

## 1    **3.0       Affected Environment**

### 2    **3.1       Introduction**

3    This chapter characterizes the existing environment of the planning area. Although all environmental  
4    resources are described to some degree, emphasis is placed on those resources managed by the BLM  
5    that have the potential to be influenced by the plan amendment alternatives described in Chapter 2.0.  
6    This document is tiered to the RFO RMP Final EIS (BLM 2008a) and ROD (BLM 2008b), which provide  
7    the primary source of baseline information. Additional information for all resources in the planning area  
8    can be found in Chapter 3.0 of the Rawlins RMP Final EIS (BLM 2008a). For ease of reference, the  
9    sections below are arranged alphabetically.

### 10   **3.2       Air Resources**

11   Section 3.2 from Chapter 3.0 of the Rawlins RMP Final EIS (BLM 2008a, pp. 3-2 to 3-9) provides a  
12   general description of air resources in the planning area and is herein incorporated by reference. Section  
13   3.2 of the Rawlins RMP Final EIS (BLM 2008a) provides an overview of air resource conditions including  
14   climate, temperature, precipitation, dispersion, and wind velocity (Sections 3.2.1 through 3.2.5; pp. 3-2 to  
15   3-3), as well as elements of air quality including ambient air quality concentrations, visibility, and  
16   atmospheric deposition (Section 3.2.6; pp. 3-3 to 3-9). Relevant information is summarized in this  
17   section.

18   Climate and air quality influence visibility within the planning area. The climate of the planning area is  
19   classified as desert and semi-arid steppe (Martner 1986; Trewartha and Horn 1980). Steppe climate is  
20   characterized by large seasonal variations in temperature (cold winters and warm summers) and by  
21   precipitation levels that are low but still sufficient for the growth of short, sparse vegetation. Mean annual  
22   temperature is 43 degrees Fahrenheit (°F) in Rawlins. Mean annual precipitation in Rawlins ranges from  
23   5 inches in dry years to 13 inches in wet years. The annual average wind speed in Rawlins is relatively  
24   strong at 12 miles per hour (Martner 1986), and wind direction is generally from the west-northwest,  
25   west, or west-southwest (BLM 1999).

26   Criteria air pollutants in the planning area are in compliance with the National Ambient Air Quality  
27   Standards and Wyoming Ambient Air Quality Standards. Nitrogen, sulfur, and ozone concentrations are  
28   consistent or slightly higher than concentrations in other remote areas. Depositions of nitrogen and sulfur  
29   compounds have consistently met the acceptable level of deposition totals (Fox et al. 1989).

30   Planning area visibility is measured by six Interagency Monitoring of Protected Visual Environments  
31   monitoring stations. The Brooklyn Lakes monitoring station installed in 2001 near Centennial, Wyoming  
32   demonstrated that visibility on clear days reaches 201 miles, while visibility on hazy days reaches  
33   85 miles. Visibility data from a long-term study (Wyoming 2003) suggest that visibility is comparable to  
34   visibility at other sites around Wyoming.

### 35   **3.3       Cultural Resources**

36   Section 3.3 and Section 3.13.2 from Chapter 3.0 of the Rawlins RMP Final EIS (BLM 2008a, pp. 3-10 to  
37   3-18, 3-92 to 3-93) provides a general description of cultural resources in the planning area and is herein  
38   incorporated by reference. Section 3.3 of the Rawlins RMP Final EIS (BLM 2008a) provides an overview  
39   of cultural resources and subregions found in the planning area (pp. 3-10 to 3-11 and Table 3-3); a  
40   discussion of prehistoric sites and associated periods relevant to the planning area (Section 3.3.2,  
41   pp. 3-11 to 3-13); historic area influences and associated sites (pp. 3-14 to 3-17); and resources that are  
42   considered sensitive and potentially sacred to modern Native American tribes (Section 3.3.3, pp. 3-17).

1 Descriptions of the relevant history of the historic trails that cross the planning area are provided in  
2 Section 3.13.2 (pp. 3-92 to 3-93). Relevant information is summarized in this section.

3 Archeological investigations indicate that prehistoric people inhabited the planning area. Prehistoric sites  
4 within the planning area include lithic scatters, lithic material quarries, open camps, stone circles, rock  
5 shelters, house pits, rock cairns and alignments, game drive lines and kill sites, brush or pole structures,  
6 rock art, and human burials.

7 Additionally, historic-age sites, including expansion-era trails, freight roads, and railroads are also located  
8 in the planning area. The historic era began in the early 1800s with the arrival of well-organized fur  
9 trading expeditions in the region. Major themes represented by historic cultural resources include  
10 ranching, transportation, and mining. Remnants of the transcontinental Union Pacific Railroad (UPRR)  
11 are located within the planning area. The railroad was constructed through the southern Wyoming  
12 Territory in 1867 and 1868. The original UPRR grade was abandoned in 1901. The Lincoln Highway  
13 eventually followed the UPRR grade, and was part of the first national coast to coast modern highway  
14 system.

15 There are four historic trails within the planning area: the Overland Trail, Cherokee Trail, Rawlins to  
16 Baggs Road (which is contained entirely within the CCSM planning area and is not being analyzed  
17 herein, and the Rawlins to Ft. Washakie Road. These historic transportation routes are managed by the  
18 BLM according to the policies established in Manual 6280 (BLM 2012a) to preserve and protect the  
19 historic values of the trails, and to ensure they are available for appropriate uses by present and future  
20 generations.

21 Management objectives in regards to these trails include: 1) developing management plans for historic  
22 trails, or segments of historic trails, in areas of high risk for development or at high risk for adverse  
23 effects; 2) maintaining setting for those contributing portions of historic trails where setting is an important  
24 aspect of integrity by utilizing viewshed management tools; 3) monitoring the condition of contributing  
25 portions of historic trails that are known to be under threat from development; and 4) maintaining an  
26 inventory and evaluating trail segments and associated sites for contributing or noncontributing status.

27 Both the Cherokee and Overland trails are currently being evaluated for National Trail designation  
28 through the National Trail Feasibility Study. This study has been authorized through an Act of Congress  
29 to determine the feasibility and desirability of designating a trail route as a National Scenic and Historic  
30 Trail (NSHT). As set forth in the new NSHT guidance (BLM Manual 6280 [BLM 2012a]), management  
31 decisions for trails recommended as suitable, but not yet designated, should take into account significant  
32 trail values, characteristics, and settings, so as not to compromise potential future Congressional action  
33 to designate these trails as National Trails. The following should be considered in formulating  
34 alternatives and analysis: 1) management of the values, characteristics, and settings, and the purposes  
35 for which a trail is being studied, or has been recommended as suitable; 2) retention of public lands  
36 under study, or recommended as suitable, in public land ownership; 3) methods to avoid adverse  
37 impacts to the trail tread or trace and setting, including minimizing or mitigating techniques, and the  
38 development and application of best management practices; and 4) closure or restriction of areas to  
39 maintain the trail under study, or the recommended trail (BLM 2012a).

40 Of greatest concern are visual effects to cultural resource sites for which the historic setting is an  
41 important aspect of integrity and where it contributes to eligibility to the NRHP. These may include, but  
42 are not limited to, historic trails, districts, structures, as well as to sites of traditional, cultural, or religious  
43 significance to Native Americans.

#### 44 **3.4 Wildland Fire and Fuels**

45 Section 3.4 from Chapter 3.0 of the Rawlins RMP Final EIS (BLM 2008a; pp. 3-18 to 3-20) provided a  
46 general description of wildland fire and fuels in the planning area, and is herein incorporated by  
47 reference. Section 3.4 of the Rawlins RMP Final EIS (BLM 2008a) provided an overview of the wildland

1 fire and fuels management program (pp. 3-18) and the primary ignition sources and potential for wildland  
2 fire occurrence in the planning area (Section 3.4.1, pp. 3-18 to 3-19). Section 3.4 of the Rawlins RMP  
3 Final EIS (BLM 2008a) also discusses how fuels are managed (Section 3.4.2, pp. 3-19), the use of  
4 wildland fire (Section 3.4.3, pp. 3-19), the role of wildland fire in plant communities (Section 3.4.6,  
5 pp. 3-19), and emergency stabilization and rehabilitation (Section 3.4.7, pp. 3-20). Wildland Urban  
6 Interface (WUI) areas (Section 3.4.4, pp. 3-19) and community assistance with wildfire suppression  
7 (Section 3.4.5) are also discussed. Relevant information is summarized in this section.

8 Wildland fire and fire suppression, fuel treatments, and fuel loads influence the visual character of the  
9 planning area, and VRM can affect how treatments are conducted. The response to wildland fires in the  
10 planning area varies according to the evaluation of several factors, such as cause of the fire, public  
11 safety, weather and fuel conditions, visual resources, and resource management objectives. Lightning is  
12 the primary ignition source for natural fires and the majority of strikes occur at higher elevations. The  
13 majority of human-caused fires occur along U.S. I-80, Interstate 25 (I-25), and railroad corridors.

14 Drought and fire suppression have altered natural fire cycles and vegetation composition within some  
15 plant communities. This alteration could result in undesirable fire behavior and effects. Vegetation  
16 treatments, including prescribed fire, mechanical, chemical, and biological treatments, are used to  
17 reduce unnatural fuel loads and restore desired ecological conditions. In areas where private property  
18 would not be endangered, wildland fires are sometimes utilized as vegetation treatments. Within the  
19 planning area, areas with less of a need for suppression include the area west of SH 789, disconnected  
20 areas in the northwest of Pathfinder Reservoir, and Shirley Basin bounded on the west by SH 77 and on  
21 the east by SH 487.

22 There is a greater need to suppress wildland fires in WUI areas. In the planning area, WUI areas total  
23 approximately 215,000 acres and contain 61 at-risk communities. WUI areas are found in five general  
24 locations in the planning area: near Baggs along SH 70, along the North Platte River Drainage where the  
25 river flows out of Medicine Bow National Forest, the eastern edge of Medicine Bow National Forest along  
26 SH 10, north of I-80 near Curt Gowdy State Park, and the northern reaches of Seminoe Reservoir  
27 extending to the northern edge of the RFO boundary. These areas receive priority for fuel reduction  
28 treatments. Map 2-1 of the Rawlins RMP ROD (BLM 2008b) displays fire management areas in the  
29 planning area.

30 RFD/RFA noted in Appendix 33 of the 2008 RMP/ROD (pp. A33-1, Table A33-2, BLM 2008a,b) has  
31 been updated as follows:

- 32 • WUI specific actions (burning) – Treat approximately 20 acres/year; and
- 33 • Mechanical and Chemical Treatments – Treat approximately 20 acres/year.

### 34 **3.5 Forest Management**

35 Section 3.5 from Chapter 3.0 of the Rawlins RMP Final EIS (BLM 2008a, pp. 3-21 to 3-23) provided a  
36 general description of forest management in the planning area, and is herein incorporated by reference.  
37 Section 3.5 of the Rawlins RMP Final EIS (BLM 2008a) provided an overview of forest management  
38 (pp. 3-21) and a detailed description of the forest communities on Elk Mountain (Section 3.5.2, pp. 3-22  
39 to 3-23). Relevant information is summarized in this section.

40 Forest resources influence the visual character of the planning area, and VRM can affect how forest  
41 management activities are conducted. Forested areas are located mainly within the mountainous regions  
42 of the planning area which include Shirley Mountain, Elk Mountain, Ferris Mountains WSA, Seminoe  
43 Mountain, Bennett Mountain, Powder Rim, and the Laramie Peaks. Forested acreage accounts for  
44 approximately 1 percent of the total planning area, which is approximately 196,934 acres. Overall forest  
45 health varies depending on location. Lack of fire is historically part of the natural forest cycle and has  
46 created a susceptibility to diseases such as dwarf mistletoe, mountain pine beetle, and white pine blister

1 rust. Susceptibility to diseases is caused by an extended period of warmer winters that has allowed  
2 epidemic numbers of beetles to over winter. Periodic lack of fire has resulted in large quantities of  
3 standing dead timber within the forested areas. Additionally, lack of fire in the forest cycle has resulted in  
4 encroachment of conifers on aspen stands, which increases competition for nutrients, and allows aspen  
5 stands to become over-mature, which makes them more susceptible to disease and insect infestation,  
6 thus limiting their ability to regenerate. These factors, combined with an overall decrease in timber  
7 harvesting over the last decade, have resulted in a buildup of biomass within the forested areas. The  
8 majority of the commercial timber exists within the Shirley Mountain and Elk Mountain forests.

9 The Shirley Mountains are located entirely within the planning area northeast of Seminole Reservoir and  
10 consist of state, private, and BLM-administered lands. The portion that consists of public land is  
11 approximately 22,843 acres. The condition of the forest differs considerably from the forest stands on  
12 private land due to differences in management practices. On public lands, the 9,860 acres of lodgepole  
13 pine forest type is relatively healthy but will begin to experience a decline in productivity due to the fact  
14 that the forest is in the mature age class as a result of a lack of fire in the forest system. Pine beetle and  
15 dwarf mistletoe are present within the forest. The spruce-fir forest type is dominated by subalpine fir with  
16 occasional Engelmann spruce. This forest type occupies approximately 330 acres and is an even aged  
17 and fairly young stand that exists in isolated patches devoid of the lodgepole pine stands. However,  
18 subalpine fir saplings have become established on approximately 5,877 acres of lodgepole pine and  
19 aspen forest. The aspen forest type comprises approximately 810 acres and is typically found on steep  
20 rocky slopes, or low wet areas. Conifer encroachment will likely replace the aspen stands in time unless  
21 fire or land management techniques interfere. The woodland forest type (limber pine and juniper)  
22 occupies the majority of the Shirley Mountains (approximately 11,843 acres) and is experiencing an  
23 overall increase in tree density. Seedlings are becoming established in open areas, resulting in a  
24 reduction of grass and forb species.

25 The forest on Elk Mountain is located in the southeast quarter of Carbon County. The 5,670-acre area  
26 consists of lodgepole pine, spruce-fir, aspen, and woodland forest types. Due to past cutting practices,  
27 insect infestation, and fire suppression, the overall health of the forest is poor. Dwarf mistletoe occurs on  
28 all coniferous species, and pine beetle infestation has resulted in large amounts of standing dead timber.  
29 The 1,083 acres of lodgepole pine forest is overcrowded and exhibits an unbalanced mature even-age  
30 class stand structure. The spruce-fir forest is approximately 2,486 acres and is composed of subalpine fir  
31 and Engelmann spruce. The age structure is immature and in the process of becoming established  
32 under lodgepole pine stands. Aspen stands are heavily diseased and in poor quality. They eventually will  
33 be replaced by a spruce-fir climax community. The woodland forest type (mainly limber pine) typically  
34 occupies drier south facing slopes, but is invading the sagebrush cover type in some locations and could  
35 create a desirable environment for other tree species in several decades. Map 3-1 of the Rawlins RMP  
36 Final EIS (BLM 2008a) displays forested lands and lands with potential for commercial harvest in the  
37 planning area.

38 The RFD/RFA for forest management has been updated from the 2008 RMP/ROD (Table A33-1,  
39 pp. A33-1, BLM 2008b) as follows:

- 40 • Removal per decade throughout the entire planning area: 500 thousand board feet (MBF) to  
41 1 million board feet (MMBF);
- 42 • Average clear-cut size per year: 10 acres;
- 43 • Acres treated by implementing Stewardship and Service Contracts to comply with current policy,  
44 (i.e., Healthy Forest Initiative and Healthy Forest Restoration Act of 2003)—hazardous fire fuels  
45 reductions, biomass removal, piling and burning, firewood removal through sales/trade, and all  
46 forest health treatments per year: 10 to 100 acres;
- 47 • Biomass removal through fuels reduction to promote forest health and productivity per year:  
48 50 to 100 tons;

- 1 • Biomass removal in the form of firewood (by sales to the public) per year cords: 100 to
- 2 200 cords;
- 3 • Commercial and pre-commercial thinning of stands consisting of post/pole, Christmas tree, and
- 4 wildling (sales to the public) per year: 500 to 1,500 trees;
- 5 • Average timber sale size (select/clear cuts): 20 acres (max select cut size)/10 acre (max
- 6 clear-cut size);
- 7 • Average MMBF removal per timber sale (dependent on density of the stand): 20 to 85 MBF; and
- 8 • Acres treated by commercial and pre-commercial thinning of stands consisting of post/poles,
- 9 Christmas trees, and wildlings (sales to the public) per year: 30 to 100 acres.

### 10 3.6 Lands and Realty

11 Section 3.6 from Chapter 3.0 of the Rawlins RMP Final EIS (BLM 2008a, pp. 3-24 to 3-26) provided a  
 12 general description of lands and realty in the planning area, and is herein incorporated by reference.  
 13 Section 3.6 of the Rawlins RMP Final EIS (BLM 2008a) provided an overview of lands and realty in the  
 14 planning area (pp. 3-24); land ownership adjustments and consolidations (Sections 3.6.1 and 3.6.5,  
 15 pp. 3-24 and 3-26); withdrawals and classifications on land or minerals to protect resource values or  
 16 existing facilities (Section 3.6.2, pp. 3-25); and existing leases for energy and minerals and transportation  
 17 and utility ROWs (Sections 3.6.3 and 3.6.4; pp. 3-26). Relevant information is summarized in this section  
 18 and augmented with current information for leases and ROWs.

19 The most prominent land use feature in the planning area is a large swath of land that is divided into a  
 20 checkerboard pattern of ownership. The swath of land is approximately 40 miles wide and runs from east  
 21 to west across the entire planning area. In this area, ownership is divided among private, state, and  
 22 public land. The checkerboard pattern, with alternating sections of mainly private and public land, occurs  
 23 20 miles to the south and north of the original UPRR line. Each section in the checkerboard is one  
 24 square mile. Due to the variable, fractured landownership in the checkerboard, management of  
 25 resources and resource uses on these parcels can be difficult.

26 Right of way grants occur throughout the planning area. ROWs are encouraged to be placed in utility  
 27 corridors designated in the RMP, but are authorized throughout the RFO on a site-specific basis. ROWs  
 28 authorized under the authority of Title V of the FLPMA include ROWs for roads, transmission lines,  
 29 communication lines (buried or above ground), communication sites and systems, industrial facilities  
 30 (pipeline compressor stations, produced water disposal facilities, split estate oil and gas wells, etc.),  
 31 water pipelines, ditches and canals, and wind energy infrastructure (meteorological towers, wind  
 32 turbines, and transmission lines). Pipeline ROWs for the transportation of refined products (i.e., oil and  
 33 natural gas) are authorized under the authority of Section 28 of the Mineral Leasing Act. The majority of  
 34 existing infrastructure leases and ROW grants in the planning area are for oil and gas, which is  
 35 concentrated in the western third of the planning area (**Figure 3-1**). Other leases and ROW grants in the  
 36 planning area have been designated for transportation, wind energy, and other utilities. **Figure 3-2**  
 37 depicts the current infrastructure and ROWs.

38 Wind site testing and monitoring application areas comprise approximately 1,246,125 acres of the  
 39 planning area (**Table 3-1**). Approximately 742,911 acres of BLM-administered public land within the  
 40 planning area have high wind potential (defined as areas with wind classes 5 through 7<sup>1</sup>) for wind energy

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<sup>1</sup> Wind resources are characterized by the NREL wind-power density classes, ranging from Class 1 (the lowest) to Class 7 (the highest). Good wind resources (e.g., Class 4 and above, which have an average annual wind speed of at least 15.7 to 16.8 mph at a 50-m height) are the minimum requirement for large wind turbine systems, but higher wind classes are more desirable for optimum power output. For the purposes of this Plan Amendment, areas with high wind potential were classified as areas with wind resources of Class 5 (excellent; 16.8 to 17.9 mph at 50 m), Class 6 (outstanding; 17.9 to 19.7 mph at 50 m), or Class 7 (superb; >19.7 mph at 50 m). Estimates of reasonably foreseeable wind energy development activity were developed from analysis of current wind site testing and monitoring application areas and areas with high wind potential. These estimates were

1 development (**Figure 3-3**), based on the wind power resource estimates map for the State of Wyoming,  
 2 released by the National Renewable Energy Laboratory (NREL) on June 6, 2002. As of July 2013, there  
 3 are 26 approved wind energy site-testing and monitoring project area ROWs, containing approximately  
 4 272,025 acres of public land, within the planning area. The project area ROWs range from 1,297 acres  
 5 to over 60,000 acres, with an average of 21,250 acres. The existing project areas are mainly  
 6 concentrated in areas which are shown to have higher wind development potential by the NREL, but not  
 7 all of the acres within project areas have a high wind potential rating. In addition to the 26 approved  
 8 project areas, there are 8 pending applications.

**Table 3-1 Wind Resources and Application Areas within the Planning Area**

Feature	Acres within the Planning Area
Areas with high wind potential	742,911
Wind site testing and monitoring application areas	272,025
Wind Site Testing and Monitoring Application Areas with High Wind Potential	231,189

9

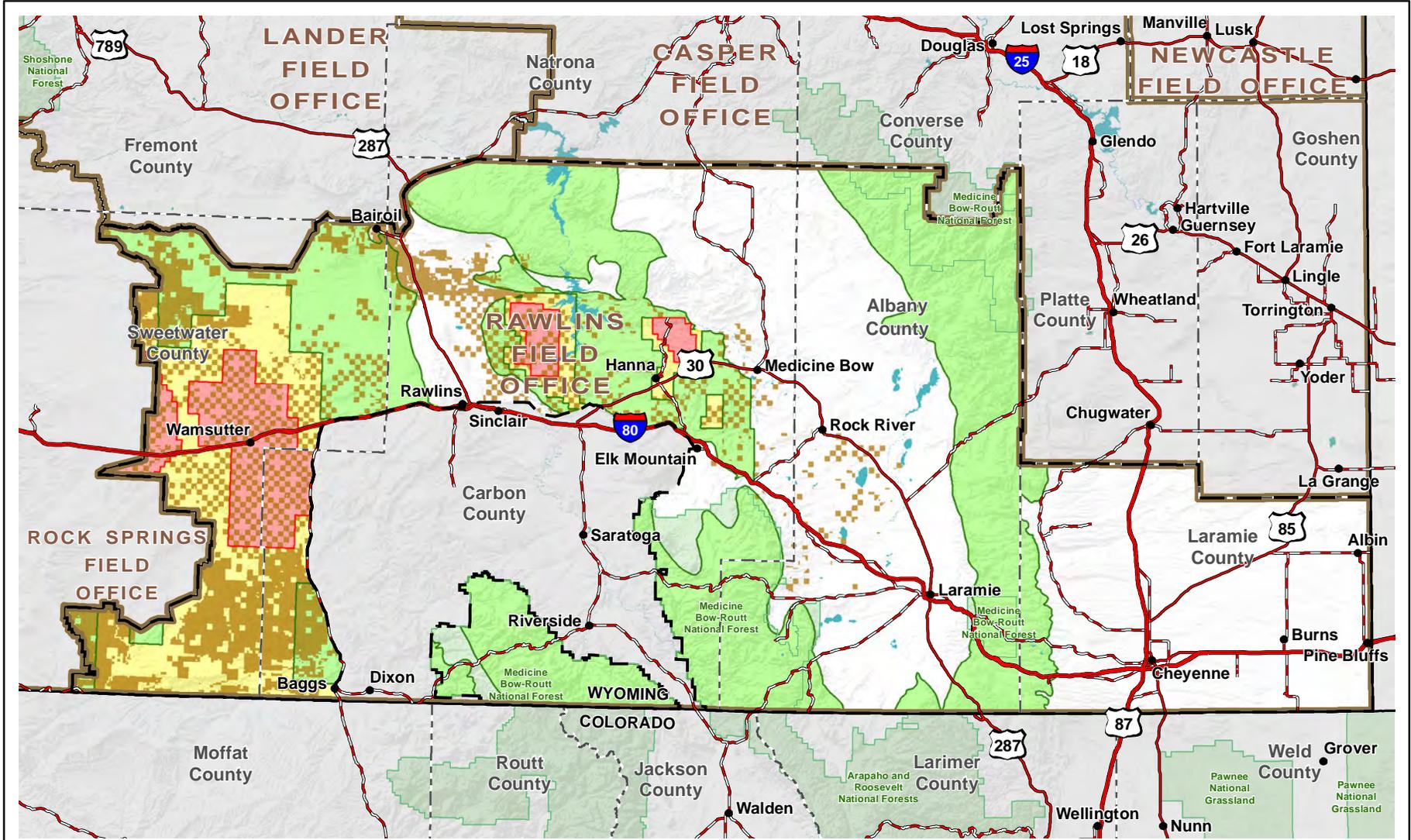
10 There is currently one wind energy development project ROW (Wyoming Wind Project), which has 34  
 11 turbines on approximately 17,000 acres of public lands on Foote Creek Rim near Arlington, Wyoming  
 12 (additional turbines associated with the Foote Creek Rim Project are on private property). The Wyoming  
 13 Wind Project, constructed in 2000, had an initial output of more than 85 megawatts (MW) and consisted  
 14 of 68 turbines. After subsequent construction phases, the project now totals 183 turbines with a  
 15 generating capacity of 134.7 MW. Rocky Mountain Power operates the Seven Mile Hill I and II wind  
 16 energy development projects between Hanna and Medicine Bow, Wyoming. The Seven Mile Hill  
 17 projects, which have all turbines located on private land, have a short segment of road across public land  
 18 (ROW) to access the project areas. In addition, there are at least three wind development projects  
 19 located entirely on private land within the planning area. The Dunlap Ranch wind project is operated by  
 20 Rocky Mountain Power north of Medicine Bow, Wyoming, and two other wind projects are located near  
 21 Cheyenne, Wyoming; one to the west and the other to the south. **Figure 3-3** illustrates the location of the  
 22 current wind site testing and monitoring application areas within the planning area and where these  
 23 locations overlap with areas of high wind potential.

24 Existing major transportation and utility ROW corridors (Designated Corridors) (Map 2-2) are conducive  
 25 to the placement and development of future ROWs. Designated Corridors are consistent with the ROD  
 26 for the West-wide Energy Corridor Programmatic EIS, which evaluated the environmental impacts of  
 27 designating corridors in the western U.S., as directed by the Energy Policy Act of 2005.

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used to aid in the analysis of environmental consequences. Because they are general, the development potential classifications are appropriate for planning purposes, but they are not intended to predict future activity or the locations of new wind energy projects.

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- Legend**
- Planning Area
  - BLM Field Office Boundary
  - National Forest/Grassland
  - Authorized BLM Mineral Lease
  - Areas with Oil and Gas Development Potential - High O&G Potential
  - Moderate O&G Potential
  - Low O&G Potential

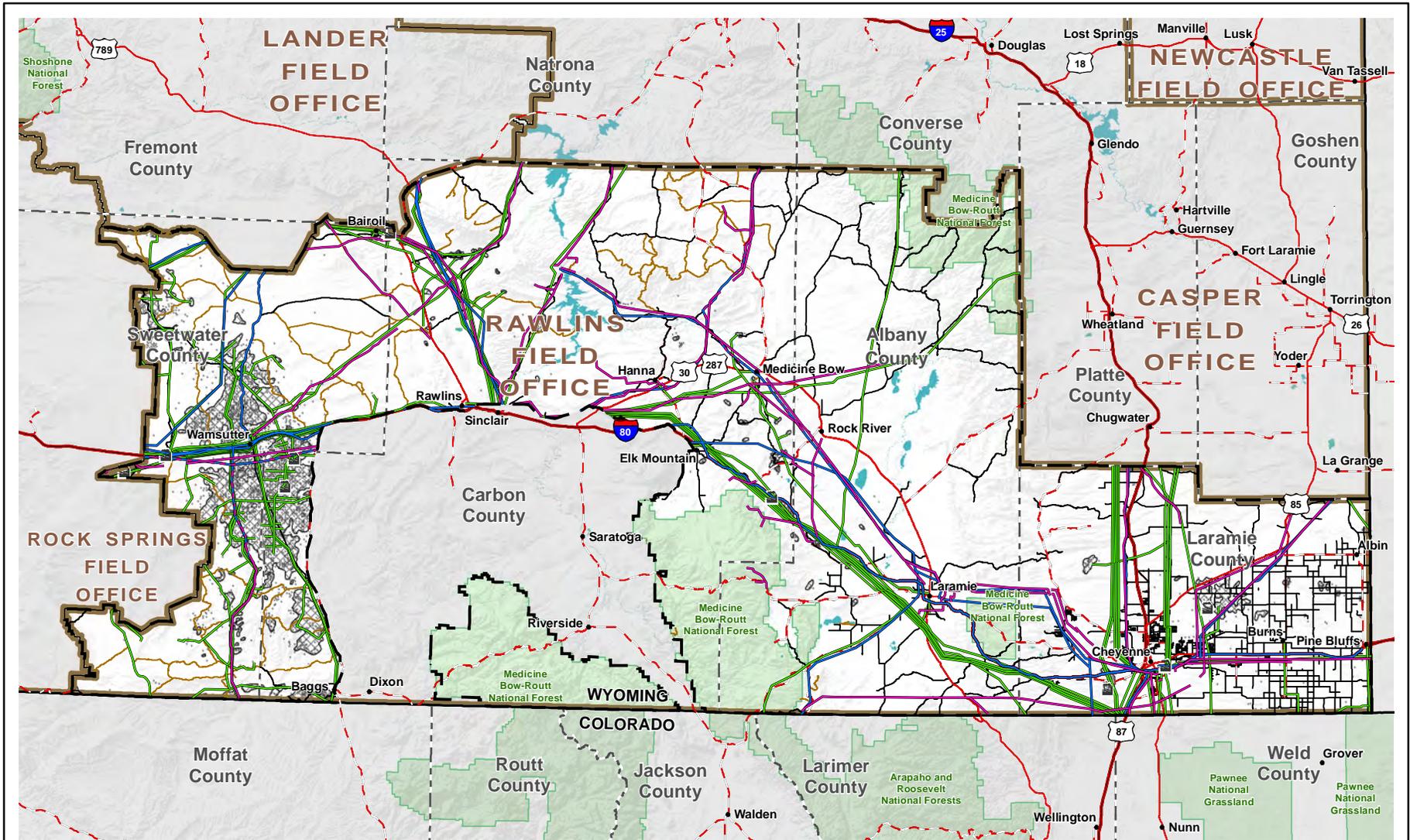
**Rawlins Field Office  
RMP-A/EA**

**Figure 3-1  
High, Moderate, and Low Oil and Gas  
Potential within the Planning Area**

0 10 20 40 Miles  
0 10 20 40 Kilometers

1:1,700,000

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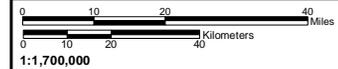


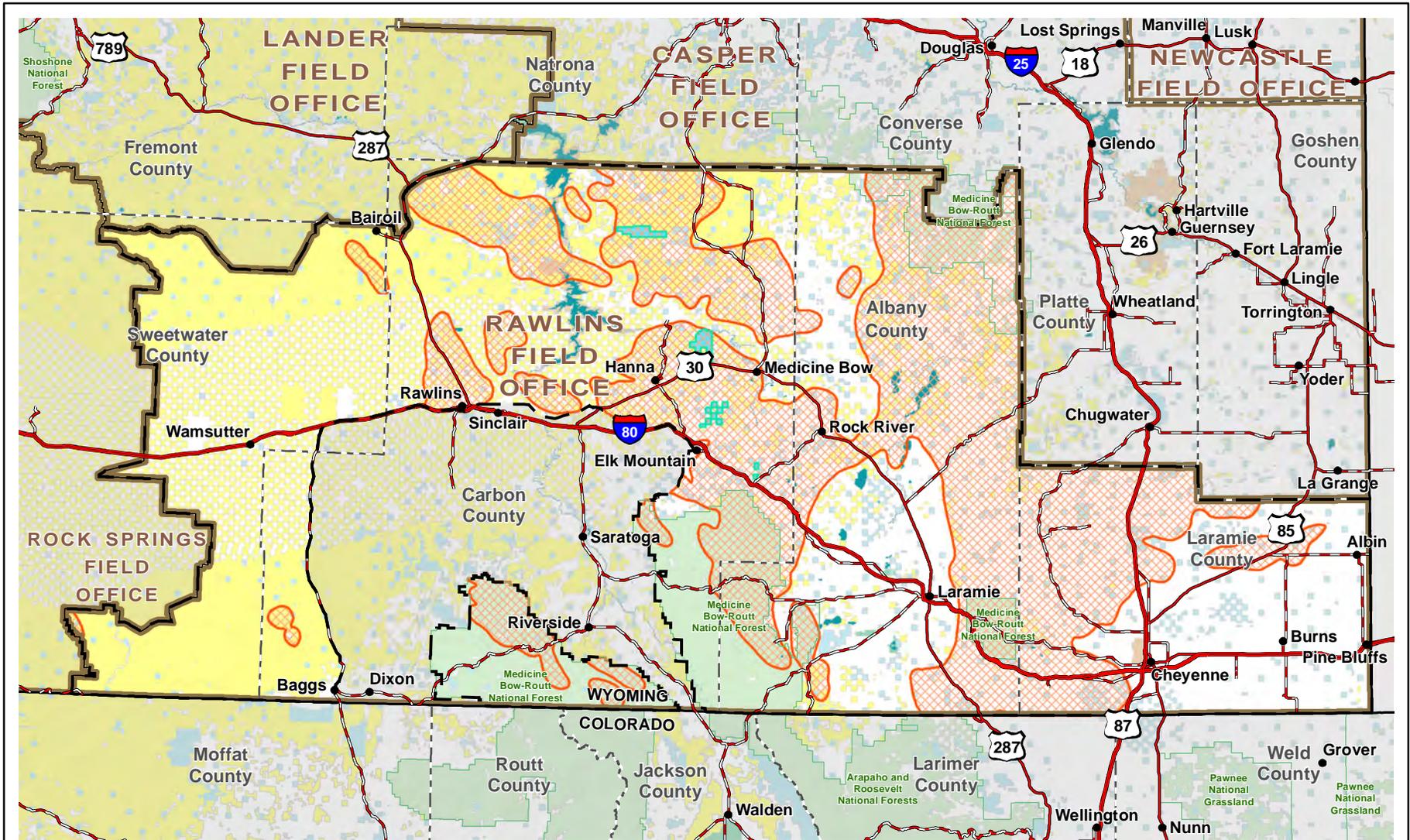
**Legend**

- WOGCC Well
- 🏭 Refinery or Gas Plant
- Interstate Highway
- U.S. Highway
- State Highway
- County Road
- BLM Road
- Pipeline
- Utility Corridor
- Designated Right-of-Way Corridor and Other Existing Facilities
- ▣ Oil & Gas Field
- ▭ BLM Field Office Boundary
- ▭ National Forest/Grassland

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**Figure 3-2  
Existing Infrastructure and ROWs  
within the Planning Area**





- |   |   |   |  |
|---|---|---|--|
|  | Interstate Highway                                |  | <b>Land Owner</b><br>Bureau of Land Management |
|  | U.S. Highway                                      |  | National Park Service                          |
|  | State Highway                                     |  | US Fish and Wildlife Service                   |
|  | BLM Field Office Boundary                         |  | US Forest Service                              |
|  | Planning Area                                     |  | Other Federal                                  |
|  | High Wind Potential                               |  | Private  |
|  | Wind Site Testing and Monitoring Application Area |  | State  |

**Rawlins Field Office  
RMP-A/EA**

**Figure 3-3  
Wind Site Testing and Monitoring  
Application Areas and Areas of  
High Wind Potential in the Planning Area**



0 10 20 40 Miles  
0 10 20 40 Kilometers



1:1,700,000

1 Current infrastructure is sufficient to meet the current needs and requirements for interstate transmission  
2 of telephone communication, electric power, fluid mineral resources, and interstate commercial and  
3 private travel. These facilities include:

- 4 • The state and interstate highway system (I-80 and I-25), Federal Highway 30/287, and State  
5 Routes (SRs) 789, 230, 130, and 30;
- 6 • Major natural gas delivery systems (i.e. Sinclair pipeline system from Sinclair, Wyoming, to  
7 Billings, Montana; CIG pipeline from Greasewood, Colorado, to Wamsutter, Wyoming; Lost  
8 Creek pipeline from Crooks Gap to Wamsutter; Exxon/Frontier Pipeline in the northwest portion  
9 of the planning area; Pioneer/Conoco pipeline from Croydon, Utah, to Sinclair, Wyoming;  
10 Entrega/Rockies Express Pipeline from Meeker, Colorado through Sinclair, Wyoming, along the  
11 I-80 corridor; and I-80 and I-25 highway routes utilized for major natural gas pipeline  
12 transportation routes); and
- 13 • Electric transmission lines (i.e. Western Area Power Administration electric power delivery  
14 system corridor from Seminole Reservoir to Cheyenne; the Rock Springs to Dave Johnson  
15 powerline located in the northwest portion of the planning area, from I-80 heading north-  
16 northeast to the planning area boundary; the Spence-Bairoil-Jim Bridger 230-kilovolt (kV)  
17 transmission line; and the 230-kV transmission line running northeast from Cheyenne, Wyoming,  
18 to Nebraska).

19 The ability for existing infrastructure to meet future energy transmission needs may be exceeded if  
20 increased development of oil and gas resources and wind energy resources occurs within the planning  
21 area and requires additional transmission capacity. The RFD/RFA for lands and realty (Table A33-3,  
22 pp. A33-2, BLM 2008b) has been updated as follows. In addition to the Foote Creek Rim and Seven Mile  
23 Hill projects, there is one pending application for wind energy development projects within the planning  
24 area: the Sand Hills Wind Energy Facility northeast of Arlington, Wyoming. More applications are  
25 anticipated.

26 The exact size and location of wind energy development ROWs cannot accurately be estimated at this  
27 time. It is likely that most of the smaller developments built to date are the result of limited transmission  
28 line capacity in the existing infrastructure. Small projects, similar to the proposed Sand Hills Wind Farm,  
29 would have up to 25 wind turbines. The Dry Creek and Middlewood wind power projects are larger  
30 projects with up to 150 and 270 wind turbines proposed, respectively. Fewer projects of this scale would  
31 be developed until new transmission line capacity is developed (see discussion below). The CCSM Wind  
32 Energy Project, which proposes to construct up to 1,000 wind turbines, located outside the planning area  
33 and addressed in a separate Plan Amendment, would require a transmission line largely dedicated to  
34 that project. The distribution of wind turbines on BLM-administered lands and non-BLM-administered  
35 lands would be based on economic and environmental conditions. Wind turbines would range from 394  
36 to 429 feet high from the ground to the tip of the rotors. The surface disturbance estimates would remain  
37 the same as described in Appendix 33 of the Rawlins RMP.

38 In addition to wind turbines, interconnected transmission lines would be needed to deliver electricity to  
39 major transmission lines. The length of the interconnected transmission lines would be based on the  
40 proximity to existing major distribution lines. There are currently five major transmission line projects  
41 proposed within the planning area, that if approved, could provide transmission of any increased wind  
42 energy production. The Gateway West Transmission Line Project is a proposed 230-kV and 500-kV  
43 alternating current (AC) transmission line project that would run from Glenrock, Wyoming, to Boise  
44 Idaho; the Energy Gateway South Transmission Line Project is a proposed 500-kV AC transmission line  
45 project that would run from near Medicine Bow, Wyoming, to Mona, Utah, south of Salt Lake City, Utah;  
46 the TransWest Express Transmission Line Project is a proposed 600-kV direct current transmission line  
47 that would run from near Medicine Bow, Wyoming, to Boulder City, Nevada; the Overland Transmission

1 Line Project that would run from southern Wyoming to Idaho; and, the Zephyr Transmission Line Project  
2 that would run from southern Wyoming to Idaho to Las Vegas, Nevada.

3 Wind development within the planning area will be closely tied to the availability of adequate  
4 transmission capacity. If the capacity is available, it is anticipated that proposals would be received to  
5 use the capacity.

### 6 **3.7 Livestock Grazing**

7 Section 3.7 from Chapter 3.0 of the Rawlins RMP Final EIS (BLM 2008a, pp. 3-27 to 3-33) provided a  
8 general description of livestock grazing in the planning area, and is herein incorporated by reference.  
9 Section 3.7 of the Rawlins RMP Final EIS (BLM 2008a) provided a discussion of the historic and current  
10 livestock grazing in the planning area (Sections 3.7.1 and 3.7.2, pp. 3-27 to 3-30) and results of  
11 rangeland BMPs by allotment (Section 3.7.3, pp. 3-30 to 3-33). The allotments in the planning area are  
12 shown in Map 3-3 of the RMP Final EIS (BLM 2008a). Relevant information is summarized in this  
13 section.

14 Livestock grazing influences the visual character of the planning area, and VRM can affect how grazing  
15 management activities are conducted. Livestock grazing on public lands within the planning area  
16 consists mainly of cattle; however, sheep, bison, and horses are also included. Livestock grazing on  
17 public lands has been regulated by the Taylor Grazing Act of 1934 and FLPMA. Multiple monitoring  
18 inventories have been conducted and used for adjusting livestock stocking rates, establishing allotment  
19 management plans, standardizing land use plans, and managing riparian and wetland habitat.

20 Since the mid-1990s, grazing allotments have been rated using the Standards for Healthy Rangelands  
21 Assessment system. This system evaluates rangeland health on a watershed scale. Within the planning  
22 area, there are a total of 582 grazing allotments containing 3,492,744 acres. Allotments range in size  
23 from 20 to 291,954 acres. Of these 582 allotments, 87 percent are used by cattle only, 9 percent are  
24 used by cattle and sheep, and 1.4 percent is used by sheep only. Nine allotments are currently not  
25 permitted for use by livestock. Duration and type of use consist of permit-long (56 percent), deferred  
26 rotation system (20 percent), rotation system (16 percent), and year-long use (4 percent). Map 3-3 of the  
27 Rawlins RMP Final EIS (BLM 2008a) displays grazing allotments in the planning area. Stocking levels  
28 vary due to forage conditions, market prices, and changes in livestock operations. Changes in wild horse  
29 and elk populations, spread of invasive species, and BMPs have influenced livestock numbers as well.  
30 Successful BMPs have been implemented on several different allotments within the planning area.  
31 Examples of these practices include pasture fencing, water developments, vegetation treatments, and  
32 grazing rotation systems.

33 The RFD/RFA for livestock provided in Table A33-4 of the 2008 RMP/ROD (pp. A33-3, BLM 2008a,b)  
34 remains adequate.

### 35 **3.8 Minerals, Geology, and Topography**

#### 36 **3.8.1 Minerals**

37 Section 3.8.4 from Chapter 3.0 of the Rawlins RMP Final EIS (BLM 2008a, pp. 3-37 to 3-44) provided a  
38 general description of mineral resources in the planning area, and is herein incorporated by reference.  
39 The Rawlins RMP Final EIS (BLM 2008a) provided a description of the resources, relevant authorities,  
40 and past and current activity for leasable minerals (pp. 3-37 to 3-39); locatable minerals (pp. 3-40 to  
41 3-43); and common variety minerals (pp. 3-44). Relevant information is summarized in this section.

42 BLM surface and subsurface (mineral) ownership are often intermingled with non-federal mineral  
43 estates. Although the BLM is required to allow access to non-federally owned minerals, the BLM still  
44 retains authority and responsibility for the BLM-administered public lands. Within the planning area, there

1 is a total of 104,933 acres of federally owned surface lands over non-federal minerals located almost  
2 exclusively in the western half of the field office (**Figure 3-4**).

3 Mineral development influences the visual character of the planning area, and VRM can affect how and  
4 where mineral development occurs. Mineral resources on public lands are placed into one of three  
5 categories: leasable, locatable, or common variety.

6 Leasable minerals consist of coal, oil and gas, trona, bitumen, phosphate, sulfur, and geothermal  
7 energy. One active coal and multiple oil and gas developments exist within the planning area. Seven  
8 areas within the planning area have been identified as having potential coal for development: Red Rim,  
9 China Butte, Indian Springs, Indian Springs North, Atlantic Rim, Hanna Basin, and Carbon Basin. Of the  
10 seven areas identified as having coal development potential, only the Hanna and Carbon Basins have  
11 had federal coal leases issued and have undergone active mining. Currently, the Hanna Basin mines  
12 sites are in final reclamation, and only the Carbon Basin has an active coal mining lease. Both strip  
13 mining and underground mining methods are used for extraction. The central sections of the planning  
14 area (southwest of Seminole Reservoir) could be used for carbon dioxide (CO<sub>2</sub>) sequestration. Typically,  
15 the CO<sub>2</sub> would be used for enhanced oil and gas recovery. The majority of oil and gas production,  
16 including CBNG, occurs in the western and north-central sections of the planning area (see **Figure 3-1**  
17 for high, moderate, and low oil and gas potential areas). In the western sections of the planning area, oil  
18 and gas activity is heavily concentrated in the Great Divide and Washakie basins and Wamsutter Arch.  
19 The north-central sections are contained within the Hanna and Carbon Basins. Classifying oil and gas  
20 potential typically requires the execution of a probabilistic model that analyzes variables including  
21 geophysical data showing aeromagnetic, isostatic gravity, and Bouguer gravity anomalies, and geology,  
22 topography and bedrock depth (Copeland 2009). **Table 3-2** provides a breakdown of leased public lands  
23 with high, moderate, and low oil and gas potential. Other minerals with development potential within the  
24 planning area include oil shale, phosphate, sodium sulfate, and potash; however, none are being mined  
25 at this time.

**Table 3-2 Total vs. Leased Acres of Potential Oil and Gas Development Areas<sup>1</sup>**

Oil and Gas Potential	Total	Authorized		Non-leased	
		Acres	%	Acres	%
High	218,021	166,305	17.5	51,716	4.6
Moderate	746,009	465,869	49.0	280,140	25.0
Low	1,105,139	317,664	33.5	787,474	70.4
<b>Total</b>	2,069,169	949,838	100.00	1,119,331	100.0

<sup>1</sup> Acreages were obtained from geographic information system (GIS) data provided by the BLM.

26

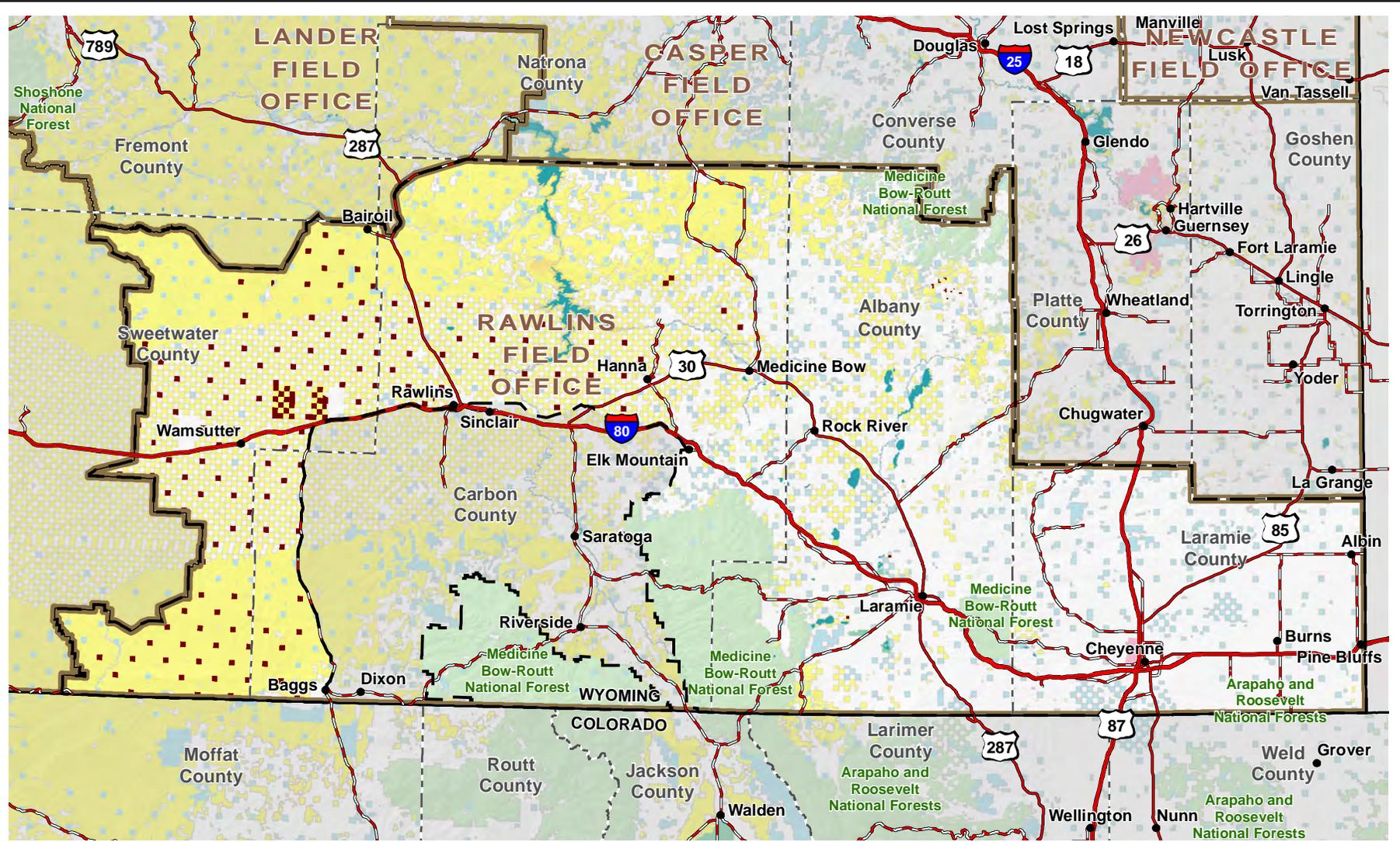
27 Locatable minerals within the planning area consist of uranium, titaniferous magnetite, stratabound gold,  
28 copper-gold deposits, and kimberlite pipes and diamonds. Uranium production is currently occurring in  
29 the Shirley Basin, Poison Buttes, and Red Desert Basin. Three projects are expected to be approved for  
30 in-situ mining in the Red Desert Basin within the next 3 years. Development of other locatable minerals  
31 (titaniferous magnetite, gold, copper, and diamonds) is currently not economically viable, although  
32 exploration efforts are expected to continue at a rate of five notice-level projects per year. Locatable  
33 mineral deposits in the planning area are summarized in Table 3-6 of the Rawlins RMP (BLM 2008a).

34 Disposal of common variety minerals is discretionary and is authorized under the Materials Act of 1947,  
35 as amended by the Acts of 1955 and 1962. These acts provide that certain mineral materials be  
36 disposed of either through a contract of sale or a free use permit (for state and local governments or

1 eligible nonprofit organizations). Types of common variety minerals that occur within the planning area  
2 include sand and gravel, limestone, clinker (scoria), clay, and moss rock.

3

X:\Projects\BLM\_Rawlins\_VRM\_Amendment\_60224981\FIGS\DOCEAN1\_PDEA\Figure\_3-4\_RFO\_BLM\_NonFedMinerals\_20130618.mxd



Legend			
	BLM Field Office Boundary		US Department of Defense
	Planning Area		US Fish and Wildlife Service
	Lands where BLM is the surface owner over non-federal minerals		US Forest Service
	Bureau of Land Management		Private
	Bureau of Reclamation		State
	National Park Service		
	US Department of Energy		

**Rawlins Field Office  
RMP-A/EA**

**Figure 3-4  
Lands Where BLM is the Surface  
Owner Over Non-Federal Minerals**

1:1,700,000

1 According to the Mineral Potential Report Summary (2012), the RFD/RFA for minerals is primarily  
2 associated with oil, gas, coal, uranium, and aggregates. Other locatable and salable mineral recovery is  
3 not economically viable at this time or in the foreseeable future. Hydrocarbon resources have been, and  
4 continue to be, productive within the planning area. CBNG exploration within the planning area is  
5 expected to continue. Coal production is expected to continue in the Carbon Basin at a rate of 1.3 to  
6 3.1 million tons per year. Exploratory uranium drilling plans are being pursued in the Shirley Basin and  
7 Poison Buttes. Areas for in-situ production are being evaluated in the Red Desert Basin and the Lost  
8 Creek ISR mine is operational. Development of other locatable minerals is not economically viable at this  
9 time or in the foreseeable future. Common variety materials are expected to be produced at a rate of  
10 21 million tons over the next 10 years then drop to less than 1 million tons per year.

### 11 **3.8.2 Geology**

12 Sections 3.8.1 and 3.8.2 from Chapter 3.0 of the Rawlins RMP Final EIS (BLM 2008a, pp 3-34 to 3-36)  
13 provided a general description of geology in the planning area, and are herein incorporated by reference.  
14 The Rawlins RMP Final EIS (BLM 2008a) provided a discussion of geologic units (Section 3.8.1,  
15 pp. 3-34 to 3-35) and structural geology and tectonics (Section 3.8.2, pp. 3-35 to 3-36). Relevant  
16 information is summarized in this section.

17 Geology formations influence or contribute to the visual character of the planning area. The geologic  
18 formations within the planning area range from Precambrian to recent. Precambrian rocks become  
19 exposed in the core of mountain ranges (Medicine Bow and Sierra Madre) and the Rawlins Uplift, and  
20 consist of igneous and metamorphic assemblages (Houston 1993). Younger rock types tend to be  
21 sedimentary. The major structural elements consist of the Great Divide, Washakie, Hanna, Carbon,  
22 Kindt, Shirley, Laramie, and Denver-Cheyenne basins as well as the Medicine Bow, Sierra Madre,  
23 Rawlins, Sweetwater, and Laramie uplifts. The Precambrian cores of these mountain ranges have been  
24 uplifted through movement on reverse faults. The igneous and metamorphic rocks eventually break  
25 down to form the sedimentary rock that fills the adjacent basins. In addition to these structural elements,  
26 the Cheyenne Belt (a major shear zone) extends into the southeastern portion of the planning area. The  
27 belt separates some of North America's oldest metamorphic sedimentary rocks to the north from  
28 younger igneous rocks to the south. These geological variations enhance the visual character of the  
29 associated landscapes by altering color and structural texture. These elements are important  
30 components of visual resource inventories. Map 3-4 of the Rawlins RMP Final EIS displays major  
31 structural elements in the planning area.

### 32 **3.8.3 Topography**

33 Section 3.8.3 from Chapter 3.0 of the Rawlins RMP Final EIS (BLM 2008a, pp. 3-36 to 3-37) provides a  
34 general description of topography in the planning area and is herein incorporated by reference. Relevant  
35 information is summarized in this section.

36 Topography influences the visual character of the planning area. Within the planning area there are three  
37 major physiographic provinces: the Wyoming Basin, the Southern Rocky Mountains, and the Great  
38 Plains. The western and northwestern portion of the planning area is within the Wyoming Basin. The  
39 Wyoming Basin is characterized by topographic sub-basins including the Washakie, Great Divide,  
40 Hanna, Shirley, and Laramie basins which range from 6,500 to 7,500 feet in elevation and are bounded  
41 by mountains. The Great Divide Basin is bounded by branches of the Continental Divide. Major  
42 drainages within the Wyoming Basin include the Laramie, Little Snake, and North Platte Rivers, all of  
43 which originate in the Southern Rocky Mountains. The south and south-central portion of the planning  
44 area lies within the Southern Rocky Mountain Province. This province consists of the Laramie  
45 Mountains, the Medicine Bow Mountains and the Sierra Madre Range and ranges from 7,500 to  
46 approximately 12,000 feet in elevation. Changes in elevation in the Wyoming Basin and Southern Rocky  
47 Mountain provinces create variations in color and geological structure in the landscape scenery that is an  
48 important element of consideration in visual resource inventories. The eastern portion of the planning  
49 area lies within the Great Plains Province. Long sloping tertiary rock structures, mesas, and badlands

1 characterize the otherwise flat topography. Elevations range from less than 5,000 to 7,000 feet.  
2 Drainages in this portion of the planning area flow from west to east and consist of Cow Creek,  
3 Lodgepole Creek, Horse Creek, and Little Bear Creek; all of which drain into the North Platte River Basin  
4 except Cow Creek, which drains into the South Platte River.

### 5 **3.9 Off-highway Vehicles**

6 Section 3.9 from Chapter 3.0 of the Rawlins RMP Final EIS (BLM 2008a, pp. 3-45 to 3-47) provided a  
7 general description of OHV use in the planning area, and is herein incorporated by reference. The  
8 Rawlins RMP Final EIS (BLM 2008a) provided a discussion of management of OHV use in the planning  
9 area (Section 3.9.1, pp. 3-45) and OHV use trends (Section 3.9.2, pp. 3-45 to 3-47). Relevant  
10 information is summarized in this section.

11 OHV use influences the visual character of the planning area. OHVs provide access to hunting, fishing,  
12 and camping, and are quickly becoming a popular form of recreation as OHV ownership becomes more  
13 common. There are four categories of OHV use: all-terrain vehicles, cars/trucks/sport utility vehicles  
14 (SUVs), motorcycles, and snowmobiles. The most popular category among OHV enthusiasts is  
15 cars/trucks/SUV. With increasing OHV use, environmental degradation effects have become more  
16 apparent on the landscape. The proliferation of unauthorized roads is expanding rapidly and continues to  
17 contribute to environmental degradation.

18 Public lands in the planning area are classified as open, closed, or limited to OHV use. The majority of  
19 OHV use in the planning area is limited to existing roads and vehicle routes. There are three OHV  
20 designations in the planning area: open to OHV use, closed to OHV use, or have specific seasonal or  
21 spatial timing stipulations. Map 2-44 of the Rawlins RMP ROD (BLM 2008b) displays OHV designations  
22 in the planning area.

23 As stated in the 2008 RMP Appendix 33, RFD/RFA for OHV travel in the planning area include  
24 conducting reclamation and closing roads, where necessary, to mitigate impacts from OHV activity. No  
25 actions requiring the use of equipment beyond normal 4-wheel drive or motorcycle vehicles are  
26 authorized

### 27 **3.10 Paleontology**

28 Section 3.10 from Chapter 3.0 of the Rawlins RMP Final EIS (BLM 2008a, pp. 3-48 to 3-50) provided a  
29 general description of paleontological resources in the planning area, and is herein incorporated by  
30 reference. Section 3.10 of the Rawlins RMP Final EIS (BLM 2008a) presents an overview of the  
31 paleontological resources present in the planning area (Section 3.10.1; pp. 3-48 to 3-49) and the  
32 associated Potential Fossil Yield Classification (Section 3.10.2; pp. 3-49 to 3-50). Relevant information is  
33 summarized in this section.

34 Paleontological resources are a recreational and/or scientific opportunity that occurs on public land and  
35 does not typically affect the quality of visual resources. The exposure or discovery of paleontological  
36 resources present in the planning area can be attributed to the area's high elevation and continental  
37 climate, which hinder vegetative growth and soil development while supporting erosion and bedrock  
38 exposure. Most fossils are discovered as scattered finds in areas of exposed rocks. Paleontologists  
39 frequently rely on the public-at-large to play a major role in making significant fossil discoveries. Three  
40 National Natural Landmark areas are located within the planning area: Big Hollow, Como Bluff, and Sand  
41 Creek. Big Hollow and Sand Creek are examples of geologic processes and are not noted for fossil  
42 resources. Como Bluff is the site of the original collection of dinosaur fossils in Wyoming and is noted for  
43 its fossil resources. The original fossil quarries are on private lands and are not accessible to the public.

44 The Greater Green River Basin is a large physiographic and structural feature located in the western part  
45 of the planning area. The basin contains important paleontological resources and many institutions have  
46 actively studied the paleontology of the area (BLM 1987). Tertiary rocks in the Continental Divide area

1 west of Rawlins contain one of the most complete records of Tertiary continental deposition in  
2 North America. The upper Cretaceous Medicine Bow Formation in the Hanna Basin east of Rawlins is  
3 known to produce vertebrate fossils of scientific significance. Fossils from the Medicine Bow Formation  
4 include the remains of marine and freshwater invertebrates, terrestrial plants, and terrestrial vertebrates.  
5 The formation has also produced dinosaur bone fragments from the Ceratopsian Triceratops and the  
6 remains of a small number of mammals from the late Cretaceous Period (BLM 2001). Appendix 30 in the  
7 Rawlins RMP (BLM 2008a) lists geologic formation classifications according to the Potential Fossil Yield  
8 Classifications, for the State of Wyoming.

### 9 **3.11 Recreation and Visitor Services**

10 Section 3.11 from Chapter 3.0 of the Rawlins RMP Final EIS (BLM 2008a; pp. 3-51 to 3-58) provides a  
11 general description of recreation and visitor services in the planning area and is herein incorporated by  
12 reference. The Rawlins RMP Final EIS (BLM 2008a) provides a discussion of recreation resources,  
13 sites, and areas (Sections 3.11.1, 3.11.3-5, pp. 3-51 to 3-52, 3-55–3-58); recreation trends  
14 (Section 3.11.6, pp. 3-58); and SRMAs including the Continental Divide National Scenic Trail,  
15 Shirley Mountain, and North Platte River SRMAs that occur in the planning area (Section 3.11.2,  
16 pp. 3-53 to 3-55). Relevant information is summarized in this section.

17 Recreation is one of the many uses in the area. The quality of the recreational experience is largely  
18 influenced by the visual character or setting of the planning area. Recreational opportunities occur at  
19 developed/undeveloped recreation sites and dispersed public lands, primarily near areas that contain  
20 high quality wildlife and visual resources, waterways, lakes, and other resources (physical, historical,  
21 etc.). Wildlife-based recreation, including hunting, fishing, trapping, and wildlife viewing, comprises the  
22 majority of all recreational activities in the planning area.

23 The planning area contains five developed recreation sites, four undeveloped recreation sites, four larger  
24 dispersed recreation use areas that receive seasonally heavy recreational use, and three SRMAs. The  
25 three SRMAs within the planning area primarily allow for hiking, hunting, camping, OHV use, and wildlife  
26 viewing. A large portion of public lands in the planning area are managed as Middle Country, which  
27 includes areas greater than 0.5 mile from improved roads and in which the landscape appears to be  
28 natural, except for obvious primitive roads. Recreation areas near Seminole Reservoir and along the  
29 North Platte River provide further recreational opportunities within the planning area.

30 Visitor numbers in the planning area have been steady to slightly increasing, with the vast majority of  
31 visitors favoring dispersed recreation over developed/undeveloped recreation sites. Recreation  
32 management areas are shown on Map 2-17 of the Rawlins RMP ROD (BLM 2008b) and recreation sites  
33 are shown on Map 3-7 of the Rawlins RMP ROD (BLM 2008b).

34 As stated in the 2008 RMP Appendix 33, the RFD/RFA for recreation resources in the planning area  
35 include conducting reclamation and closing developed sites where necessary to mitigate impacts from  
36 recreational activity, specifically in the Shirley Mountains, North Platte River, and OHV SRMAs.

### 37 **3.12 Socioeconomics**

38 Section 3.12 from Chapter 3.0 of the Rawlins RMP Final EIS (BLM 2008a, pp. 3-59 to 3-85) provided a  
39 general description of socioeconomic conditions in the planning area, and is herein incorporated by  
40 reference. Section 3.12 of the Rawlins RMP Final EIS (BLM 2008a) presented the county characteristics  
41 (Section 3.12.1; pp. 3-59 to 3-60); demographic characteristics (Section 3.12.2; pp. 3-60 to 3-63);  
42 economic characteristics (Section 3.12.3; pp. 3-63 to 3-75); important economic activities  
43 (Section 3.12.4; pp. 3-75 to 3-77); environmental justice (Section 3.12.5; pp. 3-77 to 3-78); and social  
44 development, culture, and history of communities (Section 3.12.6; pp. 3-78 to 3-85). Relevant  
45 information is summarized in this section.

1 Visual Resource Management classes can affect how and where resource use occurs, which can have  
2 an indirect effect on the social and economic outcomes or outputs in the area, by potentially limiting or  
3 expanding economic activity. The planning area encompasses portions of Carbon and Sweetwater  
4 counties, and all of Albany and Laramie counties. The socioeconomic study area includes these four  
5 counties. These counties are rural, large, and are mostly comprised of public lands. Laramie County is  
6 the most populated county, followed by Sweetwater, Albany and Carbon counties (U.S. Census Bureau  
7 [USCB] 2010). The largest population centers nearby are Cheyenne, Laramie, Rock Springs, and  
8 Rawlins.

9 All four counties recorded increased population growth during the 2000s. The highest population growth  
10 took place in Sweetwater County, while the lowest population growth was in Carbon County. Median  
11 household income in Sweetwater County is above the state average, and the poverty level is lower than  
12 poverty levels throughout the state. This indicates the absence of a high concentration of low-income  
13 populations in the county. This is not the case in Albany and Carbon counties, however, as these  
14 counties reported a lower median household income and higher poverty rates than found throughout  
15 Wyoming. For Albany County, the poverty rate is approximately 8.5 percentage points above the state  
16 average, indicating the potential for a low-income “environmental justice population” (USCB 2010). In  
17 comparison to the state average, the socioeconomic study area reported a lower percentage of whites  
18 and a slightly higher percentage of individuals indicating they are of Hispanic or Latino descent.

19 Per capita income growth in the socioeconomic study area during the 2000s was slightly less than the  
20 Wyoming state average, but significantly higher than the U.S. average (U.S. Bureau of Economic  
21 Analysis [BEA] 2011). Unemployment in the socioeconomic study area generally reflects the  
22 unemployment rate of the State of Wyoming, with the largest employment sectors in the region including  
23 government and retail trade as of 2009 (BEA 2011). Manufacturing, transportation, and utilities also have  
24 a strong local presence. Oil and gas production accounted for a significant percent of mineral valuation in  
25 the socioeconomic study area as assessed by the state. The oil and gas industry also provides a  
26 significant amount of revenue to Carbon and Sweetwater counties through ad valorem taxes on oil and  
27 gas property (Wyoming Taxpayers Association 2001). Lodging, sales and use taxes, and gas taxes are  
28 additional tax revenue sources that contribute to the socioeconomic study area (Wyoming Department of  
29 Revenue 2001). There is one existing wind energy center on BLM lands within the socioeconomic study  
30 area. The Wyoming Wind Project provides local revenue through ad valorem, lodging, sales, and use  
31 taxes.

32 Non-developed open spaces and recreational activities have important economic value in terms of both  
33 satisfaction provided to local residents and economic activity generated for the regional economy. This  
34 high value placed on open space and recreational activity is evidenced by the numerous recreational  
35 areas and the expansion of dispersed recreation, such as OHV use. In terms of economic activity,  
36 recreation generates additional spending in the local economy that supports jobs and income. Estimates  
37 of recreational use within the planning area indicate that over several hundred thousand recreational  
38 visitors days are spent in this area. As visitors come to this area to recreate, they spend money on goods  
39 and services to support their activities, including lodging, meals and groceries, gasoline, and other items.  
40 These expenditures and the subsequent “ripple effect” can be an important economic stimulus to the  
41 local area.

### 42 **3.13 Special Designations and Management Areas**

43 Special Designations and Management areas are designated to protect or preserve certain resource  
44 qualities or uses in areas that best provide them. Management of the SD/MAs affects the visual  
45 character of the planning area. VRM classes can influence how and where resource use occurs in the  
46 SD/MAs. The planning area contains three WSAs, two ACECs, three NNLs, three SRMAs, and five  
47 wildlife habitat management areas. SD/MAs are shown on Maps 2-6 (WSAs), 2-9 (ACECs), 2-13 (other  
48 management areas), and 2-18 (NNLs), of the Rawlins RMP ROD (BLM 2008b). Section 3.13 from  
49 Chapter 3.0 of the Rawlins RMP Final EIS (BLM 2008a; pp. 3-86 to 3-99) provides a general description  
50 of SD/MAs in the planning area and is herein incorporated by reference. The Rawlins RMP Final EIS

1 (BLM 2008a) provides a discussion of the WSAs (Section 3.13.1, pp. 3-87); ACECs (Section 3.13.2, pp.  
2 3-88 to 3-89); and other management areas (pp. 3-89 to 3-92, 3-95 to 3-96) that occur in the planning  
3 area. Relevant information is summarized in this section.

#### 4 **3.13.1 Wilderness Study Areas**

5 There are three WSAs, that have been designated by Congress, within the planning area: Adobe Town,  
6 Bennett Mountain, and Ferris Mountain. They are managed according to the non-impairment standard,  
7 so as not to impair the suitability of such areas for preservation as wilderness. As stated in the 2008  
8 RMP Appendix 33, RFD/RFA for WSAs in the planning area includes conducting reclamation and  
9 closing roads where necessary to mitigate impacts from recreational activity.

#### 10 **3.13.2 Areas of Critical Environmental Concern**

11 There are two ACECs within the planning area, the Blowout Penstemon and Cave Creek Cave ACECs.  
12 They are managed to protect and prevent irreparable damage to specific resources. Since the RMP  
13 ROD has been released, there have been several ACEC/WHMA boundary changes that need to be  
14 addressed. All of these changes will require an RMP maintenance or amendment action.

##### 15 **3.13.2.1 Blowout Penstemon ACEC**

16 The blowout penstemon (*Penstemon haydenii*) sand dune complex area is located southeast of the  
17 Ferris Mountains within the North Platte River Drainage in the BLM Rawlins Field Office and contains  
18 mixed federal (BLM and BOR-administered public land), state, and private land. This area encompasses  
19 unique sand dunes that contain steep sandy slopes deposited at the base of granite or sedimentary  
20 mountains. The area is composed of a large dune field and grass dominated wetlands that include  
21 shifting sand dunes, springs and wetlands, as well as deer, elk, antelope, and waterfowl habitat. The  
22 ACEC provides dramatic views of other adjacent areas including Bradley Peak, Table Mountain, Bear  
23 Mountain and Ferris Mountain, all of which contribute to the scenic quality of the area. The ACEC dune  
24 field portion of the area is part of the much larger Kilpecker Sand Dune Complex. It should be noted that  
25 only this portion of the Kilpecker Sand Dune Complex contains habitat for the endangered blowout  
26 penstemon plant and two plant species of concern, including the pale blue-eyed grass (*Sisyrinchium*  
27 *pallidum*) and the annual skeletonweed (*Shinneroseris rostrata*). These sand dunes, and adjacent areas  
28 in the Great Divide Basin, support habitat for the desert kangaroo rat, a species that is almost exclusively  
29 restricted to sand dunes. The area contains vegetated sand dunes (scurfpea and ricegrass  
30 communities), active parabolic sand dunes and graminoid-dominated wetlands, all of which contain  
31 unique and isolated biota and fragile communities. These communities have been rated as highest  
32 priority for conservation by the Wyoming Gap Analysis Project (WY-GAP). In addition, a portion of the  
33 ACEC is located within the Wyoming Governor's Greater Sage-Grouse core area, which may require  
34 additional management protection measures through both state and BLM resource management. A  
35 management plan is being developed for the Blowout Penstemon ACEC.

36 The blowout penstemon is restricted to the sparsely vegetated, early successional, shifting sand with  
37 crater-like blowout depressions. Within the ACEC, the plant is found primarily on the rim and leeward  
38 slopes of these blowout depressions and associated steep slope sand deposits at the base of foothills.  
39 These areas are zones of continuous sand movement from west to east, resulting from wind erosion and  
40 deposition activity. This plant occurs in sparsely-vegetated pioneer communities, often with minimal  
41 vegetation cover.

42 The management goal of the Blowout Penstemon ACEC is to manage the endangered blowout  
43 penstemon plant population and its habitat. The following two objectives have been identified by the BLM  
44 to accomplish this goal: 1) maintain, restore, and enhance the unique parabolic dune complex (Ferris  
45 Dunes) and 2) protect the area to ensure the continued existence of the plant and to allow for continued  
46 research.