nests (66,900 acres); and</li> <li>▪ November 15 through March 15, within 1/2 mile of identified bald eagle critical night roosts and within 1/4 mile of identified winter hunting perches (2,800 acres).</li> </ul> <p>No exceptions would be granted.</p>	<p>Same as Alternative B, but exceptions, waivers, or modifications could be granted (see Appendix A).</p>	<p>Same as Alternative A.</p>	<p>Timing limitation stipulations would be applied, as follows, to all surface disturbing activities associated with land use authorizations, permits, and leases issued on BLM administered lands:</p> <ul style="list-style-type: none"> <li>▪ November 15 through July 31 or until fledgling and dispersal of young within 1/2 mile of identified bald eagle nests (800 acres);</li> <li>▪ February 1 through August 15 or until fledgling and dispersal of young, within 1/2 mile of identified special status raptor nest sites; and within 1 mile of identified ferruginous hawk nests (66,900 acres); and</li> <li>▪ November 15 through March 15, within 1/2 mile of identified bald eagle critical night roosts and within 1/4 mile of identified winter hunting perches (2,800 acres).</li> </ul>

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Table 2-9. Comparison of Alternatives – Special Status Animal Species

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
	<ul style="list-style-type: none"> <li>November 15 through April 15 within 1/2 mile of identified bald eagle winter roosts and concentration areas (2,800 acres).</li> </ul>	The BLM could apply these mitigation measures to surface use activities associated with existing land use authorizations as a COA.			
31	No similar action.	The felling of any native tree with a diameter at breast height (dbh) greater than 12 inches that is located within 100 feet of a river bank or defined bald eagle foraging area would be prohibited. Any activity that has the potential to kill perch trees or impede utilization of foraging areas would also be prohibited.	Same as Alternative A.		The felling of any native tree with a diameter at breast height (dbh) greater than 12 inches that is located within 100 feet of a river bank or defined bald eagle foraging area would be prohibited. Any activity that has the potential to kill perch trees or impede utilization of riverine foraging areas would also be prohibited.
<b>Canada Lynx</b>					
32	No similar action.	Use of newly developed well access routes in lynx habitat would be limited to that associated directly with oil and gas development, production, and maintenance activity. Access routes would be reduced to minimum standards during production and eliminated upon project completion.			
33	No similar action.	The BLM would request that maximum efforts be applied to reduce the extent and effective utility of snow compaction or removal activities in lynx habitat as travel corridors for competitive carnivores. Use of over-the-snow vehicles would be prohibited for use in lynx habitat during project-related reconnaissance, on-site inspections, or surveys.			
34	No similar action.	Interim and final reclamation practices would be oriented toward enhancing habitat attributes considered most important for lynx prey or denning functions at the time of project submission. These site-specific determinations would be established in coordination with CPW and FWS in preparation for ESA Section 7 consultation proceedings.			

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Table 2-9. Comparison of Alternatives – Special Status Animal Species

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
35	No similar action.	Oil and gas development activities on BLM-administered lands would not be allowed to contribute disproportionately to FS management thresholds applied to lynx habitat (i.e., no more than 30 percent of mapped habitat within a lynx analysis unit [LAU] in unsuitable condition and less than 15 percent of habitat within an LAU converted to unsuitable condition within a 10-year period; also, maintenance of greater than 10 percent of habitat suitable for denning).			
36	No similar action.	Surface-disturbing and disruptive activities that have the potential to disrupt the utility of habitat parcels suitable for lynx denning functions would not be allowed from March 15 to July 15. No exceptions would be granted. (1,800 acres).	Surface-disturbing and disruptive activities that have the potential to reduce the utility of habitat parcels suitable for lynx denning functions would not be allowed from March 15 to July 15. (3,400 acres). Exceptions could be granted (see Appendix A).	Surface-disturbing and disruptive activities that have the potential to reduce the utility of habitat parcels suitable for lynx denning functions would not be allowed from March 15 to July 15. (3,400 acres).	
37	No similar action.	Development and production facilities would be sited to avoid important lynx habitat features (e.g., prey-rich foraging areas, denning habitat, and movement corridors) and to maintain the utility of such features or habitats through the operational life of the facility.	Development and production facilities would be sited to avoid occupation of important lynx habitat features (e.g., prey-rich foraging areas, denning habitat, and movement corridors) and, to the extent practicable, minimize adverse influences on the utility of such features or habitats through the operational life of the facility.		

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Table 2-10. Comparison of Alternatives – Special Status Plant Species

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)	
<b>Management Goal</b>						
1	No similar goal.	Manage public land to maintain, restore, improve, or enhance habitats to sustain, conserve, and recover populations of special status plant species (federally endangered, threatened, proposed, and candidate species; BLM sensitive plant species) and designated critical habitat. This includes proactive management to preempt and preclude the need for federal listing of BLM sensitive species.				
2	No similar goal.	Manage all oil and gas activities authorized by the BLM in occupied and suitable habitats so as to sustain and recover special status plant species and their habitats.				
3	No similar goal.	Manage environmental risks, reclamation and associated affects in a manner compatible with sustaining special status plant species and their habitats.				
<b>Management Objective</b>						
4	No similar objective.	Maintain, restore, improve, or enhance special status plant species habitat, in coordination and consultation with FWS and other local, state, and federal agencies, consistent with other agency plans, policies, and agreements. Including collaborative research and monitoring of BLM special status plant species.				
5	No similar objective.	Maintain special status plant species communities, occupied and suitable habitats in a continuous and connected pattern on a landscape scale including consideration of short- and long-term disturbance, climate change, and population changes.				
6	No similar objective.	Key conservation areas identified in the Dudley Bluffs bladderpod ( <i>Physaria congesta</i> ) and Dudley Bluffs twinpod ( <i>Physaria obcordata</i> ) recovery plan would be managed to meet species recovery goals and to limit other impacts from surface disturbance associated with oil and gas development, including fugitive dust and noxious weeds.			The Dudley Bluffs bladderpod ( <i>Physaria congesta</i> ) and Dudley Bluffs twinpod ( <i>Physaria obcordata</i> ) would be managed to meet species recovery goals and to limit other impacts from surface disturbance associated with oil and gas development, including fugitive dust and noxious weeds.	

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Table 2-10. Comparison of Alternatives – Special Status Plant Species

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Allowable Uses and Management Actions</b>					
7	<p>Prior to approving surface disturbing or potentially impacting activity within known or potential habitat for a listed, proposed or candidate plant species, a plant inventory conducted by a qualified botanist, and environmental analysis will be completed on the action. Based on the results of a plant survey, informal consultation with the U.S. Fish and Wildlife Service (USFWS) may be conducted during preparation of the environmental analysis. Formal consultation with the USFWS will occur if the environmental analysis indicates a finding of possible impact to a listed species and the proposed action cannot be moved to avoid the impact.</p>	<p>Prior to approving surface-disturbing or potentially impacting activities within known (occupied), suitable, or potential habitat for federal listed, proposed, and candidate species, a plant inventory conducted by a qualified botanist and an environmental analysis would be required for the proposed action. Based on the results of the plant survey, Section 7 consultation with FWS may be necessary, and appropriate conservation measures may be required to avoid or minimize impacts on federally listed species. Typically, Section 7 consultation would be required prior to surface disturbing and similar activities within occupied habitat for federally listed.</p>			<p>Prior to approving surface-disturbing or potentially impacting activities within occupied, suitable, potential or critical habitat for special status plant species a plant inventory conducted by a qualified botanist and an environmental analysis would be required for the proposed action. Based on the results of the plant survey, Section 7 consultation with FWS may be necessary, and appropriate conservation measures may be required to avoid or minimize impacts on federally listed species or critical habitat. Typically, Section 7 consultation would be required prior to surface disturbing and similar activities within occupied or critical habitat for federally listed and proposed plants.</p>

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Table 2-10. Comparison of Alternatives – Special Status Plant Species

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
8	No similar action.	Prioritize the treatment of noxious weeds in occupied and suitable special status plant species habitats. Control methods and design criteria would utilize Integrated Pest Management (IPM) strategies for weed control as specified in the WRFO’s Integrated Weed Management Plan.			Prioritize the treatment of noxious weeds in occupied, suitable, and critical habitat for special status plant species. Control methods and design criteria would utilize Integrated Pest Management (IPM) strategies for weed control as specified in the WRFO’s Integrated Weed Management Plan.
9	Motorized vehicle travel within ACECs for T/E plants will be limited to designated roads and trails. Roads or trails in these areas not designated for use will be abandoned and reclaimed. Off road motorized vehicle travel will be prohibited in these areas.	Motorized vehicle travel within and outside ACECs used to support oil and gas exploration and development activities within occupied, suitable, or potential habitats for federally listed species, proposed species, candidate species and BLM sensitive species would be limited to existing routes. Roads or trails in these areas not designated for use will be abandoned and reclaimed. Off road motorized vehicle travel will be prohibited in these areas.		Motorized vehicle travel within and outside ACECs used to support oil and gas exploration and development activities within occupied, suitable, or potential federal listed, proposed species, and candidate species habitats would be limited to existing routes. Roads or trails in these areas not designated for use will be abandoned and reclaimed. Off road motorized vehicle travel will be prohibited in these areas.	Same as Alternative A.

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**Table 2-10. Comparison of Alternatives – Special Status Plant Species**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
10	No similar action.	Off-road motorized vehicle travel for oil and gas activities (including pre-construction survey work) within 660 feet of occupied, suitable, or potential habitats for federally listed, proposed, and candidate species would be limited to existing routes. Off-road motorized vehicle travel for oil and gas activities within 330 feet of occupied BLM sensitive species habitat would be limited to existing routes.		Off-road motorized vehicle travel for oil and gas activities within 660 feet of occupied, suitable, or potential habitats for federally listed, proposed, and candidate species would be limited to existing routes.	Same as Alternative A. (Note: See Table 2-19 Record 7.)
11	No similar action.	Reclamation of suitable habitat of federally listed, proposed, and candidate species, would include replicating the existing soil horizons and subsoil dynamics to allow for increased potential in possible occupation of these sites by special status plant species as well as achievement of late seral vegetation conditions.		Same as Alternative A.	Reclamation of suitable habitat of special status plant species would include replicating the existing soil horizons and subsoil dynamics (i.e., replace soil and sub-soil to their pre-disturbance order) to allow for increased potential in possible occupation of these sites by special status plant species as well as achievement of late seral vegetation conditions.

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Table 2-10. Comparison of Alternatives – Special Status Plant Species

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
12	All known (occupied) and potential T/E habitat, including ACECs, will be exclusion areas for new ROW authorizations.	All occupied habitat of federally listed and proposed plant species within a 330 foot buffer would be exclusion areas for new ROW authorizations. All suitable and potential habitat for listed and candidate plants would be avoidance areas for new ROW authorizations.		All occupied habitat of federally listed and proposed plant species would be exclusion areas for new ROW authorizations. All suitable habitat for listed and candidate plants would be avoidance areas for new ROW authorizations.	Areas within 330 feet of occupied habitat of federally listed and proposed plant species would be exclusion areas for new ROW authorizations. Areas within 330-660 feet of occupied habitat or within 660 feet of suitable habitat, or within critical habitat for federally listed, proposed or candidate plant species would be avoidance areas for new ROW authorizations.
13	No similar action.	Management of important threatened, endangered, and sensitive (TES) plant concentrated populations existing outside of the ACECs would be emphasized and subject to the stipulations, COAs, and BMPs for TES plants and associated habitats. These concentrated areas include approximately 600 hundred acres along Yellow Creek, 960 acres east of the Duck Creek ACEC, 300 acres east of the Dudley Bluffs ACEC, and 150 acres north of the Duck Creek ACEC on Pinto Mesa.		Same as Alternative A.	Management of populations of special status plants existing outside of ACECs would be emphasized and subject to the stipulations, COAs, and BMPs for special status plants and associated habitats. These areas include, but are not limited to, east of the Duck Creek ACEC, north of the Duck Creek ACEC on Pinto Mesa, east of the Dudley Bluffs ACEC, Calamity Ridge, and along Yellow Creek.

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Table 2-10. Comparison of Alternatives – Special Status Plant Species

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
14	No similar action.	Maintenance of existing and planned roads and/or rights-of-way within occupied, suitable, or potential special status plant species (federally listed species, proposed, and candidate species) habitat would be limited to the existing disturbance; maintenance would be performed in accordance with specifications provided by the BLM during site specific environmental analysis.		Same as Alternative A.	Maintenance of existing roads and/or rights-of-way within occupied, suitable and/or critical habitat for federally listed, proposed, and candidate species may be subject to Section 7 consultation or conference with the FWS.
15	An NSO stipulation will be placed on known (occupied) and potential habitat of federally listed and candidate (proposed) T/E plants. New T/E plant habitat mapped as a result of future surveys will also be protected by an NSO stipulation. This stipulation will apply to all surface disturbing activities within these areas (48,800 acres). Exceptions could be granted (see Appendix A).	Occupied, suitable, and potential habitat for federally listed, proposed, and candidate species, including any new suitable habitat mapped as a result of future surveys, would be open to oil and gas leasing with an NSO stipulation. This includes any areas that are found in the future to contain currently unknown features (e.g., soil, geologic, vegetative) that would qualify as potential habitat for federally listed, proposed, or candidate species. Additionally, within 1,970 feet of occupied habitat other COAs (see Record 18) would be applied to minimize indirect impacts.	Occupied and suitable habitat for federally listed, proposed, and candidate species, including any new habitat mapped as a result of future surveys, would be open to oil and gas leasing with an NSO stipulation. An NSO buffer of 660 feet from the edge of the suitable or occupied habitat would be applied where geography and other resource concerns allow. Of this buffer, within 330 feet from the occupied habitat would have limited exceptions to provide increased protection to the species. Additionally, within 1,970 feet of occupied habitat other COAs (see Record 18) would be applied	Prohibit surface occupancy within a 660 feet buffer from the edge of occupied habitat including any new habitat identified as a result of future surveys for federally listed, proposed, and candidate species. An NSO stipulation would be applied to all land use authorizations, permits, and leases that involve surface disturbance associated with oil and gas development (51,700 acres). Exceptions could be granted (see Appendix A).	Areas within 660 feet of occupied and suitable habitat for federally listed, proposed, and candidate species, including any new habitat mapped as a result of future surveys, would be open to oil and gas leasing with an NSO stipulation (32,400 acres). Areas within 330 feet of occupied habitat would have limited exceptions. Additionally, within 1,970 feet of occupied habitat other COAs (see Record 18 below) would be applied to minimize indirect impacts to pollinator habitat. Potential and critical habitat for federally listed, proposed, and candidate species would be open to oil and gas leasing

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**Table 2-10. Comparison of Alternatives – Special Status Plant Species**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
		<p>An NSO buffer of 660 feet from the edge of the potential, suitable, and occupied habitat would be applied where geography and other resource concerns allow (91,400 acres). No exceptions would be granted.</p>	<p>to minimize indirect impacts. Potential habitat for federally listed, proposed, and candidate species would be open to oil and gas leasing with an NSO stipulation. This includes any areas that are found in the future to contain currently unknown features (e.g., soil, geologic, vegetative) that would qualify as potential habitat for federally listed, proposed, or candidate species (91,400 acres). Exceptions could be granted (see Appendix A).</p>		<p>with a lease notice (LN). This includes any areas that are found in the future to contain currently unknown features (e.g., soil, geologic, vegetative) that would qualify as potential habitat for federally listed, proposed, or candidate species (91,400 acres).</p>

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Table 2-10. Comparison of Alternatives – Special Status Plant Species

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
16	<p>A NSO stipulation will also be placed on known and potential habitat of BLM sensitive plants and remnant vegetation associations occurring outside ACECs (10,800 acres for BLM sensitive plants).</p>	<p>Occupied, suitable, and potential habitat buffered by 330 feet from the edge of habitat for BLM sensitive plants would be open to oil and gas leasing with an NSO stipulation.</p> <p>An NSO stipulation would be applied to surface-disturbing activities and other land use authorizations, permits, and leases associated with oil and gas development (78,700 acres).</p> <p>No exceptions would be granted.</p>	<p>Occupied and suitable habitat buffered by 330 feet from the edge of habitat for BLM sensitive plants would be open to oil and gas leasing with an NSO stipulation.</p> <p>An NSO stipulation would be applied to surface-disturbing activities and other land use authorizations, permits, and leases associated with oil and gas development (78,700 acres).</p> <p>Exceptions could be granted (see Appendix A).</p>	<p>Occupied habitat for BLM sensitive plants would be open to oil and gas leasing with a CSU stipulation.</p> <p>A CSU stipulation would be applied to surface disturbing activities and other land use authorizations, permits, and leases for oil and gas activities issued on BLM-administered lands (7,200 acres).</p> <p>For plant species listed as BLM sensitive, special design, construction, and implementation measures, including relocation of operations by more than 660 feet may be required. In addition, relocation would be required beyond 330 feet from occupied habitat.</p> <p>Exceptions could be granted (see Appendix A).</p>	<p>Areas within 330 feet from the edge of occupied and suitable habitat for BLM sensitive plant species, including any new habitat mapped as a result of future surveys would be open to oil and gas leasing with an NSO stipulation.</p> <p>An NSO stipulation would be applied to surface-disturbing activities and other land use authorizations, permits, and leases associated with oil and gas development (7,300 acres).</p> <p>(Note: See Table 2-3 Record 27 for RVAs.)</p>

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Table 2-10. Comparison of Alternatives – Special Status Plant Species

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
17	No similar action.	Control of 80 percent of fugitive dust within 330 feet from edge of occupied, suitable, and/or potential special status plant species (federally listed species, proposed species and candidate species) habitat would be achieved using BLM approved dust suppression methods to be determined on a case by case basis.		Control of 50 percent of fugitive dust within 330 feet from edge of occupied, suitable, and/or potential special status plant species (federally listed species, proposed species and candidate species) habitat would be achieved using BLM approved dust suppression methods to be determined on a case by case basis.	Intensive control of fugitive dust within 330 feet from the edge of occupied and/or suitable special status plant habitat would be achieved using BLM approved dust suppression methods (preferably water) to be determined on a case by case basis. The goal of this measure would be to reduce and control the dust plumes created by traffic during construction, drilling and well completion, and maintenance stages of a project.
18	No similar action.	COAs identified as appropriate through environmental analysis to mitigate the impacts to federally listed, proposed, and candidate species and associated habitat would be applied to land use authorizations, permits, and leases that fall within the plant consideration area (e.g., 1,970 feet) of the affected plant species or occupied habitat. Possible mitigation strategies may include, but are not limited to: <ul style="list-style-type: none"> <li>▪ Adjusting the location of the disturbance outside of the plant consideration area;</li> <li>▪ The use of several dust abatement measures;</li> <li>▪ Using signs, fencing, and other deterrents to reduce possible human disturbance;</li> <li>▪ Requiring construction to occur outside of the blooming season (September through March), involving possibly delaying the project by more than 60 days;</li> </ul>		Same as Alternative A.	COAs identified as appropriate through environmental analysis to mitigate the impacts to pollinator habitat for special status plant species would be applied to land use authorizations, permits, and leases that fall within the plant consideration area (e.g., within 1,970 feet of occupied habitat) of the affected plant species. Possible mitigation strategies may include, but are not limited to:

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Table 2-10. Comparison of Alternatives – Special Status Plant Species

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
		<ul style="list-style-type: none"> <li>▪ Using a higher percentage of forbs in the reclamation seed mix to promote pollinator habitat;</li> <li>▪ In reclamation of the site, replace the soil and sub-soil layers to the pre-disturbance order of soil horizons;</li> <li>▪ Using a qualified, independent third party contractor to provide general oversight, and</li> <li>▪ Non-native or invasive species monitoring and control. These measures may also be applied to projects near suitable habitat that may hold special value or to provide protection to suitable habitat that may allow for species' expansion.</li> </ul>			<ul style="list-style-type: none"> <li>▪ Adjusting the location of the disturbance outside of the plant consideration area;</li> <li>▪ Minimizing the area of disturbance;</li> <li>▪ The use of dust abatement measures;</li> <li>▪ Requiring construction to occur outside of the blooming season (i.e., construction could occur September through March), involving possibly delaying the project by more than 60 days;</li> <li>▪ Using a higher percentage of forbs in the reclamation seed mix to promote pollinator habitat; and</li> <li>▪ Non-native or invasive species monitoring and control.</li> </ul>

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Table 2-11. Comparison of Alternatives – Wild Horse Management

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Management Goal</b>					
1	Manage the wild horse herd within the Piceance-East Douglas Herd Management Area (HMA) so that a thriving ecological balance is maintained for all plant and animal species on that range.				
<b>Management Objectives</b>					
2	No similar objective.	Manage the Piceance-East Douglas wild horse herd as an integral part of the public lands ecosystem at an appropriate management level (AML). Periodically reevaluate the existing AML to ensure herd size remains compatible with other resources.			Same as Alternative A.
3	Wild horses will be managed to provide a healthy, viable breeding population with a diverse age structure.	Wild horses would be managed to provide a healthy population with a diverse age structure.			
4	No similar objective.	All wild horses that have relocated outside the HMA will be expeditiously removed from the range.			Same as Alternative A.
5	No similar objective.	Recognize and proactively respond to potential conflicts, as they occur, between the wild horse herd and other resources.			
6	No similar objective.	Maintain quality of habitat for wild horses and burros in areas with oil and gas development.			Maintain quality of habitat for wild horses in areas with oil and gas development.
<b>Allowable Uses and Management Actions</b>					
7	No similar action.	The Piceance-East Douglas HMA would be open to oil and gas leasing with standard lease terms.			No similar action.

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**Table 2-11. Comparison of Alternatives – Wild Horse Management**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
8	Piceance-East Douglas HMA would be managed for a wild horse herd of 135 to 235 animals (as per the adjustment derived from the WRFO Wild Horse Program Analysis and Operational Plan [BLM 1999c]) on 190,100 acres within the 1 Piceance-East Douglas HMA so that a thriving ecological balance is maintained for all plant and animal species on that range.	Habitat conditions in the Piceance-East Douglas HMA would be managed to maintain the current HMA status and an AML that could be adjusted as range conditions warrant.		Same as Alternative A.	

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Table 2-11. Comparison of Alternatives – Wild Horse Management

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
9	<p>A lease notice would be added to leases that encompass portions of a wild horse herd management area. In order to protect wild horses within this area, intensive development activities may be delayed for a specified 60 day period within the spring foaling period between March 1 and June 15.</p> <p>The lessee may be required to perform special conservation measures within this area including:</p> <ul style="list-style-type: none"> <li>▪ Habitat improvement projects in adjacent areas if development displaces wild horses from critical habitat.</li> <li>▪ Disturbed watering areas would be replaced with an equal source of water, having equal utility.</li> <li>▪ Activity/improvements would provide for unrestricted movement of wild horses between summer and winter ranges.</li> </ul>				<p>A lease notice would be added to leases that encompass portions of a wild horse herd management area. In order to protect wild horses within this area, intensive development activities may be delayed for a specified 60 day period within the spring foaling period between March 1 and June 15.</p> <p>The lessee may be required to perform special conservation measures within the wild horse herd management area including:</p> <ul style="list-style-type: none"> <li>▪ Habitat improvement projects within the HMA in areas adjacent to development if such development displaces wild horses from crucial habitat.</li> <li>▪ Disturbed watering areas would be replaced with an equal source of water, having equal utility.</li> <li>▪ Activity/improvements would provide for unrestricted movement of wild horses between summer and winter ranges.</li> </ul>

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Table 2-12. Comparison of Alternatives – Cultural Resources

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Management Goal</b>					
1	No similar goal.	Identify, preserve, and protect significant cultural resources and ensure that they are available for appropriate uses by present and future generations.			
<b>Management Objectives</b>					
2	Protect and preserve examples of cultural and historic resources in accordance with existing laws and regulations.	Preserve and protect cultural and historic resources in accordance with existing laws and regulations.			
3	No similar objective.	Reduce imminent threats from natural or human-caused deterioration or potential conflict with oil and gas activities.			
4	No similar objective.	Develop cultural resource project plans for the Canyon Pintado National Historic District (NHD) and Dragon Trail/Douglas Arch area south of Rangely, Colorado.			
<b>Allowable Uses and Management Actions</b>					
5	Designate the Canyon Pintado National Historic District as an avoidance area for major new ROWs for power lines, pipelines, roads, etc. to protect cultural resources.	The Canyon Pintado NHD would be an avoidance area for new ROWs, power lines, pipelines, or roads to protect cultural resources.			
6	All ground disturbing activities outside of existing disturbance within the Canyon Pintado NHD will be monitored by an approved and qualified archaeologist under the following conditions:	<p>Any new surface disturbance within the Canyon Pintado NHD would be required to be monitored by an approved and qualified archaeologist for the following conditions:</p> <ul style="list-style-type: none"> <li>▪ Activity occurs in the vicinity of known resources;</li> <li>▪ Activity occurs in the alluvial bottoms along Douglas Creek and its tributaries; and</li> <li>▪ Activity occurs in deep alluvial soils.</li> </ul>			

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Table 2-12. Comparison of Alternatives – Cultural Resources

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
	<ul style="list-style-type: none"> <li>▪ Activity occurs in the vicinity of known resources;</li> <li>▪ Activity occurs in the alluvial bottoms along Douglas Creek and its tributaries; and</li> <li>▪ Activity occurs in deep alluvial soils.</li> </ul>				
7	<p>Increase protection of cultural resources in the Texas-Missouri-Evacuation Creek areas with a controlled surface use stipulation or conditions of approval to control placement of surface developments. A CSU stipulation will be applied to surface-disturbing activities associated with all land use authorizations, permits, and leases issued on BLM-administered lands (22,510 acres) in these areas.</p>		<p>Federal mineral estate occurring within the Texas-Missouri-Evacuation Creek areas would be open to oil and gas leasing with a CSU stipulation (see Appendix A). A CSU stipulation would be applied to surface-disturbing and disruptive activities associated with all land use authorizations, permits, and leases issued in these areas (19,300 acres). For existing land use authorizations, COAs that emulate the intent of these stipulations would be applied to the extent allowable.</p>		<p>Federal mineral estate occurring within the Texas-Missouri-Evacuation Creek areas would be open to oil and gas leasing with a CSU stipulation (see Appendix A). A CSU stipulation would be applied to surface-disturbing and disruptive activities associated with all land use authorizations, permits, and leases issued in these areas (19,300 acres).</p>

Chapter 2 – Alternatives

Table 2-12. Comparison of Alternatives – Cultural Resources

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
8	Protect cultural resource values in the Texas-Missouri-Evacuation Creek area by designating the area as an avoidance area for major new rights-of-way for pipelines, power lines, etc.	The Texas-Missouri-Evacuation Creek areas would be an avoidance area for major new ROWs, power lines, pipelines, roads, (i.e., linear features) to protect cultural resources.			Same as Alternative A.
9	Approximately three acres in and around the Duck Creek Wickiup Village, listed on the National Register of Historic Places, shall be protected with a no surface occupancy stipulation. No exceptions, modifications, or waivers will be granted.	Approximately 3 acres within and adjacent to the Duck Creek Wickiup Village, listed on the National Register of Historic Places, would be protected with an NSO stipulation. Note: Waiver language applies to Alternatives B through E; see Appendix A.			
10	Permits will be required for all third-party consultants conducting work in the field. Applicants for permits must meet the eligibility requirements at 43 CFR 7.6 and BLM Manual 8151.	Permits will be required for all third-party consultants conducting fieldwork on BLM-administered lands. Applicants for permits must meet the eligibility requirements at 43 CFR 7.6 and BLM Manual 8151.			

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**Table 2-12. Comparison of Alternatives – Cultural Resources**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
11	No similar action.	Mineral material sales (e.g., sand and gravel) would not be allowed within the Canyon Pintado NHD.			Mineral material sales (e.g., sand and gravel) related to oil and gas activities would not be allowed within the Canyon Pintado NHD.
12	No similar action.	The Thornburgh/Battle of Milk Creek viewshed would be an avoidance area for major new ROWs for power lines, pipelines, or roads to protect cultural resources.			The Thornburgh/Battle of Milk Creek viewshed would be an avoidance area for new ROWs (e.g., power lines, pipelines, roads, etc.) to protect cultural resources.

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Table 2-12. Comparison of Alternatives – Cultural Resources

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
13	No similar action.	The Thornburgh/Battle of Milk Creek viewshed would be open to oil and gas leasing with a CSU stipulation (5,800 acres). A CSU stipulation would be applied to surface-disturbing and disruptive activities associated with all land use authorizations, permits, and leases issued in these areas. The Thornburgh/Battle of Milk Creek, National Register listed site, would be open to oil and gas leasing with an NSO stipulation (110 acres). An NSO stipulation would be applied to surface-disturbing and disruptive activities associated with all land use authorizations, permits and leases issued within the site. For existing land use authorizations, COAs that reflect the intent of these stipulations would be applied to the extent allowable.	The Thornburgh/Battle of Milk Creek viewshed would be open to oil and gas leasing with a CSU stipulation (5,800 acres). A CSU stipulation would be applied to surface-disturbing and disruptive activities associated with all land use authorizations, permits, and leases issued in these areas. For existing land use authorizations, a COA that reflects the intent of this stipulation would be applied to the extent allowable.	Same as Alternative C.	The Thornburgh/Battle of Milk Creek viewshed would be open to oil and gas leasing with a CSU stipulation (5,800 acres). A CSU stipulation would be applied to surface-disturbing and disruptive activities associated with all land use authorizations, permits, and leases issued in these areas. The Thornburgh/Battle of Milk Creek, National Register listed site, would be open to oil and gas leasing with an NSO stipulation (110 acres). An NSO stipulation would be applied to surface-disturbing and disruptive activities associated with all land use authorizations, permits and leases issued within the site.
14	No similar action.	Approximately 360 acres within and adjacent to the Mellen Hill sites (5RB227, 5RB279, 5RB489, etc.) would be protected with an NSO stipulation.			

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Table 2-12. Comparison of Alternatives – Cultural Resources

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
15	No similar action.	<p>A cultural resource project plan (CRPP) for the Canyon Pintado NHD will be developed within five years of the ROD for the RMPA/EIS. When approved and implemented, the CRPP will apply long-term protection and use of resources and be a detailed design plan for implementing decisions made through resource management plans. The Canyon Pintado NHD CRPP will be the basis for review and alteration of management designations in a future RMP revision or amendment (BLM Manual 8130.42). At a minimum, the CRPP will analyze:</p> <ul style="list-style-type: none"> <li>▪ The compatibility of an NSO designation for Canyon Pintado NHD with the feasible extraction of minerals utilizing current and foreseeable technologies;</li> <li>▪ Measured impacts of livestock grazing on National Register of Historic Places (NRHP)-eligible sites and sites contributing to the Canyon Pintado NHD;</li> <li>▪ Known effects of current authorized and unauthorized recreation on NRHP eligible and contributing sites; and</li> <li>▪ Existing impacts on and importance of visual resources within the Canyon Pintado NHD.</li> </ul> <p>Based on these analyses, the CRPP will establish a concise list of qualities and resources for management of the Canyon Pintado NHD to:</p> <ul style="list-style-type: none"> <li>▪ Be consistent with the Canyon Pintado NHD’s listing on the NRHP;</li> <li>▪ Identify a management boundary for the Canyon Pintado NHD based on aliquot portions that wholly contains the Canyon Pintado NHD’s National Register boundary;</li> <li>▪ Identify the management goals and permissible uses of federal surface estate in the Canyon Pintado NHD, officially assign some individual sites in the Canyon Pintado NHD to one or more of the use categories defined in BLM Manual 8130.21; and</li> <li>▪ Establish a yearly minimum site monitoring plan for the Canyon Pintado NHD.</li> </ul> <p>A table of management actions implementing these goals and practices will be appended to the CRPP. The effectiveness of CRPP implementation will be reviewed and documented periodically. After the CRPP is completed, if the existing plan does not adequately provide long-term protection and use of resources, the plan will be amended.</p>			<p>A cultural resource project plan (CRPP) for the Canyon Pintado NHD will be developed within five years of the ROD for the Oil and Gas Development RMPA. The Canyon Pintado NHD CRPP will be the basis for analysis, and alteration of management decisions in a future RMP revision or amendment (BLM Manual 8130.42). At a minimum, the CRPP will document:</p> <ul style="list-style-type: none"> <li>▪ Measured impacts of oil and gas exploration and development on National Register of Historic Places (NRHP)-eligible sites and sites contributing to the Canyon Pintado NHD;</li> <li>▪ Measured impacts of livestock grazing on NRHP eligible and contributing sites;</li> <li>▪ Measured impacts of current authorized and unauthorized recreation on NRHP eligible and contributing sites; and</li> </ul>

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Table 2-12. Comparison of Alternatives – Cultural Resources

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
					<ul style="list-style-type: none"> <li>▪ Measured impacts of other authorized and unauthorized land uses on NRHP eligible and contributing sites.</li> </ul> <p>Based on this, the CRPP will establish a concise list of qualities and resources for management of the Canyon Pintado NHD to:</p> <ul style="list-style-type: none"> <li>▪ Be consistent with the Canyon Pintado NHD’s listing on the NRHP;</li> <li>▪ Identify a management boundary for the Canyon Pintado NHD based on aliquot portions that wholly contain the Canyon Pintado NHD’s National Register boundary;</li> <li>▪ Identify management goals and recommended uses or restrictions for federal surface estate in the Canyon Pintado NHD; and</li> <li>▪ Establish a site monitoring plan for sites in the Canyon Pintado NHD.</li> </ul>

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Table 2-12. Comparison of Alternatives – Cultural Resources

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
					After the CRPP is completed, if the existing plan does not adequately provide long-term protection of cultural resources, the plan will be amended
16	No similar action.	<p>A CRPP for the Dragon Trail/Douglas Arch area south of Rangely, Colorado will be developed within six years of the ROD for the RMPA/EIS. When approved and implemented, the CRPP will apply to the long-term protection and use of resources and be a detailed design plan for implementing decisions made through resource management plans (BLM Manual 8130.42). The CRPP will be the basis for review and alteration of management designations in a future RMP revision or amendment. At a minimum the CRPP will analyze:</p> <ul style="list-style-type: none"> <li>▪ The feasibility of additional special management areas (e.g., ACECs, historic districts);</li> <li>▪ Measured impacts of livestock grazing on NRHP-eligible sites;</li> <li>▪ Known effects of current authorized and unauthorized recreational use on eligible sites; and</li> <li>▪ Existing impacts on and importance of visual resources within the Dragon Trail/Douglas Arch area.</li> </ul> <p>Based on these analyses, the CRPP will establish a concise list of qualities and resources for management of Dragon Trail/Douglas Arch to:</p> <ul style="list-style-type: none"> <li>▪ Establish management goals and use allocations of individual sites in the Dragon Trail/Douglas Arch area to one or more of the use categories defined in BLM Manual 8130.2;</li> <li>▪ Identify management boundaries for the NRHP-eligible sites;</li> <li>▪ Identify the management goals and permissible uses of federal surface estate in newly defined management areas; and</li> <li>▪ Establish a yearly minimum site monitoring plan for the area.</li> </ul> <p>A table of management actions implementing these goals and practices will be appended to the CRPP. The effectiveness of CRPP implementation will be reviewed and documented periodically.</p>			<p>A CRPP for the Dragon Trail/Douglas Arch area south of Rangely, Colorado will be developed within six years of the ROD for the Oil and Gas Development RMPA. The CRPP will be the basis for analysis, and alteration of management decisions in a potential future RMP revision or amendment (BLM Manual 8130.42). At a minimum, the CRPP will document:</p> <ul style="list-style-type: none"> <li>▪ Measured impacts of oil and gas exploration and development on National Register of Historic Places (NRHP)-eligible sites;</li> <li>▪ Measured impacts of livestock grazing on NRHP eligible sites;</li> <li>▪ Measured impacts of current authorized and unauthorized recreation</li> </ul>

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Table 2-12. Comparison of Alternatives – Cultural Resources

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
					<p>on NRHP eligible sites; and</p> <ul style="list-style-type: none"> <li>▪ Measured impacts of other authorized and unauthorized land uses.</li> </ul> <p>Based on this, the CRPP will establish a concise list of qualities and resources for management of Dragon Trail/Douglas Arch to:</p> <ul style="list-style-type: none"> <li>▪ Consider the feasibility of additional special management areas (e.g., ACECs, historic districts);</li> <li>▪ Identify management goals and recommended uses or restrictions for federal surface estate in potential boundary areas; and</li> <li>▪ Establish a site monitoring plan for sites in the area.</li> </ul> <p>After the CRPP is completed, if the existing plan does not adequately provide long-term protection of cultural resources, the plan will be amended.</p>

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Table 2-12. Comparison of Alternatives – Cultural Resources

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
17	<p>Within the Canyon Pintado NHD, proposed actions that produce vibrations will be located a distance far enough away from rock art or structural features to allow full attenuation of the vibration before it gets to the resource of concern. No exceptions will be granted (16,000 acres).</p>	<p>Development would be restricted with a CSU stipulation within 1,000 feet of rock art or standing architecture (31,800 acres) such as cabins, rock structures, or standing wickiups. Vibrations from construction would be limited unless it could be shown that environmental attenuation would prevent the vibrations from reaching the rock art or standing architecture.</p> <p>Applicants would be required to monitor site integrity a minimum of once per year, or more frequently at the discretion of the BLM. If deterioration of site integrity was documented, the holder would bear the cost and responsibility for stabilization or other data recovery.</p> <p>If avoidance standards could not be met, full mitigation, including level II archival documentation (i.e., photographs or other measures) as determined</p>	<p>Development would be restricted with a CSU stipulation within 750 feet of rock art or standing architecture (20,400 acres) such as cabins, rock structures, or standing wickiups. Vibrations from construction would be limited unless it could be shown that environmental attenuation would prevent the vibrations from reaching the rock art or standing architecture.</p> <p>Applicants would be required to monitor site integrity a minimum of once per year, or more frequently at the discretion of the BLM. If deterioration of site integrity was documented, the holder would bear the cost and responsibility for stabilization or other data recovery.</p> <p>If avoidance standards could not be met, full mitigation, including level II archival documentation (i.e., photographs or other measures) as determined</p>	<p>Development would be restricted with a CSU stipulation within 500 feet of rock art or standing architecture (11,000 acres) such as cabins, rock structures, or standing wickiups. Vibrations from construction would be limited unless it could be shown that environmental attenuation would prevent the vibrations from reaching the rock art or standing architecture.</p> <p>Applicants would be required to monitor site integrity a minimum of once per year, or more frequently at the discretion of the BLM. If deterioration of site integrity was documented, the holder would bear the cost and responsibility for stabilization or other data recovery.</p> <p>If avoidance standards could not be met, full mitigation, including level II archival documentation (i.e., photographs or other measures) as determined necessary through</p>	<p>Oil and gas exploration and development activities that produce vibrations would be restricted with a CSU stipulation within 660 feet of rock art or standing architecture (13,900 acres) such as cabins, rock structures, or wickiups.</p>

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Table 2-12. Comparison of Alternatives – Cultural Resources

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
		necessary through consultation with the Colorado State Historic Preservation Office (SHPO), could be required before development would be allowed to proceed.	necessary through consultation with the Colorado SHPO, could be required before development would be allowed to proceed.	consultation with the Colorado SHPO, could be required before development would be allowed to proceed.	
18	The following LN will be added to all new leases: This lease may be found to contain historic properties and/or resources protected under the National Historic Preservation Act (NHPA), American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, Executive Order 13007, or other statutes and executive orders. The BLM will not approve any ground disturbing activities that may affect any such properties or resources until it completes its obligations (e.g., State Historic Preservation Officer (SHPO) and tribal consultation) under applicable requirements of the NHPA and other	A LN would be added to all new leases stating that a Class III cultural resource inventory may be required prior to surface disturbing activities. Mitigation measures may be required to reduce the impacts of surface disturbances on the affected cultural resources. These mitigating measures may include, but are not limited to, relocation of roads, well pads and other facilities, evaluative testing, data recovery, and/or fencing. All cultural resource work must be performed by a BLM-permitted archaeologist. The BLM may charge federal licensees and permittees project costs of preservation activities conducted under the National Historic Preservation Act as a condition to the issuance of such license or permit. [NHPA, as amended Section 110 (E) (g)].			Same as Alternative A.

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Table 2-12. Comparison of Alternatives – Cultural Resources

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
	authorities. The BLM may require modification to exploration or development proposals to protect such properties, or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized, or mitigated.				

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Table 2-13. Comparison of Alternatives – Paleontological Resources

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Management Goal</b>					
1	Identify and protect scientifically noteworthy paleontological resource values from indiscriminate loss.	Identify and protect the integrity of the scientific value of paleontological resources from indiscriminate loss.			
<b>Management Objective</b>					
2	No similar objective.	Reduce imminent threats from natural or human-caused deterioration or potential conflict with oil and gas activities.			
<b>Allowable Uses and Management Actions</b>					
3	No similar action.	Monitoring by a qualified paleontologist would be required at all times during surface-disturbing activities authorized within potential fossil yield classification (PFYC) 5 and PFYC 4 areas. In PFYC 3 areas, the BLM will require spot-checking of the exposed unit, including the spoil or storage piles, at key times. These times would depend on the activity, but would typically include when bedrock is initially exposed, occasionally during active excavation, and when the maximum exposure is reached and before backfilling has begun. Monitoring and spot-checking by a qualified paleontologist or a BLM-approved representative would be required.			
4	Permit applicants must meet minimum qualifications as specified by the BLM.	Permits would be required for all third-party consultants conducting work in the field, in accordance with applicable laws and regulations.			

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Table 2-13. Comparison of Alternatives – Paleontological Resources

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
5	<p>A paleontological survey will be required on surface-disturbing activities occurring within PFYC 4 and PFYC 5 fossil bearing formations known to contain noteworthy fossils. Scientifically noteworthy fossil bearing formations shall include but not necessarily be limited to: the Chinle, Glen Canyon, Morrison, Cedar Mountain, Mowry Shale, Parachute Creek Member of the Green River Formation, Wasatch and Browns Park Formation. Also, in the Rangely area, the Mesaverde Group and Uinta Formation are noteworthy. Formations or members of formations may be added or removed from this list as additional data become available.</p>	<p>An on-the-ground survey would be required prior to approval of surface-disturbing activities to avoid resource bearing strata for PFYC 4 and PFYC 5 formations. These formations include:</p> <ul style="list-style-type: none"> <li>▪ PFYC 5: Morrison and Wasatch Formations; and</li> <li>▪ PFYC 4: Chinle, Glen Canyon, Cedar Mountain, Mowry Shale, Parachute Creek and Douglas Creek Members of the Green River Formation, Browns Park Formation, Williams Fork Formation, Iles Formation, Mesaverde Group, and Uinta Formation.</li> </ul> <p>Formations or members of formations could be added or removed from this list as additional data become available. Exceptions to the survey requirement in these areas could be granted in areas having vertical to near-vertical (i.e., unsafe) slopes, areas of soil development, and areas covered with much vegetation, as these areas would be unlikely to produce recoverable fossils. For larger projects, an on-the-ground survey sample may be required of some likely fossiliferous PFYC 3 areas.</p>			<p>An on-the-ground survey would be required prior to approval of surface-disturbing activities to avoid resource bearing strata for PFYC 4 and PFYC 5 formations. Currently, there are no identified PFYC 4 formations within the WRFO. The following formations are listed as PFYC 5:</p> <ul style="list-style-type: none"> <li>▪ Morrison, Wasatch, Chinle, Glen Canyon, Mowry Shale, Parachute Creek and Douglas Creek Members of the Green River Formation, Browns Park Formation, Williams Fork Formation, Iles Formation, Mesaverde Group, and Uinta Formation.</li> </ul> <p>Formations or members of formations could be added or removed from this list as additional data become available. Exceptions to the survey requirement in these areas could be granted in areas having vertical to near-vertical (i.e., unsafe) slopes, areas of soil development,</p>

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Table 2-13. Comparison of Alternatives – Paleontological Resources

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
					and areas covered with much vegetation, as these areas would be unlikely to produce recoverable fossils. For larger projects, an on-the-ground survey sample may be required of some likely fossiliferous PFYC 3 areas (e.g., Fort Union and Mancos Shale formations).

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Table 2-14. Comparison of Alternatives – Visual Resources

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Management Goal</b>					
1	No similar goal.	Protect and maintain visual and aesthetic qualities in sensitive areas while allowing for changes to visual quality in less sensitive areas.			
<b>Management Objective</b>					
2	Manage public lands in a manner that will maintain the quality of scenic and visual resources.	Manage changes in the landscape to maintain and protect visual values as identified by visual resource management (VRM) class objectives.			

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Table 2-14. Comparison of Alternatives – Visual Resources

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Allowable Uses and Management Action</b>					
3	<p>Stipulations or other management actions will be developed through environmental analysis and placed on approvals to mitigate the visual resource. The area of primary concern and focus will be the areas having sensitive landscapes such as:</p> <ul style="list-style-type: none"> <li>▪ All VRM Class I and II areas;</li> <li>▪ Canyon Pintado NHD; and</li> <li>▪ corridors along Highways 13, 40, 64, and 139.</li> </ul>	<p>Stipulations or COAs identified as appropriate through environmental analysis for the protection of visual qualities would be applied to land use authorizations, permits, and leases, to mitigate impacts on visual resources in all VRM classes. Areas of primary concern (i.e., sensitive landscapes) would include:</p> <ul style="list-style-type: none"> <li>▪ VRM Class I and II areas;</li> <li>▪ Canyon Pintado NHD;</li> <li>▪ National and State Scenic Byways;</li> <li>▪ Areas surrounding communities; and</li> <li>▪ Thornburgh/Battle of Milk Creek viewshed.</li> </ul>			<p>Stipulations or COAs identified as appropriate through environmental analysis for the protection of visual qualities would be applied to land use authorizations, permits, and leases, to mitigate impacts on visual resources in all VRM classes. Areas of primary concern (i.e., sensitive landscapes) would include but not be limited to:</p> <ul style="list-style-type: none"> <li>▪ VRM Class I and II areas;</li> <li>▪ Canyon Pintado NHD;</li> <li>▪ Corridors along Highways 13, 40, 64, and 139;</li> <li>▪ National and State Scenic Byways; and</li> <li>▪ Thornburgh/Battle of Milk Creek viewshed.</li> </ul>

**Chapter 2 – Alternatives**

**Table 2-15. Comparison of Alternatives – Forestry and Woodland Products**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Management Goals</b>					
1	Manage timberlands to maintain productivity, extent, forest structure, and enhancement of other resources.	Manage oil and gas activities within forest stand communities for health, composition, and diversity (considering density, basal area, canopy cover, age class, stand health, and understory) through forest management practices and to provide late successional vegetation while providing for multiple uses.			
2	No similar goal.	Manage oil and gas activities in woodland communities (such as pinyon-juniper) for a healthy mix of successional stages within the range of natural variability.			
3	No similar goal	Manage for retention of old growth forest and woodland stands in areas with oil and gas development.			
<b>Management Objectives</b>					
4	No similar objective.	Manage to retain areas with mature pinyon-juniper woodland community characteristics throughout the WRFO, consistent with HFRA provisions for old growth forest and woodland management.	Manage to retain mature pinyon-juniper woodland communities with high potential of old growth character in areas with oil and gas development.	Manage oil and gas development in old growth forest and woodland stands consistent with the Healthy Forest Restoration Act (HFRA) and BLM policy.	Manage to retain mature forest and woodland communities with high potential of old growth character in areas with oil and gas development.
5	No similar objective.	Prohibit ground disturbance in existing old growth forest and woodland stands.	Minimize ground disturbance in existing old growth forest and woodland stands.	Same as Alternative A.	Same as Alternative C.

**Chapter 2 – Alternatives**

**Table 2-15. Comparison of Alternatives – Forestry and Woodland Products**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Allowable Uses and Management Actions</b>					
6	No similar action.	New pipelines in mature pinyon-juniper woodland communities and existing old growth forest and woodland stands would be required to be located within previously authorized areas of disturbance.		Same as Alternative A.	New pipelines in mature pinyon-juniper woodland communities and existing old growth forest and woodland stands would be required to be located within previously authorized areas of disturbance to the extent practicable.
7	Older forests stands will be managed to preserve existing old growth.	Old growth forest and woodland stands would be avoidance areas for land use authorizations.			

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Table 2-15. Comparison of Alternatives – Forestry and Woodland Products

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
8	No similar action.	The HFRA provisions for old growth forest and woodland management would be implemented through retention of larger diameter trees and those species with high potential to attain old growth characteristics (e.g., pinyon-juniper, Douglas-fir, aspen, ponderosa pine). Mechanical treatments would be utilized to thin new growth, promote old growth, and maintain desired understory within these stands. Selected snags would be left for wildlife nesting, perches, and sources of food and cover.	In areas with oil and gas development, a full range of silviculture practices would be utilized to thin new growth and maintain desired age classes for pinyon-juniper woodland communities with high potential of old growth character.	Same as Alternative A.	In areas with oil and gas development, a full range of silviculture practices (treatments) would be utilized to thin new growth, promote old growth, maintain desired understory and maintain desired age classes (e.g., old growth) for pinyon-juniper, Douglas-fir, aspen, and ponderosa pine woodland communities.
9	Based on a 300-year rotation for clearcutting, the annual allowable commercial harvest will be 45 acres. The allowable harvest will be monitored as a decadal limit which will allow for yearly fluctuations.	Clearing of woodlands attributed to oil and gas activities would be limited to an annual disturbance of 260 acres or 2,600 acres per decade and primarily conducted in early or mid-seral woodland areas.	Clearing of woodlands attributed to oil and gas activities would be limited to an annual disturbance of 420 acres or 4,200 acres per decade and primarily conducted in early or mid-seral woodland areas.	Clearing of commercial woodlands attributable to oil and gas activities would be limited to 7,800 acres per decade.	Same as Alternative B.

Chapter 2 – Alternatives

Table 2-15. Comparison of Alternatives – Forestry and Woodland Products

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
10	No similar action.	Areas with Douglas-fir and aspen on slopes greater than 25 percent would be open to oil and gas leasing with an NSO stipulation (63,200 acres). No exceptions would be granted.	Areas with Douglas-fir and aspen on slopes greater than 25 percent would be open to oil and gas leasing with an NSO stipulation (61,900 acres). Exceptions could be granted.	Same as Alternative A.	Areas with Douglas-fir and aspen on slopes greater than 25 percent would be open to oil and gas leasing with an NSO stipulation (61,900 acres).
11	No similar action.		The ROW width would be required to be reduced to within 25 feet of total disturbance in old growth forest and woodland stands. Exceptions could be granted.	Same as Alternatives A and B.	The ROW disturbance widths in old growth forest and woodland stands, identified through site specific analysis, would be required to be 25 feet or less.
12	No similar action.	Lands managed as old growth and areas with high potential for old growth would be open to oil and gas leasing with an NSO stipulation. Exceptions could be granted.	Manage old growth and areas with high potential for old growth characteristics with a CSU stipulation. The CSU stipulation would help retain stands with old growth characteristics or high potential to develop old growth characteristics.	Same as Alternative A.	Same as Alternative C.

Chapter 2 – Alternatives

Table 2-16. Comparison of Alternatives – Livestock Grazing

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Management Goal</b>					
1	No similar goal.	Manage oil and gas activities in a manner that maintains and/or enhances livestock grazing and rangeland health.	Manage oil and gas activities in a manner that reduces overall effects on the livestock grazing program and maintains rangeland health.	Manage oil and gas activities in a manner that minimizes adverse effects on livestock grazing operations and maintains rangeland health.	Same as Alternative C.
<b>Management Objectives</b>					
2	No similar objective.	Develop and implement mitigation actions to minimize cumulative impacts on livestock grazing (including cumulative livestock forage loss and reduction in operation capabilities and production performance) where opportunities exist.			
3	Maintain or enhance a healthy rangeland vegetative composition and species diversity, capable of supplying forage at a sustained yield to meet the demand for livestock grazing.				
4	No similar objective.	Identify opportunities and facilitate or implement projects to improve rangeland vegetation to sustain and enhance livestock grazing and meet Colorado Public Land Health Standards in cooperation, consultation, and coordination with grazing permittees and the interested public.			
5	No similar objective.	Encourage grazing permittees and affected interests to participate with the BLM to monitor and evaluate rangeland health to determine appropriate management actions in light of oil and gas development.			
<b>Allowable Uses and Management Actions</b>					
6	No similar action.	Administrative actions could be combined (e.g., adjustments in season of use; livestock exclusion; stocking level adjustments) and rangeland projects (e.g., fences, ponds, vegetation treatments) implemented to direct livestock use to meet resource objectives and Colorado Public Land Health Standards, in cooperation and consultation with grazing permittees and other affected interests.			

Chapter 2 – Alternatives

Table 2-16. Comparison of Alternatives – Livestock Grazing

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
7	Additional adjustments in livestock grazing levels, as a result of increases or decreases in forage, will follow procedures outlined in 43 CFR 4110.	Adjustments in livestock grazing use would be implemented based on monitoring results and through consultation, coordination, and cooperation with grazing permittees, other affected interests, and state agencies.			
8	No similar action.		Livestock grazing in affected allotments could be temporarily suspended or modified (for portions of or entire allotments) throughout the period of intensive oil and gas development if oil and gas activity increases to a level where the two activities are incompatible.		
9	No similar action.	When oil and gas activities preclude effective implementation of a grazing plan, compensatory mitigation by oil and gas operators commensurate with the impact to the livestock operation could be recommended.			
10	No similar action.	Actively pursue opportunities to facilitate voluntary collaboration between operators and grazing permittees to provide flexibility in management of livestock grazing on allotments temporarily impacted by oil and gas development activities and to enhance reclamation success.		Same as Alternative A.	The BLM will actively pursue opportunities and facilitate voluntary collaboration between operators and grazing permittees to identify and implement projects and actions to increase flexibility in livestock grazing management in areas temporarily impacted by oil and gas development and to enhance reclamation success.

**Chapter 2 – Alternatives**

**Table 2-16. Comparison of Alternatives – Livestock Grazing**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
11	No similar action.	Livestock would be excluded from oil and gas well pads and related surface disturbance, including cut and fill slopes, until interim and final reclamation vegetation is successfully established (a minimum of three growing seasons). Operators would be responsible for construction, maintenance, and removal of necessary fencing.		Same as Alternative A.	Where appropriate, as determined by BLM livestock would be excluded from oil and gas well pads and related surface disturbance, including cut and fill slopes, until interim and final reclamation vegetation is successfully established. Operators would be responsible for construction, maintenance, and removal of fencing unless otherwise specified (see Appendix D).

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Table 2-16. Comparison of Alternatives – Livestock Grazing

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
12	No similar action.	Where deemed necessary by the BLM, at any time during the life of the project if conditions warrant, livestock would be excluded from linear ROWs and related surface disturbance until final reclamation vegetation is successfully established (a minimum of three growing seasons). Operators would be responsible for construction, maintenance, and removal of necessary fencing. Fencing would be installed in a manner that does not impair livestock or wildlife travel through the area (pass-through areas provided).		Same as Alternative A.	Where voluntary collaboration between operators, livestock grazing permittees, and resource managers has failed, as determined by the BLM at any time during the life of the project where conditions warrant, livestock would be excluded from linear ROWs and related surface disturbance until final reclamation vegetation is successfully established. Fencing would be installed in a manner that does not impair livestock or wildlife travel through the area (pass-through areas provided). Operators would be responsible for construction, maintenance, and removal of fencing unless otherwise specified (see Appendix D).

**Chapter 2 – Alternatives**

**Table 2-16. Comparison of Alternatives – Livestock Grazing**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
13	No similar action.	To allow for continued implementation of existing grazing permits/leases, adjustments to oil and gas activities would be considered in areas to prevent loss of forage, safety hazards, improper livestock distribution, or other circumstances.	Allotment management and/or permitted Animal Unit Months (AUMs) would be adjusted where oil and gas activity conflicts with grazing operations, Colorado Public Land Health Standards, and rangeland management objectives. Conflicts could include loss of forage, unsuccessful rehabilitation of disturbed areas, invasive species, safety hazards, improper livestock distribution, or other circumstances.		

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**Chapter 2 – Alternatives**

**Table 2-17. Comparison of Alternatives – Minerals**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Management Goals</b>					
1	No similar goal.	Reduce potential conflicts of oil and gas activities with other resource uses while promoting efficient recovery of oil and gas resources.			
2	No similar goal.	Promote environmental stewardship among oil and gas operators.			
<b>Management Objectives</b>					
3	Make federal oil and gas resources available for leasing and development in a manner that provides reasonable protection for other resource values.	Manage the intensity, extent, and timing of drilling and completion activities to minimize impacts on other resources.			Same as Alternative A.
4	No similar objective.	Manage oil and gas activities to prevent degradation of subsurface resources (including oil and gas resources).			Manage oil and gas activities to prevent degradation of resources (including oil and gas resources).
5	No similar objective.	Manage oil and gas activities to complement or contribute to improving trends in achieving Colorado Public Land Health Standards.			
6	No similar objective.	Establish partnerships with cooperating entities to develop and adapt BMPs in response to site-specific conditions and other resource objectives.			
<b>Allowable Uses and Management Actions</b>					
7	1,696,000 acres of BLM oil and gas mineral estate are open to oil and gas leasing and development; 83,300 acres of BLM federal oil and gas mineral estate would be closed to leasing. Areas closed to leasing include WSAs and the National Park Service’s Harpers Corner Road withdrawal.				
8	No similar action.	Long-term facilities would be situated on the access route side of the well pad, unless otherwise approved by the BLM.			

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Table 2-17. Comparison of Alternatives – Minerals

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
9	No similar action.	For APDs received after May 7, 2007, the BLM would require current leaseholders to follow the intent of the revised Onshore Order No. 1 regarding reclamation requirements by using the WRFO Surface Reclamation Plan included in Appendix D.			For APDs and ancillary facilities authorized after the signing of the ROD for the Oil & Gas Development RMPA, the BLM would require current leaseholders to follow the reclamation requirements in the WRFO Surface Reclamation Plan (See Appendix D). For APDs and ancillary facilities authorized prior to the signing of the ROD, the WRFO Reclamation Plan would be used as guidance for authorizing Reclamation Plans submitted as per Onshore Order No. 1.
10	No similar action.	Use of evaporation ponds and/or misters for the disposal of produced water from federal leases would not be allowed.	Use of evaporation ponds and/or misters for the disposal of produced water would not be allowed on public lands.	Use of evaporation ponds and/or misters for the disposal of produced water would be evaluated on a case-by-case basis.	Use of evaporation facilities for the disposal of produced water would be evaluated on a case-by-case basis. (Note: Same as Table 2-2 Record 22.)

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Table 2-17. Comparison of Alternatives – Minerals

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
11	No similar action.	Final reclamation of abandoned wells and access routes to current standards would be required (see Appendix D).			The BLM would require final reclamation of abandoned wells and access routes including long term (until termination of land use authorization) maintenance (e.g., weed control, vegetation establishment) of ROWs as defined in the WRFO Surface Reclamation Plan (see Appendix D). (Note: Same as Table 2-3 Record 14.)
12	No similar action.	Concentrated Development Plans (CDP) would be required for oil and gas activities in the WRFO. These plans would direct time-referenced, managed activities intended to concentrate development, promote effective reclamation, and to reduce the cumulative adverse resource effects attributable to oil and gas activities.			Encourage industry to submit development plans that would direct time-referenced, managed activities intended to concentrate development, promote effective reclamation, and to reduce the cumulative adverse resource effects attributable to oil and gas activities.
13	455,500 acres of BLM federal oil and gas mineral estate would be open to leasing and subject to standard lease terms.	0 acres of federal mineral estate would be open to leasing with standard lease terms.		444,800 acres of BLM federal oil and gas mineral estate would be open to leasing and subject to standard lease terms.	Same as Alternatives B and C.

Chapter 2 – Alternatives

Table 2-17. Comparison of Alternatives – Minerals

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
14	No similar action.	For APDs received prior to May 7, 2007 (date of revised Onshore Order No. 1), the BLM would engage current leaseholders in a cooperative program to apply, where appropriate, the most current reclamation standards and practices to existing well pads, roads, and pipelines in annual increments (e.g., 5 percent of identified disturbed areas due to oil and gas activities per year) to allow for completed interim or final reclamation of active and inactive ROW corridors and producing, plugged, and abandoned wells and access routes. This action would be applicable resource area-wide but most relevant to the Douglas/Evacuation Creek, Coal Oil Basin, Indian Valley, Crooked Wash, and White River Dome areas.		Same as Alternative A.	In areas under an existing lease, a program would be developed in cooperation with current leaseholders, to apply (where appropriate) the most current reclamation standards and practices to existing well pads, roads, and pipelines. These standards and practices would be applied in annual increments that would allow for completed interim or final reclamation of active and inactive ROW corridors and producing, plugged, and abandoned wells and access routes within 20 years. This action would be most relevant to the Douglas/Evacuation Creek, Coal Oil Basin, Indian Valley, Crooked Wash, and White River Dome areas. (Note: Same as Table 2-4 Record 9.)

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**Table 2-17. Comparison of Alternatives – Minerals**

<b>Record Number</b>	<b>Alternative A</b>	<b>Alternative B</b>	<b>Alternative C</b>	<b>Alternative D</b>	<b>Alternative E (Proposed)</b>
15	No similar action.	For existing leases, Section 17 or Section 39 Mineral Leasing Act (MLA) lease suspensions, depending on the justification and circumstances, would be directed by the Authorized Officer or consented to by the lessee of active oil and gas leases in the interest of the conservation of natural resources or in cases where the lessee is prevented from operating by matters beyond the reasonable control of the lessee.		Same as Alternative A.	Same as Alternatives A and D. (Refer to Section 1.4.6.)
16	No similar action.	Section 17 or Section 39 Mineral Leasing Act (MLA) lease suspensions could be applied to Development Exclusion Areas (DEA) if these DEAs are cooperatively identified by BLM, CPW, and the operator.		Same as Alternative A.	Same as Alternatives A and D. (Refer to Section 1.4.6.)
17	No similar action.	New and existing oil and gas unit agreements would be developed or amended, with the consent of the unit working interest owners, to best conform to the objectives of the CDP. Multi-unit phase development planning involving one or more operators working cooperatively with the BLM, and possibly utilizing other amended agreements for units and new unit agreements, may be required to achieve an acceptable level of conformance.		Same as Alternative A.	

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Table 2-17. Comparison of Alternatives – Minerals

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
18	<p>1,696,000 acres of BLM federal oil and gas mineral estate would be open to leasing of which 1,240,500 acres would be subject to lease stipulations (see Appendix A), including NSO<sup>(1)</sup> (157,100 acres), CSU stipulations (583,900 acres), and timing limitations (1,006,500 acres).</p>	<p>1,696,000 acres of BLM federal oil and gas mineral estate would be open to oil and gas leasing and subject to lease stipulations (see Appendix A), including NSO<sup>(1)</sup> (757,200 acres), CSU stipulations (296,300 acres), and timing limitations (1,696,000 acres). Existing lease stipulations attached to existing oil and gas leases would continue to apply to those leases. New or additional lease stipulations would apply only to lands leased pursuant to this RMPA/EIS. The BLM has the discretion to modify surface operations to change or add specific mitigation measures when supported by scientific analysis. All mitigation/conservation measures not already required as stipulations would be analyzed in a site-specific NEPA document, and be incorporated, as appropriate, into conditions of approval of the permit, plan of development, and/or other use authorizations.</p>	<p>1,696,000 acres of BLM federal oil and gas mineral estate would be open to oil and gas leasing and subject to lease stipulations (see Appendix A), including NSO<sup>(1)</sup> (387,600 acres), CSU stipulations (400,400 acres), and timing limitations (1,696,000 acres). The BLM’s ability to add or change mitigation measures would be the same as Alternative B.</p>	<p>1,696,000 acres of BLM federal oil and gas mineral estate would be open to leasing of which 1,251,200 acres of BLM federal oil and gas mineral estate would be open to leasing and subject to lease stipulations (see Appendix A), including NSO<sup>(1)</sup> (257,100 acres), CSU stipulations (469,300 acres), and timing limitations (1,002,100 acres). The BLM’s ability to add or change mitigation measures would be the same as Alternative B.</p>	<p>1,696,000 acres of BLM federal oil and gas mineral estate would be open to oil and gas leasing and subject to lease stipulations (see Appendix A), including NSO<sup>(1)</sup> stipulations (405,600 acres<sup>(2)</sup>), CSU stipulations (514,400 acres), and timing limitations (1,696,000 acres). The BLM has the discretion to modify surface operations to change or add specific mitigation measures when supported by scientific analysis. All mitigation/conservation measures not already required as stipulations would be analyzed in a site-specific NEPA document, and be incorporated, as appropriate, into conditions of approval of the permit, plan of development, and/or other use authorizations.</p>

Chapter 2 – Alternatives

Table 2-17. Comparison of Alternatives – Minerals

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
19	No similar action.	The BLM would require an adapted footprint configuration to match the topography of the surrounding landscape to reduce reclamation needs (e.g., fewer cut/fill areas).	The BLM would encourage an adapted footprint configuration to match the topography of the surrounding landscape, to reduce reclamation needs (e.g., fewer cut/fill areas).	Same as Alternative A.	In locations where a standard well pad foot print configuration would require large cuts and fills, the BLM would encourage an adapted footprint configuration to match the topography of the surrounding landscape to reduce reclamation needs (e.g., fewer cut/fill areas).
20	No similar action.	The BLM would not allow the use of pits.	The BLM would discourage the use of pits.	Same as Alternative A.	The BLM would discourage the use of reserve, production, and completion/re-completion pits. Onsite burial of drill cuttings meeting COGCC 900 Series Rule would be allowed.

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Table 2-17. Comparison of Alternatives – Minerals

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Oil Shale</b>					
21	No similar action.	<p>A CSU would be applied to permits for oil and gas drilling in areas available for oil shale and multi-mineral leasing, as determined in the 2008 Oil Shale Final PEIS (and updated by the 2012 Draft Oil Shale PEIS) to protect oil shale resources in the Green River Formation (337,200 acres).</p> <p>Drilling would be precluded on existing and future Oil Shale Research, Development and Demonstration tracts in the Green River Formation (800 acres).</p> <p>A maximum of four pads per section would be allowed in areas identified in the 1986 Oil Shale Agreement (approximately 86,000 acres).</p>	<p>A CSU would be applied to permits for oil and gas drilling on commercial oil shale leases to protect oil shale resources in the Green River Formation (0 acres).</p> <p>Drilling would be precluded on existing and future Oil Shale Research, Development and Demonstration tracts in the Green River Formation.</p> <p>A maximum of four pads per section would be allowed in areas identified in the 1986 Oil Shale Agreement (approximately 86,000 acres).</p>		<p>A CSU stipulation would be applied to oil and gas leases for development activities on commercial oil shale leases and for blocks greater than 640 acres within the available area for oil shale and multi-mineral leasing, as determined in the March 2013 “Approved Land Use Plan Amendments/Record of Decision (ROD) for Allocation of Oil Shale and Tar Sands Resources on Lands Administered by the Bureau of Land Management in Colorado, Utah, and Wyoming and Final Programmatic Environmental Impact Statement” (approximately 17,500 acres<sup>(3)</sup>) to protect oil shale resources in the Green River Formation.</p> <p>An NSO stipulation would be applied to oil and gas leases on existing and future Oil Shale Research, Development and Demonstration tracts in the MPA. (approximately 1,100 acres)</p>

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Table 2-17. Comparison of Alternatives – Minerals

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Sodium</b>					
22	No similar action.	Drilling would be precluded from active mining areas (980 acres) in the Green River Formation (Appendix A). COAs would be applied to permits for oil and gas drilling in areas available for sodium and multi-mineral leasing to protect sodium resources throughout the Green River Formation.	Drilling would be precluded from active mining areas (980 acres) in the Green River Formation (Appendix A). COAs would be applied to permits for oil and gas drilling on existing sodium leases to protect sodium resources throughout the Green River Formation.		An NSO stipulation would be applied to oil and gas leases in areas with active sodium mining (approximately 980 acres) in the MPA. COAs would be applied to permits for oil and gas drilling on existing sodium leases to protect sodium resources throughout the MPA.

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Table 2-17. Comparison of Alternatives – Minerals

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Coal</b>					
23	The area included in the approved permit area for the Deserado Coal Mine would be managed with a CSU stipulation (13,645 acres). The oil and gas lessee must reach agreement with the federal coal lessee on the placement of wells or surface facilities within the coal mine permit area. Surface occupancy may not be allowed within the mine permit area.	Same as Alternative A, except would be applied to permits for oil and gas drilling in all areas leased for coal along with the area adjacent to and south of the approved Deserado Coal Mine Permit Area (19,000 acres).	Same as Alternative A except would be applied to permits for oil and gas drilling in the area included in the Deserado Coal Mine Permit Area as well as areas adjacent to and south of the approved Deserado Coal Mine Permit Area (17,700 acres).		The area included in the approved permit area for the Deserado Coal Mine Permit Area as well as areas adjacent to and south of the approved Deserado Coal Mine Permit Area would be managed with a CSU stipulation (approximately 17,700 acres). The oil and gas lessee would be required to reach an agreement with the federal coal lessee on the placement of wells or surface facilities within the coal mine permit area. Surface occupancy may not be allowed within the mine permit area.

SOURCE: BLM GIS data 2009, Alternatives A-D; BLM GIS data 2013, Alternative E.

NOTES:

- <sup>(1)</sup>NSO and CSU stipulation acres reflect a hierarchy analysis which prioritized areas with overlapping NSO and CSU stipulation areas as an NSO stipulation. The CSU stipulation acres reflect areas that are only CSU stipulations; these areas contain no overlap. TL stipulations acres are not calculated using a hierarchy analysis and include all acres which would have a TL stipulation applied.
- <sup>(2)</sup>Total NSO acreage for Alternative E Record 18 does not include NSO 21-E (Table 2-6 Record 17) since the stipulation does not preclude development from taking place on any land within a lease, but rather limits the amount of disturbed lands that are rendered unsuitable for use by sage-grouse.
- <sup>(3)</sup>There are currently no areas leased for commercial oil shale development if existing Preference Right Lease Areas are converted to commercial oil shale leases this could increase the area up to 39, 700 acres.

**Chapter 2 – Alternatives**

**Table 2-17a. Comparison of Alternatives – Minerals: Master Leasing Plans – Dinosaur Trail**

<b>Note: The MLP discussion applies only to the Proposed RMPA (Alternative E).</b>	
<b>Record Number</b>	<b>Alternative E (Proposed)</b>
<b>Management Goals</b>	
24	Reduce potential conflicts of oil and gas activities with other resource uses while promoting efficient recovery of oil and gas resources. (Note: See Table 2-17 Record 1.)
25	Promote environmental stewardship among oil and gas operators. (Note: See Table 2-17 Record 2.)
<b>Management Objectives</b>	
26	Make federal oil and gas resources available for leasing and development in a manner that provides reasonable protection for other resource values. (Note: See Table 2-17 Record 3.)
27	Manage oil and gas activities to prevent degradation of resources (including oil and gas resources). (Note: See Table 2-17 Record 4.)
28	Manage oil and gas activities to complement or contribute to improving trends in achieving BLM’s Colorado Public Land Health Standards. (Note: See Table 2-17 Record 5.)
29	Establish partnerships with cooperating entities to develop and adapt BMPs in response to site-specific conditions and other resource objectives. (Note: See Table 2-17 Record 6.)
<b>Allowable Uses and Management Actions</b>	
30	Apply an MLP to 422,700 acres in the Dinosaur Trail area. All management decisions, goals, and objectives developed for the WRFO planning area would apply within the Dinosaur Trail MLP, however specific management decisions developed for the MLP would take precedence if there were conflicting guidance. A lease notice will be used to inform lessees that additional resource protection measures may be required to reduce environmental impacts within the MLP area.
31	357,800 acres of BLM oil and gas mineral estate included in the Dinosaur Trail MLP; 42,200 acres of BLM federal oil and gas mineral estate would be closed to leasing. Areas closed to leasing include the Bull Canyon, Skull Creek, and Willow Creek WSAs and the National Park Service’s Harpers Corner Road withdrawal. <sup>(1)</sup>
32	315,600 acres of BLM federal oil and gas mineral estate would be open to leasing and subject to lease stipulations (see Appendix A), including NSO stipulations (83,100 acres), CSU stipulations (186,700 acres), and timing limitations (315,600) <sup>(2)</sup> . (Note: Refer to Table 2-24 for acreage associated with individual stipulations by resource within the MLP.)

**Chapter 2 – Alternatives**

**Table 2-17a. Comparison of Alternatives – Minerals: Master Leasing Plans – Dinosaur Trail**

<b>Note: The MLP discussion applies only to the Proposed RMPA (Alternative E).</b>	
<b>Record Number</b>	<b>Alternative E (Proposed)</b>
33	0 acres of federal mineral estate would be open to leasing with standard lease terms.
34	Leasing within the MLP would progress in phases to address resource values and concerns. Leasing would first occur in the southern portion of the MLP, where the oil and gas occurrence potential is rated medium to high. Leasing within sage-grouse habitat, areas of low oil and gas potential, or areas adjacent to Dinosaur National Monument would occur once the BLM has completed additional analysis and planning. Within sage-grouse habitat in the MLP, sage-grouse management would be emphasized and leasing would only occur after the BLM has issued the Record of Decision for the Northwest Colorado Greater Sage-Grouse RMPA (193,000 acres). In areas of the MLP that are outside of sage-grouse habitat, but are within either low oil and gas potential or adjacent to Dinosaur National Monument Headquarters leasing would only occur after the BLM has completed a RMP Revision and determined whether or not leasing is appropriate given considerations such as the potential impacts to visual resources, night skies, and soundscapes (25,300 acres).
35	VRM Class III areas adjacent to Dinosaur National Monument headquarters would be open for oil and gas leasing with a CSU stipulation to minimize impacts to viewsheds, night skies, and soundscapes (50 acres).
36	A lease notice will be used to inform lessees of regulations that restrict commercial use of Harpers Corner Road.
37	Federal mineral estate with surface estate identified as, adjacent to, or surrounded by VRM Class II within the Dinosaur Trail MLP would be open for oil and gas leasing with a CSU stipulation to minimize impacts to visual resources, night skies, and soundscapes (154,200 acres).
38	<p>Master Development Plans would be required for all oil and gas activities, including exploratory drilling, within the Dinosaur Trail MLP. Specific resource protection measures would be evaluated when an operator submits a Master Development Plan. Examples of resource protection measures that will be considered to reduce environmental impacts within the MLP area include:</p> <ul style="list-style-type: none"> <li>▪ Planned or required unitization of federal lands to eliminate redundant infrastructure, thereby reducing habitat fragmentation;</li> <li>▪ Phased development may be appropriate where it is important to leave areas of habitat undisturbed by ongoing construction and drilling activity while other areas are developed;</li> <li>▪ Limitations on surface disturbance (pending acceptable interim/final reclamation) may be placed on the percentage of bare ground allowed in a developed area at any one time in order to preserve habitat in important wildlife areas or reduce erosion in areas with highly erosive soils;</li> <li>▪ Multiple wells per pad may be required to limit the number of surface locations in scenic areas, fragile soil areas, or important wildlife habitat while still allowing the necessary number of downhole locations;</li> <li>▪ Liquids gathering pipeline systems feeding centralized offsite production facilities to reduce year-round fluids haul traffic during the life of the field in areas of important wildlife habitat;</li> <li>▪ New technologies to reduce/capture emissions to ensure full field development does not contribute to eventual nonattainment of National Ambient Air Quality Standards under the Clean Air Act or adversely impact Air Quality Related Values, such as visibility;</li> </ul>

Chapter 2 – Alternatives

Table 2-17a. Comparison of Alternatives – Minerals: Master Leasing Plans – Dinosaur Trail

Note: The MLP discussion applies only to the Proposed RMPA (Alternative E).	
Record Number	Alternative E (Proposed)
	<ul style="list-style-type: none"> <li>▪ Practices to protect scenic quality by reducing the visual contrast of development, such as (1) siting roads to follow the contours of the landscape; (2) siting well locations where they are less visible and where cuts and fills can be minimized; (3) consolidating and using low profile equipment; (4) screening, disguising, or placing equipment offsite; (5) painting equipment to blend with the background; and (6) burying pipelines and power lines in existing disturbed areas;</li> <li>▪ Placing all linear disturbances (e.g., power lines, pipelines, roads) in common corridors and development of a comprehensive area wide planned transportation network to eliminate unnecessary cross-country clearing and resulting fragmentation of habitat;</li> <li>▪ Extensive interim reclamation of roadway disturbance up to or including the road surface and reclamation of pads to the well head/production facilities to minimize long-term surface disturbance; and</li> <li>▪ Final reclamation that fully restores the original landform and re-establishes the native plant community.</li> </ul>
<p>Note: All of the resource-based management decisions developed for the WRFO planning area would also apply within the Dinosaur Trail MLP if those resources are found to be present (see Table 2-17a Record 30 and Table 2-24). For a complete list of decisions, please refer to Tables 2-1 through 2-22 and Appendices A, B, D, I, and J. The following lease stipulations are unique to the Dinosaur Trail MLP area and focus on the key resources identified for management. These decisions are also found in the relevant resource decisions sections, as referenced.</p>	
39	<p>Aspen, serviceberry, and chokecherry communities associated with Blue Mountain (57,600 acres) would be managed with a CSU stipulation in order to maintain the distribution, condition, and functional capacity of deciduous browse and aspen communities integral to high priority big game and dusky grouse (formerly known as blue grouse) habitats. Prior to authorizing activities in these areas, the applicant would be required to submit a plan of development to demonstrate:</p> <ul style="list-style-type: none"> <li>▪ Associations have been avoided to the extent possible;</li> <li>▪ Special reclamation measures or design features would promote accelerated recovery and establishment of desirable plant community components;</li> <li>▪ The potential or capacity of the area to support viable, self-sustaining aspen, serviceberry, and chokecherry communities has not been diminished; and</li> <li>▪ Involvement of community derived values are mitigated through project life commensurate with projected impacts.</li> </ul> <p>Surface disturbance or occupation within aspen, serviceberry, and chokecherry communities may be prohibited. (Note: See Table 2-3, Record 11.)</p>
40	<p>Within all ferret management areas (58,600 acres), surface-disturbing and disruptive activities associated with land use authorizations, permits, and leases issued on BLM-administered lands would be subject to a CSU stipulation (see Appendix A) that incorporates those provisions established in A Cooperative Plan for Black-footed Ferret Reintroduction and Management, Wolf Creek and Coyote Basin Management Areas, Moffat and Rio Blanco Counties, Colorado (Wolf Creek Work Group et al. 2001). (Note: See Table 2-9, Record 11.)</p>

Chapter 2 – Alternatives

**Table 2-17a. Comparison of Alternatives – Minerals: Master Leasing Plans – Dinosaur Trail**

Note: The MLP discussion applies only to the Proposed RMPA (Alternative E).	
Record Number	Alternative E (Proposed)
41	Approximately 360 acres within and adjacent to the Mellen Hill sites (5RB227, 5RB279, 5RB489, etc.) would be protected with an NSO stipulation. (Note: See Table 2-12, Record 14.)
42	Harpers Corner Road (500 feet on either side of center line) would be classified as an avoidance area for land use authorizations. (Note: See Table 2-21, Record 18.)
43	The following ACECs would be open to oil and gas leasing with an NSO stipulation (see Appendix A): <ul style="list-style-type: none"> <li>▪ Raven Ridge (5,000 acres);</li> <li>▪ Moosehead Mountain (8,900 acres); and</li> <li>▪ White River Riparian (600 acres).</li> </ul> (Note: See Table 2-21 Record 13.)
44	The following ACECs would be open to oil and gas leasing with a CSU stipulation (see Appendix A): <ul style="list-style-type: none"> <li>▪ Coal Oil Rim (3,200 acres).</li> </ul> (Note: See Table 2-21 Record 14.)
45	The following special designation areas are classified as exclusion areas for land use authorizations: <ul style="list-style-type: none"> <li>▪ Bull Canyon, Willow Creek, and Skull Creek WSAs; and</li> <li>▪ Raven Ridge and Moosehead Mountain ACECs.</li> </ul> The following special designation areas are classified as avoidance areas for land use authorizations: <ul style="list-style-type: none"> <li>▪ White River Riparian and Coal Oil Rim ACECs.</li> </ul> (Note: See Table 2-20 Record 10.)
46	For lands with wilderness characteristics the BLM will apply the following: <ul style="list-style-type: none"> <li>▪ Tier 1 areas would be open to leasing with an NSO stipulation and would be managed as a ROW exclusion area. (Note: Within the Dinosaur Trail MLP, this would apply to the following areas within these lands with characteristics units: <ul style="list-style-type: none"> <li>○ 20 – Upper Coal Rim (12,100 acres)</li> <li>○ 21 – Coal Ridge (8,800 acres)</li> <li>○ 26 – Moosehead Mountain (7,800 acres)</li> <li>○ 32 – Willow WSA – Adjacent (4,700 acres)</li> </ul> </li> </ul>

Chapter 2 – Alternatives

**Table 2-17a. Comparison of Alternatives – Minerals: Master Leasing Plans – Dinosaur Trail**

Note: The MLP discussion applies only to the Proposed RMPA (Alternative E).	
Record Number	Alternative E (Proposed)
	<ul style="list-style-type: none"> <li>○ 33 – Bull Canyon WSA South – Adjacent (700 acres)</li> <li>○ 34 – Bull Canyon WSA North – Adjacent (900 acres)</li> <li>▪ Tier 2 areas would be open to leasing with a CSU stipulation and be managed as a ROW avoidance area (Note: Within the Dinosaur Trail MLP, this would apply to the following areas within these lands with wilderness characteristics units:)               <ul style="list-style-type: none"> <li>○ 16 – Raven Ridge (5,800 acres)</li> <li>○ 20 – Upper Coal Rim (1,600 acres)</li> <li>○ 21 – Coal Ridge (200 acres)</li> <li>○ 22 – Coal Oil Gulch (13,000 acres)</li> <li>○ 25 – Lower Wolf Creek (11,600 acres)</li> <li>○ 27 – MF Mountain (9,100 acres)</li> <li>○ 32 – Willow WSA –Adjacent (1,200 acres)</li> <li>○ 34 – Bull Canyon WSA North – Adjacent (200 acres)</li> </ul> </li> </ul> <p>(Note: See Table 2-22, Records 7 and 11, Map 2-6, and Table 4-116.)</p>

SOURCE: BLM GIS data 2009, Alternatives A-D; BLM GIS data 2013, Alternative E.

NOTES:

<sup>(1)</sup>These acres have already been included in the estimates given for Record 7 and are no different from the management applied to the rest of the field office but are provided here to aid in comparison of the range of alternatives for the area proposed to be included in the Dinosaur Trail MLP.

<sup>(2)</sup>These acres have already been included in the estimates given for Record 18 and are no different from the management applied to the rest of the field office but are provided here to aid in comparison of the range of alternatives for the area proposed to be included in the Dinosaur Trail MLP. The BLM’s application of lease stipulations and the ability to apply additional mitigation would be the same as described in Record 18, Alternative B.

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Chapter 2 – Alternatives

Table 2-18. Comparison of Alternatives – Recreation

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Management Goal</b>					
1	No similar goal.	Until recreation resources and uses can be allocated and designated through the Land Use Planning process as part of an RMP revision, the WRFO will continue to provide a broad spectrum and diversity of recreation opportunities to meet expected increased demand due to the continued growth of the oil and gas industry.			
<b>Management Objective</b>					
2	The entire Resource Area will be managed as the White River Extensive Recreation Management Area (ERMA).	Manage the White River ERMA to support, sustain and promote existing principal opportunities for dispersed, self-directed recreation while allowing for the production of oil and gas resources.			
3	No Special Recreation Management Areas (SRMA) will be identified.	In order to continue to provide backcountry/middlecountry oriented recreational opportunities on BLM lands, in close proximity to local communities as oil and gas development increases, areas will be identified to preserve public access, limit resource damage, and retain the physical, social and managerial conditions of these recreation setting classifications while still allowing for the production of oil and gas resources.	In order to continue to provide backcountry/middlecountry oriented recreational opportunities on BLM lands as oil and gas development increases, areas will be managed to preserve public access, limit resource damage, and retain the physical, social, and managerial conditions of these recreation setting classifications while still allowing for the production of oil and gas resources.		
<b>Allowable Uses and Management Actions</b>					
4	No similar action.	The White River ERMA will retain the qualities and conditions of the physical, social, and operational components of the existing Recreation Opportunity Spectrum (ROS) classifications within the White River ERMA as defined in the 1997 White River Record of Decision and Approved Resource Management Plan.			

Chapter 2 – Alternatives

Table 2-18. Comparison of Alternatives – Recreation

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
5	No similar action.	<p>Approximately 7,800 acres would be open to oil and gas leasing with an NSO stipulation. These areas would be managed to maintain and/or enhance the physical, social and managerial conditions associated with backcountry/middlecountry recreation setting classifications. These areas are currently popular recreational destinations for the community of Meeker and the upper White River valley of northwestern Colorado. The three areas are:</p> <ul style="list-style-type: none"> <li>▪ Anderson Gulch (2,000 acres).</li> <li>▪ LO7 Hill (1,600 acres).</li> <li>▪ 3 Mile Gulch (4,200 acres).</li> </ul> <p>An NSO stipulation would be applied to surface-disturbing activities associated with all other land use authorizations, permits, and leases granted in these areas.</p>	<p>Approximately 7,800 would be open to oil and gas leasing with a CSU stipulation. These areas would be managed to maintain and/or enhance the physical, social and managerial conditions associated with backcountry/middlecountry recreation setting classifications. These areas are currently popular recreational destinations for the community of Meeker and the upper White River valley of northwestern Colorado. The three areas are:</p> <ul style="list-style-type: none"> <li>▪ Anderson Gulch (2,000 acres).</li> <li>▪ LO7 Hill (1,600 acres).</li> <li>▪ 3 Mile Gulch (4,200 acres).</li> </ul> <p>A CSU stipulation would be applied to surface-disturbing activities associated with all other land use authorizations, permits, and leases granted in these areas.</p>	<p>Approximately 6,200 acres would be open to oil and gas leasing with an NSO stipulation. These areas would be managed to maintain and/or enhance the physical, social and managerial conditions associated with backcountry/middlecountry recreation setting classifications. These areas are currently popular recreational destinations for the community of Meeker and the upper White River valley of northwestern Colorado. The two areas are:</p> <ul style="list-style-type: none"> <li>▪ Anderson Gulch (2,000 acres).</li> <li>▪ 3 Mile Gulch (4,200 acres).</li> </ul> <p>An NSO stipulation would be applied to surface-disturbing activities associated with all other land use authorizations, permits, and leases granted in these areas.</p>	<p>Approximately 3,600 acres would be open to oil and gas leasing with an NSO stipulation. These two areas are:</p> <ul style="list-style-type: none"> <li>▪ Anderson Gulch (2,000 acres).</li> <li>▪ LO7 Hill (1,600 acres).</li> </ul> <p>Approximately 4,200 acres would be open to oil and gas leasing with a CSU stipulation on:</p> <ul style="list-style-type: none"> <li>▪ 3 Mile Gulch (4,200 acres).</li> </ul> <p>Either an NSO or CSU stipulation would be applied to surface-disturbing activities associated with all land use authorizations, permits, or leases granted in these areas.</p>

Chapter 2 – Alternatives

Table 2-19. Comparison of Alternatives – Comprehensive Trails and Travel Management

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Management Goal</b>					
1	No similar goal.	Provide access for oil and gas development consistent with public health and safety and other resource value concerns.			
<b>Management Objectives</b>					
2	No similar objective.	Manage motorized travel on public lands to provide for public need and demand, protect natural resources, provide for the safety of public land users, and minimize conflicts among various users of public lands.			
3	No similar objective.	Provide needed and appropriate ingress, egress, and access routes to and across public lands for oil and gas activities.			
4	No similar objective.	Reclaim or mitigate erosion impacts on transportation corridors.			
<b>Allowable Uses and Management Actions</b>					
5	No similar action.	Motorized vehicle travel for non-BLM activities within recreational vehicle areas that are located outside of designated ACECs would be limited to existing roads and trails.			Same as Alternative A.
6	All six Wilderness Study Areas (WSAs) are designated as closed until such time that congress either designates them as wilderness or releases them for multiple uses.	Wilderness Study Areas would remain closed to motorized and mechanized vehicle use until Congress either designates them as wilderness or releases them for multiple uses.			

Chapter 2 – Alternatives

Table 2-19. Comparison of Alternatives – Comprehensive Trails and Travel Management

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
7	No Similar action.	Motorized vehicle use associated with oil and gas development would be limited yearlong to existing routes in areas that are currently open seasonally (922,200 acres), identifiable from the 2005 National Agriculture Imagery Program (NAIP) digital data sets. Routes newly constructed for oil and gas activities would be closed except to uses defined by the Authorized Officer. Those uses would generally be limited to compliance, maintenance, and production activities.		Motorized vehicle use associated with oil and gas activities would be limited to existing roads, ways, and trails on most of the public lands in the WRFO Planning Area from October 1 through April 30 each year (922,200 acres).	Motorized vehicle travel for oil and gas activities (including pre-construction survey work) would be limited year-round to authorized routes or to existing routes that are limited seasonally in the 1997 RMP, identifiable from the 2011 National Agriculture Imagery Program (NAIP) digital data sets (921,000 acres). Routes newly constructed for oil and gas activities would be closed except to uses defined by the Authorized Officer. Those uses would generally be limited to compliance, maintenance, drilling, and production activities.
8	No similar action.	All new oil and gas access routes would be designated for administrative use only.		Same as Alternative A.	
9	No similar action.	Access routes for oil and gas activities that are considered redundant or unneeded would be abandoned or closed and reclaimed after consultation with local government and interested parties, unless the BLM deems it more appropriate to retain them for administrative or public use.		Same as Alternative A.	Access routes constructed for oil and gas activities that are considered redundant or unneeded would be obliterated and reclaimed.

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Table 2-19. Comparison of Alternatives – Comprehensive Trails and Travel Management

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
10	No similar action.	Oil and gas features (e.g., two-track, seismic activities, and pipeline ROWs) that compromise public health and safety or result in extreme departure from expected site conditions as defined by BLM Technical Reference 1734-6 (Interpreting Indicators of Rangeland Health [BLM et al. 2000]) would be reclaimed.		Same as Alternative A.	
11	No similar action.	In coordination with authorized users, temporary route closures would be applied in areas with concentrated oil and gas development as needed to meet public health and safety or wildlife management objectives (e.g., areas exempt from big-game timing limitations).		Same as Alternative A.	In coordination with counties and authorized users, temporary route closures would be applied in areas with concentrated oil and gas development as needed to meet public health and safety or other resource concerns.

**Chapter 2 – Alternatives**

**Table 2-19. Comparison of Alternatives – Comprehensive Trails and Travel Management**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
12	No similar action.	Well access routes would generally be unavailable for public vehicular access, including BLM permittees, not expressly associated with oil and gas development, production, monitoring, and maintenance. No exceptions would be considered. Access developed for well and facility access would also generally be subject to complete abandonment once its intended use is complete.	Well access routes would generally be unavailable for public vehicular access, including BLM permittees, not expressly associated with oil and gas development, production, monitoring, and maintenance. Exceptions would be evaluated on a case-by-case basis in the context of disturbance thresholds established for each seasonal range and leaseholding. Access routes developed for well and facility access would also generally be subject to complete abandonment once its intended use is complete.	Same as Alternative A.	Same as Alternative C.

Chapter 2 – Alternatives

Table 2-20. Comparison of Alternatives – Lands and Realty

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Management Goal</b>					
1	To make public lands available for the siting of public and private facilities through the issuance of applicable land use authorizations, in a manner that provides for reasonable protection of other resource values.	Manage BLM public lands, including the siting of public and private facilities through the issuance of applicable land use authorizations, in a manner that balances the needs of oil and gas development with the management for other resource values.			
<b>Management Objectives</b>					
2	No similar objective.	Respond to internal and external requests for land use authorizations (e.g., pipelines, access routes, utility lines, communication sites, leases, and permits).			
3	No similar objective.	Emphasize efficient use and colocation of existing pipeline corridors to protect resources and resource uses.	Emphasize efficient use and colocation of existing pipeline corridors to protect resources and resource uses. Consider the establishment of new pipeline corridors to meet demand for oil and gas activities.	Consider the establishment of new pipeline corridors to meet demand for oil and gas activities.	Emphasize efficient use of and colocation with existing ROWs to protect resources and resource uses. Consider the establishment of new ROW corridors to meet demand for oil and gas activities.

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Table 2-20. Comparison of Alternatives – Lands and Realty

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Allowable Uses and Management Actions</b> <i>(Note: Unless noted otherwise below, all ROW corridors designated in the 1997 White River RMP would be carried forward in the RMPA.)</i>					
<b>Land Use Authorizations</b>					
4	Communication site rights-of-way will be limited to currently occupied sites. An exception may be granted for non-commercial, private mobile, or microwave facilities by pipeline/power companies or land management entities, in support of their primary business where no existing site can be shown to meet the applicant’s needs. The site at Moosehead Mountain will not be available for additional authorizations.		Applications for new communication sites would be considered on a case-by-case basis if: (1) it is determined that the facility would fill a need to improve public safety and information transfer and (2) no existing site would meet the applicant’s needs. The site at Moosehead Mountain would not be available for additional authorizations.		

**Chapter 2 – Alternatives**

**Table 2-20. Comparison of Alternatives – Lands and Realty**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
5	<p>The 1997 White River RMP designated the Colorow-Greasewood Corridor which follows the Uintah Basin Lateral and Rocky Mountain Natural Gas pipelines from the base of the Colorow Mountain to Magnolia Camp. The 2009 Approved RMP Amendments/ROD for Designation of Energy Corridors on BLM-Administered Lands in the 11 Western States (WWEC) designated corridor 132-133 which modified the width of the Colorow-Greasewood corridor and provided an additional northern route between SH 64 and the WRFO boundary.</p>				<p>A section of the Colorow-Greasewood corridor that starts at the intersection of State Highway 64 (SH 64) and goes north towards Colorow Mountain would be eliminated as a designated corridor since the WWEC amendment provided an alternate northern route for this corridor.</p>

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Table 2-20. Comparison of Alternatives – Lands and Realty

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
6	Land use authorizations will be denied in exclusion areas, with the exception of short-term land use permits involving no development and projects that are consistent with management objectives for the area.	Land use authorizations (e.g., ROWs, leases, and permits) would be considered on a case-by-case basis but denied in exclusion areas.	Land use authorizations (e.g., ROWs, leases, and permits) would be considered on a case-by-case basis but denied in exclusion areas. Exceptions could be considered in ACECs within the footprint of existing disturbance within existing ROWs or for short-term land use permits involving no development and projects that are consistent with management objectives for the area.		Land use authorizations (e.g., ROWs, leases, and permits) will be denied in exclusion areas, with the exception of short-term land use permits involving no development and projects that are consistent with management objectives for the area.
7	Designate major ROW corridors on public lands that will meet public, industry, and environmental needs.	No new designated ROW corridors would be established. Upgrades to existing pipelines would be permitted in existing ROWs when pipeline capacity is exhausted, (including the energy corridors designated in the 2009 Approved RMP Amendments/ROD for Designation of Energy Corridors on BLM-Administered Lands in the 11 Western States).	New designated ROW corridors could be established only when the capacities of existing ROW corridors (including energy corridors established by the 2009 Approved RMP Amendments/ROD for Designation of Energy Corridors on BLM-Administered Lands in the 11 Western States) have been exhausted, or when such designation would enable management objectives.		
8	No similar action.	Construction of pipelines and energy-associated roads and utilities would not be allowed from December 1 through April 30, coinciding with the big game severe winter range stipulation.		Same as Alternative A.	Timing limitation stipulations identified in Appendix A could be applied as Terms and Conditions to oil and gas-associated ROW grants.

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**Table 2-20. Comparison of Alternatives – Lands and Realty**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
9	No similar action.	Companies would be encouraged to request smaller ROW widths for pipeline installation, as well as placing pipelines under newly constructed roads. Such placement must consider safety and maintenance.	Companies would be encouraged to request smaller ROW widths for pipeline installation, as well as placing pipelines under newly constructed energy-associated roads. Pipelines could be placed within a road bed only if resource and topographic conditions dictate and would be discouraged for county roads or BLM local roads. Such placement must consider safety and maintenance.	Same as Alternative A.	Companies would be encouraged to request smaller ROW widths for pipeline installation, as well as placing pipelines under newly constructed energy-associated roads. Pipelines could be placed within a road bed only if resource and topographic conditions dictate, and would be discouraged for county roads. Such placement must consider safety and maintenance.

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Table 2-20. Comparison of Alternatives – Lands and Realty

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
10	<p>The following areas are classified as exclusion areas for land use authorizations:</p> <ul style="list-style-type: none"> <li>Wilderness Study Areas;</li> <li>South Cathedral Bluffs and Addition<sup>(1)</sup>, Raven Ridge and Addition<sup>(2)</sup>, Black’s Gulch, and Coal Draw ACECs;</li> <li>Moosehead Mountain;</li> <li>Known habitat for listed and candidate plants; and</li> <li>Potential habitat for listed/candidate plants.</li> </ul> <p>The following areas are classified as avoidance areas for land use authorizations:</p> <ul style="list-style-type: none"> <li>Landslide areas;</li> <li>Lands surrounding raptor nests;</li> <li>Sage-grouse leks;</li> <li>Bald eagle roost/concentration areas;</li> </ul>	<p>The following areas would be classified as exclusion areas for land use authorizations:</p> <ul style="list-style-type: none"> <li>Wilderness Study Areas;</li> <li>South Cathedral Bluffs, Raven Ridge, Black’s Gulch, and Coal Draw ACECs;</li> <li>Moosehead Mountain;</li> <li>Thornburgh/Battle of Milk Creek site;</li> <li>Lands with wilderness characteristics that have been identified for retention of their resource values; and</li> <li>Within 330 feet of occupied habitat for federally listed and proposed plants.</li> </ul> <p>The following areas would be classified as avoidance areas for land use authorizations:</p> <ul style="list-style-type: none"> <li>All areas included in NSO or CSU stipulations;</li> <li>Harpers Corner Road;</li> <li>Canyon Pintado National Historic District; and</li> </ul>	<p>Same as Alternative B, except for the following would be classified as avoidance areas for land use authorizations:</p> <ul style="list-style-type: none"> <li>The Thornburgh/Battle of Milk Creek site; and</li> <li>Lands with wilderness characteristics that have been identified for retention of their resource value.</li> </ul>	<p>Same as Alternative B, except for the following:</p> <ul style="list-style-type: none"> <li>Only occupied habitat for federally listed plants would be classified as exclusion areas (i.e., no buffer as in Alternative B) for land use authorizations;</li> <li>The Thornburgh/Battle of Milk Creek site would be classified as an avoidance area for land use authorizations; and</li> <li>Areas where lands with wilderness characteristics occur would be classified as open for land use authorizations.</li> </ul>	<p>The following areas would be classified as exclusion areas for land use authorizations:</p> <ul style="list-style-type: none"> <li>Wilderness Study Areas;</li> <li>South Cathedral Bluffs, Raven Ridge, Coal Draw, and Black’s Gulch ACECs;</li> <li>Moosehead Mountain;</li> <li>Tier 1 lands with wilderness characteristics that will be managed to protect wilderness characteristics as a priority over other multiple uses (i.e., NSO areas); and</li> <li>Within 330 feet of occupied habitat for federally listed and proposed plants.</li> </ul> <p>The following areas would be classified as avoidance areas for land use authorizations:</p> <ul style="list-style-type: none"> <li>All areas included in NSO or CSU stipulations (Appendix A);</li> </ul>

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Table 2-20. Comparison of Alternatives – Lands and Realty

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
	<ul style="list-style-type: none"> <li>▪ Deer Gulch, Lower Greasewood Creek, Dudley Bluffs, Yanks Gulch/Upper Greasewood Creek, Ryan Gulch ACEC, White River Riparian, Coal Oil Rim, Oil Spring Mountain, East Douglas Creek, and Duck Creek ACECs;</li> <li>▪ Lands supporting BLM sensitive plants/RVAs;</li> <li>▪ Harpers Corner Road;</li> <li>▪ Oak Ridge SWA;</li> <li>▪ Riparian areas; and</li> <li>▪ Canyon Pintado National Historic District.</li> </ul> <p>The remainder of the Resource Area is considered open for land use authorizations.</p>	<ul style="list-style-type: none"> <li>▪ Suitable habitat for listed and candidate plants.</li> </ul> <p>The remainder of the Resource Area would be classified as open for land use authorizations.</p>			<ul style="list-style-type: none"> <li>▪ Areas within 330-660 feet of occupied habitat or within 660 feet of suitable habitat, or within critical habitat for federally listed, proposed or candidate plant species;</li> <li>▪ Harpers Corner Road; and</li> <li>▪ Canyon Pintado National Historic District.</li> </ul> <p>The remainder of the Resource Area would be classified as open for land use authorizations.</p>

Chapter 2 – Alternatives

Table 2-20. Comparison of Alternatives – Lands and Realty

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
11	No similar action.				For land use authorizations (e.g., ROWs, leases, and permits) authorized after the signing of the ROD for the Oil & Gas Development RMPA, the BLM would require current holders to follow the reclamation requirements in the WRFO Surface Reclamation Plan (see Appendix D). For land use authorizations (e.g., ROWs, leases, and permits) authorized prior to the signing of the ROD, the WRFO Reclamation Plan would be used as guidance for approving submitted Reclamation Plans. (Note: See also Table 2-3 Record 13.)

Chapter 2 – Alternatives

Table 2-20. Comparison of Alternatives – Lands and Realty

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
12	No similar action.				The Rangely District Hospital R&PP lease/patent (20 acres) would be open to oil and gas leasing subject to an NSO stipulation.
13	No similar action.				A lease notice will be used to inform lessees of Public Land Order 7582 (for the Rio Blanco Test Site) withdrawing 200 acres of public land from surface entry and mining and 160 acres of reserved federal mineral interest from mining. If the Department of Energy modifies the Rio Blanco Test Site withdrawal in the future, the LN will be updated to reflect the current acreage and restrictions included in the withdrawal.

NOTES:

<sup>(1)</sup>South Cathedral Bluffs and Addition hereafter referred to as South Cathedral Bluffs.

<sup>(2)</sup>Raven Ridge and Addition hereafter referred to as Raven Ridge.

**Chapter 2 – Alternatives**

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Chapter 2 – Alternatives

Table 2-21. Comparison of Alternatives – Special Designations

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Management Goal</b>					
1	No similar goal.	Protect the integrity of unique resource values, preserve historical significance, and provide opportunity for other uses, where appropriate.			
<b>Management Objectives</b>					
<b>Wilderness Study Areas</b>					
2	Manage WSAs to avoid impairment of suitability characteristics until either designated as wilderness or released for other uses.	Manage WSAs to avoid impairment of suitability characteristics until either designated as wilderness or released by Congress for other uses.			
3	Managed designated wilderness areas to preserve ecosystems and wilderness qualities in perpetuity.				
<b>Areas of Critical Environmental Concern</b>					
4	Designate and protect areas that contain important historic, cultural, scenic, and natural values as ACECs.	Protect areas that contain relevant and important historic, cultural, scenic, and natural values as ACECs while managing for multiple uses.			
5	Manage ACECs in cooperation with interested agencies, landowners, and other parties to prevent degradation of the special values in the ACECs.	Manage ACECs in cooperation with interested agencies, landowners, and other parties to prevent degradation of the relevant and important values for which they were established.			
6	The genetic integrity of native species in ACECs and RVAs will be maintained.	Maintain the genetic integrity of native species in ACECs.			

Chapter 2 – Alternatives

Table 2-21. Comparison of Alternatives – Special Designations

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
7	Maintain environmental quality to prevent undue degradation to the values that make the site or locale unique.				
8	No similar objective.	Maintain, restore, and enhance areas within current and potential ACECs to meet Colorado Public Land Health Standards.			Maintain, restore, and enhance areas within ACECs to meet Colorado Public Land Health Standards.
<b>Allowable Uses and Management Actions</b>					
<b>Wilderness Study Areas</b>					
9	Six WSAs (Bull Canyon, Willow Creek, Skull Creek, Oil Spring Mountain, Windy Gulch, and Black Mountain) would be managed under the Interim Management Policy for Land Under Wilderness Review. Except for certain valid existing rights, activities will not be allowed to occur in WSAs that will impair wilderness values or the areas' suitability for preservation as wilderness.				Six WSAs (Bull Canyon, Willow Creek, Skull Creek, Oil Spring Mountain, Windy Gulch, and Black Mountain) would be managed under BLM Manual 6330- Management of Wilderness Study Areas. Except for certain valid existing rights, activities that would impair wilderness values or the areas' suitability for preservation as wilderness would not be allowed to occur in WSAs.

Chapter 2 – Alternatives

Table 2-21. Comparison of Alternatives – Special Designations

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
10	Except for permitted uses, WSAs would be closed to motorized vehicle use. Motorized vehicle travel, in areas released to multiple use by Congress, will be limited to designated roads and trails.	Except for permitted uses, WSAs would be closed to motorized vehicle use. If WSAs are released by Congress for management for multiple uses, motorized vehicle travel would be limited to designated roads and trails.			Except for permitted uses, WSAs would be closed to motorized/mechanized use. If WSAs are released by Congress for management for multiple uses, motorized vehicle travel would be limited to designated roads and trails.
11	Only native plant species would be used for reseeding disturbed areas within WSAs.				
12	If WSAs are released by Congress for management for multiple uses, the areas would be managed as VRM Class II.				
<b>Areas of Critical Environmental Concern</b>					
13	<p>The following ACECs would be open to oil and gas leasing with an NSO stipulation (see Appendix A):</p> <ul style="list-style-type: none"> <li>▪ Dudley Bluffs (1,600 acres);</li> <li>▪ Yanks Gulch/Upper Greasewood Creek (2,700 acres);</li> <li>▪ Lower Greasewood Creek (200 acres);</li> <li>▪ Raven Ridge (5,000 acres);</li> <li>▪ South Cathedral Bluffs (1,300 acres);</li> <li>▪ Deer Gulch (1,800 acres);</li> <li>▪ Ryan Gulch (1,400 acres);</li> <li>▪ Blacks Gulch (800 acres);</li> <li>▪ Coal Draw (1,800 acres);</li> <li>▪ Moosehead Mountain (8,900 acres); and</li> <li>▪ Duck Creek (3,400 acres).</li> </ul> <p>(Note: Exception language varies by alternative see Appendix A.)</p>			<p>The following ACECs would be open to oil and gas leasing with an NSO stipulation (see Appendix A):</p> <ul style="list-style-type: none"> <li>▪ Dudley Bluffs (1,600 acres);</li> <li>▪ Yanks Gulch/Upper Greasewood Creek (2,700 acres);</li> <li>▪ Lower Greasewood Creek (200 acres);</li> <li>▪ Raven Ridge (5,000 acres);</li> <li>▪ South Cathedral Bluffs (1,300 acres);</li> <li>▪ Deer Gulch (1,800 acres);</li> <li>▪ Ryan Gulch (1,400 acres);</li> <li>▪ Blacks Gulch (800 acres);</li> </ul>	

Chapter 2 – Alternatives

Table 2-21. Comparison of Alternatives – Special Designations

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
					<ul style="list-style-type: none"> <li>▪ Coal Draw (1,800 acres);</li> <li>▪ Moosehead Mountain (8,900 acres);</li> <li>▪ Duck Creek (3,400 acres); and</li> <li>▪ White River Riparian (950 acres).</li> </ul>
14	<p>The following ACECs would be open to oil and gas leasing with a CSU stipulation (see Appendix A):</p> <ul style="list-style-type: none"> <li>▪ White River Riparian (950 acres);</li> <li>▪ Coal Oil Rim (3,200 acres);</li> <li>▪ Oil Spring Mountain (18,300 acres); and</li> <li>▪ East Douglas Creek (47,600 acres).</li> </ul> <p>(Note: Exception language varies by alternative see Appendix A.)</p>				<p>The following ACECs would be open to oil and gas leasing with a CSU stipulation (see Appendix A):</p> <ul style="list-style-type: none"> <li>▪ Coal Oil Rim (3,200 acres);</li> <li>▪ Oil Spring Mountain (18,300 acres); and</li> <li>▪ East Douglas Creek (47,600 acres).</li> </ul>
15	<p>Site-specific management of ACECs would be developed in individual activity plans. Existing ACEC activity plans (i.e., Dudley Bluffs, South Cathedral Bluffs, and Raven Ridge) will be revised to be consistent with the decisions contained in the approved RMPA. As integrated activity plans are initiated, ACECs occurring within those areas will be incorporated into that activity plan process. The integrated activity plan will then replace the need for an individual ACEC activity plan.</p>				

Chapter 2 – Alternatives

Table 2-21. Comparison of Alternatives – Special Designations

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
16	Only native plant species would be used for reseeding disturbed areas within ACECs.				Native plant species would be used for reseeding disturbed areas within ACECs. Exceptions may be considered if an environmental analysis indicates that the use of non-native species is compatible with the resources for which the ACEC was designated. Exceptions would not be considered in those ACECs which were designated for special status plant species.
17	Reclamation of surface disturbance resulting from authorized activities within ACECs and RVAs shall use only locally gathered or genetic stock from locally gathered native species. In those cases where locally gathered native species are not available, the impact of using non-local native species on the genetic integrity of the ACECs and RVAs must be analyzed and mitigated through a site specific environmental analysis.	Locally collected seed or genetic stock from locally gathered seed would be used for reclamation and available in adequate quantity for reclamation needs prior to issuance of the notice to proceed. If such seed is not available in adequate quantities, then collection from the site of disturbance would be required. All seed collection, storage, or increase would be conducted in accordance with BLM-approved collection, storage, and seed increase protocols. If three growing seasons pass without adequate collection to provide the quantities necessary for reclamation needs, the impact of using non-local native species on the genetic integrity of native species would be evaluated by the BLM and mitigated through site-specific environmental analysis.		Same as Alternative A.	Reclamation of surface disturbance resulting from authorized activities within ACECs designated for special status plant species would use only locally gathered or genetic stock from locally gathered native species. In cases where locally gathered native species are not available, the impact of using non-local native species on the genetic integrity of native species would be evaluated through site-specific environmental analysis. (Note: See Table 2-3 Record 29 for RVAs.)

Chapter 2 – Alternatives

Table 2-21. Comparison of Alternatives – Special Designations

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
18	Harpers Corner Road will be classified as an avoidance area for land use authorizations.				Harpers Corner Road (500 feet on either side of center line) would be classified as an avoidance area for land use authorizations.

Chapter 2 – Alternatives

Table 2-22. Comparison of Alternatives – Lands with Wilderness Characteristics

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Management Goal</b>					
1	No similar goal.	Maintain lands with wilderness characteristics (naturalness, outstanding opportunities for solitude, or outstanding opportunities for primitive and unconfined recreation) where possible, considering manageability and the context of competing resource demands.			
<b>Management Objectives</b>					
2	No similar objective.	Lands with wilderness characteristics may be managed to retain their resource value if the parcels are 5,000 acres in size or greater and 20 percent or less of the area is encumbered by existing oil and gas leases scheduled to expire by the year 2016.	Manage lands with wilderness characteristics to give priority to other resource values and uses and give consideration to retaining some of their wilderness characteristics, such as naturalness and/or opportunities for solitude or primitive and unconfined recreational activities.	Manage lands with wilderness characteristics to give priority to other uses over the protection of wilderness characteristics by implementing the minimum protection required by laws and regulations.	Manage lands with wilderness characteristics in the following tiers (Map 2-6): <ul style="list-style-type: none"> <li>▪ Tier 1 areas will be managed to protect wilderness characteristics as a priority over other multiple uses.</li> <li>▪ Tier 2 areas will be managed to emphasize other multiple uses while applying management restrictions to reduce impacts to wilderness characteristics.</li> <li>▪ Tier 3 areas will be managed to emphasize other multiple uses as a priority over protecting wilderness characteristics.</li> </ul>

**Chapter 2 – Alternatives**

**Table 2-22. Comparison of Alternatives – Lands with Wilderness Characteristics**

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Allowable Uses and Management Actions</b>					
3	No similar action.	Lands with wilderness characteristics inventories will be maintained for the WRFO on an ongoing basis. Inventories will be reviewed and updated prior to issuing any land use authorizations, permits, or leases for proposed actions.			
4	No similar action.	Where reasonable, seek funding to update the inventory from project proponents on a cost recovery basis to facilitate the project review process.			Same as Alternative A.
5	No similar action.	Temporary fencing in support of reclamation will be approved on a case-by-case basis in lands with wilderness characteristics.			Same as Alternative A.
6	No similar action.	In areas where lands with wilderness characteristics have been identified for retention of their resource value, motorized or mechanized use will be allowed if necessary to protect life (e.g., helicopter life flight or OHV evacuation).	In areas where lands with wilderness characteristics occur, motorized or mechanized use will be allowed as necessary to protect life (e.g., helicopter life flight or OHV evacuation) or property.		Same as Alternative A.

Chapter 2 – Alternatives

Table 2-22. Comparison of Alternatives – Lands with Wilderness Characteristics

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
7	No similar action.	In areas where lands with wilderness characteristics have been identified for retention of their resource values, the BLM would apply an NSO stipulation until an RMP revision is completed which addresses whether or not these areas should be open to oil and gas surface disturbance (121,300 acres).	For lands with wilderness characteristics, the BLM may apply a lease notice containing measures and limitations intended to maintain naturalness, outstanding opportunities for solitude, and outstanding opportunities for primitive and unconfined recreation. Examples of the measures and limitations in the lease notices may include: <ul style="list-style-type: none"> <li>▪ Limiting motorized access to trails and unimproved, non-maintained routes only;</li> <li>▪ Vegetative screening and contouring; and</li> <li>▪ Additional siting considerations to minimize visual impacts.</li> </ul>		For lands with wilderness characteristics the BLM will apply the following: <ul style="list-style-type: none"> <li>▪ Tier 1 areas would be open to leasing with an NSO stipulation (70,000 acres);</li> <li>▪ Tier 2 areas would be open to leasing with a CSU stipulation (67,900 acres); and</li> <li>▪ Tier 3 areas would be open to leasing without any lease stipulations designed to protect wilderness characteristics (164,000 acres).</li> </ul>

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Table 2-22. Comparison of Alternatives – Lands with Wilderness Characteristics

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
8	No similar action.	Stipulations or COAs identified as appropriate through environmental analysis may be applied for the maximum protection of wilderness characteristics.	Stipulations or COAs identified as appropriate through environmental analysis may be applied for the minimum protection of wilderness characteristics.		<p>Consistent with existing lease rights and the management objective for each tier, COAs may be applied to leased acreage in Tier 1, 2 and 3 areas that contain wilderness characteristics.</p> <p>Examples of such COAs could include, but are not limited to:</p> <ul style="list-style-type: none"> <li>▪ Roads will not bisect the unit;</li> <li>▪ Visual resources will be managed similar to VRM Class II;</li> <li>▪ Siting of facilities will be considered in facility design (topographic screening may be applied); and</li> <li>▪ Timing restrictions on use of helicopters may be applied during big game hunting seasons.</li> </ul>

Chapter 2 – Alternatives

Table 2-22. Comparison of Alternatives – Lands with Wilderness Characteristics

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
9	No similar action.	In areas where lands with wilderness characteristics have been identified for retention of their resource value, no new road construction or upgrading/improvements of existing roads, would be allowed.	New road construction or upgrading/improvements of existing roads in lands with wilderness characteristics would be allowed. Whenever possible, roads will be maintained as a primitive road or two-track (as per the Gold Book's [DOI and USDA 2007 pg. 23] discussion on non-constructed roads and routes).		New road construction or improving/maintaining primitive roads would: <ul style="list-style-type: none"> <li>▪ Not be allowed within Tier 1 areas; and</li> <li>▪ Be allowed in Tier 2 and Tier 3 areas.</li> </ul> Appropriate COAs (as described above) may be applied.
10	No similar action.	No new facility construction would be considered.	Construction of new facilities would be considered on a case-by-case basis where lands with wilderness characteristics have been identified.		Construction of new facilities would: <ul style="list-style-type: none"> <li>▪ Not be allowed within Tier 1 areas; and</li> <li>▪ Be allowed in Tier 2 and Tier 3 areas.</li> </ul> Appropriate COAs (as described above) may be applied.

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Table 2-22. Comparison of Alternatives – Lands with Wilderness Characteristics

Record Number	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
11	No similar action.	Lands with wilderness characteristics that have been identified for retention of their resource value would be exclusion areas for new ROW authorizations.	Lands with wilderness characteristics that have been identified for retention of their resource value would be avoidance areas for new ROW authorizations.	In areas where lands with wilderness characteristics occur; mitigation that would minimize impacts to wilderness character may be required on new linear ROWs.	For rights-of-way authorizations the following will apply: <ul style="list-style-type: none"> <li>All Tier 1 areas will be managed as ROW exclusion areas;</li> <li>All Tier 2 areas will be managed as ROW avoidance areas; and</li> <li>All Tier 3 areas will be open for ROWs and other land use authorizations.</li> </ul>
12	No similar action.	In areas where lands with wilderness characteristics have been identified for retention of their resource value, restoring the appearance of naturalness may require the establishment of native grasses, forbs, shrubs or trees and the addition of rocks, felled trees, or other locally sourced materials.	In areas where lands with wilderness characteristics occur, restoring the appearance of naturalness within lands may require the establishment of native grasses, forbs, shrubs or trees and the addition of rocks, felled trees, or other locally sourced materials.	Same as Alternative A.	Same as Alternative C.
13	No similar action.	Existing facilities in support of oil and gas development that are not consistent with the management of lands with wilderness character, would be removed as opportunities arise.	Existing facilities in support of oil and gas development that are not consistent with the management of lands with wilderness character, would be examined on a case by case basis and only removed as per the reclamation plan of each individual location.		Same as Alternative A.

Chapter 2 – Alternatives

Table 2-23. Consolidated Acres by Alternative

Record Number	Stipulation (#)	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Table 2-2 Soil and Water Resources</b>						
9	CSU (1): Fragile soils on slopes >35 %	385,000			385,000	
12	NSO (1): Perennial Waters, Springs, Wells, Riparian		55,300			
	NSO (1):100-year floodplain		22,100			
	CSU (2): Perennial Waters, Springs, Wells, and Riparian			55,300		
	CSU (2): 100-year floodplain			22,100		
	CSU (2-E): Floodplain, Perennial Waters, Springs, Wells, and Riparian					101,500
15	NSO (2-4): Landslide areas	38,600	46,400	42,500		38,600
16	NSO (5-6): Saline Soils		45,300	34,100		
	CSU (3): Saline Soils					44,300
17	NSO (7-8): Steep slopes $\geq 35\%$ and $\geq 50\%$		353,000			114,200
	CSU (4-5): Steep slopes $\geq 25\%$ but $< 35\%$ and $\geq 35\%$ but $< 50\%$		279,900	231,500		231,500
23	NSO (57): Source Water Protection			1,500		1,500
24	NSO (58): Impaired Waters in MPA			2,500		2,500

**Chapter 2 – Alternatives**

**Table 2-23. Consolidated Acres by Alternative**

Record Number	Stipulation (#)	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Table 2-3 Vegetation</b>						
11	CSU (35, 35-E): Blue Mountain Vegetation	61,540	57,600			
20	NSO (9): Priority riparian/wetland habitats		1,600			
	CSU (6-7): Riparian/wetland habitats			1,600		
22	Weed Free Zones	497,900				
27	NSO (10-11, 11-E): Remnant Vegetation <sup>(1)</sup>	4,520	3,600			4,800
28	NSO (12): Proposed Remnant Vegetation Addition		630			
<b>Table 2-4 Fish and Wildlife – Big Game</b>						
12	TL (1): Elk production areas	12,700			12,700	
	TL (2, 5, 8, 8-E): Big game severe winter range	446,000	493,500	379,500	446,600	673,100
	TL (6, 6-E, 9): Big game winter range, winter concentration areas		847,200	961,200		604,500
	TL (3): Deer and elk summer range	376,400			376,400	
	TL (7, 7-E, 10): Big game summer range		437,900			420,300
	TL (4): Pronghorn production areas	0			0	
13	TL (8, 8-E): CPW Restricted Development Areas		53,200	36,700		10,700
16	NSO (13-15): CPW State Wildlife Areas	9,300	20,900	18,200		20,900

Table 2-23. Consolidated Acres by Alternative

Record Number	Stipulation (#)	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Table 2-5 Fish and Wildlife – Raptors</b>						
11	NSO (16, 20): Raptor nests buffer – other	20,900		44,800	20,900	
	NSO (20-E): Raptor nests other than special status					120,700
	NSO (17-19): Nocturnal/diurnal raptor nest buffer		147,300			
	TL (11, 14, 14-E, 15): Raptor nest sites – other	83,300		145,000	83,300	145,000
	TL (12-13): Nocturnal/diurnal raptor nests		281,400			
<b>Table 2-6 Fish and Wildlife – Grouse</b>						
10	TL (16,17, 17-E, 18, 19): Sage-grouse winter concentration areas	Not mapped		260,300		450,100
	TL (20, 21, 21-E, 22, 23): Sage-grouse nesting/early brood habitat			152,500		450,100
12	Deferred Decision: Sage-grouse habitat		96,100			
17	NSO (21, 21-E): Sage-grouse habitat		222,300			450,700
18	NSO (22-23): Sage-grouse lek sites	3,600	14,100		3,600	14,100
	CSU (8): Sage-grouse lek sites			17,400		
21	NSO (24): Sharp-tailed grouse leks				15	
	TL (24): Sharp-tailed grouse nesting habitat				1,500	
<b>Table 2-7 Fish and Wildlife – Migratory Birds</b>						
6	TL (25): Migratory birds		All WRFO			
	TL (26): Higher value migratory bird habitat			818,100		

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Table 2-23. Consolidated Acres by Alternative

Record Number	Stipulation (#)	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Table 2-9 Special Status Animal Species</b>						
11	CSU (9-10): Black-footed Ferret management areas	53,200		58,600	53,200	58,600
15	NSO (25): Prairie dog colonies		166,200			
18	NSO (26-27): Endangered Colorado River fish				1,100	
19	CSU (11-12): Colorado River/ native cutthroat trout habitat	97,000			108,900	
20	CSU (13): Black Sulphur Creek		2,700			
26	CSU (14-15): Bald eagle nest, roost, and perch habitat		930			930
28	NSO (28, 29, 31, 32): Special status raptor nests	10,700	29,700	10,700		
	NSO (31-E): SS Raptor nests, Golden eagle and Prairie falcon nests					29,700
	NSO (30): Burrowing owl nests		3,200			
	NSO (33-34): bald eagle nests – Abandoned			60		60
29	NSO (35-37): Bald eagle critical nocturnal roosts			1,000		

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Table 2-23. Consolidated Acres by Alternative

Record Number	Stipulation (#)	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
30	TL (27, 31, 36, 36-E): Special status raptor nests	13,400		80,300	13,400	5,200
	TL (28, 32, 37): Bald eagle nests			800		
	TL (29, 40): Ferruginous hawk nests			66,900		
	TL (30, 33-34, 38): Bald eagle critical night roosts and winter concentration areas			2,800		
	TL (39): Bald eagle winter hunting perches <sup>(1)</sup>			0		0
36	TL (41, 42): Canada lynx denning habitat		1,800		3,400	
<b>Table 2-10 Special Status Plant Species</b>						
13	Management Emphasis Areas: Yellow Creek and Duck Creek ACEC		2,000			
15	NSO (38-40, 40-E, 41): Federally listed and candidate plant species	48,800	91,400		51,700	32,400
16	NSO (42, 43, 43-E): BLM sensitive plants <sup>(2)</sup>	10,800	78,700			7,300
	CSU (16): BLM sensitive plants				7,200	
<b>Table 2-12 Cultural Resources</b>						
7	CSU (17-A, 17): Texas-Missouri-Evacuation Creek	22,500			19,300	
9	NSO (44-45): Duck Creek Wickiup			3		
13	CSU (18): Thornburgh/Battle of Milk Creek Viewshed				5,800	
	NSO (59): Thornburgh/Battle of Milk Creek site		110			110

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Table 2-23. Consolidated Acres by Alternative

Record Number	Stipulation (#)	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
14	NSO (46): Mellen Hill Sites		360			
17	CSU (19-22, 22-E): Rock art and structural features	16,000	31,800	20,400	11,000	13,900
NA	CSU (23): Protected Historic properties and resources	WRFO boundary				
<b>Table 2-15 Forestry and Woodland Products</b>						
10	NSO (47-48): Douglas-fir/aspen on slopes >25%		63,200	61,900		61,900
12	NSO (49): Old growth		Not mapped			
	CSU (24): Old growth			Not mapped		Not mapped
<b>Table 2-17 Minerals</b>						
7	Closed: WSAs and Harpers Corner Road	83,300				
13	Open: Standard lease terms and conditions	455,500	0		444,800	0
18 <sup>(4)</sup>	Open: Subject to lease stipulations	1,240,500	1,696,000	1,696,000	1,251,200	1,696,000
	NSO: Lease stipulations	157,100	757,200	387,600	257,100	405,600 <sup>(3)</sup>
	CSU: Lease stipulations	583,900	296,300	400,400	469,300	461,800
	TL: Lease stipulations	1,006,500	1,696,000	1,696,000	1,002,100	1,696,000
21	CSU (25-26, 26-E): Areas available for oil shale & multi-mineral leasing		337,200			17,500
	NSO (50): Oil shale RD&D leases		800			1,100
	CSU (27): Maximum of 4 pads/section Oil Shale Agreement areas		86,000			
22	NSO (51): Active sodium mining areas		980			
23	CSU (28-30): Coal areas	13,645	19,000	17,700		

Chapter 2 – Alternatives

Table 2-23. Consolidated Acres by Alternative

Record Number	Stipulation (#)	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Table 2-17a Minerals: Master Leasing Plans – Dinosaur Trail</b>						
31	Closed: WSAs and Harpers Corner Road					42,200
32 <sup>(1,2)</sup>	Open: Subject to lease stipulations					315,600
	NSO: Lease stipulations					83,100
	CSU: Lease stipulations					186,700
	TL: Lease stipulations					44,800
33	Open: Standard lease terms and conditions					0
34	Phased leasing					422,700
35	CSU-36: VRM Class III					50
37	CSU-37: VRM Class II					154,200
39	CSU-35-E: Blue Mountain Vegetation					57,600
40	CSU-10: Black-footed ferret management areas					58,600
41	NSO-46: Mellen Hill sites					360
43	NSO-55-E: ACECs					13,200
44	CSU-33-E: ACECs					3,200
46	NSO-56-E: Tier 1 lands with wilderness characteristics					35,000
	CSU-34: Tier 2 lands with wilderness characteristics					38,800
<b>Table 2-18 Recreation</b>						
5	NSO (52, 52-E, 53): Recreation areas		7,800		6,200	3,600
	CSU (31, 31-E): Recreation areas			7,800		4,200

**Table 2-23. Consolidated Acres by Alternative**

Record Number	Stipulation (#)	Alternative A	Alternative B	Alternative C	Alternative D	Alternative E (Proposed)
<b>Table 2-19 Comprehensive Trails and Travel Management</b>						
7	Motorized vehicle use limited seasonally	922,200			922,200	
	Motorized vehicle use limited yearlong in seasonally open		922,200			
	Motorized vehicle use limited yearlong to authorized routes					921,000
<b>Table 2-20 Lands and Realty</b>						
12	NSO (60): Rangely District Hospital R&PP					20
<b>Table 2-21 Special Designations</b>						
13	NSO (54, 55, 55-E): ACECs			28,900		29,900
14	CSU (32, 33, 33-E): ACECs			70,100		69,100
<b>Table 2-22 Lands with Wilderness Characteristics</b>						
7	NSO (56, 56-E): Lands with wilderness characteristics		121,300			70,000
	CSU (34): Tier 2 lands with wilderness characteristics					67,900

SOURCE: BLM GIS Data 2013.

NOTES:

Acres presented have been calculated using GIS data provided by the BLM; the results differ from both the 1997 White River RMP and 2007 RFD Scenario due to advancement of GIS technology, refinement in the precision of the mapping of various datasets over time, and variations in the selection of data sets utilized for calculations.

This table is intended for a quick comparison of acres between alternatives. For complete descriptions of the stipulations or management actions and how they vary by alternative, please refer to Tables 2-1 through 2-22 and Appendix A.

<sup>(1)</sup>Bald eagle winter hunting perches are included in winter night roosts acres.

<sup>(2)</sup>BLM Sensitive plant species are covered under NSO-39 and 40 for Alternatives B and C, CSU-16 for Alternative D and NSO-40-E for Alternative E.

<sup>(3)</sup>Total NSO acreage for Alternative E (Table 2-17 Record 18) does not include NSO 21-E (Table 2-6 Record 17) since the stipulation does not preclude development from taking place on any land within a lease, but rather limits the amount of disturbed lands that are rendered unsuitable for use by sage-grouse.

<sup>(4)</sup>NSO and CSU stipulation acres reflect a hierarchy analysis which prioritized areas with overlapping NSO and CSU stipulation areas as an NSO stipulation. The CSU stipulation acres reflect areas that are only CSU stipulations; these areas contain no overlap. TL stipulations acres are not calculated using a hierarchy analysis and include all acres which would have a TL stipulation applied.

**Table 2-24. Consolidated Lease Stipulation Acres – Dinosaur Trail MLP  
Alternative E**

Record Number	Stipulation: Resource	Alternative E (Proposed)	Comment
<b>Table 2-2 Soil and Water Resources</b>			
12	CSU-02-E: Flood plain, Perennial Waters, Springs, Wells, and Riparian	10,552	
15	NSO-02: Landslide areas	0	This resource is located outside the MLP.
16	CSU-03: Saline Soils	20,500	
17	NSO-08: Steep slopes $\geq 50\%$	7,200	
	CSU-05: Steep slopes $\geq 35\%$ but $< 50\%$	14,500	
23	NSO-57: Source Water Protection	1,500	
24	NSO-58: Impaired Waters in MPA	0	This resource is located outside the MLP.
<b>Table 2-3 Vegetation</b>			
11	CSU-35-E: Blue Mountain Vegetation	57,600	This resource occurs only within the MLP.
20	CSU-06: Riparian/wetland habitats	130	
22	Weed Free Zones	194,400	
27	NSO-11-E: Remnant Vegetation	0	This resource is located outside the MLP.
<b>Table 2-4 Fish and Wildlife – Big Game</b>			
12	TL-08-E: Big game severe winter range	89,900	
	TL-06-E: Big game winter range, winter concentration areas	183,100	
	TL-07-E: Big game summer range	76,800	
13	TL-08-E: CPW Restricted Development Areas	0	North Ridge is located outside the MLP.
16	NSO-14: CPW State Wildlife Areas	0	This resource is located outside the MLP.
<b>Table 2-5 Fish and Wildlife – Raptors</b>			
11	NSO-20-E: Raptor nests other than special status	4,300	
	TL-14-E: Raptor nest sites – other	6,600	

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**Table 2-24. Consolidated Lease Stipulation Acres – Dinosaur Trail MLP  
Alternative E**

Record Number	Stipulation: Resource	Alternative E (Proposed)	Comment
<b>Table 2-6 Fish and Wildlife – Grouse</b>			
10	TL-17-E: Sage-grouse winter concentration areas	191,400	
	TL-21-E: Sage-grouse nesting/early brood habitat	191,400	
17	NSO-21-E: Sage-grouse habitat	191,400	
18	TL-24: Sharp-tailed grouse nesting habitat	0	This resource is located outside the MLP.
	NSO-23: Sage-grouse lek sites	4,700	
	NSO-24: Sharp-tailed grouse leks	0	This resource is located outside the MLP.
<b>Table 2-9 Special Status Animal Species</b>			
11	CSU-10: Black-footed ferret management areas	58,600	This resource occurs only within the MLP.
18	NSO-27: Endangered Colorado River fish	640	
19	CSU-12: Native cutthroat trout habitat	0	This resource is located outside the MLP.
26	CSU-15: Bald eagle nest, roost, and perch habitat	600	
28	NSO-31-E: Special status raptor nests, golden eagle and prairie falcon nests	30,600	
	NSO-34: bald eagle nests – abandoned	0	This resource is not currently known to be present in the MLP.
29	NSO-37: Bald eagle critical nocturnal roosts	650	
30	TL-36-E: Special status raptor nests	14,000	
	TL-37: Bald eagle nests	990	
	TL-40: Ferruginous hawk nests	76,000	
	TL-38: Bald eagle critical night roosts and winter concentration areas	650	
	TL-39: Bald eagle winter hunting perches	160	
36	TL-42: Canada lynx denning habitat	0	This resource is located outside the MLP.

**Table 2-24. Consolidated Lease Stipulation Acres – Dinosaur Trail MLP Alternative E**

Record Number	Stipulation: Resource	Alternative E (Proposed)	Comment
<b>Table 2-10 Special Status Plant Species</b>			
15	NSO-40-E: Federally listed and candidate plant species	2,700	
16	NSO-43-E: BLM sensitive plants	1,800	
<b>Table 2-12 Cultural Resources</b>			
7	CSU-17: Texas-Missouri-Evacuation Creek	0	This resource is located outside the MLP.
9	NSO-45: Duck Creek wickiup	0	This resource is located outside the MLP.
13	CSU-18: Thornburgh/Battle of Milk Creek viewshed	0	This resource is located outside the MLP.
	NSO-59: Thornburgh/Battle of Milk Creek site	0	This resource is located outside the MLP.
14	NSO-46: Mellen Hill sites	360	This resource occurs only within the MLP.
17	CSU-22-E: Rock art and structural features	1,100	
<b>Table 2-15 Forestry and Woodland Products</b>			
10	NSO-48: Douglas-fir/aspen on slopes >25%	130	
12	CSU-24: Old growth	Not mapped	
<b>Table 2-17 Minerals</b>			
21	CSU-26-E: Areas available for oil shale and multi-mineral leasing	0	This resource is located outside the MLP.
	NSO-50: Oil shale RD&D leases	0	This resource is located outside the MLP.
22	NSO-51: Active sodium mining areas	0	This resource is located outside the MLP.
23	CSU-30: Coal areas	14,200	

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**Table 2-24. Consolidated Lease Stipulation Acres – Dinosaur Trail MLP  
Alternative E**

Record Number	Stipulation: Resource	Alternative E (Proposed)	Comment
<b>Table 2-17a Minerals: Master Leasing Plans – Dinosaur Trail</b>			
31	Closed: WSAs and Harpers Corner Road	42,200	
32 <sup>(1, 2)</sup>	Open: Subject to lease stipulations	315,600	
	NSO: Lease stipulations	83,100	
	CSU: Lease stipulations	186,700	
	TL: Lease stipulations	45,500	
33	Open: Standard lease terms and conditions	0	
34	Phased leasing	422,700	This management action applies only within the MLP.
35	CSU-36: VRM Class III in MLP	50	This management action applies only within the MLP.
37	CSU-37: VRM Class II in MLP	154,200	This management action applies only within the MLP.
39	CSU-35-E: Blue Mountain Vegetation	57,600	This management action applies only within the MLP.
40	CSU-10: Black-footed ferret management areas	58,600	This resource occurs only within the MLP.
41	NSO-46: Mellen Hill sites	360	This resource occurs only within the MLP.
43	NSO-55-E: ACECs	14,500	
44	CSU-33-E: ACECs	3,200	
46	NSO-56-E: Tier 1 lands with wilderness characteristics	35,000	
	CSU-34: Tier 2 lands with wilderness characteristics	38,800	
<b>Table 2-18 Recreation</b>			
5	NSO-52-E: Recreation areas	0	This resource is located outside the MLP.
	CSU-31-E: Recreation areas	0	This resource is located outside the MLP.
<b>Table 2-19 Comprehensive Trails and Travel Management</b>			
7	Motorized vehicle use limited yearlong to existing routes	159,800	

**Table 2-24. Consolidated Lease Stipulation Acres – Dinosaur Trail MLP Alternative E**

Record Number	Stipulation: Resource	Alternative E (Proposed)	Comment
<b>Table 2-20 Lands and Realty</b>			
12	NSO-60: Rangely District Hospital R&PP	0	This resource is located outside the MLP.
<b>Table 2-21 Special Designations</b>			
13	NSO-55-E: ACECs	14,500	
14	CSU-33-E: ACECs	3,200	
<b>Table 2-22 Lands with Wilderness Characteristics</b>			
7	NSO-56-E: Tier 1 lands with wilderness characteristics	35,000	
7	CSU-34: Tier 2 lands with wilderness characteristics	38,800	

SOURCE: BLM GIS data, 2013.

**NOTES:**

This table is intended for a quick comparison of stipulations in the Proposed RMPA (Alternative E). We have included all of the stipulations so that the reader can distinguish which stipulations apply within the MLP and which ones do not. For complete descriptions of the stipulations or management actions and how they vary by alternative, please refer to Tables 2-1 through 2-22 and Appendix A.

<sup>(1)</sup>Total NSO acreage for Alternative E (Table 2-17 Record 26) does not include NSO 21-E (Table 2-6 Record 17) since the stipulation does not preclude development from taking place on any land within a lease, but rather limits the amount of disturbed lands that are rendered unsuitable for use by sage-grouse.

<sup>(2)</sup>NSO and CSU stipulation acres reflect a hierarchy analysis which prioritized areas with overlapping NSO and CSU stipulation areas as an NSO stipulation. The CSU stipulation acres reflect areas that are only CSU stipulations; these areas contain no overlap. TL stipulations acres are not calculated using a hierarchy analysis and include all acres which would have a TL stipulation applied.

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