

Roan Plateau Planning Area Resource Management Plan Amendment and Supplemental Environmental Impact Statement

Public Scoping Summary Report

July 2014

Prepared by:
Bureau of Land Management
Colorado River Valley Field Office



Public Scoping Summary Report

Roan Plateau Planning Area RMPA/SEIS

July 15, 2014

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1 INTRODUCTION

The U.S. Department of the Interior (DOI), Bureau of Land Management's (BLM) Colorado River Valley Field Office (CRVFO) is supplementing its 2007/2008 Roan Plateau Resource Management Plan Amendment (RMPA)/Environmental Impact Statement (EIS) (BLM 2007a; BLM 2008a). The new planning effort and supporting environmental analysis will address deficiencies in the BLM's earlier environmental analysis and RMPA that were identified by the U.S. District Court for the District of Colorado (the Court).

1.1 SCOPING OVERVIEW

Under the National Environmental Policy Act (NEPA) of 1969 (Public Law 91-190) and Council on Environmental Quality (CEQ) regulations for implementing NEPA, federal agencies are required to consider the environmental impacts of their proposed actions prior to implementation. Compliance with NEPA is required of all federal actions, including the adoption of official policies, and formal plans and programs, and the approval of specific projects, whether the action is developed by or submitted to the BLM. The NEPA compliance process within the BLM is guided by a series of federal, departmental, and bureau laws, regulations, and policies. NEPA mandates that every federal agency prepare a detailed statement of the effects of "major federal actions significantly affecting the quality of the human environment" (BLM 2008b).

The Roan Plateau RMPA/SEIS is subject to the requirements of NEPA because decisions made in the RMPA/SEIS will affect federal management actions and plans, including new and continuing activities and programs financed, conducted, regulated, and approved by the BLM (40 Code of Federal Regulations [CFR] 1508.18).

Public involvement is a vital component of both the Federal Land Policy and Management Act (FLPMA) (BLM 2001a) and NEPA, vesting the public in the decision-making process and allowing for full environmental disclosure. Guidance for implementing public involvement is codified in 40 CFR 1506.6, thereby ensuring that federal agencies make a diligent effort to involve the public in preparing NEPA documents. Public involvement for the Roan Plateau RMPA/SEIS is being conducted in four phases, over the course of the planning and NEPA process:

1. Public scoping prior to NEPA analysis to identify potential issues and alternatives to help determine the scope of the RMPA/SEIS.
2. Public outreach via newsletters, news releases, and newspaper advertisements.
3. Collaboration with federal, state, and tribal governments.
4. Public review and comment on the Draft RMPA/SEIS, which will analyze and disclose potential environmental effects and identify the BLM's preferred alternative.

This Scoping Report documents the results of the scoping phase of the public involvement process. This process has two components: internal scoping and external scoping. Internal scoping is conducted within the agency and with cooperating agencies to determine preliminary and anticipated issues and concerns. Due to the supplemental nature of this NEPA process, internal scoping primarily consisted of BLM's internal assessment of new information. This process was documented in an Assessment of New Information (ANI) report, which is included in this Scoping Report as Appendix A. External scoping is a public process designed to reach beyond the BLM in order to discern issues of importance to the public.

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The public process is designed to determine and frame the scope of pertinent issues and alternatives to be addressed in a NEPA document. External scoping helps ensure that:

- Issues are identified early in the process and are properly analyzed.
- Issues of no consequence or concern do not consume time and effort.
- The proposed action and alternatives are balanced, thorough, and able to be implemented.

In accordance with 43 CFR 1610.2(d), the BLM has prepared this Scoping Report to document the scoping results. In accordance with the BLM's land use planning guidance (BLM 2005), this Scoping Report captures public input in one document. This report summarizes the discrete comments received during the formal external scoping period. The Scoping Report also identifies the issues and management concerns generated from the public scoping meetings and discusses how these comments will be incorporated into the RMPA/SEIS.

1.2 BACKGROUND

The development of the Planning Area RMPA began a Notice of Intent (NOI) and with scoping in 2000. The Draft EIS was published in November 2004. The Final EIS was published in August 2006. The BLM then issued two Records of Decision (RODs), the first in June 2007 and the second, pertaining to Areas of Critical Environmental Concern (ACEC) only, in March 2008.

A lawsuit was filed in July 2008 that challenged the BLM's oil and gas leasing and management decisions for the Roan Plateau. On June 22, 2012, the Colorado District Court issued a decision, (Colorado Environmental Coalition et al. v. Kenneth Salazar et al. 2012, hereinafter called "the Judicial Order") that upheld BLM's interpretation of Public Law 105-85 (the "Transfer Act") and its consideration of a No Leasing Alternative. However, the Judicial Order set aside the RMPA and remanded the matter to the BLM for further action to address the following deficiencies:

1. Failed to sufficiently address the "Community Alternative" that various local governments, environmental organizations, and individual members of the public recommended.
2. Failed to sufficiently address the cumulative air quality impacts of the RMPA decision in conjunction with anticipated oil and gas development on private lands outside the Planning Area.
3. Failed to adequately address the issue of potential ozone impacts from proposed oil and gas development.

In view of the Court's ruling and Secretary Salazar's commitment to responsibly develop oil and gas resources on the public lands in the right places and in the right ways, the BLM determined that a new proposed RMPA and a supplemental analysis under NEPA were warranted.

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1.2.1 Purpose and Need

1.2.1.1 The Purpose of the Action

The purpose of amending the existing RMPs for the Planning Area is to provide an integrated plan that guides future site-specific analysis and decisions in accordance with the following goals and objectives:

- Implement the BLM's mission to sustain the health, diversity, and productivity of public lands for the use and enjoyment of present and future generations.
- Facilitate management of the natural resources of the Planning Area for multiple use and long-term value, recognizing that the mix of permitted and allowable uses will vary from area to area and over time.
- Comply with the provisions of Public Law 105-85 transferring the approximately 55,354 acres within Naval Oil Shale Reserves (NOSRs) 1 and 3 from U.S. Department of Energy (DOE) to the DOI.
- Ensure a consistent and coordinated approach to managing lands within the Planning Area.

To achieve these goals, the BLM must:

- Identify desired outcomes and allowable uses and actions that restore and maintain the health of the land, as well as preserve natural and cultural heritage, reduce threats to public health, safety, and property, and provide for environmentally responsible recreational and commercial activities.
- Evaluate the need for designation of ACECs for areas that contain resource values that meet the BLM's criteria for relevant and important values.
- Evaluate the need for designation of Special Recreation Management Areas (SRMAs) or other management determinations, as applicable, such as for stream segments eligible for designation as Wild and Scenic Rivers (WSRs), Watershed Management Areas (WMAs), areas having wilderness character, and Back Country Byways.
- Establish travel designations that replace interim travel designations on transferred lands and affirm or change travel designations on lands in the remainder of the Planning Area.
- Establish conservation measures for all species listed as threatened, endangered, proposed, candidate, or BLM sensitive. Conservation measures are designed to prevent the need for listing of additional species under the Endangered Species Act (ESA) and to improve the condition of all special status species and their habitats to a level where their special status recognition is no longer warranted. (See August 30, 2000, Interagency Memorandum of Agreement [MOA] for Programmatic Endangered Species Act Section 7 Consultation and BLM Manual 6840, Special Status Species Management. [BLM 2001b])
- Apply BLM Rangeland Health Standards (BLM Manual 4180) (BLM 2001c) to recommendations and information from land health assessments to develop direction that enhances or restores physical function and biological health and achieves Land Health Standards at the watershed scale.
- Recognize valid existing rights, including oil and gas leases, mineral leases, mining claims, and lands and realty actions.

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- Integrate the management of the Planning Area with the Glenwood Springs Resource Area (GSRA) and White River Resource Area (WRRRA) by applying management techniques that are successful in other portions of these areas.

These goals and objectives are based on the direction provided by numerous laws, mandates, policies, and plans, including:

- NEPA
- FLPMA
- Public Law 105-85 (U.S. Department of Defense Authorization Act of 1998)
- Mineral Leasing Act of 1920, as amended
- National Historic Preservation Act of 1966, as amended
- Federal Onshore Oil and Gas Leasing and Reform Act of 1987
- ESA, Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act, Clean Water Act (CWA), Clean Air Act, and other environmental laws
- BLM Planning Regulations (40 CFR 1600)
- BLM Grazing Administration Regulations (43 CFR 4180)
- BLM Land Use Planning Handbook, H-1601-1, updated January 5, 2001 (BLM 2001d) and March 11, 2005 (BLM 2005a)
- BLM Manual 1613 (Areas of Critical Environmental Concern) (BLM 1988b)
- BLM Manual 6840 (Special-Status Species Management) (BLM 2001b)
- BLM Manual 4180 (Rangeland Land Health Standards) (BLM 2001c)

The previously published Draft RMPA/EIS for the Planning Area was prepared in compliance with guidance provided by the then-current version of the BLM Land Use Planning Handbook (BLM 2001d). The most recent update to this handbook was released in March 2005 (BLM 2005a), after publication of the Draft. In order to avoid confusion when referring to elements of the Draft RMPA/EIS, some aspects of the updated guidance were not incorporated into this document. For example, the suggested outline and organization of the Proposed Plan/Final EIS follow the earlier version of the handbook. However, more substantive aspects of the revised handbook, such as guidance for trails and travel management and socio-economic analysis, were compiled in the Final RMPA/EIS.

1.2.1.2 The Need for the Action

Transfer of NOSRs 1 and 3 from DOE to BLM

Public Law 105-85 (the “Transfer Act”) transferred management authority of NOSRs 1 and 3 from the DOE to the DOI (specifically, the BLM) in 1997. The 55,354 acres of land involved in the transfer comprised 36,362 acres in NOSR 1 and 18,992 acres in NOSR 3. These lands were added to the 18,248 acres (including federal surface or mineral estate) previously managed by the BLM in the Planning Area. The primary need for the current RMPA/EIS process is to develop an integrated land use plan that

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incorporates the transferred NOSRs into the remainder of BLM land in the Planning Area and establishes a unified set of goals, objectives, and land use or management actions.

The Transfer Act states, “Beginning on the date of the enactment of this section, or as soon thereafter as practicable, the Secretary of the Interior shall enter into leases with one or more private entities for the purpose of exploration for, and development and production of, petroleum (other than in the form of oil shale) located on or in public domain lands in Oil Shale Reserves Numbered 1 and 3 (including the developed tract of Oil Shale Reserve Numbered 3). Any such lease shall be made in accordance with the requirements of the Mineral Leasing Act (30 U.S.C. 181 et seq.) regarding the lease of oil and gas lands and shall be subject to valid existing rights” (Section 3404, Public Law 105.85). In addition, the act stipulates that the transferred lands be managed in accordance with the FLPMA and other applicable laws that guide the BLM’s management efforts.

Another provision of the Transfer Act mandated that the developed track of NOSR 3, located below the rim, be leased within one year. At the time NOSR 3 was transferred, a planning process was underway to evaluate increasing levels of oil and gas development in the western portion of the GSRA. As a result of the short timeframe mandated to lease NOSR 3 and the similarity in ecological characteristics of the area below the rim to adjacent BLM lands, an area of 12,029 acres within NOSR 3 already leased and being developed for oil and gas (“the production area”) was included in that planning process. On March 24 1999, a ROD approved the RMPA as analyzed in the 1999 Glenwood Springs Resource Area, Oil and Gas Leasing and Development Final Supplemental Environmental Impact Statement (FSEIS) (BLM 1999a) and pertaining to the 12,029 acres in the current production area of NOSR 3. The remaining lands in NOSR 3, all of the lands in NOSR 1, and non-NOSR federal lands within the Planning Area would be subject to an additional planning process, specifically the 2006 Final RMPA/EIS.

The 2006 Final RMPA/EIS focused on unleased BLM lands in the Planning Area, comprising NOSR 1, portions of NOSR 3 outside the production area, and the non-NOSR federal lands. However, certain resource and land use management decisions—specifically those not in conflict with vested property rights under existing oil and gas leases—would apply to the entire 73,602 acres of BLM lands.

The impact analyses of Chapter 4 in the 2006 Final RMPA/EIS also consider the currently leased areas. Most of the unleased portions of BLM lands lie in NOSR 1 above the Roan cliffs. The area above the cliffs, including both federal and private lands, is the area generally referred to in the vernacular as the “Roan Plateau.” The Planning Area includes these areas of higher elevation as well as areas of lower elevation below the Roan cliffs. The area transferred from the DOE was historically managed by the BLM, although it was under the authority of the DOE and in accordance with the DOE’s Operational Management Plan (OMP) (DOE 1988). The OMP specified the administrative procedures and resource management direction for the areas.

Demographic and Economic Changes in the Planning Area

The rate of population growth of Garfield County has been faster than that of Colorado as a whole since 1970 (Sonoran Institute 2002). Between 1990 and 2000, growth in Garfield County was 3.9 percent, compared to 2.7 percent for Colorado. Between 2000 and 2010, Garfield County grew by 2.99%. The I-70 corridor, where most of the population is concentrated, is growing for several reasons, including residents attracted to the rural character, natural beauty, and recreational and, increasingly, economic opportunities of the area. Historically, the economy of the area was based on ranching, hunting, and related services, and oil and gas development; however, the influx of new residents associated with other economic sectors has generated differing opinions regarding future development of the Planning Area. Opinions expressed during public comment on the Final 2006 RMPA/EIS indicated that some residents would prefer a low level of development, while others would prefer commodity production to support economic growth. Conflicting

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community goals for the Planning Area have contributed to the need for an open and coordinated planning process.

Oil and Gas Leasing

The 1999 FSEIS (BLM 1999a) addressed increasing levels of oil and gas development in the western portion of the Glenwood Springs Field Office (GSFO), including portions of NOSR 3 and, to a minor extent, NOSR 1 within the production area. Oil and gas leasing decisions, lease stipulations, and mitigation measures for public lands were included in the subsequent ROD issued March 24, 1999.

At the time the 1999 FSEIS was prepared and the ROD was issued, much of western Garfield County was already leased. The ROD established lease stipulations that apply to subsequent leases to the extent that they are consistent with existing lease rights or can be applied as Conditions of Approval (COAs) during permitting. The bulk of NOSRs 1 and 3 were not leased for oil and gas at this time. Increasing demand and subsequent increases in drilling for oil and gas in western Colorado resulted in the need for a management plan that facilitated orderly economic and environmentally sound exploration and development of oil and gas resources in these lands using principles of multiple use.

Interim Travel Designations

BLM land use planning regulations require the designation of public lands as open, closed, or limited for off-highway vehicle (OHV) use (43 CFR 8342.1). The purpose of travel designations is to protect fragile and unique resource values from damage by OHVs while providing opportunities for this type of use, where appropriate. Permanent travel designations have not yet been made for the transferred lands (NOSRs 1 and 3), but interim closures and restrictions were established and published in the Federal Register on July 3, 2000 (Volume 65, No. 128, Pages 41081-41082). The interim management included closing the NOSRs to cross-country motorized and mechanized travel and restricting OHV travel to designated routes. These interim measures did not apply to other BLM lands in the Planning Area. For purposes of impact analysis, only the No Action Alternative assumed that the interim closures and restrictions would be vacated and that permanent designations for NOSRs 1 and 3 would allow cross-country OHV travel throughout the Planning Area.

Wilderness Character and Roadless Inventory

A wilderness inventory of the transferred NOSR lands was conducted during 1998, 1999, and 2000 to determine whether the lands contained the characteristics of wilderness, as defined by the Wilderness Act of 1964. All other lands within the Planning Area had already been inventoried. The information contained in the wilderness inventory was considered in the development and analysis of alternatives in the 2006 RMPA/EIS.

The Draft RMPA/EIS included an analysis of alternative management prescriptions for three areas (totaling 21,382 acres) found by the BLM to contain wilderness characteristics. On April 14, 2003, a settlement agreement was reached between the DOI and the State of Utah, Utah School and Institutional Trust Lands Administration, and Utah Association of Counties. Consistent with that settlement and subsequent policies issued by the BLM, the Final RMPA/EIS did not consider the designation of new Wilderness Study Areas (WSAs) or the classification or management of BLM lands as if they were, or would become, WSAs. However, the protection and management of wilderness characteristics was considered and analyzed for Alternatives II and III in the Draft RMPA/EIS.

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New Information from Land Health Assessments

Land health assessments were conducted in portions of the Planning Area atop the plateau in 1999 and in the eastern portion of lands below the rim in 2001. Several assessments were updated in 2013. These assessments were conducted in accordance with BLM statewide standards that describe the natural resource conditions needed to sustain public land health, as adopted by the BLM in Colorado and approved by the Secretary of the Interior in February 1997. Information included in the assessments used to support this analysis, and ultimately the selection of a RMPA, address upland soils, riparian systems, plant and animal communities, special status (threatened, endangered, candidate, or sensitive) species, and water quality.

1.2.2 Supplemental Environmental Impact Statement

The SEIS is needed for two reasons:

1. To address the Judicial Order; and
2. To include new or updated regulatory requirements or data that would affect the analysis.

Since publication of the 2006 RMPA/EIS, significant new information regarding resources may now be available or changes in regulatory requirements may have occurred. These additional requirements may include:

- Addressing significant new data, when available and if needed to make an informed decision (e.g., socioeconomic data).
- Addressing changing/changed resource conditions.
- Addressing changed regulatory status (e.g., threatened and endangered [T&E] species status) or other new regulations.
- Integration or modification of uses of public land that have occurred since the 2006 RMPA/EIS and other associated management/activity plans were completed.

1.3 SCOPING PROCESS

The scoping process is the method for determining the scope, focus, and content for the RMPA/SEIS. Scoping helps to identify the range of actions, alternatives, environmental effects, methods of assessment, and mitigation measures to be analyzed in depth, and eliminates issues that are not significant or relevant to the decision at hand from detailed study. Scoping also provides an opportunity for active participation from a variety of audiences, including proponents and opponents of a proposed action, and encourages the expression of thoughts and/or concerns during the decision-making process. Formal public scoping is not required for a supplemental EIS. However, BLM determined that it would be useful for identifying new information, issues, and changed circumstances.

1.4 PLANNING AREA LOCATION AND DESCRIPTION

The Planning Area is located in west-central Colorado, west of the Town of Rifle and Highway 13, north of Interstate 70, and east of Parachute Creek Road (Garfield County Road 215) (Figure 1). The Planning Area encompasses approximately 127,000 acres. The BLM manages approximately 73,600 acres of the Planning Area, of which 68,447 acres have both surface ownership and sub-surface mineral rights and 4,455 acres have private surface with underlying federal mineral rights. The remaining 53,400 acres of the

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Planning Area have both private surface and mineral ownership. It has been estimated that the BLM's ownership contains a total of approximately 8.9 trillion cubic feet (TCF) of recoverable natural gas. About 34,758 acres of the Planning Area are BLM-managed lands located on top of the plateau, holding an estimated 4.2 TCF of recoverable gas. About 38,844 acres of BLM managed lands are below the rim (including the cliffs), holding an estimated 4.7 TCF of gas.

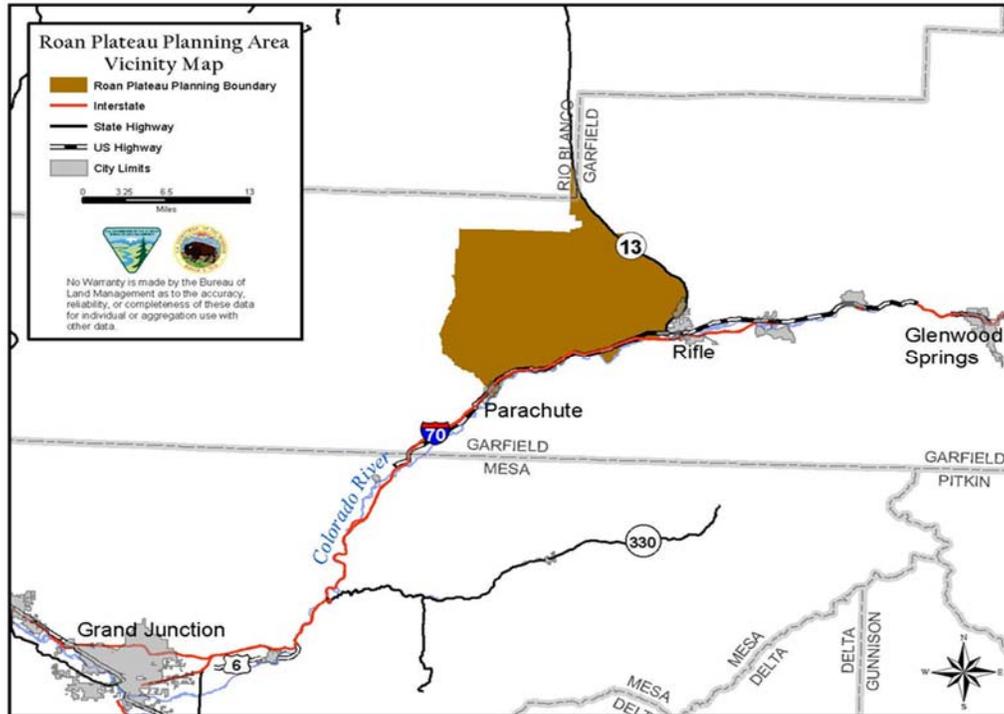


Figure 1. Location of the Roan Plateau Planning Area

1.4.1 Federal Register

An NOI to prepare an SEIS associated with the development of the RMPA for the Planning Area was issued by the DOI on January 28, 2013. This notice stated that the RMPA will amend two RMPs: the GSFO RMP and the White River Field Office RMP. The NOI identified the need for the RMPA/SEIS and provided information about the Planning Area and the future planning process, preliminary planning issues and criteria in the resource area, and contact information. The NOI also initiated a 90-day scoping period, which closed March 30, 2013. Comments received in response to the NOI are included in this Public Scoping Summary Report.

1.4.2 Press Release

A press release was published by the BLM on January 25, 2013, announcing the inception of the scoping process. This notice included scoping meeting locations, times, and other mechanisms for submission of scoping comments. This information was subsequently published in the Denver Post, Grand Junction Daily Sentinel, and Glenwood Springs Post-Independent.

1.4.3 Public Meetings

The BLM held two scoping meetings to answer questions from attendees and to collect written comments regarding the RMPA/SEIS. The public was invited to participate in two meetings:

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- February 27, 2013, 4:00 p.m. to 7:00 p.m., Colorado River Valley Field Office, 2300 River Frontage Road, Silt, Colorado; and
- February 28, 2013, 4:00 p.m. to 7:00 p.m., Clarion Inn, 755 Horizon Drive, Grand Junction, Colorado.

Attendees at each meeting were recorded via a sign-in sheet. Written scoping comments were collected at the scoping meetings and were received through the end of the scoping period on March 30, 2013 via email, fax, or mail:

- Email: roanplateau@blm.gov
- Fax: (970) 876-9090
- Mail: Bureau of Land Management, Colorado River Valley Field Office, Roan Plateau Comments, 2300 River Frontage Road, Silt, Colorado, 81652

1.4.4 Internal Scoping

The BLM's internal scoping was documented in the ANI that summarizes new information and regulations that could affect the SEIS analysis. The ANI describes, by resource, the current state of the resource, new information and the significance of the information, and changes in federal or state regulations. The ANI is included as Appendix A to this Scoping report.

1.4.5 Cooperating Agencies

A cooperating agency is any federal, state, or local government agency or Native American tribe, other than the BLM that has "jurisdiction by law" or "special expertise" with respect to any environmental impact. A cooperating agency enters into a formal agreement with the BLM to assist in the development of an environmental analysis. Potential cooperating agencies were identified early in the planning process and the list was refined during scoping.

In June 2013, BLM mailed letters to federal, state, local, and tribal representatives inviting them to participate as cooperating agencies for the Roan Plateau RMPA/SEIS. Table 1 lists the agencies invited to be cooperators in the Roan Plateau RMPA/SEIS, and Table 2 lists the agencies that accepted this offer and have entered into a Memorandum of Understanding (MOU) with the BLM for this purpose.

Table 1. Agencies Invited to be Cooperators for the Roan Plateau RMPA/SEIS

Garfield County
Mesa County
Rio Blanco County
Town of Parachute
Town of Silt
City of Rifle
Colorado Parks and Wildlife

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Table 1. Agencies Invited to be Cooperators for the Roan Plateau RMPA/SEIS

Colorado Department of Natural Resources
U.S. Fish and Wildlife Service

Table 2. Cooperating Agencies for the Roan Plateau RMPA/SEIS

Garfield County
Mesa County
Rio Blanco County
City of Rifle
Colorado Parks and Wildlife
U.S. Fish and Wildlife Service

A meeting was held with the potential cooperating agencies on July 17, 2013, although no substantive scoping was conducted at this meeting. Scoping is an ongoing process and it is expected that continuing cooperating agency involvement will be integrated into internal scoping as the process continues.

1.4.6 Tribal Consultation

A letter inviting scoping comments was sent to potentially interested Native American tribes on October 13, 2013 (Table 3). No responses were received.

Table 3. Tribal Consultation for the Roan Plateau RMPA/SEIS

American Indian Group	Contact
Ute Indian Tribe	Chairman Gordon Howell
	Ms. Betsy Chapoose, Native American Graves Protection and Repatriation Act (NAGPRA) Representative
Southern Ute Indian Tribe	Chairman Jimmy Newton Jr.
	Mr. Alden Naranjo, NAGPRA Coordinator
Ute Mountain Ute Tribe	Chairman Manuel Heart
	Mr. Terry Knight, Sr., NAGPRA Representative//Tribal Historic Preservation Office (THPO)

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2 SUMMARY OF PUBLIC COMMENTS

Planning issues are concerns or controversies about existing and potential land and resource allocations, levels of resource use, production, and related management practices. Issues to be addressed may stem from new information or changed circumstances and from the need to reassess the appropriate mix of allowable uses.

During the public scoping period, 25,163 comment submissions were received (Table 4). Comments were received as emails, hard copy letters, faxes, and completed scoping comment forms distributed during the public scoping meetings. Of the scoping comment submissions, 25,057 submissions (99 percent) were attributed to one of five form emails/letters and 106 submissions (one percent) represented unique submissions. These submissions comprise a total of 439 unique, individual comments and are summarized by topic in Table 5.

Table 4. Scoping Representative Comments, by Affiliation

Organization Type	Number of Submissions	Name/Title
Federal and State Agencies	2	U.S. Environmental Protection Agency
		Colorado Parks and Wildlife
Oil and Gas Industry	1	Bill Barrett Corporation
		WPX Energy Rocky Mountain, LLC; OXY USA Inc.; and Ursa Piceance LLC
		Shepard Enterprises, LLC, Grand Junction
Commercial Associations, Alliances, and Partnerships	5	Colorado Oil & Gas Association
		Grand Junction Economic Partnership
		Western Energy Alliance
		Citizens Supporting Property Rights
		Grand Valley Citizens Alliance
Towns	2	Town of Rangely
		Town of Parachute
Boards of County Commissioners	4	Garfield County
		Rio Blanco County
		Mesa County (plus 1 individual commissioner letter for the commissioners)
State of Colorado Representative	1	Ray Scott, House District 55
Individuals		
Unique	69	Individuals
Form Email 1	1,712	Protect the Roan Plateau from Oil and Gas Drilling and Fracking*
Form Email 2	126	End Regulatory Delays*
Form Email 3	3,250	Conserve Roan Plateau's Crucial Fish and Wildlife Habitat*

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Table 4. Scoping Representative Comments, by Affiliation

Organization Type	Number of Submissions	Name/Title
Form Email 4	13,230	Protect the Roan Plateau's Remaining Wildlands*
Form Email 5	6,739	Roan Plateau Supplemental EIS Scoping Comments*
Conservation Districts	1	Rio Blanco Water Conservation District
Chambers of Commerce	4	Rifle Area Chamber of Commerce
		Rangely Chamber of Commerce (Commissioner Lohse)
		Meeker Chamber of Commerce
		Grand Junction Chamber of Commerce
Non-Governmental Organizations	5	Earthjustice, Natural Resources Defense Council, Conservation Colorado, National Wildlife Federation, The Wilderness Society, Rock the Earth, Western Resource Advocates, Sierra Club, Colorado Wildlife Federation, Roaring Fork Sierra Club Group, Rock Mountain Wild, Wilderness Workshop, Colorado Mountain Club
		Grand Valley Angler's Chapters of Colorado Trout Unlimited and the International Federation of Fly Fishers
		Wyoming Backcountry Horsemen of America
		Trout Unlimited and Colorado Trout Unlimited
		Backcountry Hunters and Anglers

*Form email submissions were classified by identical text. They are identified here by common email subject line.

Table 5. Scoping Summary, Individual Comments by Topic

Topic	Number of Unique Comments*
Air Resources and Air Quality	36
Soil Resources	6
Water Resources and Water Quality	35
Wetlands, Floodplain, and Riparian Habitat	5
Terrestrial Wildlife and Habitat – Includes Avian	21
Aquatic Wildlife and Habitat	16
Special Status Species	8
Ecological Resources	10
Livestock Grazing	1

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Table 5. Scoping Summary, Individual Comments by Topic

Topic	Number of Unique Comments*
Fluid Minerals, Oil and Gas Leasing, and Reasonable Foreseeable Development	131
Recreation	5
Special Designations: Wilderness and Lands With Wilderness Characteristics Areas of Critical Environmental Concern	5 7
Social and Economic	32
Hazardous Materials	2
Sound and Noise	1
SEIS Process and NEPA Analysis	64
SEIS Alternatives	54
Total	439

*Does not include multiples of identical submissions or the same scoping comments

3 SCOPING ISSUE SUMMARY

3.1 ISSUES IDENTIFIED DURING SCOPING

As defined in the BLM Land Use Planning Handbook H-1601-1 (BLM 2005), planning issues are concerns or controversies regarding existing and potential land and resource allocations, levels of resource use, production, and related management practices. These issues may stem from significant new information or changed circumstances and from the need to reassess the appropriate mix of allowable uses. For the Roan Plateau RMPA/SEIS process, planning issues will also comprise those identified in the Judicial Order on the original RMPA/EIS as requiring additional analysis. Defined planning issues will be used to develop alternative management strategies that will be analyzed during the planning process.

Scoping submissions were reviewed and individual scoping comments were summarized and categorized by a planning issue. The scoping comments and planning issues were further classified based on how they

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would be addressed in the SEIS process. Comments were classified into one of the following groups and are discussed in detail in the corresponding sections:

- Planning issues to be addressed in the SEIS;
- Planning issues that are addressed through policy or administrative action;
- Planning issues beyond the scope of this plan; or
- Planning issues that were adequately addressed in the existing Roan Plateau RMPA/EIS.

3.2 PLANNING ISSUES TO BE ADDRESSED IN THE SEIS

Scoping comments to be addressed within the scope of the SEIS are summarized by planning issue, as outlined below. Planning issue statements are drafted to synthesize like groups of scoping comments into clear questions that can be addressed through the land use planning process. Because of the replication or strong similarity of many comments, a single representative comment was selected to represent groups of identical or similar comments associated with each issue. If a single comment addresses more than one planning issue or topic, it is grouped by the first mentioned. Minor editorial changes (adding a verb for instance) were made as necessary for clarity. Acronyms not identified in the text are included in Section 8, Acronym List, of this Public Scoping Summary Report.

3.2.1 Air Resources and Air Quality

Some scoping comments regarding air resources and air quality asked that the analysis of air quality impacts include a comparison to regulatory standards and incorporation of air quality data and analyses from other nearby or regional projects or studies. Other comments suggested that discussions on greenhouse gas (GHG) emissions and climate change be integrated into the SEIS. Comments expressed varying opinions, ranging from a desire to see a comprehensive analysis of potential air impacts, to noting that the analysis is required to only address the narrow scope as identified in the Judicial Order.

3.2.1.1 Air Issue 1

How will land use planning decisions, including decisions to lease oil and gas, affect air quality in the Planning Area and the surrounding region? How will air quality impacts relate to regulatory standards and thresholds? What mitigation measures are available to address adverse impacts to air quality? How will air quality in the region be cumulatively affected by other ongoing and proposed development? What effects will new development and drilling/completion methods have that were not anticipated in the FEIS, and how will they be mitigated?

Air Issue 1 Representative Comments

- Disclose the current air quality conditions in the Planning Area, as well as, potential air quality impacts associated with oil and gas development activities. The Draft SEIS should include an evaluation of the direct, indirect, and cumulative impacts of oil and gas development on:
 - Each of the criteria pollutants and their appropriate National Ambient Air Quality Standards (NAAQS) (i.e., ozone, particulate matter, carbon monoxide, nitrogen oxides, sulfur dioxide, and lead).
 - Prevention of Significant Deterioration (PSD) increment consumption at Class I areas.

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- Projected ambient concentrations of hazardous air pollutants (e.g., formaldehyde, benzene, toluene, ethyl benzene, xylene, n-hexane, etc.).
- Air Quality Related Values (AQRVs) in Class I and sensitive Class II areas.
- Identify mitigation measures (including control measures and design features) that would apply in the event that potential adverse impacts to air quality or AQRVs are predicted, and to do so after completing an air quality analysis that is informed by the Reasonably Foreseeable Development (RFD) scenario and the emissions inventory. These mitigation measures could include emission standards or limitations, best management practices (BMPs), control technologies, reclamation, and limitations on surface disturbance and the pace of development.
- Analyze the cumulative air quality impacts of any natural gas development authorized by the new RMPA “when added to other past, present, and reasonably foreseeable future” drilling on public and private lands throughout the region. BLM’s cumulative air quality impacts analysis must consider not only the booming development that was occurring as of 2006, but also the expanded drilling contemplated since that time.
- Consider the air quality impacts of any oil and gas development it authorizes, especially when added to the pollution from the booming natural gas fields throughout the region.
- It is imperative to me that an adequate air quality assessment is conducted in this area.
- Key topics that we recommend are disclosed and analyzed so that potential impacts to public health and the environment can be fully understood include:
 - Air resources
- The BLM must consider the resources that need protection on the Roan Plateau:
 - Clean air
- The U.S. Environmental Protection Agency (EPA), U.S. Department of Agriculture, and the DOI have entered into a "Memorandum of Understanding Regarding Air Quality Analyses and Mitigation for Federal Oil and Gas Decisions Through the National Environmental Policy Act Process" (National Air Quality MOU; June 23, 2011). We believe using this helpful tool will ensure effective and efficient NEPA air quality evaluations. We are eager to work with the BLM using this tool, and believe it works best to first and foremost convene a technical workgroup composed of the MOU signatory agencies who will participate in this BLM action.

3.2.1.2 Air Issue 2

What are the potential impacts from the emissions of GHGs from authorized development activities? How will the effects of planning decisions be impacted by the effects of climate change?

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Air Issue 2 Representative Comments

- The SEIS must quantify and analyze the reasonably foreseeable GHG emissions associated with drilling authorized under the new RMPA. The BLM must account for present and future warming in addressing impacts on the Roan Plateau. The DOI's current adaptation plan states that agencies "should incorporate adaptation planning and decision-making consideration of climate change impacts as a component of cumulative impacts." The SEIS must consider and incorporate into its climate change analysis information from the BLM's recent Rapid Ecoregional Assessment (REA) for the Colorado Plateau.
- Include an analysis and disclosure of GHG emissions and climate change, including reasonable alternatives and/or potential means to mitigate project-related GHG emissions. Specifically, we suggest the following approach:
 - Consider the lifecycle of GHG emissions associated with this proposed action in the analysis. We recommend that GHG emissions be quantified in carbon dioxide (CO₂)-equivalent terms and translated into equivalencies that are easily understood from the public standpoint (e.g., annual GHG emissions from x number of motor vehicles, (see <https://www.epa.gov/cleanenergy/energy-resources/calculator.html>). In addition, because information on "downstream" indirect GHG emissions from activities such as refining may be of interest to the public in obtaining a complete picture of the GHG emissions associated with the proposed project, it may be helpful to estimate and disclose them.
 - Describe any existing regional or state climate change plans or goals that cover the Planning Area as well as the extent to which the BLM would reconcile, through mitigation or otherwise, its proposed action with such plans.
 - Qualitatively discuss the link between GHGs and climate change, and the potential impacts of climate change. Include a summary discussion of ongoing and projected regional climate change impacts relevant to the action area based on U.S. Global Change Research Program assessments.
 - Identify any potential impacts from the proposed action that may be exacerbated by climate change (e.g., reclamation could become more difficult with climate change, or the impacts of water consumption could increase). We recommend that the BLM assess and implement measures to reduce GHG emissions associated with the proposed project, including alternatives and/or potential means to mitigate emissions. We recommend considering mitigation measures from the EPA's Natural Gas STAR Program as examples of cost-effective technologies and practices to reduce GHG emissions (www.epa.gov/gasstar/).
- Cumulative effects of climate change must be analyzed.
- Climate change is much more upon us and these plans need to take account of that. It has not. It is a 1997 plan. I see no plans from the BLM for air quality impacts.

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3.2.3 Fluid Minerals

A number of scoping comments requested additional analysis of drilling and development impacts and, specifically, the impact of new technologies, as well as more wells, than initially considered in the RMPA/EIS. Other comments voiced concern regarding impacts from development on private lands. Some comments were made for addressing specific aspects of the revised RFD scenario; others made specific requests for leased development COAs and required mitigation and/or BMPs. [Note: some comments regarding the potential numbers of oil and gas wells are addressed under other resources and issues, as appropriate.]

3.2.3.1 Fluid Minerals Issue 1

What are the relative and foreseeable environmental impacts of horizontal drilling, directional (“S-curve”) drilling, and other new technologies? What is the feasibility of these techniques in the Roan Plateau geologic environment for recovery of the mineral resource?

Fluid Minerals Issue 1 Representative Comments

- The BLM must account for the inevitable improvements in directional drilling technology that will occur over the 20-year life of the new RMPA, and the dramatic decrease in costs that follows when companies gain experience with new drilling practices.
- The size of well pads and the number of downhole locations from a given pad can be limited by using sidetrack wells from existing wells.
- Rock the Earth showed that all of the Planning Area can be reached today using directional drilling technology.
- If your reasoning is to drill the Roan Plateau from the valley floor, you are failing to use common sense in expecting energy producers to develop technology that can reach the elevations of the Plateau for their operations.
- Drilling and Hydraulic Fracturing Technology – The BLM must analyze the impacts associated with rapidly developing exploration and production techniques, such as hydraulic fracturing and horizontal and directional drilling, into different formations. These methods present a number of substantial environmental and community impacts that are distinct from older methods of oil and natural gas extraction, and they must be thoroughly considered in the SEIS. These impacts include, but are not limited to, increased water consumption and water quality impacts, truck traffic, socio-economic impacts, cross-contamination of subsurface aquifers from abandoned and idle wells, increased chemical storage, transport, and use, and increased generation of potentially toxic waste and produced water.
- Advances in “S curve” directional drilling and horizontal drilling will allow well over 75 percent of the mineral estate to be reached while leaving the top of the plateau, and much of the base, intact and un-fragmented.
- Companies could recover 73 percent of the gas in the Planning Area (53 percent of the federal gas) without accessing any gas from federal lands on the top of the plateau.
- The BLM should not simply take at face value self-interested industry claims about what directional drilling distances are “technically and economically feasible.”

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- The BLM should require the use of three-phase gathering systems to collect oil and gas, condensate, produced water, and other liquids and materials on the Roan Plateau.
- The WPX Report stated that there is extreme difficulty with directionally drilling a well with more than a 2,000-foot horizontal reach, and that drilling from the base of the plateau to below the upper plateau was infeasible.
- The geologic architecture of the Williams Fork reservoir underlying the Plateau Leases severely limits the ability to develop these reserves through horizontal drilling. While vertical drilling is able to develop multiple layers of this formation as the wellbore proceeds through the formation, horizontal drilling could not recover these vertically-stacked, discontinuous reserves.
- Based upon operator's current experience, the distance at which the drill string is unable to rotate is between 3,500 to 4,000 feet from the target reservoir and difficulty once the tangent approaches 65 degrees from vertical.
- The technical and economic issues that render directional drilling infeasible will not change over the course of the next 20 years and the life of the RMPA.
- When using the "S" drilling technique, the torque and drag on the drill string become prohibitive at distances greater than 4,000 feet from the surface of the well, and the weight from the drill string cannot be transferred to the bit for drilling beyond this distance.
- Given the physical constraints on directional drilling, only a small fraction of the plateau reserves could be accessed by wells drilled on the Valley Leases.
- It is my understanding that horizontal drilling could reach almost 90 percent of the gas reserves under Roan Plateau without touching the top of the plateau.
- In 2012, directional drilling from the valley floor remains technically or economically infeasible. Further, those mineral access locations on the valley floor are held by private land owners over which the federal government has no authority.
- Utilize BMPs and most current technologies for drilling.
- The Roan Plateau should not be sacrificed for these natural gas extraction boom and bust cycles. With the lack of drilling activity in the area, it appears that there is not a high demand for gas leases in this area, other than for speculative purposes.
- Develop a more protective plan to prohibit new roads, pipelines, and well pads on top and on crucial habitat at its base.
- Must require "state-of-the-art practices," including directional drilling, reclamation, and water recycling.
- It is recommended that the BLM identify the regulatory mechanisms it will use to ensure their implementation (including lease stipulations and conditions of approval, notices to lessees, and permit terms and conditions).
- Even temporary disturbance from road, pipeline, or other development can cause considerable and irreversible damage.

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- While the current RMPA/EIS states that “... the potential for contamination of usable groundwater is considered negligible based on the requirement that operators isolate and protect water bearing zone,” it fails to consider that, while the well integrity might be great, there are many occasions for surface spills at drill sites and unnoticed and unintended losses of contaminants to the surface which would then migrate to groundwater.

3.2.3.2 Fluid Minerals Issue 2

How will new estimates of the potential wells that could be drilled in the Planning Area change the potential impacts to resources in the Planning Area?

Fluid Minerals Issue 2 Representative Comments

- It is my understanding that previously only 210 wells were proposed, but now more current documents suggest thousands of wells. Thousands of wells would destroy much of the wonders of the Roan Plateau.
- The BLM also must analyze the full impacts of all reasonably foreseeable natural gas development authorized under the new RMPA.
- Horizontally developing these resources on 10-acre spacing will amount to more than 3,000 additional wells. While there is currently infrastructure in place at the base of the plateau, that infrastructure can in no way accommodate this huge of an increase in drilling activity.

3.2.3.3 Fluid Minerals Issue 3

How will specific COAs for fluid mineral development projects in the Planning Area address potential impacts? What project-specific mitigation requirements or required BMPs for fluid mineral development in the Planning Area will be effective in addressing potential impacts from development activities?

Fluid Minerals Issue 3 Representative Comments

- The BLM should prohibit open pits to prevent bird and wildlife mortality.
- The BLM should require the use of three-phase gathering systems to collect oil and gas, condensate, produced water, and other liquids and materials on the Roan Plateau.
- Energy development infrastructure should prioritize the use of pipelines over surface vehicles to gather condensate, liquids, etc., from sites in or near important habitat areas, such as big game winter range. This policy should be implemented and adhered to from the outset of drilling and development of any given site to mitigate adverse impacts to big game.
- Reuse of produced water for these activities is recommended, when feasible, to reduce the use of water resources and help ensure the long-term sustainability of these operations. It is also recommended that the BLM require future project proponents to develop water resource management plans to address water consumption and produced water disposal, including identifying water recycling opportunities.

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3.2.5 Ecological Resources

Many scoping comments addressed protection and analysis of impacts to ecological resources. Many of these were in regards to special status species, as well as some addressing general wildlife and habitat concerns. [Note: Special status species are defined as those species listed under the ESA by the U.S. Fish and Wildlife Service (USFWS) as candidate, proposed, or T&E, as well as those designated by the BLM State Director as sensitive species.]

3.2.5.1 Ecological Resources Issue 1

How will new information and changed circumstances impact special status species, including endangered plants listed by the ESA, the Colorado River cutthroat trout (CRCT), and greater sage-grouse, as well as their habitat? How can potential adverse impacts be mitigated?

Ecological Resources Issue 1 Representative Comments

- I strongly urge the BLM to create an alternative management plan that conserves the top of the Roan Plateau and its stunning wildlife habitat and recreational opportunities.
- The BLM must thoroughly analyze the impacts of any natural gas drilling or other surface disturbing activity authorized under the new RMPA on the Roan Plateau's wildlife resources and habitat. This includes the imperiled sage grouse, which is particularly sensitive to natural gas exploration and development activities, and CRCT.
- The Roan Plateau contains important populations of CRCT, rare plants.....
- Sage grouse, which is particularly sensitive to natural gas exploration and development activities, big game winter range and migration corridors, and CRCT warrant protection under the new RMPA through measures such as no leasing, no surface occupancy (NSO) stipulations, ACEC designation, and other protective management prescriptions. Adverse effects of oil and gas development can be divided into seven categories:
 1. Direct loss of habitat
 2. Disturbance and displacement of wildlife
 3. Habitat fragmentation and isolation
 4. Alteration of environmental functions and processes (e.g., stream hydrology, water quantity/quality)
 5. Physiological stress to wildlife
 6. Introduction of competitive and predatory organisms
 7. Secondary effects created by work force assimilation and growth of service industries.

The SEIS must address these effects.

- The habitat of sage grouse should be left alone and not changed to oil drilling.

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- Those species include some of the “rarest plants in North America,” such as the DeBeque Phacelia and Parachute Penstemon, both federally protected threatened species under the ESA.
- Parachute Penstemon Critical Habitat. The Parachute Penstemon (also known as the Parachute Beardtongue or *Penstemon debilis*) is “one of the rarest plants in North America.” The listing decision describes the serious threat posed by booming oil and gas development on and around the Roan Plateau. The critical habitat designation identifies “energy development and associated activities” as “the primary threat to *Penstemon debilis* and its habitat.” The BLM must consult with the USFWS pursuant to Section 7 of the ESA to ensure that any activities authorized under the new RMPA do not jeopardize the Penstemon or adversely modify its critical habitat. Given the dire threat energy development poses to the Penstemon and its habitat, authorizing any drilling in or near the critical habitat would most likely violate the ESA.
- DeBeque Phacelia. The BLM’s analysis and new RMPA should incorporate and implement the Colorado Rare Plant Conservation Initiative’s Recommended Best Management Practices for Plants of Concern. The BLM must consult with the USFWS under Section 7 of the ESA to ensure that natural gas development and other activities authorized under the new RMPA do not jeopardize the Phacelia.
- The BLM must consider the resources that need protection on the Roan Plateau: habitat for rare and sensitive plants, such as the Parachute Penstemon (for which critical habitat is found on the Roan Plateau), DeBeque Phacelia, hanging gardens, and old-growth forest. Specific approaches are necessary for protecting these values by managing lands to protect wilderness characteristics, designating ACECs, and using other management prescriptions to protect important big game habitat and migration corridors, special status plants (including Parachute Penstemon critical habitat), and native trout drainages.
- The new RMPA should ensure that the important wildlife, wilderness-quality lands, and other natural resources that make the Roan Plateau so special are protected for present and future generations.
- Increased inter-species and intra-species competition will result from displacement of wildlife into what is assumed to be more marginal habitats.
- The Roan Plateau is important habitat for genetically pure trout, rare plants, and lands with wilderness characteristics.
- The SEIS must also include an informed consideration of impacts involving habitat competition among various wildlife species when habitat loss and fragmentation occurs.
- I strongly support the need to protect big game wintering range along the base, as well as the habitats and locations of rare and endangered plant species.
- The BLM must draw from and incorporate the substantial body of current and relevant scientific data that analyzes wildlife impacts related to fossil fuel extraction and production. This body of research unequivocally proves that oil and gas development has a myriad of negative impacts on affected species, including greater sage grouse, mule deer, and elk.
- Specific approaches are necessary for protecting these values by managing lands to protect wilderness characteristics, designating ACECs, and using other management prescriptions to protect important big game habitat and migration corridors, special status plants (including Parachute Penstemon critical habitat), and native trout drainages. Management prescriptions include NSO/no ground disturbance (NGD), limiting motorized vehicles to designated routes, visual resource management, and exclusion or avoidance for rights-of-way (ROWS).

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3.2.5.2 Ecological Resources Issue 2

How will new information concerning aquatic species, specifically native trout affect impacts to the species by the proposed plan and alternatives?

Ecological Resources Issue 2 Representative Comments

- The CRCT populations of Trapper, Northwater, and the East Middle Fork of Parachute Creek must be included as Core Conservation populations, not just those in the East Fork of Parachute Creek.
- We have concerns about wildlife habitat, specifically for the sage grouse and native/unique species of CRCT that could not only be severely impacted by drilling activities, but in the case of the trout, could possibly be pushed into extinction.
- The BLM must provide thorough analysis on the status of CRCT habitat conditions on the Roan Plateau.
- In general, our observations of the drainages of Trapper Creek and Northwater Creek are that they are in fragile condition now because of past and current practices, and that further development, including roads, drill pads, pipelines, and other infrastructure required to support drilling for and production of gas and oil on top of the plateau and within these watersheds, would seriously threaten the viability of these core conservation populations.
- Current Preferred Alternative actions do not seem to meet the goal of the Conservation Strategy for CRCT, which is “to assure the long-term viability of CRCT throughout their historic range.”
- The BLM must consider the resources that need protection on the Roan Plateau:
 - High-value watersheds for native fisheries, including the Roan Plateau populations of CRCT.
- The BLM must update the CRCT Rangewide Assessment analysis in the SEIS.
- Assuring long-term viability and recovery of CRCT throughout its historic range is of paramount importance.
- Our organization does not believe that even the current well-considered plan of having a single federal unit atop the Roan Plateau and all the associated considerations, restrictions, and conditions, including phased and clustered development as described in Section 2.3.1 of the Final RMPA/EIS, provides appropriate protection for the CRCT populations in Trapper and Northwater creeks.
- As the CRCT Conservation Agreement of 2006, and to which the BLM is a signatory, states, managing for protection of entire watersheds, not just riparian “buffers,” is critical.
- Please do not post any information on CRCT historic ranges and genetic lineages on your public website.
- The BLM must include strict stipulations to protect CRCT populations on the Roan Plateau. Stipulations include NSO for high-value special status fish species habitat.

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- Science supports non-waivable NSO/NGD stipulations for entire watersheds of Trapper Creek, Northwater Creek, and East Fork Parachute Creek as the only way to protect CRCT. Trapper/Northwater creeks are already protected by controlled surface use (CSU) for wild and scenic river eligibility.
- The Woodling Report (2007) focuses on CRCT populations, estimates of erosion impacts from oil and gas development, contamination from oil and gas toxic spill threats, nutrient enrichment from cattle grazing, angler harvesting, and dewatering of streams from oil and gas development.
- Impacts to cold water fisheries associated with oil and gas development include surface disturbances leading to increased erosion and increased sedimentation and spills and source contamination introducing toxins into streams. Produced water can impact water quality, and groundwater pumping can alter stream flows.
- The BLM acknowledged that pollution and sedimentation from natural gas development will result in permanent and irreversible losses of CRCT and other wildlife habitat.
- The SEIS should include map overlays of infrastructure and road maps and wildlife habitat and movement corridor maps for useful comparison and analysis.

3.2.6 Water Resources

A large number of comments were received regarding water resources, including several that draw a connection between possible surface disturbing activities that may increase sedimentation or contamination to surface water and/or groundwater. Many of these comments specifically requested more information and analysis.

3.2.6.1 Water Resources Issue 1

How will potential development activities, particularly advances in drilling and completion technology, impact surface water and groundwater quality and availability?

Water Resources Issue 1 Representative Comments

- Water quality must be protected.
- Impacts to ground water must be analyzed.
- Conduct a reevaluation of the mitigation measures identified in the 2006 Final EIS to ensure the protection of wetlands, riparian areas, and floodplains, and to identify additional mitigation measures, if necessary, to protect these resources.
- We recommend analyzing potential impacts to impaired water bodies, including water bodies listed on the 2012 CWA § 303(d) list and water bodies with completed Total Maximum Daily Loads (TMDLs).
- The Draft SEIS should address how water quality monitoring in the Planning Area will occur for future project-level NEPA analyses to detect impacts to both groundwater and surface water resources. A recent example of a water quality monitoring plan is the "Long-Term Plan for Monitoring of Water Resources" developed by the BLM for the Gasco Energy, Inc. Uinta Basin Natural Gas Development Project Final EIS and the National Ground Water Association's Water Wells in Proximity to Natural Gas or Oil Development Brief.

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- Update the analysis of potential impacts to groundwater and surface water quality and associated mitigation measures related to drilling, associated production, and disposal of produced water, including the potential use of pits, underground injection wells, and evaporation ponds, and potential impacts associated with production wellbore integrity and pipeline use. It is also recommended that the Draft SEIS discuss measures the BLM will require of an operator to minimize the potential for these impacts to occur.
- Key topics that we recommend are disclosed and analyzed so that potential impacts to public health and the environment can be fully understood include:
 - Water resources
- In order to ensure public drinking water supply sources (e.g., surface water sources, including groundwater under direct influence [GWUDI] of surface water sources, and groundwater sources) are fully protected from potential impacts associated with oil and gas leasing, it is recommended that the BLM consider the following NSO language:
 - Municipal Supply Watersheds – NSO within any of the following areas, as deemed appropriate by the BLM:
 - The entire watershed.
 - Local Source Water Protection Planning Areas, where delineated in a Source Water Protection Plan.
 - Drinking water protection areas, as defined by Source Water Assessment Areas evaluated by the State of Colorado.
 - For surface water sources, if the Municipal Supply Watersheds NSO is not deemed feasible by the BLM, it is recommended the Draft SEIS cite the Colorado Oil and Gas Conservation Commission (COGCC) Regulation 317B and incorporate its requirements for protecting surface water drinking water supplies.
 - For groundwater and GWUDI sources, if the Municipal Supply Watersheds NSO is not deemed feasible by the BLM, it is recommended that a minimum 0.5-mile (2,640-foot) NSO or CSU concentric buffer for these sources be developed. This recommendation is based on the professional judgment of the Colorado Department of Public Health and the Environment (CDPHE) Surface Water Protection Plan (SWPP).
- The conclusion of “negligible impact to groundwater resources” reached by the previous RMPA may be based upon a lack of data.
- Questions to be addressed:
 - What is the connection between this aquifer and the numerous springs, streams, and hanging gardens on the plateau?
 - What is the risk to the perched aquifer from drilling 3,700 holes in the impermeable layer below? Could it be partially drained?
 - Could this aquifer become contaminated with drilling mud or petroleum products either during the drilling process or if the bore casings fail to completely seal off the aquifer?

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- What percentage of wells have contaminated adjacent aquifers across public land and within the state of Colorado?
- With the BLM's limited budget, who will do the monitoring to ensure protection of the aquifer is maintained?
- What would be the impact to fish, wildlife, and plant species that depend upon the springs, seeps, and streams supported by the aquifer?
- What independent research supports the conclusions reached regarding hydrologic resources?
- What is the success or failure rate of the stipulations applied in other areas? Have these stipulations been applied to areas with similar hydrologic conditions?
- Nationally, and within Colorado, what percentage of oil and gas drilling and recovery activities have resulted in adverse effects to ground or surface waters?
- It is recommended that the BLM update the 2006 Final EIS as needed to characterize groundwater and surface water resources including:
 - A description of all aquifers in the study area, noting which aquifers are Underground Sources of Drinking Water (USDWs). Federal Safe Drinking Water Act regulations define a USDW as an aquifer or portion thereof: (a)(1) which supplies any public water system; or (2) which contains a sufficient quantity of groundwater to supply a public water system; and (i) currently supplies drinking water for human consumption; or (ii) contains fewer than 10,000 milligrams per liter (mg/L) of total dissolved solids; and (b) which is not an exempted aquifer (40 CFR 144.3).
 - Maps depicting the location of sensitive groundwater resources such as: municipal watersheds, source water protection zones, sensitive aquifers, and recharge areas.
 - A description of and locations of groundwater use (e.g., public water supply wells, domestic wells, springs, and agricultural and stock wells).
 - Current water quality conditions for each surface water body within and adjacent to the Planning Area, including intermittent and ephemeral streams, rivers, lakes, reservoirs, and surface water drinking water sources. We recommend comparing existing conditions to existing water quality standards or other reference conditions and presenting associated water quality status and trends.
 - A map and list of 2012 CWA § 303(d) impaired or threatened water body segments within or downstream of the Planning Area, including the designated uses of the water bodies and the specific pollutants of concern.
 - Inventories and maps of existing wetlands and waters of the U.S. within the Planning Area, including waters that are regulated under Section 404 of the CWA, and wetlands that are determined to be non-jurisdictional and protected under Executive Order 11990, Protection of Wetlands (May 24, 1977). We suggest providing current information on acreages and channel lengths, habitat types, values, and functions of these waters.
- The RMPA does not provide information regarding the potential connection between ground water and surface water, and the wildlife, fish, and plant species that are dependent upon that water.

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- Additional analysis needs to be conducted on risks and potential harm to ground and surface water and the biological resources they support.
- It is recommended that the BLM disclose, in the Draft SEIS, anticipated water needs and sources for projected development and associated potential impacts to streams, wetlands, and wells.
- Drilling and production atop the plateau would be potentially harmful to the streams and to the aquifers because of the high probability of unintended releases of contaminants at drill sites and ancillary facilities.
- We have learned in the case of the recent “Parachute Plume,” where we still do not know the full impact on the Parachute Creek/Colorado River water table, that accidents are not preventable at drilling sites. Any release of hydrocarbons and drilling chemicals would devastate wildlife populations and endanger fish and aquatic species on the Roan Plateau.
- The current Final RMPA/EIS notes that groundwater is discharged at numerous springs which contribute to the base flows in the East Fork of Parachute Creek and East Middle Fork of Parachute Creek. These same conditions generally prevail on Trapper and Northwater creeks. The report also mentions that the contractor “inferred” that the spring water had a relatively short residence time in the aquifer (addressed in the Final RMPA/EIS, Chapter III, pgs. 3-17, 3-18). If this inference is correct, it suggests that there would be limited time for natural attenuation or breakdown of contaminants in the aquifer before reaching surface waters.
- The Colorado BLM’s White River Draft RMPA/EIS estimated sediment runoff based on projected surface disturbance, types of surface disturbance, including impacts from roads, wells pads, and pipelines, and general characteristics of the basin (erodible soils, slopes, etc.). Erosion rates were calculated using the Water Erosion Prediction Project (WEPP) model. The WEPP model used by the BLM is a web-based interface designed by the United States Forest Service and can be accessed at: <http://forest.moscowfs.wsu.edu/fswepp/>. We recommend that the BLM consider using this or a similar model.

3.2.7 Riparian Habitat, Wetlands, and Floodplains

Some scoping comments specifically address concerns regarding possible surface-disturbing activities that may cause impacts to riparian habitat, wetlands, and/or floodplains.

3.2.7.1 Riparian Habitat, Wetlands, and Floodplains Issue 1

How will new information concerning development potential impact the ability to reduce the risks of impacts to riparian habitat, wetlands, and floodplains?

Riparian Habitat, Wetlands, and Floodplains Issue 1 Representative Comments

- It is recommended that the BLM reevaluate potential impacts to wetlands, riparian areas, and floodplains, in light of new baseline information, as well as the inclusion of the Community Alternative in this analysis. Specifically, we recommend consideration of impacts on the following:
 - Stream structure and channel stability.
 - Streambed substrate, including season and spawning habitats.
 - Stream bank vegetation, riparian habitats, and aquatic biota.

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- The EIS does not discuss the risk of oil spills and leaks or slow releases of petroleum products, drilling mud, and other chemicals used in the drilling and recovery process.
- Gathering lines and road construction will increase the risk of erosion and sedimentation, and also will create significant and permanent fragmenting features through existing undisturbed habitats.
- These drainages are very vulnerable to erosion from surrounding slopes.
- While it might seem reasonable that the danger of erosion could be eliminated by the location of well pads and related facilities on ridgelines above the drainages, it is unlikely that such measures would eliminate erosion over time into the drainages.
- We suggest that the Draft SEIS analyze potential impacts to surface waters related to erosion and sedimentation from land disturbance and stream crossings.
- Current grazing practices are producing a negative impact on both the Trapper Creek and Northwater Creek drainages. The JQS Common Allotment and the Clough-Alber Allotment are currently listed in the Improve Category (I), indicating that the present range condition is unsatisfactory or in a declining trend, including the observation that “riparian areas are presently in a declining trend and management is unsatisfactory.”
- Reevaluate the mitigation measures identified in the 2006 Final EIS to ensure protection of wetlands, riparian areas, and floodplains, and for the identification of additional mitigation measures, to protect these resources.

3.2.8 Socioeconomics

Many comments reflected concerns about potential impacts to the local economy and way of life.

3.2.8.1 Socioeconomics Issue 1

What impact will potentially cancelling existing leases, or approving larger numbers of wells than were originally analyzed, have on the socioeconomics of the local area and Garfield County?

Socioeconomic Issue 1 Representative Comments

- Rio Blanco County is significantly affected, as a large number of our residents will be directly and indirectly impacted by energy development on the Roan Plateau.
- The State of Colorado would benefit from tax revenues and jobs created by development of natural gas on the Roan Plateau.
- Mesa County is significantly affected by the Roan Plateau, both directly and indirectly.
- Development of leases below the rim will have a positive economic impact to state/local governments (about \$140M in taxes and over 100 new jobs).
- We are especially concerned about the alternative that would preclude any development on the Roan Plateau. This would have short-term and long-term consequences for the economy. It would extend unemployment and deny local jurisdictions the revenue needed to provide quality education, infrastructure, public safety, health, and other important services, including funds to our water district.

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- The energy industry is part of our way of life in Rangely. The industry provides the highest paying jobs and generates huge amounts of tax revenues that continually improve our quality of life in Rangely.
- Banning development on the Roan Plateau would deny economic activity to the region and cause further unemployment and migration out of the area, thereby damaging local tax bases and forcing additional cuts to vital public services.
- Rangely will benefit from the increased availability of jobs as well as tax revenues that flows into the city and county coffers from energy development.
- The economic consequences of not developing or further delaying development on the Roan Plateau are too egregious to not evaluate a comparative full development scenario.
- Parachute lost 53 percent of its sales tax revenues when the energy companies basically shut down in our area in 2009. We have reduced staff by over a third, put all equipment purchases on hold, and have frozen salaries for five years in an attempt to absorb the revenue losses.
- We have asked the Department of Local Affairs how repayment to the energy companies that purchased the leases on the Roan Plateau would be handled should you breach your contracts and walk away. These monies have already been distributed and spent from the federal level all the way down the system to the local municipal level. We have a population of 1,083 souls and have no resources to repay a debt your actions would create by violating your agreements on the Roan Plateau. Depending on the amount of repayment we might be asked for and the time frame required for repayment, we run the real possibility of going bankrupt as a municipality. We are not the only small municipality that would have to brace for this potentiality. Repaying your defaults through future disbursements would have the same undesirable impact upon us. We count on mineral lease money to build revenue reserves over time to use as leverage for grants to help us rebuild our streets and infrastructure. We implore you to honor your commitments from the sale of the Roan leases.
- Cancelling the leases would require repayment from local budgets.
- Withdrawing the leases would deny the community socio-economic benefits.
- If the outcome is to ban drilling on the Roan Plateau, then existing leases (\$113M) would have to be paid back.
- The viability of the Rifle community depends upon addressing the narrow issues instructed by the judge.
- In the Fact Sheet that was made available at the February 27, 2013, Silt meeting indicated estimated federal revenue at \$857 million to \$1.13 billion. Are these figures derived from current leasing and commodity rates or historical data from the 2008 EIS? The new EIS must contain accurate data based on existing data.
- With over \$114 million dollars invested, the BLM has currently stranded said investment capital so our organization has a tremendous interest in seeing the BLM issue the leases in question.
- Banning drilling would require withdrawing leases, which would necessitate repaying lease holders, equaling an unfunded \$56 million cost to State of Colorado.

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- In the longer term, the move would deter investment in the region and add uncertainty to the market place. There is not a much greater deterrent to business than the threat of arbitrarily losing the opportunity for return on investment.
- The continued delay in commencement of development will only cause more economic harm to the region.
- The threat to future investment and development is also critical, as companies would be dissuaded by the uncertainty.
- Our concern over the new EIS is added tax payer costs, additional delays adding to operations costs, precluding economic benefits to communities, and the presence of a “no drilling” alternative.

3.2.8.2 Socioeconomics Issue 2

What resource tradeoffs exist between oil and gas development and other sources of revenue for the local area and Garfield County?

Socioeconomics Issue 2 Representative Comments

- Energy operators are strong, supportive, involved members of the local and regional community. The Roan RMPA/SEIS should reflect the intrinsic importance of the energy industry on the tourism and recreation industries, as well as the local communities.
- The Roan Plateau provides outstanding wildlife habitat, fisheries, and outdoor recreation opportunities. These attributes lead to long-term sustainable jobs in the outdoor recreation industry.
- The DeBeque Phacelia and Parachute Penstemon, along with CRCT, mule deer, and elk represent a critical component of the local economy, with hunting, fishing, and backcountry recreation contributing tens of millions of dollars each year and 18 percent of all jobs.
- We will make more money from eco-tourism than hydraulic fracturing.
- The adoption of the community alternative to prohibit any energy development on top of the Roan Plateau would pose dire economic consequences on the Western Slope, including refunding the money paid by the leases, which would have lasting negative impacts on infrastructure, public safety, and public education.

3.2.9 Alternatives

Many comments were submitted regarding potential alternatives for the RMPA/SEIS. These comments ranged from preference statements for various existing alternatives, to suggested specifics for new alternatives that were not previously analyzed. Issues that were raised concerned the Community Alternative and how the BLM would address this alternative in the SEIS. Specifics in the No Action Alternative were questioned, in light of changed conditions. Numerous suggestions were made as to how fluid mineral management could be incorporated into SEIS alternatives.

3.2.9.1 Alternatives Issue 1

How would the community alternative address impacts to resources other than fluid minerals? How is the technical feasibility of resource recovery impacted by the proposed decisions in the community alternative?

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Alternatives Issue 1 Representative Comments

- ...this (Community) alternative (is) impractical, as it is not technically or geographically feasible (according to the BLM itself, the COGCC, and experts in the oil and gas industry, all whom have included their reasons for the limitations in the administrative record). This fact makes it clear that the Community Alternative would violate the Transfer Act and FLMPA, as well as existing lease holders on top of the Roan Plateau.
- The Community Alternative cannot require the leases on top of the Roan Plateau to use the Valley Leases to reach their minerals.
- The BLM should analyze and implement an alternative that recognizes the importance of the Roan Plateau resources and accomplishes their protection.
- The BLM should analyze, in detail, an alternative similar to the original Community Alternative that would allow the entire top of the Roan Plateau to be leased immediately, but require NSO stipulation on all federal surface on top of the plateau. This approach was detailed in Rock the Earth's analysis.
- BHA would like to highlight the absence of a Community Alternative that would eliminate surface disturbance from natural gas drilling on the top of the Roan Plateau.
- Should clarify that any community alternative that is analyzed will not impact the Valley Leases.
- The BLM should clarify the limits of any Community Alternative. Such a plan, which would attempt to retroactively change legal contracts to existing leases and force drilling from the Valley Leases to access reserves located beneath the Roan Plateau Leases owned by other operators, would be both illegal and operationally impossible.
- The fact is that directional drilling is not possible from the base of the Roan Plateau and, therefore, will not satisfy the lease rights that exist at the top of the Roan Plateau. This fact makes the Community Alternative very similar to Alternative F, as it would violate the BLM's multiple use objective as well as the Transfer Act.
- Alternatives, such as the so called "Citizens Alternative," can be addressed though existing data in the administrative record showing the implementation is unquestionably technically infeasible and, therefore, a functional taking of lease holder rights.
- The "Citizens Proposal" is a *de facto* ban on drilling, not feasible, illegal under the Transfer Act, and not supported by the local communities. It should be referred to as the "environmental plaintiff's plan."

3.2.9.2 Alternatives Issue 2

How would the effects differ depending on the definition of the No Action Alternative? What effects would existing leases have on resources and resource values?

Alternative Issue 2 Representative Comments

- Under Judge Krieger's ruling, the SEIS represents a reconsideration of the BLM's earlier, deficient NEPA analysis. As a result, the No Action Alternative should remain unchanged from the 2006 EIS, meaning it contemplates no change from management prior to the illegal RMPA. Under this scenario, no leasing would occur beyond the areas of NOSRs 1 and 3 that were leased in the late 1990s.

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- If the No Action Alternative for the SEIS were to represent the status quo today (with invalid, suspended leases in place) it would improperly pre-determine the outcome of the new NEPA process by assuming that the leases would remain in place in the absence of the new RMPA. The point of NEPA, however, is to consider impacts before leasing occurs. Using today's status quo for the No Action Alternative would effectively eliminate the remedy Judge Krieger awarded: that the BLM reconsider its earlier RMPA based on additional NEPA analysis.

3.2.9.3 Alternative Issue 3

What would be the impacts of a full development scenario on the resources in the Planning Area?

Alternative Issue 3 Representative Comments

- The BLM should also include a counter-weight proposal: a development alternative that would explore the impacts, including socio-economic analysis, of allowing full development of the Roan Plateau.
 - Full Development Scenario. The BLM's analysis must address the impacts of the full scope of development authorized under various alternatives. If the BLM considers an alternative similar to the full development approach adopted in 2008, its analysis must include the over 3,000 wells Bill Barrett Corporation (BBC) plans to drill on top of the Roan Plateau. The initial leasing phase would be limited to perimeter lands that could be accessed from private lands. The interior of the plateau should be the last phase to be leased. Implementation would require that only those leases not in the initial phase (perimeter) be canceled.
- If the BLM considers a No Development alternative, it needs to consider a Full Development alternative to maintain balance.
- A balancing alternative that would call for full development of the leases was not included.
- Strongly consider the inclusion of a full development alternative to add balance to the process.
- A full development alternative should be considered to provide a truer picture.
- Include a Development Alternative in the new RMPA.

3.2.9.4 Alternative Issue 4

How would additional stipulations impact the resources and development of fluid mineral leases on the Plateau? How would a phased leasing approach impact the resources on the Plateau? Which suggestions are feasible?

Alternative Issue 4 Representative Comments

[Note: One scoping comment submission included five alternatives for consideration in the SEIS. These comprise the first five bullets below.]

- Community Alternative. BLM should analyze, in detail, an alternative similar to the original Community Alternative that would allow the entire top of the Roan Plateau to be leased immediately, but require NSO stipulations on all federal surface atop the plateau. This approach was detailed in Rock the Earth's analysis. This alternative would result in the following:

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- The lessee would have the benefit of holding these reserves now and exercising control over the timing of future development.
- The company would not be able to use federal surface atop the plateau for that development.
- The lessee would have to use lands at the base, and negotiate access to the adjacent private lands atop the plateau that are already being drilled for well pads, pipelines, and other infrastructure.
- The BLM's analysis of the Community Alternative should treat lands around the base under the same requirements as the Conservation Alternative.
- Phase Leasing Alternative. The BLM could consider an alternative that is highly protective of federal lands above the rim, but also incorporates phased leasing. This alternative builds on legislation introduced in 2008 by Senator Ken Salazar by designating a "special protection area" on the top of the plateau that would be subject to non-waivable NSO stipulations. This approach would allow leasing of more of the plateau surface, but would control the timing and sequence of new leasing by requiring companies to complete and reclaim an area before commencing development of another area. This alternative would include the following elements:
 - The BLM would be allowed to determine when new leasing is appropriate.
 - The BLM should not allow surface disturbance on the interior of the Roan Plateau. The special protection areas should cover the large majority of federal lands atop the plateau, including road corridors. There should be no carve-outs from the special protection areas for ridgetop road corridors.
 - The leasing phases should not be defined according to ridgetops on the Roan Plateau, as was proposed earlier. Phases should start from the perimeter of the plateau and work inward. Under Phase 1, the BLM could lease those lands that all stakeholders agree can be readily drilled from the adjacent private lands. In later phases, parts of the interior could be leased as technology develops, but still be subject to the special protection area limits (i.e., non-waivable NSO stipulations).
 - Subsequent phases could not be leased until 90 percent of the gas was recovered and lands in the earlier phases had been appropriately reclaimed.
 - Lands around the base would be managed under the same terms as the Conservation Alternative.
- Resource Protection-Focused Alternative. The BLM should also evaluate a full range of protections for the many natural values on the Roan Plateau, whether as a separate alternative or as part of the Conservation Alternative or Community Alternative described above.
- No Action Alternative. The No Action Alternative should remain unchanged from the 2006 EIS, which includes no leasing beyond the areas of NOSRs 1 and 3 that were leased in the late 1990s.
- Conservation Alternative. The BLM should make the Conservation Alternative the preferred alternative in the Draft SEIS. The Conservation Alternative would require:
 1. Cancelling the existing leases atop the Roan Plateau outside of Anvil Ridge, and designating the area outside of Anvil Ridge as closed to leasing for the life of the plan.

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2. Permitting leasing of the Anvil Ridge area, but only subject to NSO stipulations on all federal surface lands in that area. Because western Anvil Ridge has two sizeable split estate areas of private surface and federal minerals, this approach would allow substantial development to occur on Anvil Ridge, with as many as eight well pads and potentially 500 wells or more.
3. Sensitive areas around the base of the Roan Plateau being off-limits to surface disturbance.

The Conservation Alternative would result in the following:

- Allow some surface disturbance on private surface in Anvil Ridge.
 - The interior of the Roan Plateau would be protected and left undisturbed, while the entire leasehold in western Anvil Ridge could be readily drilled today (assuming only a one-mile directional reach). That part of western Anvil Ridge is close to existing development on adjacent private lands and the lessee could readily take advantage of infrastructure in that area.
 - No surface disturbance would be permitted in eastern Anvil Ridge. Much of this area has been designated as critical habitat for the Parachute Penstemon. In addition, eastern Anvil Ridge includes the headwaters of East Fork Parachute Creek, where reintroduction of native trout is underway. Recovery of gas from eastern Anvil Ridge could occur only from the well pads in western Anvil Ridge.
 - Outside of Anvil Ridge, the top of the Plateau would be protected by closing it to new leasing for the life of the RMPA. This would provide maximum protection for the Roan Plateau while also complying with Judge Krieger's Transfer Act ruling that some "meaningful" part of the top must be leased.
 - The Conservation Alternative should also address development around the base of the Roan Plateau.
 - Current NSO/NGD provisions contain loopholes so that they do not actually preclude surface occupancy. As part of this alternative, the BLM must clarify that the areas of the base covered by these stipulations are permanently off-limits to surface disturbance without any exceptions or so-called "conditions."
 - The Conservation Alternative should require all companies to develop a single master development or geographic area plan that covers all drilling and related infrastructure around the base of the Roan Plateau. Such a plan would help ensure that development occurs in a planned manner that minimizes impacts on elk and deer range.
- The BLM should evaluate a full range of protections for the many natural values on the Roan Plateau, whether as a separate alternative or as part of the alternatives listed above.
 - Support an alternative that would still allow for managing the Roan Plateau for multiple uses, making the top of the plateau available for leasing and capture of the gas resources, but not allowing actual gas drilling and development of related facilities to occur on the top of the plateau.
 - I would like to offer a feasible alternative to existing proposals for your consideration:
 - Lay out the area in a checkerboard design on section lines, alternating open/closed areas every five years. ROWs and construction would be confined to times that would have the least adverse effect on the ground, when and where feasible.

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- There would be at least a 90-day transition period from one period to the other.
- All major access and transmission lines would be established on longitudinal lines.
 - ROWs would be restricted to 50 feet wide, where feasible, and would include a 40-foot travel lane; transmission lines would be restricted to 30 feet from center line, where feasible, with 36 inches of cover, where feasible, and 48-inch ROW crossings in conduit to protect it from heavy traffic damage. All lines would be visibly marked with above ground markers and standard trench tape and tracer wire underground.
 - Minor site accesses, where feasible, would be designed with crowfoot ingress/egress with 40-foot ROWs, 30-foot travel lanes, 100-foot-radius corners to allow safe turning of heavy equipment with the least amount of soil/vegetation disruption. A flowing turn crow's foot design would be utilized for pad site access, with safe radius. Feeder lines would have 36-inch cover, and conduit ROW crossings would have 48-inch cover. Feeder lines would be installed as close as feasible to the outer edge of the ROW. Pipelines would be marked.
- All ROWs would be seeded with native vegetation cover, except travel lanes.
 - Dust mitigation during heavy traffic times would be required using acceptable methods, such as water trucks (keeps the dust down and waters the grass).
 - Where feasible, as much of any drill site would be reclaimed to as small an area as possible leaving enough area for normal maintenance.
- All pad sites would have a protective barrier to discourage entrance by larger animals.
- Fluid utilization for a specific project would require a special use permit specific to that situation and a specified time frame, such as water usage for dust mitigation, or filling water holes for animal preservation (under regulating agency supervision).
- The BLM's new plan and evaluation of alternatives must include the following points:
 - Undisturbed big game winter range for elk and mule deer at the base of the Roan Plateau should not be drilled and their associated migratory corridors need to remain intact and undisturbed by drilling.
 - New roads, well pads, and pipelines should not be constructed on top of the Roan Plateau around high-value watersheds for native fisheries, including the Roan Plateau populations of CRCT, or in other important areas, such as lands with wilderness characteristics.
 - Where drilling is allowed, it should be conducted using state-of-the-art practices (such as directional drilling and water and waste management technologies) that will protect sensitive trout and wildlife habitat at the base and top of the Roan Plateau, as well as other resources.
 - To protect significant wildlife, fisheries, habitat, and other resources, the BLM should retain the option of cancelling the leases.
- If you do lease this land, I think the following should be included in any contract:
 - Money set aside to restore the land once it has been mined.

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- Constant air and water monitoring surrounding the drilling. There should be significant penalties for violation of the contract.
 - Monitoring of all trucks carrying hazardous material, including monitoring of weight, level of driver skill, and level of truck safety inspection, with significant penalties for any spills.
 - Constant monitoring of any methane leaks which contribute to our global warming.
 - This gas is very valuable to future generations and should not be exported to other countries. There should be a contract statement that any gas will be used for American energy use.
 - Monitoring of the source of all water used and a requirement that the water be cleaned and returned to its source. This is especially important in our drought condition.
 - Creation of an Environmental Impact Assessment that truly measures both the physical destruction and the impact to future generations.
- The proposed alternatives are unduly restrictive and lack balancing alternatives to provide for fair and complete analysis.
 - I believe we need to spend more time looking at alternatives to additional development and natural resource extraction, such as energy conservation. Please consider alternatives to the development of the Roan Plateau and, if development is pursued, please proceed cautiously and with protection of the natural environment as the top priority.
 - Health Impacts. The BLM must thoroughly analyze the human health impacts of unconventional natural gas development. Recent studies highlight the significant risks of natural gas development to human health and well-being. As the Secretary of Energy Advisory Board recently concluded, “intensive shale gas development can potentially have serious impacts on public health, the environment, and quality of life, even when individual operators conduct their activities in ways that meet and exceed regulatory requirements.” The BLM must thoroughly analyze air, water, and other health impacts in the SEIS and should do so through a health impact assessment (HIA) or equivalent analysis.
 - The SEIS must fully analyze all reasonably foreseeable impacts of the natural gas development scenarios contemplated by the various alternatives.

3.3 SCOPING COMMENTS ADDRESSED BY BLM POLICY OR ADMINISTRATIVE ACTIONS

The content of some scoping comments are addressed by BLM policy or administrative actions. In general, these scoping issues include those that are part of everyday BLM management and implementation decisions. Issues that are already addressed in BLM policy or by administrative actions will not be carried forward into analysis in the SEIS.

3.3.1 Valid Existing Rights

Numerous comments were received regarding valid existing rights and/or cancelation of existing leases. Valid existing rights, including existing leases, are addressed by guidance in BLM Handbook 1601-1 (BLM 2005) and law under FLPMA (BLM 2001a) (43 U.S.C. Chapter 35, Subchapter I, 1701, Savings Provision (h)). [Note: “(h) All actions by the Secretary under this Act shall be subject to valid existing rights.”]

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- I ask that you cancel all leases previously issued for drilling on top of the Roan Plateau and start the planning process over with a clean slate. There is no need to lease even more public lands in Colorado, especially when the Roan Plateau's lower slopes have already been irreparably damaged by expansive drilling operations. Please protect this unique wild place while you still can.
- The BLM is required by law to protect existing leases and because the Community Alternative would impact the way these lessees could use their leases, by essentially limiting the way they develop the resource, the BLM could not consider this alternative "reasonable."
- The BLM is significantly restrained in analysis parameters on remand because any unilateral and retroactive amendment to BBC's existing lease terms would be a breach of the lease contract, and would substantially devalue BBC's leases and property rights.
- BBC's leases are not void or voidable under the express terms of the Mineral Leasing Act. BBC's lease rights are protected by the fact it was a bona fide purchaser when it acquired the BBC leases from its predecessor. Under the terms of the Mineral Leasing Act, the Secretary of the Interior does not have the right to cancel a lease of a bona fide purchaser.
- Respecting existing lease and property rights must be used as a guiding principle by the BLM for any Resource Management Plan (RMP) supplement or amendment.
- The BLM can easily document the fact that significant portions of the lands surrounding the "top of the plateau" are privately owned and that the BLM does not have the authority to compel private citizens to allow development of federal lands from those private lands, access to the federal surface would be of the BLM's own making.
- The BLM must respect BBC's valid existing rights in the planning process.
- It is well settled that once the BLM has issued a federal oil and gas lease that does not contain a NSO stipulation, and in the absence of a nondiscretionary statutory prohibition against development, the BLM cannot completely deny development on the leasehold.
- It is well settled under law that any RMP supplement or amendment process must respect BBC's valid existing lease rights. This fundamental principle is found within the applicable statutes, regulations, and BLM policy guidance. Pursuant to the FLPMA, all BLM actions, such as authorization of RMPs, are "subject to valid existing rights" 43 U.S.C. 1701 note (h).
- Pursuant to federal statute, the BLM cannot terminate, modify, or alter any valid or existing property rights.
- The BLM's Land Use Planning Handbook specifically recognizes that existing rights must be honored when undertaking a land use plan revision.
- Federal courts have interpreted the phrase "valid existing rights" to mean that federal agencies cannot impose stipulations or conditions of approval that make development on existing leases either uneconomic or unprofitable.
- Importantly, through the RMP, the BLM cannot revise or restrict valid existing lease rights through imposition of COAs for drilling permits or through imposition of lease stipulation provisions from adjacent leases.

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- An RMP supplement or amendment for the Roan Plateau cannot defeat, devalue, or materially restrain BBC's valid and existing rights to develop its leases through subsequent imposition of new lease stipulations, COAs, or other means.
- The BLM cannot void or devalue BBC's valid existing leases through the NEPA process, nor may the BLM use the NEPA process to impose a substantive remedy beyond the scope of the District Court's narrow remand order.
- Under well-established precedent, after the BLM accepts the bid and the lessee fully pays for the lease, a contract exists between the lessee and the BLM based solely on those identified terms and conditions. The BLM may not later amend the lease with terms not identified in the sale notice and not part of the contract subject to the bidding process. A retroactive amendment of lease terms by the BLM would be a unilateral breach of the lease contract.
- The BLM has no grounds to unilaterally cancel Valley Leases.
- It is well settled that a federal lease conveys both contract and property rights to the lessee and these rights may not be unilaterally extinguished by the BLM. *Penroc Oil Corp. et al.*, 84 IBLA 36, 40 (1984) ("once the Secretary has leased the land he may not deny or extinguish the rights of the federal oil and gas lessee under the valid oil and gas lease"); *Union Oil Co. of California v. Morton*, 512 F.2d, 743, 746 (9th Cir. 1975) (oil and gas leases convey to lessees a property interest which is enforceable against the federal government).
- A primary guiding statute for the BLM, the FLPMA, expressly states that all BLM actions are "subject to valid existing rights."
- The Interior Board of Land Appeals has clearly ruled that an EIS alternative that would infringe on lease rights is invalid because "BLM...cannot deny the right to drill and develop the leasehold unless a non-discretionary statute, such as the Endangered Species Act, prohibits drilling. Absent a ban, authority to completely deny development activities can only be granted by Congress."
- Select valley floor leases should be considered for exclusion from this SEIS process and be allowed to be developed immediately.
- Separate analysis of a base directional drilling alternative is not required under NEPA, nor would it be a reasonable alternative because the BLM cannot unilaterally and retroactively modify existing lease terms and conditions of BBC's leases.
- The Court vacated the 2008 Leasing Decision and remanded the matter to the BLM for further NEPA review. WPX and Ursa believe that the oil and gas leases on top of the Roan Plateau (Plateau Leases) are distinct and should be considered separate from the leases at the base of the plateau (Valley Leases).
- Valley Leases should not be tied to those factual and legal issues that are peculiar to the Plateau Leases.
- Valley Leases can and should be developed regardless of the final development trajectory for the Plateau Leases.
- The Valley Leases contain valid existing rights which do not allow the BLM to permit other companies to develop resources from those same lands. In issuing the Valley Leases, the BLM used the agency's standard lease form which grants to the Valley Lessees the "exclusive right to drill for, mine, extract, remove, and dispose of all the oil and gas ... in the lands described."

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- A no leasing alternative, or an alternative that would not allow development on the top of the Roan Plateau, would breach and violate the terms of BBC's leases and be unlawful.
- The BLM should not assume for any of its alternatives that the existing leases will remain in place.
- The BLM must consider a range of alternatives that involve cancellation of the leases issued pursuant to the illegal 2008 (sic) 2006 RMPA.
- So long as BBC retains leases on the top of the Roan Plateau, any alternatives that would eliminate, modify, or alter BBC's leases in any way would not be lawful and could not be considered reasonable under the law.
- The BLM cannot lawfully analyze an alternative that would not require development on top of the Roan Plateau, as it would be voiding existing rights on the plateau.
- Cancelling the existing leases atop the Roan Plateau outside of Anvil Ridge, and designating the area outside of Anvil Ridge as closed to leasing for the life of the new RMPA.
- The new approach proposes an alternative that would forbid energy development altogether on the Roan Plateau.
- (The BLM) should cancel the leases on the top of the Roan Plateau and make it off-limits to future oil and gas development, including fracking.
- Mandate drilling from private lands only or from areas of the base where development already exists so that big game migration corridors, streams with native CRCT, lands with wilderness characteristics, and rare plants are not disturbed.
- Retain the option to cancel current leases.
- As your team prepares the Court-ordered Roan Plateau SEIS, I ask that you not cancel all leases previously issued for drilling on top of the Roan Plateau. The local and state economy would be better supported by responsible energy extraction and development.
- These comments are intended to require the BLM to protect the Roan Plateau from any further natural gas drilling or any other fossil fuel or mineral extraction. Please make it a BLM policy to expire current natural gas leases. Please phase out any current natural gas drilling activity on or near the Roan Plateau. If any natural gas drilling activity is still ongoing on or near the Roan Plateau, I am certain that many land and water conservation laws have been broken by the gas companies. It is certain that chemical pollution has taken place. This policy needs to be stopped immediately.
- The undeveloped top of the Roan Plateau is a wildlife sanctuary and an economic asset in a sea of oil and gas development. This oasis can be protected by requiring all drilling to occur from non-essential wildlife habitat at the base of the Roan Plateau or from private land adjacent to the public land on the top of the Roan Plateau. The BLM should preclude gas drilling on the top of the Roan Plateau to fulfill its multiuse mission.
- Canceling all or a portion of the leases will allow the BLM to implement a phased leasing approach, controlling the timing and sequence of new leasing and development, giving companies economic incentives to meet defined, measurable reclamation criteria and fully develop resources before triggering new leasing.

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- The BLM has sold valid lease rights for development on the top of the Roan Plateau. Garfield County fully supports honoring those private property lease rights.

3.3.2 Legal

Scoping comments addressing legal issues included the topics of the Judicial Order, the Transfer Act, requirements of NEPA, and the scope of what a NEPA analysis should include. These comments are organized by topic below.

3.3.2.1 Legal Issue 1 – Judicial Order

Court decisions specified in the Judicial Order form the basis for the SEIS. The Judicial Order directed the BLM to further analyze three issues: cumulative air quality impacts, ozone impacts, and the Community Alternative. The Judicial Order did not specify how the BLM would analyze these issues.

- Because the leases were issued without a valid NEPA analysis, the leases are void *ab initio*. DOI regulations make clear that “[l]eases shall be subject to cancellation if improperly issued.” 43 CFR 3108.3(d).
- Where, as here, a court finds narrow procedural violations of procedural statutes, like NEPA, the remedies “are limited to procedural remedies.”
- Judge Krieger’s ruling makes clear that the leases were issued in violation of NEPA.
- In its Judicial Order, the Court specifically declined to cancel any of the Roan leases, and none of the Court-specified analytical shortcomings in BLM’s previous EIS warrants the draconian act of unilaterally terminating the Valley Lessees’ lawfully acquired contracts and property rights.
- The Court invalidated the 2006 EIS and accompanying RMPA.
- Garfield County’s key concern is that compliance with the Court order be accomplished in a manner that provides an appropriate level of stewardship and at the same time provides an opportunity for the people of United State of America to use and/or develop resources within the Roan Plateau RMP lands.
- We would urge the BLM to re-adopt the original EIS, comply with the Court’s required amendments, or include a development alternative in the new draft.
- The Court did not set aside the oil and gas leases that the BLM had issued pursuant to the illegal RMPA, but contemplated that they could be unwound in connection with the new RMPA.
- The conservation groups believe the BLM should cancel all existing leases at the outset of the new planning process. There is no legal obstacle to this approach. DOI regulations make clear that “[l]eases shall be subject to cancellation if improperly issued.” Because the leases were improperly issued pursuant to the illegal 2006 EIS and subsequent RMPA, the leases are invalid.
- The legal dispute that gave rise to this supplemental NEPA and RMPA process involved oil and gas leasing on the Plateau Leases, not the Valley Leases.

3.3.2.2 Legal Issue 2 – The Transfer Act

The Transfer Act directed the BLM to lease oil and gas in NOSRs 1 and 3. The Judicial Order found the existing interpretation of the Transfer Act in the RMPA/EIS to be accurate.

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- The BLM has a duty under the law to lease and develop the Roan Plateau, and it has a duty to do so without unneeded delay.
- The BLM is legally barred from imposing superfluous analysis requirements on Roan development because Congress told the BLM to lease the Roan Plateau as soon as reasonable. The BLM cannot start a time-consuming new EIS process when a lesser analysis will satisfy the requirements of a recent Court ruling.
- The inclusion of a no-drilling alternative is the wrong step because of the Transfer Act, the Roan Plateau is a prolific gas resource, and there are already at least 31 wells on top of the plateau.
- Community Alternative. Because energy could not be developed through directional drilling, the agency would be in violation of the Transfer Act, as well as the FLPMA, which mandates the BLM to develop energy resources on top of the Roan Plateau and foster and encourage energy development on public lands.
- The non-binding requirements of the Transfer Act are germane to this scoping process, as the BLM is actively considering initiating an entirely new EIS process as a means of evaluating a proposal from environmentalists that is so technologically infeasible that it is part-and-parcel with a wholesale ban on drilling. Both of these matters—a needlessly deleterious review, and the consideration of a plan that effectively bars drilling on the Roan Plateau—are illegal under the terms of the Transfer Act.

3.3.2.3 Legal Issue 3 – Scope of the SEIS Analysis

Because the Judicial Order does not specify how the BLM would analyze the issues in the remand, details regarding the type and scope of NEPA analysis will be determined by the BLM in accordance with its own policy and guidance, the FLPMA, and CEQ policy.

- The FLPMA provides for the BLM to set management that “will preserve and protect certain public lands in their natural condition” and further defines multiple use to specifically provide for “the use of some land for less than all of the resources,” which includes excluding or limiting certain uses of the public lands.
- Since the 2008 Roan Plateau lease sale, the agency has already conducted additional air analysis; therefore, the matter concerning air quality can be easily and readily communicated to the courts to remedy their concerns.
- The Court did not insist that the BLM complete ozone modeling, but provide a more detailed explanation for its consideration. The same is true for the air impact analysis.
- BLM fully considered ozone impacts and recognized that impacts from future growth may require further analysis.
- For remand purposes, the BLM can easily document why requiring development from the base of the plateau could adversely impact other resources present in the area, including mule deer and other big game species.
- The BLM can address the issues on remand through a narrow supplemental NEPA document, such as an Environmental Assessment (EA). These matters can be addressed efficiently given the fact that the BLM already has, in the administrative record, the data and information that the BLM relied upon and only needs to provide a more detailed explanation for its decision to eliminate certain alternatives from detailed analysis in the RMP.

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- The Court is not questioning the BLM's reasoning; instead, the Court is questioning the lack of justification. Once this information is provided, the remand will be sufficiently addressed. This remand can be addressed through a supplemental NEPA document such as an EA. A more detailed analysis, such as an EIS, is not necessary.
- To comply with the Court's remand order, the BLM needs to supplement the existing Roan Plateau EIS with information in three separate areas: (1) providing more detailed information about why the Community Alternative was not addressed more than it was; (2) addressing cumulative air quality impacts of the BLM's decision in conjunction with anticipated energy development on private lands outside the Planning Area; and (3) better addressing the potential ozone impacts that will result. These issues can be easily clarified through existing information that for (1) is already in the administrative record and only needs to be clarified, and for (2) and (3) is now available on account of the recently obtained, detailed air quality/ozone monitoring that includes the Roan Plateau airshed.
- Because the Court directed the BLM to weigh the competing evidence on the feasibility of the Community Alternative, to comply with the remand, the BLM need only detail the technological deficiencies and explain its decision adequately.
- A new NEPA assessment is not required per Court decision.
- The more prudent approach would be to take a narrow approach and only address the issues identified by the Court, thereby saving money and expediting development of leases providing jobs.
- Garfield County does support the narrowly defined court ordered analysis of the SEIS and does not support an excessively broad analysis or the advancement of new alternatives. The Court order requires the BLM to further address: (1) the Community Alternative (directional drilling from below the rim); (2) cumulative air impacts that include development on private land outside the Planning Area; and (3) potential ozone impacts.
- The BLM already possess all the required data and merely needs to present it more fully.
- The BLM can quickly accumulate an administrative record explaining why the environmental plan is not consistent with federal law; a new NEPA process is not needed for this either. As I understand it, the BLM already has a breadth of scientific and geologic data showing why the environmentalist plan is tantamount to a ban on drilling, which is inconsistent with federal law. The BLM should incorporate this into its record with a minimal process. This issue has already been analyzed and documented ad nauseam.
- (If) the BLM acquiesces and initiates a review of an illegal drilling plan anyway, then the agency has a duty to study the full-field development scenario, as well. If the agency is to fall into the trap of studying additional scenarios for the sake of studying additional scenarios, then it cannot arbitrarily and capriciously ignore a scenario that contemplates the jobs and domestic energy production benefit of developing all of the Roan Plateau's energy resources (full field, all-in).
- Garfield County does not support an approach that exposes the whole of the existing EIS to new assessment and rewriting the EIS is outside the bounds of the narrowly focused Court order. This approach will delay economic opportunity and delay reasonable access to existing leases in a manner that will have the adverse effect of reducing employment and further eroding the County's economic base. Tax revenues generated from the resources in the Planning Area could easily reach \$100s of millions for federal, state, and local governments. Garfield County believes the BLM should adopt an approach to the SEIS development that minimizes the already extraordinary delay in providing lease holders reasonable access to develop their leases.

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- Rio Blanco County is opposed to the preparation of a SEIS or RMPA and believes an abbreviated NEPA document, such as an EA, is more than adequate, considering the District Court's decision in 2012.
- Air quality analysis and ozone information can also be easily provided through an EA, and a complete EIS is not necessary or warranted.
- The BLM should divide the additional NEPA analysis required by the Court in response to the legal appeal into two separate actions, one for the leases above the rim and another for leases below the rim, to account for the distinct physical, biological, and other resource characteristics between these two different geographical areas and the significant development that has already occurred adjacent to the leases located below the rim.
- Mesa County is opposed to a new EIS. The issues should be addressed through an EA. An EIS would be an unjust and unreasonable waste of taxpayer resources.
- A supplement to the existing EIS will be adequate to address issues.
- If BLM decides to pursue needless additional study, it will open itself up to litigation and sully its reputation by acting like the laws and rules do not apply.
- The planning process will result in a new amendment of the resource management plan governing the Planning Area.
- To comply with the District Court's narrow remand order, the BLM can supplement the existing EIS to specifically address each of the discrete issues identified by the District Court instead of opening an entirely new planning process. This can be accomplished with a supplemental EA that documents and explains the BLM's decision-making with respect to the narrow issues identified by the District Court. There is no basis to re-open the entire RMP process.
- By confining any supplemental NEPA analysis to the narrow issues on remand, the BLM would be further minimizing future litigation risk. In contrast, by expanding the scope of the analysis beyond those narrow issues on remand, the BLM is opening itself to additional new avenues of legal challenge.
- The Valley Leases should be analyzed as a "targeted" and "limited" EA, only addressing the lands at the base of the Roan Plateau, and limited to only analyzing ozone emissions and the cumulative air quality impacts of leasing on private lands outside the Planning Area.
- The BLM should clarify the relationship between the Roan Plateau SEIS and Colorado River Valley (CRV) RMP and White River (WR) RMP revisions. Because it is a narrowly targeted plan amendment, the RMPA should be allowed to proceed independently of the larger planning efforts presently underway for the two affected BLM field offices.
- Strongly recommend the BLM return to the previous RMP and restrict revisions to the limited scope of judge's decision.
- The BLM has either grossly misinterpreted the ruling, or deliberately used it as an excuse to discard the RMP in favor of one that is more closely aligned with the political goals of the plaintiffs.
- There is no need to initiate another NEPA analysis.
- The Court only required specific items to be addressed.

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- The Court did not require the BLM to analyze in detail the impacts of the Community Alternative; it merely indicated the agency must explain why such an alternative was not analyzed in detail.
- On remand, because the Community Alternative is not a technically or economically feasible alternative and does not meet the purpose and need of the EIS (based on the Transfer Act), the BLM must simply explain and document why development of the resources underlying the top of the Roan Plateau is infeasible from the base.
- Your response has been to reopen the entire NEPA process to include an additional review of the leases on the valley floor that had long ago been decided as adequately protected. Incorporating the valley floor into the 2008 litigation makes no sense and causes Parachute, as a municipality, to not only question your motives for doing so, but puts our economy and the economies of our sister cities in Garfield County at peril. Drilling has been occurring for decades on the valley floor without incident and you are reviewing leases in areas surrounded by drilling. Some well sites are even situated on the line where you have now placed restrictions in adjacent parcels.
- Including the valley floor into your 2008 litigation will further erode our efforts to rebuild our economy and provide added motivation for the continued egress of energy producers. We urge you to rethink the way you are handling the 2008 litigation and redact the valley floor from your NEPA review.
- NEPA does not require the BLM to analyze an alternative that does not meet the stated purpose and need of its undertaking.
- NEPA does not require the BLM to conduct a “separate analysis of alternatives which are not significantly distinguishable from alternatives actually considered, or which have substantially similar consequence.”
- The BLM is not required to analyze a base directional drilling alternative as a separate alternative because it is speculative and infeasible.
- Under NEPA, the BLM does not need to consider alternatives that “it has in good faith rejected as too remote, speculative, impractical, or ineffective.”
- The scope of the new EIS should fully recognize and reflect the balance of our environment and economy.
- Prior precedent recognizes the validity of the BLM’s position that the expectation of speculative oil and natural gas development in impact analysis is unreasonable, and need not be incorporated into an EIS.
- Separate the leases on top of Roan Plateau from valley floor, thereby avoiding the hyper-politicized processes currently delaying issuance of leases on top.
- The BLM should not attempt to make site-specific decisions, but should develop only broad management goals and objectives.
- All reasonably foreseeable impacts of natural gas development must be analyzed by the SEIS. That analysis should extend beyond lands with special status and the impacts to wildlife and fisheries acknowledged in these comments.

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- The BLM is restricted from considering any leasing or environmental issues which have arisen after the Valley Leases were issued in 2008. The BLM must, as it has in past similar situations where a court invalidated portions of an oil and gas pre-leasing NEPA document, limit the supplemental analysis to those issues which were reasonably foreseeable at the time of leasing. The BLM cannot consider any leasing or environmental issues which may have arisen in the intervening time period.
- It is unnecessary to start the process over. There are potential impacts to the Parachute local economy and fiscal health presented by the new analysis.
- Separating the valley bottom leases is common sense policy for four primary reasons:
 1. Environmentalists who filed suit acknowledged in court filings that “oil and gas development has covered public and private lands around the base of the Roan Plateau with well pads, roads, and related infrastructure.” In this language, the plaintiffs acknowledge that pre-existing development at the base is different than the ultimate development that will take place on the top of the plateau. The existence of wells and infrastructure around the Valley Leases also means these lower elevation leases will be drilled cost effectively, even in the current natural gas price environment. Communities have an immediate economic gain if these leases are released from their prison of politicization.
 2. The so called “Community Alternative” proposed to allow drilling around the base of the plateau in areas not placed off limits by the BLM.
 3. The Valley Leases are literally right next to existing, producing wells.
 4. The BLM can easily and quickly integrate the additional drilling activity emissions from the Valley Lease development into analysis conducted during the Lower Colorado River Valley Field Office RMP revision.
- Valley Leases are adjacent to, and surrounded by, a developed natural gas field, complete with producing gas wells, well pads, pipelines, roads, and related infrastructure.
- A number of the issues related to development of the Plateau Leases (e.g., road access, distance to the underlying gas reserves, etc.) do not pertain to development of the Valley Leases.
- The BLM’s original contention that the Garfield County Planning Office document was hypothetical in nature and, therefore, did not present itself as an appropriate and reliable basis for planning purposes was correct, and the BLM simply needs to expound on this further for the purposes of the Court’s remand.
- Western Energy Alliance would like to further emphasize the need for the BLM to merely clarify the impracticality of relying on the Garfield County Planning Office’s rough estimate referenced above for land use planning purposes.
- The BLM must merely explain why a rough estimate composed of arbitrary future development scenarios and growth estimates was considered but determined to be of inappropriate quality and reliability to affect its analysis.

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- The RMP should give existing conditions within the RMP, as they exist and set goals for any changes, not methodology, on how to do everything. Then, when a company proposes a management/development plan, it will include the potential impacts and how will they will mitigate or minimize them. This would also include a monitoring plan using standard experimental design to measure these impacts.
- This RFD Plan is usually developed for a much smaller or slower rate of development which, in turn, reduces the magnitude of the impacts.
- Performing a new EIS will take years and leave the leases in a state of limbo leading to further uncertainty and delay of economic benefits, including increased employment, ancillary growth, enhanced revenue streams for local governments, and production of clean energy.
- A NEPA “restart” also now places local municipalities and counties at risk for having to repay the \$54 million received from the Federal Mineral Lease Bonus Payments from the Roan Plateau lease sale in 2008.
- The leases below the rim deserve additional protection and should be addressed through a separate and more expedited process (such as an EA). Rio Blanco is asking the BLM to split out the process if detailed analysis is pursued, because if one SEIS is done for leases both above and below the rim, the process will be unduly prolonged for many years and hinder the timely and reasonable development of vast resources from leases adjacent to current development.
- As a matter of equity and conscience, the BLM should complete its supplemental analysis as expeditiously as possible without considering extraneous issues.
- The latest announced reworking of the EIS that is the focus of this scoping process is an egregious example of wasted resources, since this latest round of full-blown NEPA analysis, layered on top of more than a decade of existing analysis, is simply not required. Judge Marcia Krieger simply noted the BLM had a few minor adjustments to its otherwise voluminous review and analysis before more drilling and job creation in Western Colorado could move forward.
- By expanding the analysis unnecessarily, West Slope Colorado Oil and Gas Association (WSCOGA) believes the agency is dangerously close to impugning lease rights using the NEPA processes politically and punitively instead of properly.
- The resource management planning process is not the appropriate stage in the analysis process to make site-specific development decisions, given the many variables and uncertainties associated with the actual location for oil and gas development (See *N. Alaska Env'tl. Ctr. v. Kempthorne*, 457 F.3d 969 [9th Cir. 2006]). Consequently, any analysis of where directional drilling may be undertaken under the Community Alternative should be undertaken in a subsequent site-specific analysis for the Plateau Leases, not in the current supplemental NEPA analysis for the Roan Plateau RMPA process.
- The time span for analysis (economic and environmental) needs to be 50, 60, or 70 years to account for up and down cycles of natural gas prices versus the upward trend of the value of natural resources associated with leaving the Roan Plateau untouched or highly mitigated.
- Please give extra consideration for the value of lands untracked by roads, wildlife populations with room to migrate and expand, and natural landscapes with clean air and water for humans to visit and to remember their connection to the natural world.

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- The BLM should not expend unnecessary resources attempting to analyze the potential impacts of oil and gas development on a site-specific basis more than necessary, given the uncertainty associated with the location and extent of future development.
- The FLPMA defines mineral exploration and development as a principal use of public lands and requires the BLM to foster mineral activities rather than hinder them.
- The BLM's Land Use Planning Handbook specifies that RMPs are not normally used to make site-specific implementation decisions.
- Federal court rulings have agreed that the area's pristine "Roadless" designation had to be maintained if and when any drilling takes place, and other rulings have called to action that certain areas should never have been included in the leasing process and were illegal to have been leased at all.
- District Court remanded it on discrete issues that only require explanation of the BLM's decision-making, as well as further explanation and potential additional air quality analysis or tiering to subsequent air analyses that the BLM has already performed and that includes the Roan Plateau airshed.
- The BLM has already completed additional, detailed air quality modeling and qualitative air impact analysis for lands within and surrounding the Roan Plateau in the recently released Draft Resource Management Plan and Environmental Impact Statement for the CVRFO, the Grand Junction Field Office, and for the White River Field Office's oil and gas amendment. The BLM can utilize these air analyses to efficiently address air issues in the District Court's remand order.
- The two discrete air issues identified by the District Court, the cumulative effects of emissions from private lands outside the Planning Area and ozone emissions, do not require any additional analysis because the BLM has already conducted a new, robust cumulative impacts and ozone analysis. The BLM already has adequate additional air quality and ozone data for the Valley EA from the CRV RMP revisions and no further analysis is needed.

3.3.3 Fluid Minerals Leasing

BLM fluid mineral leasing decisions are guided by agency policy, specifically the Onshore Oil and Gas Order No. 1 (BLM 2007b). Project-specific design details are finalized and analyzed during site-specific NEPA evaluation (BLM 2007c).

- It is crucial that a non-waivable NSO/NGD stipulation is applied if leasing occurs.
- Clarification is necessary because the language of the 2008 leases contains peculiar "embedded waiver" provisions that threaten to defeat the NSO/NGD designations relied upon for mitigation. The majority of the NSO/NGD stipulations set out in the 2008 Roan Plateau Lease Sale Notice contain embedded provisions that appear to authorize the BLM to permit surface development contrary to the ordinary understanding of these stipulations. For example, Stipulation GS-NSO-ROAN-27 states that "no ground-disturbing activities will be permitted" in wildlife security areas below the Roan cliffs. Yet, in the following paragraph, this provision states that ground disturbing-activities "may be permitted by BLM" under certain circumstances. Because the language allowing surface disturbance is embedded in the stipulations themselves, the BLM claims that they are not "exceptions, modifications, or waivers" but rather statements of "the conditions under which each stipulation would apply, and standards that must be met for their application."
- Leasing methodology needs to be changed to address the different requirements of tight sands and shale oil and gas exploration and development.

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- Approval of leases should be for the life of the lease, not the next 4 to 5 years.
- The regulations governing leasing of federal minerals will have to be modified and improved, with the BLM given more of a say in what parcels are leased. It would not be solely up to industry to nominate blocks.
- Analysis of site-specific drilling locations is not appropriate for an RMP.
- [Note: A single scoping comment submission included extensive, specific suggestions for a leasing scenario in the Planning Area, predicated on reversing the existing leases]:
 - A large leased block like the Roan Plateau is needed. There is no best size, but it must be large enough to permit the use of state-of-the-art technology and be economical.
 - There must be a requirement that the pipeline system is constructed current with the drilling locations so that drilling fluids and production can be pipelined in or out.
 - The pipelines and transportation developed for the initial block is then carried forward to the next lease block. Without the operator-guaranteed additional lease blocks or a requirement for the new lessee to reimburse the first field operator for a part of its infrastructure developing the original infrastructure is not economical.
 - A request to stop construction could be made and approved under the Management Development Plan (MDP). When construction is restarted, it must begin where it stopped, not somewhere else on the block. If new state-of-the-art technology is developed which will help reduce impacts and improve efficiency, it could be approved under the already approved MDP as long as impacts are reduced or at least stay the same.
 - Small blocks could be leased to any company, but the new lessee would be required to be part of a unitized area or to develop such an agreement with the main operator. This means a pooled pipeline system will be used to reduce the creation of numerous parallel lines.
 - If a parcel with a high recreation potential is proposed for leasing, it would be up to industry to spell out how development could occur without degrading the recreation potential of the block. If the BLM concurred, the minerals could be leased.
 - Regulations governing man camps will also need improving to facilitate their use. As drilling moves into more and more remote areas, it will become necessary to determine the best way to handle drilling crews.
 - This proposed MDP will spell out how the lease block will be developed from beginning to final abandonment.
 - To further reduce associated impacts, development will occur in an orderly progression across the lease block. The number of drill rigs allowed to operate within the block will stay on each drill pad until all wells planned for the life of the block are completed.
 - The associated pipelines and service road will also be completed before the rig is moved to the new pad. The MDP will also address all aspects of reclamation planned. It will address when reclamation work should start on all disturbed ground and what constitutes success for bond release.

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- The number of active drill pads will be spelled out in the MDP. Once drilling begins on a pad, it will continue until all wells to the target formation are completed before it can be moved to a new pad. The MDP will spell out in detail how the lease will be developed, including all efforts planned to reduce impacts on associated resources and their uses. It will show all proposed road locations, drill pad locations, and pipeline sizes and locations. This will include necessary pumping stations and mechanical specifications. This MDP will contain all the necessary information to permit drafting of the necessary NEPA documents to permit development.
- If any T&E species occur within the lease block, the MDP will document how, on federal minerals, these species will be protected and how any impacts will be mitigated. On private surface and minerals, the MDP will follow applicable laws and regulations. The species will be included in the monitoring plan and their populations will be monitored to detect any impacts.
- A monitoring plan will be developed and implemented by the lessee that will document any air quality concerns and any water quality concerns. These plans will be reviewed and approved by the Air Quality and Water Quality Control Commissions prior to MDP approval. The monitoring plan will also address any other applicable items, such as reclamation success and affected populations. If other associated resources and their uses will be impacted from development, the monitoring plan will document and quantify the changes and the mitigation efforts to offset these impacts.
- Reclamation will begin as soon as dirt work ceases. The species of plants proposed by the lessee will be determined based on the length of time from completion of dirt work to cessation of surface disturbance. The initial primary goal of reclamation will be to keep soil micro flora and fauna alive and to control erosion. Because drill pads may be developed as much as a year or more before drilling starts, the lessee must show how he will control erosion and protect soil micro flora and fauna in the interim. The reclamation monitoring plan will set standards for success and the progress in meeting these goals. Once drilling is completed, reclamation must be achieved on all surface disturbance outside of areas routinely used for normal operation and maintenance.
- The lessee will provide transportation from the nearest town to the well pad. Private vehicles will not be allowed to access the drill pad. Mass transit of some type will be employed to move manpower for the shift changes. Once on the pad, employees will be restricted to the exterior boundaries of the pad to confine human disturbance to the well pad only. When new pads and pipeline extensions are being built, crews will be transported to the work site by the lessee's mass transit system. The timing of these additional projects will be spelled out in the MDP. To further reduce disturbance and impacts, it may be necessary to install temporary quarters on a well pad. These temporary quarters will be approved by the county under county regulations governing this type of use.
- Once a development plan is submitted to the federal agency and accepted as complete, the agency can now draft an EIS or EA. The document is now written about a known type of development and targeted formation. The agency is not guessing about the order, or method, or rate of development.

3.4 SCOPING COMMENTS OUTSIDE THE SCOPE OF THE SEIS

Upon review, a number of scoping comments do not add substantive or applicable information for the RMPA/SEIS and are considered outside the scope of the process. These scoping comments are organized by general topic in the following sections.

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3.4.1 Climate Change

- America is the leader in CO₂ emission per capita. This is not a safe energy infrastructure.
- We do not need to be adding GHGs under any circumstances.
- Why is the stakeholder list always just other government agencies, instead of representatives of the people of this country? The public mood has changed since 1997 and what they did in 1997 has no relevance to life and what we need to prevent climate change in 2013.

3.4.2 Socioeconomics

- Oil and gas development is critical to our economic well-being and our future sustainability.
- The BLM has decided to work in concert with the environmental movement to obstruct economic progress.
- For years now, all elected officials have done in Garfield and Mesa counties is chase oil shale and make people think the government has stopped jobs in gas, well idiots get factories, tech companies, in this wonderful area without any opportunity for people.
- Garfield County Commissioners need to stop wasting time on going to these meetings; and here is a novel idea, put your energy into creating some jobs for the people they represent.
- Natural gas extraction is not a suitable activity from a long-term economic or environmental basis.
- The most compelling reason to authorize (oil and gas) production is jobs. The BLM can play a large role in correcting the recession.

3.4.3 Groundwater and Surface Water

- Some at your agency must know it is not a good idea to ravage pristine lands as these. ...we see unconscionable use of fresh water, in this time of serious drought that is contaminated and cast off.
- Our organization has worked on in-stream improvements, planting willows, shrubs, and cottonwoods along stream stretches, and participated in developing exclosure areas along stretches of Trapper Creek to eliminate livestock grazing along the creek and allow the riparian habitat to restore itself. These efforts involved both physical labor and financial contributions.
- Contaminants collected by the stormwater will end up in either the surface or groundwater systems.

3.4.4 Ecological Resources

- In regards to the Gunnison sage grouse: The new EIS should proceed with the assumption that the rare bird will be listed soon in order to avoid having to re-write this plan yet again. One consideration is that it is not just the drilling, itself, but the attendant activity and noisy trucks and equipment which generate as much as 70dba at a quarter mile distance (many songbirds only register in the 50-decibel range). One University of California-Davis study played recordings of drilling site and truck noise through camouflaged speakers at four different leks. Early results pointed toward a 25 percent decrease in birds on sites with this noise. The agency has to consider that this is continuous noise because the drilling is typically 24/7 for several months. [Note: Gunnison sage-grouse is not considered to occur in the Planning Area, per Petch 2014.]

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- Thank you for your efforts in balancing all of the many demands on our public lands. The Roan Plateau is a beautiful out of the way place with few roads, extensive wildlife habitat, and solitude for humans needing to escape from frantic human endeavors for a while. Please do all you can to keep it that way.
- I want my tax dollars to protect wildlife.
- Please leave the top of the Roan Plateau in as natural a state of being as it is now.
- I strongly feel that desert and semi-desert ecosystems should be valued highly and not treated as wastelands.
- The Roan Plateau is a biological treasure. The top of the plateau supports species biodiversity rivaled by only three other areas in Colorado, each of which are protected as national monuments or parks.
- The Roan Plateau is a biologically rich place that deserves permanent protection.
- Recognizing the pharmacological uses of the rare species across the acres as yet undisturbed should be reason enough to protect the whole surface of the top of the Roan Plateau.
- The top of the Roan Plateau is physically, biologically, and environmentally distinct from the base.
- Roan Plateau is the “crown jewel” of Colorado public lands.
- The industrialization of the open areas of our western slope must be stopped. Our national parks, forests, and other beautiful and unique places, such as the Roan Plateau, must be protected and preserved. Piceance Basin has become an industrial park and the environmental scarring in areas surrounding Parachute, Battlement Mesa, and Rifle will not recover in our lifetimes.
- The Roan Plateau should remain pristine, natural, untrammled, and enjoyed by all wildlife and outdoor enthusiasts.
- I see no diminution accounted for in the huge impact on animal and bird destruction. Critical habitat is being destroyed, which is what the BLM usually does.
- Our organization has worked with the BLM, the Colorado Department of Parks and Wildlife, and Colorado Trout Unlimited on Trapper Creek and Northwater Creek to provide better environmental conditions for the core conservation populations of CRCT in these drainages.
- Colorado Natural Heritage Program ranked it one of the four most biologically rich places in Colorado.
- The BLM should go beyond its normal NSO/NGD stipulations and prohibit all energy development activity from these watersheds.
- The BLM must incorporate the latest conservation Geographic Information System (GIS) spatial data to assist in protecting important habitat ranges.
- The BLM must be flexible in adapting to new technologies as fish and wildlife ecological conditions change.
- Minimize the development of roads.
- I urge you to fully consider adopting the Conservation Alternative in your revised RMPA and EIS for the Roan Plateau.

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- Prohibit new roads, pipelines, and well pads on public land on the Roan Plateau.
- The relatively small areas of NSO shown on the BLM's map under the Preferred Alternative should be expanded to the entire top of the plateau.

3.4.5 Legal

- These deficiencies can be quickly and efficiently corrected so that oil and natural gas can finally be developed, now 16 years after Congress mandated development.
- It is unconscionable that a proposal to ban drilling would be included in any new EIS without including one to fully allow it.
- We need protection from the venal actions of the BLM employees, some of whom take bribes from rich corporations. This comment is for the public record. That taking of bribes is part of BLM history.
- Responsible energy development is the hallmark of Western Colorado and should not be held up by misinterpretation of Court ruling, holding up economic health and quality of life.
- The planning process used by the BLM must be streamlined.
- Benefits could be realized to the whole state if development on public lands were not tied up in court battles, redundant studies, and bureaucratic minefields.
- I support responsible oil and gas development of the Valley Leases that are located in an area already subject to development.
- The BLM's preferred alternative should leave the top of the Roan Plateau and the most important areas for big game habitat pristine.
- The preferred alternative should leave the top and most important areas for big game around the base pristine by canceling all existing oil and gas leases and apply NSO stipulations.
- The BLM's preferred alternative should leave the top of the Roan Plateau, and the most important areas for big game habitat around the base, pristine. That means the agency should cancel the existing oil and gas leases and forbid drilling on the surface in any future leases (i.e., no-surface occupancy stipulations).
- Seeing no basis for this scoping action noticed by the BLM to initiate a new supplemental EIS, the only assumption to be made is that the decision is part of a strategy meant to further delay and further encumber our member companies with financial burdens so as to reduce the likelihood of the area leases being developed.
- There has been no broad participation.
- What animal protection groups has the BLM sent this plan to? Is there some reason animal protection groups are blackballed in BLM plans?
- What bird protection groups, like American Bird Conservancy, has this plan been sent to? Why are they not on the stakeholder lists?

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3.4.7 Water Resources

- ...are you okay with the groundwater being contaminated for centuries, thus rendering the land not only scarred by open-pit mining but without potable water? Your choices have more of an impact than you think. Do not let America's greatest attractions be destroyed for greed. Please protect this unique wild place while you still can.

3.4.8 Fluid Minerals

- I do not want our public lands of 74,000 acres to be devoted to oil and gas drilling. These public lands belong to 325 million people and not just to the BLM for mercenary purposes and destruction.
- I do not want any oil production on the Roan Plateau whatsoever. In fact, I want to see a nation-wide comprehensive ban on fracking.
- The policy of the American citizen is to not have any natural gas or fossil fuel drilling on the Roan Plateau. Please make this the new BLM policy and enforce it to the maximum level.
- Just a reminder as I have been appealing with you for ten years now to "Save the Roan." Some natural places need to be preserved in the West as the drilling continues to be an option. This is one place to save! Please consider enough drilling on the Roan Plateau.
- I am concerned, in general, about any leasing, especially to oil/gas companies. The BLM should not allow any leases.
- I ask that you not offer any further leases in this beautiful area, especially in light of the degradation to the plateau that has already occurred.
- Our county has a substantial interest in ensuring energy development moves forward in a timely manner on the Roan Plateau.
- We support responsible development of the Roan Plateau and urge you to move quickly to finalize authorization.
- All of the controversy is focused on the top of the Roan Plateau. The base of the Roan Plateau has no controversy.
- Oil and gas development on the Valley Leases is supported by a wide range of stakeholders, including Colorado Environmental Coalition, the plaintiffs in the Roan Plateau litigation.
- No amount of additional concession, modification, or restriction will ever satisfy the demands of drilling opponents.
- The citizens of the Western Slope, as represented by local governments in counties like Garfield, Mesa, and Rio Blanco, all support oil and gas development on the Roan Plateau. Scores of political, business, and community leaders up and down the Western Slope have also expressed the same.
- The bulk of the plaintiffs seeking to block or delay drilling are organizations funded by big-dollar, East Coast environmentalists.
- The role of the BLM is to comply with the Congressional directives to allow oil and gas production and be good stewards of the public's money.

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- Oil and gas development always seems to happen at the expense of other resource uses.
- Do we, as citizens of the U.S., want to sacrifice the Roan Plateau to facilitate exports to China? This speculation/export issue needs to be addressed in the EIS.
- Many other areas on the U.S., such as the Marcellus shale, are producing huge amounts of natural gas that make any gas extracted from the Roan Plateau look like a minuscule amount. The upcoming EIS needs to incorporate this latest data for all natural gas producing areas in the U.S.
- The Roan Plateau is far too valuable to sacrifice for energy development programs on federal lands.
- Even without the Roan Plateau, there are 4.2 million acres of federal lands leased for oil and gas development in Colorado, and fully 65 percent of those leases have not been put into production by the companies that hold them.
- The communist elements in the environmental groups will do anything to impair positive progress in this country. They use every excuse to block production.
- The BLM consistently destroys every inch of land put under their management. The BLM knows nothing about protecting environment; it is all about use it up and destroy it. The BLM operates in a venal, vicious manner. This is not 1997 and the 1997 act is not what should apply in 2013.
- Do not allow Obama to open up federal and tribal lands to fracking!
- The Bush administration plan would have turned the Roan Plateau into an industrial zone. The original EIS admitted that it would cause permanent and irreparable harm there.
- Fracking is a process that will contribute to ruining our planet and human life as we know it. The energy being put into this destructive process should be diverted to renewable energy.
- No surface disturbance above the rim.
- Please do not allow further oil and gas development on our precious land. This would be an abuse of public land and an abuse of the public.
- We do not need to sacrifice the Roan Plateau to have a robust energy development program on federal lands.
- There are no resource issues which would preclude leasing on the areas below the rim of the plateau.
- The Roan Plateau will generate more energy per acre than any other location in the 48 states.
- The gas companies have shown incredible disregard to the health and safety of Colorado citizens. Their wells produce carcinogenic hydrocarbon and small particulate materials which are hazardous to both workers and surrounding citizens. Their use of deep well injection of waste materials should be replaced with their own water purification systems.
- The BLM should not simply take at face value self-interested industry claims about what directional drilling distances are “technically and economically feasible.” Companies have every motivation to understate their capabilities in order to minimize the requirements imposed by the BLM. In fact, surface use restrictions for environmental protection are what have led industry to make many of the advances in directional drilling that have been achieved thus far. The BLM should request technical and economic information from operators, and undertake an independent public analysis of this question.

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- In 2004, a vice president of a Canadian Gas firm operating in Garfield County stated, in a private conversation to me, stated that they were drilling 2 miles horizontally which makes this (Community) alternative more viable. Also, in the February 27, 2013, issue of the Post Independent Vice President Don Simpson of Ursa (bought Antero) that they have constructed in other areas and plan to construct in this area horizontal wells 2 miles in length.
- The inclusion of a no drill alternative makes the assumption that lasting and substantial environmental damage is unavoidable, which is an inaccurate depiction of today's oil and gas industry.

3.4.9 Recreation

- The local economy is better supported by outdoor recreation, tourism, and guiding for hunting and fishing than by the uncertainty of energy extraction.
- Unparalleled opportunities for outdoor recreation.

3.5 PLANNING ISSUES THAT WERE ADEQUATELY ADDRESSED IN THE ROAN PLATEAU RMPA/EIS

A number of scoping comments made statements or requested information or additional analyses for topics adequately addressed in the RMPA/EIS (BLM 2007a, 2008a). These are grouped by topic, below. Text following individual comments points to the section of the RMPA/EIS where the topic was discussed and analyzed in the RMPA/EIS. The BLM's assessment of new information is included as Appendix A to this Scoping Report.

3.5.1 Ecological Resources

- BLM must consider the resources that need protection on the Roan Plateau:
 - Summer and winter range for elk and mule deer, as well as the migration corridors they use along the Roan cliffs. (Addressed in the Final RMPA/EIS; Sections 3.3.2 and 4.3.2)
- To fully disclose and, if necessary, mitigate the potential impacts of soil disturbance, we recommend that the Draft SEIS include an estimate of erosion rates for each alternative. (Addressed in the Final RMPA/EIS; Section 3.2.3.6 [erosion rates] and Section 4.2.3 [impacts])
- Timing limitations must not be considered adequate for protection of big game habitat. Impacts from oil and gas on critical winter range to deer and elk result from noise and human presence and habitat loss from well pads and roads. (Addressed in the Final RMPA/EIS; Sections 3.3.2 and 4.3)
- The BLM also must analyze the cumulative impacts on wildlife of the natural gas development it authorizes, when added to other past, present, and reasonably foreseeable future development in the region. (Addressed in the Final RMPA/EIS; Sections 3.3.2 and 4.3.2)
- The springs and surface aquifers make the Roan Plateau the verdant place that must be protected from any damage. These water sources have created the lush vegetation that is found on the Roan Plateau. If they are destroyed or polluted, the area will lose the rich biological diversity that is found there. I ask you to implement a plan of surveying the water qualities of know water sources now and, if any drilling has to occur, to continue to monitor the water sources and respond quickly if any degradation is noted. (Addressed in the Final RMPA/EIS; Sections 3.2.4).

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- Winter range for elk and mule deer already has been greatly impacted in the area, further stressing the importance of protecting the remaining habitat in critical wintering areas and their associated migratory corridors. If development is to occur near these areas, we must emphasize the importance of allowing no more than one drilling site per 640 acres unless there are compelling circumstances to consider otherwise and then only with consultation with Colorado Parks and Wildlife (CPW). (Addressed in the Final RMPA/EIS; Sections 3.3.2 and 4.3.2).
- Roan Plateau is important habitat for deer, elk, and lands with wilderness characteristics (Addressed in the Final RMPA/EIS; Sections 3.3.2 and 4.3.2).
- The SEIS should identify and quantify impacts resulting from habitat fragmentation and interruption of movement corridors and should model scenarios that may occur should movement corridors be disrupted or lost. (Addressed in the Final RMPA/EIS; Sections 3.3.2 and 4.3.2)
- Protect the most important areas around the base and no activity on sensitive big game habitat. (Addressed in the Final RMPA/EIS; Sections 3.3.2 and 4.3.2).
- This area also includes elk calving and winter concentration areas designated as “sensitive wildlife habitat” by the COGCC. (Addressed in Final RMPA/EIS; Section 3.3.2 and 4.3.2)
- The area around the base needs to be protected for big game habitat; drilling would be very disturbing for the animals. (Addressed in Final RMPA/EIS; Sections 3.3.2 and 4.3.2)
- The BLM, itself, has acknowledged that maintaining connectivity between important habitats (crucial winter ranges, severe winter relief areas, calving/fawning habitats, migration corridors, topographic relief areas, mountain shrub communities, and forest type habitats) is paramount to sustaining viable big game herds and other wildlife. Fragmentation and permanent damage to these crucial habitats will not sustain big game populations. (Addressed in Final RMPA/EIS; Section 3.3.2.3 and 4.3.2)
- There are some endangered plants surrounding the plateau; however, I would hope that, under close supervision and scrutiny, drill sites could be selected that would avoid such plants. (Addressed in Final RMPA/EIS; Section 3.3.3 and 4.3.3, and Appendix C)
- Protect the sensitive big game and the endangered animal species (greenback trout, sagebrush grouse) and plant species that now call that area home. (Addressed in Final RMPA/EIS; Sections 3.3.2 and 4.3.2 and Appendix C)
- The BLM must consider the resources that need protection on the Roan Plateau:
 - Areas where the BLM has recognized the importance of protecting the Roan’s visual appearance (e.g., the cliffs overlooking Interstate 70). (Addressed in Final RMPA/EIS; Sections 3.4.1 and 4.4.1).
- Will additional survey work be conducted for Mexican spotted owl and lynx? (Addressed in Final RMPA/EIS; Sections 3.3.4 and 4.3.4).
- Protect all ACECs and winter range at base from drilling. (Addressed in Final RMPA/EIS; Sections 3.5.7 and 4.5.7).

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3.5.3 Groundwater/Surface Water

- To comply with the FLPMA's mandate, the new RMPA should designate all 36,000 acres as ACECs and afford management prescriptions to adequately protect them. Those prescriptions should include no leasing or strict NSO stipulations for any natural gas development, among other protections. (Addressed in the Final RMPA/EIS; Sections 3.5.7 and 4.5.7)

3.5.4 Recreation

- The BLM must guarantee the integrity of these important places by balancing our need for energy with our right to hunt and fish on wild public lands. (Addressed in the Final RMPA/EIS; Sections 3.5.3 and 4.5.3 and Appendix F)
- The only genetically pure, reproducing populations of CRCT in the state, and highly sought-after big game species like mule deer and elk. These species represent a critical component of the local economy, with hunting, fishing, and backcountry recreation contributing tens of millions of dollars each year and 18 percent of all jobs. (Addressed in the Final RMPA/EIS; Sections 3.5.3 and 4.5.3 and Appendix F)

3.5.5 Special Designations

3.5.5.1 Wilderness/Lands with Wilderness Characteristics

- Make a full evaluation of lands with wilderness characteristics and consider the citizen wilderness proposal areas. (Addressed in the Final RMPA/EIS; Sections 3.5.8 and 4.5.8)
- The BLM's previous determination that the 11,373-acre Trapper Creek Unit did not qualify as lands with wilderness characteristics was erroneous. This area is dominated by naturalness and includes outstanding opportunities for both solitude and primitive and unconfined recreation. It is home to sensitive wetland and riparian communities, two populations of CRCT, fossils, and other supplemental values. BLM must consider a reasonable range of alternatives that would prioritize management of lands with wilderness characteristics to protect those values over other multiple uses. This includes, but is not limited to, no leasing or strict NSO stipulations and other protections. (Addressed in the Final RMPA/EIS; Sections 3.5.8 and 4.5.8)
- Could we at least set aside large areas of the Roan Plateau as Lands with Wilderness Characteristics or WSAs? (Addressed in the Final RMPA/EIS; Sections 3.5.8 and 4.5.8)
- The new plan should ensure that the important wilderness-quality lands and other natural resources (that make the Roan Plateau so special) are protected for present and future generations. (Addressed in the Final RMPA/EIS; Sections 3.5.8 and 4.5.8)
- I believe this land should be changed to wilderness designation. (Addressed in the Final RMPA/EIS; Sections 3.5.8 and 4.5.8)
- The BLM must consider the resources that need protection on the Roan Plateau: lands with wilderness characteristics, including the approximately 19,000 acres identified by the BLM's 2000 inventory, as well as additional lands identified by the citizens wilderness proposal for the Roan Plateau and by updated inventories conducted by the BLM and/or citizens. (Addressed in the Final RMPA/EIS; Sections 3.5.8 and 4.5.8)

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3.5.5.3 Areas of Critical Environmental Concern (ACECs)

- Acres on the Roan Plateau previously designated as ACECs and those identified as Lands with Wilderness Characteristics must be put off-limits to any industrial development. (Addressed in the Final RMPA/EIS; Sections 3.5.7 and 4.5.7)
- Ensure that all areas that met ACEC criteria (consider unique watersheds, sage grouse habitat, and big game winter range and migration corridors) are designated with adequate protections including NSO/NGD. (Addressed in the Final RMPA/EIS; Sections 3.5.7 and 4.5.7)
- I would like to see the ACECs encompass appropriate areas, such as sage grouse habitat, and oil and gas leasing kept to an extremely low density or confined to the base of the plateau in the zones where it is already occurring. (Addressed in the Final RMPA/EIS; Sections 3.5.7 and 4.5.7)
- The BLM should reevaluate six additional potential ACECs (Rifle Hogback, Ben Good Creek, Anvil Points Expansion, Parachute Creek, Schoolhouse Point, and Thirty-Two Mile Gulch) to determine whether there are rare plant species, wildlife, and other values that require special management protection. (Addressed in the Final RMPA/EIS; Sections 3.5.7 and 4.5.7)
- The BLM should consider other ACEC protections for sage grouse habitat, native trout streams, and big game winter range and migration corridors. (Addressed in the Final RMPA/EIS; Sections 3.5.7 and 4.5.7)
- Protect all ACECs and winter range at the base from drilling. (Addressed in the Final RMPA/EIS; Sections 3.5.7 and 4.5.7)

4 VALID EXISTING MANAGEMENT TO BE CARRIED FORWARD

Due to the Judicial Order regarding the BLM RMPA/EIS decision, BLM lands within the Planning Area currently are being managed according to a variety of existing documents, primarily:

- Glenwood Springs Resource Area Record of Decision and Resource Management Plan, January 1984 (Revised 1988) (BLM 1988).
- White River Resource Area, Proposed Resource Management Plan and Final Environmental Impact Statement (BLM 1996) (ROD issued July 1997).
- Glenwood Springs Resource Area, Oil and Gas Leasing and Development Final Supplemental Environmental Impact Statement, January 1999 (BLM 1999a).
- Glenwood Springs Resource Area Oil and Gas Leasing and Development Record of Decision and Resource Management Plan Amendment, March 1999 (BLM 1999b).

It should be noted that these existing decisions do not cover the entire Planning Area and many acres do not currently have existing management in place.

The BLM will review existing resources and resource use conditions and the existing management situation in order to identify which existing management decisions should be carried forward and where there are opportunities to modify existing management direction and/or develop new management guidance.

5 SPECIAL DESIGNATIONS

The BLM Land Use Planning Handbook H-1601-1 (BLM 2005) requires that application of administrative designations be considered when developing RMPs. Special designations applicable to the Planning Area include ACEC and WSR designations. Although they may be considered in the RMPA/SEIS, areas managed for wilderness characteristics are not considered special designations. Anticipated decisions that may be analyzed in the Roan Plateau RMPA/SEIS include:

- Changes in the special designation status or boundaries, based on status changes, or new data and information, to relevant and important resources.
- Changes in special designations due to new nominations.
- Finalization of special designations.

6 DRAFT PLANNING CRITERIA

Planning criteria are constraints or ground rules that guide and direct the development of the RMPA. They ensure that the plan is tailored to the identified issues and that unnecessary data collection and analyses are avoided. The criteria may be adjusted during RMPA development based on management concerns and the results of the overall public scoping process. Preliminary planning criteria for the Roan Plateau RMPA include:

- The Roan Plateau RMPA will comply with NEPA, the FLPMA, the Transfer Act, and all other applicable laws, regulations, and policies.
- The Roan Plateau RMPA will consider reasonable alternatives in accordance with regulations at 43 CFR 1610 and 40 CFR 1500.
- Decisions in the Roan Plateau RMPA will only apply to public lands and the mineral estate managed by the BLM.
- The Roan Plateau RMPA and supplementation process will follow the BLM Land Use Planning Handbook H-1601-1 (BLM 2005) and the BLM NEPA Handbook H-1790-1 (BLM 2008b), where appropriate.
- The Roan Plateau RMPA planning process will include broad-based public participation.
- The Roan Plateau RMPA process will consider the identification and management of lands with wilderness characteristics.
- The Roan Plateau RMPA process will include coordination with state, local, and tribal governments to ensure that the BLM considers provisions of pertinent plans, seeks to resolve any inconsistencies among state, local, and tribal plans, and provides ample opportunities for state, local, and tribal governments to comment on the development of the RMPA.
- The Roan Plateau RMPA process will rely on available inventories of the lands and resources, as well as data gathered during the planning process.

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- The Roan Plateau RMPA process will incorporate sage grouse management actions to address greater sage grouse habitat and conservation, as outlined in the Northwest Colorado Sage Grouse Plan Amendment/Final EIS.
- The Roan Plateau RMPA process will use GIS data and incorporate geospatial data, to the extent practicable, and Federal Geographic Data Committee standards and other applicable BLM data standards will be followed.
- The Roan Plateau RMPA will incorporate and observe the principles of multiple use and sustained yield.
- The Roan Plateau RMPA process will involve consultation with Native American tribal governments.
- The Roan Plateau RMPA will recognize valid existing rights.
- The Roan Plateau RMPA and SEIS will use analysis in the Roan Plateau Final EIS, to the extent possible and practicable.

7 SUMMARY OF FUTURE STEPS IN PLANNING PROCESS

The Analysis of the Management Situation (AMS), which describes the resources and uses of the planning area, was originally prepared for the 2006 RMPA/EIS. The AMS, signed January 2003, presents baseline information for resources or topics by describing:

- Management plans and documents
- Current management
- Characteristics and settings
- Resource conditions and capabilities
- Opportunities

The next phase of the BLM's planning process will be to consider the development of additional management alternatives based on the issues identified in the Judicial Order, as well as those identified during the scoping process. Alternatives will be designed to meet the RMPA goals and objectives and planning criteria. In compliance with NEPA, CEQ regulations, and the BLM planning regulations and guidance, alternatives should be reasonable and capable of implementation. The BLM will also continue to meet with cooperating agencies, interested tribes, and the public. A detailed analysis of the alternatives will be performed to assess potential impacts and will be described in the Draft SEIS. Based on the alternatives analyses, the BLM's Preferred Alternative will then be selected and analyzed in detail.

The alternatives analysis will be documented in the Draft RMPA/SEIS. Although the BLM welcomes public input at any time during the planning process, the next official comment period will begin when the Draft RMPA/SEIS is published. The draft document will be widely distributed to elected officials, regulatory agencies, and members of the public, and will be available on the project website: http://www.blm.gov/co/st/en/BLM_Programs/land_use_planning/rmp/roan_plateau.html.

The availability of the draft document will be announced via a Notice of Availability (NOA) in the Federal Register, and a 90-day public comment period will follow. Public meetings will be held during the comment

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period. At the conclusion of the public comment period, the Draft RMPA/SEIS will be revised and a Proposed RMPA/Final SEIS will be published. The availability of the proposed document will be announced in the Federal Register along with the protest/appeal period. Concurrently, the Governor of Colorado will review the document for consistency with approved state or local plans, policies, or programs. At the conclusion of the public protest/appeal period and Governor's consistency review, the BLM will resolve all protests and any inconsistencies, and the approved RMPA and ROD will be approved by the State Director and published. The availability of these documents will be announced in the Federal Register.

8 ACRONYMS AND ABBREVIATIONS

ACEC	Area of Critical Environmental Concern
AMS	Analysis of the Management Situation
ANI	Assessment of New Information
AQRV	Air Quality Related Value
BBC	Bill Barrett Corporation
BLM	Bureau of Land Management
BMP	Best Management Practice
CDPHE	Colorado Department of Public Health and the Environment
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO ₂	Carbon Dioxide
COA	Condition of Approval
COGCC	Colorado Oil and Gas Conservation Commission
Court	U.S. District Court for the District of Colorado
CPW	Colorado Parks and Wildlife
CRCT	Colorado River cutthroat trout
CRV	Colorado River Valley
CRVFO	Colorado River Valley Field Office
CSU	controlled surface use
CWA	Clean Water Act
DOE	U.S. Department of Energy
DOI	U.S. Department of the Interior
EA	Environmental Assessment
EIS	Environmental Impact Statement

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ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act of 1976
FSEIS	Glenwood Springs Resource Area, Oil and Gas Leasing and Development Final Supplemental Environmental Impact Statement
GHG	greenhouse gas
GIS	Geographic Information System
GSFO	Glenwood Springs Field Office
GSRA	Glenwood Springs Resource Area
GWUDI	groundwater under direct influence
HIA	health impact assessment
IMP	Interim Management Policy
MDP	Management Development Plan
mg/L	milligrams per liter
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NAAQS	National Ambient Air Quality Standard
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act of 1969
NGD	no ground disturbance
NOA	Notice of Availability
NOI	Notice of Intent
NOSR	Naval Oil Shale Reserve
NSO	no surface occupancy
OHV	off-highway vehicle
OMP	Operational Management Plan
Planning Area	Roan Plateau Planning Area
PSD	Prevention of Significant Deterioration
REA	Rapid Ecoregional Assessment
RFD	Reasonable Foreseeable Development
RMP	Resource Management Plan
RMPA	Resource Management Plan Amendment
ROD	Record of Decision

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ROW	Right-of-Way
SEIS	Supplemental Environmental Impact Statement
SRMA	Special Recreation Management Area
SWPP	Surface Water Protection Plan
T&E	Threatened and Endangered
TCF	trillion cubic feet
THPO	Tribal Historic Preservation Office
TMDL	Total Maximum Daily Load
USDW	Underwater Sources of Drinking Water
USFWS	U.S. Fish and Wildlife Service
WEPP	Water Erosion Prediction Program
WMA	Watershed Management Area
WR	White River
WRRRA	White River Resource Area
WSA	Wilderness Study Area
WSCOGA	West Slope Colorado Oil and Gas Association
WSR	Wild and Scenic River

9 REFERENCES

[Note: References cited in the Scoping Report text are included here. References noted in scoping comment text are not listed.]

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APPENDIX A

ASSESSMENT OF NEW INFORMATION (ANI) REPORT

**Assessment of New Information (ANI) Report
Roan Plateau Planning Area
Supplemental Environmental Impact Statement**



**Bureau of Land Management
Colorado River Valley Field Office
Silt, Colorado**

July 2014

ASSESSMENT OF NEW INFORMATION

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Acronyms

°C	degrees Centigrade
ACEC	Area of Critical Environmental Concern
ANI	Assessment of New Information
AUM	Animal Unit Month
BA	Biological Assessment
BCC	Birds of Conservation Concern
BLM	Bureau of Land Management
BMP	Best Management Practice
BO	Biological Opinion
BOR	Bureau of Reclamation
BTEX	benzene, toluene, ethylbenzene, and xylene
CAA	Clean Air Act
CARMMS	Colorado Air Resources Management Modeling Study
CDPHE	Colorado Department of Public Health and Environment
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CHD	congenital heart defect
CNHP	Colorado Natural Heritage Program
COA	Condition of Approval
COGCC	Colorado Oil and Gas Conservation Commission
Court	U.S. District Court for the District of Colorado
CPW	Colorado Parks and Wildlife
CRCT	Colorado River Cutthroat Trout
CRVFO	Colorado River Valley Field Office
CSU	Controlled Surface Use
CWA	Clean Water Act
CWCB	Colorado Water Conservation Board
DOE	[U.S.] Department of Energy
DPS	Distinct Population Segment
DWSPA	Drinking Water Supply Protection Area
EIS	Environmental Impact Statement
EPA	[U.S.] Environmental Protection Agency

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RMPA	Resource Management Plan Amendment
ROD	Record of Decision
ROW	Right-of-Way
SDWA	Safe Drinking Water Act
SEIS	Supplemental Environmental Impact Statement
SEZ	Solar Energy Zone
SPCC	Spill Prevention, Control, and Countermeasures
SWPCRP	Source Water Protection Conservation Reserve Program
TOT	time of travel
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOC	Volatile Organic Compound
VRI	Visual Resource Inventory
VRM	Visual Resource Management
WRFO	White River Field Office
WSA	Wilderness Study Area
WSR	Wild and Scenic River

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1 INTRODUCTION

The Bureau of Land Management (BLM) initiated a supplementation process for the Roan Plateau Planning Area Resource Management Plan Amendment (RMPA)/Environmental Impact Statement (EIS) with publication of a Notice of Intent (NOI) on January 28, 2013. As stated in the NOI, the primary reason for preparing the Supplemental Environmental Impact Statement (SEIS) and RMPA is to address deficiencies identified in Colorado Environmental Coalition et al. v. Kenneth Salazar et al. 2012, hereinafter referred to as “the Judicial Order.” As an SEIS, per BLM National Environmental Policy Act (NEPA) Handbook H-1790-1 (BLM 2008), the BLM must also address significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its effects (40 Code of Federal Regulations [CFR] 1502.9(c)(1)(ii)).

In accordance with the NOI and BLM’s NEPA guidance, the Colorado River Valley Field Office (CRVFO) prepared this Assessment of New Information (ANI) as its primary means of internal scoping, with the following intents and goals:

- Identify known new information or issues, both internally generated and externally available, that have become available since publication of the 2006 Final RMPA/EIS (BLM 2006), hereinafter referred to as the “Final EIS.”
- Assess the relevance of this new information or issues to the analysis of environmental concerns and significance to the decision maker.
- Help define the scope of the SEIS by providing information or defining issues, and documenting the rationale for its inclusion or exclusion in the SEIS.

To determine the significance of new information, the BLM used the series of screening questions listed below:

1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?
5. Would the new information present environmental consequences not envisioned in the existing Final EIS?

The BLM’s intent in screening for significant new information was to meet the Council on Environmental Quality (CEQ) guidance that a NEPA document should “concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail” (40 CFR 1500.1(b)), to respect the supplemental nature of this SEIS undertaking, and to focus analysis on areas where new information

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presents a significantly different picture than what is contained in the Final EIS or where new policy or law needs to be addressed.

As a scoping tool, the ANI is not intended to be comprehensive in its inclusion of all new information. Instead, it is intended to identify the presence of new information and issues and assess their relevance, thereby raising issues for further consideration and analysis in the SEIS. The information referenced in this ANI is up-to-date at the time of preparation. Information and issues identified as significant in the ANI may require further data collection and compilation, and will require analysis in the SEIS. The ANI is an internal scoping tool and is not intended to directly assess the relevance of new information that may have been raised by the public in external scoping.

New information and data are assessed by resource in the following sections. Each section culminates in a determination of significance for the assessed information.

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2 PHYSICAL ENVIRONMENT

2.1 CAVE AND KARST RESOURCES

In 2013, the Colorado River Valley Field Office (CRVFO) received an updated map of the Anvil Points Claystone Cave Area from the Colorado Cave Survey (Bristol 2013). The pdf map that was provided was digitized by Bureau of Land Management (BLM) staff, and the Geographic Information System (GIS) boundary of the cave area has been updated.

New Information Needed: None.

Table 2.1-1 Significance Screening: Cave and Karst Resources

<i>Significance Screening Criteria*</i>	Yes	No	Notes
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?		X	
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?		X	
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?			N/A
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?			N/A
5. Would the new information present environmental consequences not envisioned in the existing EIS?			N/A

Note:

** If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.*

Key:

EIS = Environmental Impact Statement

N/A = Not applicable

SEIS = Supplemental Environmental Impact Statement

Determination of Significance: Not significant.

Significance Rationale: Anvil Points Cave is protected under the Federal Cave Resources Protection Act and the exact location of the cave must not be distributed. The Roan Plateau Environmental Impact Statement (EIS) does not share exact locations of the cave, not even under the No Surface Occupancy (NSO) stipulation. The analysis completed in Chapter 4 of the EIS analyzed a larger area than the exact cave boundary in order to include any karst resources that may contribute to the formation of the cave. The change in the cave boundary does not change the impacts measurably, as the Anvil Points NSO still covers the entire cave, according to Chapter 2 of the EIS.

Preparer: Miller, Kimberly M.; Outdoor Recreation Planner

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2.2 PALEONTOLOGICAL RESOURCES

Since publication of the initial Roan Final Environmental Impact Statement (EIS) (BLM 2006) the Bureau of Land Management (BLM) has changed its classification system pertaining to paleontological resources. The new system, adopted through BLM Instruction Memorandum (IM) 2008-009, issued on October 15, 2007, expands fossil significance from a three-tier to a five-tier classification scheme. The previous system categorized fossils as Condition 1, 2, or 3, with 1 being the most significant and sensitive. The new structure, called the Potential Fossil Yield Classification (PFYC) system, replaces “condition” with “class” and reverses the order of significance, with Class 5 being the most significant.

On March 30, 2009, a mandate for Paleontological Resources Preservation became law when President Barack Obama signed the Omnibus Public Lands Act of 2009. The law requires the Secretaries of the United States Departments of Interior and Agriculture to manage and protect paleontological resources on federal land using scientific principles and expertise. The Paleontological Resources Preservation Act (PRPA) includes specific provisions addressing management of these resources by the BLM, the National Park Service (NPS), the Bureau of Reclamation (BOR), the U.S. Fish and Wildlife Service (USFWS), and the U.S. Forest Service (USFS).

The new classification system affects the terminology used during the characterization and impact analysis for specific projects, while the Omnibus Public Lands Act of 2009 specifies the need for adequate protection of fossil resources. However, the classification system and Act do not constitute new information about the fossil resources of the Roan Plateau Planning Area (Planning Area).

Table 2.2-1 PFYC vs. BLM Condition Relative to Outcrops in the Roan Plateau Planning Area

<i>Symbol</i>	<i>Name</i>	<i>PFYC</i>	<i>BLM Cond.</i>
Qa	Modern Alluvium: Includes Piney Creek alluvium and younger deposits	2	3
Qgo	Older Grave and Alluviums (Pre-Bull Lake Age): Includes Slocum, Verdos, Rocky Flats, and Nussbaum alluviums in east, and Florida, Bridgetimber, and Bayfield gravels in southwest	2	3
Ql	Landslide Deposits: Locally includes talus, rock-glacier, and thick colluvial deposits	2	3
Tg	Green River Formation: Marlstone, sandstone, and oil shale	4/5	2
Tgl	Green River Formation: Lower part - Shale, sandstone, marlstone, and limestone in Anvil Points, Garden Gulch, and Douglas Creek members; in Piceance basin	3	2
Tglm	Green River Formation: Laney Member - Claystone, oil shale, and sandstone; in Sand Wash basin	4/5	2
Tglu	Green River Formation: Luman Tongue - Carbonaceous shale and marlstone; in Sand Wash basin	3	2
Tglw	Lower Part of Green River Formation and Wasatch Formation: Shale and sandstone	4/5	2
Tgp	Green River Formation: Parachute Creek Member - Oil shale, marlstone, and siltstone; in Piceance basin	4/5	2

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Table 2.2-1 PFYC vs. BLM Condition Relative to Outcrops in the Roan Plateau Planning Area

<i>Symbol</i>	<i>Name</i>	<i>PFYC</i>	<i>BLM Cond.</i>
Tgt	Green River Formation: Tipton Tongue - Claystone and oil shale; in Sand Wash basin; in extreme northwest, includes rocks of Wilkins Peak Member	3	2
Tu	Uinta Formation: Sandstone and siltstone; in Piceance basin; formerly Evacuation Creek Member of Green River Formation	4/5	2
Tw	Wasatch Formation: Claystone, shale, and sandstone	4/5	2
Two	Wasatch Formation (including Fort Union Equivalent at Base) and Ohio Creek Formation: Claystone, mudstone, sandstone, and conglomerate	4/5	2

Key:

BLM = Bureau of Land Management

N/A = Not Applicable

PFYC = Potential Fossil Yield Classification

New Information Needed: None.

Table 2.2-2 Significance Screening: Paleontological Resources

<i>Significance Screening Criteria*</i>	<i>Yes</i>	<i>No</i>	<i>Notes</i>
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?		X	New terms, but the same geology.
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?		X	Inventory terminology has changed, but it would not affect the impacts or decision-making.
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?			N/A
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?			N/A
5. Would the new information present environmental consequences not envisioned in the existing EIS?			N/A

Note:

* If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.

Key:

EIS = Environmental Impact Statement

N/A = Not Applicable

SEIS = Supplemental Environmental Impact Statement

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Determination of Significance: Not significant.

Significance Rationale: The new classification system affects the terminology used during the characterization and impact analysis, but does not constitute new information about the fossil resources of the Planning Area. Although new fossil locations and discoveries of new fossils occur periodically in conjunction with individual projects, research, or collection, to date, none of this information has represented a qualitative change in the known fossil resources of the Planning Area. However, the updated information and project-specific surveys based on the type of project and type of surficial geologic material potentially affected would be used at the implementation (project-specific) level to guide project location and design and the application of Conditions of Approval (COAs) to ensure adequate resource protection.

Preparer: Sieber, Anthony T.; Geologist

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2.3 SOILS

Susceptibility of the soil resource to loss or damage from erosion is based on texture, soil depth, slope angle and length, amount of plant cover, and intensity and duration of rainfall events. In general, soil erodibility is higher in the portion of the Roan Plateau Planning Area (Planning Area) below the rim due to a preponderance of thin, silty, sparsely vegetated soils, often on moderately steep to steep slopes. These are exacerbated by high-intensity thunderstorms that represent a substantial part of the annual precipitation. Atop the plateau, soils are deeper and, while some of the terrain is moderately steep, it is mostly covered with a well-developed cover of herbaceous and woody plants.

Although vulnerability of Planning Area soils to erosion has not changed since the Roan Plateau Final Environmental Impact Statement (EIS) (BLM 2006), information on soils within the Planning Area was updated in 2013 by the Natural Resources Conservation Service (NRCS) (NRCS 2013). This updated information differs from the earlier (USDA 1977) soils map used in the Final EIS by showing greater detail in the distribution of various soil types within the Planning Area. The primary soils-related protection under the Proposed Resource Management Plan (RMP) for the Colorado River Valley Field Office (CRVFO) (BLM 2014) is a No Surface Occupancy (NSO) stipulation for slopes steeper than 50 percent and a Controlled Surface Use (CSU) stipulation for slopes steeper than 30 percent or with highly erodible soils. These were also the protections applied in the Roan Plateau Final EIS (BLM 2006), except that the CSU only applied to areas having both slopes steeper than 30 percent and highly erodible soils.

Discrepancies between the 1977 and 2013 soils maps are relatively slight overall, with approximately 6 percent less area currently meeting the criteria for the 30 percent slope/highly erodible soil CSU. However, the new mapping shows slightly more area as meeting the CSU criteria above the rim than was the case in 1977. This does not represent a change in topography or soils, but is an artifact of the Geographic Information system (GIS) software. As noted above, because the upper plateau is generally very well vegetated, due to a combination of better and deeper soils and more ample rainfall, areas of steeper slopes in the upper plateau are less prone to soil loss or damage from erosion than the generally more barren slopes of the lower plateau.

New Information Needed: None.

Table 2.3-1 Significance Screening: Soils

<i>Significance Screening Criteria*</i>	Yes	No	Notes
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?		X	Minor changes of approximately 6% relative to applicable thresholds.
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?		X	
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?			N/A
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?			N/A

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Table 2.3-1 Significance Screening: Soils

<i>Significance Screening Criteria*</i>	Yes	No	Notes
5. Would the new information present environmental consequences not envisioned in the existing EIS?			N/A

Note:

** If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.*

Key:

EIS = Environmental Impact Statement

N/A = Not Applicable

SEIS = Supplemental Environmental Impact Statement

Determination of Significance: Not significant.

Significance Rationale: The distribution of erosive soils and steep slopes has not changed significantly since 2006, despite slight changes based on new mapping available digitally from the NRCS (NRCS 2013). These changes are minor, representing a difference of about 600 acres out of more than 10,000 acres, or roughly 6 percent. Soil conditions on the ground will be assessed during site-specific permitting, and site-specific environmental analyses will use the newer data.

Preparer: Crockett, Allen B.; Supervisory Natural Resource Specialist

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2.4 WATER RESOURCES AND GROUNDWATER

2.4.1 Water Resources

New Colorado Oil and Gas Conservation Commission (COGCC) Rules for Development atop the Roan Plateau

On June 12, 2008, the Colorado Oil and Gas Conservation Commission (COGCC) wrote a notice to operators for pit design, construction, and monitoring requirements within 0.75 mile of the rim (COGCC 2008). The COGCC developed more stringent requirements for pits “in response to recent releases from pits proximate to the rim of the Roan Plateau in Garfield County.” The new requirements dictate that pits shall not be constructed on any surface water feature and if groundwater is encountered pit construction must cease. The pit design requirements are very specific and include double-liner systems with leak detection or the operator must submit a design which is certified by a Professional Engineer. In addition, requirements for hydrotesting and monitoring are specified in the Notice to Operators (NTO) (COGCC 2008).

Designation of Outstanding Waters

In the September 30, 2013, Water Quality Control Commission rulemaking, the COGCC “took several steps in many drainages to protect rare, threatened, and endangered species. The Colorado River Cutthroat was specifically protected by a high quality designation on Northwater and Trapper creeks as well as Trappers Lake. The Commission found these segments to be critical spawning sites and considers the protection of this species to be important to the public at large.” (CDPHE 2013a)

These changes include:

The East Middle Fork of Parachute Creek, including all tributaries and wetlands, from the source to the boundary of the White River National Forest, was moved Segment 8 from Segment 11d to facilitate the application of an Outstanding Waters designation (see Section O in Regulation 37) because the Colorado River Cutthroat Trout (CRCT) is present.

Mainstem of Northwater and Trapper creeks, including all tributaries and wetlands, from their sources to the confluence with the East Middle Fork of Parachute Creek. East Middle Fork of Parachute Creek, including all tributaries and wetlands, from the source to the confluence with the Middle Fork of Parachute Creek, are designated as outstanding because the CRCT is present.

Impaired waters are listed in Table 2.4-1 (CDPHE 2012).

Table 2.4-1 State of Colorado’s 303 (D) List of Impaired Waters and Monitoring and Evaluation List in the Roan Plateau Planning Area

WBID	Segment Description	Portion	Colorado’s Monitoring & Evaluation Parameter(s)	Clean Water Act Section 303(d) Impairment	303(d) Priority
COLCLC10	East Rifle Creek, West Rifle Creek, and Rifle Creek, including tributaries from Rifle Gap to the Colorado River	All	<i>E. coli</i>	Selenium	L

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COLCLC01	Colorado River, Roaring Fork River to Rifle Creek	All	Sediment		
COLCLC02a	Colorado River, and Rifle Creek to Rapid Creek	All	Sediment		
Source: CDPHE 2012					

Town of Parachute Source Water Protection Plan (Hill 2013):

“The Colorado River supplies a portion of the Town’s water supply, particularly in the summer when water demand is greater. The Colorado River intake is located in the riverbed, beneath a bridge that crosses between Parachute and Battlement Mesa. Water from the intake is pumped approximately 200 feet and stored in a 153,000-gallon raw water tank. This tank is adjacent to the treatment facility, where water is then treated using microfiltration. During summer, the average daily demand is 325,000 to 375,000 gallons per day. In winter, as in most cases in a rural community, the average demand is much less at 200,000 to 250,000 gallons per day. Parachute has approximately 255 taps connected to their systems.”

“After carefully reviewing their Source Water Assessment Report and the Colorado Department of Public Health and the Environment’s (CDPHE’s) delineation of the Source Water Protection Areas for each of the communities in this Plan, the Source Water Protection Conservation Reserve Program (SWPCRP) and the Steering Committee decided to re-delineate these Source Water Protection Areas to reflect current local issues of concern, as well as to make them more manageable for the prevention of contamination. This re-delineation of the Source Water Protection Area by the SWPCRP is to be referred to Drinking Water Supply Protection Area (DWSPA), and is defined as:

1. Primary Zone – In surface water systems, the primary zone is the area within the boundaries of the Colorado River alluvium as determined by the U.S. Geological Survey (USGS). For groundwater systems, the primary zones follow the two-year time of travel (TOT) boundaries.
2. Secondary Zone – In surface water systems, the secondary zone is the area within a 5-mile buffer zone upstream of each intake, within each 12-digit Hydrologic Unit Code as determined by the U.S. Department of Agriculture (USDA)/National Resources Conservation Service (NRCS) National Cartography and Geospatial Center. In groundwater systems, the secondary zones follow the 5 year TOT boundaries.”

Lands within with Roan Plateau Planning Area (Planning Area) include portions of the Town of Parachute’s primary and secondary protection zones. The overall susceptibility rating, which is based on two components, the physical setting vulnerability of the water source and the contaminant threat, is rated as moderately high for the Town of Parachute’s source water (Hill 2013).

Roan Cliffs Land Health Assessment 2013

Several recent water quality samples collected by the CDPHE, the Bureau of Land Management (BLM), and others entities have exceeded acute or chronic water quality standards; however, these results have not resulted in new listings of segments on the 303(d) Impaired Waters list or Monitoring and Evaluation list by the State of Colorado.

Parameters of concern include selenium, iron, lead, dissolved oxygen, *E. coli*, and water temperature. On the other hand, from a biological standpoint, new macroinvertebrate data from 2011, 2012, and 2013 indicate overall water quality conditions are generally fair to good. (BLM 2013a and b)

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New Information Needed:

Stream Designations

Update all stream segments with classifications and numeric standards according to State of Colorado Regulations 37 and 41 (CDPHE 2013b, c) and 305b Report (CDPHE 2010).

Water Rights

Update the number of new filings for surface water springs from 125 to over 300. Also include Instream Flow water rights held by the Colorado Water Conservation Board (CWCB), for East Fork Parachute Creek on BLM lands.

Table 2.4-2 Significance Screening: Water Resources

<i>Significance Screening Criteria*</i>	Yes	No	<i>Notes</i>
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?	X		Newly identified resource concerns and information/classification related to water resources and water rights.
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?	X		New COGCC Rules for Development atop the plateau; designation of Outstanding Waters; Town of Parachute Source Water Protection Plan; etc.
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?		X	The impacts would not change, but their relevance to regulatory thresholds and management designations would be affected.
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?	X		This is unknown and warrants further analysis to determine.
5. Would the new information present environmental consequences not envisioned in the existing EIS?	X		Some of the data are not considered in the 2006 Final EIS but are relevant to analysis, given current resource concerns.

Note:

** If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.*

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Table 2.4-2 Significance Screening: Water Resources

<i>Significance Screening Criteria*</i>	<i>Yes</i>	<i>No</i>	<i>Notes</i>
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Key:

COGCC = Colorado Oil and Gas Conservation Commission

EIS = Environmental Impact Statement

SEIS = Supplemental Environmental Impact Statement

Determination of Significance and Rationale:

1. New COGCC Rules for Development atop the Roan Plateau: Significant.
Address in sections on RFD and oil and gas practices/rules.
2. Designation of Outstanding Waters: Significant.
Changed circumstances on the management designation warrant inclusion in the Supplemental Environmental Impact Statement (SEIS).
3. State of Colorado’s 303(d) List of Impaired Waters and Monitoring and Evaluation List (CDPHE 2012): Significant.
Although the analysis of impacts should not be changed, this new information is significant because it involves a regulatory threshold with the potential to be affected.
4. Town of Parachute Source Water Protection Plan: Significant.
This designation is significant based on its relationship to changed resource concerns related to fluid minerals production and water quality, and because it has the potential to inform the decision maker about potential effects.
5. Roan Cliffs Land Health Assessment 2013: Significant.
Although changes do not present a significantly different picture of land health, recent data suggest that changes may be important relative to regulatory thresholds.
6. Water Rights: Significant.
This is considered significant due to increased regulatory focus on potential effects to water, near doubling of known springs, and changed oil and gas practices.

Preparers: Adams, Pauline M.; Hydrologist. Larson, Gregory P.; Project Manager

2.4.2 Groundwater

Since publication of the Roan Plateau Final Environmental Impact Statement (EIS) (BLM 2006), there has been growing public concern relative to the practice of hydraulic fracturing, also known as “fracking.” Although fracking has been in use for several decades, it was not specifically analyzed in the Roan Plateau Final EIS in connection with groundwater. The Roan Plateau is unique compared to most of the Piceance basin, mainly due to its “perched” bedrock aquifers. These aquifers, known as the Upper and Lower Piceance Basin aquifers, are the principal sources of groundwater for the northern province of the Piceance.

- Upper Piceance Basin Aquifer: The upper aquifer includes the sandstone and fractured siltstone of the Uinta Formation and the fractured marlstone and solution cavities of the upper part of the Parachute Creek Member of the Green River Formation (Table 2.4-3). The Uinta consists of discontinuous layers of sandstone, siltstone, and marlstone, and is less permeable than the hydrologically connected upper Parachute Creek Member (CGS 2003).

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- **Lower Piceance Basin Aquifer:** The lower aquifer unit includes the fractured marlstone and leached section of the lower part of the Parachute Creek Member. The Mahogany confining unit is a leaky confining layer and correlates with the Mahogany zone of the Parachute Creek Member. This confining unit separates the upper and lower aquifer units. The Mahogany zone is located in the upper one-third of the Parachute Creek Member (CGS 2003).
 - **Fractures:** Fractures are ubiquitous in both the upper and lower aquifers, leading to relatively high conductivity rates (less than 0.1 to greater than 1.6 feet per day). These fractures increase the propagation of fluids throughout both aquifer systems, including movement through the semi-permeable Mahogany confining unit. The majority of these fluids are discharged at springs and creeks (Figure 2.4-1 [CGS 2003]).

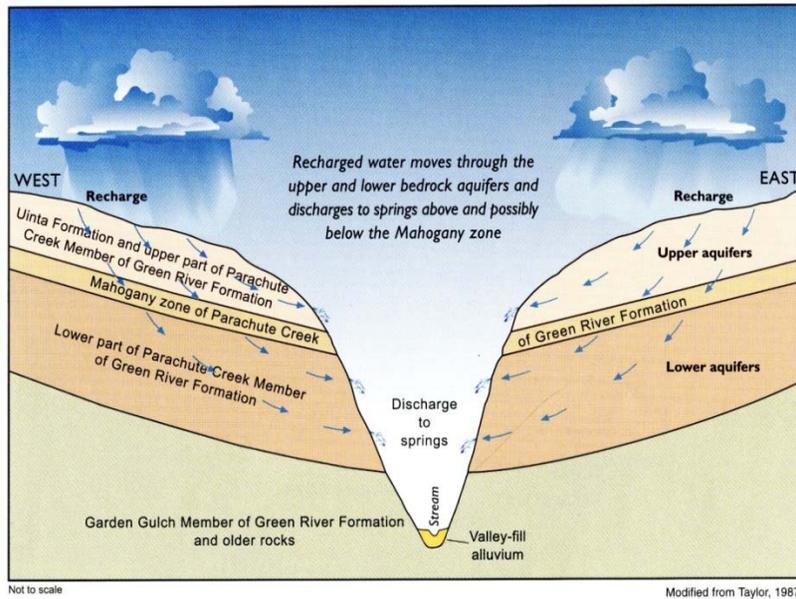


Figure 2.4-1 Diagrammatic Cross-Section of Groundwater Movement in Roan and Parachute Creek Drainage Basins

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Table 2.4-3 Hydrogeologic Units of the Piceance Basin

Era	System	Series	Stratigraphic Unit	Unit Thickness	Physical Description	Hydrogeologic Unit	Hydrological Characteristics
Cenozoic	Tertiary	Eocene	Uintah Formation	0-1,400	Silty sandstone, Siltstone and marlstone	Upper Piceance Basin aquifer	Conductivity range <0.2 to >1.6 ft/day; yield 1 to 900 gpm; transmissivity 610-700ft ² /day Conductivity range <0.1 to >1.2 ft/day; yield 1 to 1,000 gpm; transmissivity 260-380ft ² /day
			Green River Formation	As much as 5,000	<i>Parachute Creek Member</i> kergenuous, dolomitic marlstone and shale 500-1,800 ft	Mahogany confining unit	
					<i>Anvil Points Member</i> shale, fine-grained sandstone and marlstone 0-1,870 ft.	Lower Piceance Basin aquifer	
					<i>Garden Gulch Member</i> claystone, siltstone, clay-rich oil shale and marlstone 0-900 ft.	Confining unit	
		Wasatch Formation	~5,000	Shale and lenticular sandstone			
Paleocene	Fort Union Formation	Very Thin	Coarse-grained sandstone	Fort Union aquifer			
Mesozoic	Cretaceous	Upper Cretaceous	Mesaverde Group	Averages 3,000 may be >7,000	<i>Fox-Hills Sandstone, Lewis Shale, Williams Fork Formation, Iles Formation</i> ; sandstone interbed shale and coal	Mesaverde aquifer	
			Mancos Shale	More than 7,000	Mainly Shale but Frontier Sandstone may be local aquifer	Mancos confining unit	

Source: CGS 2003

- o Water Quality: Water in the Tertiary aquifer system for the northern portion of the Piceance Basin gains dissolved solids and shows changes in major ion chemistry as it moves along the basin flow paths from the upland recharge areas to the discharge areas.

In the upper aquifer unit, the dissolved solids concentration increases from 500 to 1,000 milligrams per liter (mg/L). The chemical water classification is diverse, ranging from calcium carbonate to sodium carbonate water with large concentrations of sulfate.

In the lower aquifer unit, the dissolved solids concentration increases from about 1,000 to 10,000 mg/L along the basin flow paths. Waters with dissolved solids concentrations in excess of 1,000 mg/L are generally unsuitable for potable supply. Water in the lower aquifer unit is characterized as a sodium-carbonate type. Processes in the recharge areas contributing to water

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quality include dissolution of calcite and dolomite. Chemical reactions in the down-gradient areas probably include dissolution of nahcolite and halite (CGS 2003).

- **Lands Below the Rim:** Studies have shown that the Williams Fork Formation is a semiconfined aquifer under artesian pressure specifically in the Garfield County area, where upwelling can occur along conduits, such as well bores or natural fractures; this mechanism can allow deep groundwater to migrate into shallow aquifers (Thomas and McMahon 2013).

Review of groundwater resources data compiled since the initial analysis for the Roan Plateau Resource Management Plan (RMP) does not reveal any new information or resource concerns that would significantly change the groundwater analysis performed for the original SEIS, or groundwater portions of the previous alternatives. As always, groundwater resource analysis will be conducted on a project-by-project basis to determine the presence or absence of previously unidentified resources.

New Information Needed: A list of existing Colorado Division of Water Resource wells needs to be added to the SEIS in order to provide a more comprehensive analysis. Well data will provide a baseline for aquifer depths as well as bore hole proximity. Furthermore, a Geographic Information System (GIS) map needs to be included that details groundwater recharge areas.

Table 2.4-4 Significance Screening: Groundwater

<i>Significance Screening Criteria*</i>	Yes	No	<i>Notes</i>
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?	X		Fracturing presents a new resource concern
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?		X	No new law or policy, but a public/agency expectation of analysis
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?		X	Based on other analyses, this is unlikely
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?		X	Based on other analyses, this is unlikely
5. Would the new information present environmental consequences not envisioned in the existing EIS?	X		Consideration of potential fracturing effects not considered in the Final EIS (water use and water quality)

Note:

* If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.

Key:

EIS = Environmental Impact Statement

SEIS = Supplemental Environmental Impact Statement

ASSESSMENT OF NEW INFORMATION

Determination of Significance: Significant.

Significance Rationale: Although our understanding of groundwater in the Planning Area has not significantly changed since the Final EIS, changed exploration and production practices have changed the way groundwater information is presented and analyzed, warranting a change in analysis to incorporate new information related to the potential effects of hydraulic fracturing.

Preparer: Sieber, Anthony T.; Geologist

ASSESSMENT OF NEW INFORMATION

2.5 CLIMATE CHANGE AND AIR QUALITY

2.5.1 Climate Change

Since the development of the existing Final Environmental Impact Statement (EIS) (BLM 2006), the Intergovernmental Panel on Climate Change (IPCC) (2013 and 2014) has released several Climate Change Assessment reports. Just recently, the Council on Environmental Quality (CEQ) provided to other federal agencies the “Draft Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Reviews” that is intended to supersede the February 2010 CEQ draft guidance on Climate Change and the National Environmental Policy Act (NEPA) (CEQ 2010). The Bureau of Land Management (BLM) is currently reviewing a draft Instruction Memorandum (IM) that provides national guidance for the BLM’s consideration of climate change through the NEPA process for land use planning and project level decisions. Over the past several years, the BLM has developed several emissions inventory toolkits (for internal use) including the *Emissions Inventory Calculator* and *Greenhouse Gas and Climate Change NEPA Toolkit*, that calculate air pollutant (including greenhouse gases [GHGs]) emissions for many BLM resources/permited activities

New Colorado Air Resource Management Modeling Study (CARMMS) emissions calculators were used to develop 10-year projected emissions inventories for CARMMS modeling (ongoing) and also develop updated GHG emissions inventory projections for each Field Office/planning area (including the Roan Planning Area).

In addition, the U.S. Environmental Protection Agency’s (EPA’s) Greenhouse Gas Reporting Program released its third year of emissions data in the fall 2013.

New Information Needed: Available data applicable to the use of methods described above.

Table 2.5-1 Significance Screening: Climate Change

<i>Significance Screening Criteria*</i>	Yes	No	Notes
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?	X		
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?	X		
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?	X		
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?	X		
5. Would the new information present environmental consequences not envisioned in the existing EIS?	X		

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Table 2.5-1 Significance Screening: Climate Change

Significance Screening Criteria*	Yes	No	Notes
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Note:

* If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.

Key:

EIS = Environmental Impact Statement

SEIS = Supplemental Environmental Impact Statement

Determination of Significance: Significant.

Significance Rationale: As described in the introduction, above, there have been many climate change information reports, draft guidance documents for addressing climate change in NEPA assessments/analyses, and GHG emissions inventory toolkits developed since the release of the existing Final EIS. Information from these sources would significantly enhance the GHG/Climate Change section for the Supplemental Environmental Impact Statement (SEIS) and provide a better reflection of current policy for the analysis.

Preparer: Cook, Forrest; Air Resource Specialist

2.5.2 Air Quality

The existing Final EIS does not sufficiently address cumulative air quality impacts and potential ozone impacts. For these reasons (and others), the U.S. District Court for the District of Colorado (the Court) set aside the decision embodied in the 2006 Final Resource Management Plan Amendment (RMPA)/EIS, and remands the action to the BLM for further action.

New Information Needed: The BLM is currently conducting the Colorado Air Resources Management Study (CARMMS) that includes future air quality (includes ozone impacts) modeling for several future oil and gas development scenarios for the BLM Colorado field offices and planning areas. Emissions source impacts apportionment analyses are being conducted for each field office/planning area, and air quality impacts are being evaluated for each Planning Area including the Roan Plateau Planning Area (Planning Area). The CARMMS cumulative (includes emissions sources for the entire U.S.) and ozone-modeling study will be used for the SEIS.

Table 2.5-2 Significance Screening: Air Quality

Significance Screening Criteria*	Yes	No	Notes
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?	X		
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?	X		
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?	X		

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Table 2.5-2 Significance Screening: Air Quality

Significance Screening Criteria*	Yes	No	Notes
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?	X		
5. Would the new information present environmental consequences not envisioned in the existing EIS?	X		

Note:

** If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.*

Key:

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SEIS = Supplemental Environmental Impact Statement

Determination of Significance: Significant.

Significance Rationale: As previously stated in the introduction, the CARMMS will provide substantial new information that will meet Court orders and sufficiently develop the SEIS.

Preparer: Cook, Forrest; Air Resource Specialist

3 BIOLOGICAL ENVIRONMENT

3.1 VEGETATION

3.1.1 Wetlands, Floodplains, and Riparian Habitat

The Roan Cliffs Land Health Assessments of 1994 (BLM 1994) and 1999 (BLM 1999) determined the Proper Functioning Condition (PFC) of riparian areas within the Roan Plateau Planning Area (Planning Area) as described in Technical Reference 1737-15 (USDI BLM, et. al. 1998). The PFC assessment evaluates most of the indicators listed for healthy riparian systems as described in Colorado Standards for Public Land Health (BLM 1997). Each stream reach was assessed to determine whether it was at PFC, Functioning at Risk with an upward trend, Functioning at Risk with a downward trend, Functioning at Risk with no apparent trend, or Not Functioning based in indicator ratings. Repeated riparian photo points were also used to assess trends. From the 1994 PFC Assessment, a total of 31.6 miles of perennial and intermittent flow streams capable of supporting riparian vegetation were assessed. Of these, 10.8 percent (3.4 miles) were found to be at PFC, 83.9 percent (26.5 miles) were Functioning at Risk, and 5.4 percent (1.7 miles) were Not Functioning. The 1999 Land Health Assessment (BLM 1999) indicated improvement, with 25 percent (8.6 miles) at PFC, 73 percent (24.6 miles) Functioning At Risk with an upward trend, and only 2 percent (0.6 mile) of Non-Functioning streams (BLM 1999). This was the information available for the Final Environmental Impact Statement (EIS) (BLM 2006) analysis.

The 2013 Roan Cliffs Land Health Assessment (BLM 2013a) revisited many of the stream reaches assessed in 1994 and/or 1999, and PFC status for these reaches was reevaluated. Additional Multiple Indicator Monitoring data were collected in 2013 (internal BLM data), including stubble height measurements, stream bank alteration, and riparian species composition. In the 2013 Land Health Assessment (BLM 2013), a total of 41.2 miles of stream riparian areas were assessed. Of these, 55.6 percent (22.9 miles) were at PFC, 6.6 percent (2.7 miles) were Functioning at Risk with an upward trend, 36 percent (14.9 miles) were Functioning at Risk with no apparent trend, and 2 percent (0.9 mile) were Non-Functioning. This assessment found an increase in the percentage of streams at PFC, but a shift in most of the remaining Functioning at Risk streams from an upward trend to no apparent trend. The overall trend in riparian area health within the Roan Plateau Planning Area (Planning Area) appears relatively stable with some areas improving and some declining relative to the earlier assessments used for the Final EIS analysis, depending on management actions and type of livestock (BLM 2013a).

Methodology differed somewhat between earlier assessments and the 2013 assessment in that earlier assessments frequently visited only the lower reaches of streams below cliff bands where livestock grazing was limited by topography. The riparian health of these lower reaches was then attributed equally to upper reaches where more intensive livestock grazing occurred. The 2013 assessment visited these upper reaches and found poorer riparian conditions relative to the earlier assessments. Therefore, some of the apparent decline in riparian area functional condition can be attributed to differences in methodology. However, overall, riparian areas grazed by cattle tend to be in early seral stages dominated by non-native grasses such as redbud (*Agrostis stolonifera*) and Kentucky bluegrass (*Poa pratensis*), tufted hairgrass (*Deschampsia caespitosa*), and a few scattered patches of sedges and rushes. Dense willow stands dominate in steeper and less accessible stream reaches, but are sparse to absent along the upper, gentler gradient stream reaches.

New Information Needed: None.

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Table 3.1.1-1 Significance Screening: Wetlands, Floodplains, and Riparian Habitat

<i>Significance Screening Criteria*</i>	Yes	No	Notes
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?		X	Riparian areas were reassessed in 2013, with refined stream reach delineations. There were some shifts upward and downward relative to earlier information but, overall, condition changes do not present a dramatically different representation of the riparian conditions.
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?		X	
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?		X	The 2013 LHA data suggest that riparian areas are not recovering as quickly as anticipated in some areas, following intensive livestock use. However, this does not change the environmental concerns addressed in the Final EIS.
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?		X	Analysis of the new information would not result in a meaningful change in alternative impacts analysis, but may affect grazing management decisions at the allotment management level.
5. Would the new information present environmental consequences not envisioned in the existing EIS?		X	The Final EIS analysis included the need to adjust livestock grazing numbers, length and timing of grazing periods, and availability of water sources in response to annual forage production and livestock impacts. The new Land Health Assessment information would result in these types of

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Table 3.1.1-1 Significance Screening: Wetlands, Floodplains, and Riparian Habitat

<i>Significance Screening Criteria*</i>	Yes	No	Notes
			management changes, rather than in impacts requiring new analysis within the Roan SEIS.

Note:

* If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.

Key:

EIS = Environmental Impact Statement

SEIS = Supplemental Environmental Impact Statement

Determination of Significance: Not significant.

Significance Rationale: The new 2013 data show an increase in percentage of PFC riparian areas from 25 percent in 1999 to 55.6 percent in 2013. The percentage of riparian areas Functioning at Risk with an upward trend dropped from 73 percent in 1999 to 6.6 percent in 2013, with the changes in 2013 largely consisting of shifts either upwards to PFC, or downwards to Functioning at Risk with no apparent trend (36 percent). The percentage of riparian areas in Non-Functioning condition remained the same between 1999 and 2013, at 2 percent. These new monitoring data would not significantly shift the alternative impacts analysis, the relevant information necessary for the decision maker, and the environmental consequences envisioned in the existing Final EIS. Instead, they provide indications of where livestock management adjustments have been successful, and where further adjustments may be necessary.

Preparer: Perkins, Judy L.; Botanist

3.1.2 Vegetation and Plant Communities

Limited new information is available regarding upland vegetation and plant communities relative to the Final EIS (BLM 2006) analysis data. The 2013 Land Health Assessment (BLM 2013a) primarily focused on riparian areas and upland terraces adjacent to perennial streams. These upland terraces were highly disturbed, frequently dominated by Kentucky bluegrass, houndstongue (*Cynoglossum officinale*), western coneflower (*Rudbeckia occidentalis*), and other undesirable or native species that increase under heavy grazing pressure.

In other upland areas, there appears to have been little change from the conditions described in the Final EIS. No new upland Land Health Assessment data have been collected since the Final EIS analysis was completed, and updated information is derived from observational qualitative assessments in conjunction with long-term grazing utilization monitoring and random vegetation monitoring sites. The 2013 Land Health Assessment (BLM 2013a) was entirely focused on riparian areas rather than including upland vegetation due to the lack of any significant changes within the long-term monitoring sites. Age class structure continues to be generally skewed towards old age classes. Mesic mountain shrublands are dominated by dense stands of shrubs, with much sparser grass and forb cover than expected for the ecological site, likely influenced in part by the long grazing history on the plateau (BLM 2013b; BLM 2013c). In 2011 and 2012, approximately 350 acres of mesic mountain shrub communities along the ridgetops were mowed, resulting in increased age class diversity, a reduction in shrub canopy cover, and an increase in herbaceous species canopy cover.

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Aspen stands mainly consist of mature and dying trees, with re-growth of new shoots ranging from good to sparse re-growth that is inversely correlated with understory shrub density, particularly snowberry (*Symphoricarpos rotundifolius*). Individual aspen shoots are relatively short-lived, and the mortality seen on the Roan Plateau largely appears to be a function of this natural life history. Interactions with grazing may be limiting stand regeneration, either directly from cattle impacts to new shoots or indirectly through the increased shrub density in response to grazing pressure on grasses.

New Information Needed: None.

Table 3.1.2-1 Significance Screening: Vegetation and Plant Communities

<i>Significance Screening Criteria*</i>	Yes	No	Notes
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?		X	There have been no significant changes in upland vegetation or plant communities.
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?		X	
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?		X	No changes in vegetation have occurred that would be sufficient to alter the analysis of environmental concerns.
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?		X	No new vegetation information exists which would affect an informed decision.
5. Would the new information present environmental consequences not envisioned in the existing EIS?		X	No new vegetation information exists which would result in new environmental consequences not analyzed in the Final EIS.

Note:

** If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.*

Key:

EIS = Environmental Impact Statement

SEIS = Supplemental Environmental Impact Statement

Determination of Significance: Not significant.

Significance Rationale: The only new upland vegetation data collected since the Final EIS is from grazing utilization monitoring on grazing allotments, ecological site inventory, and long-term vegetation monitoring plots. No changes in vegetation have appeared since 1999 that would change the Final EIS analysis. Therefore, the limited new information is considered not significant for the Supplemental Environmental Impact Statement (SEIS).

Preparer: Perkins, Judy L.; Botanist

ASSESSMENT OF NEW INFORMATION

3.1.3 Threatened, Endangered, and Sensitive Plant Species, and Significant Plant Communities

Changes in special status plant designations have occurred since the completion of the Final EIS (BLM 2006). Two species, DeBeque phacelia (*Phacelia submutica*) and Parachute penstemon (*Penstemon debilis*), were candidate species for federal listing during the original analysis. Both of these species were listed as federally threatened by the U.S. Fish and Wildlife Service (USFWS) in 2011 (USFWS 2011), and critical habitat for each species was designated by the USFWS in 2012 (USFWS 2012). Critical habitat for Parachute penstemon was designated within the Planning Area, and includes a 1-kilometer buffer around known plant occurrences. This buffer is intended to protect pollinator habitat and potential habitat for Parachute penstemon, as well as the plants themselves. The critical habitat extends beyond the Area of Critical Environmental Concern (ACEC) and No Surface Occupancy (NSO) boundaries as analyzed in the Final EIS.

The list of special status and other potentially sensitive plant species within the Planning Area that have changed in some way since Final EIS (BLM 2006) is shown in Table 3.1.3-1. Additional botany surveys have been conducted in association with oil and gas activities. Since completion of the Final EIS analysis, Bureau of Land Management (BLM) staff conducting strategic surveys have mapped several new locations of three BLM sensitive plant species, including Roan Cliffs blazingstar (*Mentzelia rhizomata*), Cathedral Bluffs meadowrue (*Thalictrum heliophilum*), and DeBeque milkvetch (*Astragalus debequaeus*). All of these species were already known to occur within the Planning Area.

In 2005, potential habitat modeling for DeBeque phacelia was conducted by the Colorado Natural Heritage Program for the USFWS (Decker et. al. 2005). The modeling mapped approximately 58,732 acres of potential habitat for this species within the Planning Area, based on elevation and geology. More detailed and specific criteria for identifying suitable and marginally suitable habitat for DeBeque phacelia were developed by the USFWS in 2012 and 2013 (USFWS 2013), and these criteria have been used during botany surveys for oil and gas development projects to map areas of suitable and marginally suitable DeBeque phacelia habitat within the Planning Area. All of the potential habitat areas are at lower elevations below the cliffs, and the currently mapped suitable habitat areas within the Planning Area are near Parachute Creek.

Both Parachute penstemon and DeBeque phacelia were included in the Biological Assessment (BA) for the Final EIS, but because they were merely federal candidate species and not listed during the U.S. Fish and Wildlife Service (USFWS) Section 7 consultation, they were not covered under the Biological Opinion (BO). The biological opinion specifically stated the following regarding these species (USFWS 2007):

We applaud the inclusion of the protections outlined in the biological assessment for these species. However, because these species are not included on the list of threatened and endangered species at this time, they are not addressed in this memorandum (other than the technical assistance provided below). Should any of these species become listed as threatened or endangered at a future date, consultation under Section 7 of the Endangered Species Act should be initiated at that time.

Because of the new listing status, Section 7 consultation with the USFWS needs to be reopened for Parachute penstemon and DeBeque phacelia.

The significant plant communities within the Planning Area are unchanged from the Final EIS (BLM 2006). However, new locations for two of these communities, the Quaking Aspen/Rocky Mountain maple forest and the Sagebrush Bottomland Shrubland (mountain big sagebrush/Great Basin wildrye), have been mapped within the Planning Area since the Final EIS was completed.

New Information Needed: None.

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Table 3.1.3-1 Special Status and Other Potentially Sensitive Plant Species in the Planning Area

Common Name	Scientific Name	Agency Status	CNHP Rank¹	Notes	Probability of Occurrence
DeBeque Phacelia	<i>Phacelia submutica</i>	Federal Threatened	G2/S2	Colorado endemic. Ephemeral annual. Restricted to sparsely vegetated, steep slopes on clays of Atwell Gulch and Shire members of Wasatch Formation. Soils often have large cracks due to shrink-swell potential of the clays: 4,700 to 6,200 feet.	Definite
Parachute Penstemon	<i>Penstemon debilis</i>	Federal Threatened	G1/S1	Colorado endemic. One of rarest plants in North America, known from five locations, two of which are in Planning Area. Restricted to sparsely vegetated south-facing talus in Mahogany Zone of Green River Formation: 7,800 to 9,000 feet.	Definite
Colorado Hookless Cactus	<i>Sclerocactus glaucus</i>	Federal Threatened	G3/S3	Rocky hills, mesa slopes, and alluvial benches in desert shrub communities: 4,500 to 6,000 feet.	Unlikely

Note:

¹ G = Global rarity, S = State rarity, G1 or S1 = 5 or fewer occurrences, G2 or S2 = 5 to 20 occurrences, G3 or S3 = 20 to 100 occurrences.

Key:

BLM = Bureau of Land Management

CNHP = Colorado Natural Heritage Program

USFS = U.S. Forest Service

ASSESSMENT OF NEW INFORMATION

Table 3.2.3-2 Significance Screening: Threatened, Endangered, and Sensitive Plant Species, and Significant Plant Communities

<i>Significance Screening Criteria*</i>	Yes	No	Notes
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?	X		New inventory results associated with oil and gas projects have located several previously undocumented threatened, endangered, and sensitive plant species occurrences, as well as suitable habitat within the Planning Area.
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?	X		Parachute penstemon and DeBeque phacelia are now listed as federally threatened, and critical habitat for Parachute penstemon has been designated within the planning area (USFWS 2012 and 2013).
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?	X		One previously documented Parachute penstemon population occurred directly below the rim road and continues to decline. Reasons for this decline are unknown. Critical habitat for this species includes the rim road, where additional oil and gas development would likely occur. The Critical habitat was designated in part to protect pollinator habitat for Parachute penstemon (USFWS 2012). Roads and vehicle traffic associated with oil and gas development could have negative impacts on pollinators, thereby impacting Parachute penstemon. This was not analyzed in the Final EIS. Also, USFWS (2013) has more clearly identified criteria for delineating suitable DeBeque phacelia habitat on the lower slopes of the Roan Plateau, in areas that could be impacted by development.

ASSESSMENT OF NEW INFORMATION

Table 3.2.3-2 Significance Screening: Threatened, Endangered, and Sensitive Plant Species, and Significant Plant Communities

<i>Significance Screening Criteria*</i>	Yes	No	Notes
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?	X		The new threatened listing status of Parachute penstemon and DeBeque phacelia, and new habitat and pollinator information that has come following the listing, provide important new information for making an informed decision.
5. Would the new information present environmental consequences not envisioned in the existing EIS?	X		Because the effects on elements of critical habitat, particularly pollinators, were not adequately addressed in the Final EIS, the new information related to the federal listing of Parachute penstemon and designation of critical habitat would present new environmental consequences. New information on DeBeque phacelia associated with its new threatened status more clearly delineates suitable habitat for this species, which would alter the environmental consequences for this species with actions located on the lower Roan Plateau slopes.

Note:

** If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.*

Key:

EIS = Environmental Impact Statement

SEIS = Supplemental Environmental Impact Statement

Determination of Significance: Significant.

Significance Rationale: With regard to federally listed species, the new threatened listing for DeBeque phacelia and Parachute penstemon and the new scientific information associated with these species may result in potential impacts not considered in the FEIS, and thus the need for new protective stipulations. The critical habitat extends beyond the ACEC and NSO boundaries as analyzed in the Final EIS, and impacts to this critical habitat merit further analysis in the SEIS. Because of the new information, the change in federal listing status, and the designation of critical habitat, DeBeque phacelia and Parachute penstemon need to be re-analyzed in the SEIS and BA, and Section 7 consultation needs to be re-opened with the USFWS.

For sensitive plant species and significant plant communities, there is some new occurrence information. However, the existing Final EIS stipulations provide adequate protections for these species and

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communities as they may be discovered in new botany surveys. Therefore, the new information on sensitive plant species and significant plant communities is not significant.

Preparer: Perkins, Judy L.; Botanist

3.1.4 Noxious Weeds and Invasive Species

No systematic surveys or mapping of weeds has occurred within the Planning Area since completion of the Final EIS (BLM 2006) analysis. Limited herbicide treatment of noxious weeds has been ongoing in readily accessible areas along roadsides and adjacent to riparian areas, but these treatments have made no significant difference in overall weed infestation levels. The 2013 Land Health Assessment (BLM 2013a) found that noxious weeds, such as houndstongue, Canada thistle (*Cirsium arvense*), and musk thistle (*Carduus nutans*), are common along roads, in riparian areas and their adjacent terraces, and near water developments (BLM 2013b; BLM 2013c). While most of the noxious weeds are concentrated in disturbed areas, houndstongue is ubiquitous throughout the landscape.

Because weed infestations are so widespread throughout the Planning Area, it has not been possible to map all of them. A rough estimate was made by buffering Geographic Information System (GIS) mapped weed points and range developments by 200 feet to approximate weed infestation, resulting in an estimate of 1,141 infested acres within upper elevations of the Planning Area in 2013. This is likely an underestimate of actual infested acreage, particularly given the widespread infestation of houndstongue across the landscape on top of the Roan Plateau.

At lower elevations, acreages of disturbed areas have increased with new oil and gas development below the cliffs. Cheatgrass (*Bromus tectorum*), halogeton (*Halogeton glomerata*), and redstem filaree (*Erodium cicutarium*) are common and widespread noxious weeds in these areas. Other weedy non-native species are also common here, and include Russian thistle (*Salsola tragus*), kochia (*Bassia scoparia*), tumbled mustard (*Sisymbrium altissimum*), and madwort (*Alyssum* sp.).

New Information Needed: No new information is needed for a planning-level analysis. However, at the project-specific level, site-specific information would be collected from site surveys to ensure that project location, design, mitigation, and monitoring provide an appropriate level of protection. Requirements needed to ensure adequate measures in relation to existing or potential infestations of noxious weeds and other invasive species would be applied as conditions of approval attached to the project authorizations.

Table 3.1.4-1 Significance Screening: Noxious Weeds and Invasive Species

<i>Significance Screening Criteria*</i>	Yes	No	Notes
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?		X	No systematic weed inventory has occurred since the Final EIS. BLM range personnel map new occurrences of noxious weeds as they are found during the Land Health Assessment or range allotment monitoring, or while treating weeds along roadsides.
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?		X	

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Table 3.1.4-1 Significance Screening: Noxious Weeds and Invasive Species

<i>Significance Screening Criteria*</i>	Yes	No	Notes
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?		X	Weeds are an ever-present concern. Individual occurrences arise, increase, and are sometimes treated and reduced or eliminated. The current status would not measurably change impacts relative to the Final EIS.
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?		X	As above, the new information would not affect the decision-making process.
5. Would the new information present environmental consequences not envisioned in the existing EIS?		X	The environmental consequences of noxious weeds and invasive species are unchanged.

Note:

** If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.*

Key:

EIS = Environmental Impact Statement

SEIS = Supplemental Environmental Impact Statement

Determination of Significance: Not significant.

Significance Rationale: Because there is no significant difference in noxious weed infestations, or the impacts of noxious weeds, relative to the Final EIS, the limited new weed information is not significant.

Preparer: Perkins, Judy L.; Botanist

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3.2 WILDLIFE

3.2.1 Greater Sage-Grouse

Within the past few years, Colorado Parks and Wildlife (CPW) has mapped the top of the Roan Plateau as general habitat for the greater sage-grouse (*Centrocercus urophasianus*), based on monitoring of one radio-tagged male bird and incidental observations of other individuals. Telemetry data collected by CPW indicated the use of mixed sagebrush-grassland-snowberry habitats along the rim of the Roan cliffs by one individual throughout the summer (May to late August) in 2006 (Walker YEAR?). Incidental observations have occurred in the northern part of the Roan Plateau Planning Area (Planning Area), where sagebrush-covered ridges are broader, less dissected, and contiguous with more extensive sagebrush habitat north of the Planning Area in the White River Field Office (WRFO).

The apparently small population on the top of the plateau falls within the Parachute-Piceance-Roan population. In this area, virtually all seasonal use takes place on relatively narrow mid-elevation ridges north of the Planning Area, with movement to higher elevations, such as the Roan Plateau, through the brood rearing and general summer use periods. Winter use appears to occur at all elevations within this zone, extending north into the WRFO from the top of the plateau, depending on accumulated snow depth and snow texture. However, broad ridges at lower elevations (again, to the north of the Planning Area) support the bulk of winter use during extreme conditions.

The Planning Area is outside of the defined “breeding habitat” for greater sage-grouse, as outlined in the Colorado Greater Sage-Grouse Conservation Plan (CGSGSC 2008), although late summer/fall habitat is available and would potentially include late brood rearing and the transition to wintering habitats. At this time, no leks (i.e., communal courtship and breeding sites) are not known in the Planning Area. Nesting selection is not uniform across the range, with 80 percent of females selecting nest sites within 4 miles of a lek site (Haulslitner 2003; CGSGSC 2008). Nesting in the Planning Area has not been documented and is considered unlikely, but potentially occurs at the western end of the upper plateau, which is within 4 miles of known lek sites on private lands farther west.

Brood rearing activity is the most likely use of the Planning Area, based on the type of habitat present (a mosaic of sagebrush on ridges and slopes and mesic [i.e., moist] meadows along drainage floors). Use of these areas, to the extent it may occur, would be expected to begin approximately three weeks following hatching, by which time the young are capable of flight and, therefore, there is dispersal across greater distances. Winter use by sage-grouse is possible in the northern part of the Planning Area, based on vegetation structure. However, the higher elevation of the upper plateau than areas to the north may limit or preclude winter use due to deep and persistent snow cover.

The Bureau of Land Management’s (BLM’s) Northwest Colorado Greater Sage-Grouse Land Use Plan Amendment (LUPA) and Environmental Impact Statement (EIS) (BLM 2013) is currently in draft form. In conjunction with this planning effort, the BLM and CPW have preliminarily mapped greater sage-grouse habitat including the top of the Roan Plateau. This mapping effort designates three categories of habitat:

- Preliminary Priority Habitat (PPH): Areas identified as having the highest conservation value to maintaining sustainable populations, include breeding, late brood rearing, and winter concentration areas.
- Preliminary General Habitat (PGH): Areas of seasonal or year-round habitat within occupied range outside PPH.

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- **Linkage/Connectivity Habitat:** Areas identified as broader regions of connectivity important to facilitate movement and maintain ecological processes.

In the above-mentioned planning effort, the entire Planning Area was mapped as PGH due to the general nature of the mapping effort. It is understood that, at the implementation level, areas that are not considered suitable habitat, such as aspen and conifer stands, will not be treated as such.

New Information Needed: At the planning (Resource Management Plan [RMP]) level, no additional information is needed, given the very recent mapping for the greater sage-grouse LUPA. Information on occurrences of sage-grouse within the Planning Area would be continually updated as it becomes available.

New oil and gas lease stipulations consistent with the regional LUPA, would be analyzed in the Roan Plateau Resource Management Plan Amendment (RMPA)/Supplemental Environmental Impact Statement (SEIS). New or additional Conditions of Approval (COAs) specified in the regional LUPA would also be analyzed in the RMPA/SEIS. Because the habitat mapping prepared for the greater sage-grouse LUPA is a small-scale mapping effort covering the northwestern quarter of Colorado, site-specific habitat suitability would be analyzed on a project-specific basis. This more detailed information would be used to assess habitat quality for greater sage-grouse and potential seasons and types of use as a basis for ensuring appropriate project location, design, and timing.

Table 3.2.1-1 Significance Screening: Greater Sage-Grouse

<i>Significance Screening Criteria*</i>	Yes	No	<i>Notes</i>
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?	X		New resource concerns due to potential listing of greater sage-grouse.
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?	X		Programmatic and multi-state planning effort and new habitat definitions.
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?		X	Impacts not significantly different, but presentation different.
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?	X		May include the need for a different management alternative.
5. Would the new information present environmental consequences not envisioned in the existing EIS?	X		New delineation of habitat types.

Note:

* If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.

Key:

EIS = Environmental Impact Statement

SEIS = Supplemental Environmental Impact Statement

ASSESSMENT OF NEW INFORMATION

Determination of Significance: Significant.

Significance Rationale: The information pertaining to greater sage-grouse is regarded as significant. The presence of this species was not recognized during the initial analysis of the Planning Area and was, therefore, not analyzed in the original document. Additionally the listing status of the species has changed and this has generated a new Land Use Plan solely concerned with the subsistence of the species. The majority of the Planning Area falls within the boundary of the LUPA as “General Habitat” and will, therefore, need to coincide with the determinations that are reached in order to protect greater sage-grouse. All of these factors will require new analysis and consideration in the SEIS. It is important to note that the BLM’s Northwest Colorado Greater Sage-Grouse LUPA/EIS (BLM 2013) does not propose management decisions for the Planning Area; thus the SEIS may incorporate applicable content by reference, but not tier to a decision once made.

Preparer: Ringer, Sylvia M.; Wildlife Biologist

3.2.2 Western Yellow-Billed Cuckoo

Western yellow-billed cuckoos (*Coccyzus americanus*) breed in large blocks of riparian habitats (particularly woodlands with cottonwoods (*Populus* spp.) and willows (*Salix* sp.). Dense understory foliage appears to be an important factor in nest site selection, while cottonwood trees are an important foraging habitat in areas where the species has been studied in California (USFWS 2013). Western yellow-billed cuckoos winter in South America. They feed on larger insects than any other insectivorous birds, with the possible exception of some raptors (Dettling and Seavey 2012). Western yellow-billed cuckoos are primarily foliage gleaners, though they can catch flying prey or drop to the ground to catch grasshoppers or tree frogs.

The western yellow-billed cuckoo is a proposed threatened species under the Endangered Species Act (ESA). The yellow-billed cuckoos that occur in the western United States are a distinct population segment (DPS) (USFWS 2011). This species historically occurred in portions of western Colorado, although this species was likely never common and is now extremely rare and is an uncommon summer resident. The available data indicate that cuckoos do not nest within this broad highlands region, and reveal few records of cuckoos at all in the mountainous region of the state (USFWS 2013).

Since 2000, detections of the western yellow-billed cuckoo DPS have been limited in western Colorado. Consistent cuckoo observations have been recorded at only two locations in western Colorado:

- Since 2001, they have been detected annually in the San Luis Valley of south-central Colorado in Conejos County where breeding is suspected, but not confirmed (USFWS 2011).
- Since 2003, they have been detected annually at the North Fork of the Gunnison River valley of west-central Colorado in Delta County; breeding was confirmed in 2008 near Hotchkiss (USFWS 2011).

Reports of single western yellow-billed cuckoos have primarily originated from the Grand Junction area and Mesa County in 2001, 2002, 2005, and 2008, with a report of more than one cuckoo at Orchard Mesa Wildlife Area in 2006 (USFWS 2011). Additional reports include an individual south of Montrose in Montrose County near the Uncompahgre River in 2009, an individual along the Gunnison River near Gunnison in 2007 (USFWS 2011), and detections by the Rocky Mountain Bird Observatory along the Yampa River near Craig in 2007 and 2008, and in far western Colorado near Nucla in 2005 and 2008 (USFWS 2011).

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No individuals have been recorded or confirmed to nest on BLM lands within the Planning Area. Habitat analysis reveals that potentially suitable habitat is present at two locations along the Colorado River and one location along the Eagle River in the Colorado River Valley Field Office (CRVFO) (BLM 2013). None of these areas are included within the Planning Area.

New Information Needed: At the planning (RMP) level, no additional information is needed. Mapping of suitable habitat is currently being conducted by the U.S. Fish and Wildlife Service (USFWS), and none is anticipated to be in the SEIS Planning Area.

Table 3.2.2-1 Significance Screening: Western Yellow-Billed Cuckoo

<i>Significance Screening Criteria*</i>	Yes	No	Notes
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?		X	Continued isolated sightings
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?		X	
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?		X	
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?		X	
5. Would the new information present environmental consequences not envisioned in the existing EIS?		X	

Note:

** If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.*

Key:

EIS = Environmental Impact Statement

SEIS = Supplemental Environmental Impact Statement

Determination of Significance: Not Significant.

Significance Rationale: No new information or policy/law.

Preparer: Ringer, Sylvia M.; Wildlife Biologist

3.2.3 Birds of Conservation Concern

The 1988 amendment to the Fish and Wildlife Conservation Act mandates the USFWS to “identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act (ESA) of 1973.” “Birds of Conservation Concern 2008” (BCC) (USFWS 2008) is the most recent effort to carry out this mandate. The overall goal of this effort is to accurately identify the migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent the highest conservation

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priorities. The current BCC list (USFWS 2008) for Region 16 (Southern Rockies/Colorado Plateau) includes 11 species potentially present in or near the Planning Area:

- Bald eagle (*Haliaeetus leucocephalus*)
- Willow flycatcher (*Empidonax traillii*)
- Golden eagle (*Aquila chrysaetos*)
- Gray vireo (*Vireo vicinior*)
- Flammulated owl (*Otus flammeolus*)
- Pinyon jay (*Gymnorhinus cyanocephalus*)
- Western yellow-billed cuckoo (*Coccyzus americanus*)
- Juniper titmouse (*Baeolophus griseus*)
- Lewis's woodpecker (*Melanerpes lewis*)
- Brewer's sparrow (*Spizella breweri*)
- Cassin's finch (*Haemornus cassinii*)

New Information Needed: At the planning (RMP) level, no additional information is needed. Information on occurrences of BCC species within the Planning Area would be continually updated as it becomes available.

Specific COAs would be added to site-specific projects. These would be analyzed in the Roan Plateau RMPA/SEIS. Appropriate COAs would be applied to project authorizations to ensure adequate protection of BCCs and their habitats.

Table 3.2.3-1 Significance Screening: Birds of Conservation Concern

<i>Significance Screening Criteria*</i>	Yes	No	Notes
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?	X		Juniper titmouse and Cassin's finch were not included on the 2002 BCC list used in the Final EIS but are included in the 2008 BCC.
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?		X	
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?		X	
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?		X	
5. Would the new information present environmental consequences not envisioned in the existing EIS?	X		Yes, but only for juniper titmouse and Cassin's finch; these species were not included in the analysis, but can be efficiently included with other similar species in the analysis.

Note:

* If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.

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Table 3.2.3-1 Significance Screening: Birds of Conservation Concern

<i>Significance Screening Criteria*</i>	Yes	No	Notes
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Key:

BCC = Birds of Conservation Concern

EIS = Environmental Impact Statement

SEIS = Supplemental Environmental Impact Statement

Determination of Significance: Significant.

Significance Rationale: Juniper titmouse and Cassin’s finch were not included on the 2002 BCC list used in the Final EIS. These species were not included in the Final EIS analysis, but can be efficiently included with other similar species in the analysis. No other changes are significant.

Preparer: Ringer, Sylvia M.; Wildlife Biologist

3.2.4 North American Wolverine

North American wolverines inhabit remote wilderness areas and their habitat is often inaccessible to humans (Pasitschniak-Arts and Lariviere 1995). Wolverine were extirpated in historical times from the Sierra Nevada and the southern Rocky Mountains (USFWS 2012). In Colorado, nearly all historical and recent reports of wolverines are from higher elevations, in isolated alpine areas. Until recently, the last confirmed wolverine sighting in Colorado was in 1919. In spring 2009, researchers with the Greater Yellowstone Wolverine Program tracked a wolverine from Grand Teton National Park south into north-central Colorado. This was the first wolverine confirmed in the state in 90 years and is the only known wolverine in Colorado (CPW 2012). On July 8, 2010, the Colorado Parks and Wildlife Commission granted CPW’s request to begin discussions on restoring wolverines with CPW’s partners and stakeholders.

In 2010, the USFWS determined that wolverines found in the contiguous United States warranted protection under the ESA, but a rulemaking proposing the species for protection was precluded by higher priority species. On February 4, 2013, the USFWS proposed to list the wolverine as a threatened species (78 Federal Register 7864) in the states that it is known to occur. Then, on February 4, 2014, the USFWS published a Federal Register notice that extended the deadline for the final decision on whether to list the wolverine under the ESA. During the peer review process on the proposed rule to list the wolverine as threatened, a variety of opinions from the scientific community were received concerning the information that was used to develop the proposed rules. In response, the deadline was extended for the final listing decision by 6 months (August 4, 2014) to further evaluate areas of scientific disagreement and uncertainty as they relate to the wolverine listing decision.

Additionally, the populations in Colorado, Wyoming, and New Mexico are proposed as “Nonessential Experimental Populations.” Section 10(j) of the ESA provides for the designation of specific reintroduced populations of listed species as “experimental populations.”

With the Federal Register notice announcing the 6-month extension, the comment period for wolverine listing was reopened until May 6, 2014, with details on the kinds of information the USFWS is seeking being available during the 6-month extension notice.

No wolverines are known or suspected to exist within the Planning Area at this time.

New Information Needed: None at this time.

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Table 3.2.4-1 Significance Screening: North American Wolverine

Significance Screening Criteria*	Yes	No	Notes
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?		X	No change in the Roan Plateau Planning Area affected environment.
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?		X	
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?		X	
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?		X	
5. Would the new information present environmental consequences not envisioned in the existing EIS?		X	

Note:

** If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.*

Key:

EIS = Environmental Impact Statement

SEIS = Supplemental Environmental Impact Statement

Determination of Significance: Not Significant.

Significance Rationale: No changes in species presence in the Planning Area or relevant ESA status.

Preparer: Ringer, Sylvia M.; Wildlife Biologist

4 HUMAN ENVIRONMENT

4.1 VISUAL RESOURCES

A new Visual Resource Inventory (VRI) was conducted in 2013 for the following reasons:

- A new VRI data standard was established (BLM 2012).
- There was incomplete documentation from the 1981 Glenwood Springs Field Office (GSFO) VRI.
- The 1981 VRI did not cover the portion of the Roan Plateau Planning Area (Planning Area) located within the White River Field Office (WRFO) boundary.

Although the new VRI classes differ from the previous VRI classes (1981-GSFO and 2011-WRFO), this is not expected to affect the Visual Resource Management (VRM) classes selected for inclusion in the Record of Decision (ROD) for the Roan Plateau Resource Management Plan Amendment (RMPA)/Supplemental Environmental Impact Statement (SEIS) because the VRI classes are informational in nature and provide the basis for considering visual values in the Resource Management Plan (RMP) process. In addition, the inventory classes do not establish management direction and should not be used as a basis for constraining or limiting surface disturbing activities (BLM 1986).

The approved VRM objectives result from, and conform to, the resource allocation decisions made in the RMP. The approved VRM classes provide the VRM standards for the design and development of future projects and for rehabilitation of existing projects. VRM classes may differ from VRI classes, based on management priorities for land uses (BLM 1984). Note that although the first ROD for the Final Environmental Impact Statement (EIS) (BLM 2006) did not include areas within the Areas of Critical Environmental Concern (ACECs), objectives and management actions (stipulations) to protect visual resources for these areas were included in the second ROD (BLM 2008).

Note in Table 4.1-1, a smaller total area is now indicated as Class II and more as Classes III and IV. Because the 1981 inventory was part of an inventory for the entire Colorado River Valley Field Office (CRVFO) area, the focused 2013 inventory was conducted in greater detail and in conformance with more recent Bureau of Land Management (BLM) guidance.

Table 4.1-1 summarizes the difference in acres of each VRI class. Table 4.1-2 lists the new VRI Class Designations and Table 4.2-3 lists the old VRI Class Designations.

Table 4.1-1 Summary of the Difference in Acres of Each VRI Class

Class	VRI (2013)	VRI (1981 CRVFO & 2011 WRFO)	% Change in Inventories (New to Old)
Class I	0	0	0%
Class II	21,958	55,311	47% Decrease
Class III	17,018	2,408	14% Increase
Class IV	34,828	16,048	46% Increase
Total	73,804*	73,768*	

Note:

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Table 4.1-1 Summary of the Difference in Acres of Each VRI Class

Class	VRI (2013)	VRI (1981 CRVFO & 2011 WRFO)		% Change in Inventories (New to Old)	
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**Variation in acre totals due to different Planning Area Boundaries and Land Status data sets. Note: Difference discussed under Lands and Realty.*

Key:

CRVFO = Colorado River Valley Field Office

VRI = Visual Resource Inventory

WRFO = White River Field Office

VRM Classes (Current Planning Area Boundary)		VRI Class I (Acres)		VRI Class II (Acres)		VRI Class III (Acres)		VRI Class IV (Acres)	
VRM I	1,618	0	0%	349	1.6%	138	0.8%	1,130	3.2%
VRM II	30,397	0	0%	18,367	83.6%	10,163	59.7%	1,867	5.4%
VRM III	33,507	0	0%	3,062	14%	4,234	24.9%	26,212	75.3%
VRM IV	8,282	0	0%	180	0.8%	2,483	14.6%	5,619	16.1%
Summary	73,804*	0	0%	21,958	100%	17,018	100%	34,828	100%

VRM Classes (Boundary Used in ROD 6/8/2007)		VRI Class I (Acres)		VRI Class II (Acres)		VRI Class III (Acres)		VRI Class IV (Acres)	
VRM I	1,618	0	0%	1,617	2.9%	0	0%	0	0%
VRM II	30,377	0	0%	25,413	46%	2,408	100%	2,556	16%
VRM III	33,503	0	0%	28,141	50.8%	0	0%	5,362	33.4%
VRM IV	8,270	0	0%	140	0.3%	0	0%	8,130	50.6%
Summary	73,768*	0	0%	55,311	100%	2,408	100%	16,048	100%

New Information Needed: None.

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Table 4.1-4 Significance Screening: Visual Resources

<i>Significance Screening Criteria*</i>	Yes	No	Notes
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?		X	New inventory results, which are informational only, are not significant but should be referenced in Chapter 3 of the SEIS. The VRM classes considered for each alternative in the Final EIS would not change based on the new inventory. If new management is considered in an additional alternative, it should be based on the new inventory data.
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?	X		IM No. 2012-055 VRI Data Standard. The updated VRI meets the new data standard.
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?		X	New VRI data should not affect VRM classes considered for each alternative in the Final EIS, unless BLM decides to change the VRM classes based on the alternatives.
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?		X	For alternatives considered in the FEIS, the VRM Classes would not need to change in the SEIS based on the VRI. Thus, the existing FEIS analysis would not change. The Proposed VRM management classes were not protested or brought up during scoping. If new management classes need to be developed for new/modified alternatives, they should be based on the new VRI.
5. Would the new information present environmental consequences not envisioned in the existing EIS?		X	Analysis would be based on VRM classes, which have not changed, but the environmental

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Table 4.1-4 Significance Screening: Visual Resources

Significance Screening Criteria*	Yes	No	Notes
			consequences may vary depending on the alternatives.

Note:

* If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.

Key:

EIS = Environmental Impact Statement

IM = Instruction Memorandum

SEIS = Supplemental Environmental Impact Statement

VRI = Visual Resource Inventory

VRM = Visual Resource Management

Determination of Significance: Not significant, but new inventory should be referenced as described.

Significance Rationale: The change in acreages between the new inventory and old inventory is not significant because the management classes would not change based on the new inventory (for the alternatives considered in the Final EIS). Disclosing new inventory data can likely be accomplished with a short description of the change in acreage between the old inventory and new inventory in Chapters 3 and 4. If new management is considered in an additional alternative, it should be based on the new inventory data.

Preparer: McGrew, Julie A.; Natural Resource Specialist

ASSESSMENT OF NEW INFORMATION

4.2 CULTURAL RESOURCES

In the period between preparation of the Roan Plateau Final Environmental Impact Statement (EIS) (BLM 2006) and the Supplemental Environmental Impact Statement (SEIS), additional cultural resource inventories have been conducted both on top of the Roan Plateau and below the rim within the Roan Plateau Planning Area (Planning Area). During these additional inventories, new cultural resources were identified and recorded, primarily below the rim, which also is where the majority of inventories took place.

Recent Geographic Information System (GIS) analysis/modeling of the highlands and lowlands subareas indicates that, since the 2002 Class I Cultural Resource Overview of the Roan Plateau (used in the Final EIS), a combined 11,413 acres of new cultural resource inventories were conducted, consisting of 8,472 acres on the lowlands and 2,940 acres on the highlands. These inventories increased the number of surveyed acres, and the associated resource density, but did not represent qualitatively different types of cultural resources. Table 4.2-1 compares the previous and current surveyed acres and densities. No new traditional cultural properties or areas of Native American Religious Concern were identified during this time period.

Table 4.2-1 Survey Acreage and Cultural Resource Density by Location

Subarea	Total Acreage (% total)	Survey Acreage (% subarea)	All Resources 2002 Density (n=429)	Prehistoric Resources 2002 Density (n=327)	Historic Resources 2002 Density (n=102)
			2014 Density (n=588)	2014 Density (n=432)	2014 Density (n=156)
Lowlands	65,536 (51.6)	28,318 (43.2)	1 per 118 acres (5.42 per sq. mi.)	1 per 156 acres (4.1 per sq. mi.)	1 per 480 acres (1.33 per sq. mi.)
		36,791 (56.1)	1 per 93 acres (6.8 per sq. mi.)	1 per 129 acres (4.9 per sq. mi.)	1 per 343 acres (1.8 per sq. mi.)
Highlands	61,471 (48.4)	45,410 (73.9)	1 per 242 acres (2.64 per sq. mi.)	1 per 313 acres (2.04 per sq. mi.)	1 per 1,056 acres (0.61 per sq. mi.)
		48,350 (78.6)	1 per 249 acres (2.5 per sq. mi.)	1 per 324 acres (1.9 per sq. mi.)	1 per 986 acres (0.65 per sq. mi.)
TOTAL	127,007 (100)	73,728	1 per 172 acres (3.72 per sq. mi.)	1 per 225 acres (2.84 per sq. mi.)	1 per 723 acres (0.87 per sq. mi.)
		85,141	1 per 149 acres (4.3 per sq. mi.)	1 per 197 acres (3.2 per sq. mi.)	1 per 545 acres (1.1 per sq. mi.)

Note:

**Bold numbers are new calculations based on confidential unpublished information from BLM GIS data and Cultural Inventory and Site Report files reviewed in April 2014.*

Key:

sq. mi. = square mile

New Information Needed: None.

ASSESSMENT OF NEW INFORMATION

Table 4.2-2 Significance Screening: Cultural Resources

<i>Significance Screening Criteria*</i>	Yes	No	Notes
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?		X	There was an approximately 13% decrease in known site density since 2002; this is within the margin of error, given the percent of the total Roan Plateau Planning Area covered by intensive surveys.
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?		X	
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?			N/A
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?			N/A
5. Would the new information present environmental consequences not envisioned in the existing EIS?			N/A

Note:

** If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.*

Key:

EIS = Environmental Impact Statement

N/A = Not applicable

SEIS = Supplemental Environmental Impact Statement

Determination of Significance: Not significant.

Significance Rationale: Review of cultural resource survey and site data compiled since the initial analysis for the Roan Plateau Resource Management Plan (RMP) does not reveal any new information or resource concerns that would significantly change the cultural modeling performed for the original Final EIS, or cultural resource portions of the previous alternatives. As always, cultural resource analysis will be conducted on a project-by-project basis in order to resolve the need for cultural inventories in determining the presence or absence of previously unidentified resources.

Preparer: Brogan, John; Archaeologist

ASSESSMENT OF NEW INFORMATION

4.3 SOCIOECONOMICS

Since the 2006 publication of the Roan Plateau Final Environmental Impact Statement (EIS), there have been substantial changes in several industries and markets affecting social and economic conditions in the Roan Plateau Planning Area (Planning Area). In particular, new technologies and a national economic crisis have resulted in changed prices for, and production of, natural gas, as well as changes in real estate values and local economic conditions. These changes, and others, have substantially affected population growth in the area, as well as employment and income, public revenue, quality of life, and likely growth scenarios for the Planning Area.

New numbers for oil/gas jobs per well are available that should be used for employment impact analysis. There have been substantial changes in well drilling conditions since 2005 that impact the number of jobs per well. Based upon discussions between the BLM and U.S. Forest Service economic specialists and updated industry data, the number of direct jobs per well is assumed to be around 11.7 jobs (per April 07, 2014 email from Mike Retzlaff). This is substantially different from the 30 to 45 jobs indicated in the Final EIS.

Additionally, the assumption of the value of production of \$10 per thousand cubic feet of natural gas needs to be revised based upon the recent 10-year average of a wellhead price of \$5.60 (EIA 2014 averaged wellhead prices for 2001-2012, accessed May 12, 2012). This will significantly change the revenues associated with natural gas production across all alternatives.

New Information Needed: More recent data and trends will be needed to evaluate both current conditions/trends and the analysis of impacts from the alternatives.

Table 4.3-1 Significance Screening: Socioeconomics

<i>Significance Screening Criteria*</i>	Yes	No	<i>Notes</i>
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?	X		New assumptions for the value of production and the direct number of jobs created per well may present a significantly different picture of the environment and effects.
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?		X	
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?	X		The change of wellhead price to the most current 10-year average (\$5.60) is almost a 50% reduction of the value used in the Final EIS (\$10.00). Additionally, the employment numbers associated with oil/gas wells has significantly changed since the Final EIS. The change in employment will impact overall employment, income, and population impacts to the affected environment.
4. Would the analysis present new information to the decision maker necessary to make an	X		See notes above for 1 and 3.

ASSESSMENT OF NEW INFORMATION

Table 4.3-1 Significance Screening: Socioeconomics

Significance Screening Criteria*	Yes	No	Notes
informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?			
5. Would the new information present environmental consequences not envisioned in the existing EIS?	X		Potentially, if new alternatives restrict leasing beyond what was considered in the Final EIS.

Note:

** If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.*

Key:

BLM = Bureau of Land Management

EIS = Environmental Impact Statement

SEIS = Supplemental Environmental Impact Statement

USFS = U.S. Forest Service

Determination of Significance: Significant.

Significance Rationale: As discussed above, there have been considerable changes in current conditions and circumstances that would present new information for the basis of the impact analysis.

Preparer: Montag, Jessica M., Ph.D.; Socioeconomic Specialist, BLM Blue Sky Zone

4.4 TRANSPORTATION

Routes Accessing the Roan Plateau

As described in the 2006 Roan Plateau Final Environmental Impact Statement (EIS) analysis (BLM 2006), there are two primary public transportation routes serving the Roan Plateau Planning Area (Planning Area). The most direct route for accessing the plateau is by traveling on Garfield County Road 242 (aka JQS Road) from State Highway 13 about 5 miles north of Rifle, Colorado; however, due to its lack of surfacing, narrow roadway, steep grades, and tight curves or switchbacks, the JQS route is suitable and safe only by four-wheel drive vehicles during favorable weather conditions. For conventional vehicles, the favored route to the plateau would be via Cow Creek Road, which entails a 20-mile drive north of Rifle, Colorado, on State Highway 13, traveling across Rio Blanco County Road 5 (CR 5) for another 3 miles west, and driving an additional 12-mile trek along the Bureau of Land Management's (BLM's) rarely maintained Cow Creek Road and Garfield County Road 249 to enter the northern portion of the Planning Area. Although this route provides public access to the area, the route is circuitous, difficult to manage during harsh weather or unfavorable road conditions, and can take an inordinate amount of time to travel, given the plateau's proximity to Rifle, Colorado.

In the Final EIS, a statement refers to private "four-wheel drive" roads up Parachute Creek that access the top of the Roan Plateau as needing "significant construction effort to be usable by drill rig equipment" (BLM 2006). Those significant private road upgrades have occurred since the Final EIS decision (BLM 2007), and the improved, all-weather roads currently serve private oil and gas developments on a daily basis. Two of these private roads, WPX Energy's Wheeler Gulch-Highlands Road and Encana's Long Ridge Road, provide access to fee (private) oil and gas leases that abut the western edge of BLM lands atop the plateau. If federal oil and gas lessees were to execute negotiated road use and maintenance agreements with the private land or mineral owners, these upgraded access roads could readily provide reasonable, feasible, and more direct field development access to the top of the plateau than the existing public Cow Creek Road route described above. Furthermore, an indirect access route, known as the Divide Road, serves the northwestern portion of the plateau using BLM and private lateral roads off Rio Blanco's paved Piceance Creek Road (CR 5). At this time, it is unknown which route would be the preferred route for the development of the federal leases in the Planning Area, other than "private" land routes from Parachute Creek that would be considered more favorable given the shorter distance, savings in time and fuel, and their current use as development routes for adjacent private leases.

It is important to note that use of the improved oil and gas field development roads west of the Planning Area and traversing private lands by any federal oil and gas lessee would be wholly contingent on such agreements and cooperation between the operating companies. If such agreements between the private parties could not be reached, the existing Cow Creek Road route would serve as the primary oil and gas development access route for the federal leases in the Planning Area. The JQS Road route could not provide a safe or useful route for oil and gas development given its circuitous and often challenging alignment on the steep east-facing slopes and cliffs of the Roan Plateau. The Roan Plateau Final EIS (BLM 2006) specified that JQS Road would not be used to support oil and gas activities.

Existing Transportation System

A cursory comparison of today's BLM transportation system with the description included in 2006 Final EIS found a minor addition of new road constructed since the 2006 decision, with less than 1 mile occurring in the existing oil and gas field below the rim.

ASSESSMENT OF NEW INFORMATION

Road System Maintenance Summary

BLM road maintenance consists of blading and grading, usually in the summer or fall. Additional corrective maintenance or water drainage work (installation of culverts, drains, or other water management devices) is performed as needed, such as after heavy rainfall. The BLM does not remove snow, but some access routes have portions plowed by county road maintenance, utility companies, or private entities if the roads provide access to utilities, homes, or private buildings.

As costs have risen, fewer miles of BLM roads have been maintained each year. The actual miles of roads maintained each year would be based on annual budgets. No road maintenance is scheduled in the Planning Area for 2014, whereas, until 2010, approximately 30 miles of roads were annually scheduled for maintenance, although not necessarily the same roads in the Roan Plateau.

The BLM has changed from “Maintenance Levels” to “Maintenance Intensity” and simplified the standards for consistency across all linear features (BLM 2006). The old “Maintenance Level” definitions addressed both the type of road (road geometry or construction material) and the level of use, but did not provide a clear standard for the actual maintenance level. As a result, the term was used inconsistently across the BLM as a means for describing everything from road construction type to appropriate maintenance standards. BLM route “Maintenance Intensities” provide guidance for appropriate “standards of care” (e.g., appropriate intensity, frequency, and type of maintenance activities that should be undertaken) for recognized routes. Recognized routes by definition include roads, primitive roads, and trails carried as assets within the BLM Facility Asset Management System. The management system includes four primary “Maintenance Intensity” levels that allow for removal, low, medium, and high maintenance intensities, irrespective of the type of route (road, primitive road, or trail) (BLM 2006). Maintenance intensities must be consistent with land use planning management objectives (e.g., natural, cultural, recreation setting, and visual).

Regional Traffic Summary

Table 4.4-1 shows average daily traffic counts for roads likely to receive additional traffic in association with development of the federal oil and gas resources within the Planning Area. Various published and anecdotal traffic data have been collected since the initial traffic counts were presented in the 2006 Final EIS. Table 4.4-1 indicates that traffic use increased dramatically as residential, commercial, and oil and gas development increased in the region until a decline occurred after 2007 in response to the nationwide recession and acute drop in natural gas prices impacting oil and gas development locally. The data illustrated by the recent 2012 traffic counts show a recovering and increasing amount of traffic on area highways and Interstate 70 since the peak traffic counts in 2007.

ASSESSMENT OF NEW INFORMATION

Table 4.4-1 Average Annual Daily Traffic on I-70 and Other Roads

Highway or Road Segment	Average Daily Traffic				
	A 2003 Data (from the Final EIS)	B Projected 2023 (from the Final EIS)	C Average of A and B (at locations with 2012 data)	D Most Recent Data (2012)	E % Change C to D
I-70 at Rifle	11,402	15,393	13,398	17,000 ⁴	27%
I-70 at Rulison	15,954	21,538		N/A ⁵	N/A
I-70 at Parachute	11,580	15,633	13,607	19,000 ⁴	40%
SH 13 at I-70	11,680	15,768	13,724	16,000 ⁴	17%
SH 13 at US 6	2,151	2,904	2,528	3,300 ⁴	31%
SH 13 at SH 325	3,049	4,116	3,583	3,600 ⁴	0%
SH 13 at CR 5	1,963	2,650		N/A ⁵	N/A
CR 215 (Parachute Creek)	919	1,241		N/A ⁶	N/A
CR 242 (JQS)	84	113		N/A ⁶	N/A
CR 244 (Fravert Reservoir)	317	428		N/A ⁶	N/A
CR 246 (Anvil Points)	366	494		N/A ⁶	N/A
CR 5 (at SH 13 junction)	300	405	353	1,310 (2010) ³	272%
Total	59,765	80,683	47,191	60,210	28%

Notes:

³ Rio Blanco County 2014. Traffic Count Summary Data for County Roads (2003-2013).

⁴ CDOT 2014. OTIS –Traffic Data. <http://dtdapps.coloradodot.info/Otis/TrafficData#ui/0/1/0/criteria/64255/true/true/>

⁵ CDOT stations for these intersections are not listed in OTIS Traffic Data System.

⁶ No data entries for these locations in the traffic data.

Key:

CDOT = Colorado Department of Transportation

CR = County Road

EIS = Environmental Impact Statement

I = Interstate

N/A = Not applicable

OTIS = Online Transportation Information System

SH = State Highway

New Information Needed: None.

Table 4.4-2 Transportation

Significance Screening Criteria*	Yes	No	Notes
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?		X	The Final EIS refers to a “planned new route through private lands to the west (from Parachute Creek valley)” (p. 4-106), and develops a brief statement of impacts related to 50% of the traffic to the federal leases on the plateau from the “private” route. The Final EIS did not provide details

ASSESSMENT OF NEW INFORMATION

Table 4.4-2 Transportation

Significance Screening Criteria*	Yes	No	Notes
			<p>on the location of the private route, and it is still unknown which route would be chosen. Therefore, the presence of the new Encana and WPX roads and their potential use is consistent with the analysis in the Final EIS.</p> <p>Traffic volumes are approximately 28% greater than envisioned in the Final EIS for the current time period. Given the margin of error inherent to estimating future traffic volumes, particularly with respect to a given route or intersection, this is not a substantially different representation than what was considered in the Final EIS.</p>
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?		X	BLM has changed from "Maintenance Levels" to "Maintenance Intensity" and has simplified the standards for consistency across all linear features. This policy does not need to be addressed, as it does not change the actual effects of the considered actions.
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?			N/A
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?			N/A
5. Would the new information present environmental consequences not envisioned in the existing EIS?			N/A

Note:

* If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.

Key:

BLM = Bureau of Land Management

EIS = Environmental Impact Statement

N/A = Not applicable

SEIS = Supplemental Environmental Impact Statement

Determination of Significance: Not significant.

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Significance Rationale: Changes have been made in terminology and traffic volume estimates (to use in comparison to baseline). Terminology changes do not affect the anticipated effects and are not needed to compare across alternatives or to arrive at an informed decision. Traffic volumes are relatively close to the estimate for 2012 that were foreseen in the 2006 Final EIS, and would not meaningfully change the analysis given the uncertainty inherent in future predictions and in how leases will ultimately be developed under various alternatives.

Preparer: Byers, James C.; Natural Resource Specialist

5 MANAGEMENT ENVIRONMENT

5.1 LANDS AND REALTY

Land status data are continually updated; therefore, these data updates have slightly changed the overall Roan Plateau Planning Area (Planning Area) boundary since publication of the 2006 Roan Plateau Resource Management Plan Amendment (RMPA)/Final Environmental Impact Statement (EIS). Some of the smaller Bureau of Land Management (BLM) parcels along the Colorado River that were in the 2006 RMPA are not included in the current Planning Area boundary due to litigation (e.g., Koch v. United States 1995, United States v. Walter B. Lemon, et. al.1986, W.F. Clough and the United States 1996). With advancements in Geographic Information System (GIS) data, BLM Lands and Realty is able to update master title plats to provide accurate depictions of land status.

The BLM requested rights-of-way (ROW) GIS data for oil and gas infrastructure (pads, wells, roads, pipelines, etc.) from operators with interests within the Planning Area. Those data were consistent with the BLM’s internal update that used aerial photographs and other sources, such as master title plats, LR2000, and county data.

New Information Needed: None.

Table 5.1-1 Significance Screening: Lands and Realty

Significance Screening Criteria*	Yes	No	Notes
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?		X	The boundary has changed slightly, but the total change in acreage would be minimal.
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?		X	No new policy has come into effect. GIS and cadastral have simply caught up with each other.
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?			N/A
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?			N/A
5. Would the new information present environmental consequences not envisioned in the existing EIS?			N/A

Note:

* If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.

Key:

EIS = Environmental Impact Statement

GIS = Geographic Information System

N/A = Not applicable

SEIS = Supplemental Environmental Impact Statement

ASSESSMENT OF NEW INFORMATION

Determination of Significance: Not significant.

Significance Rationale: The Planning Area boundary has changed slightly, but the overall change in acreage is minimal in comparison to the entire Planning Area.

Preparer: McGrew, Julie A.; Natural Resource Specialist

ASSESSMENT OF NEW INFORMATION

5.2 ONSITE TRAVEL MANAGEMENT

All of the travel management implementation decisions in the first Record of Decision (ROD) for the Roan Plateau Final Environmental Impact Statement (EIS) were completed between 2009 and 2013.

New Information Needed: None.

Table 5.2-1 Significance Screening: Onsite Travel Management

Significance Screening Criteria*	Yes	No	Notes
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?	X		All of the management implementation decisions in the first ROD for the Roan Plateau Final EIS have been implemented.
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?		X	No new policy or laws have come into effect.
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?			N/A
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?			N/A
5. Would the new information present environmental consequences not envisioned in the existing EIS?			N/A

Note:

** If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.*

Key:

EIS = Environmental Impact Statement

N/A = Not applicable

ROD = Record of Decision

SEIS = Supplemental Environmental Impact Statement

Determination of Significance: Not Significant.

Significance Rationale: The travel management implementation decisions have all been completed; the Supplemental Environmental Impact Statement (SEIS) may need to disclose a different representation of the existing situation. This can likely be accomplished with a short description of the actions undertaken since 2006, but without a full revision of applicable sections within Chapters 3 and 4.

Preparer: McGrew, Julie A.; Natural Resource Specialist

ASSESSMENT OF NEW INFORMATION

5.3 RECREATION

In the first Record of Decision (ROD) for the Roan Plateau Final Environmental Impact Statement (EIS) (BLM 2008), the entire Roan Plateau Planning Area (Planning Area) would be managed as an Extensive Recreation Management Area (ERMA). The objective in the ROD was to ensure custodial outcomes for the purpose of addressing stewardship needs associated with recreation-tourism activity participation, including visitor health and safety, use and user conflicts, and resource protection. Recreation was not an emphasis.

Since none of the objectives or management actions are being proposed to change, the area should be “Undesignated” instead of an “ERMA” to be consistent with updated planning guidance (BLM 2010a and 2010b). In the new guidance, recreation is emphasized in an ERMA. ERMAs are managed to support and sustain the principal recreation activities and the associated qualities and conditions of the ERMA, including facilitating visitor participation and maintaining particular recreation setting characteristics. In the new guidance “Undesignated” lands are public lands not designated as Recreation Management Areas and are managed to meet basic recreation and visitor services and resource stewardship needs. This is an update only to the terminology, not the management.

New Information Needed: None.

Table 5.3-1 Significance Screening: Recreation

<i>Significance Screening Criteria*</i>	Yes	No	Notes
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?		X	The resource has not changed; only the definition has changed.
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?		X	IM 2011-004 Revised Recreation and Visitor Services Land Use Planning Guidance (Attachment 1, Recreation and Visitor Services Planning Decision Guidance) (BLM 2010)
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?			N/A
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?			N/A

ASSESSMENT OF NEW INFORMATION

Table 5.3-1 Significance Screening: Recreation

Significance Screening Criteria*	Yes	No	Notes
5. Would the new information present environmental consequences not envisioned in the existing EIS?			N/A

Note:

** If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.*

Key:

EIS = Environmental Impact Statement

IM = Instruction Memorandum

N/A = Not applicable

SEIS = Supplemental Environmental Impact Statement

Determination of Significance: Not significant.

Significance Rationale: The needed update is for terminology only.

Preparer: McGrew, Julie A.; Natural Resource Specialist

ASSESSMENT OF NEW INFORMATION

5.4 LIVESTOCK GRAZING

Since the planning process began, livestock grazing permits authorizing grazing use in the Roan Plateau Planning Area (Planning Area) have been modified based on monitoring and permit renewal applications. Currently, two of the allotments formerly authorizing cattle have been converted to sheep use. Sheep have proven easier to control to avoid the sensitive riparian areas on top of the cliffs. Other permits have also been reduced in available Animal Unit Months (AUMs) in order to maintain land health standards.

In 2013, the Colorado River Valley Field Office (CRVFO) revisited the land health standards for the five allotments on top of the cliffs as documented in the 2013 Roan Cliffs Land Health Assessment (BLM 2013). The final report has not been completed as of the publication of this Assessment of New Information (ANI); however, several of the creeks that had been meeting land health standards in 1999 were determined to not be meeting these standards in 2013. The manner in which land health is reported has changed since 1999, as well. Land health is now reported as “acreage not meeting,” whereas before it was reported as “allotments not meeting.”

The Roan Plateau Final Environmental Impact Statement (EIS) also reported that there were three grazing permittee cabins on the cliffs. There are actually four permittee cabins.

New Information Needed: None.

Table 5.4-1 Significance Screening: Livestock Grazing

<i>Significance Screening Criteria*</i>	Yes	No	Notes
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?		X	There have been minor health standards inventory changes, but these must be addressed under any management alternative. Other minor changes in uses would not seriously change the information being represented, and would not change impacts measurably.
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?		X	
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?			N/A
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?			N/A

ASSESSMENT OF NEW INFORMATION

Table 5.4-1 Significance Screening: Livestock Grazing

Significance Screening Criteria*	Yes	No	Notes
5. Would the new information present environmental consequences not envisioned in the existing EIS?			N/A

Note:

** If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.*

Key:

EIS = Environmental Impact Statement

N/A = Not applicable

SEIS = Supplemental Environmental Impact Statement

Determination of Significance: Not significant.

Significance Rationale: Minor changes in ongoing management and inventory would not measurably affect the analysis of impacts, and must be addressed under any alternative.

Preparer: Pittman, John I.; Rangeland Management Specialist

5.5 OIL AND GAS AND OTHER MINERALS

Oil and Gas

Since the publication of the Roan Plateau Final Environmental Impact Statement (EIS) (BLM 2006), there has been new insight and technological development related to a majority of oil and gas activities. Changes specifically affecting the Roan Plateau Planning Area (Planning Area) are relevant to hydraulic fracturing, horizontal drilling practices, multi-well pads, and microseismicity, as further described below. In addition to these changes, operators are beginning to incorporate a wide range of best management practices (BMPs), such as closed-loop drilling systems, green completions, and pitless drilling. Water disposal, while not a new issue, is being analyzed by operators for cost benefit and net environment impact (hauling nearly 100 miles for disposal), the result of which is an increase of water disposal well permits. Finally, changes in development practices and natural gas prices have changed the Reasonable Foreseeable Development Scenario (RFD) for the Roan Plateau Planning Area.

Hydraulic Fracturing

Although hydraulic fracturing has been in use for decades, the 2006 Final EIS did not analyze its affects in relation to oil and gas operations. Hydraulic fracturing is incorporated into oil and gas operations to create additional pathways to facilitate gas production. After a well is drilled, operators use shaped explosive charges to perforate the well casing, isolating cement, and the surrounding formation. After perforation a mixture of fresh water, chemical components, and a propping medium are injected into the newly formed fractures. The propping medium (or “proppants”) usually consist of sand, aluminum, glass, or plastic beads, and are used to keep the pathways open once they are created. The other compounds, usually constituting less than 1 percent of the total mixture, help break down the formation, or assist in gas extraction.

Horizontal Drilling

The majority of wells drilled since 1995 within the Piceance Basin have been drilled either vertically, or more recently, using a directional s-curve well bore. The advent of horizontal drilling was introduced into the Colorado River Valley Field Office (CRVFO) planning area. Horizontal wells start out with a vertical bore and then “kick-off,” thereby establishing a gradual 90-degree curve to horizontal. Instead of targeting the stacked lenticular sands prominent in the Williams Fork Formation, horizontal wells focus on a single, continuous, stratified production zone, such as the Niobrara/Mancos Shale. Horizontal wells tend to interact with higher pressure gas zones, have multiple completion intervals, have higher hydrostatic pressure, and employ vertical fracture propagation.

Multi-Well Pads

Even though multi-well pads were used prior to the 2006 Final EIS, recent technology and a greater understanding of basin geology have decreased the size of the pads and have increased the number of wells per pad. The revised Roan Plateau Reasonable Foreseeable Development (RFD) calculations estimate an average pad size of 5 acres, with approximately 20 wells per pad. Prior analysis in the 2006 Final EIS suggested 6-acre pads with approximately eight wells per pad.

Microseismicity

For decades, oil and gas companies and independent geophysicists have used state-of-the-art equipment to monitor microseismic activity—defined as a “faint” or “very slight” tremor—during hydraulic fracturing to optimize well completions and to gather information about fracture dimensions and propagation (Warpinski 2011). These data give an indication about the magnitude of seismic activity associated with

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hydraulic fracturing, dimensions of resultant fractures in geologic formations, and probability for induced fractures to extend into nearby aquifers, if present.

Reasonable Foreseeable Development Scenario

The RFD provides the interdisciplinary planning team with an estimate of the oil and gas development activities that are reasonably likely to occur on BLM-administered lands within the Planning Area over the next 20 years. An updated RFD is under development by the BLM, and its estimates will provide a changed picture of projected development under various alternatives, and a new basis for impacts analysis related to oil and gas development in the Planning Area.

Other Minerals

Oil Shale

The 2008 Oil Shale and Tar Sands (OSTS) Programmatic Environmental Impact Statement (PEIS) and Record of Decision (ROD) made Land Use Plan decisions regarding areas available for application for oil shale leasing within the CRVFO. The 2008 OSTs ROD erroneously proposed opening the lands in Naval Oil Shale Reserves (NOSRs) 1 and 3, within the Planning Area portion of the CRVFO, to oil shale leasing. However, those lands were withdrawn from oil shale leasing and development in conjunction with their transfer from U.S. Department of Energy (DOE) to the Bureau of Land Management (BLM). For other oil shale lands within the CRVFO, the Glenwood Springs Resource Management Plan (RMP) was amended in 2001 to support revocation of existing withdrawals of deposits of oil shale on public lands from leasing or other disposal (BLM 2001). This action was taken because withdrawals were no longer considered necessary since existing regulations, policies, and land use decisions were adequate for managing the oil shale resources (Final OSTs PEIS 2012). The Final PEIS (BLM 2012) corrected the error regarding NOSRs 1 and 3 by identifying those oil shale deposits as unavailable for application for commercial oil shale leasing.

New Information Needed: None.

Table 5.5-1 Significance Screening: Oil and Gas and other Minerals

<i>Significance Screening Criteria*</i>	Yes	No	Notes
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?	X		Fracking was not discussed in the Final EIS. Also, horizontal drilling has different impacts than traditional directional drilling. Finally, a new RFD will be available for the SEIS.
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?	X		The final 2012 OSTs PEIS removed NOSRs 1 and 3 from commercial oil shale leasing.
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?	X		Fracking could have potential impacts on groundwater resources

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Table 5.5-1 Significance Screening: Oil and Gas and other Minerals

<i>Significance Screening Criteria*</i>	Yes	No	Notes
			as well as microseismicity.
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?	X		Environmental impacts could vary between alternatives, depending on the alternative considered.
5. Would the new information present environmental consequences not envisioned in the existing EIS?	X		Fracking and horizontal drilling were not analyzed in the Final EIS; therefore, the environmental consequences of both were not envisioned.

Note:

** If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.*

Key:

EIS = Environmental Impact Statement

Fracking = Hydraulic fracturing

NOSR = Naval Oil Shale Reserve

OSTS = Oil Shale and Tar Sands

PEIS = Programmatic Environmental Impact Statement

SEIS = Supplemental Environmental Impact Statement

Determination of Significance: Significant.

Significance Rationale: New information related to horizontal drilling was not analyzed in the 2006 Final EIS; nor were the possible impacts from hydraulic fracturing. Some changes from 2006 will be addressed in the RFD scenario and its assumptions.

Preparer: Sieber, Anthony T.; Geologist

5.6 AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACECs)

Anvil Points ACEC

The Anvil Points Area of Critical Environmental Concern (ACEC) was designated in the Final Environmental Impact Statement (EIS) (BLM 2006) for its combination of scenic, geologic, wildlife, and botanical/ecological values. The specific botanical/ecological values were Parachute penstemon (*Penstemon debilis*), DeBeque phacelia (*Phacelia submutica*), southwest stickleaf (*Mentzelia argillosa*), DeBeque milkvetch (*Astragalus debequaeus*), Utah fescue (*Argillochloa dasyclada*), Great Basin grassland (beardless bluebunch wheatgrass community), Great Basin montane grassland (beardless bluebunch wheatgrass/Sandberg bluegrass community), aspen/Rocky Mountain maple forest, and sagebrush bottomland shrubland (mountain big sagebrush/Great Basin wildrye).

Since the Final EIS analysis, a taxonomic name change has occurred for one of these species. Southwest stickleaf (*Mentzelia argillosa*) is now known as Roan Cliffs blazingstar (*Mentzelia rhizomata*).

Also, two of these plant species, Parachute penstemon and DeBeque phacelia, which were Bureau of Land Management (BLM) sensitive species (federal candidate species) during the Final EIS analysis, are now listed as federally threatened species (USFWS 2011). In addition, critical habitat for Parachute penstemon has been designated within and beyond the boundaries of the ACEC (USFWS 2012). The designated critical habitat includes a 1-kilometer buffer around the known plant occurrences in order to protect pollinators and pollinator habitat of importance to Parachute penstemon, as well as the Parachute penstemon habitat. Most of the pollinators are ground-nesting bees, which depend heavily on mat penstemon (*Penstemon caespitosus*) as well as Parachute penstemon (USFWS 2012).

Much of the designated critical habitat lies outside of the current ACEC boundaries. These new species listings and the critical habitat designation constitute new information not analyzed in the Final EIS.

Magpie Gulch ACEC

The Magpie Gulch ACEC was designated for its scenic, wildlife, and botanical/ecological values. There is no new information for this location. The botanical/ecological and scenic values remain the same as those analyzed under the Final EIS (BLM 2006) for this ACEC.

East Fork Parachute Creek and Trapper/Northwater Creek ACECs

Both the East Fork Parachute Creek and the Trapper/Northwater Creek ACECs were designated to protect a combination of fish and wildlife values and botanical/ecological values (BLM 2006). The East Fork Parachute Creek ACEC also included scenic values. The species status of the Colorado River cutthroat trout (*Oncorhynchus clarki pleuriticus*) (CRCT) in these watersheds has been in a state of flux since the Final EIS analysis (Bestgen, Rogers, and Granger 2013; Kaeding 2003; Metcalf et. al. 2007; Metcalf et. al. 2012; Rogers 2012a; Rogers 2012b; Rogers 2010). Based on the new information, the streams within the Roan Plateau Planning Area (Planning Area), including East Fork Parachute Creek, East Middle Fork Parachute Creek, JQS Gulch, Northwater Creek, and Trapper Creek, contain genetically pure Blue Lineage CRCT native to the White and Yampa river basins located north outside of the Planning Area. All of the occupied CRCT streams are currently recognized as containing Core Conservation populations of CRCT (CRCT that are >99 percent genetically pure or better) (Bestgen, Rogers, and Granger 2013). Despite not containing the native Green Lineage CRCT, the Blue Lineage CRCT in all of these streams are still of conservation value. The BLM and Colorado Parks and Wildlife (CPW) are both signatories to the Range-Wide CRCT Conservation Agreement and Strategy (CRCT Coordination Team 2006), the primary goal of which is to ensure the long-term prosperity of native, genetically pure CRCT within their native ranges in Colorado.

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Despite not being the native CRCT to the area, these streams are still important in the ongoing conservation efforts for CRCT across the state.

In light of the results of the new genetic and meristic research and the need to update information for the Supplemental Environmental Impact Statement (SEIS), a need arose to determine if these Blue Lineage CRCT still meet the Relevance and Important criteria for ACEC consideration. Based on a new assessment of the criteria, it was determined that the Blue Lineage CRCT, while not the native trout of the area, still meet the ACEC Relevance and Importance criteria. This species is currently a BLM sensitive species, which meets the Relevance criterion. Because of their genetic purity, they are still irreplaceable Core Conservation Populations of CRCT, which are rarer within and outside of the range of the Blue Lineage fish. This supports the Importance criterion, as does the fact that these CRCT streams require special management attention to protect them and their habitats in the face of potential threats. It is unlikely that proposed protective measures, such as timing limitations, No Surface Occupancy (NSO), and Controlled Surface Use (CSU) would be as extensive in the absence of these fish.

The botanical/ecological and scenic values remain the same as those analyzed under the Final EIS for both the East Fork Parachute Creek and the Trapper/Northwater Creek ACECs. These two ACECs collectively contain approximately 60 percent of all known Sullivantia hanging gardens.

Table 5.6-1 Significance Screening: Areas of Critical Environmental Concern

<i>Significance Screening Criteria*</i>	Yes	No	<i>Notes</i>
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?	X		The Final EIS does not address critical habitat or the ecological factors deemed significant during the development of critical habitat, particularly protection of pollinators and pollinator habitat relative to Parachute penstemon.
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?	X		Parachute penstemon and DeBeque phacelia are now both listed as federally threatened species. Critical habitat for Parachute penstemon has been designated within the Roan Plateau Planning Area.
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?	X		The potential impacts from increased oil and gas development, including well pads, road and pipeline development, and increased vehicle traffic, through critical habitat would

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Table 5.6-1 Significance Screening: Areas of Critical Environmental Concern

<i>Significance Screening Criteria*</i>	Yes	No	Notes
			measurably change the impacts analysis.
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?	X		The new information on Parachute penstemon could affect the decision on boundaries for the Anvil Points ACEC, and/or stipulations for this ACEC.
5. Would the new information present environmental consequences not envisioned in the existing EIS?	X		The environmental consequences for Parachute penstemon pollinators was not addressed in the Final EIS, so new information would alter environmental consequences in the Final EIS.

Note:

** If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.*

Key:

ACEC = Area of Critical Environmental Concern

EIS = Environmental Impact Statement

SEIS = Supplemental Environmental Impact Statement

Determination of Significance: Significant.

Significance Rationale: The new federally threatened status for Parachute penstemon, the designation of critical habitat for this species within and adjacent to the Anvil Points ACEC, and the new information on pollinators and pollinator habitat provide significant new information which could affect the Anvil Points ACEC boundary and/or stipulations. The new information on CRCT is not currently altering management approaches, so it is not significant relative to the SEIS. There is no new information on the Sullivantia hanging gardens in the East Fork Parachute Creek and Trapper/Northwater Creek ACECs, or on the old growth Douglas fir trees in the Magpie Gulch ACEC.

Preparer: Perkins, Judy L.; Botanist

Fisheries Relevance and Importance Criteria for Area of Critical Environmental Concern (ACEC) Determination

Recent genetics and morphological studies have led researchers to conclude that CRCT in Roan Plateau streams are not indigenous to the mainstem Colorado River drainage (Green Lineage) but to the White and Yampa River drainages (Blue Lineage). In light of the new genetic and meristic research on CRCT in Colorado, as well as the need to update information for the SEIS, the BLM reevaluated CRCT populations and their habitats on the Roan Plateau to determine if they continue meet the criteria established in the BLM ACEC Manual 1613 for Relevance and Importance criteria (BLM 1988). Based upon an Interdisciplinary

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Team review of the Relevance and Importance criteria, it was determined that the CRCT and their habitats residing in Roan Plateau streams continue to meet the criteria for Relevance and Importance.

After a review of the new information, the BLM interdisciplinary team concluded that the Blue Lineage CRCT found on the Roan Plateau is a BLM sensitive species that meets the Relevance criterion. Because of its genetic purity, it is still an irreplaceable Conservation Population of CRCT, which is rare within and outside the range of the Blue Lineage fish. This supports the Importance criterion, as does the fact that the occupied streams require special management attention to protect the fish and their habitats in the face of potential threats. It is unlikely that proposed protective measures, such as timing limitations, NSO, and CSU stipulations, would be as extensive in the absence of these fish.

A particular factor that the BLM considered in its review is that Blue Lineage CRCT have been determined to originate in the White and Yampa river basins and that the presence of these fish in Roan Plateau streams is the result of historic stocking. However, the USFWS has yet to formally review the status of CRCT under the Endangered Species Act (ESA) in Colorado, based upon review and interpretation of the recent research. The BLM believes that, even after the USFWS review is completed, the populations of CRCT on top of the Roan Plateau will continue to be regarded as a regionally important and protected genetic resource, despite being located outside its natural range.

New Information Needed: None.

Table 5.6-2 Fisheries Relevance and Importance Criteria for Area of Critical Environmental Concern

<i>Significance Screening Criteria*</i>	Yes	No	Notes
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?	X		New genetic information.
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?		X	
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?		X	Still meets relevance criteria.
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?		X	
5. Would the new information present environmental consequences not envisioned in the existing EIS?		X	

Note:

** If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.*

Key:

EIS = Environmental Impact Statement

SEIS = Supplemental Environmental Impact Statement

Determination of Significance: Not significant.

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Significance Rationale: Although the new genetics information on the provenance of CRCT in streams atop the Roan Plateau is ecologically significant, it does not affect future management decisions or management actions relative to ACECs. This conclusion is based on the status of the Roan Plateau population of CRCT as a BLM sensitive species that continues to meet the Relevance criterion and a regionally important genetic resource that meets the Importance criterion; thus, there is no change in analysis needed to address this resource.

Preparer: Fresques, Thomas D.; Fishery Biologist

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5.7 LANDS MANAGED TO PROTECT WILDERNESS CHARACTERISTICS

In 2013, the Colorado River Valley Field Office (CRVFO) took a new look at the 2000 inventory for lands with wilderness characteristics completed for the Roan Plateau Planning Area (Planning Area). No changes to prior inventory findings were found. An additional polygon was inventoried that was missed by the 2000 inventory, but it was not found to contain wilderness characteristics. Inventory information will be posted at:

http://www.blm.gov/co/st/en/fo/crvfo/Lands_Managed_for_Wilderness_Characteristics.html

New Information Needed: None.

Table 5.7-1 Significance Screening: Lands Managed to Protect Wilderness Characteristics

<i>Significance Screening Criteria*</i>	Yes	No	Notes
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?		X	
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?		X	
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?			N/A
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?			N/A
5. Would the new information present environmental consequences not envisioned in the existing EIS?			N/A

Note:

* If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.

Key:

EIS = Environmental Impact Statement

N/A = Not applicable

SEIS = Supplemental Environmental Impact Statement

Determination of Significance: Not significant.

Significance Rationale: No change in conditions.

Preparer: Miller, Kimberly M.; Outdoor Recreation Planner

5.8 REVIEW OF FISHERIES OUTSTANDINGLY REMARKABLE VALUE (ORV) FOR WILD AND SCENIC RIVER (WSR) DETERMINATIONS

A detailed discussion of Colorado River cutthroat trout (CRCT) is provided in Section 5.6. In summary, recent genetics and morphological studies have led researchers to conclude that CRCT in Roan Plateau streams are not indigenous to the mainstem Colorado River drainage (Green Lineage) but to the White and Yampa River drainages (Blue Lineage). In light of the new genetic and meristic research on CRCT in Colorado, as well as the need to update information for the Supplemental Environmental Impact Statement (SEIS), the Bureau of Land Management (BLM) has reevaluated CRCT populations and their habitats on the Roan Plateau to determine if they continue to meet the criteria established in the BLM Wild and Scenic River (WSR) Manual 6400 for an Outstandingly Remarkable Value (ORV) (BLM 2012). Based upon an Interdisciplinary Team review of the ORV criteria, it was determined that the CRCT and their habitats residing in Roan Plateau streams continue to meet the criteria for ORV.

After a review of the information summarized above, the BLM Interdisciplinary Team concluded that the Blue Lineage CRCT are nonetheless genetically pure conservation populations, continue to have special status as BLM sensitive species, and are of regional importance in the ongoing conservation for CRCT in western Colorado. Within the area of comparison, these streams are collectively exemplary producers of pure CRCT. Specifically, CRCT from within the Roan Plateau Planning Area (Planning Area) have been used as a brood stock source by Colorado Parks and Wildlife (CPW) and progeny have been stocked into other low elevation CRCT streams located outside of the Planning Area.

Particular factors that the BLM considered in its review are that Blue Lineage CRCT have been determined to originate in the White and Yampa river basins and that the presence of this species in Roan Plateau streams is almost certainly the result of historic stocking. However, the U.S. Fish and Wildlife Service (USFWS) has yet to formally review the status of CRCT under the Endangered Species Act (ESA) in Colorado, based upon review and interpretation of the recent research. The BLM believes that, even after the USFWS review is completed, the populations of CRCT on the Roan Plateau will continue to be regarded as a regionally important and protected genetic resource, even though this species is not physically located within their historic basin of origin.

The BLM Interdisciplinary Team also concluded that CRCT habitat within the Planning Area continues to meet the criteria for ORV. The habitat is unique and rare because the subject stream segments are located close to one another in the headwaters of a relatively pristine watershed, and they are geographically isolated by large waterfall features that keep non-native fishes from being able to invade. Although the stream segments are located within a “sky island,” the relatively low elevation of these streams results in stream reach temperatures approaching the upper end of the thermal tolerance range for CRCT, and the resident fish appear to have adapted to this thermal regime. In the face of climate change, this is an important adaptation that could prove beneficial. In addition, the streams on top of the Roan Plateau have been designated as Outstanding Waters by the State of Colorado for the exceptional water quality and fish habitat the streams provide (see Section 2.4 for detailed information on water resources). The stream habitats have been minimally impacted by human disturbances and have reliable flows, even during recent drought conditions. Finally, the habitat is also capable of supporting Green Lineage CRCT, which are the CRCT species native to this portion of Colorado. CPW has plans to reclaim portions of the East Fork Parachute Creek watershed and remove brook trout (*Salvelinus fontinalis*) and potentially replace them with native, genetically pure Green Lineage CRCT.

New Information Needed: None.

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Table 5.8-1 Significance Screening: Wild and Scenic Rivers

<i>Significance Screening Criteria*</i>	Yes	No	Notes
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?		X	
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?		X	
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?			N/A
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?			N/A
5. Would the new information present environmental consequences not envisioned in the existing EIS?			N/A

Note:

** If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.*

Key:

EIS = Environmental Impact Statement

N/A = Not applicable

SEIS = Supplemental Environmental Impact Statement

Determination of Significance: Not significant.

Significance Rationale: Although the new genetics information on the provenance of trout in streams atop the Roan Plateau is ecologically significant, it does not affect future management decisions or management actions regarding WSRs. This conclusion is based on the status of the Roan Plateau population of CRCT continuing to be that of a BLM sensitive species, its value as a regionally important genetic resource, and a determination that it constitutes an ORV.

Preparer: Fresques, Thomas D.; Fisheries Biologist

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5.9 FOREST PRODUCTS

Since preparation of the initial Roan Plateau Final Environmental Impact Statement (EIS) (BLM 2006) and the Supplemental Environmental Impact Statement (SEIS) has included further degradation of conifer and aspen forest quality, particularly related to forest products value (increased tree mortality affecting already declining merchantable timber values). Both conifer and aspen forests on the Roan Plateau are in declining condition, with natural regeneration of aspen stands being adversely affected by symptoms of aspen decline, a dense understory of snowberry, and herbivory by native ungulates (deer and elk) and livestock (Bisbing and Pelz 2012).

Below the rim, the typical forest type (woodland forest) is slow growing, and the interval since initiation of the Roan Plateau EIS has had no overall effect on stand conditions. However, mortality from attacks by the pinyon pine *Ips* beetle from late 1990 through 2010 has affected localized stands of pinyon pine (Bachelet 2010).

With virtually no timber sales or efforts to actively manage the conifer forest or pinyon-juniper woodlands since settlement of the region in the 1800s, the forest conditions have evolved with varying effects from natural causes, such as fire, windstorms, drought, and insect/disease outbreaks.

New Information Needed: None.

Table 5.9-1 Significance Screening: Forest Products

<i>Significance Screening Criteria*</i>	Yes	No	Notes
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?		X	
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?		X	
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?			N/A
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?			N/A
5. Would the new information present environmental consequences not envisioned in the existing EIS?			N/A

Note:

** If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.*

Key:

EIS = Environmental Impact Statement

N/A = Not applicable

SEIS = Supplemental Environmental Impact Statement

Determination of Significance: Not significant.

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Significance Rationale: Based on the information summarized above, conditions and uses related to forestry have not significantly changed since the Roan Plateau Final EIS (BLM 2006). Therefore, the analyses, conclusion, and actions described in the Final EIS remain adequate and valid.

Preparer: Byers, James C.; Natural Resource Specialist

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5.10 FIRE

Since preparation of the Roan Plateau Final Environmental Impact Statement (EIS) (BLM 2006) and the current Supplemental Environmental Impact Statement (SEIS) no new changes that would impact Fire Management on the Roan Plateau were identified. There have been no policy changes or significant fuels issues that have developed since the publication of the Final EIS in 2006.

Due to the risk of damage to industrial equipment and the risk of injury to personnel that may be present as part of development activities, an increase in development on the top of the Roan Plateau could impact the current fire management strategy for this area,.

New Information Needed: None.

Table 5.10-1 Significance Screening: Fire

<i>Significance Screening Criteria*</i>	Yes	No	Notes
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?		X	
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?		X	
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?		X	
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?		X	
5. Would the new information present environmental consequences not envisioned in the existing EIS?		X	

Note:

** If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.*

Key:

EIS = Environmental Impact Statement

SEIS = Supplemental Environmental Impact Statement

Determination of Significance: Not significant.

Significance Rationale: No new information, policy, or changed circumstances.

Preparer: Stark, Russell M.; Fire Management Specialist

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5.11 RENEWABLE ENERGY

The 2006 Roan Plateau Final Environmental Impact Statement (EIS) (BLM 2006) described renewable energy as the following:

In February 2003, the Bureau of Land Management (BLM) and the National Renewable Energy Laboratory (NREL) issued a report identifying public lands most suitable for increased development of renewable energy (DOE and BLM 2003). The report examined federal areas, including those administered by BLM in eleven western states, for the highest energy potential from four renewable sources: wind, solar, geothermal, and biomass. The assessment was undertaken in response to the National Energy Plan. BLM and U.S. Department of Energy (DOE) worked with industry experts to develop screening criteria for each type of energy. Factors considered included geography, infrastructure requirements, access to roads and power transmission lines, and proximity to towns and cities. Findings of the assessment indicated that the region including the Planning Area was not among the 25 highest rated areas for any of these potential energy sources.

No development of renewable energy is currently anticipated for the Planning Area...[due to its] low potential of the Planning Area for wind generation.

Since publication of the Final EIS, renewable energy resources have gained public interest and importance. Solar and wind facilities for generating electricity have increased in number in response to this growing public interest, driven in large part by concerns regarding global climate change, and particularly in response to government mandates and advances in technology.

Wind Power

A maximum potential development scenario was created by BLM lands in 11 western states (USDOJ and NREL 2003). The BLM and NREL developed screening criteria for areas of wind power potential. Different class designations were assigned to indicate the potential for wind power production. These classes range from 1 to 7, with 1 being of lowest potential and 7 being the highest. Class 3 is considered moderate potential, having wind speeds over 14.3 miles per hour (mph) at 50 meters above ground level, while Classes 4 and higher are good to excellent wind power potential, with wind speeds above 15.7 mph at 50 meters above ground level (Elliot et al. 1987). Classes 3 and higher were determined as potentially developable over the next 20 years (same time frame as the Programmatic Environmental Impact Statement (PEIS) analysis, or 2005-2025), with Class 3 designated as medium potential for the short term, and Classes 4 and higher having high wind power potential (USDOJ and BLM 2005a) for long-term projects.

In addition to having an appropriate wind power class, it was determined that the site must have transmission line (69-345 kilovolt [kV]) access within 25 miles, available transmission capacity, and access to roads within 50 miles (USDOJ and DOE 2003). Excluded areas include Wilderness Areas, Wilderness Study Areas (WSAs), National Monuments, and National Conservation Areas (USDOJ and BLM 2005b). Figure 5.11-1 shows wind power potential in the Colorado River Valley Field Office (CRVFO) area. Although the figure does not include the Roan Plateau Planning Area (Planning Area), a review of the data shows that there are no areas of Class 4 or higher within the Planning Area. In addition, there are no suitable transmission lines on top of the Roan Plateau to access these areas (Figure 5.11-2). Therefore, wind power development on top of the Roan Plateau would most likely not be feasible.

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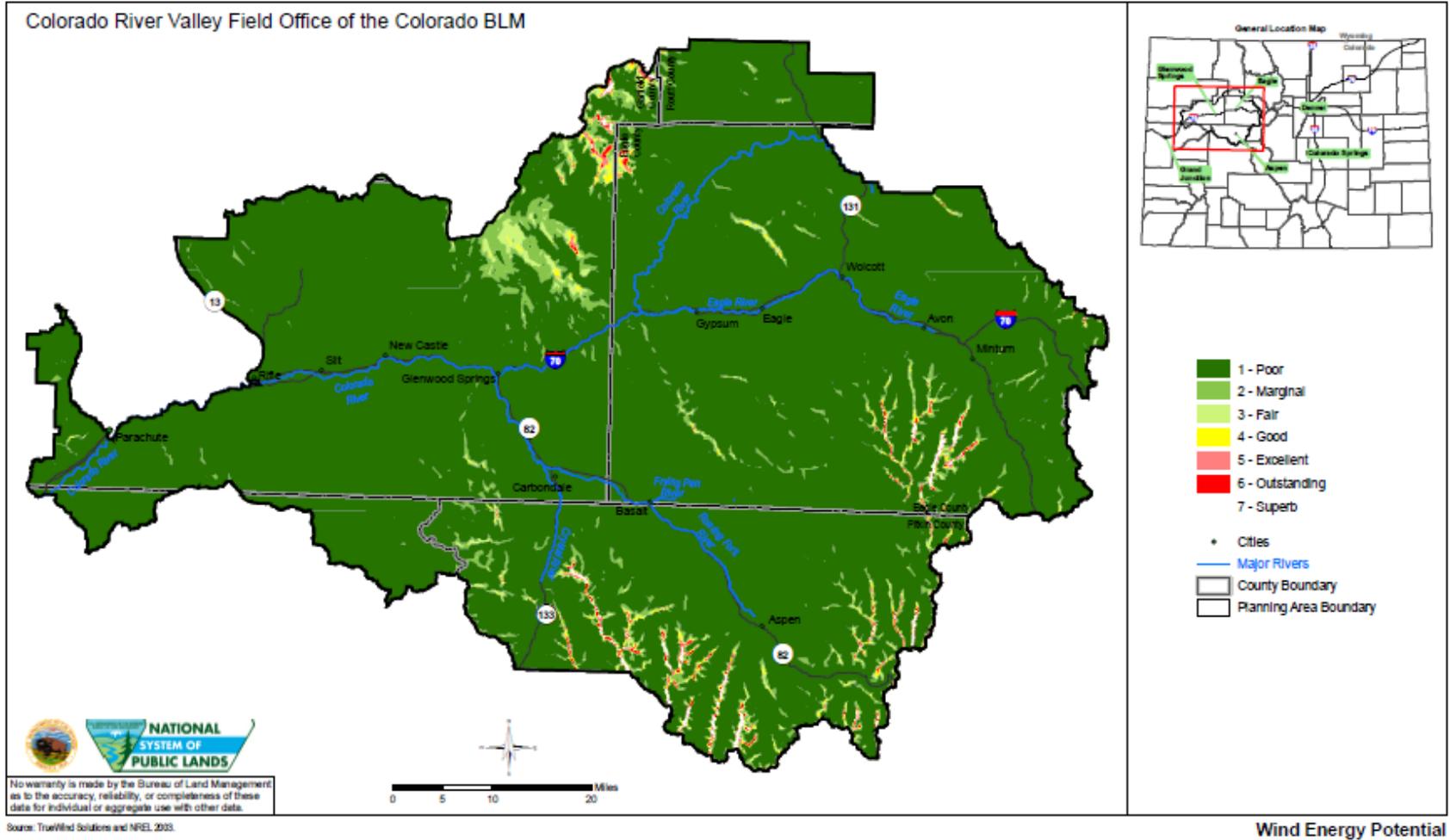


Figure 5.11-1 Wind Energy Potential in the Colorado River Valley Field Office

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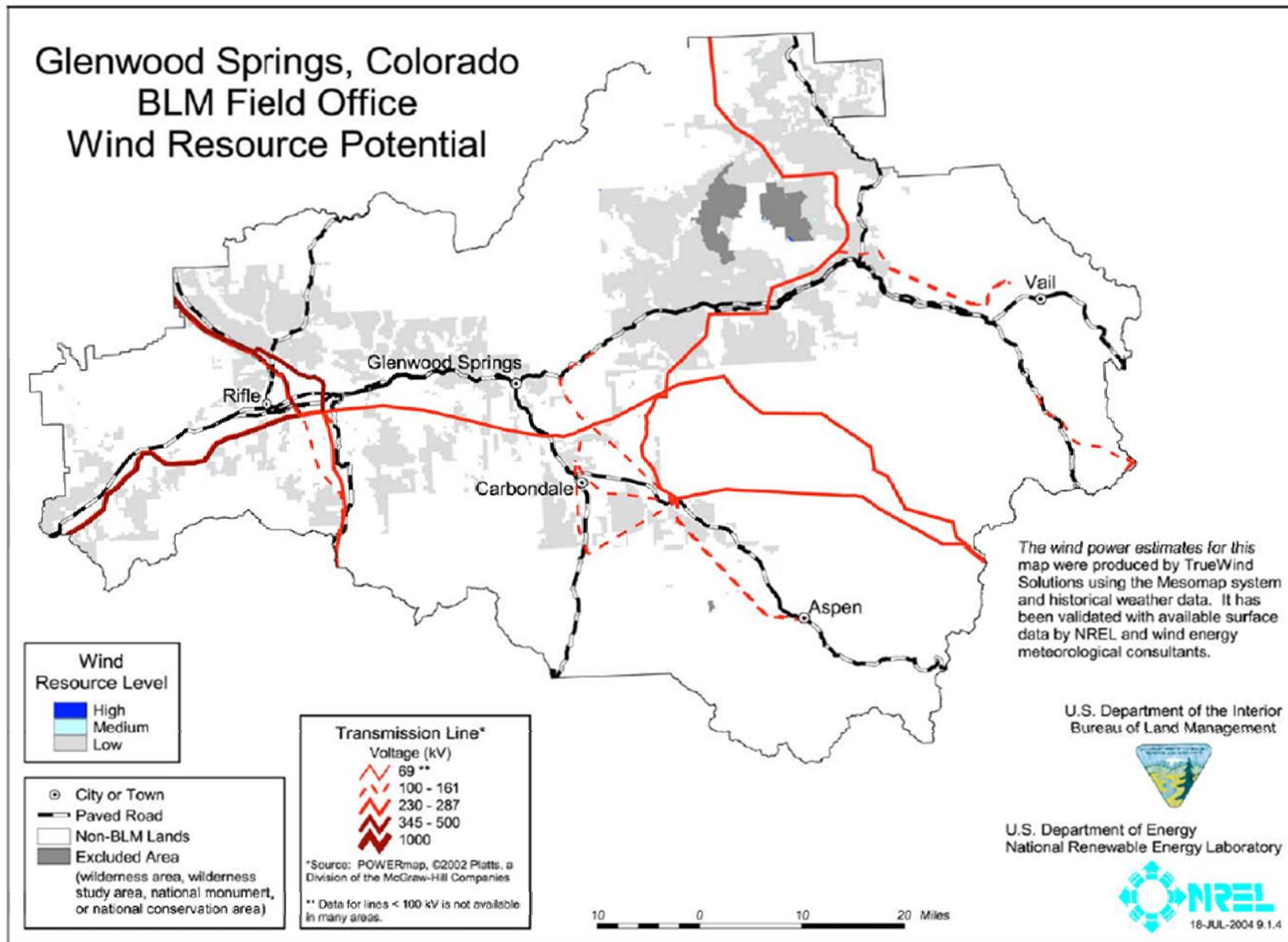


Figure 5.11-2 Transmission Line and Wind Energy Potential in the Colorado River Valley Field Office and Roan Plateau Planning Area

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Solar Power

In 2012, the BLM and DOE completed the Final Solar Energy Development Programmatic Environmental Impact Statement (Solar PEIS) (BLM and DOE 2012) that evaluated potential areas for utility-scale (projects generating electricity capacities greater than 20 megawatts) solar energy development in Arizona, California, Colorado, Nevada, New Mexico, and Utah. The Solar PEIS included an assessment of environmental, social, and economic impacts of utility-scale solar facilities and transmission connections from facilities to an existing power grid, and other associated infrastructure (roads) over an approximately 20-year time frame (approximately until 2030). With more than 300 days of sunshine per year, Colorado is included as a good source for solar energy potential (Figure 5.11-3).

There are two types of solar power in wide use as an energy source—concentrated solar power units and photovoltaic solar power units. The Solar PEIS analyzed 17 zones in six states for energy development potential (BLM and DOE 2012). Different screening criteria for concentrated solar power and photovoltaic solar power were considered in the development of these designated zones:

- **Concentrated Solar Power:** To be considered a potential source for concentrated solar power, a site must have a solar resource of 5 kWh/m²/day of direct normal, land that has a slope of less than 5 percent (ideally less than 1 percent), transmission line access within 50 miles (69 to 345 kV), with transmission capacity available, a 40-acre minimum parcel size, and road or rail access within 50 miles (USDOJ and DOE 2003). These criteria are generally not met within the Planning Area, and are certainly not as attractive for development as in other regions.
- **Photovoltaic Solar Power:** The criteria for photovoltaic solar power are similar to concentrated solar power, including an accessible transmission line with available capacity, as well road access within 50 miles (USDOJ and DOE 2003). These criteria are generally not met within the Planning Area, and are certainly not as attractive for development as in other regions.

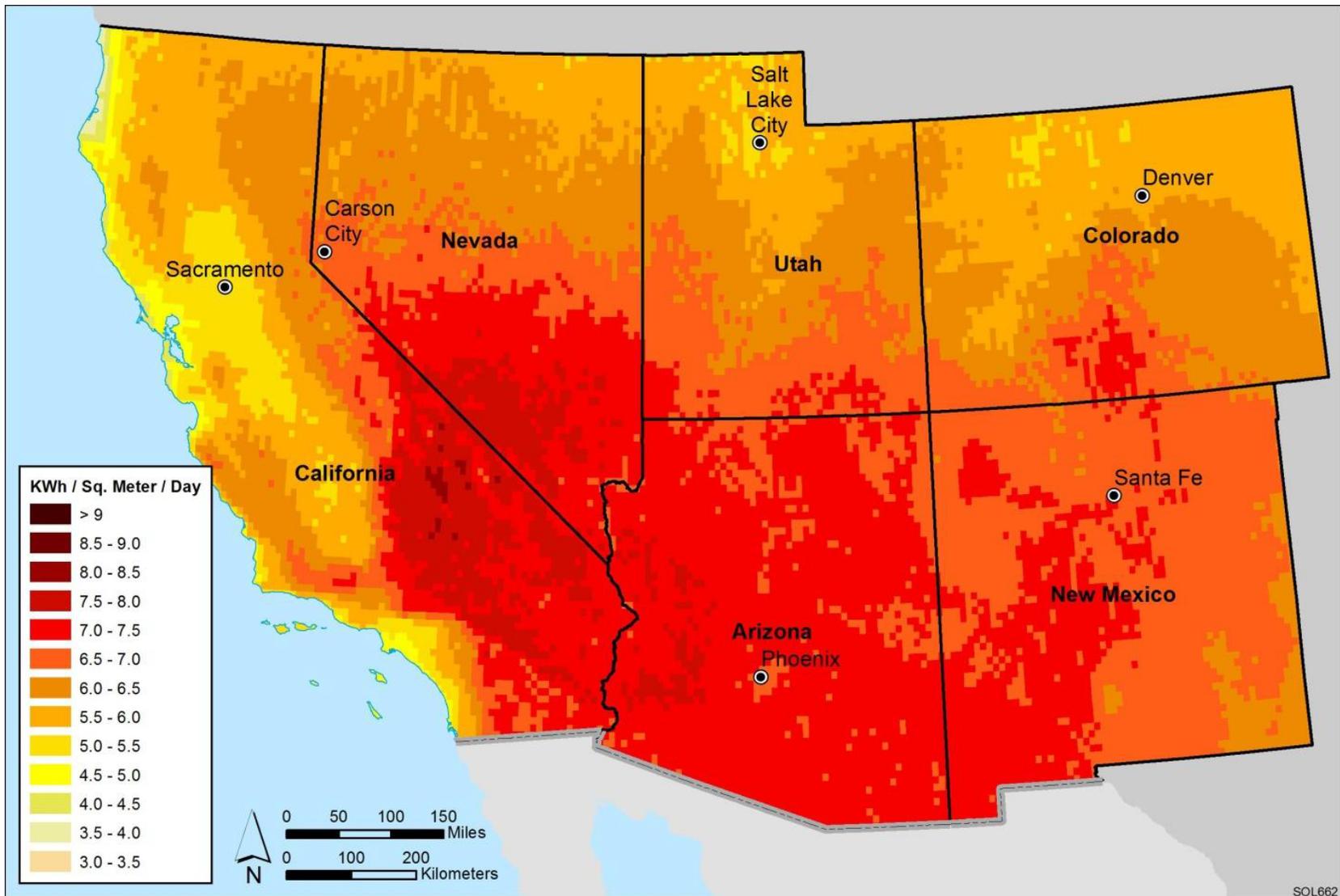
On the basis of these criteria and analysis, four solar energy zones (SEZs) were proposed in Colorado that satisfied the aforementioned screening criteria. They are the Antonito Southeast and Los Mogotes East in Conejos County, De Tilla Gulch in Saguache County, and Fourmile East in Alamosa County (USDOJ and DOE 2003) (Figure 5.11-4). None of these proposed SEZs are located in the Planning Area. Therefore, the potential for solar development in the Planning Area is unlikely.

Geothermal

In the Glenwood Springs area, there are no hot springs over 50 degrees Celsius (°C), but there are warm springs with temperatures between 20 and 50 °C (BLM 2011). Due to the presence of warm springs in the CRVFO area, approximately 254 square miles were identified as potential for geothermal energy development (Figure 5.11-5), though high-potential geothermal sites were identified without developing screening criteria (USDOJ and DOE 2003). None of these areas were identified in the Planning Area (note that data for the Planning Area are not shown on the map). Specialists in BLM offices were consulted during field visits and recommended top-pick sites in California, Oregon, Nevada, New Mexico, Utah, and Washington, and did not recommend any sites in Colorado (Figure 5.11-6).

No geothermal leases have been issued, to date. Six lease applications were filed at various times in different areas (including South Canyon, Dotsero, and on U.S. Forest Service [USFS] lands), but all applications were rejected or denied (BLM 2011). Geothermal development on top of the Roan Plateau would not be likely.

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Source: BLM and DOE 2012

Figure 5.11-3 Solar Direct Normal Insolation Levels in the Southwestern United States

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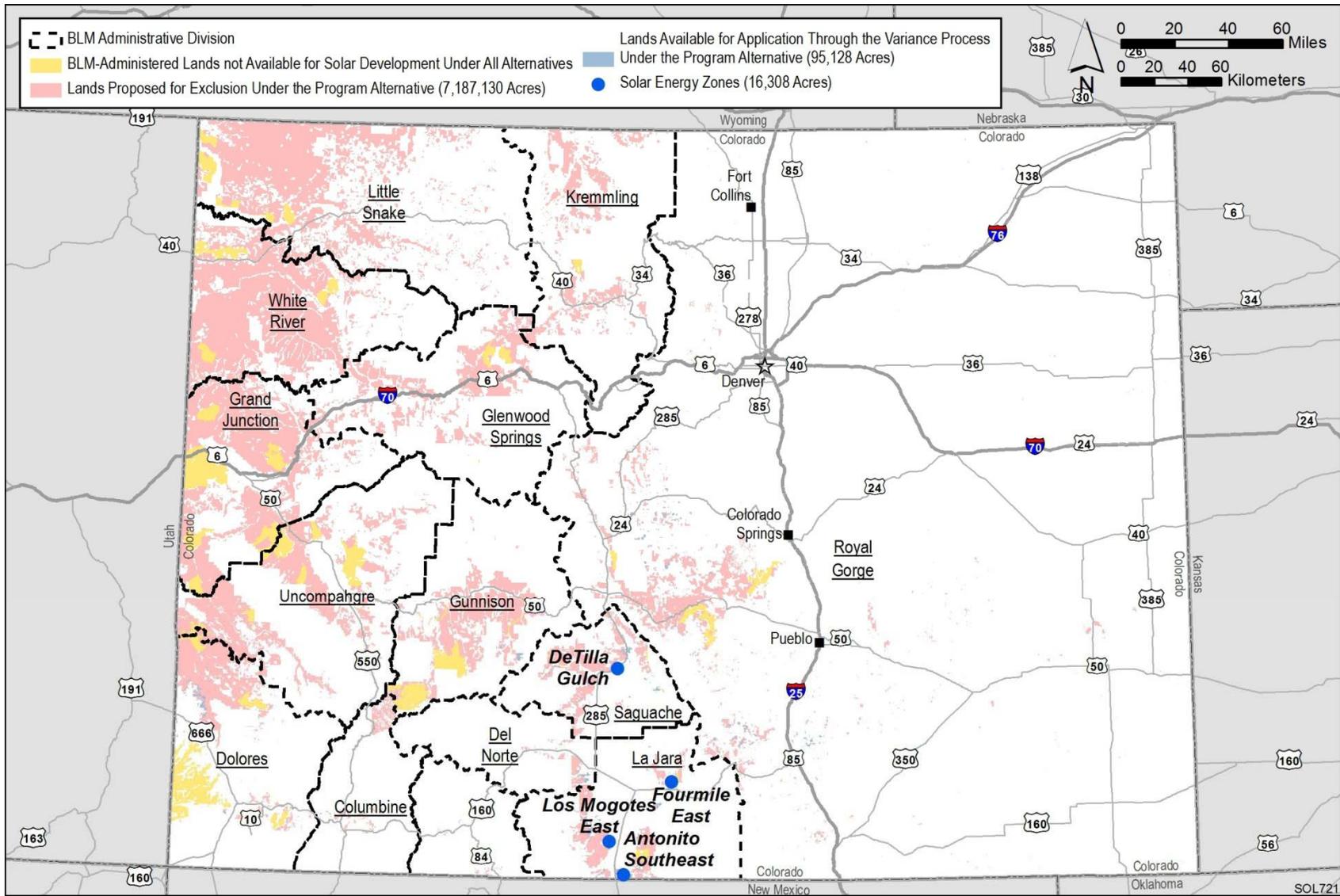
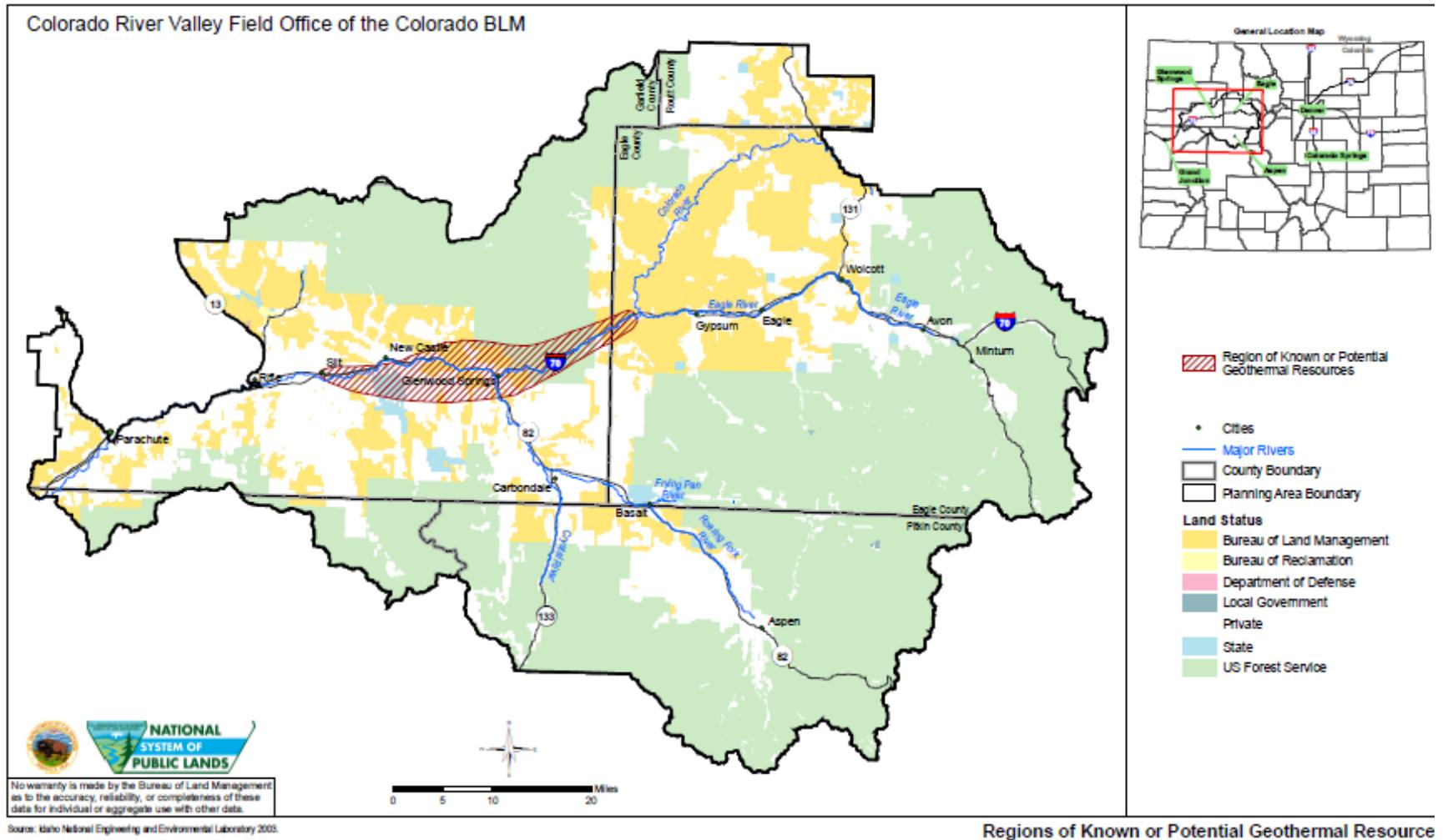


Figure 5.11-4 Proposed SEZs in Colorado

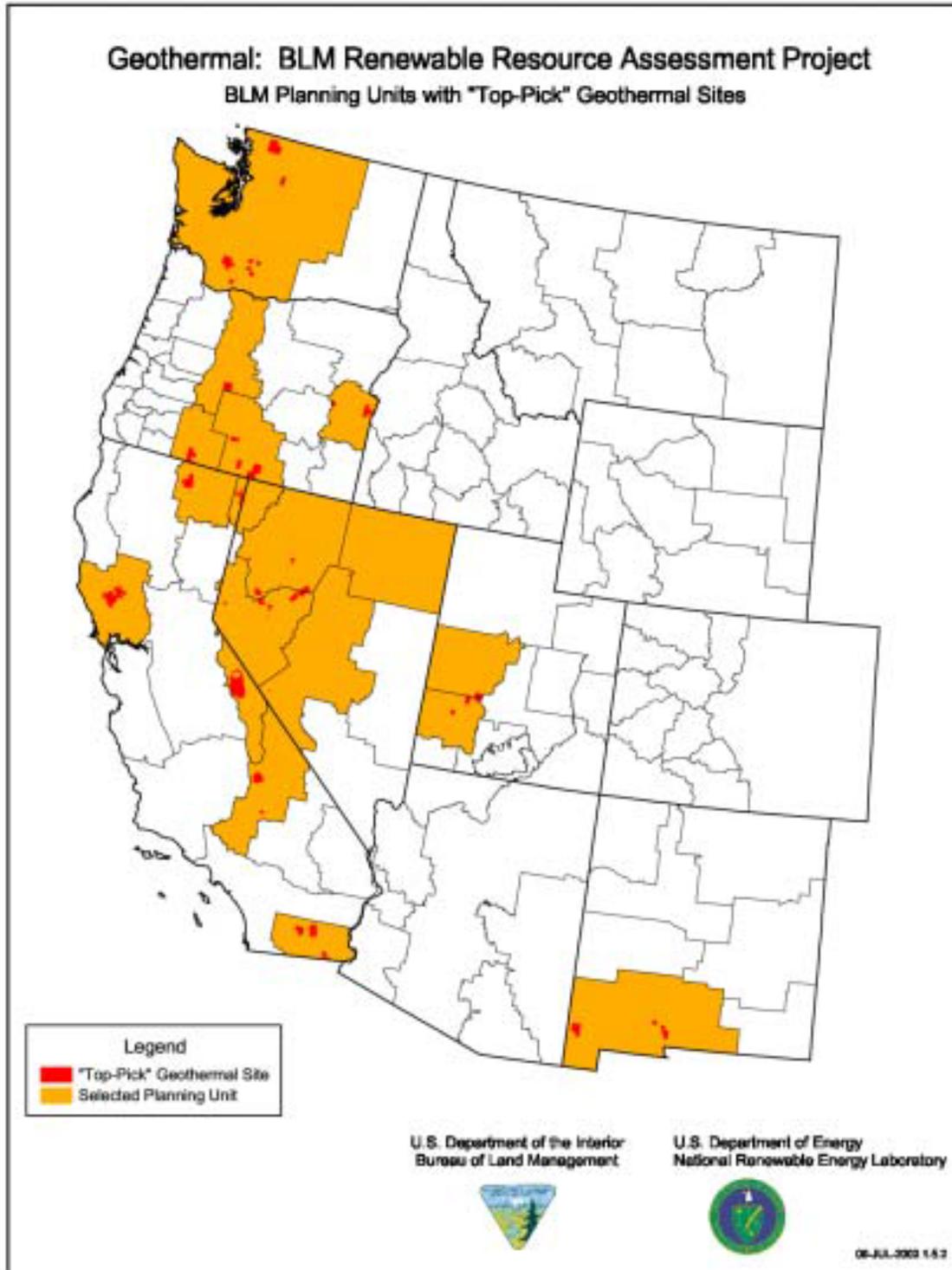
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Source: BLM 2011

Figure 5.11-5 Geothermal Energy Potential in the Colorado River Valley Field Office

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Source: USDOI and DOE 2003

Figure 5.11-6 BLM Top-Pick Geothermal Sites

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Biomass

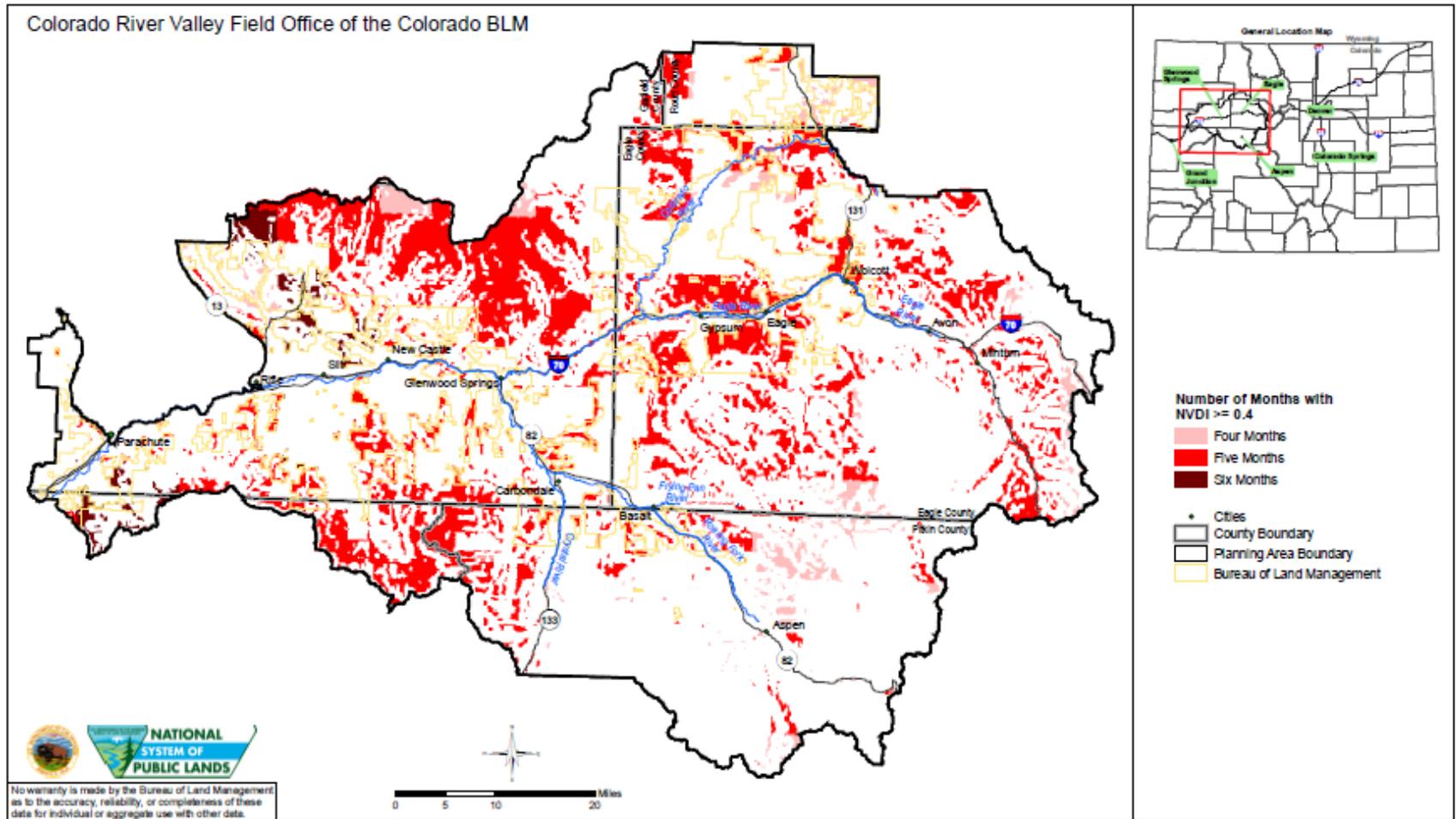
Plants, plant-derived materials, crop waste, food waste, and organic matter from municipal and industrial wastes can all be utilized to produce biomass power. Biomass can be used for direct heating (burning wood in wood stove) and for generating electricity, or it can be converted directly into liquid fuels to meet transportation energy needs (biodiesel for buses) (BLM 2011).

The BLM evaluated the potential for biomass energy using the Normalized Difference Vegetation Index (NDVI) computed from the National Aeronautics and Space Administration's (NASA's) Advanced Very High Resolution Radiometer Land Pathfinder satellite program (USDOJ and DOE 2003). The NDVI index correlates the amount of vegetation available for biomass energy. For an area to have biomass development potential, it must meet four criteria:

- Have a NDVI rating of 0.4 for at least 4 months between April and September.
- Have a slope of less than 40 percent.
- Be located within 50 miles of a town with at least 100 people.
- Have a land use compatible with BLM and USFS uses. (USDOJ and DOE 2003)

A small area with an NDVI of at least 0.4 for 6 months is located in the western portion of the CRVFO in northwestern Garfield County (Figure 5.11-7), but none are located in the Planning Area (note that data for the Planning Area are not shown on the map). There are currently no biomass facilities and no pending applications for biomass facilities within the Planning Area. Therefore, it is unlikely that biomass production would be a feasible energy development option on top of the Roan Plateau.

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Biomass Potential

Source: BLM 2011

Figure 5.11-7 Biomass Energy Potential in the Colorado River Valley Field Office

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Table 5.11-1 Significance Screening: Renewable Energy

<i>Significance Screening Criteria*</i>	Yes	No	<i>Notes</i>
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?		X	
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?		X	
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?		X	
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?		X	
5. Would the new information present environmental consequences not envisioned in the existing EIS?		X	

Note:

** If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.*

Key:

EIS = Environmental Impact Statement

SEIS = Supplemental Environmental Impact Statement

Determination of Significance: Not significant.

Significance Rationale: The potential for renewable energy projects was found to be low to moderate, at best, and the Planning Area generally would not be a feasible location for these developments. This is consistent with the discussion of renewable energy in the 2006 Final EIS. In addition, the top of the Roan Plateau is isolated with respect to paved roads and proximity to transmission lines. Also, there are several Areas of Critical Environmental Concern (ACECs) that would prevent the development requiring significant amounts of space (e.g., 40-acre parcels needed for solar development). In addition, there are private holdings on top of the Roan Plateau that would also limit any development requiring significant amounts of space.

Preparer: Caranese, Vanessa, E., Natural Resource Specialist

5.12 PUBLIC HEALTH AND SAFETY

The continually expanding exploration and development of fluid mineral resources in the Colorado River Valley Field Office (CRVFO) area, a portion of which has occurred within the Roan Plateau Planning Area (Planning Area), and national attention on oil and gas practices have led to heightened public concern about potential impacts on human health and safety. In Garfield County, approximately 14 percent of oil and gas wells access federal mineral estate under permits from the Bureau of Land Management (BLM), while approximately 86 percent of the wells access private minerals under the purview of the Colorado Oil and Gas Conservation Commission [COGCC]. The BLM requires oil and gas operators to comply with applicable regulations designed to protect the environment and the public, as well as additional requirements imposed by the BLM, as part of the drilling permit, lease, or right-of-way (ROW) grant.

The regulation of oil and gas exploration and production activities has been exempted under a number of federal statutes, including provisions of the Clean Air Act (CAA), Clean Water Act (CWA), Safe Drinking Water Act (SDWA), and Resource Conservation and Recovery Act (RCRA), in addition to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Emergency Planning and Community Right to Know Act (the Toxics Release Inventory) (Witter et al. 2008).

Potential Risks from Spills and Releases during Transport of Natural Gas, Condensate, and Produced Water.

Oil and gas operators are responsible for understanding and abiding by all applicable hazardous materials transportation laws and regulations. The potential exists for pipelines carrying natural gas, liquid condensate, or produced water to develop leaks or ruptures during natural gas extraction, transport, and processing. Data available online (USDOT 2014) from the U.S. Department of Transportation (USDOT) Pipeline and Hazardous Materials Safety Administration (PHMSA), in Colorado for all pipelines, indicated that significant incidents occurred at the rate of approximately 0.03 per every 480 miles of pipeline (48,000 miles total). For gas gathering pipelines such as comprise most of the lines in the planning area, no significant incidents occurred during the 10-year period across the 732 miles of pipelines statewide. Including gas transmission lines, one significant occurred during the 10-year period across 7,848 miles of pipelines statewide.

Nationwide, more than 50 percent of pipeline ruptures occur as a result of heavy equipment striking the pipeline. Such ruptures would potentially cause a fire or explosion if a spark or open flame ignited the natural gas escaping from the pipeline. Pipeline design, materials, maintenance, and abandonment procedures are required to meet the standards set forth in USDOT regulations (49 Code of Federal Regulations [CFR] 192, Transportation of Natural Gas by Pipelines). In the CRVFO, oil and operators are required to maintain and implement a Spill Prevention, Control, and Countermeasures (SPCC) plan, including such cleanup and mitigation measures as required by BLM or the state.

Potential Risks to Groundwater Aquifers and Water Wells from Hydraulic Fracturing and Other Aspects of Oil and Gas Activities

Topics of recent and growing public concern, both nationally and within the CRVFO, include hydraulic fracturing (“fracking”) to enhance recovery of natural gas and associated liquid hydrocarbons and emissions to the atmosphere of natural gas (methane) and other gaseous constituents. This was not specifically addressed in the Roan Plateau Final Environmental Impact Statement (EIS).

Hydraulic fracturing has been used for more than 50 years to enhance the recovery of oil and gas hydrocarbons from bedrock by creating small fractures that function as preferential flowpaths of fluids toward the borehole. Recent advances in hydraulic fracturing technology have opened to development huge

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reserves of domestic natural gas reserves that previously could not be extracted from the rock. This advance has been realized primarily in “tight” formations, particularly deep marine shales and marlstones that have very low permeability due to very small grain size in addition to the pressure from thousands of feet of overlying strata.

Public concern about the use of hydraulic fracturing has been focused on the potential for contamination of freshwater aquifers and impacts to domestic and municipal water wells. An associated concern has involved the potential for “mini-earthquakes” caused by the creation of enough pressure within the formation to cause fractures. Potential risks associated with use of hydraulic fracturing are addressed in the sections of this ANI on Groundwater and Oil and Gas Operations.

In 2011, the COGCC published an analysis of hydraulic fracturing technology use in the state and potential risks to human health and the environment. The introduction to that report included the following paragraph at page 8:

“Hydraulic fracturing has occurred in Colorado since 1947. Nearly all active wells in Colorado have been hydraulically fractured. The COGCC serves as first responder to incidents and complaints concerning oil and gas wells, including those related to hydraulic fracturing. To date, the COGCC has not verified any instances of groundwater contaminated by hydraulic fracturing.”

In addition to public concerns about the use of hydraulic fracturing is heightened public concern about contamination of freshwater aquifers and water wells, more generally in relation to oil and gas development. A non-peer-reviewed “white paper” by Witter et al. (2008) addressed the chemicals used or produced during oil and gas development but made little reference to health or environmental statistics. However, the authors did note two situations relative to environmental exposures. One was the reported occurrence of detectable levels of methane in 135 of 184 water wells, springs, seeps, ponds, and rivers sampled during a hydrogeologic (groundwater) investigation conducted for Garfield County in 2006 (Papadopoulos 2007). That study noted that methane may have been present due to natural levels in some of the bedrock formations penetrated by the water wells or recharging the seeps, springs, and surface water, and that it may also be generated by a natural (bacterial) process within the water wells. Because the study could not identify the sources of methane, Witter et al. (2008) were unable to conclude whether any of the methane in wells and natural waterbodies sampled by Papadopoulos (2007) resulted from oil-and-gas-related activities or from a secondary generation of methane by natural bacterial processes unrelated to oil and gas.

The U.S. Geological Survey (USGS) (McMahon, Thomas, and Hunt 2011) published a detailed assessment of methane in water wells in the Silt-Rifle area of the CRVFO, within which a large portion of oil and gas development has occurred and where, due to more concentrated human populations, the number of water wells is relatively high. The study, which used various geochemical analyses to evaluate the likely origins of methane in water wells, documented methane higher than trace concentrations in four of the 27 wells. Trace concentrations are common in waters derived from the Wasatch formation, the surficial and shallow bedrock formation within which most of the non-alluvial water wells in the CRVFO are completed. The four wells were located along a belt of anoxic (low-oxygen) groundwater in the Wasatch formation, indicating a biogenic source from natural bacterial processes and not indicating methane from the gas-producing Mesaverde formation or associated with oil and gas wells. One sample did contain methane with a geochemical signature, indicating a thermogenic (deep) origin from the Mesaverde formation, the primary hydrocarbon-producing formation in the CRVFO. However, that sample also contained biogenic methane, indicating that it had moved through the Wasatch formation while migrating toward the water well. This indicates movement along a natural fracture system along axis of the Rifle-Grand Hogback Syncline. Fractures commonly form along the axis synclines (downwarped folds) and anticlines (upward folds) due to compressional and tensional forces, respectively. However, the authors also concluded that the methane migrating to that water well was unrelated to oil and gas activities.

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In addition to the potential for groundwater contamination, Witter et al. (2008) also discussed a documented occurrence of benzene and other organic compounds in surface water at seeps along West Divide Creek within the CRVFO (URS 2006). That occurrence, related to insufficient use by one oil and gas operator of surface casing and cement to isolate shallow groundwater from the bore of a private (non-BLM-administered) well, led to the enactment of more stringent requirements by COGCC, also adopted by BLM. The operator was fined, and the penalty money was used to help fund the hydrogeologic investigation cited above (Papadopoulos 2007). The COGCC (2010) also determined that migration of the methane to the seeps was not the result of hydraulic fracturing of the problematic oil and gas well.

Measures currently required by the BLM and COGCC for protecting groundwater aquifers, water wells, and surface waters (streams, springs, and seeps) are described in Section 3.2.4 of the Colorado River Valley Proposed Resource Management Plan (RMP)/Final EIS (BLM 2014). These measures include isolating deeper, hydrocarbon-producing horizons from shallower bedrock and alluvial layers that communicate with surface waters and within which freshwater wells are completed in the CRVFO. Examples include requiring setting casing to a depth below the deepest freshwater aquifer encountered and water wells in the vicinity, and cementing the casing to prevent flow of saline waters, natural gas, and associated fluids moving up the borehole from contacting the freshwater zones. In general, the CRVFO requires surface casing at depths of 800 to 1,000 feet, roughly twice the depth of the deepest water wells in the area. In specific areas, however, the COGCC and CRVFO may require surface casing to greater depths where indicated by the local geology in relation to surface waters or shallow aquifers.

Potential Health Risks from Air Emissions

Chemicals produced during oil and gas operations consist mostly of natural gas (methane) and produced water (a saltwater brine, the remnant of the ancient seas in which the deposits were laid), with a small amount of associated liquid constituents that are separated from the gas and produced water at the surface. Among the constituents of natural gas condensate are volatile organic compounds (VOCs), such as benzene, toluene, ethylbenzene, and xylenes (BTEX). Active oil and gas wells can release atmospheric pollutants due to uncaptured gases produced from the wellbore; emissions from condensate tanks, separators, vehicle exhausts, pipeline compressor engines, and open pits containing hydrocarbon fluids; and fugitive dust from access roads and other disturbed surfaces. Abandoned wells may continue to be a source of pollutant emissions if not properly plugged and capped.

As a result of the increased health concerns among residents of Garfield County, the Board of County Commissioners commissioned studies intended to characterize potential exposures to oil-and-gas-related pollutants via the air and water pathways. One non-peer-reviewed study (Coons and Walker 2008) used hypothetical emission and exposure scenarios to calculate potential risks from emissions of natural gas and associated VOCs, including the known carcinogen, benzene. For example, their calculations indicated that U.S. Environmental Protection Agency's (EPA's) acceptable lifetime (70-year) cancer risk range at distances extending approximately 500 meters (1,650 feet) downwind from an uncontrolled well with all of its natural gas production released directly to the atmosphere. By assuming a 93 percent capture rate, the authors estimated that EPA's acceptable 70-year exposure risk for a 70-year duration would extend only 75 meters (246 feet) downwind from a well with uncontrolled emissions. During normal operations, however, the actual recovery rate of natural gas and associated benzene has generally been reported by industry in the CRVFO area as greater than 99 percent, including capture and use of natural gas on site to power equipment. During flowback between completion of a well and full use of production equipment, natural gas is required to be ignited and consumed ("flaring"), a process that also destroys associated VOCs (called "green completions").

Some recent reports available online indicate much higher emission rates for methane from oil and gas fields. However, those results have been questioned on several bases, including measurements being taken

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during drilling (when releases are greater but which is transitory compared to long-term production) and individual sources indicating some operational upset or equipment failure. A summary and assessment of the recent findings is available online (Revkin 2014). Because this topic is in a state of flux, it will be considered continually during the Roan Plateau Supplemental Environmental Impact Statement (SEIS) process.

Coons and Walker (2008) also assumed uncontrolled releases of vapors from hydrocarbon fluids stored on the pad at 20 tons of VOCs per year. However, the COGCC requires emission controls on all sources exceeding 5 tons per year. Because their hypothetical exposures used atypically high emission rates, a 70-year exposure duration (compared to the 30-year life of most wells), and a location very close to a well pad and constantly downwind from the pad, the potential health consequences reported by Coons and Walker (2008) are substantial overestimates compared to reasonable scenarios for the public.

Coons and Walker (2008) also addressed reported illness rates among residents of Garfield County for a variety of afflictions, with the result that data for the county are generally within or below the reported illness rates for three other counties—Mesa, Delta, and Montrose—with much lower levels of oil and gas development. In comparing cancer rates in Garfield County to Colorado as a whole, Coons and Walker (2008) found a significantly higher rate of all cancers combined in the county than statewide for males from 1992 through 2000 and for females from 1992 through 1998. However, these periods pre-dated the rapid expansion of oil and gas development that began in the early 2000s. In contrast, cancer risks in the county were no higher than statewide rates for the period from 2001 through 2005, which included the initial expansion of oil and gas. The authors cautioned that cancer has a lag time from exposure to expression and that additional monitoring is needed. However, the assumptions used in their study—no or very low recovery of produced natural gas and associated compounds and a 70-year exposure duration in proximity to a well pad always upwind from the receptor—do not reflect likely exposures to the public.

Acknowledging the limitations of their study, the conclusion by Coons and Walker (2008) included the following statement: There is no health crisis in Garfield County, but there are some health trends that should be monitored. We cannot say conclusively that any of these health trends are directly related to the presence of natural gas industry activities or other factors.” Similarly, as noted by several comment letters received by the BLM following public review of the Colorado River Valley Draft RMP/Draft EIS, the authors were quoted in the *Glenwood Springs Post Independent* newspaper (Yates 2008) as saying that “...there is not a ‘health crisis’ because of rapid natural gas development in the county.”

Another human health risk study was conducted for Garfield County by Witter et al. (2008), and also was not a peer-reviewed study. Funded by the environmental community, this study concluded that “human health risks and social impacts are associated with oil and gas development.” Witter et al. (2008) based this conclusion largely on the types of chemicals used in, or produced by, oil and gas activities and not on documented release rates of those chemicals to the environment and exposure to the public. Thus, their study cataloged potential risks associated with uncontrolled exposures, at unspecified exposure rates, and for unspecified exposure durations. In summarizing the results of the Coons and Walker (2008) report, Witter et al. (2008) cited a higher combined cancer rate among Garfield County residents compared to statewide statistics but did not mention that the trend was true only in the 1990s, as noted in the paragraph above, and did not extend into the period from 2001 through 2005, during which natural gas production expanded. The truncation of the trend in the early 2000s may have been related to influx of new residents associated with the expansion of oil and gas development, possibly changing population demographics in terms of age or other factors related to cancer rates. The authors also noted that Garfield County has higher rates than statewide rates for chronic obstructive pulmonary disease, asthma, low birth weight, the first two of which are higher in Colorado than in the rest of the nation, despite a lower rate of tobacco use and a relatively young and fit population. The authors made no speculation as to the possible contributors to these trends. However, the fact that the majority of county and statewide residents are in urban areas instead of

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rural areas in proximity to oil and gas drilling and production suggests that the higher incidences of chronic obstructive pulmonary disease, asthma, and low birth weight are related to some other factor or combination of factors.

A more recent study of natural gas operations from a public health perspective (Colborn et al. 2011) noted the following:

- Toxic chemicals are used during both the drilling and fracturing phases of gas operations.
- Long-term health effects that may not be immediately recognized.
- Waste evaporation pits may contain numerous chemicals on the EPA's Superfund list.

The study's findings cited the difficulty of developing monitoring programs. To protect public health, the study recommended full disclosure of the contents of all products, extensive air and water monitoring, a comprehensive human health study, and regulation of hydraulic fracturing under the SDWA (Colborn et al. 2011).

In Colorado, the COGCC requires operators to maintain a list of the chemicals used in the hydraulic fracture of each well and to submit that information to an online data repository (fracfocus.org). Table 5.12-1 presents a typical list of chemicals used in hydraulic fracturing of tight gas formations, such as the Mesaverde in the CRVFO.

Table 5.12-1 Constituents of Typical Hydraulic Fracturing Operation in Tight Gas Formations

<i>Additive Type*</i>	<i>Typical Example*</i>	<i>% by Volume**</i>	<i>Function*</i>	<i>Common Use of Example Compound</i>
Acid	Hydrochloric acid	0.123	Dissolves mineral cement in rocks and initiates cracks	Swimming pool chemical and cleaner
Biocide	Glutaraldehyde	0.001	Eliminates bacteria in the water that produce corrosive or poisonous by-products	Disinfectant; sterilizer for medical and dental equipment
Breaker	Ammonium persulfate	0.010	Allows delayed breakdown of the gel	Used in hair coloring, as a disinfectant, and in manufacture of household plastics
Clay stabilizer	Potassium chloride	0.060	Creates a brine carrier fluid that prohibits fluid interaction with formation clays	Used in low-sodium table salt substitutes, medicines, and IV fluids
Corrosion inhibitor	Formic acid	0.002	Prevents corrosion of the well casing	Used as preservative in livestock feed; used as lime remover in toilet bowl cleaners
Crosslinker	Borate salts	0.007	Maintains fluid viscosity as temperature increases	Used in laundry detergents, hand soaps, and cosmetics
Friction reducer	Polyacrylamide	0.088	"Slicks" the water to minimize friction	Used as a flocculant in water treatment and manufacture of paper
Gelling agent	Guar gum	0.056	Thickens the water to help suspend the sand propping agent	Used as a thickener, binder, or stabilizer in foods

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Table 5.12-1 Constituents of Typical Hydraulic Fracturing Operation in Tight Gas Formations

<i>Additive Type*</i>	<i>Typical Example*</i>	<i>% by Volume**</i>	<i>Function*</i>	<i>Common Use of Example Compound</i>
Iron control	Citric acid	0.004	Prevents precipitation of metal oxides	Used as flavoring agent or preservative in foods
Surfactant	Lauryl sulfate	0.085	Increases the viscosity of the fluid	Used in soaps, shampoos, detergents, and as foaming agents
pH adjusting agent	Sodium hydroxide, acetic acid	0.011	Adjusts pH of fluid to maintain the effectiveness of other components	Sodium hydroxide used in soaps, drain cleaners; acetic acid used as chemical reagent, main ingredient of vinegar
Scale inhibitor	Sodium polycarboxylate	0.043	Prevents scale deposits in the pipe	Used in dishwashing liquids and other cleaners
Winterizing agent	Ethanol, isopropyl alcohol, methanol	--	Added as necessary as stabilizer, drier, and anti-freezing agent	Various cosmetic, medicinal, and industrial uses
Total Additives		0.49		
Total Water and Sand		99.51		

Notes:

*FracFocus 2014 Chemical Disclosure Registry,

**DOE 2009

Also in 2010, a study by the Colorado Department of Public Health and Environment (CDPHE) on behalf of the Garfield County Public Health Department used data collected from four monitoring sites located in proximity to oil and gas developments, of which two were in a rural area and two were in a more urban area (CDPHE 2010). This report was an extension of a previous study, the results of which were first reported in 2007 (CDPHE 2007). For cancer risks, the study concluded that “the estimated cancer risks associated with the six [contaminants of potential concern] are not likely to result in significant health impacts.” For non-cancer (chronic and acute) health hazards, the study concluded that “overall, significant non-cancer health effects are not likely to occur.” However, this does not mean that health risks from living in proximity to oil and gas activities do not exist. For example, the cancer risk calculations showed a low to moderate potential increase (1.1 to 1.7 additional cancers per 10,000 residents during a 70-year exposure duration). For non-cancer health risks, the “hazard quotient” (rating) ranged from 0.4 to 0.9, with values less than HQ = 1 indicating no “appreciable” health impacts. The study did not compare data for the four sites analyzed to air concentrations in locations remote from oil and gas activities in the county or elsewhere in the state.

McKenzie et al. (2012) used monitoring data collected by the Garfield County Public Health Department from a fixed station “in the midst of rural home sites and ranches and [natural gas development] during both well development and production” as well as “grab samples” collected from the perimeters of four well pads, at distances of 130 to 500 feet from the well pad center. The data were extrapolated to include five years of well development (construction, drilling, and completion) at a pad followed by 20 to 30 years of production and maintenance activities (30 years total duration). Although the report shows higher risks within 0.5 mile of an oil and gas well pad, none of the risks were significantly elevated for either cancer or

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non-cancer health effects for any modeled receptors. In addition, development period of 5 years at a given pad is much longer than the typical period of a few months to a year.

Colborn et al. (2011) reported on potential health risks of atmospheric emissions from a single multi-well pad across a period of 15 months before, during, and following drilling of 16 oil and gas wells, including hydraulic fracturing. Pre-drilling background data were collected July through September. The sampling site was described as a rural residence located 0.7 mile from the well pad, located near Battlement Mesa in the western part of the CRVFO area. The authors reported “no correlation between detected emissions...and wind direction” and inferred that atmospheric inversions may explain why concentrations were higher during winter and with calm winds. Indeed, with one exception, concentrations were much lower outside the period from mid-December through mid-January despite drilling operations from late October through late March. Data presented did not include concentrations during baseline sampling prior to activities at the pad. The authors did not assert that measured concentrations represented an acute or chronic health risk, but they did express concern about the concentrations of polycyclic aromatic hydrocarbons (PAHs) in relation to mental development of children exposed prenatally (before birth). That concern was based on studies in New York City and Poland in which pregnant women carried personal air monitors. The authors noted the difficulty in comparing results of studies using personal monitors to those with stationary samplers.

Early in 2014, McKenzie et al. (including some of the same co-authors as in her 2012 paper) reported on a comparison of birth outcomes (including birth defects) in relation to residential proximity of the mothers to oil and gas operations in rural Colorado counties. Outcomes addressed included congenital heart defects (CHDs) and neural tube defects (NTDs) such as spina bifida, as well as oral clefts, preterm births, and term low birth weight. The study assessed a total of 124,842 births in Garfield County during the period from 1996 to 2009. Data were grouped by relative proximity of the mother’s residence to a natural gas well (less than 10 miles versus more than 10 miles). The intensity of development within 10 miles was classified as low, medium, and high. Data were compiled from public birth records. Other variables included ethnicity (White Hispanic/White Non-Hispanic), gender of the infant, maternal use/non-use of tobacco, maternal education, the number of times the mother had given birth, elevation of the residence, and straight-line distance from the nearest natural gas well. The results of the study, when adjusted for the other variables, showed a 30 percent greater occurrence of CHDs (173 vs. 133 per 10,000) for the group in the highest one-third in terms of wells within 10 miles of the residence. For NTDs, the number in the same group was twice as great (8.4 vs. 4.2 per 10,000), although the data were adjusted only for residence elevation because of the small number of total incidents (i.e., not adjusted for ethnicity, tobacco use, alcohol use, etc.) Interestingly, the rate of NTDs was lower in the low- and medium-intensity development groups compared to mothers residing more than 10 miles from a well. Also interestingly, oral clefts, preterm birth, and low birth weight occurred slightly less frequently for mothers residing less than 10 miles from a well, highlighting the role of other variables and the difficulty of analysis with small sample sizes.

McKenzie et al. (2014) cited earlier studies in Texas and Sweden in which exposure to benzene correlated with a frequency of NTDs. They also cited positive correlations between elevated exposure to components of engine exhaust and CHD and NTD birth defects (in China and California). Limitations of the study included:

- The inability to address other variables potentially associated with birth defects.
- The lack of an exposure pathway that results in elevated ambient concentrations of benzene or other potential teratogenic (birth-defect-causing) agents causally linked to oil and gas activities at the distances used.
- The lack of more extensive information on familial and medical history of the mothers.

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Because of these limitations, the authors concluded only that the results are suggestive of a possible link and warrant further investigation. In a news release on February 9, 2014 (*coloradoan.com*), the Chief Medical Officer for CDPHE highlighted the study's limitations, concluding that "Many factors known to contribute to birth defects were ignored" and that "people should not rush to judgment."

Based on the studies cited above, it is clear that some chemicals emitted to the atmosphere during oil and gas development have the potential for health effects with certain types, levels, and durations of exposure. However, emitted concentrations diffuse rapidly with increasing distance from the well pad, and exposures to members of the public are of much shorter duration and at much lower concentrations than those associated with chronic health effects. The recent statewide study of birth defects in relation to oil and gas activity, as cited above, has similar limitations of not being causally linked to exposure to one or more specific pollutants at demonstrably elevated levels or related to oil and gas. Consequently, no actual, existing health effects from oil and gas activities in western Garfield County have been documented. However, increasing levels of oil and gas development in combination with increasing human population in the County, and the results of likely future studies, could lead to a different conclusion. For the present, the BLM and COGCC ensure adherence to state and federal health-related standards and guidelines during oil and gas exploration and development and apply mitigations intended to minimize exposures to potentially harmful compounds. Future tightening of health-based standards by state and federal agencies would be applied and enforced for future projects through conditions of approval (COAs) and through the BLM's and COGCC's regulatory authority.

Risks to Worker Health and Safety

In terms of worker health and safety, Witter et al. (2008) presented data indicating that the rate of illness, injury, and fatality among oil and gas workers in Garfield County is higher than in most job sectors. Looking at their data in detail shows that fatality rates among oil and gas workers are approximately the same as for agricultural workers and that illness and injury rates are lower than for both agricultural and construction workers. Witter et al. (2008) also reported that "rapid industrial change" can have deleterious impacts on the psychosocial welfare of the local population in terms of increased crime and drug use but added that "further study is needed to determine if industrial development, in the form of oil and gas drilling, is contributing [to an increase in these rates] in Garfield County." To date, no further study has been conducted.

Potential Risks from Hydrogen Sulfide Emissions

At this time, the only known hydrogen sulfide within the boundaries of the CRVFO is associated with produced water. The most likely cause of the hydrogen sulfide is the introduction of bacteria during workover or completion activities. Mitigation of this situation is being accomplished by the injecting of biocides to reduce the bacterial action producing the hydrogen sulfide. Additionally, testing of the gas streams for hydrogen sulfide is being conducted during the normal sampling periods.

Summary

Since publication of the Roan Plateau Final EIS (BLM 2006), public awareness of, and concern about, potential health effects of oil and gas exploration and development have increased dramatically. This concern includes oil and gas activities in general in relation to potential exposure routes to humans through drinking water or air. National attention on the use of hydraulic fracturing has added to the public's concern.

In the Roan Plateau Final EIS (BLM 2006), human health effects of air emissions from oil and gas development were analyzed using a regional air quality model. However, that model did not address potential increases in levels of ozone, nor did it address the cumulative impacts of reasonably foreseeable

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oil and gas development outside the Planning Area. In addition, use of hydraulic fracturing, although a standard operating practice in the industry for several decades, was not specifically analyzed. Consequently, the SEIS will need to include a more comprehensive analysis of potential adverse impacts of oil and gas projects on human health.

Additional Information Needed: None.

Table 5.12-2 Significance Screening: Public Health and Safety

<i>Significance Screening Criteria*</i>	Yes	No	Notes
1. Does the existing (Final EIS) description present a significantly different picture than what is known of the environment today? Has new information arisen that changes this picture (e.g., new inventory results, newly identified resource concerns, new assumptions)?	X		Hydraulic fracturing and the pace of development have raised new circumstances with regard to human health and safety.
2. Has new policy or law come into effect that needs to be addressed (e.g., planning policy, inventory requirements)?	X		New Colorado rules for emissions from oil and gas facilities and production. (CAQCC a, b, and c)
3. Are these changes relevant to the analysis of the environmental concerns (i.e., would the new information change the impacts measurably)?	X		
4. Would the analysis present new information to the decision maker necessary to make an informed decision (e.g., would the new information show meaningfully different impacts between alternatives)?	X		Potentially, but may require some analysis to determine.
5. Would the new information present environmental consequences not envisioned in the existing EIS?	X		

Note:

** If yes to questions 1 or 2, then continue to numbers 3-5. If no, then document and dismiss issue from analysis in the SEIS. If yes to one or more of questions 3-5, the issue is significant and should be carried forward for analysis in the SEIS.*

Key:

EIS = Environmental Impact Statement

SEIS = Supplemental Environmental Impact Statement

Determination of Significance: Significant.

Significance Rationale: New information is significant in the context of changed development circumstances and new resource concerns.

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