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CHAPTER 2 – ALTERNATIVES

This chapter presents four LRMP alternatives that represent different approaches to the management of the public lands and resources administered by the USFS and BLM. The alternatives discussed in this chapter include the No Action Alternative (labeled Alternative A) and three other alternatives (labeled Alternative B, Alternative C, and Alternative D). A No Leasing Alternative for oil and gas is also analyzed as part of the oil and gas leasing availability decision.

Chapter 2 includes the following discussions:

- **2.1 Development of Alternatives:** This section describes how the alternatives were developed during the agency and public scoping process, as well as how each alternative emphasizes or reflects different aspects for managing the SJNF and TRFO.
- **2.2 Important Points Common to All Alternatives:** This section describes how the alternatives represent, to varying degrees, the principles of multiple use and sustained yield of USFS- and BLM-administered lands in the planning area, as directed by all applicable laws, rules, regulations, standards, policies, and guidelines.
- **2.3 Alternatives Considered but Eliminated from Further Analysis:** This section describes several issues that were raised during the scoping process that were considered, but not carried forward, for further analysis as alternatives.
- **2.4 Comparison of Alternatives:** This section explains the differences among the alternatives related to the primary revision issues and related LRMP decisions.
- **2.5 Summary and Comparison of Environmental Consequences:** This section provides a comparative summary of the effects of the alternatives on each resource.

2.1 Development of Alternatives

Land use planning regulations and NEPA require the USFS and BLM to develop a range of reasonable alternatives during the planning process. The basic goal of developing alternatives is to prepare different combinations of management scenarios in order to address all identified issues and resolve conflicts among uses. Alternatives must meet the purpose and need; must be reasonable; must provide a mix of resource protection, use, and development; must be responsive to the issues; and must meet the established planning criteria. Under all of the alternatives, the SJNF and TRFO would manage the public lands in accordance with all applicable laws, regulations, policies, standards, and guidelines.

The development of alternatives for this LRMP/FEIS was guided by applicable provisions of the NFMA and FLPMA, applicable LRMPs, and implementation of NEPA. Management actions (alternatives), including the No Action Alternative, were developed in order to address planning issues, concerns, and requirements, and to provide direction for resource programs influencing land management and resource use in the planning area. The alternatives were developed using an iterative process that focused on improving current management. Each management alternative would represent a different combination of resource uses, management allocations, and environmental consequences (see Chapter 3).

The development of the alternatives analyzed in this LRMP/FEIS included a public scoping process that allowed interested members of the public, Native American tribal governments and entities, special interest groups, and federal, state, and local government agencies to comment on and

contribute input with regard to the planning process. On September 23, 1999, a Notice of Intent (NOI) to revise the USFS San Juan National Forest Land and Resource Management Plan was published in the *Federal Register*. On December 14, 2004, a second NOI was published, updating timelines and informing all interested parties that the BLM San Juan/San Miguel Resource Management Plan would be revised concurrently.

Detailed analyses of conditions and trends for social, economic, and ecological elements related to the planning area were developed early in the process. These analyses included consideration of relevant new information, as well as legal, regulatory, and policy changes that have occurred since the last planning period. Results from the analyses were used in the public scoping process in order to inform stakeholders, focus the issues, and enhance overall communication.

The public scoping process began in January 2005. Alternatives were developed using a community participation process that centered on a series of meetings held in local communities. Web-based mechanisms were also offered so that all interested parties could interact using the Internet. People were encouraged to participate in the entire series of community study group meetings in order to build upon knowledge gained during earlier meetings and to stay informed as alternative development progressed. It was a mutual learning experience for both community members and agency personnel.

During the scoping process, public lands in the planning area were divided into 33 smaller landscapes. This was done so that people could discuss conditions, concerns, and solutions for issues in the context of specific places, rather than at an abstract level. Scoping participants identified outstanding features, primary uses, concerns with current management, and opportunities for improvement for each landscape. Alternative development was also influenced by consultation and discussions with other federal agencies, state and local governments, cooperating agencies, Native American tribal agencies, CPW, Colorado's Roadless Areas Review Task Force, the Governmental Water Roundtable (a group convened to give water input specific to the LRMP), and local recreation organizations, as well as written comments from all interested parties.

During the community study group meetings, management direction for areas was depicted primarily in terms of MAs that varied in levels of development and suitability for different uses and/or activities. The interdisciplinary team and staff created a preliminary draft of MA allocations by translating the BLM Emphasis Areas and SJNF management prescriptions found in the two existing land management plans into MAs. These preliminary land allocations were used as a starting point for community study group discussions about their preference for how areas should be managed. Using a spectrum of MAs ranging from MA 1 (Natural Processes Dominate, i.e., very little if any management or uses allowed) to MA 5 (Working Forest and Rangelands, i.e., areas where management and uses are likely, evident, and encouraged) to MA 8 (Permanently Developed Lands, i.e., applied to areas with dams or downhill ski areas), the public expressed their preference for how areas should be managed. A description of the MAs used in the community study groups is provided in Chapter 3 of the LRMP.

For many areas within each landscape, participants agreed with the proposed land allocations; for other areas, people suggested changes and described their rationale for the changes. Areas with varying preferences for management and allowable uses were used to develop the alternatives analyzed in this FEIS.

2.1.1 Application of Management Areas

As described above, the composition of MAs were used in the public scoping meetings as a starting point for developing alternatives with the public. For the FEIS, resource suitability and allowable

resource use decisions have been used in addition to MAs for analyzing impacts and describing how each alternative responds to the four issues and related LRMP decisions. Resource-specific allocations compliment the MA preferences identified during public scoping, including but not limited to lands suitable for timber production, lands suitable and capable for livestock grazing, and lands available for lease, areas open, closed, or limited to motorized use. These resource decisions and related MA allocations on SJNF lands are further described in Section 2.4.1 below.

MA allocations have been removed from BLM lands in the LRMP to be consistent with BLM planning guidance (USFS planning regulations require designation of MAs, while BLM planning regulations contain no such requirement). While MAs are no longer proposed to apply to BLM lands on the TRFO, the related resource-specific land allocations are reflective of the MA preferences that were expressed by the public for each alternative, and these allocations are consistent with BLM's planning direction.

2.1.2 Supplement to the Draft Environmental Impact Statement

During the 120-day public comment period for the Draft LRMP/EIS, we received comments suggesting that the Reasonable Foreseeable Development (RFD) scenario for oil and gas development projections in the Paradox Basin were low because the draft did not consider the development potential of Gothic Shale gas, a potential new shale gas development play underlying portions of Montezuma, Dolores, and San Miguel Counties. These comments and supporting documentation indicated that the following conditions used in the USFS's and BLM's oil and gas leasing and development analysis had changed:

- geologic source potential: the emergence of a Gothic Shale Gas Play (GSGP) area in southwest Colorado identified as having high resource potential;
- development technology: the advancement of horizontal drilling and hydraulic fracturing, which makes extraction of gas from shale formations possible and more economical; and
- demand and activity: there has been significant leasing interest from industry on federal mineral estate within the GSGP area since the release of the Draft EIS and increased permitting activity on non-federal mineral estate lands within the GSGP area.

The USFS and BLM also received comments on the Draft LRMP/EIS suggesting that the type of air quality model used was inappropriate for the scale of the plan and that capabilities of the model as used in the Draft EIS had been exceeded. The USFS and BLM considered all of this information and, through further technical evaluation, determined that 1) the GSGP was a high potential play that should be evaluated and 2) a more detailed air quality model and analysis was needed to adequately represent potential air quality impacts in the planning area and disclose results specific to the new development projections for the GSGP area. Hence, it was determined that a Supplement to the Draft EIS was needed in order to incorporate this new information and analysis into the Draft LRMP/EIS.

A Supplement to the Draft EIS was released on August 26, 2011, for a 90-day public review and comment. Comments received on both the Draft LRMP/EIS and the Supplement to the Draft EIS were used in developing the final set of alternatives analyzed in this Final EIS.

2.2 Important Points Common to All Alternatives

Each of the LRMP alternatives would:

- protect basic soil, air, water, and land resources in order to encourage long-term, healthy, and sustainable ecosystems;
- meet the BLM Colorado Public Land Health Standards;
- provide for diverse ecosystems;
- emphasize the important role that federal lands play in providing for diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives. Fish and wildlife habitat is managed to maintain viable populations of existing native and desired non-native vertebrate species on SJNF lands.
- provide recreation settings and maintain scenic quality in response to the needs of USFS and BLM public land users and local communities;
- protect heritage resources, in accordance with applicable laws and regulations, while, also providing educational opportunities at appropriate sites;
- sustain multiple uses, products, and services (including timber harvesting, livestock grazing, locatable and leasable minerals development, and recreational uses);
- emphasize improved landownership and access patterns that would benefit both private landowners and the public;
- emphasize cooperation with individuals, organizations, Native American tribes, and other agencies in order to better coordinate the planning and implementation of projects;
- implement the revised standards, guidelines, and other referenced guidance found in the LRMP;
- promote rural development opportunities in order to enrich cultural life, enhance the environment, provide employment, and improve living conditions;
- promote actions that would continue to encourage active public participation in the planning and management processes; and
- manage the roadless areas in compliance with the Colorado Roadless Rule. (On the SJNF, 566,100 acres are inventoried as Colorado Roadless Areas [CRAs].)

A number of designations and activities would not change under the alternatives, including:

- existing ski-based resorts (although boundaries may vary by alternative);
- existing components of the National Wilderness Preservation System;
- existing developed recreation sites, utility corridors, and electronic sites;
- currently designated national scenic and recreation trails;
- currently designated scenic byways;
- currently designated NRHP and archeological districts;
- currently designated BLM wilderness study areas (WSAs);
- currently designated BLM Wild Horse HMAs;
- the development of coalbed methane (CBM) gas in the HD Mountains (as described in the ROD for the Northern San Juan Basin EIS [USFS and BLM 2007]), although availability of that area for new leases may vary by alternative;

- existing current, valid mineral lease rights (lands leased prior to the date of this plan decision would be subject to valid existing rights under lease terms and may be conditioned to be in compliance with the LRMP); and
- currently withdrawn areas from oil and gas leasing within SJNF lands, including designated wilderness areas—Lizard Head, Weminuche, and South San Juan—and the Piedra area.

2.3 Alternatives Considered but Eliminated From Further Analysis

Several alternatives were considered during the planning process, but were eliminated from further detailed analysis. The planning team used input, past management experience, and laws and regulations in designing the alternatives that were analyzed in detail during the planning process. Many of the suggestions proposed by interested parties and the public were used to develop and shape the analyzed alternatives even if they were presented in an alternative that was not carried forward in its entirety. The following are alternatives not considered in detail, including the reasons why they were eliminated:

2.3.1 *Exclusive Use or Elimination of Traditional Uses Alternatives*

Alternatives proposing exclusive use, or protection of one resource at the expense of other resources, were not considered. Several laws mandate that the BLM and USFS manage public lands for multiple uses and sustained yield. This legal and regulatory requirement eliminates exclusive-use alternatives, such as alternatives that would close all public lands to livestock grazing or those that would manage for wildlife values only at the expense of other resource considerations. Several proposed alternatives for exclusive use or elimination of traditional uses are detailed below.

No Livestock Grazing Alternative: This alternative would close the entire planning area to livestock grazing. This alternative was eliminated from detailed analysis for several reasons. NEPA requires that agencies study, develop, and describe appropriate alternatives in order to recommend courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources. No issues or conflicts have been identified during this land use planning process that would require the complete elimination of livestock grazing within the planning area as a resolution. No comments were received during the scoping process that suggested a no livestock grazing alternative should be considered, and the agencies received feedback from the public during LRMP study group meetings that a no livestock grazing alternative would not contribute to addressing the issues that the plan should focus on. Concerns over livestock grazing in some localized areas were brought to the managing agencies. Closures and adjustments to livestock use have been incorporated in the alternatives, as appropriate, on an area basis in order to address these issues. The USFS and BLM have considerable discretion through their livestock grazing regulations to determine and adjust stocking levels, seasons-of-use, and livestock grazing management activities, as well as to allocate forage. For these reasons, an alternative proposing no livestock grazing for the entire planning area is not needed and has been dismissed from further consideration in this analysis.

No Coalbed Methane Gas Development in the HD Mountains Alternative: This alternative would prohibit further development of existing oil and gas leases in the HD Mountains. However, this alternative would not be practical, due to valid existing rights. A number of persons also asked that the HD Mountains be recommended for inclusion in the National Wilderness Preservation System and/or be managed as an MA 1, where natural processes dominate. The HD Mountains Roadless

Area was analyzed but was found to not be available for wilderness, due to its high mineral potential, approved plans, and current development of existing oil and gas leases within the area.

The ROD for the Northern San Juan Basin Coalbed Methane (NSJB-CBM) Development EIS (USFS and BLM 1982) describes how development of current leases would proceed in the HD Mountains. This land management plan EIS addresses future management of the HD Mountains, including whether the area should be available for leasing after the current leases expire.

Maximum Timber Yield Alternative: This alternative would maximize timber production. This alternative was considered, but eliminated, because it was not considered reasonable given the required consideration of other resource desired conditions and objectives, likely budget levels, local mill capacities, and expected demand for timber products.

Citizens for the Wild San Juan's Alternative: As presented to the SJNF and TRFO, this alternative's goal would be to expand large, wild core habitats; return native fish and wildlife species; secure critical landscape connections; and promote living, working, and playing in harmony with native species and wild habitats in the planning area. In its entirety, this alternative would not meet the purpose and need for the new land management plan. The San Juan Citizens Alliance presented the alternative to the SJNF and TRFO, with endorsements from the Southern Rockies Ecosystem Project, the Wilderness Society, the Sierra Club – Rocky Mountain Chapter, the Rocky Mountain Recreation Initiative, the Center for Native Ecosystems, the Sinapu, the Biodiversity Conservation Alliance, the Colorado Environmental Coalition, the Colorado Wild, the Western Resource Advocates, and the Upper Arkansas South Platte Project.

This alternative, along with similar comments and suggestions from participants in the community study group process, was the primary basis for Alternative C. Many ideas from this alternative would be represented under Alternative B, and, to a lesser extent, Alternative D. The exact alternative was not analyzed in detail because it included wilderness recommendations for some lands that were found not to be capable or available for wilderness and Wild and Scenic River (WSR) recommendations for some stream segments that were found not to be eligible for WSR status.

The Citizens Wilderness Proposal Alternative: This alternative advocates citizens proposed wilderness areas for the SJNF and TRFO. In its entirety, this alternative would not meet the purpose and need for the new land management plan. This alternative was presented to the SJNF and TRFO by the San Juan Citizens Alliance, the Colorado Environmental Coalition, the Wilderness Society, the Southern Rockies Ecosystem Project, the Rocky Mountain Recreation Initiative, the Colorado Wild, the Sinapu, the Central Colorado Wilderness Coalition, the Sierra Club – Rocky Mountain Chapter, the Western Resource Advocates, the Upper Arkansas South Platte Project, the Colorado Mountain Club, the Center for Native Ecosystems, and the San Luis Valley Ecosystem Council.

Most of the proposal's wilderness recommendations are represented by Alternative C. The exact citizens' alternative was not analyzed in detail because it included wilderness recommendations for some lands that were found to not be capable or available for wilderness, or it contained areas on BLM lands, and BLM does not have the authority to recommend new wilderness areas or create new WSAs. Although the addition of new WSAs, or boundary changes to existing WSAs, was not considered in detail, several of the areas identified in the citizen's wilderness proposal on BLM lands are addressed through the TRFO's inventory of lands with wilderness characteristics, which is discussed in Volume III, Appendix O.

2.4 Comparison of the Alternatives

The 2007 Draft LRMP/EIS described and analyzed four alternatives, including Alternative A (the No Action Alternative), Alternative B (the Preferred Alternative), and Alternatives C and D, each of which represents different ways to achieve the stated goals and objectives. These four alternatives are carried into the FEIS for analysis and consideration. Each alternative was developed based on response to the following factors:

- balance of use and protection of resources as described by the four planning issues;
- extent of the environmental impacts; and
- public comments on the Draft LRMP/EIS and Supplement to the Draft EIS.

Alternative A represents the continuation of current management direction under the existing BLM and USFS land management plans: the BLM's San Juan/San Miguel Resource Management Plan (1985) and the San Juan National Forest Land and Resource Management Plan (1983), both as amended. Alternative A meets the NEPA requirements that a No Action Alternative be considered (40 CFR 1502.14). "No Action" means that the alternative reflects the implementation of existing management goals, objectives, and management practices based on the existing land use plans. Alternative A also serves as the baseline for comparing and contrasting the impacts of the other alternatives. Alternative A is based on reasonably foreseeable actions, existing planning decisions and policies, and existing land use allocations and programs.

Alternative B, the Preferred Alternative, focuses on balancing the goals of maintaining working forest and rangelands and retaining core, undeveloped lands and providing and maintaining the full diversity of uses and active recreation opportunities. Uses and activities that require roads, such as timber harvesting and oil and gas development, would be mostly focused in areas that already have roads, while the relatively undeveloped areas and areas that currently do not have roads would, for the most part, remain that way. Alternative B was chosen because it responds best to the major issues while providing for common ground among conflicting opinions and multiple uses of public lands in a sustainable fashion. Alternative B also incorporates the goals of the USFS's Strategic Plan (36 CFR 219.12(f)(6)) and the U.S. Department of the Interior's (USDI's) Strategic Plan. The Responsible Officials, the Regional Forester for NFS lands and the State Director for BLM-administered lands, have identified Alternative B as the Preferred Alternative in this FEIS.

Alternative C provides for a mix of multiple-use activities with a primary emphasis on maintaining the undeveloped character of the planning area. Production of goods from vegetation management would continue, but might be secondary to other non-commodity objectives. Under Alternative C, production of goods and services would be more constrained than that proposed under Alternatives A, B, and D. Alternative C identifies more resources and areas for special designation than the other alternatives and overall emphasizes the undeveloped areas and non-motorized recreational activities to a greater degree than any of the other alternatives.

Alternative D provides for a mix of multiple-use activities, with a primary emphasis on working forest and rangelands in order to produce a higher level of commodity goods and services when compared to the other alternatives. Alternative D allocates the least amount of land for special designation. Under Alternative D production of goods and services would be greater than that proposed under Alternatives B and C.

2.4.1 Management Areas

MAs apply to all SJNF lands within the planning area. MAs describe the intensity of management that can be expected within each MA, ranging from areas where natural processes dominate and shape the landscape to areas that are intensely managed. MAs also provide a general sense of how the landscape would appear and identify uses and activities that are allowed for programs such as grazing, timber, motorized recreation, etc. A full description of each MA is provided in Chapter 3 of the LRMP. The description of how MAs vary by alternative is included now for context, since MAs are referred to in the comparisons of issues and LRMP decisions that follow (acreages are provided in Table 2.4.1). See Volume III, Appendix V, Maps 2 through 5 for a display of MAs by alternative.

Table 2.4.1: Management Area Allocations on San Juan National Forest Lands

Management Area Allocations	Alternative A (No Action)	Alternative B (Preferred)	Alternative C	Alternative D
MA 1 - Natural Processes Dominate	483,869	598,517	1,016,281	497,856
MA 2 - Special Areas and Unique Landscape Areas	8,949	91,985	86,295	59,602
MA 3 - Natural Landscape, with Limited Management	755,418	596,119	245,753	710,990
MA 4 - High-Use Recreation Emphasis	148,022	69,864	46,502	79,854
MA 5 - Active Management	454,035	451,730	426,507	454,137
MA 7 - Public and Private Lands Intermix	0	49,560	40,679	49,547
MA 8 - Highly Developed Areas	14,538	7,056	2,814	12,845
Total Acres	1,864,831	1,864,831	1,864,831	1,864,831

Alternative A was developed by translating the San Juan National Forest Land and Resource Management Plan (1983) management prescriptions to MAs. MA 1 includes designated wilderness, the Piedra area, and the wild segment of the Piedra River. MA 2 includes the existing RNAs, special botanical areas (SBAs), Chimney Rock National Monument, and Falls Creek Archeological Area. The MA 4 allocation in Alternative A was applied to areas under the current LRMP that were allocated to semi-primitive non-motorized recreation areas. MA 5 correlates closely with the areas suitable for timber production and areas that were open to cross-country motorized travel (before the current LRMP was amended). There was no similar category to MA 7 in the current management prescriptions; hence, there are no acres allocated to MA 7 in Alternative A. Lastly, MA 8 includes the McPhee dam and areas of existing and potential downhill ski areas under the current LRMP.

For the most part, the **type of resources and areas** allocated to each MA under Alternative A are the same areas and resources allocated under Alternatives B, C, and D. For example, MA 1 applies to wilderness areas, the Piedra Area, and wild segments of suitable WSR under all alternatives; MA 2 applies to most special area designations and unique landscapes, such as RNAs, SBAs, archeological areas, etc.; and MA 8 applies to dams and downhill ski areas. In general MA 5 correlates with lands suitable for timber production and landscapes with a developed road system. The application of MA 4 for Alternatives B, C, and D is applied to scenic byways and other NFS roads valued for their scenery and driving for pleasure, as well as recreation destinations, such as lakes. MA 7 is applied to the areas where public and private lands are intermixed and around communities. MA 3 generally applies to most lands not already allocated for the specific resources and areas that the other MAs define. The primary MA differences among the alternatives include:

- **Management of CRAs:** Consistent with the theme of emphasizing the undeveloped nature of the SJNF, Alternative C allocates nearly all of the CRAs to MA 1 (which is more restrictive than the

Colorado Roadless Rule), whereas Alternatives A, B, and D manage most CRAs as MA 3. (Additionally, in Alternatives B, C, and D there are some portions of CRAs that are designated as MA 4 [e.g., CRAs that are within scenic corridors], MA 7 for areas just outside Pagosa Springs, and MA 2 such as RNA designations.) Hence, Alternative C has the most acres allocated to MA 1.

- **Areas suitable for timber production and MA 5 lands:** All lands suitable for timber production are allocated to MA 5 and include lands that have commercial timber value. With the passing of the Colorado Roadless Rule and its prohibitions on tree cutting and road building, all suitable timber production lands that were within CRAs were removed from all alternatives, resulting in similar acres allocated to MA 5 across the alternatives.
- **Areas suitable for downhill ski area development:** MA 8 varies significantly by alternative due to differences among the alternatives for downhill ski areas. Under the current LRMP, 14,538 acres are identified for downhill ski development. Alternative D is similar to Alternative A, but removes the Wolf Creek Valley and Stoner potential downhill ski areas, managing these areas as MA 3 instead. Alternative B makes the same changes as Alternative D and additionally removes the East Fork potential ski area, which is also a CRA, and instead would manage it as an MA 1. Alternative C would manage most of the downhill ski areas identified in Alternative A as MA 1 to retain their undeveloped character.

2.4.2 Issue 1: Balancing Management between the Ideas of Maintaining “Working Forest and Rangelands” and Retaining “Core Undeveloped Lands”

This issue addresses questions regarding where public lands should be actively managed (e.g., for timber production and mineral development) and which lands should have minimal management, allowing natural processes to shape the landscape (i.e., core undeveloped areas). The three primary activities and uses of actively managed lands on the SJNF and TRFO are timber production, mineral development, and livestock grazing. Roads can be expected in the active MAs, because lands devoted to managing or extracting resources generally require road access. On SJNF lands, MA 5 lands are primarily correlated with areas identified as suitable for timber production, mineral development, access, and where road construction is suitable and anticipated.

Core undeveloped areas provide reserves and refuges to protect native biodiversity and serve as wildlife movement corridors and linkage areas. A majority of the core undeveloped areas on SJNF lands are within roadless areas identified in the Colorado Roadless Rule. Other undeveloped areas include BLM lands managed for their wilderness characteristics, RNAs, and areas recommended for wilderness. Most of the LRMP decisions related to these undeveloped areas are discussed under Issue Three: Special Area Designations. Management of CRAs on SJNF lands is consistent across all alternatives and managed by the Colorado Roadless Rule.

In general, Alternatives A and D emphasize active management and land allocations that maximize goods and services on the SJNF and TRFO, followed by Alternative B. Alternative C favors the retention of core undeveloped lands, where natural processes dominate land management and would yield the least amount of commodity goods and services.

2.4.2.a Lands Suitable for Timber Production and Harvest

Timber suitability is determined through a process established through the NFMA and planning regulations. This winnowing process first identifies lands not suitable for harvest by excluding areas where 1) site conditions preclude tree cover, 2) harvest is prohibited by statute or regulation (e.g., wilderness), 3) irreversible resource damage could occur from timber harvest (e.g., steep or unstable

slopes), and 4) adequate restocking, with trees, following harvest is not assured. Lands remaining after this exclusionary process are deemed “tentatively suitable.” These remaining lands are broken into two classes: 1) lands suitable for timber production (“suitable timberlands”) and 2) “other tentatively suitable lands where timber harvest may occur” for multiple-use objectives other than timber production. Tentatively suitable lands are the same for all alternatives.

The timber sale program quantity (TSPQ) is an estimate of annual average output of timber from the SJNF during the first decade under this LRMP based on expected budget levels, industry capacity, and other public and resource objectives. The TSPQ is a combined program of timber management treatments from USFS lands designated as “suitable for timber production” and other tentatively suitable lands. The SJNF has a program of vegetation management in which timber sales are offered based on capability determined by the Long Term Sustained Yield Capacity, which is defined as the highest uniform wood yield that may be sustained under specified management intensities consistent with multiple-use objectives after stands have reached desired conditions.

Allowable sale quantity (ASQ) is the quantity of timber that may be sold from the area of suitable (for production) land covered by the LRMP; this is also referred to as “chargeable volume;” this is displayed in these LRMP revision documents as an upper threshold, under what might be viewed as a “full” budget, that is, fully meeting timber management goals

There is currently not an active commercial timber program on the BLM lands within the planning area; however, non-commercial products (including post and poles, Christmas trees, and other non-forest products) are available.

Given the adoption of the Colorado Roadless Rule (July 3, 2012), the SJNF removed all CRAs from the lands “suitable for timber production” in all alternatives. This is the primary reason that the acres suitable for timber production are relatively similar for Alternatives A, B, and D (Table 2.4.2). The “total acres where timer harvesting may occur” varies by alternative, due primarily to areas identified for other resource emphasis or special designation, such as recommended for wilderness on the SJNF lands.

Table 2.4.2: Timber Harvest and Production by Alternative

Timber Harvest and Timber Production	Alternative A (No Action)	Alternative B (Preferred)	Alternative C	Alternative D
Tentatively suitable (USFS)	722,680	722,680	722,680	722,680
Tentatively suitable (BLM)	29,146	29,146	29,146	29,146
Not suitable for timber production or harvest (USFS)	1,143,357	1,157,816	1,386,816	1,145,625
Not suitable for timber production or harvest (BLM)	476,676	476,323	476,912	476,320
Suitable for timber production (USFS)	308,544	311,949	299,431	314,118
Suitable for timber production (BLM)	0	0	0	0
Other tentatively suitable lands where timber harvest may occur (USFS)	412,933	395,067	178,587	405,090
Other tentatively suitable lands where timber harvest may occur (BLM)	26,956	27,309	26,720	27,312

Timber Harvest and Timber Production	Alternative A (No Action)	Alternative B (Preferred)	Alternative C	Alternative D
Total Acres where Timber Harvesting May Occur (USFS)	721,477	707,016	478,018	719,208
Total Acres where Timber Harvesting May Occur (BLM)	26,956	27,309	26,720	27,312
SJNF Timber Program Projections	Alternative A (No Action)	Alternative B (Preferred)	Alternative C	Alternative D
Timber: Long-term Sustained-Yield Capacity million cubic feet/million board feet (MMCF/MMBF) (average annual value for first decade)				
Timber production compatible with desired conditions and objectives	8.77/35.86	8.54/35.55	7.96/33.15	8.49/35.38
Other lands (timber harvesting in order to meet resource and area desired conditions and objectives but not for production purposes)	2.05/7.90	1.82/7.03	1.13/0.91	1.97/7.57
Timber Sale Program Quantity MMCF/MMBF (average annual value for first decade)				
Timber production compatible with desired conditions and objectives	1.71/8.57	2.18/10.92	1.99/9.95	2.46/12.29
Other lands (timber harvesting in order to meet resource and area desired conditions and objectives but not for production purposes)	0.21/1.03	0.18/0.91	0.10/0.49	0.20/0.98
Timber: ASQ MMCF/MMBF (average annual value for first decade)				
ASQ	3.7/18.7	4.0/19.9	3.8/18.9	4.0/20.2

2.4.2.b Lands Suitable and Available for Cattle and Sheep Grazing

Alternative A would continue the current allotment status and stocking rates. Alternative B is similar to Alternative A, in that AUMs would change by approximately 2%. Specifically, Alternative B would slightly increase permitted AUMs by combining several vacant custodial BLM allotments with active maintain category BLM allotments. Eleven BLM custodial grazing allotments in the Pagosa unit would be closed due to the difficulties of managing small parcels of public lands within larger private land parcels undergoing subdivision for non-agricultural uses, and remaining unstocked BLM custodial grazing allotments would be closed to improve program administration efficiency. Under Alternative B, acres of suitable grazing lands would not change on NFS lands.

Alternative C reduces grazing opportunities, reduces stocking rates, and closes the most allotments of all the alternatives in order to enhance wildlife, soils, ecosystem restoration, and cultural values. Alternative C achieves this by making currently vacant USFS sheep allotments permanently closed to livestock grazing and closing BLM sheep allotments in the Silverton area to eliminate potential wild and domestic sheep conflicts. Alternative C would also close the BLM Spring Creek allotment located within the Spring Creek Wild Horse HMA and would close custodial BLM allotments to improve public land management efficiency. (Note: any decision to close or stock vacant allotments would be evaluated at the project level.)

Alternative D proposes to increase livestock grazing by offering vacant USFS allotments to qualified operators, stocking rates via restoration activities on improve and maintain category BLM allotments, and AUMs on USFS grazing allotments within those areas where restoration activities are planned. Under Alternative D, acres of suitable grazing lands for cattle would increase by 16% and 3% for

SJNF and BLM lands, respectively, and remain the same as Alternatives A and B for suitable/available grazing lands for sheep (Table 2.4.3).

Table 2.4.3: Livestock Grazing Land Allocations by Alternative

Livestock Grazing	Alternative A (No Action)	Alternative B (Preferred)	Alternative C	Alternative D
Livestock Grazing: Permitted AUMs				
Sheep: permitted AUMs (USFS)	6,396	6,396	4,981	11,327
Sheep: permitted AUMs (BLM)	2,073	2,073	16	2,281
Total Sheep AUMs	8,469	8,469	4,997	13,608
Cattle: permitted AUMs (USFS)	102,925	105,809	93,602	139,745
Cattle: permitted AUMs (BLM)	21,070	21,152	14,189	23,734
Total Cattle AUMs	123,995	126,961	107,791	163,479
Livestock Grazing: Suitable and Available Acres				
Sheep: total suitable acres (USFS)	183,733	183,733	122,670	183,733
Sheep: lands available (BLM)	31,973	31,973	2,566	31,973
Total Acres	215,706	215,706	125,236	215,706
Cattle: total suitable acres (USFS)	689,628	689,628	641,456	800,810
Cattle: lands available (BLM)	398,802	388,202	320,214	398,802
Total Acres	1,088,430	1,077,830	961,670	1,199,612

2.4.2.c Lands Open for Locatable Mineral Development

Lands currently withdrawn or segregated from mineral leasing under all alternatives include designated wilderness, the Piedra Area, the Alpine Loop Backcountry Byway, Chimney Rock National Monument, and existing downhill ski areas, administrative sites, and developed recreation areas (e.g., campgrounds). Additionally, Alternative B recommends the wild segments of suitable WSRs and recommended wilderness areas be petitioned for withdrawal. Alternative C recommends the same areas be petitioned for withdrawal as Alternative B and adds the entire Dolores River Canyon, RNAs, lands managed for their wilderness characteristics, and the Mesa Verde Escarpment. Alternative D does not recommend any new lands be petitioned for withdrawal (Table 2.4.4).

Table 2.4.4: Lands Open, Closed, and Recommended for Withdrawal from Locatable Mineral Development by Alternative

Federal Mineral Estate	Alternative A	Alternative B	Alternative C	Alternative D
Open to locatable mineral development (USFS)	1,279,087	1,220,604	751,447	1,279,087
Open to locatable mineral development (BLM)	724,638	711,983	656,579	724,638
Withdrawn (USFS)	502,502	502,502	502,502	502,502
Withdrawn (BLM)	3,557	3,557	3,557	3,557
Petition to withdraw (USFS)	0	58,482	527,640	0
Petition to withdraw (BLM)	0	12,655	68,059	0

2.4.3 Issue 2: Providing Recreation and Travel Management within a Sustainable Ecological Framework

This issue addresses questions about what lands should be made available for recreational motorized or non-motorized travel, including overground and oversnow travel. In general, travel suitability is determined based on the need for administrative access, the goals of providing for various recreational opportunities and reducing user conflicts, the need to provide for resource protection, and in consideration of wildlife habitat needs. The LRMP decision identifies **areas** where motorized use is either suitable or not suitable (in USFS terms) and areas that are either open, closed, or limited (in BLM terms). This LRMP/FEIS does not make site-specific, route-by-route designations, such as identifying specific roads or trails that would be open or closed; those decisions are made during travel management planning. For more information about motorized suitability and travel management planning on the SJNF and TRFO, please see the Access and Travel Management section of the LRMP.

2.4.3.a Motorized Suitability and Off-Highway Vehicle Designations

SJNF Overground Motorized Suitability: For overground travel on SJNF lands in Alternative A, all areas are suitable for motorized travel except designated wilderness areas, the Piedra Area, and the wild segment of the Piedra River. Alternative A is based on the 2005 visitor map that was used during public scoping. Alternatives B, C, and D all identify more areas as not suitable for overground motorized use. In general, the changes from Alternative A are a result of making MA 1 lands and areas recommended for wilderness unsuitable, as well as areas identified for resource or habitat emphasis, including some CRAs that currently do not have motorized routes. Areas of greatest difference among the alternatives for overground travel include, but are not limited to, most of the area within the Rico West-Dolores landscape (including Fish Creek, Willow Divide, the Meadows, Bear Creek, and the Rico Mountains), the Hermosa Creek and Beaver Meadows area on the Columbine District, Turkey Springs, Jackson Mountain, and the Trail Ridge areas on the Pagosa District.

Alternative B closes 928,054 acres to overground travel; approximately half of those acres (481,532) are within the wilderness and Piedra areas. Alternative C would make the most areas unsuitable for motorized use (1,133,752), as it has the most MA 1 acres and the most acres recommended for wilderness. Conversely, Alternative D does not recommend any wilderness areas and has the least amount of MA 1 acres; hence, it has more acres available for motorized recreation. Overall, Alternative D closes approximately 273,000 acres more than currently identified in Alternative A.

SJNF Oversnow Motorized Suitability: Alternative A has 883,972 acres open for oversnow motorized travel and 980,860 acres unsuitable. This alternative has the most suitable oversnow acres of all the alternatives and would provide the most suitable motorized recreation opportunities on the mountain passes. Alternative D has approximately 30,000 less suitable acres than Alternative A, including less acres in the Coalbank and Wolf Creek Pass areas. Compared to Alternative A, Alternative B reduces the acres of open to motorized winter use by approximately 91,600 acres. The changes in areas open and closed can best be understood by viewing the Section 3.14, Recreation. In Alternative B the east side of Red Mountain Pass would change to unsuitable and the west side would remain suitable (access from the west side to the suitable area known as US Basin on the east side of the pass would be retained via a motorized route connecting the two areas). The configuration of open and closed areas also changes for Coalbank, Molas, and Wolf Creek Pass in Alternative B. Alternative C allocates the least amount of acres for oversnow motorized use, which correlates with the emphasis on maintaining undeveloped areas and the amount of acres allocated to MA 1, which

prohibits overground and oversnow motorized recreation. In Alternative D, both sides of Red Mountain Pass would be suitable for oversnow motorized travel, as there would be more suitable acres at the other passes than provided by Alternatives B and C.

TRFO OHV area designations year-round: Closed areas in Alternative A on TRFO lands include WSAs, the Snaggletooth area of the Dolores River Canyon, Perins Peak Wildlife Management Area, and Animas Mountain. Limited Areas under Alternative A include Silverton, a portion of Disappointment Valley, and a portion of the Grandview area. All other areas are open to OHV travel under Alternative A on TRFO lands.

The primary difference between Alternative A and the other alternatives on TRFO lands is that nearly all of the currently designated open areas under Alternative A would be changed to limited to existing routes or limited to designated routes under Alternatives B, C, and D. The limited OHV designation compliments the upcoming travel management planning on TRFO lands, in which route designations and season of use would be determined. It also compliments agency direction to limit cross-country travel and designated routes. Acres limited to designated routes are the same for Alternatives B, C, and D.

Under Alternative B most of the TRFO would be designated as limited to existing routes. The closed areas would be similar to Alternative A, with the addition of closing lands managed for their wilderness characteristics. Two small play areas totaling 23 acres within the Cortez Special Recreation Management Area (SRMA) would be designated open to cross-country travel.

Alternative C has the most closed acres, including WSAs, lands managed for their wilderness characteristics, and the Mesa Verde Escarpment. The rest of the area is designated as limited to designated or limited to existing routes under Alternative C; there are no open areas under Alternative C.

Alternative D has the same closed acres as Alternative A, except Animas Mountain would be limited, not closed. Alternative D would have the same open areas (23 acres) as Alternative B, and the rest of the area would be designated as limited to designated or existing routes (Table 2.4.5).

Table 2.4.5: Motorized Travel Suitability and Recreation Land Allocations by Alternative

Motorized Suitability and Recreation	Alternative A (No Action)	Alternative B (Preferred)	Alternative C	Alternative D
SJNF Motorized Travel over Ground (acres)				
USFS not suitable	482,019	928,054	1,133,752	755,538
USFS suitable areas	896,400	632,500	448,992	759,602
USFS suitable opportunity areas	486,413	304,278	282,088	349,692
Total	1,864,832	1,864,832	1,864,832	1,864,832
Motorized Travel over Snow (acres)				
USFS not suitable areas	980,860	1,072,520	1,277,808	1,008,741
USFS suitable areas	883,972	792,312	587,024	856,091
Total	1,864,832	1,864,832	1,864,832	1,864,832
TRFO Motorized Travel Year-round				
BLM closed	70,602	73,823	104,523	59,758
BLM limited	69,254	429,782	399,104	443,846
BLM open	363,771	23	0	23
Total	503,627	503,628	503,627	503,627

2.4.3.b Special Recreation Management Areas (BLM only)

Current management (Alternative A) includes two SRMAs—Dolores River Canyon and Silverton. Alternative A includes approximately 17,000 acres more in the Dolores River Canyon SRMA than the other alternatives, which are within the Dolores River Canyon WSA. Hence, Alternatives B, C, and D stop the SRMA at the WSA boundary.

Alternatives B and C have the same SRMA designations including the two existing SRMAs (Dolores River Canyon and Silverton) and adds two more SRMAs for recreation opportunities around Durango and Cortez.

Alternative D has the greatest amount of acres allocated for SRMAs (if not including the Dolores River Canyon WSA that Alternative A has). Similar to Alternatives B and C, it includes the two existing SRMAs (Dolores River Canyon and Silverton) and adds the Durango and Cortez SRMAs. However, the Durango SRMA is larger than identified in Alternatives B and C because it includes Perins Peak parcels as part of the SRMA (Table 2.4.6). See Maps 36 through 39 in Volume III. Appendix V for a depiction of SRMAs proposed under each alternative.

Table 2.4.6: Special Recreation Management Areas by Alternative

SRMAs	Alternative A (No Action)	Alternative B (Preferred)	Alternative C	Alternative D
Cortez SRMA	0	8,710	8,710	8,710
Dolores River SRMA	50,222*	33,435	33,435	33,435
Durango SRMA	0	3,632	3,632	5,145
Silverton SRMA	44,888	44,888	44,888	44,888
Total	95,110	90,665	90,665	92,178
* The SRMA boundary in Alternative A includes acres within the Dolores River Canyon WSA. The SRMA boundary in Alternatives B, C, and D does not include the acres within the WSA.				

2.4.3.c Downhill Ski Areas

Alternative A downhill ski acreage allocation is outdated, in that it includes areas that were identified more than 20 years ago that have never been developed and that have gone defunct since the current plans were written. Given the unfeasible ski area allocations in Alternative A, Alternative D recommends the most acres for downhill skiing. It includes the current Durango Mountain Resort and Silverton areas, and identifies two new polygons that would expand the Wolf Creek ski area onto the SJNF, totaling (821 acres). Alternative D would also retain the East Fork potential downhill ski area. Alternative B includes the current Durango Mountain Resort and Silverton ski areas, and identifies the two polygons to expand the Wolf Creek ski area onto the SJNF. The current permitted downhill ski area boundary for Purgatory ski area is kept the same in Alternatives B and D. This boundary includes what is developed and room for expansion to the north. The Wolf Creek ski area expansion is not found suitable under Alternative C. Additionally, the Durango Mountain Resort permitted ski area boundary is reduced in Alternative C to include just the currently developed area (Table 2.4.7).

Table 2.4.7: Downhill Ski Area Allocations by Alternative

SRMAs and Downhill Ski Areas	Alternative A (No Action)	Alternative B (Preferred)	Alternative C	Alternative D
Downhill Ski Areas				
Durango Mountain Resort (existing)– SJNF	5,593	5,593	2,149	5,593

SRMAs and Downhill Ski Areas	Alternative A (No Action)	Alternative B (Preferred)	Alternative C	Alternative D
Downhill Ski Areas				
Wolf Creek ski area expansion (potential)–SJNF*	60	821	60	821
East Fork (potential)–SJNF	5,009	0	0	5,009
Stoner (defunct)–SJNF	276	0	0	0
Wolf Creek Valley (defunct)–SJNF	2,412	0	0	0
Silverton ski area (existing)–BLM	1,300	1,300	1,300	1,300
Total Downhill Ski Areas	14,491	7,714	3,350	12,596
*All alternatives reflect 60 acres of existing Wolf Creek ski area facilities and equipment that is actually on the SJNF and not the Rio Grande National Forest (e.g., explosives cache, miscellaneous equipment, etc.)				

2.4.3.d Recreation Opportunity Spectrum

Changes between Alternative A recreation opportunity spectrum (ROS) and the action alternatives were made primarily to correlate more closely with motorized suitability and OHV designations and to represent foreseeable recreation opportunities across SJNF and TRFO lands. For example, the greatest difference in ROS acreage on SJNF lands is the difference between semi-primitive non-motorized and semi-primitive motorized ROS, which correlates with suitable and unsuitable allocations for Alternatives B, C, and D (Table 2.4.8). Primitive wilderness ROS on the SJNF in Alternatives B, C, and D is due to allocating wilderness and the Piedra to this classification. Similarly, on TRFO lands, the primitive ROS category increased in Alternatives B, C and D due to allocating WSAs to this classification. Please see the Recreation section of the LRMP for an explanation of the different ROS classes.

Table 2.4.8: Recreation Opportunity Spectrum Acres by Alternative

Recreation Opportunity	Alternative A (No Action)	Alternative B (Preferred)	Alternative C	Alternative D
SJNF Summer ROS				
Primitive wilderness	0	481,532	481,532	481,532
Primitive	490,173	2,620	513,756	0
Semi-primitive non-motorized	369,118	435,171	137,885	278,360
Semi-primitive motorized	93,738	448,638	274,643	512,464
Roaded natural	881,687	495,545	455,615	591,076
Rural	30,115	1,325	1,400	1,399
Total SJNF Summer ROS	1,864,831	1,864,831	1,864,831	1,864,831
SJNF Winter Recreation Opportunity Spectrum				
Primitive wilderness	481,035	481,532	481,532	481,532
Primitive	0	2,605	527,174	0
Semi-primitive non-motorized	437,315	545,132	243,329	463,601
Semi-primitive motorized	287,471	514,037	268,378	319,863
Roaded natural	657,367	318,659	344,021	596,881
Rural	1,643	2,866	397	2,954
Total SJNF Winter ROS	1,864,831	1,864,831	1,864,831	1,864,831
TRFO Recreation Opportunity Spectrum Year-round				
Primitive	0	55,729	55,729	55,730
Semi-primitive non-motorized	61,274	19,881	23,840	19,724
Semi-primitive motorized	319,989	331,366	343,806	331,575
Roaded natural	75,876	95,819	79,420	95,765
Rural	46,490	834	834	834
Total BLM	503,629	503,629	503,629	503,629

2.4.3.e Visual Resource and Scenic Integrity Management Objectives

Visual resource management (VRM) objectives on TRFO lands and scenic integrity objectives (SIOs) on the SJNF vary by alternative based primarily on the theme of each alternative. For example on the SJNF, very high SIO acres are the greatest in Alternative C due to great amount of acres recommended for wilderness designation (Table 2.4.9). Similarly, the VRM II acres are greatest Alternative C, as that alternative emphasizes the natural preservation over commodity production of lands. Alternative D emphasizes commodity production, which could potentially alter the visual resources of the landscape; hence Alternative D allocates more acres to VRM Classes III and IV and low and moderate SIOs. Low SIO and VRM Class IV represent the greatest difference among the alternatives. Low SIO and VRM Class IV acres in Alternative B represent areas where timber harvest and vegetation management would be emphasized on the Dolores District (SJNF), oil and gas development in the HD area of the Columbine District (SJNF), and U.S. Department of Energy (DOE) lands on the TRFO. Alternative D allocates the greatest amount of Low SIO and VRM IV acres, primarily due to the oil and gas development anticipated in the Paradox Leasing Analysis Area (PLAA) on both SJNF and TRFO lands.

Table 2.4.9: Visual Resource Management and Scenic Integrity Objectives by Alternative

VRM and SIO	Alternative A (No Action)	Alternative B (Preferred)	Alternative C	Alternative D
SJNF Scenic Integrity Objectives				
Very low	3,509	0	0	0
Low	107,398	113,005	5,243	330,160
Moderate	396,951	522,319	498,209	256,341
High	871,086	625,731	347,766	775,737
Very high	485,887	603,767	1,013,572	502,554
Total SJNF	1,864,831	1,864,831	1,864,832	1,864,832
TRFO Visual Resource Management Objectives				
VRM I	0	57,922	57,592	57,494
VRM II	0	169,277	354,264	235,634
VRM III	0	267,296	90,572	108,372
VRM IV	0	9,135	1,201	102,129
Unclassified	503,629	0	0	0
Total BLM	503,629	503,629	503,629	503,630

2.4.4 Issue 3: Management of Special Area Designations and Unique Landscapes

This issue reflects the question about which areas should be recommended for special designations or emphasize specific resource management or protections. Special area designations are described below and compared by alternative.

In continuing current management, Alternative A would not recommend any new areas for special designation; it would only continue to manage the areas currently identified, including:

- WSR segments of the Dolores, West Dolores, Los Pinos, and Piedra Rivers found suitable under the current plan;
- the Anasazi Cultural Area ACEC on TRFO lands;
- the Williams and Narraguinnep RNAs on SJNF lands,

- the Falls Creek and Chimney Rock Archeological Areas on SJNF lands
- the O’neal Hill SBA
- the Spring Creek Wild Horse HMA; and
- the Perins Peak Wildlife Management Area.

2.4.4.a Wilderness Recommendations on San Juan National Forest Lands

Alternative A does not recommend any new wilderness. Alternative B recommends the following four areas for wilderness on SJNF lands, totaling 54,886 acres: the west side of the Hermosa CRA, the Lizard Head adjacent CRA, portions of the Weminuche adjacent CRAs (Elk Park and Monk Rock), and portions of the Turkey Creek CRA. The other CRAs would be managed to retain their roadless character in accordance with the Colorado Roadless Rule. Under Alternative C, all CRAs that meet the available and capable requirements for wilderness are proposed for wilderness (approximately 532,400 acres) (Table 2.4.10).

Table 2.4.10: Recommended Wilderness Areas by Alternative and Already Designated Areas

Specialty Designated Lands	Alternative A (No Action)	Alternative B (Preferred)	Alternative C	Alternative D
Wilderness, WSAs, and Recommended Wilderness				
Wilderness acres - Congressionally designated (USFS)	420,522	420,522	420,522	420,522
Piedra Area (USFS)	60,341	60,341	60,341	60,341
WSAs (BLM)	56,576	56,576	56,576	56,576
Recommended Wilderness (USFS) (acres)				
Fish Creek	0	0	13,537	0
Storm Peak	0	0	57,623	0
Ryman	0	0	8,665	0
Lizard Head, adjacent	0	2,632	5,558	0
Blackhawk Mountain	0	0	17,545	0
Hermosa	0	50,850	149,402	0
San Miguel	0	0	65,061	0
West Needle	0	0	4,378	0
East Animas			16,883	
Baldy	0	0	20,032	0
Florida River			5,726	
Runlett Park	0	0	5,600	0
HD Mountains			0	
Piedra Area, adjacent	0	0	39,230	0
Graham Park			17,325	
Weminuche, adjacent	0	740	20,827	0
Turkey Creek	0	664	25,311	0
Treasure Mountain	0	0	22,502	0
South San Juan, adjacent	0	0	34,964	0
Winter Hills/Service Berry	0	0	5,100	0
Total Recommended Wilderness Acres (USFS)	0	54,886	535,269	0

2.4.4.b Lands with Wilderness Characteristics on TRFO lands

The inventory of lands with wilderness characteristics (see Volume III, Appendix O—Lands with Wilderness Characteristics) identified 36,574 acres that had wilderness characteristics. Alternative A does not have any lands with wilderness characteristics identified. Alternative B recommends managing an area in Coyote Wash and an area near the Snaggletooth section of the Dolores River for their wilderness characteristics. Alternative C recommends managing all of the areas found to have wilderness values for their wilderness characteristics, with some minor exceptions. Alternative D does not recommend that any of the areas be managed for their wilderness characteristics (Table 2.4.11).

Table 2.4.11: Lands with Wilderness Characteristics by Alternative

	Alternative A (No Action)	Alternative B (Preferred)	Alternative C	Alternative D
Lands managed for wilderness characteristics	N/A	11,867	36,574	0

2.4.4.c Suitable Wild and Scenic Rivers

Alternative A would continue to manage river segments found suitable under the current plan for WSR status, including the Dolores, West Dolores, Los Pinos, and Piedra Rivers.

Alternative B finds 12 river segments, totaling approximately 356 miles, suitable for inclusion in the National Wild and Scenic Rivers System. Under Alternative C, 24 river segments, totaling approximately 534 miles, would be considered suitable for addition to the National Wild and Scenic Rivers System. This total includes all segments considered eligible due to their outstandingly remarkable values (ORVs) and free-flowing character. Consistent with its management theme, Alternative D does not make any river segment suitable for WSR status (Table 2.4.12).

Table 2.4.12: Miles of Recommended Suitable Wild and Scenic Rivers by Alternative

Wild and Scenic River Segments	Alternative A (No Action)	Alternative B (Preferred)	Alternative C	Alternative D
Dolores River				
Dolores, above McPhee	0	0	56	0
Dolores McPhee to Bedrock	108	108	108	0
Rio Lado	0	0	3	0
West Dolores	34	0	34	0
Summit Canyon	0	0	12	0
Coyote Wash	0	8	8	0
McIntyre Canyon	0	0	6	0
Bull Canyon	0	0	6	0
Animas River				
Bakers Bridge to Sultan Creek	0	27	27	0
Sultan Creek to Silverton	0	0	4	0
Mineral Creek	0	9	9	0
Cement Creek	0	0	8	0
Cinnamon Creek	0	0	2	0
Maggie Gulch	0	0	5	0
South Fork Mineral Creek	0	7	7	0
West Fork Animas/California Gulch	0	0	3	0

Wild and Scenic River Segments	Alternative A (No Action)	Alternative B (Preferred)	Alternative C	Alternative D
Hermosa Creek and Tributaries				
Hermosa Creek and tributaries	0	62	62	0
Los Pinos River				
Los Pinos and tributaries above Vallecito	54	54	54	0
Vallecito Creek	0	0	17	0
Piedra River				
North of Hwy 160 to Forks	22	22	22	0
South of Hwy 160 to SJNF boundary (Chimney Rock area)	0	0	8	0
East Fork Piedra River				
North of wilderness boundary	9	9	9	0
South of wilderness boundary	7	0	7	0
Middle Fork Piedra River	19	19	19	0
San Juan River				
West Fork San Juan River	0	11	17	0
Wolf Creek and Fall Creek	0	0	8	0
East Fork San Juan River	0	13	13	0
Total Suitable WSR Segment Miles	253	350	534	0
Total Suitable WSR River Segments	7	12	27	0

2.4.4.d Areas of Critical Environmental Concern

Alternative A would continue to manage the existing Anasazi Cultural Area ACEC. Under Alternative B, one new ACEC, Gypsum Valley, would be designated and 941 acres of the Anasazi Cultural Area ACEC would continue to be managed as an ACEC (the size of this ACEC changed from Alternative A due to removing the portion of the area that has a developed gravel pit). Alternative C includes the same ACECs as Alternative B, but adds Silveys Pocket and Grassy Hills. All of these areas were identified as potential conservation areas by the Colorado Natural Heritage Program due to their significant biodiversity (Table 2.4.13).

Table 2.4.13: Areas of Critical Environmental Concern by Alternative

ACECs (BLM)	Alternative A (No Action)	Alternative B (Preferred)	Alternative C	Alternative D
Anasazi Cultural Area	1,160	941	941	0
Gypsum Valley	0	13,333	13,333	0
Silveys Pocket	0	0	707	0
Grassy Hills	0	0	420	0
Total ACEC Acres	1,160	14,274	15,401	0
Total ACEC Areas	1	2	4	0

2.4.4.e Research Natural Areas

Alternative A would continue to manage the two existing RNAs—Narraguinnep and Williams. In addition to the two existing RNAs, eight new RNAs totaling 54,493 acres would be designated under Alternative B. Alternative C would continue managing the two existing RNAs and designate nine new RNAs, totaling 69,141 acres. Alternative D proposes three new RNA areas to the existing two areas for a total of 15,277 acres (Table 2.4.14).

Table 2.4.14: Research Natural Areas by Alternative

Research Natural Areas (USFS)	Alternative A (No Action)	Alternative B (Preferred)	Alternative C	Alternative D
Electra	0	2,455	2,455	2,455
Grizzly Peak	0	3,256	4,676	0
Hermosa	0	15,469	15,469	0
Martinez Creek	0	1,305	1,305	0
Hidden Mesas	0	3,132	3,132	3,132
Navajo River	0	7,183	7,183	7,183
Needles Mountain	0	0	12,900	0
Piedra	0	5,976	5,976	0
Porphyry Gulch	0	11,840	11,840	0
Narraguinnep (existing)	1,971	1,971	1,971	1,971
Williams Creek (existing)	486	486	486	486
Total RNA Acres	2,457	53,073	67,393	15,227
Total RNA Areas	2	10	11	5

2.4.4.f Special Botanical Areas

Alternative A would continue to manage the O'Neal Hill SBA. In addition, Alternatives B, C, and D make the Chattanooga Fen an SBA. Alternatives B and C include management direction to retain and protect approximately 4,800 acres with old growth ponderosa pine (*Pinus ponderosa*) in the Dolores District. Under Alternative D these areas would not have specific management direction, but would be managed per the LRMP Terrestrial Ecosystem plan components (see Volume II, LRMP) (Table 2.4.15).

Table 2.4.15: Special Botanical Areas and Old Growth Recruitment Areas by Alternative

Botanical Areas (USFS)	Alternative A (No Action)	Alternative B (Preferred)	Alternative C	Alternative D
O'Neal Hill SBA	328	276	276	276
Chattanooga Fen SBA	0	59	59	59
Old Growth Recruitment Areas (USFS)	Alternative A (No Action)	Alternative B (Preferred)	Alternative C	Alternative D
Boggy Old Growth Recruitment Area	0	2,534	2,534	0
Smoothing Iron Old Growth Recruitment Area	0	2,314	2,314	0

2.4.4.g Wildlife Management Areas

The Perins Peak Wildlife Management Area is included in all alternatives. However, under Alternatives B, C, and D, the Animas Mountain portion is removed and made part of the SRMA. The wildlife values and especially winter closures are included in the SRMA direction specific for the Animas Mountain (i.e., managing winter closures is a key part of the SRMA direction).

Alternative C identifies an additional wildlife management area to protect the sage-grouse (*Centrocercus urophasianus*) habitat adjacent to the Willow Creek State Wildlife Area. Under Alternatives B and D these parcels would not have specific habitat management, but would be managed per the LRMP Terrestrial Wildlife plan components (see Volume II, LRMP) (Table 2.4.16).

Table 2.4.16: Wildlife Management Areas by Alternative

Wildlife Management Areas (BLM)	Alternative A (No Action)	Alternative B (Preferred)	Alternative C	Alternative D
Perins Peak Wildlife Management Area	3,787	2,274	2,274	2,274
Willow Creek Wildlife Management Area	0	0	876	0

2.4.4.h Wild Horse Herd Management Areas

The Spring Creek Wild Horse HMA is included in all alternatives with the same management direction under all alternatives (see Volume II, LRMP, Chapter 3 for more information) (Table 2.4.17).

Table 2.4.17: Wild Horse Herd Management Area

Wild Horse Herd Management Areas (BLM)	Alternative A (No Action)	Alternative B (Preferred)	Alternative C	Alternative D
Spring Creek Wild Horse HMA	20,983	20,983	20,983	20,983

2.4.4.i Heritage and Cultural Area Designations

On SJNF lands, the Chimney Rock National Monument and Falls Creek Archeological Areas would be managed the same under all alternatives. On TRFO lands, Alternatives B and C would manage the Mesa Verde Escarpment area to protect cultural values. Under Alternatives A and D, Mesa Verde Escarpment would not have specific management direction, but would be managed per the LRMP Heritage Resource components (see Volume II, LRMP) (Table 2.4.18).

Table 2.4.18: Heritage and Cultural Designations

Archaeological Areas (USFS and BLM)	Alternative A (No Action)	Alternative B (Preferred)	Alternative C	Alternative D
Falls Creek Archeological Area (USFS)	1,504	1,504	1,504	1,504
Chimney Rock National Monument (USFS)	4,726	4,726	4,726	4,726
Mesa Verde Escarpment (BLM)	0	7,373	7,373	0

2.4.5 Other LRMP Decisions

2.4.5.a Lands Available for Disposal

Since the current LRMP was developed, approximately 900 acres have been disposed of; hence, the total acres identified for disposal in Alternative A are fewer than the other alternatives. Alternatives B and D identify all the parcels in Alternative A and more; primarily most of the isolated, dispersed parcels on TRFO lands are identified for disposal (Table 2.4.19). Alternative C identifies the least amount of acres for disposal, in that it would retain more parcels that are adjacent to other public lands or conservation easements, as well as parcels that may contain eligible cultural sites. See Maps 44 through 47 in Volume III, Appendix V for lands available for disposal under each alternative.

Table 2.4.19: TRFO Lands Available for Disposal

Lands Available for Disposal,	Alternative A (No Action)	Alternative B (Preferred)	Alternative C	Alternative D
Acres available for disposal	10,469	15,327	8,004	15,327

2.4.5.b Right-of-way Exclusion and Avoidance Areas

With regard to areas of right-of-way (ROW) corridors for pipelines, utilities, communication, etc., the LRMP makes decisions about which resources or areas should be excluded (areas that are not available for location of ROWs under any conditions) or avoided (areas to be avoided but may be available for location of ROWs with special conditions). The resources excluded or avoided are the same for all alternatives; however, the acres identified as exclusion and avoidance areas vary by alternative because of the different land allocations for the resourced (e.g., recommended RNAs and WSR have different acres allocated by alternative).

Exclusion areas on TRFO lands include WSAs and recommended suitable WSR (wild segments only); avoidance areas include lands managed for wilderness characteristics, the Anasazi Culture Area ACEC, Perins Peak Wildlife Management Area, the Dolores River Canyon, the Mesa Verde Escarpment, and VRM II scenery classified lands.

Exclusion areas on SJNF lands include wilderness, recommended wilderness, the Piedra Area, recommended suitable WSR (wild segments only), RNAs, and areas allocated to MA 1; avoidance areas include upper tier CRAs, SBAs, Chimney Rock National Monument, Falls Creek Archeological Area, and high SIO scenery classified lands.

ROW avoidance and exclusion areas for both the SJNF and TRFO are summarized in Table 2.4.20.

Table 2.4.20: Right-of-way Avoidance and Exclusion Areas

Avoidance and Exclusion Areas	Alternative A (No Action)	Alternative B (Preferred)	Alternative C	Alternative D
SJNF exclusion acres	514,760	647,263	1,068,710	505,900
TRFO exclusion acres	68,139	69,659	70,049	56,867
Total Exclusion Acres	582,899	716,922	1,138,759	562,767
SJNF avoidance acres	1,030,769	787,462	509,497	937,468
TRFO avoidance acres	37,691	232,351	439,984	273,129
Total Avoidance Acres	1,068,460	1,019,813	949,481	1,210,597

2.4.6 Issue 4: Management of Oil and Gas Leasing and Development

This issue reflects the question about where energy development should take place and how it should be done to best balance the extraction of oil and gas with the protection of other resources and values. The LRMP and USFS oil and gas leasing availability decisions made in this plan revision and FEIS identify areas that would be made available for oil and gas leasing and development on NFS and BLM public lands, and the leasing stipulations that would apply to new leases.

The leasing alternatives complement Alternatives A, B, C, and D described earlier by incorporating lease stipulations that are consistent with the desired conditions and goals of each alternative. An alternative that allows no leasing of NFS lands within the planning area is provided consistent with the requirements of 36 CFR 228.102(c)(2). A No Leasing Alternative is also analyzed for BLM public lands, including split estate lands, in order to provide a consistent set of alternatives across the public lands administered by the USFS and BLM.

All lands under lease as of the date of the revised LRMP are managed under their existing terms; the revised oil and gas leasing availability decisions do not change or limit the terms of the valid existing rights conveyed by the leases. Existing leases are concentrated in the San Juan Basin and Paradox Basin portions of the SJNF and TRFO. Given the that these leases provide for existing rights, the revised LRMP and USFS oil and gas leasing availability decision provides for where and how oil and gas leasing development may occur on future leases only. If an existing lease expires, then such lands would be subject to the leasing decisions in the revised LRMP.

The lands most likely to be leased if made available are currently unleased lands with moderate or high potential. Within the planning area, lands are considered available for leasing, unless they are specifically withdrawn or administratively not available for lease.

- **Lands Withdrawn:** This legal classification refers to land designations made by the USDI and/or Congress that preclude the appropriation and disposal of federally owned mineral resources under the Mineral Leasing Act of 1920, subject to valid existing rights. Minerals held under valid existing rights may still be extracted. For all alternatives and the No Leasing Alternative, the lands withdrawn from mineral leasing include the designated wilderness areas—Lizard Head, Weminuche, and South San Juan—and the Piedra Area. Combined they total 480,863 acres on SJNF lands.
- **Lands Administratively Not Available:** This classification applies to lands that the Authorized Officer has determined should not be leased for oil and gas based on potential for oil and gas occurrence and development, environmental concerns that cannot be resolved, and/or other conflicting uses of USFS or BLM public lands. This designation would apply only to lands not already withdrawn from leasable mineral appropriation. Within the SJNF and TRFO, four resource areas common to all alternatives have been identified as administratively not available for oil and gas leasing because leasing would not be compatible with the desired conditions for such lands:
 - Wild segments of rivers suitable for WSR designation are administratively not available in all alternatives for lease for the purpose of protecting their suitable WSR status.
 - BLM WSAs are administratively not available for lease in all alternatives for the purpose of ensuring that the wilderness characteristics are protected until Congress acts to designate them for wilderness or release them from their WSA status.
 - USFS areas recommended for wilderness are also administratively not available for lease. The acreage varies by alternative because the acres recommended for wilderness vary by alternative.
 - Chimney Rock National Monument, Anasazi, and Falls Creek Archeological Areas are administratively not available for lease in all alternatives for the purpose of protecting the outstanding archeological values and landscape features that are integral to each sites' integrity of setting and feeling.

Alternative C would make additional areas not available for lease; they are described under Alternative C below (see Section 2.4.6c).

- **Lands Available for Leasing:** This classification applies to lands that the Authorized Officer has determined to make available for lease based on potential for oil and gas occurrence and development, environmental factors, and/or other uses disclosed in this FEIS.

For lands available for leasing, standard lease terms apply and further stipulations may be applied as necessary to a lease parcel to specify how leasing and subsequent development would occur. In general, stipulations are applied to minimize adverse impacts specific to air,

water, land, visual, cultural, and biological resources, and other land uses. The stipulation definitions below describe how leasing would occur:

- **No Surface Occupancy (NSO):** Use or occupancy of the land surface for fluid mineral (oil and gas) exploration or development is prohibited to protect identified resource values. However, oil and gas under lands affected by NSO stipulation are legally available for extraction if extraction can be accomplished without occupying the surface (such as through directional drilling or otherwise accessing the reservoir from adjacent lands). Technological limitations and higher cost will affect the recovery of these resources, but they are available.
- **Controlled Surface Use (CSU):** Use or occupancy of the land surface for fluid mineral (oil and gas) exploration or development is allowed but identified resource values require special operational constraints that may modify lease rights. A CSU stipulation allows the SJNF or TRFO to require that a proposed facility or activity be relocated from the proposed location, or otherwise modified if necessary to achieve the desired level of protection. CSU provides operating guidance, but does not substitute for NSO or timing limitation (TL) stipulations. CSU allows year-round occupancy and accessibility to leased lands while providing mitigation of effects on other resources.
- **Timing Limitations (TL):** Use or occupancy of the land surface for fluid mineral (oil and gas) exploration or development is prohibited during a specified period of the year. The scope of the TL stipulation goes beyond ground-disturbing activities to encompass any source of protracted or high-intensity disturbance that could interfere with normal wildlife behavior and adversely affect habitat use. The limitation is applied annually for a specified period. The TL stipulation does not apply to the operation and maintenance of production facilities unless the analysis demonstrates the continued need for such mitigation and that less stringent project-specific mitigation measures (such as Conditions of Approval [COAs]) would not be sufficient. The TL stipulation provides for partial accessibility for a portion of the year and maintains the potential for extraction of oil and gas, but may increase costs due to timing constraints (such as a short operating season).
- **Standard Lease Terms:** All SJNF and TRFO oil and gas leases are subject to standard lease terms. These are the least restrictive terms under which an oil and gas lessee may operate. They require operators of oil and gas leases to minimize adverse impacts to air, water, land, visual, cultural, and biological resources and other land uses and users, and to comply with all applicable laws, regulations and formal orders of the agency managing the leased lands.

Table 2.4.21 details the lands available and not available for lease by alternative. Additionally, the acres of NSO, CSU, TL and standard lease terms are provided. Stipulations may overlap on lands available for lease, e.g., there may be TL and NSO applied to the same acres. Hence, the total for stipulations would be greater than the total lands available for lease.

Table 2.4.21: Oil and Gas Leasing Availability by Alternative on National Forest System and Bureau of Land Management Lands

Jurisdiction	Alternative A	Alternative B	Alternative C	Alternative D	No Leasing Alternative
USFS					
Federal mineral acres	1,863,402	1,863,402	1,863,402	1,863,402	1,863,402
Acres withdrawn from leasing	509,954	509,954	509,954	509,954	509,954

Jurisdiction	Alternative A	Alternative B	Alternative C	Alternative D	No Leasing Alternative
Acres administratively not available for leasing	16,357	73,636	644,113	14,896	1,353,448
Acres available for leasing	1,337,090	1,279,811	709,335	1,338,551	0
NSO	848,806	876,266	547,642	666,105	0
CSU	513,893	882,532	391,150	1,033,242	0
TL	783,302	527,489	157	45,463	0
Standard lease terms	177,162	143,722	129,069	210,570	0
BLM					
Federal mineral acres	503,466	503,466	503,466	503,466	503,466
Acres withdrawn from leasing	0	0	0	0	0
Acres administratively not available for leasing	62,437	62,570	161,637	56,916	503,466
Acres available for leasing	441,030	440,896	341,829	446,550	0
NSO	132,713	194,290	318,601	98,486	0
CSU	35,948	401,232	300,504	406,487	0
TL	343,440	321,435	64	28,679	0
Standard lease terms	48,344	22,734	16,729	35,570	0
Federal Subsurface					
Federal mineral acres	319,957	319,957	319,957	319,957	319,957
Acres withdrawn from leasing	0	0	0	0	0
Acres administratively not available for leasing	0	0	0	0	319,957
Acres available for leasing	319,957	319,957	319,957	319,957	0
NSO	36,041	88,548	197,478	34,565	0
CSU	23,705	214,839	171,786	214,665	0
TL	167,189	161,301	0	461	0
Standard lease terms	128,016	82,233	110,718	104,039	0

2.4.6.a Alternative A – Oil and Gas Leasing Availability

Alternative A represents the continuation of current BLM and USFS leasing decisions (Table 2.4.22). This direction is contained in the BLM Colorado Oil and Gas Leasing and Development EIS (January 1991), the San Juan/San Miguel Resource Management Plan (BLM 1985) and the San Juan National Forest Land and Resource Management Plan (USFS 1983), as amended. In total, 2,098,077 acres are available for leasing and 78,794 acres are not available for leasing (Volume III, Appendix V, Maps 49, 53, 57). The lands not available for lease in Alternative A include WSAs and the wild segments of the Dolores River found suitable for WSR status on TRFO lands. On the SJNF, lands not available for lease include Chimney Rock National Monument and the wild segments of WSR segments. Of the combined SJNF and TRFO mineral estate, Alternative A makes 78% of the lands available for lease. Of the lands available, 17% are managed with standard lease terms and 83% are stipulated with NSO, CSU, or TL.

Table 2.4.22: Oil and Gas Leasing Availability by Mineral Estate Owner for Alternative A

Planning Area	USFS	BLM	Federal Subsurface	Total
Federal mineral acres	1,863,402	503,466	319,957	2,686,825
Acres withdrawn from leasing	509,954	0	0	509,954
Acres administratively not available for leasing	16,357	62,437	0	78,794

Planning Area	USFS	BLM	Federal Subsurface	Total
Acres available for leasing	1,337,090	441,030	319,957	2,098,077
NSO	848,806	132,713	36,041	1,017,560
CSU	513,893	35,948	23,705	573,546
TL	783,302	343,440	167,189	1,293,931
Standard lease terms	177,162	48,344	128,016	353,522

2.4.6.b Alternative B – Oil and Gas Leasing Availability

Under Alternative B, approximately 2,040,798 acres are available for lease and 136,073 acres are not available for lease. There is only a 57,279-acre difference in the lands available for lease between Alternatives A and B. The additional lands not available for lease in Alternative B are all on SJNF lands and include additional wild segments of WSR and archaeological National Register Districts (Volume III, Appendix V, Maps 50, 54, 58). Lands not available for lease have the following mineral development potential.

- WSAs (BLM): totaling 55,400 acres are located within no potential areas (10%), moderate potential areas (35%), and high potential areas (55%).
- Wild segments of suitable WSR total approximately 49,050 acres, of which 26% are within high potential areas, 8% are within moderate potential areas, and the majority (66%) are within low or no potential areas.
- The Falls Creek and Anasazi Archaeological Areas and Chimney Rock National Monument total approximately 21,500 acres on SJNF lands, of which 2% are within low potential areas, 27% are within moderate potential areas, and 71% are within and high potential areas.

An NSO stipulation would be applied to approximately 1,097,527 acres, or approximately 50% of the lands available for leasing.

- Approximately 566,100 acres of NSO stipulations are assigned to roadless areas, a majority of which (66%) occur within no to low potential areas and 34% in moderate to high potential areas.
- NSO stipulations prescribed to protect sensitive soils and steep slopes comprise an additional 172,100 acres, of which 43% occur in no to low potential areas and 56% occur in moderate potential areas.
- Recreation-related NSO stipulations (developed recreation and administrative sites, MA 8 designations on SJNF lands, national scenic byways, and high scenic integrity areas) comprise approximately 553,924 acres, 68% of which occur in no to low potential areas and 32% in moderate potential areas.
- The remaining Alternative B NSO stipulation areas include riparian areas and related water bodies, critical wildlife habitat, the Dolores River Canyon, cultural areas, lands managed for wilderness characteristics, state wildlife areas, SBAs, threatened and endangered species habitat, WSR scenic segments, and existing and proposed RNAs. These areas occur across the SJNF and TRFO and range from no to high gas potential.

Table 2.4.23 presents leasing availability and stipulations that would apply to public lands administered by the USFS and BLM in Alternative B.

Table 2.4.23: Oil and Gas Leasing Availability by Mineral Estate Owner for Alternative B

Planning Area	USFS	BLM	Federal Subsurface	Total
Federal mineral acres	1,863,402	503,466	319,957	2,686,825
Acres withdrawn from leasing	509,954	0	0	509,954
Acres administratively not available for leasing	73,636	62,437	0	136,073
Acres available for leasing	1,279,811	441,030	319,957	2,040,798
NSO	876,266	132,713	88548	1,097,527
CSU	882,532	35,948	214,839	1,133,319
TL	527,489	343,440	161,301	1,032,230
Standard lease terms	143,722	48,344	82,233	274,299

2.4.6.c Alternative C – Oil and Gas Leasing Availability

Alternative C has the least amount of lands available for lease of all the alternatives, with the exception of the No Leasing Alternative. Approximately 1,371,000 acres of the planning area would be available for lease and 805,750 acres would be not available for lease (Volume III, Appendix V, Maps 51, 55, 59).

Lands that are available for lease in the other alternatives, but not available in Alternative C, include Colorado Roadless Areas, lands managed for wilderness characteristics, the Chimney Rock viewshed, all federal mineral estate acres within state wildlife areas, proposed archeological National Register Districts, existing and proposed RNAs, the Dolores River Canyon, proposed occupied critical habitat for Gunnison sage-grouse (*Centrocercus minimus*), and municipal watersheds and public water supply areas.

Areas that are either withdrawn or administratively not available for lease have the following oil and gas resource potential:

- Recommended wilderness (USFS) and WSAs (BLM): approximately 627,434 acres including no potential areas (10%), low potential areas (52%), moderate potential areas (29%), and high potential areas (9%).
- Recommended WSR: approximately 56,300 acres including no potential areas (54%), low potential areas (16%), moderate potential areas (7%), and high potential areas (23%).
- CRAs (USFS): approximately 566,100 acres including no potential areas (9%), low potential areas (57%), moderate potential areas (29%), and high potential areas (5%).
- Lands managed for wilderness characteristics: 36,574 acres including moderate potential areas (approximately 25%) and high potential areas (approximately 75%).
- Falls Creek and Anasazi Archaeological Areas and Chimney Rock National Monument (USFS): approximately 21,500 acres including low potential areas (2%), moderate potential areas (27%), and high potential areas (71%).
- Viewshed for Chimney Rock: approximately 60,000 acres including no potential areas (9%), low potential areas (5%), moderate potential areas (74%), and high potential areas (12%).
- Proposed National Register Districts: approximately 11,500 acres including high potential areas (99%).

- Existing and proposed RNAs: approximately 67,400 acres including no potential areas (41%), low potential areas (31%), moderate potential areas (25%), and high potential areas (3%).
- Dolores River Canyon: approximately 43,900 acres including moderate potential areas (5%) and high potential areas (95%).
- Municipal watersheds and public water supplies: approximately 26,900 acres including no potential areas (5%), low potential areas (2%), moderate potential areas (61%), and high potential areas (32%).
- Proposed occupied Gunnison sage-grouse critical habitat: approximately 67,000 acres, including high potential areas (83%) and moderate potential areas (17%).
- State wildlife areas: approximately 19,000 acres including moderate potential areas (54%) and high potential areas (46%).

Lands assigned an NSO stipulation in Alternative C total approximately 1,063,721 acres, or 70% of the lands available for leasing.

- NSO stipulations that apply to highly erosive soils and steep slopes (approximately 162,800 acres, or 31%) comprise the greatest amount of the NSO stipulated lands in Alternative C, of which 45% occur in no to low potential areas and 55% occur in moderate potential areas.
- NSO stipulations prescribed to protect recreation and scenery desired conditions, including national scenic byways, developed recreation and administrative sites, and MA 8 designations on SJNF lands comprise an additional 222,800 acres in Alternative C, of which approximately 47% occur in no to low potential areas, 37% occur in moderate potential areas, and 16% occur in high potential areas.
- The remaining 1,381,628 NSO stipulated areas include protections for resources such as riparian areas and related water bodies, critical wildlife habitat, scenic and recreational river corridors, important viewsheds, old growth habitat, the Old Spanish Trail, SBAs, threatened and endangered species habitat, and designated WSR scenic sections.

Table 2.4.24 presents leasing availability and associated stipulations for USFS- and BLM-administered lands that apply to Alternative C.

Table 2.4.24: Oil and Gas Leasing Availability by Mineral Estate Owner for Alternative C

Planning Area	USFS	BLM	Federal Subsurface	Total
Federal mineral acres	1,863,402	503,466	319,957	2,686,825
Acres withdrawn from leasing	509,954	0	0	509,954
Acres administratively not available for leasing	644,113	161,637	0	805,750
Acres available for leasing	709,335	341,829	319,957	1,371,121
NSO	547,642	318,601	197,478	1,063,721
CSU	391,150	300,504	171,786	863,440
TL	157	64	0	221
Standard lease terms	129,069	16,729	110,718	256,516

2.4.6.d Alternative D – Oil and Gas Leasing Availability

Of the combined SJNF and TRFO mineral estate, Alternative D makes 78% of the lands available for lease, the most of all the alternatives. Alternatives A and D have nearly the same amount of acres

available and not available for lease (Volume III, Appendix V, Maps 52, 56, 60). Differences in areas not available for lease between Alternatives A and D include the addition of national archeological districts in Alternative D on SJNF lands and fewer acres on TRFO lands due to the difference in WSR recommendations (Alternative A includes the Dolores River, whereas, Alternative D does not).

Areas administratively not available for leasing total approximately 71,800 acres and have the following oil and gas resource potential:

- WSAs (BLM): approximately 55,400 acres are primarily located within no potential areas (10%), moderate potential areas (35%), and high potential areas (55%).
- Chimney Rock, Anasazi, and Falls Creek Archaeological Areas (approximately 22,000 acres on NFS lands) are primarily located within low or no potential areas (5%), moderate potential areas (28%), and high potential areas (67%).

Lands stipulated as NSO total approximately 799,000 acres or 38% of the lands available for leasing, and have the following resource potential:

- Approximately 566,100 acres are applied to CRAs, of which 66% occur within no to low potential areas and 34% in moderate to high potential areas. Lands recommended for wilderness (and thus administratively not available for lease under Alternatives B and C) are stipulated NSO under Alternative D.
- Stipulations developed to protect highly erosive soils and steep slopes comprise an additional 16% (approximately 165,000 acres) of the total NSO lands in Alternative D, of which 44% occur in no to low potential areas and 34% occur in moderate potential areas.
- Recreation-related stipulations, including downhill ski areas, and developed recreation and administrative sites cover approximately 41,600 acres in Alternative D, of which 55% occur in no to low potential areas and 37% in moderate potential areas.
- The remaining stipulated NSO areas, 282,764 acres, include critical wildlife habitat, archeological areas, existing and proposed RNAs, the Dolores River Canyon unique landscape, state wildlife areas, and threatened and endangered species habitat.

Table 2.4.25 presents leasing availability and stipulations for Alternative D.

Table 2.4.25: Oil and Gas Leasing Availability by Mineral Estate Owner for Alternative D

Planning Area	USFS	BLM	Federal Subsurface	Total
Federal mineral acres	1,863,402	503,466	319,957	2,686,825
Acres withdrawn from leasing	509,954	0	0	509,954
Acres administratively not available for leasing	14,896	56,916	0	71,812
Acres available for leasing	1,338,551	446,550	319,957	2,105,058
NSO	666,105	98,486	34,565	799,156
CSU	1,033,242	406,487	214,665	1,654,394
TL	45,463	28,679	461	74,603
Standard lease terms	210,570	35,570	104,039	350,179

2.4.6.e No Leasing Alternative

The No Leasing Alternative is analyzed per direction in 36 CFR 228.102(c)(2)&(3) which requires the USFS, when considering oil and gas leasing, to analyze an alternative of not leasing. A No Leasing Alternative is also applied to BLM administered public lands to achieve a consistent set of alternatives among the two land management agencies (Table 2.4.26). Under the No Leasing Alternative, 2,176,871 (i.e., all lands that are not already withdrawn) would be administratively not available for leasing (Volume III, Appendix V, Map 61). Under the No Leasing Alternative existing leases would not be affected and would continue through their terms.

Table 2.4.26: Oil and Gas Leasing Availability on the San Juan National Forest and Tres Rios Field Office for the No Leasing Alternative

Planning Area	USFS	BLM	Federal Subsurface	Total
Federal mineral acres	1,863,402	503,466	319,957	2,686,825
Acres withdrawn from leasing	509,954	0	0	509,954
Acres administratively not available for leasing	1,353,448	503,466	319,957	2,176,871
Acres available for leasing	0	0	0	0

2.5 Summary and Comparison of Environmental Consequences

This section contains a comparison summary of the each of the alternatives as they relate to the issues identified and tracked through the analysis in the FEIS. This FEIS is a programmatic document. It discusses environmental effects on a broad scale and does not predict what would happen when such broad-based standards and guidelines are implemented on individual, site-specific projects. Nor does it convey the long-term environmental consequences of any site-specific project. The actual consequences (impacts) would depend on the extent of each project, the environmental conditions at the site (which can vary widely across the public lands), and the mitigation measures and their effectiveness.

2.5.1 Terrestrial Ecosystems and Plant Species

Several ecosystem types have been identified and considered in the analysis: spruce-fir forests, aspen forests, cool-moist mixed conifer forests, warm-dry mixed conifer forests, ponderosa pine forests, pinyon-juniper woodlands, mountain shrublands, mountain grasslands, sagebrush shrublands, semi-desert shrublands, and alpine terrestrial ecosystems. Management of various resources and resource conditions (recreation, range, minerals, etc.), as described in each alternative, could result in impacts to the various ecosystem types. Generally, Alternative D would result in more area available for management activities that could result in effects to the various ecosystem types. Alternative C, with a few minor exceptions, would result in the fewest acres available for management activities that could result in effects to the various ecosystem types.

2.5.2 Terrestrial Wildlife

Nearly all multiple-use activities conducted in the planning area under LRMP implementation, and described in this analysis, have some potential to impact terrestrial wildlife habitats, species, or individuals. Activities that have greater potential to affect wildlife habitat capability or species include

travel management, oil and gas development, road construction and road management, livestock grazing, fire and fuels management, hard rock mining, and timber management. Activities with lesser impacts include aquatic and riparian habitat improvement projects, watershed improvement projects, abandoned mines and hazardous materials projects, developed recreation facilities, prescribed burns, utility corridor ROWs, and ski area modifications and expansion.

Amphibians and Reptiles (potential impacts from projected outputs)

Under all alternatives, potential impacts would be limited by implementation of LRMP components. However, the potential for habitat and species impacts and the potential need for management and monitoring of amphibians and reptiles and their habitats would be greatest under Alternative D because it has the highest projected level of outputs that could adversely impact habitats for amphibians and reptiles. Alternative C has the least projected outputs that could impact amphibian and reptile habitat. Potential adverse impacts from outputs to amphibian and reptilian habitat would be similar under Alternatives A and B, which fall between the levels for Alternatives D and C. With effective implementation of LRMP standards and guidelines and applicable management direction from other referenced guidance, adverse impacts to amphibian and reptile habitat from LRMP implementation activities are expected to be generally minor and localized and are not expected to result in measureable changes to species abundance or distribution across the planning area.

Migratory Birds

In general, the amount of habitat likely to be altered by projects conducted under LRMP implementation under any of the alternatives is expected to be relatively small, when compared to the total amount of habitat currently available within the planning area. For this reason, and for most species, the impacts of direct habitat alteration on migratory birds would be generally small and not sufficient to result in population-level impacts or in changes to species distribution across the planning area. Impacts to migratory bird habitats are expected to be similar across all LRMP alternatives for those program areas that have similar projected program outputs, such as fire and fuels treatments. In general, the impacts of LRMP implementation are likely to be greatest under Alternative D and the least under Alternative C. Alternatives A and B are projected to have relatively similar potential for impacts to migratory birds.

Mammals

The vast differences in life history and habitat requirements among the mammal species that inhabit the SJNF and TRFO suggest that mammal species may be influenced by management actions and/or by human activities in widely differing ways and to different extents. A variety of impacts that could vary greatly in intensity are expected during LRMP implementation, resulting in widely varying potential impacts on the mammal group as a whole. The potential for impact, as well as the need for adjustment and monitoring of project effects to some mammal species and their habitat components, is likely to be greatest under Alternative D. Impacts to mammals is likely to be least under Alternative C and is likely to be similar between Alternatives A and B. The differences would be due to the slight acreage increase in potential outputs under Alternative D in relation to the number of acres available for timber harvesting, the available livestock AUMs, fluid minerals development scenarios, and the substantial increase in acres suitable for summer motorized travel.

Threatened and Endangered, Candidate, and Proposed Species

For listed species, actions associated with implementing the selected alternative may impact a listed species and/or its habitat. LRMP components including mitigation, stipulation, and conservation

measures are expected to conserve listed species regardless of the selected alternative. Separate site- and project-specific consultation with the USFWS would be undertaken during the NEPA process, as necessary, when projects are proposed for implementation under the LRMP.

Sensitive Species

In general, within the planning area the wide variety of sensitive species and wide variety of their preferred habitats suggests that all LRMP alternatives have potential for some affect to some sensitive species or their preferred habitats. Effects could be both adverse and beneficial, depending on the species and habitats affected. Application of LRMP standards and guidelines and management recommendations from referenced documents and manuals during project design and implementation should ensure that the scale of impact is minimized and the intensity of effects is reduced to the extent possible. The potential for impact, as well as the potential need for adjustment and monitoring of project effects to some sensitive species and their key habitat components is likely to be greatest under Alternative D. The potential for impacts to sensitive species is likely to be least under Alternative C and is likely to be similar between Alternatives A and B. Alternative D would also have a larger amount of land area available for active management activities that may, in turn, impact habitats for sensitive species, movements of individuals, and the potential for human disturbance to sensitive species or their key habitats or use areas. Alternatives B, C, and D would eliminate cross-country motorized use. Eliminating cross-country motorized travel and limiting motorized travel to a system of designated routes would substantially reduce the potential for disturbance to sensitive species, compared to the potential for disturbance in areas of unrestricted cross-country travel that would remain available under Alternative A.

2.5.3 Riparian Areas and Wetland Ecosystems

Adverse impacts to riparian areas and wetland ecosystems from management activities would be minimized or prevented by the implementation of standards, guidelines, and stipulations in the LRMP, the implementation of project mitigation measures, and by following direction from agencies' guidance, manuals, and handbooks, as well as applicable laws and regulations. The types of management activities that would most likely affect riparian and wetlands include vegetation manipulation including fire, fuels, and timber management, solid and fluid mineral development, livestock grazing, and recreation. Generally Alternative C would result in fewer acres allocated for those management activities that could adversely impact riparian areas and wetland ecosystems. Alternative D would result in the highest potential allocation of acres for activities that could result in adverse effects to riparian areas and wetland ecosystems. Alternatives B and A are similar in acres allocated and fall between Alternatives C and D.

2.5.4 Aquatic Ecosystems and Fisheries

Based on the assessment of current aquatic conditions, it appears that the greatest risks to fish and aquatic species are from management activities that directly impact streams, riparian areas and wetlands ecosystems, and/or aquatic community composition. Activities with greater impacts include water use and development projects, road construction and road management, oil and gas development, hard rock mining, mining reclamation, and grazing. Activities with lesser impacts include timber harvesting, mechanical fuels reduction projects, rangeland treatments, wildfire, prescribed burns, utility corridor projects, ski area modifications and expansion, and OHV use. Overall, the long-term impacts related management activities on fisheries and aquatic habitat would be minor. By alternative, the greatest impacts could result from Alternatives D and A. Alternative B would result in less than Alternatives D and A with the greatest potential for adverse impacts from

Alternative C. These impacts vary by alternative due to the variations in amounts of acres allocated for various management activities proposed under each alternative and to the corresponding impacts on fish habitat from sediment and increased stream temperatures.

2.5.5 Water Resources

Each of the alternatives would allow for annual watershed restoration projects (including erosion control, stream restoration, riparian/lake/fen treatments, road decommissioning, and/or fish habitat improvement). Alternatives B and C would propose similar goals, with Alternative C treating more acres and stream miles than all other alternatives. The potential effects to watersheds would be similar to those of riparian areas and wetland ecosystems and aquatic ecosystems and fisheries. Alternatives A and D would treat substantially fewer acres and stream miles than Alternatives B and C, meaning that Alternatives B and C would produce the highest levels of beneficial watersheds impacts.

2.5.6 Livestock and Range Management

Under Alternatives A and B, changes to livestock grazing management would generally be minor in that permitted AUMs would only change by approximately 2% from Alternative A to B. Alternative A would propose to continue current permitted livestock levels. Alternative B would propose to slightly increase permitted AUMs through consolidating/combining some of the allotments. Alternative C would be the most restrictive alternative in that livestock grazing would be managed in order to enhance wildlife, cultural, and soils values, which would result in lower stocking rates. Alternative D would propose to increase livestock grazing by offering vacant USFS allotments to qualified operators, increasing stocking rates via restoration activities on BLM allotments in the improve and maintain categories where rotational grazing systems are in place, maintaining stocking levels on BLM allotments elsewhere, and increasing AUMs on USFS grazing allotments within those areas where restoration activities are planned.

2.5.7 Invasive Species

The alternatives that allow for the most ground-disturbing activities would provide the most opportunities for invasive species to establish and spread. Actions under Alternative A would have the greatest potential to introduce and spread invasive species. Alternative A would be followed by Alternatives D, B, and C. Mineral development ground-disturbing activities would continue even if no additional oil and gas leasing occur. Best management practices (BMPs), mitigation measures, and public education and awareness programs would continue to be used in order to limit the introduction and spread of invasive species. Based on observations on the SJNF and TRFO, impacts would continue to be long-term and moderate. Using early detection and rapid response strategies, most invasive species should be contained, based on successful use of these practices on the SJNF and TRFO.

2.5.8 Timber and Other Forest Products

The alternatives vary in areas where timber management may occur in order to achieve the desired vegetative conditions and objectives for timber program offerings. Alternative A would have the most acres available for management and highest harvesting objective in terms of number of acres, with Alternatives D, B, and C following in descending order, respectively. Alternative D would result in the greatest opportunity to provide vegetative conditions that limit the intensity and extent of disturbances

(including from wildfire and insect epidemic), whereas Alternative C would provide the least opportunity.

2.5.9 Insects and Disease

The projected area available to allow thinning/harvesting over the 15-year period of the LRMP ranges from 2.5% (Alternative C) to 4.4% (Alternative D). The potential area that could be burned (and concurrently meet insect/disease management objectives) is much greater, but managed fire is not expected to impact a significant area of the forest due to constraints tied to prescribed fire. Hence, effects from insects or disease would tie more closely with forest conditions and affecting factors—that is, 1) amount, extent, and susceptibility of host habitat, 2) insect or disease levels (extent and populations/infection rates), 3) climate, and 4) disturbance (such as windthrow events that create spruce-beetle preferred host material)—than from actual management activities. The impacts from chemical treatments or pheromone applications for insect/disease are expected to be similar across all alternatives. The majority of these activities would fall in or near developed facilities.

2.5.10 Fire and Fuels Management

Estimates were made of the number of acres of fuels treatment attainable annually under each alternative. These estimates were based on values at risk, historic funding levels experienced by the public lands over the last few years, and management objectives for each alternative. The highest priority for mechanical treatments would continue to be adjacent to high-value areas, communities at risk, and areas identified in community wildfire protection plans. From a cost perspective related to fire suppression, Alternative B would result in the lowest projected costs, followed by Alternatives A, D, and C, respectively. From a resource perspective, the alternatives with the greatest opportunity for vegetation management activities would potentially result if the greatest reduction in effects from fire due to reduced vegetation. Conversely opportunity for activities such as mineral development and motorized recreation could potentially increase the risk of human caused ignitions and possibly increase the risk to human health and safety.

2.5.11 Air Quality

The air quality modeling is presented in consideration of the oil and gas leasing availability decision. The air quality thresholds of significance developed by the USFS and National Park Service (NPS) were used in determining potential impacts to Class I areas and sensitive Class II areas. This is because the USFS and NPS manage all of the Class I and most of the sensitive Class II areas within the modeling domain. The one exception, Canyons of the Ancients National Monument, is managed by the BLM. It should be noted the BLM uses different thresholds of significance than the USFS and NPS. If no additional federal lands are offered for lease, some wells in the Paradox Basin (GSGP and conventional Paradox wells) would still be drilled. This is because some NFS and BLM lands are already leased and there are state and private lands that can be developed.

2.5.12 Access and Travel Management

The acreage identified as suitable for motorized travel on NFS lands and limited for BLM land would be the greatest under Alternative D, slightly less for Alternative B, followed by Alternative A, and would be the least under Alternative C.

Under Alternative A, the current over-ground and oversnow travel management direction for both NFS and BLM lands would remain unchanged from current direction. Alternatives B, C, and D would result in establishment of travel suitability classifications on NFS lands and would result in OHV area

designations on BLM lands. For Alternatives B, C, and D, the areas classified as unsuitable (NFS) or closed (BLM) to motorized travel would increase by approximately 49% under Alternative D, increase by 83% under Alternative B, and increase by 119% under Alternative C. The primary reason for this major change is that each of the action alternatives would result in eliminating areas open to cross-country motorized travel, as is allowed under the current travel management on BLM lands. Alternative A would result in the highest level of road construction, followed by Alternatives D, B, and C.

2.5.13 Recreation

In general, recreation opportunities available within each ROS setting would change to some degree between alternatives, and a large portion of the planning area would still be allocated to each ROS setting. Certain activities may be limited in geographic extent but would still be allowable, and other activities may have larger areas managed for that use.

Recreation facilities would not be noticeably impacted in relation to any of the alternatives due, in part, to the long-term established use of these facilities, as well as to their current capacity, the ability to handle increased occupation, and the considerable public investment in facility operation. Implementation of any of the alternatives would not impact the number and location of facilities.

All alternatives would continue the current permitted ski areas (Durango Mountain Resort and Silverton Mountain). Alternative D includes allocation of an area for expansion of the existing Wolf Creek ski area onto the SJNF. Wolf Creek ski area has been permitted long term on the Rio Grande National Forest east of the Continental Divide, but if future development is approved within the allocated area, this would increase developed ski area acreage on the SJNF. Alternative A would carry forward ski areas from the 1983 LRMP. Alternative D would also keep the potential ski area in the East Fork of the SJNF that was in the 1983 LRMP. The East Fork ski area would impact the roadless character of the South San Juan Adjacent Inventoried Roadless Area (IRA) and would increase commercial skiable terrain in the planning area.

Alternative B would do the most to minimize conflicts between winter sports users by directly avoiding contact between users and by maintaining settings consistent with achieving either motorized or non-motorized recreation benefits, rather than by default mixing the two.

2.5.14 Scenery and Visual Resource Management

On NFS lands, scenic integrity levels are used to assess current scenic conditions and the potential impacts under the alternatives. Scenic integrity levels are used to measure the human-caused disturbance that deviates from the dominant valued attributes of the landscape character. SIOs are then developed based, in part, on the scenic integrity levels but may also be determined by other resource allocations and uses as analyzed in the land use planning process. The scenic integrity levels are used to compare the impacts between the alternatives.

On lands administered by BLM, Visual Resource Inventory (VRI) classes are assigned to land units based on scenic quality, sensitivity level, and distance zones. The VRI for the public lands serves, in part, as the basis for the VRM class determinations, although other resource allocation decisions are also considered when designating VRM classes. A VRM class is based on the degree of acceptable visual change within that landscape, which may factor the physical and sociological characteristics of any given homogeneous area and serves as a management objective. Each class has an objective, which prescribes the amount of change allowed in the characteristic landscape.

Table 2.5.1 displays a comparison of the amount of natural-appearing landscape expected under each alternative. Alternative C would provide for more acres of natural appearing landscape than would Alternatives A and D. This would be primarily due to the amount of oil and gas, timber harvesting, and fuels reduction activities that could take place under each alternative, as well as to the associated mitigation measures required for oil and gas development (stipulations).

Table 2.5.1: Natural-appearing Landscape Expected under Each Alternative

	Current Condition	Alt. A	Alt. B	Alt. C	Alt. D
Percentage natural-appearing landscape	96%	79%	90%	99%	81%

2.5.15 Heritage and Cultural Resources

Under all of the alternatives, the heritage/cultural resource program would provide support to all resource projects, as required by Section 106 of the NHPA. Prior to any federal undertaking within the planning area, the SJNF and/or TRFO must consider impacts to heritage and cultural resources. Under all of the alternatives, the preferred management strategy for eligible sites would be to avoid and protect these sites from direct, indirect, and cumulative effects. In addition, under all of the alternatives, the program would include proactive inventory, documentation, analysis, preservation, monitoring, stabilization, research, stewardship, and public interpretation and education. It is difficult to measure individual adverse impact components; therefore, the number of acres of ground disturbance may be used as a relative comparison of alternatives. Given the enormity of the planning area (more than 2.5 million acres) and the diversity of its landscapes (which results in a wide variability of heritage/cultural site densities, ranging from three sites per square mile to more than 100 sites per square mile), it would be very difficult to make reasonably accurate quantitative assessments of impacts without activity locality information. Therefore, a descriptive, qualitative analysis of the impacts is presented.

Under all of the alternatives, impacts to heritage and cultural resources from oil and gas development would be alleviated through identification, avoidance, and/or mitigation. However, a minor amount of direct and indirect impacts may still result during surface-disturbing activities due to unanticipated discoveries of heritage and cultural resources, off-site erosion, and increased access to heritage and cultural resources. Therefore, Alternative A, which would management activities on the largest amount of acres, could result in the largest amount of impacts to heritage and cultural resources. This would be followed by Alternative D, which has the second highest amount of acres. Alternative B would have less potential impacts to heritage and cultural resources than Alternatives A or D. Alternative C would have less potential impacts to heritage and cultural resources than Alternative B.

Potential specific adverse impacts to heritage and cultural resources related to oil and gas development would be properly addressed under project-specific oil and gas environmental assessments; however, the No Lease Alternative would have the least potential impacts to heritage and cultural resources than all of the other alternatives.

2.5.16 Paleontological Resources

Impacts to paleontological resources within the planning area may result from actions proposed under the following resource management programs that have the potential to disturb fossil-bearing geologic formations: minerals development; prescribed fire, fire suppression efforts, and fuels management; recreation; lands and reality actions; and travel management. Management measures

common to all alternatives would preserve and protect paleontological resources for present and future generations. Adverse impacts would be mitigated by avoidance, recordation, or collection by a qualified paleontologist.

Under all of the alternatives, the risks of damage or destruction of paleontological resources could result from mining of vanadium/uranium, unauthorized activities (including dispersed recreational activity, OHV use, vandalism, and unauthorized collection), and natural processes of weathering. Impacts to paleontological resources from these activities would be the same under all alternatives. Paleontological surveys and excavations performed as a result of uranium/vanadium mining plans of operation could be major contributors to the knowledge and understanding of paleontological resources. This beneficial impact to paleontological management could result under all of the Alternatives. Paleontological locality would be protected through an NSO stipulation in Alternatives A, B, and C, and a CSU stipulation under Alternative D.

2.5.17 Lands and Special Uses

Under all alternatives, the TRFO and SJNF could acquire land dependent on having a willing seller. The USFS has limited opportunity for direct disposal of NFS lands; therefore, most land adjustments involving NFS lands would be by land exchange. This is not expected to vary by alternative. The BLM would continue its land adjustment program with land exchanges, as well as with the sale or exchange of lands specifically identified for disposal. The potential for disposing of BLM lands is highest in Alternatives B and D with 15,327 acres of lands available for disposal, followed by Alternatives A (10,469 acres) and C (8,004 acres). Additional criteria for identifying other lands for disposal are found in the LRMP and would not vary by alternative. Under all alternatives, through cooperation with other landowners, the emphasis would be for improved landownership and access patterns that benefit private landowners and the public.

Allocation of avoidance and exclusion areas under the various alternatives would impact the accessibility of lands for the location of pipelines, transmission lines, communication sites, and other ROWs or special use authorizations. Under Alternative D, 1,210,597 acres would be within avoidance areas, where land use authorizations such as utility corridors and communications sites can occur but with restrictions, followed by Alternatives A, B, and C. Avoidance areas in each alternative encompass lands managed for wilderness characteristics, Dolores River Canyon, Mesa Verde Escarpment, Anasazi Culture ACEC, Perins Peak wildlife management area, upper tier CRAs, Falls Creek Archeological Area, SBAs, Chimney Rock National Monument, and VRM II/high SIO areas. Alternative C is the most restrictive in terms of impacts to lands and realty actions with 1,138,759 acres within exclusion areas, followed by Alternatives B, A, and D. Exclusion areas in each alternative encompass WSAs, wild segments of suitable WSRs, MA 1, RNAs, wilderness areas, the Piedra Area, and areas recommended for wilderness designation.

2.5.18 Minerals and Energy: Fluid Minerals

Alternative A represents the continuation of current BLM and USFS leasing direction as it applies to the PLAA. In total, 2,868,667 acres are available for leasing in Alternative A, of which approximately 518,300 acres are stipulated with TL, 185,300 acres are stipulated with CSU, and 908,400 acres are stipulated with NSO. Projected oil and gas development for the BLM and NFS lands under Alternative A includes approximately 590 well pads. Approximately 90 well locations are projected to be non-productive and reclaimed after production testing. For the GSGP alone, 420 well pads would be constructed on future leases. See Table 2.5.2.

Alternative B is the preferred leasing alternative. Approximately 2,060,700 acres are available for lease within the PLAA, of which approximately 617,800 acres are stipulated with TL, approximately 920,500 acres are stipulated with CSU, and approximately 1,132,700 acres stipulated with NSO. Areas that are administratively not available for leasing total approximately 154,400 acres. Projected oil and gas development for the BLM and USFS combined under Alternative B includes approximately 575 well pads on future leases. Approximately 90 well locations are projected to be non-productive and reclaimed after production testing. Projected GSGP well pads would total 410 on future leases.

Under leasing Alternative C, production of goods and services are less than proposed under leasing Alternatives A, B, and D.

Approximately 1,332,500 acres would be available for lease in Alternative C. Designated wilderness areas and the Piedra Area are withdrawn from leasing by law. Approximately 532,300 acres recommended for wilderness or WSR designation (wild river segments) are administratively not available for mineral leasing under Alternative C, the highest among the alternatives. Seventy percent of the areas proposed for withdrawal occur in no or low potential areas. CRAs not recommended for wilderness in Alternative C are stipulated with NSO. On lands outside CRAs, a full range of stipulations are assigned including stipulations such as TL, CSU, and NSO to protect various resources such as highly erosive soils, steep slopes, critical wildlife habitat, and areas with special management designations such as archaeological areas, among others. Areas that are administratively not available for lease total approximately 873,100 acres.

Projected oil and gas development for the BLM and USFS combined under Alternative C includes approximately 570 well pads on future leases. Approximately 90 well locations are projected to be non-productive and reclaimed after production testing. Projected GSGP formation well pads would total 405 on future leases.

Alternative D provides for a mix of multiple-use activities, with a primary emphasis on the “working forest and rangelands” concept in order to produce a higher level of commodity goods and services compared to the other alternatives. This alternative provides for the greatest extent of resource use within the planning area while, at the same time, protecting and sustaining resources.

Approximately 2,058,700 acres are available for lease in Alternative D, of which approximately 342,970 acres are stipulated with TL, 292,795 acres are stipulated with CSU, approximately 1,055,550 acres are stipulated with NSO, and 288,235 acres are stipulated with standard lease terms. Alternative D does not include any wilderness or WSR recommendations and thus no proposal that lands be withdrawn from leasing. IRAs are stipulated NSO in Alternative D. On lands outside IRAs, a full range of stipulations are assigned including TL, CSU, and NSO to protect various resources such as highly erosive soils, steep slopes, critical wildlife habitat, and areas with special management designations such as archaeological areas, among others

Projected oil and gas development of future leases for the BLM and USFS combined under Alternative D includes 585 well pads. Of this total, approximately 85 wells are projected to be non-productive and would be reclaimed after production testing. Within the GSGP proper, 415 well pads would be constructed on future leases.

Table 2.5.2: Oil and Gas Leasing Availability by Alternative within the Planning Area

Jurisdiction	Alternative A	Alternative B	Alternative C	Alternative D	No Lease Alternative
SJNF					
Federal mineral acres	1,863,394	1,863,394	1,863,394	1,863,394	1,863,394
Acres withdrawn from leasing	481,035	481,035	481,035	481,035	481,835
Acres administratively not available for leasing	23,973	81,848	659,733	21,934	0
Acres available for leasing	1,358,386	1,300,511	722,626	1,360,425	0
NSO	808,252	831,170	499,935	680,024	0
TL	140,356	34,315	0	288,795	0
CSU	149,846	291,151	91,003	0	0
Standard lease terms	260,742	144,714	132,539	393,336	0
TRFO					
Federal mineral acres	503,464	503,464	503,464	503,464	503,464
Acres withdrawn from leasing	0	0	0	0	0
Acres administratively not available for leasing	67,197	68,717	203,979	55,925	503,464
Acres available for leasing	436,267	434,747	299,485	447,539	0
NSO	108,361	243,456	589,353	112,252	0
TL	551,221	525,469	64	28,899	0
CSU	38,076	528,332	259,541	237,654	0
Standard lease terms	87,754	32,220	29,767	221,689	0
Federal Subsurface					
Federal mineral acres	319,809	319,809	319,809	319,809	319,809
Acres withdrawn from leasing	0	0	0	0	0
Acres administratively not available for leasing	1,462	1,462	45,868	1,462	319,809
Acres available for leasing	318,347	318,347	273,941	318,347	0
NSO	11,765	58,060	165,647	37,666	0
TL	132,486	58,060	–	417	0
CSU	14,933	101,025	28,644	53,302	0
Standard lease terms	157,336	99,375	77,823	225,135	0

2.5.19 Minerals and Energy: Solid Minerals

Under all of the alternatives, development of salable mineral materials would be impacted based on the number of acres restricted or recommended for closure to mineral activity since development of these solid minerals resources is discretionary. Locatable minerals subject to claim under the Mining Law of 1872 would not be similarly impacted under all of the alternatives. Unlike mineral materials, which occur throughout the planning area, significant deposits of locatable solid minerals are unlikely to occur outside these areas; therefore, impacts to this resource under any of the alternatives may be minor. Impacts to DOE uranium lease tracts would not vary by alternative since these lease tracts are administered by the DOE and are not subject to any of the alternatives. Locatable uranium/vanadium development may be impacted by restrictions related to protection of sage-grouse since the most important uranium/vanadium deposits are in the same geographic area.

Based on the total acres of the various management actions designations that could limit the development of solid minerals, Alternative C may result in moderate to minor impacts, followed by Alternatives B, D, and A, all with minor to negligible impacts.

2.5.20 Minerals and Energy: Alternative Energy

With no to very low potential for commercial geothermal development, wind, or solar power generation on public lands in the planning area, the environmental consequences described in this section only analyze biomass as a potential energy source. Facility construction and operation for biomass energy generation sites would be the same as for the construction and use of other facilities, and would require a specific area to be dedicated to a primary use and, secondarily, to other compatible uses.

Potential biomass generation facilities would be located near communities and existing infrastructure. They would rely on existing transportation facilities for moving materials to a centralized generation plant. Standards and guidelines would be the same under all of the alternatives, and restrictions on development would be implemented in order to ensure compliance with laws and regulations governing development projects. Given the minimal expected level of alternative energy development expected during the life of the LRMP, there may be no reasonably measurable differences between the alternatives.

2.5.21 Wilderness and Lands with Wilderness Characteristics

Under Alternative B, for NFS lands, approximately 55,533 roadless acres would be recommended for wilderness. Under Alternative C, approximately 526,344 roadless acres would be recommended for wilderness. Alternatives A and D would not propose any NFS lands for wilderness. The areas recommended for wilderness are typically somewhat smaller than the inventory areas. However, under Alternative C, all of the roadless areas (except for the HD Mountains due to existing oil and gas leases) would be recommended for designation as a wilderness area, a WSR, or an RNA.

For lands administered by BLM, the alternatives present a range of options with regards to lands with wilderness characteristics. When compared to Alternatives A and D, Alternatives B and C both offer greater protection for the wilderness characteristics on the TRFO. Alternative C protects all seven units where wilderness characteristics were found, with Alternative B protecting two units. Thus, Alternative C offers the greatest degree of protection for wilderness characteristics, and Alternative B to a lesser degree. Both Alternatives A and D offer no specific protection for wilderness characteristics in the seven units.

2.5.22 Wild and Scenic Rivers

Only the previously studied and recommended rivers are found suitable in Alternative A. Alternative C finds all river segments identified as eligible through the inventory process for this planning effort and FEIS to also be suitable. Alternative D shows none of the rivers to be found suitable. Alternative B, the Preferred Alternative, finds about two-thirds of river miles to be suitable. Potential impacts related to all other activities on WSR would be proportional to the number of miles of river found preliminarily suitable, as the suitable river corridors have higher standards for protection and less tolerance for development activities. Conversely, if designated as WSRs by Congress or the Secretary of the Interior, beneficial impacts to river resources would result due to the higher level of protection afforded them under the WSRA. Alternative C would result in the most potential protection to rivers under the WSRA, followed by Alternatives B and A, respectively. This comparison is based directly on miles of river found to be suitable. Alternative D would result in no additional river corridor protection, although standard BMPs regarding riparian corridors and water resource protection would still apply to any projects within those zones.

2.5.23 Scenic, Historic, and Backcountry Byways

Generally, all of the alternatives are similar with respect to desired future conditions, thematic direction, and design guidelines for land management of the routes (and adjacent lands) within the viewsheds. Differences exist between the alternatives regarding oil and gas stipulations. In reference to oil and gas leasing stipulations, Alternatives A and D (under CSU) would provide less scenic protection to these roads and trails than would Alternatives B or C (which prescribe NSO), although all of the alternatives propose more protective oil and gas stipulations. If no new oil and gas leases were made available, the impacts to scenic byways would be similar under all alternatives because most of the development would occur on existing leases only. The ability to move facilities to eliminate visual impacts may be limited by CSU, allowing surface occupancy within closer proximity of or within the 0.5-mile corridors; therefore, visual impacts would have a higher probability of occurring under CSU than under an NSO requirement.

2.5.24 National Recreation, Scenic, and Historic Trails

Alternative A would not propose the same viewshed protection for the trails as Alternatives B, C, and D. Alternatives B, C, and D all establish these trails as important viewer locations, and they incorporate standards, guidelines, and stipulations designed to protect the foreground viewshed along these routes. Alternative B would impose varying degrees of viewshed protection, primarily dependent on the MA designation of the lands within which the routes travel. Via the MA allocations, Alternative B contains somewhat more restrictive management criteria than Alternative D, but to a lesser degree than Alternative C. Alternative C would allow the lowest potential for developments or other active management activities that would be visible from or otherwise affect the trails. On the contrary, Alternative D has the greatest potential for allowing developments that would be visible or otherwise affect the trail corridors. Other issues, including trail access, shared use, way finding, and maintenance, would not differ between the alternatives. If no new oil and gas leases were made available, the impacts to national recreation and scenic trails would be similar to the impacts under all alternatives because most of the development would occur on existing leases.

Regardless of the alternatives, the 1968 National Trails System Act prevents land management agencies from taking actions that would directly and/or significantly alter the immediate surroundings of the trail corridors or that would degrade the specific resources for which the trail was designated.

2.5.25 Research Natural Areas

The SJNF currently contains two RNAs, Narraguinnep and Williams Creek. Twenty-one additional areas were considered for RNA designation through the LRMP revision process, primarily selected from unroaded areas, vacant or closed grazing allotments, and lands with few management conflicts.

Alternative C proposes the most RNAs so it would provide the most lands for research, education, and reference sites; the most protection for biodiversity on the SJNF; and the most amount of protected areas on NFS lands. Alternative B proposes the second most RNAs, so it would provide the second most lands for research, education, and reference sites; the second most protection for biodiversity; and the second most amount of protected areas on the SJNF, followed by Alternative D. Alternative A proposes the fewest RNAs so it would provide the fewest lands for research, education, and reference sites; the least protection for biodiversity; and the least amount of protected areas on the SJNF.

2.5.26 Areas of Critical Environmental Concern

ACECs are BLM lands where special management attention is required to prevent irreparable damage to important historic, cultural, or scenic values, as well as fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards (BLM Manual 1613). FLPMA mandates the BLM to give priority to the nomination and designation of ACECs through the development and revision of RMPs.

Alternative C would designate the most ACECs so it would provide the most protection for the relevance and importance values and biodiversity in the planning area. Alternative B proposes the second most ACECs so it would provide the second most protection for the relevance and importance values and for biodiversity, followed by Alternative A. Alternative D would designate the fewest ACECs, so it would provide the least protection for the relevance and importance values and biodiversity within the TRFO.

2.5.27 Economics

To estimate the economic impacts to the planning area economy, one model covering five counties was developed. The counties included Archuleta, Dolores, La Plata, Montezuma, and San Juan. This area matches both state and local recognition of a functional social and economic planning area.

As discussed in Section 3.14, Recreation, the total number of visitors to the planning area is projected to hold steady over the planning horizon for all of the alternatives. Current recreation patterns are also expected to hold steady across alternatives. Therefore, the economic effects of recreation are not expected to vary.

Compared with the current management alternative (Alternative A), livestock grazing production would be generally maintained under Alternative B, would drop by approximately 13% under Alternative C, and would increase by approximately 37% under Alternative D. Some permittees may maintain, or potentially even increase, the number of AUMs, with more intensive management.

Under Alternatives A and B, total harvest volume would increase by 40% compared with the 2009–2011 average. Harvest volume would increase by 19% under Alternative C, and by 76% under Alternative D. In all cases, the mix of products (e.g., sawtimber, fuelwood, and biomass) would remain unchanged from the 3-year average.

Variations driven by resource management concerns are not expected to result in substantial economic differences between the alternatives. Alternatives A and D would result in the largest number of wells and the highest production levels. By 2020 minerals-based employment in the five-county Colorado area would increase by about 470 jobs for Alternatives A and D, and by 450 jobs for Alternatives B and C. It should be noted that while job estimates are reported down to a single job, the reader should look for changes in relative magnitude between alternatives. Thus, the range of 20 jobs between the highest and lowest impact alternatives should not be regarded as substantial. The No Leasing Alternative would result in about 400 additional jobs over 2010 employment levels, or 70 jobs less than either Alternatives A or D in 2020.