CHAPTER 2
CONTINUING MANAGEMENT GUIDANCE AND ALTERNATIVES

This chapter is divided into two sections: "Continuing Management Guidance" and resource management "Plan Alternatives." The first section is a summary of the objectives, basic management policy, and program direction that is applicable regardless of which alternative is selected. The second section is a presentation of four plan alternatives developed as possible solutions to the issues discussed in Chapter 1. Each alternative presents a different blend and balance of resource allocations and emphasis. All alternatives comply with the FLPMA requirement that the public lands be managed by the principles of multiple use and sustained yield. When coupled with the continuing management guidance, any of the plan alternatives could be implemented as the selected RMP.

This RMP will provide multiple use planning for the area while consolidating and updating the existing management decisions contained in existing plans. Appendix A lists previous decisions that have been carried forward and, based on new resource information and updated Bureau guidance, provides the basis for determining which decisions remain valid and which will be revised through this RMP. The decisions presented in Appendix A received environmental analysis in previous land use or activity planning efforts. These decisions represent continuing management or monitoring requirements tied back to continued implementation of existing activity plans, regulation, or policy. When approved, the Farmington RMP will constitute the final land use plan that will supersede all previous land use planning decisions.

The RMP alternatives are designed to provide a management foundation for the public lands. Where necessary, specific actions will be detailed in future activity plans with accompanying Environmental Assessments (EA). Activity plans describe how a particular area or resource will be managed, and will comply with the allowable resource uses, levels of production, resource condition goals, program constraints, and general management practices documented in the RMP.

CONTINUING MANAGEMENT GUIDANCE

This section describes the objectives, basic management policy, and program direction that will continue to apply under all alternatives. This direction is fundamental and its associated guidance is based on laws, regulations, manuals, policies, executive orders, memoranda, and applicable planning documents. A summary of authorizing actions that guide BLM management decisions is included in Appendix K. The information that follows pertains to public land in the FFO area, except as noted.

Minerals

It is the policy of the BLM to make mineral resources available for disposal and to encourage development of mineral resources to meet national, regional, and local needs, consistent with national objectives of an adequate supply of minerals at reasonable market prices. At the same time, the BLM strives to ensure that mineral development is carried out in a manner that minimizes environmental damage and provides for the rehabilitation of affected lands. The following sections describe continuing management guidance for oil and gas, coal, and salable and locatable minerals.

Oil and Gas

In developing the alternatives for analysis, the BLM commissioned a study conducted by New Mexico Institute of Mining and Technology (NM Tech) working with oil and gas industry representatives to identify reasonable foreseeable demand for oil and gas development in the San Juan Basin. This study resulted in a RFDS, which forms the basis for projected oil and gas development in the

planning area over the next 20 years. The RFDS (Engler et al. 2001) projects 9,970 new well bores on federal minerals and a total of 12,461 new well bores on all land in the San Juan Basin over the next 20 years. An estimated 54 percent of these wells are expected to involve new surface disturbance. The remaining 46 percent of the wells is anticipated to be developed on existing disturbed sites through re-completion, dual completion, or directional drilling. Each new well pad is estimated to average two acres in finished size and involve another acre of associated road and pipeline disturbance (50-foot right-of-way [ROW] for both road and pipeline).

This section addresses policies guiding oil and gas on federal land in the San Juan Basin in New Mexico, including USFS and USBR land. The 1920 Mineral Leasing Act, as amended, authorizes the Secretary of the Interior to lease oil and gas resources on all public domain and federally acquired lands. Lands excluded from such leasing by legislation or secretarial policy are listed in CFR Title 43, Part 3100.0-3. They include units of the National Park System; incorporated cities, towns, and villages; and lands recommended for wilderness study, as well as lands within the National Wilderness Preservation System. BLM Lease Form 3100-11, Offer to Lease and Lease for Oil and Gas, contains STCs that grant the leaseholder the right to develop the oil and gas resource and provide for the general protection of surface and subsurface resources under normal operations.

The BLM, as agent for the Secretary of the Interior, is responsible for processing APDs and administering or assisting with the minerals development programs on BLM, USBR, USFS and other lands with federal minerals. BLM responsibilities include conducting pre-drill inspections of the proposed drill sites; assessing the status of cultural and threatened or endangered species clearances; conducting compliance inspections and enforcement actions for lease terms and conditions, safety, production verification, and site maintenance; and abandonment inspections of drilling locations. In situations where there are federal minerals underlying tribal, state, private, or other land ownership (split estate), the BLM issues the APDs and encourages the operator or lessee to obtain consent and agreements for surface use from the private surface owner.

BLM regulations, orders, notices, standard conditions of approval, and general requirements constitute the range of standard procedures and environmental protection measures that are applied to individual operators and projects, as applicable, and are authorized by 43 CFR 3160. BLM Onshore Oil and Gas Orders and Notices to Lessees are applied as standard operating procedures.

The New Mexico BLM has issued a number of Notice to Lessees (NTL) to those companies that operate on federal and Indian leases. The NTLs provide instructions for a specific field or area of a jurisdictional BLM district or state. The NTLs are consistent with or exceed the minimum standards specified in the 43 CFR 3160 regulations or Onshore Orders.

Because of growing concerns and public complaints over the increased amount of loud, continuous noise in the field office area, the FFO staff has developed an NTL to address noise. Equivalent wording will be used in a stipulation applied to noise generating activities permitted by ROWs. The objective of the NTL or stipulation is to maintain noise from oil and gas development on public lands at levels compatible with other uses. The two NTLs are analyzed in this document under Alternatives C and D. The NTLs are located in Appendix E.

Noise associated with oil and gas development varies according to the activity occurring. Noise occurs at different levels during construction, drilling, production, and abandonment phases. Noise generated may be short-term and transient in nature (i.e., construction noise generated from heavy equipment used for building roads, pipelines, or well pads). Noise created during the construction process would be localized and occur during daylight hours for the period of time it takes to complete the project; then, it

would stop. Oil and gas related noise may also be continuous and long-term, such as that associated with compressor stations, well head compressors, and pumpjacks used during the production phase of development.

The BLM applies STCs and special stipulations to the construction and operation of wells, pipelines, and compressors. STCs address the condition and management of the well location, associated equipment, access road, and reseeding and abandonment. STCs also ensure protection of cultural resources, compliance with the Endangered Species Act (ESA) of 1973, as amended, and the conservation of sensitive species. The FFO uses the "BLM General Requirements for Oil and Gas Operations on Federal and Indian Lands" as a COA that describes general requirements and standard plan of operations for wells drilled in its jurisdiction. The conditions may be supplemented by additional mitigation measures supplied by applicable surface managing agencies or surface owners in cases of split estates. If a surface managing agency or surface owner has supplied to the BLM and the operator a written environmental requirement, the requirement would be incorporated into the APD if it does not affect adjacent federal or Indian surface; does not compromise safety or conservation; or does not negate minimal federal restoration requirements in cases of abandonment. Surface managing agencies include the USBR, USFS, BIA, and National Park Service (NPS). Surface owners can include private surface owners, Indian tribes, and the State of New Mexico. The BLM grants approvals for routine modifications to a well's construction and operating plan via sundry notice.

The BLM must decide what lands are to be leased to access federal minerals and whether special management constraints modifying the STCs are needed to protect the environment and other resources. For example, many of these constraints are designed to reduce erosion and sedimentation in order to minimize the impacts on soil and water resources. These constraints are generally appended to a lease at the time of lease offer or as COAs on APDs, often within special management designations such as Special Management Areas (SMA) or Areas of Critical Environmental Concern (ACEC).

Stipulations include seasonal closures, or Timing Limitations (TL), that prohibit exploration, development, or any surface disturbing activities for designated time periods during the year to benefit wildlife. Controlled Surface Use (CSU) constraints are used to identify restrictions on well locations, surface use, or operations year-round in order to protect specific resource values or uses. No Surface Occupancy (NSO) constraints are intended for use when other constraints are insufficient to adequately protect the resource values and uses.

Lease exceptions, modifications, and waivers of management constraints can only be granted by the BLM if circumstances have changed or if the lessee demonstrates that operations can be conducted without harming the protected resource values and uses. Exceptions, modifications, and waivers are considered on a case-by-case basis as changes in the resource or management situation occur. An EA that meets NEPA requirements is prepared to evaluate the potential impacts of the proposed change.

Site-specific EAs are required prior to siting a new well. During this process, environmental impacts are identified and management constraints are developed, which will mitigate impacts to the environment, public health and safety, cultural resources, and threatened, endangered, and sensitive species. The mitigation measures become the COAs attached to the permits for surface disturbing activities, such as APDs and sundry notices. Similarly, mitigation measures are attached as stipulations to ROW grants, terms, and conditions on geophysical operations. Each mitigation measure is applied to protect a resource that would be affected by the operation being approved, even on existing leases. A reclamation plan and a weed management plan are also required.

The USFS cooperates with the BLM to ensure that management goals and objectives are achieved, surface impacts are mitigated to the maximum degree practicable, and the land affected is rehabilitated. The Federal Oil and Gas Leasing Reform Act of 1988 bestowed upon USFS the authority to consent to BLM leasing decisions. The Act gave USFS the authority to approve surface use plans filed as part of APDs. The USFS responds to BLM proposals to issue mineral leases and permits after reviewing its land management plans. The USFS requires reclamation plans for all proposed surface-disturbing activities to return the land to productive uses consistent with the ecological capability of the area and in accordance with land management goals. Applicable plans in the planning area are the Carson National Forest Plan, September 1986, as amended in October 1990, and Santa Fe National Forest Plan, as amended in October 1996.

Numerous mineral leases were located on USBR lands at Navajo Reservoir prior to their withdrawal for construction and operation of the dam and reservoir. The USBR is in the process of developing an RMP (USBR 1999), which is presently in the draft stage. One of the plan's objectives is to formally coordinate management of USBR lands with the BLM, which manages adjacent lands and is responsible for the management of minerals development on USBR lands. The BLM's responsibility extends to environmental protection, public health, and safety associated with federal oil and gas operations. Lease rights granted by the BLM include the right to occupy as much of the lease surface as is reasonable to extract the resource and the right to remove oil and/or gas. On USBR lands, these leases are managed by the BLM under the terms of a 1967 agreement that provides for review and concurrence by the USBR. As part of the review and concurrence process, the USBR has defined mitigation measures that are applicable to mineral extraction activities on USBR lands. The BLM may also grant, with USBR concurrence, approval for other uses, such as utility ROW on withdrawn lands not specifically allocated to recreation or fish and wildlife purposes.

Coal

The Surface Mining Control and Reclamation Act (SMCRA) of 1977 (30 USC 1201 *et seq.*) requires application of "unsuitability criteria" prior to coal leasing. Unsuitability criteria are used to screen out areas unsuitable for mining for various reasons (e.g., environmental conflicts). The criteria are part of 43 CFR 3461, and are included in Appendix C. Project-specific EAs are developed prior to leasing and before mining is approved, with the purpose of analyzing the impacts of coal mining on the natural and cultural resources in the area of the proposed mine site. During this process BLM coordinates with all appropriate agencies of state, federal, and tribal governments. A reclamation plan and a weed management plan are also required.

The FFO is responsible for inspection and enforcement on all coal leases to ensure compliance with lease terms and conditions and with stipulations for development exploration. Inspections are performed to ensure maximum economic recovery and conformance with the approved mining or exploration plan. The FFO is also responsible for product verification by independently auditing mine production reports to ensure fair royalty reporting to the federal government and The Navajo Nation.

Salable and Locatable Minerals

Federal lands in the planning area are important sources of mineral materials for construction projects in the region, including sand and gravel, rock and stone, and other fill materials. The FFO issues Contracts (Form 3600-9 and 5450-5) and Permits (Form 5510-1) for the removal of mineral materials managed under 43 CFR 3600. These contracts and permits can be issued for up to five years and 200,000 cubic yards of material. Any amount greater than 200,000 cubic yards must be offered through a competitive bid. A mining plan, a reclamation plan, and a weed

management plan are required with the contract or permit application, and plans must conform with modern mining and reclamation standards. The proposed operation plan goes through the NEPA process with the preparation of an EA, and is approved if the mining and reclamation plans comply with the FFO RMP and include appropriate mitigation measures, if needed. The FFO is responsible for inspection and enforcement on all contracts and permits.

The program to manage the extraction of locatable minerals, such as uranium, is also under the purview of the FFO under 43 CFR 3809. This program is currently inactive due to the lack of demand. The FFO program defines three levels of activity: 1) casual use using non-mechanized equipment, 2) notice level comprising less than five acres of surface disturbance, and 3) plan level comprising more than five acres of surface disturbance and heap leaching operations.

Renewable Energy Program

At present there are no renewable energy facilities on public lands in the FFO. The BLM, in conjunction with the Department of Energy's National Renewable Energy Laboratory, has conducted an assessment of the opportunities for development of renewable energy resources on lands managed by the BLM. The draft report, Assessing the Potential for Renewable Energy on Federal Lands (BLM 2002b), indicates that the Farmington Field Office is in the list of top 25 BLM planning units with high potential for concentrating solar power sites. The FFO did not meet the screening criteria to be considered as a potential area for the location of wind, biomass, or geothermal energy generation facilities. According to the Renewable Energy Atlas of the West (Nielsen et al. 2002) the planning area is rated as Class 1 (Poor) for wind power generation and exhibits an Annual Solar Insolation Average of 5.6-6.0 kilowatt hours per meter squared per day ($kWh/m^2/day$). With present technology, it is estimated that a 4-acre array of solar panels would be required to generate the energy equivalent to an average natural gas well in the San Juan Basin.

Economic and societal forces beyond the control of the BLM dictate the level of interest in renewable energy. To date, the FFO has not received any applications for location of renewable energy generation sites. Future applications would undergo site-specific environmental analysis as part of the right-of-way or commercial lease process.

Lands

The objective of the FFO lands program is to facilitate the acquisition, exchange, or disposal of public lands in order to provide the most efficient management of public resources. The program is responsible for processing land withdrawals, granting ROWs and easements on public lands, and acquiring easements on non-public lands where necessary. The lands program also issues leases and patents under the R&PP Act, and licenses and permits for specific uses such as filming or special events.

Land Ownership Adjustment

The basic concept of land ownership adjustment for the FFO follows the requirements of FLPMA. Land will generally remain in federal ownership unless it meets specific criteria in FLPMA and existing land use plans. The primary goal is conserving federal ownership while consolidating administrative boundaries to create a more efficient and economical land ownership pattern. This is accomplished through retaining, acquiring, and disposing of land for the purposes of consolidation that is in the public interest.

Acquisition of lands that would enhance and protect important resources will continue to be a priority for the FFO. Lands would only be acquired from owners willing to dispose of them. Currently, there are 145,000 acres of non-federal land within special management designations that are a high priority for acquisition. Also, a program to facilitate exchange of land between BLM and the State of New Mexico will continue when the exchange improves the management potential

of state and federal land. Where state or private lands are intermingled with public land, BLM may acquire land to help consolidate public use areas. Disposal may be by means of transfer, exchange, sale, withdrawal (to another federal entity), or other means. Lands will be transferred to another federal agency if use and management by that agency is suitable and serves a purpose. Lands may be exchanged or sold if they are difficult or uneconomical to manage, are not suitable for management by another federal entity, no longer serve a specific purpose, or if disposal would serve important public objectives. Disposal of lands meeting the above criteria is a priority.

Much of the land south and west of U.S. Highway 550 (US 550) is currently identified for exchange. The FFO has been successful over the last 25 years in transferring about 131,000 acres and exchanging 150,000 acres with The Navajo Nation. Exchanges have slowed down, since the most easily executed exchanges have been completed. However, the FFO will continue to process exchanges that are identified in the future.

Sales of public land identified in the 1988 RMP will continue. Appendix F includes a list of isolated disposal parcels. Sales will all be considered on a case-by-case basis for conformity with FLPMA criteria. Land sales will be disposed of at or above fair market value.

All land adjustment actions must go through the NEPA process. In general, under all land adjustments, the BLM will protect valid existing rights. These would include authorized permits, leases, ROW, and licenses. The FFO will continue a prevention program developed by BLM, The Navajo Nation, and BIA to prevent unauthorized occupation.

Recreation and Public Purpose

Lands will continue to be available for disposal to governmental or non-profit entities under the R&PP Act for public parks, building sites and correction centers, or other public purposes. BLM generally leases the land for up to five years or until substantial development has been completed and then the land may be patented. All applications are subject to public review and the NEPA process.

Land Withdrawal

The FFO will continue to review existing withdrawals on a periodic basis to ensure that the reasons for the withdrawal are still valid and only the acreage needed is retained in withdrawn status. Policy will continue to minimize the amount of land withdrawn (particularly from mining and mineral leasing) in favor of leases, permits, or cooperative use agreements that are more flexible. Upon revocation or modification of a withdrawal, all or part of the withdrawn land could be restored to multiple use. Additional land may be identified for withdrawal if criteria are met and would be processed on a case-by-case basis.

Rights-of-Way

Under the authority of FLPMA and the Mineral Leasing Act of 1920, the FFO grants ROW leases and permits to qualified individuals, businesses, and government entities for use of public lands. Since the 1950s, oil and gas production, and to a lesser extent coal mining, has been the major industry in the region. This has made energy-related ROWs for roads and pipelines one of the primary activities in the FFO lands program. The FFO processes ROW applications for access, utilities and telephone lines, fiber optic lines, and other communication sites. All ROW applications will continue to receive environmental review on a case-by-case basis.

To the extent possible, new ROWs will be located within or parallel to existing ROWs or ROW corridors to minimize resource impacts. Priority will be given to the ROWs identified in the 2002 Western Utility Group (WUG) revision (WUG 2002) of the 1992 Western Regional Corridor Study (WRCS) (WUG 1992) when considering corridor needs. BLM regulations specify the typical width allowed for different uses, including pipelines, roadways, and utility lines.

Lee Acres Landfill

The Lee Acres Landfill is a closed landfill formerly operated under permit from BLM by San Juan County as a municipal solid waste disposal site from 1962 to 1986. During the 1980s use of the landfill expanded to also allow the disposal of liquid waste. In 1985 maintenance activities resulted in a release of liquid waste and hydrogen sulfide gas. Several people were hospitalized due to inhalation of the gas. Closure of the landfill occurred shortly thereafter and the area was evaluated because of hazardous material concerns. Evaluations resulted in the landfill being listed on the National Priorities List by EPA. This listing required further assessment and development of a plan to remediate the potential hazardous material concerns at the landfill. BLM is currently in negotiation with the EPA and New Mexico Environment Department (NMED) on a Record of Decision (ROD) under authority of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), which will guide the final cleanup at the landfill.

The Lee Acres Landfill ROD will guide and direct how cleanup will proceed at the site, how monitoring will be conducted and any necessary follow-up actions would be implemented. Additionally the ROD may provide guidance on other actions, which should be taken to protect the public health, welfare and environment from hazardous substances that may remain on the landfill following completion of remedial action. In order to assist with the institutional controls required to implement the ROD the BLM has already withdrawn 134.68 acres of public land, within which the landfill is located, from settlement, sale, location and entry as described in Public Land Order No. 7234 (62 Federal Register 2177, January 15, 1997). The current withdrawal will remain in effect until January 15, 2047.

The withdrawal does not prohibit all activities on the withdrawn land. A primary intention of the withdrawal is to prevent withdrawal of ground water beneath the site in order to preclude unacceptable risk to human health or the environment due to exposure to hazardous substances remaining at the site. Other activities may occur at BLM's discretion if they do not interfere with protecting the public health and environment from hazardous substances as outlined by the objectives and requirements identified in the Lee Acres Landfill ROD.

Roads and Access

The FFO has not had an active easement acquisition program. This is largely due to the numerous roads located throughout the FFO area that have historically been open to the public. For the most part, this network of roads (estimated at over 15,000 miles) was generated by oil and gas development in the San Juan Basin. Normally, only one or two easements are acquired each year. As required by Bureau policy, these easements generally provide legal access to BLM-initiated range improvement projects and recreation areas.

The FFO has designated 13 OHV Management Units to serve as the basis for maintenance and transportation planning. The field office is conducting an inventory of the existing road system to identify the major collector roads that could serve as the backbone for the FFO road network. This is the first step in a process to classify and designate all levels of roads within the system based on traffic levels, type of use, condition and other criteria. Subsequently, any special restrictions, needs, or actions would be defined. Improvements would be based on the "Gold Book" (USDI 1989) that provides generic guidelines and basic stipulations for road development. The BLM Manual 9113 on Roads provides additional guidelines and standards for construction and maintenance of transportation system roads on public lands.

The San Juan Basin Public Roads Committee includes members from the oil and gas industry and the FFO. The committee has developed and agreed upon a set of bylaws, which constitute a San Juan Basin Public Roads Maintenance Committee agreement (Appendix D) that will address the issue of road

maintenance on BLM system roads within the San Juan Basin. Under this agreement, 95 percent of the cost for system road maintenance will be paid by the oil and gas industry. FLPMA enables the use of cost-share authorizations to provide the financing by users for road construction and maintenance. BLM would still incur the cost of upgrading and maintaining system roads that access federal facilities through the Deferred Maintenance and Capital Improvement Process.

The USFS is beginning a Roads Analysis Policy that is an integrated ecological, social, and economic science-based approach to transportation planning that addresses existing and future road management options. Three levels of analysis to be conducted include Forest-wide evaluation of major arterial and collector roads, inventory of all roads within a fifth order watershed, and project-level analysis if roads are required. Currently, all roads are classified as Level 2 maintenance standard, which is typically 1 or 1½ lanes wide, with turnouts, crowned, and ditched.

Public Land Health

All BLM activities are expected to meet the New Mexico Standards for Public Land Health that were accepted by the Secretary of the Interior as part of the Record of Decision for the Statewide RMP Amendment/EIS for Standards for Public Land Health and Guidelines for Livestock Grazing Management (BLM 2000a). BLM staff determines whether activities meet the standards by evaluating the results against indicators developed for each standard. The standards describe the conditions needed for healthy public lands under three categories, Upland Sites, Biotic Communities, and Riparian Sites, summarized below.

Upland Sites Standard

Healthy upland ecological sites are in a productive and sustainable condition within the capability of the site. Upland soils meeting the standard are stabilized and exhibit infiltration and permeability rates that are appropriate for the soil type, climate, and landform. The combined kind, amount, and/or pattern of vegetation provide protection on a given site to minimize erosion and assist in meeting state and tribal water quality standards. Indicators for this standard may include, but are not limited to, the following:

- Consistent with the capability of the ecological site, soils are stabilized by appropriate amounts of standing live vegetation, protective litter and/or rock cover.
- Erosion is indicated by flow patterns characteristics of surface litter soil movement, gullies and rills, and plant pedestalling.
- Satisfactory plant protection is indicated by the amount and distribution of desired species necessary to prevent accelerated erosion.

Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species Standard

Ecological processes such as the hydrologic cycle, nutrient cycle, and energy flow support productive and diverse native biotic communities, including special status, threatened, and endangered species. Desired plant community goals maintain and conserve productive and diverse populations of plants and animals that sustain ecological functions and processes. Restoration should first be achieved with native plants, and when appropriate, non-native plants. Indicators for this standard may include, but are not limited to, the following:

- Commensurate with the capability of the ecological site, plant and animal populations are productive, resilient, diverse, and sustainable.
- Landscapes are composed of communities in a variety of successional stages and patterns.
- Diversity and composition of communities are indicated by the kinds and amount of species.
- Endangered and special status species are secure and recovering, with the goal

of delisting and ensuring that additional species need not be listed within New Mexico.

Riparian Sites Standard

Healthy riparian areas are in a productive, properly functioning, and sustainable condition, within the capability of each site. There is present adequate vegetation of diverse age and composition to withstand high stream flow, capture sediment, provide for groundwater recharge, provide habitat, and assist in meeting state and tribal water quality standards. Indicators for this standard may include, but are not limited to the following:

- Stream channel morphology and stability as determined by gradient, width/depth ratio, channel roughness, and sinuosity.
- Streambank stability as determined by degree of shearing, sloughing, and vegetative cover on the bank.
- Appropriate riparian vegetation includes a mix of communities comprised of species with a range of age, density, and growth form.

Specially Designated Areas

The objective of the SDAs in the FFO is to protect, maintain, and enhance the special resource values on public lands. Areas that have special resource values are identified where some uses may be restricted in order to protect the resources. These areas include public lands such as SMAs, ACECs, Wilderness Areas (WA), Wilderness Study Areas (WSA), Special Recreation Management Areas (SRMA), and Research Natural Areas (RNA). The FFO and AFO generally identify areas with special designations as SMAs or ACECs. Other federal lands and state facilities within the planning area are also managed for special purposes. The FFO will continue to designate ACECs and other SDAs and to apply management prescription to protect the resource value of those areas.

Visual Resource Management

Legislation such as FLPMA, NEPA, and SMCRA outline the BLM's responsibilities for protecting the quality of the visual (scenic) values of public lands. Policy and management guidance is also provided in BLM manuals 8400, 8410-1, and 8431-1.

Public lands have a variety of visual values. These different values warrant different levels of management. Because providing the same level of management for all visual resources is neither desirable nor practical, the BLM systematically identifies and evaluates these resources to determine an appropriate level of management.

Visual values are identified through the BLM Visual Resource Management (VRM) inventory process and are considered with other resource values in the RMP. The inventory consists of a scenic quality evaluation, a visual sensitivity level analysis, and a delineation of distance zones. Based on these three factors, BLM-administered lands are placed into one of four visual resource inventory classes (Class I through Class IV). A VRM class identifies suggested degrees of human modifications that should be allowed in a landscape to protect visual resources, with Class I allowing the least modification and Class IV the most. VRM classes are not used as a device to stop surface disturbing activities. Most of the planning area is presently designated as a Class III or Class IV. These classes provide the visual management standards for the design and development of future projects and for rehabilitation of existing projects. Visual design considerations shall be incorporated into all surface-disturbing projects regardless of size or potential impact and is a management responsibility shared by all resource management programs.

The inventory classes represent the relative value of the visual resources, with Class I assigned to areas where the visual value is the greatest. These include WAs, WSAs, wild and scenic rivers, and other congressionally and administratively designated areas where

decisions have been made to preserve a natural landscape. Each class designation has a defined management objective.

- Class I—Preserve the existing character of the landscape. This class provides for natural and ecological changes; however, it does not preclude very limited management activity. The level of change can be very low and not attract attention.
- Class II—Retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.
- Class III—Partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention, but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.
- Class IV—Provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

VRM classes acknowledge existing visual contrasts. More restrictive requirements would not be retroactively applied to existing projects should VRM classifications change as a result of this planning effort. New proposals would be managed to meet the intent of the VRM designations determined by this plan.

Soils and Water

The BLM's soil and watershed program places emphasis on preventing and/or avoiding further degradation of soil and water resources, as well as their conservation. The program contributes to the success of other resource programs and has a legislation mandate for the protection, restoration, and improvement of these resources. The BLM will continue to support the Natural Resources Conservation Service (formerly Soil Conservation Service) in the National Cooperative Soil Survey.

The 1974 Colorado River Basin Salinity Control Act (as amended, 1984) directs the Secretary of the Interior to "…develop a comprehensive program for minimizing salt contributions to the Colorado River from lands administered by the Bureau of Land Management." Although the BLM is the largest landowner in several subwatersheds of the San Juan Basin, other owners and agencies must be involved in improving environmental conditions. Coordinated Resource Management Plans have been a successful means for the participation of a diverse group in improving resource management. The FFO will promote the Coordinated Resource Management Plan process within the San Juan Basin to improve resource conditions when opportunities arise.

Soil and water conservation practices will be used to develop site-specific Best Management Practices (BMP) at the project level to prevent or reduce the amount of pollution to a level compatible with water quality goals.

The soils program will continue to provide support to other resource activities in the FFO and also continue to emphasize its legislative mandates for the protection, maintenance, and enhancement of the soil resources. Policy and guidance for the management of soil resources associated with lands administered by the BLM are administered in Manual Sections 7000 and 7100.

Legislative mandates are also in place for the protection of water resources through the Clean Water Act (CWA) program for the Nonpoint Source Pollution program, which emphasizes improving water quality in degraded stream systems; the riparian program, which is concerned with maintenance and restoration of riparian zones both vegetatively and hydrologically; and the Colorado River Basin Salinity Control Act, which intends to reduce salt loading throughout the San Juan Basin. All three programs have parallel or similar goals, and accomplishments in any one usually are beneficial to the others.

All water rights are acquired in accordance with state substantive and procedural law, except where Congress or the Executive Branch has created a federal reservation with a reserved water right.

Federal reserved water rights are defined based on the Interior Solicitors' Opinion of June 25, 1979, as modified by Solicitor Coldiron's September 11, 1981, opinion. BLM's federal reserved water rights claims are primarily associated with the withdrawal established by the Executive Order (EO) of April 17, 1926, dealing with public water reserves, and the withdrawal for converted oil and gas wells under the Oil and Gas Well Conversion Act of June 6, 1934.

Water quality regulations in the U.S. receive its basic authority from two laws. The Federal Water Pollution Control Act of 1972, as amended by the CWA of 1977, is the basic authority for instream water quality standards and maximum permissible pollution discharges. The Safe Drinking Water Act of 1974 is the basic authority for domestic water quality standards.

The BLM's water resource program includes participation with the state and EPA in water quality management. Specifically, the BLM works to ensure that the management and development practices comply with state water quality standards.

The hydrology program will continue to emphasize legislative mandates of protections, maintenance, and enhancement of the resources, as well as provide support to other resource activities for the FFO. Policy and guidance for the management of water resources associated with lands administered by the BLM is summarized in Manual Sections 7000 and 7200.

Air Quality

All BLM actions and use authorizations must comply with all applicable local, state, tribal, and federal air quality laws, statutes, regulations, standards, and implementation plans. Prior to implementation, all BLM-initiated or authorized activities within non-attainment areas must undergo a determination (when applicable) of conformity with the National Ambient Air Quality Standards (NAAQS) according to the General Conformity Rule (40 CFR Part 93.150). If the NAAQS are being met, the area is designated as attainment, and if the status of attainment has not been verified through data collection, the area is unclassified. For permitting purposes, an unclassified area is treated as an attainment area. The counties in the planning area are classified as in attainment of all state and national ambient air quality standards.

The New Mexico Air Quality Bureau (NMAQB) is responsible for enforcing the state and national ambient air quality standards in New Mexico. Any emission source proposed for the RMP would have to comply with the NMAQB regulations. For example, any new or modified stationary source that has the potential to emit more than 10 tons per year (TPY) of any regulated air contaminant or 1 TPY of lead has to file a notice of intent (NOI) prior to construction and thereafter submit annual emissions inventories. Proposed sources that emit more 10 pounds per hour or 25 TPY of any air pollutant for which there is a national or state ambient air quality standard would have to demonstrate that these emissions would not contribute to an exceedance of an ambient air quality standard or substantially degrade air quality within pristine federal Class I areas, such as National Parks greater than 6,000 acres or

National Wilderness Areas (NWA) greater than 5,000 acres. Within the project region, these areas could include the San Pedro Parks NWA in New Mexico and the Mesa Verde National Park and Weminuche NWA in Colorado.

For any proposed coal development associated with the RMP, increase in current extraction or use, the BLM would coordinate with all appropriate agencies of state, federal, and tribal governments to ensure compliance with laws and regulations. Project specific dispersion modeling and an environmental assessment will be prepared with the opportunity for public input. Air quality will be examined in conjunction with the NMAQB, following applicable permit procedures.

Invasive Weed Management

EO 11312, Invasive Species-1999, the Federal Noxious Weed Act of 1974, the New Mexico Noxious Weed Management Act of 1978, and the Federal Plant Protection Act of 2000 require the development of a weed management program. This program focuses on the inventory of existing infestations, prevention of noxious weed invasion, monitoring revegetation efforts for invasive weeds, and assessment of the success of weed control efforts.

The mission of the FFO is to detect new invasive plant species populations, prevent the spread of new invasive populations, manage existing populations using tools of integrated weed management, and eradicate invasive populations. This is accomplished when and where possible using the safest environmental methods available in a timely manner (Heil and White 2000). Prevention and management of invasive plants assists in improving the health of public lands.

A plan developed for the FFO includes the following program procedures.

- Prevention and Detection—develop a prevention and early detection program.
- Education and Awareness—generate internal and external support for noxious weed control. The FFO has a one-week invasive plant workshop at San Juan College in July.
- Inventory—ensure that adequate baseline data are available on the distribution of weeds.
- Planning—include provisions for noxious weed management in all BLM funded or authorized actions.
- Integrated Weed Management—determine the best methods for an integrated approach to weed management and implement on-the-ground operations.
- Coordination—ensure management for noxious weeds is carried out efficiently and consistently across jurisdictional and political boundaries. San Juan County is in the process of forming a weed management team that consists of members from the BLM, San Juan County officials, Cities of Farmington, Aztec, and Bloomfield, BIA, and San Juan College.
- Monitoring, Evaluation, Research, and Technology Transfer—ensure sufficient data are available to evaluate management actions, provide a basis for making informed decisions, assess progress towards management objectives, and develop new and more effective management methods.

For all actions on public lands that involve surface disturbance or rehabilitation, reasonable steps would be required to prevent the introduction or spread of noxious weeds, including requirements for using weed seed-free hay, mulch, and straw.

Special Status Species

Special status species are managed in accordance with BLM Manual 6840. The ESA (Public Law [PL] 93-205), as amended (PL 100-478), requires special protection and management for federally listed threatened and endangered (T&E) species, species proposed to be listed as T&E, and designated and proposed critical habitat. The act also requires the

development and implementation of recovery plans for the conservation and survival of T&E species. FFO activities to implement recovery plans are described in the Biological Assessment for the RMP/EIS (BLM 2002c). In accordance with BLM Manual 6840, BLM also manages a large number of sensitive, non-listed species to protect them and prevent the need to list them as threatened or endangered. The purpose of this management prior to federal listing is to use a broad range of management options to protect a species.

Federal and state listed species are protected by requiring site-specific evaluations and clearances and by applying more stringent management prescriptions in areas that have been specially designated to protect target species. The FFO maintains a conflict map that identifies the location of listed species or potential habitat to guide any staff responsible for authorization of specific projects. When a proposed project falls within habitat that has been designated as having the potential to support a protected species, a field survey is required prior to authorization of the project. When a new threatened, endangered, or proposed species protected by the ESA is listed, any potential habitat for that species is added to the conflict map. Any action that may affect federally listed species also requires consultation with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the ESA.

Major legislation requiring actions by federal agencies to protect T&E species, as well as other protected, non-federally listed species and habitats, include the following:

- Fish and Wildlife Conservation Act of 1980 (PL 96-366).
- Fish and Wildlife Coordination Act of 1958 (PL 85-654).
- Migratory Bird Treaty Act of 1976 (PL 94-576).
- Plant Protection Act of 2000 (PL 106-224).

Wildlife and Wildlife Habitat

The objectives of BLM's wildlife management program are to ensure optimum populations and a natural abundance and diversity of fish and wildlife values by restoring, maintaining, and enhancing habitat conditions (BLM 1987b). The objective of the FFO wildlife program is to maintain, improve, and expand wildlife habitat on public lands for both consumptive and non-consumptive uses. Wildlife management on BLM lands has emphasized the perpetuation of a biologically diverse plant and animal community. Priority wildlife management activities conducted in the FFO include big game management and bald eagle protection. The FFO is determining the numbers, habitat needs, and distribution of non-T&E bird species, including migratory songbirds. The protection and enhancement of wildlife habitat is accomplished through an aggressive program of habitat improvement projects, designation of SMAs with wildlife friendly management prescriptions, and the application of mitigation measures on key wildlife lands where oil and gas reserves are being developed. Stipulations on oil and gas activities are applied to mitigate the impacts on wildlife. The FFO administers a small amount of fisheries habitat on small, generally isolated tracts of public land mostly along the San Juan River.

Legislation such as FLPMA, the ESA, and the Public Rangelands Improvement Act of 1978 provide direction to the BLM for improving wildlife habitat. It is the responsibility of the FFO to identify opportunities to maintain, improve, and expand wildlife habitat on the public lands. The Memorandum of Understanding (MOU) No. NMSO-41 between the BLM and the New Mexico Department of Game and Fish (NMDGF) provides for cooperative development of fish and wildlife resource plans. In addition to earlier Habitat Management Plans (HMP), in recent years the Rattlesnake Canyon and Crow Mesa HMPs were prepared. Implementation of these activity plans will continue and others will be developed as needed.

Department of the Interior policy and the annual Animal Damage Control Plan for the Albuquerque District, prepared jointly by the U.S. Department of Agriculture (USDA) and the BLM, guide animal damage control activities on public lands in the planning area. The USDA has overall responsibility for the program and supervises all control activities. The BLM has approval responsibility for the specific control actions on public lands.

Riparian

Under the BLM's multiple use management, a variety of activities, such as livestock grazing, timber harvest, mining, recreation, roads, and utility corridors, take place on public lands. These activities can affect the quality and health of riparian areas that are important to fish and wildlife. Recent management guidance is provided in the Riparian and Aquatic Habitat Management Plan (BLM 2000b, c). BLM guidance on the management of riparian areas has the objective of restoring and protecting those areas within the context of authorizing other land management activities.

The goal of the FFO riparian monitoring plan is to document the progress toward achieving and then maintaining Proper Functioning Condition (PFC) while being managed under the multiple use and adaptive management concepts outlined in the Riparian and Aquatic Habitat Management Plan (BLM 2000b, c). Riparian and wetland areas are considered to be functioning properly when adequate vegetation, landform, or large woody debris are present to dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality. The process used to assess PFC is described in BLM Technical References 1737-9 and 1737-15. PFC is reassessed on a 3-year rotating basis. A binder containing monitoring information, such as PFC results, reassessment schedules, and photo-point monitoring photos, for each designated riparian reach is being compiled and maintained in the FFO.

Wilderness

The objective of the FFO wilderness program is to protect and manage the WA and the WSA in accordance with appropriate laws and regulations. Currently, the FFO manages the 44,608-acre Bisti/De-na-zin WA and the 6,653-acre Ah-shi-sle-pah WSA.

In 1996, Congress designated as wilderness approximately 16,525 acres located between the Bisti WA (3,946 acres) and the De-na-zin WA (24,137 acres). As a result, the Bisti and De-na-zin were combined to create one wilderness unit (PL 104-333). Management of the WA will be in accordance with the Bisti/De-na-zin Wilderness Expansion and Fossil Forest Protection Act of 1996 (PL 104-333), the San Juan Basin Wilderness Protection Act of 1984 (PL 98-603), the Wilderness Act of 1964 (PL 88-577), and BLM Wilderness Management Regulations (43 CFR 6300 and 8560).

The Bisti/De-na-zin WA contains three previously designated ACECs: Badlands, Log Jam, and Lost Pine. These areas are required to be managed under the non-impairment standards of the Wilderness Act. Existing management plans prepared for both the Bisti and De-na-zin WAs are proposed to be replaced by one updated management plan that includes the newly acquired acreage.

The Ah-shi-sle-pah WSA will be managed under the Interim Management Policy and Guidelines for Lands Under Wilderness Review until the area is either added to the National Wilderness Preservation System by Congress or removed from further consideration (BLM 1995c). The purpose of BLM's Interim Management Policy is to protect existing wilderness values, manage valid existing rights and grandfathered activities until final wilderness suitability determinations have been made. If designated wilderness, the area will be managed under the enabling legislation, the Wilderness Act of 1964, and BLM Wilderness Management Regulations (43 CFR 6300 and 8560). If released from further wilderness consideration, the area will be managed under

the principles prescribed in the appropriate land use plan for the FFO.

The New Mexico Wilderness Study Report (BLM 1991b) recognized the outstanding wilderness values found in the Ah-shi-sle-pah WSA. However, the report did not recommend the WSA for wilderness designation due to the known coal reserves, the existence of PRLAs on 90 percent of the WSA acreage, the anticipated likelihood of future mineral development, and the potential transfer of 3,094 acres in the WSA to the Navajo Tribe. Currently, no change in land ownership or surface disturbing activity has occurred in the area. However, the WSA would be difficult to manage as wilderness should the above conditions be realized.

In the AFO, five WSAs lie either wholly or partially within the planning area. These include Cabezon, Empedrado, Ignacio Chavez, Chamisa, and La Lena WSAs, with a combined acreage of 70,475 acres. They have been closed to mineral leasing since 1982, but there are pre-existing leases that were issued before then (BLM 1991b).

Forestry

The objective of the forestry program is to manage woodlands and timber stands for the production of forest products to support multiple uses and sustained yields. Multiple uses include recreation, timber sales, and harvesting of fuelwood. Timber sales are not active in the FFO area. Restoration projects focus on improving the 7,400 acres of ponderosa pine through cutting or burning the encroaching piñon and juniper. The Material Disposal Act of 1947, as amended, establishes the authority under which the BLM disposes of timber and other forest products.

Fire Management

The objective of the FFO fire program is to manage and use fire consistent with its natural role in the functioning ecosystem, and the protection of life and property.

The Farmington Interagency Fire Program operates with the cooperation of the FFO and the Jicarilla Ranger District. The program guidance is documented in the 2001 Farmington Field Office Fire Management Plan (BLM 2001a), which addresses all fuels management guidance and provides the basis for decisions regarding evaluation and response to wildfires. The plan adheres to the Federal Wildland Fire Policy (updated in 2000) and BLM Policy 92-13-1.

All fire management activities must also comply with other federal regulations on wilderness management, T&E species protection, cultural and historic preservation, and air and water quality standards and guidance. During reclamation after a fire, a weed management plan is required.

Lightning causes the majority of wildfires in the FFO area, with fires caused by people, either accidentally or intentionally, as the next major source. The increasing population in the tri-cities area has resulted in an increase in fires in the wildland/urban interface area. Fuel loadings in the urban areas are often moderate, with an occasional area of heavy fuel loadings. With the existing fuel loadings, a wind-driven fire in these areas under dry conditions could threaten structures. Areas containing high fuel loadings, such as cottonwood trees, willows, saltcedar, and alkali sacaton, are usually located on private land. There have been no known fires in either of the WAs during the past 10 years due to the predominance of badlands with little vegetation and scattered stands of sagebrush and grass.

The FFO has agreed to suppress fires on approximately 1.5 million acres of public land, 300,000 acres on USFS land, and, under the Joint Powers Agreement, on another 700,000 acres of private, state, and Indian lands where fires may occur and pose a threat to the public land.

Rangeland

The objective of the rangeland program is to promote healthy sustainable rangeland ecosystems; to accelerate restoration and improvement of public rangeland to properly functioning condition; to promote the orderly use, improvement, and development of the

public lands; to efficiently and effectively administer domestic livestock grazing; and to provide for the sustainability of the western livestock industry and communities that are dependent upon productive, healthy public rangelands. The program cares for and is working toward improving the overall health of all public lands within the BLM's responsibility.

The livestock grazing program is authorized principally by FLPMA, the Taylor Grazing Act of 1937, and the Public Rangelands Improvement Act of 1978. When grazing allotments are planned for disposal, the BLM is required to provide notification to permittees two years in advance.

Three major parts of the program are grazing administration, resource inventory and monitoring, and range improvement. Grazing administration consists of issuing and supervising permits and leases that authorize livestock grazing. Related tasks include detecting and abating unauthorized use and supervising allotments. Analyses of resource monitoring and inventory information is used to evaluate and adjust grazing use. Range improvement helps enhance rangeland resource conditions for a variety of uses, including domestic livestock and wildlife forage and watershed protection. Public rangeland will be managed to meet the Standards for Public Land Health (BLM 2000a). If the Standards are not met, the Livestock Grazing Management guidelines offer tools to guide the FFO to improve those areas not meeting the Standards.

Guidelines are reasonable and practical management options, which when applied, move rangelands toward the statewide standards. The guidelines are developed for public land livestock grazing, not for unsuitable land or land where livestock grazing does not occur. They are based on science, past and present management experience, and public input. These guidelines will be used to develop grazing management practices that will be implemented at the watershed, allotment, or pasture level.

Specific application of these guidelines, or Livestock Grazing Management Practices, occur at the field office level, in consultation, cooperation, and coordination with lessees, permittees, interested public, and landowners. Their implementation is carried out with recognition for the impact that BLM's management objectives have on adjacent landowners.

Guidelines are designed to encourage innovation and experimentation in the development of alternative livestock grazing management practices. They improve rangeland health and consider the natural migration patterns of wildlife. The goals of the Livestock Grazing Management Practices are summarized below.

- Promote native plant health, soil stability, microorganisms, water quality, stream channel morphology, function and habitat for native wildlife including threatened and endangered and special status species.
- Provide the basic requirements of rangeland ecological sites, including allowing for plant recovery and growth; allowing residual vegetation on upland and riparian sites to protect the soil from wind and water erosion, improve infiltration, and improve soil permeability; and improve or restore riparian-wetland functions.
- Use livestock to integrate organic matter into the soil, distribute seeds and establish seedings, prune vegetation to stimulate growth, and enhance water infiltration into the soil.
- Allow for flexibility in season, duration, frequency, and intensity of use.
- Consider climate topography, vegetation, wildlife, kind and class of livestock.
- Give priority to rangeland improvements and land treatments that offer the best opportunity for achieving standards of rangeland health.
- Incorporate the use of other land management practices where needed to achieve the desired plant community,

including, but not limited to prescribed fire, and biological, mechanical, and chemical land treatments.

- Use non-native plant species only in those situations where native species are not readily available or are incapable of maintaining or achieving properly functioning conditions and biological health.

Cultural Resources

The BLM's Cultural Resource Management Program is a comprehensive system for identifying, planning the appropriate use of, and managing cultural resources on public lands within areas of BLM responsibility. The program objectives are as follows:

- Respond in a legally and professionally adequate manner to (1) the statutory authorities concerning historic preservation and cultural resource protection, and (2) the principles of multiple use.
- Recognize the potential public and scientific uses of, and the values attributed to, cultural resources on the public lands, and manage the lands and cultural resources so that these uses and values are not diminished, but rather are maintained and enhanced.
- Contribute to land use planning and the multiple use management of the public lands in ways that make optimum use of the thousands of years of land use history inherent in cultural resource information, and that safeguard opportunities for attaining appropriate uses of cultural resources.
- Protect and preserve in place representative examples of the full array of cultural resources on public lands for the benefit of scientific and public use by present and future generations.
- Ensure that proposed land uses, initiated or authorized by BLM, avoid inadvertent damage to federal and non-federal cultural resources.

These program objectives are carried out through two program components: protection and utilization. The protection component is concerned with safeguarding and maintaining cultural resources for the public. Included are proactive management activities such as physical protection, preservation, and interpretation of cultural resources along with public education. The protection component is also concerned with support to other activities so that the management and development of public lands can proceed in accordance with legal and regulatory requirements. The utilization component is concerned with scientific research and collection management.

Specific legal requirements, which the BLM and other federal agency cultural resource management programs operate under to meet the program objectives, include:

- American Antiquities Act of 1906 (PL 59-209; 34 Stat. 225; 16 USC 432, 433). The act is implemented by uniform regulations at 43 CFR Part 3.
- Recreation and Public Purposes Act of 1926 (PL 69-386; 44 Stat. 741; 43 USC 869). See 43 CFR Subpart 2741 and Manual Section 2740.
- Historic Sites Act of 1935 (PL 74-292; 49 Stat. 666; 16 USC 467-467). Regulations implementing the Landmarks program are at 36 CFR Part 65.
- Reservoir Salvage Act of 1960, as amended by Archaeological and Historic Preservation Act of 1974 (PL 86-523; 74 Stat. 220, 221; 16 USC 469, PL 93-291; 88 Stat. 174; 16 USC 469).
- National Historic Preservation Act (NHPA) of 1966 (PL 89-665; 80 Stat. 915; 16 USC 470 et seq.), as amended. Section 106 of the act is implemented by regulations of the Advisory Council on Historic Preservation (ACHP), 36 CFR Part 800.
- National Environmental Policy Act of 1969 (PL 91-190; 83 Stat. 852; 42 USC 4321). The act is implemented by

regulations of the Council on Environmental Quality, 40 CFR 1500-1508.

- Archaeological and Historic Preservation Act of 1974 (PL 86-523; 16 USC 469-469c).
- Federal Land Policy and Management Act of 1976 (PL 94-579; 90 Stat. 2743; 43 USC 1701; "FLPMA").
- American Indian Religious Freedom Act of 1978 (PL 95-431; 92 Stat. 469; 42 USC 1996).
- Archaeological Resources Protection Act of 1979 (PL 96-95; 93 Stat. 721; 16 USC 47Oaa *et* seq.) as amended (PL 100-555; PL 100-588). It is implemented by uniform regulations and departmental regulations, both in 43 CFR Part 7.
- Native American Graves Protection and Repatriation Act of 1990 (PL 101-601; 104 Stat. 3048; 25 USC 3001). The Secretary of the Interior's implementing regulations are in 43 CFR Part 10.
- EO 11593 ("Protection and Enhancement of the Cultural Environment," 36 FR 8921, May 13, 1971).
- EO 13007 ("Protection of Religious Practices and Sacred Sites" [1996]).
- 36 CFR 60—National Register of Historic Places (NRHP) (1981).
- 36 CFR 63—Determinations of Eligibility for Inclusion in the NRHP.
- 36 CFR 79—Curation of Federally Owned and Administered Archaeological Collections.
- Guidelines for Federal Agency Responsibilities, Under Section 110 of the NHPA.
- The Secretary of the Interior's Professional Qualifications Standards (48 FR 44716, September 29, 1983).
- The Secretary of the Interior's Standards for the Treatment of Historic Properties, 1995.

In addition, the Farmington and Albuquerque Field Offices manage specific Chacoan outliers, as directed, in:

- New Mexico Wilderness Act of 1980 (PL 96-550; Title V; "Chaco Culture National Historic Park"; Sec. 501-508.
- Chacoan Outliers Protection Act of 1995 (PL 104-11).

The BLM cultural program operates under a national programmatic agreement with the ACHP and State Historic Preservation Officers. As part of the agreement, a Preservation Board was established. Implementation of the agreement in New Mexico is through a protocol agreement with the State Historic Preservation Office (SHPO). Relevant documents include:

- Programmatic Agreement among the BLM, the ACHP, and the National Conference of State Historic Preservation Officers regarding the manner in which BLM will meet its responsibilities under the NHPA (1997).
- BLM Charter for the Preservation Board (1997).
- Protocol Agreement between New Mexico BLM and New Mexico State Historic Preservation Officer (1998).

Program guidance for the BLM cultural resources program is found in these Washington Office released manuals:

- 8100 Manual—Cultural Resource Management.
- 8110 Manual—Identifying Cultural Resources.
- 8120 Manual—Protecting Cultural Resources.
- 8130 Manual—Utilizing Cultural Resources for Public Benefit.
- 8160 Manual—Native American Coordination and Consultation.

Specific BLM cultural resource program guidance for the public lands under the

responsibility of the New Mexico State Office is provided in the Handbook H-8100-1, *Procedures for Performing Cultural Resources Field Work on Public Lands in the Area of New Mexico State BLM Responsibility* (2002).

Inventory

Public lands administered by the BLM are inventoried for cultural resources while implementing both program components. For example, as part of the proactive cultural resources program, areas may be inventoried while implementing a cultural resource management plan, or to investigate areas where data is lacking and to identify at-risk cultural resources. Lands are inventoried to meet the legal requirements of taking into account the effect of a federal undertaking on cultural resources. All inventories and site recording are conducted under the guidance and standards found in Handbook H-8100-1.

The Albuquerque and Farmington Field Offices each maintain copies of the investigative records prepared for cultural resources associated with federal undertakings that they have responsibility, and this contributes to the utilization component of the program. This information, coupled with base maps showing the location of recorded sites and inventoried areas, is used to guide agency decisions regarding appropriate utilization of the resources. The BLM also contributes to the maintenance of an archaeological computer data base sponsored by the Archaeological Records Management Section of the New Mexico Historic Preservation Division. Sites recorded on public lands make up a majority of the sites on record at the Laboratory of Anthropology, and contribute significantly to the historical and scientific research being conducted throughout New Mexico.

Planning

Cultural resources can be identified as ACECs or SMAs in RMPs or amendments. In the Farmington RMP (BLM 1988), 41 areas were designated as ACECs or SMAs, one of which has since been deleted. The Cultural Resource Areas of Critical Environmental Concern RMP Amendment (BLM 1998b) designated 44 ACECs, two of which had been previously designated as SMAs in the earlier RMP.

The primary purpose of ACEC and SMA designation of cultural resources is to provide special management attention to protect and prevent irreparable damage to important historic and cultural values. Special management prescriptions affect the kinds of discretionary and non-discretionary actions at ACECs or SMAs. Management objectives for the existing ACECs or SMAs are predominantly protection and preservation of the cultural values, with some areas identified for protection of both the cultural and recreational values.

Special Designations

National Register of Historic Places

The NRHP is the nation's official list of properties (districts, sites, buildings, structures, and objects) that are significant in American history, architecture, archaeology, engineering, and culture.

NRHP properties in the planning area are prehistoric, proto-historic, and historic, representing a variety of cultural groups occupying the San Juan Basin and adjacent areas. Prehistoric and proto-historic properties within the planning area that are currently listed on the NRHP are under a variety of ownership and management jurisdictions. Cultures represented on the list include Archaic, Anasazi, and Navajo. The NRHP properties dating post-1800 are primarily within towns, not on public land.

State of New Mexico Register of Historic Places

The New Mexico Historic Preservation Division maintains a list of cultural resources that meet guidelines as being important to the prehistory and history of the state. All of the sites on the NRHP are also listed on the State Register of Historic Places (SRHP). Five BLM Chaco protection sites are listed on the SRHP but are not yet listed on the NRHP.

Chaco Culture Archaeological Protection Sites

Public Law 96-550, Title V Chaco Culture National Historical Park, Section 501-508 of the New Mexico Wilderness Act of 1980 designated 33 Chacoan outliers as Chaco Culture Archaeological Protection Sites (Protection Sites) and Chaco Canyon National Monument as Chaco Culture National Historic Park. The purpose of the title was "to recognize the unique archaeological resources associated with the prehistoric Chacoan culture in the San Juan Basin; to provide for the preservation and interpretation of these resources; and to facilitate research activities associated with these resources [Sec. 501(b)]." Four BLM sites were included. The BLM was also directed to monitor three privately owned sites and seek a cooperative arrangement with the owners. The remaining sites were on Indian allotted, Navajo Reservation and fee, and Ute Mountain Ute lands. In 1991, five Navajo fee Protection Sites were transferred to the BLM through a land exchange and one was acquired by the BLM through a combination exchange/purchase.

The need to amend PL 96-550, to add additional Protection Sites, adjust boundaries of existing Protection Sites and to delete Squaw Springs at the request of the Ute Mountain Utes, was identified. As a result, the Chacoan Outliers Protection Act of 1995 (PL 104-11) deleted two and added eight new Protection Sites including three on BLM land.

World Heritage List

Natural and cultural resources throughout the world that are of international importance may be designated as World Heritage Sites by inclusion on the World Heritage List maintained by United Nations Educational, Scientific, and Cultural Organization (UNESCO). Five BLM Chacoan outliers designated as Chaco Culture Archaeological Protection Sites in 1980 were included with Chaco Canyon as a World Heritage Site in 1987.

Protection and Utilization

The objectives of the BLM cultural resource management program protection component "are aimed towards protecting the significance of cultural resources by ensuring that they are managed in a manner suited to the characteristics, attributes, and uses that contribute to their public importance; towards giving adequate consideration to the effects of BLM land use decisions on cultural properties; towards meeting legal and regulatory obligations through a system of compliance fitted to BLM's management system, and towards ensuring that the cultural resources on public land are safeguarded from improper use and responsibly maintained in the public interest" (BLM Manual 8120 – Protecting Cultural Resources). The major emphasis of the BLM's cultural resource management program objectives involves the protection, preservation, and enhancement of the cultural resources for present and future generations. Both administrative and physical measures are undertaken to ensure these objectives are met. Special designation administrative measures may include determination of eligibility for listing on the NRHP and/or UNESCO World Heritage List, designation as ACECs, or designation as a National Historic Landmark. Cultural resources may also be considered for special designation through Public Law (e.g., Chaco outliers). Other administrative measures include limiting multiple use activities that may impact cultural resources. Some of the measures which may be taken are mineral withdrawals, road closures, closing to grazing, closing or restricting specific uses to previously disturbed areas, OHV designations and public education. Physical protection measures consist of activities such as stabilization, monitoring of site condition, patrol and surveillance programs, signing, and fencing.

The emphasis of site protection activities has been on the identification and proactive management of a wide variety of site types. Many of these sites have been designated as ACECs and SMAs. A major focus of the protection program has been implementation of

PL 96-550 and PL 104-11. Both administrative and physical protection measures have been undertaken to ensure the long-term preservation of the Chacoan outliers designated as Chaco Culture Archaeological Sites in these laws. In addition to the Chacoan outliers, other Anasazi sites, early Navajo, and historic sites are being actively protected.

A stabilization program was established in the mid-1970s and remains an active program. Since then the architecture of 24 Navajo pueblitos and six Chacoan outliers has been documented and stabilized, including emergency stabilization at one historic homestead site. An active Site Steward Program is an important aspect of the FFO site protection program. The *Site Protection Action List – Farmington Field Office* was prepared to identify and establish specific management prescriptions to protect at-risk cultural sites. Specifically, the plan established a Site Protection Plan, identified management actions to protect site integrity from visitor use and deficiency in survey coverage, and assessed stabilization needs of the ACECs or SMAs. Cultural inventory (survey) to identify at-risk and other cultural sites is part of the cultural resource program responsibility under Section 110 of the NHPA, as amended, and to implement management prescriptions identified during ACEC and SMA designation. These inventories are considered part of the program's proactive protection component rather than inventories required to meet Section 106 requirements.

The objectives of the BLM cultural resource program's utilization component "are to facilitate appropriate scientific use of cultural properties on public lands; to ensure that collections of archaeological materials removed from public lands and records relating to them are maintained in qualified public repositories as U.S. property and are used for appropriate research or educational purposes; and to ensure that the public receives tangible benefits from all uses of public land cultural resources" (BLM 8130 Manual—Utilizing Cultural Resources for Public Benefit). Use Category Designations are an assessment by BLM of the appropriate use that a cultural property may be subjected to and is a mechanism for assisting management in making decisions about land use. Use categories include scientific use, conservation for future use, traditional use, public use, experimental use, and discharge from management.

Currently within the FFO, no sites are specifically allocated for experimental use or for discharge from management. Sites that may not be eligible for the NRHP, a significant benchmark for evaluating significance and guiding management decisions, are often disturbed or destroyed during construction. Those that are not destroyed are not otherwise actively managed, but they are not formally discharged from management. Within the FFO, approximately 20 percent or less of the sites documented in any given year are not considered significant.

Three sites have been specifically allocated for traditional use: Cho'li'i, Huerfano Mesa, and Salt Point. All three are also specially designated as ACECs or SMAs. Numerous sites and landscape features are known or suspected to have traditional use, but they have not been specially allocated for such. Sites allocated for public use include one Chacoan outlier, eight Navajo pueblitos, one Navajo rock art site, four historic homesteading era sites, and one homesteading era schoolhouse. Fifteen Chacoan outlier sites and three Chaco road sites are allocated for conservation for future use. These sites are currently designated as ACECs or SMAs. The remainder of the sites (more than 8,000) is allocated for scientific use.

When use warrants, the BLM issues permits to appropriate, qualified non-federal applicants for survey and recording, and for excavation and/or removal. In addition permits may be granted for limited testing and/or removal. Within the FFO the majority of the permits are issued to meet Section 106 compliance and are associated with oil and gas field development and transportation.

Compliance

One of the objectives of the protection component of the cultural resources program involves compliance with numerous federal legal and regulatory obligations. Taking into account the effect of federal undertakings (actions or authorizations) on cultural resources is mandated by Section 106 of the NHPA of 1966, as amended. Section 106 of the act is implemented by regulations of the ACHP, 36 CFR Part 800.

The New Mexico BLM cultural resource program operates under the provisions of a 1997 National Programmatic Agreement among the BLM, the ACHP, and the National Conference of State Historic Preservation Officers, and a 1998 Protocol Agreement between New Mexico BLM and New Mexico State Historic Preservation Officer. These agreements recognize the cultural resources expertise that BLM has in its professional staff and as a result, have significantly streamlined the manner in which the BLM meets its responsibilities under the NHPA, and has reduced the often time consuming project by project consultation that had been historically required in compliance with Section 106. Although these agreement documents have greatly streamlined the BLM interaction with SHPO and the ACHP, the BLM still has significant and ongoing consultation obligations and responsibilities with Native American tribes, local and state governments, other federal agencies, and interested groups and individuals.

Much of the workload of the cultural resource staff involves ensuring that federal undertakings associated with but not limited to oil and gas development, extraction and transportation are in compliance with Section 106 and other applicable preservation laws and regulations. Over 1,000 undertakings are reviewed each year, ranging from a single well pad to major pipeline gathering systems. The BLM's policy has been to prevent impacts by planning the undertaking to avoid cultural resources, however since the "boom" of Fruitland coal gas development in the early 1990s avoidance has not always been possible or recommended due to other constraints. If impacts to the cultural resources cannot be avoided, mitigation of the effect is conducted prior to approval of the undertaking or required as a stipulation on the approval. A wide range of measures is used to avoid or mitigate impacts on cultural resources. Measures commonly used include project relocation or redesign, fencing and barriers, monitoring of construction activities and site condition, and data recovery. Most protective measures are attached to the undertaking (APD, ROW, etc.) as stipulations (COAs).

Program Direction

Protection and Preservation

Cultural resources are a finite, non-renewable resource, which require protection and preservation to ensure their existence for future generations to learn from and appreciate. These resources are the cultural heritage of all Americans and warrant pro-active management. The major protection and preservation measure has been the designation of cultural resources as ACECs and SMAs. Management prescriptions have been implemented through several programs including patrol and surveillance, monitoring, and stabilization. The patrol and surveillance program has been expanded through the use of volunteer Site Stewards who also serve as educational points of contact with visitors in the fields. The involvement of the public in the management of cultural resources is an emphasis of the cultural program and will continue. Also emphasized is the role of law enforcement in the protection of cultural resources. A stabilization program was begun in the mid-1970s that provides for long-term preservation of significant standing architecture. Stabilization of 24 pueblitos and six Chacoan outliers has been conducted. Stabilization of other prehistoric and historic sites and maintenance of previously stabilized sites will continue. Prior to stabilization the structures are recorded through Historic American Building

Survey (HABS) or other detailed methods of documentation.

Public Use

Several objectives of the BLM Cultural Resources Management Program are concerned with the management of cultural resources for public use by present and future generations. A variety of public uses are possible. The most visible public use is recreational and educational site visitation. The American public along with others are keenly interested in both the prehistory and history of the San Juan Basin. Visitation to BLM administered sites continues to increase each year. Eight pueblitos, one petroglyph site and one Chacoan outlier have been prepared for recreational public visitation in the FFO. A large format interpretive brochure and map has been prepared to direct the public to the pueblitos and petroglyph site. Management prescriptions for four homesteads and a school house identified as ACECs in 1998 include preparing of the sites for public visitation and interpretation. Actions proposed to be undertaken as part of the preparation of these sites for public visitation will include gathering of information on the historic occupation of the upper Largo Canyon area with an emphasis on the ACECs and the associated community. In addition to researching the history of human occupation of the ACECs, HABS documentation of the structures will be conducted followed by stabilization. Visitor facilities such as parking areas and trails will be constructed along with signing of the sites and preparation of interpretive brochures. Other ACECs or SMAs and possibly additional sites may be identified and prepared for future visitor use.

Research

The most obvious cultural resources managed by the BLM are the physical remains of past human occupation, such as artifacts, hearths, trails and roads, structures, and rock art. In addition to physical remains the BLM is responsible for the management of areas of traditional and sacred use by Native Americans. When appropriate to the utilization designations of the resource, the BLM encourages research. Such research may include broad surveys, photographic documentation and analysis, collections of artifact specimens, and in some cases excavation. Other research methods, such as the collection of oral histories, may also be necessary to preserve information that is seldom reflected or recognizable in the archaeological record.

Additional research is needed to help answer questions necessary for the development of best management practices and visitor uses. Areas of research concern vary; however, the Fruitland Coal Gas Data Recovery Project research design identified many of the basic archaeological concerns for prehistoric and protohistoric sites. Other research concerns for archaeological values include understanding the function of the Chacoan system, pueblito and historic sites architecture, the nature and function of rock art, and site preservation methods.

Tribal Consultation Responsibilities

The BLM, USFS, and USBR all work in cooperation with the Native American tribes and the BIA to coordinate and consult before making decisions or approving actions that could result in changes in land use, physical changes to lands or resources, changes in access, or alienation of lands. FLPMA requires coordination with tribes in preparing and maintaining inventories of the public lands and determining their various resource and other values; in developing and maintaining long-range plans providing for the use of the public lands; and in managing the public lands. Federal programs are required to be carried out in a manner sensitive to Native American concerns and tribal government planning and resource management programs.

Paleontology

Paleontological resources are managed on public lands because they are nonrenewable resources of value to scientists, educators,

hobbyists, commercial collectors, and other members of the public. Without protection, the resources may be intentionally or unintentionally damaged or destroyed, causing valuable information to be lost. Paleontological resource protection objectives include facilitating research and collection on public lands, use for education and recreation, protecting scientifically valuable resources that may be in conflict with other land and resource uses, and protecting scientifically valuable fossils, as required by law.

The paleontology program achieves these objectives through the following activities (BLM 1987a):

- Identifying and evaluating paleontological resources so they may be adequately addressed in planning and environmental analysis documents.
- Maintaining and conducting an effective and continuing protection program.
- Increasing the awareness of federal land managers and the public regarding the significance of paleontological resources and management requirements, and encouraging public participation in resource management.
- Developing volunteer or cooperative management agreements and associations with individuals, professional paleontologists, local organizations and governments, and the scientific community.
- Avoiding or mitigating impacts to valuable paleontological resources.
- Avoiding publicizing the exact locations of scientifically significant paleontological resources if such attention would conflict with management objectives.
- Managing and issuing collection permits when appropriate.

Recreation

The objective of the FFO outdoor recreation program is to ensure the continued availability of public land for a diverse array of quality resource-dependent outdoor recreation opportunities. Recreation use is managed to protect the health and safety of visitors; to protect natural, cultural, and other resource values; to stimulate enjoyment of public lands; and to resolve user conflicts. Visitor demands and new recreation uses and opportunities will continue to influence how and what recreational opportunities are provided in the FFO area.

FLPMA provides for management of outdoor recreation on public lands. Section 202(c)(9) calls for land use planning consistent with statewide outdoor recreation plans. Other national laws that govern recreation management in the FFO area include the National Trails System Act of 1968, as amended; the Land and Water Conservation Fund Act of 1964, as amended; the R&PP Act, as amended; and the Wilderness Act of 1964.

Most public lands are managed to maintain a freedom of recreational choice with a minimum of regulatory constraints. Few BLM recreational facilities or supervisory efforts exist on these lands, which are sometimes referred to as Extensive Recreation Management Areas.

Where the nature of the resource attracts intensive recreational use, public lands may be managed as a SRMA. These are areas where the BLM makes major investments in recreational facilities and visitor assistance. Specific management direction in a SRMA is formulated by the BLM to provide for resource protection and public health, safety, and enjoyment.

Developed Recreation

Developed sites and areas are places that contain structures or capital improvements primarily used by the public for recreation purposes. These sites may include such things as delineated spaces for parking, camping, or boat launching; sanitary facilities; potable water, grills or fire rings; tables; or controlled access.

Detailed management direction is provided through Recreation Area Management Plans for Simon Canyon Recreation Area and ACEC, the Dunes Vehicle Recreation Area, and the Glade

Run Trail System (GRTS) Recreation Area. The Farmington RMP (BLM 1988) provides general management direction for Angel Peak Recreation Area and ACEC and Head Canyon OHV Competition Area.

Dispersed Recreation

Current management direction for dispersed recreation opportunities is provided for in the CFR (Title 43, Part 8300) and BLM manuals. The Farmington RMP provides general management direction for Thomas Canyon SMA, Carracas Mesa SMA, and Negro Canyon SMA. Detailed direction for primitive and unconfined types of recreation can be found in management plans for the Bisti and De-na-zin WAs. The two management plans will be replaced by one updated management plan, including the additional acreage added to the WA. Recreation opportunities in the WSA will be managed under BLM's Interim Wilderness Management Policy and Guidelines for Lands Under Wilderness Review.

Recreation Opportunity System

The outdoor recreation program uses the Recreation Opportunity Spectrum (ROS) as the basic tool for inventory and management to ensure the general public a continued variety of quality recreational opportunities. Providing opportunities for backcountry recreation and more developed types of recreation close to major urban areas is emphasized. An effort is made to locate and establish use areas and trails compatible with social and natural environments in close proximity to heavily populated areas.

A broad range of outdoor recreation opportunities such as backpacking, camping, sightseeing, fishing, boating, picnicking, horseback riding, wildlife viewing, OHV use, mountain biking, and motorcycling is provided for, in an attempt to meet varying public needs. Access is maintained and developed, where necessary, to enhance recreation opportunities and allow public use. Currently, five recreation SMAs have ROS class management objectives in the management prescriptions.

Special Recreation Permits

The FFO issues Special Recreation Permits (SRP) to authorize certain recreational uses of lands administered by the BLM. Authority to issue SRPs is provided in CFR Title 43, Part 8370. Permits are issued for competitive events, commercial events, and educational use. Commercial use is recreational use of public lands for business or financial gain. Competitive use is any formally organized or structured use, event, or activity on public land in which there are the elements of competition between two or more contestants, registration of participants, and/or a predetermined course or area is designated. Competitive use also includes individuals contesting an established record such as speed or endurance. Educational use is an academic activity sponsored by an accredited institution of learning.

The FFO issues permits for a range of recreational activities annually. These include commercial guide services, hunting guides, competitive events (i.e., mountain bike races, OHV rock crawling events, motocross races, equestrian events), special large group events, and educational activities.

The increase in demand for these activities influences how the BLM plans for future recreational needs. It is anticipated that recreational activity will continue to grow in the FFO area and that the BLM will strive to meet the demand.

Off-Highway Vehicle Use

43 CFR 8340 provides for OHV use as a legitimate activity on public land wherever it is compatible with other resource management objectives. OHV designations are administrative, allowing management flexibility in response to changes in the environment. All public land is designated as "open," "limited," or "closed" to motorized vehicles. These designations are made in RMPs for public lands in each field office. The designations provide for the following uses:

- Open Area: Areas on public land where OHVs may be operated, subject to the conditions set forth in 43 CFR 8341

through 8343. Open designations generally include areas where there are no compelling resource protection needs, use conflicts, or public safety issues that would warrant limiting OHV use.

- Limited Area: Areas on public land where OHVs may be restricted at certain times, in certain areas, and/or to certain vehicular use. These restrictions may be of any type, including the following categories: number of vehicles; types of vehicles; time or season of vehicle use; permitted or licensed use only; use on maintained roads and trails; use on designated road and trails; and other restrictions. Limitations may be used to meet specific resource management objectives, protect resources or public safety.
- Closed Area: Areas on public land where OHV use is prohibited. Closures may be necessary to protect resources, ensure visitor safety, or reduce use conflicts.

Emergency OHV limitations of use, and closure of areas and trails to OHV use, can occur under the authority of 43 CFR 8341.2. However, emergency closures are not OHV designations. Emergency closures can be done on a case-by-case basis to prevent or stop unnecessary degradation of resources or adverse effects to other authorized uses. Emergency closures remain in effect only until an interim or standard designation can be made, or until the adverse effects are eliminated and measures to prevent their recurrence have been implemented.

OHV use has increased substantially in the FFO over the last decade and is an increasing concern for all resource programs. The outdoor recreation program is concerned with providing access to recreational areas and opportunities in appropriate settings for OHV activities without degrading the intrinsic qualities of the landscape that are important for a range of public land resource values. BLM is also concerned with providing adequate access to resources and facilities on federal land.

The FFO has designated 13 OHV Management Units for 499,040 acres of the field office. A plan has been developed for one unit to limit OHV use on 40,960 acres of public land. SMAs, ACECs, RNAs, WAs, and WSAs also have OHV use designations. The remainder of the public lands within the FFO is currently designated as "open," allowing cross-country travel in vehicles. The FFO will continue to apply OHV designations in order to provide for resource protection, access, and recreational use.

It is difficult to provide one definition of motorized wheeled cross-country travel and have that definition fit all the situations that might occur. Roads and trails appear differently to individuals because of the variety of terrain, vegetation and soil type found in the FFO. Cross-country travel is wheeled motorized travel by any vehicle, recreational or other, off of roads and trails. The following examples further clarify this definition.

Motorized travel is considered cross-country when:

- The passage of motorized vehicles depresses undisturbed ground and crushes vegetation.
- The motorized vehicle maximum width (the distance from the outside of the left tire to the outside of the right tire or maximum tire width for motorcycles) does not easily fit the road or trail profile. However, an all-terrain vehicle (ATV) traveling within a two-track route established by a pickup truck is not considered cross-country travel.
- Motorized vehicles use livestock and game trails, unless the trails are clearly evident, or continuous single-track routes used by motorcycles over a period of years.

Motorized travel is **not** considered cross-country when:

- Motorized vehicles use constructed roads that are maintained by the oil and gas industry and/or the BLM, unless specifically closed to use through signing and/or gates. Constructed roads are often characterized by a road prism with cut and fill slopes.
- Motorized vehicles use trails specifically designated for the vehicle being used. For example, this would include the single-track trails within SDAs that are designed for motorcycles.
- Motorized vehicles use clearly evident two-track and single-track routes with regular use and continuous passage of motorized vehicles over a period of years. A route is a track where perennial vegetation is devoid or scarce, or where wheel tracks are continuous depressions in the ground, evident to the casual observer, but are vegetated.
- Travel is within a dry wash or arroyo that is as wide as the motorized vehicle's maximum width and there are no other resource concerns such as riparian areas or springs.

The entire route must meet the above specifications. Newly created routes should be easily identified as not meeting the specifications because many portions would not show signs of regular and continuous passage of motorized vehicles and many areas would still be fully vegetated with no wheel depressions. This definition does have some ambiguity that will continue to exist until formal designation of routes, trails, and areas within the OHV Activity Plans is completed. This definition only applies to cross-country travel in the dispersed area and not to cross-country travel within the SDAs and ACECs. An SDA or ACEC may have its own management plan that defines cross-country travel within its boundaries.

Law Enforcement

The FFO Field Office Ranger works closely with the Field Manager to prioritize actions in support of resource management objectives. The Field Office Ranger's responsibilities include criminal investigations, response to public complaint, surveillance, and patrols of sensitive areas. The law enforcement activities are conducted in accordance with U.S. Department of the Interior (USDI) and BLM manuals, regulations, and policies.

The BLM Law Enforcement Program works cooperatively with other agencies in the Four Corners Area including the New Mexico State Police, San Juan County Sheriff's Office, Farmington Police Department, New Mexico Department of Game and Fish, Drug Enforcement Administration, Area II Narcotics Enforcement, Chaco Culture National Historic Park, and the Civil Air Patrol.

There are seven areas of emphasis for the Law Enforcement Program in the planning area:

1. Oil and Gas—There are approximately 18,000 producing wells within the planning area. Activity focuses on the support of the Petroleum Engineering Technicians on the theft of product, vandalism to facilities and equipment, and compliance checks.
2. Cultural Resources—There are many significant cultural resources in the planning area that are accessible through the road network. Theft and vandalism of these resources are constant threats. Support includes patrol, surveillance, and cooperative information sharing on suspected criminal activity. FFO's law enforcement program is also involved in the investigation of illegal activities and the arrest and prosecution of those caught doing illegal activities.
3. Paleontological Resources—Within the planning area, there are pockets of dense, high quality fossil items. Both the Bisti and De-na-zin WAs were specifically designed to protect these resources and provide for orderly, scientific investigations. Support focuses

on extended patrols of risk areas and recruiting volunteers to assist in providing coverage.

4. Controlled Substances—Controlled substance trafficking, production, cultivation, and use occur within the planning area. Law Enforcement efforts focus on maintaining visibility to deter illegal substance activity on the public lands, while continuing close coordination with other law enforcement organizations within the planning area.
5. Vegetation Theft—The illegal cutting and removal of woodland products continues to increase in the planning area. This activity is seasonal with demand increasing in the fall. The cutting and vehicle traffic associated with removal damages soil, plants, and wildlife habitats. The theft of plants from the designated SMAs for the Knowlton's and Mesa Verde cacti threatens these endangered species. Law enforcement efforts focus on prevention through education and permitting, patrols, and public support in reporting illegal activity.
6. Employee Safety—Resource specialists work in remote areas, and law enforcement supports safe operations in isolated areas through direct support, overflight safety checks, and provision of safety information and equipment. With awareness of any potential threat of interference, the Law Enforcement Ranger will accompany resource specialists to the field.
7. Recreation—There are numerous and varied outdoor recreation opportunities and activities occurring on the public lands within the planning area, including rafting, swimming, fishing, hunting, horseback riding, mountain biking, backpacking, bird watching, rockhounding, vehicle camping, and OHV use. Law enforcement assists the recreating public with information on special areas, permitting, opportunities, access, and land status. Support focuses on patrol of developed sites, visitor information and education, and coordination with other agencies during special events.

ALTERNATIVES

This section describes the alternatives considered in detail for meeting the purpose and need for the proposed revision to the Farmington RMP. These alternatives were selected based on the following criteria:

- Provide for maximum practicable recovery of oil and gas resources in the planning area.
- Comprehensively address and incorporate previously approved real estate and land management actions in the FFO area.
- Provide a complete and adequate RMP for the FFO area.
- Adequately protect sensitive resources and the environment.
- Provide a reasonable range of management options for the FFO.

Application of these criteria resulted in the identification of three action alternatives for detailed analysis, in addition to the no action alternative. Alternatives considered but not carried forward for detailed analysis are discussed at the end of the chapter.

Overview

The alternatives described in this section define a range of land use management options. Alternative A is no action, in which management would remain under current RMP documents and policies. This alternative is required by Council on Environmental Quality (CEQ) regulations and provides a basis of comparison for the other alternatives. Alternative B emphasizes maximum recovery of the hydrocarbon resources as the primary goal. Alternative C emphasizes conservation, protection, and enhancement of natural and cultural resources through special management of designated areas. Alternative D balances the two goals to achieve maximum practicable recovery of oil and gas, while also maximizing protection of the most sensitive environmental resources.

Each alternative addresses oil and gas leasing and development for BLM, USFS, and USBR lands in the planning area, and comprehensive resource management for BLM lands only. The alternatives differ primarily in the boundaries of some special management designations and in management prescriptions. In general, there are more acres of special management designations and the management prescriptions are more stringent under Alternative C, compared to Alternatives A, B, and D. The section on Alternative A describes current practices. The sections on Alternatives B, C, and D describe changes in stipulations, special management designations, management prescriptions, and other actions compared to Alternative A. The Continuing Management Guidance would remain in effect under all alternatives.

Since the 1988 RMP and later amendments for the FFO area were completed, the BLM has been converting land management information from paper maps into electronic Geographic Information System (GIS) data. This includes data such as special management designation boundaries, wells, roads, range allotments, and watershed boundaries. For each alternative, the GIS data were used to generate the acreage of each special management designation, oil and gas lease, and the amount of land affected by constraints on oil and gas activities. GIS data were also used to determine the number of existing and projected wells within those boundaries for each alternative. These calculations differ in some cases from acreages listed in previous RMP documents due to such factors as digitizing error, different projections, or other factors. These differences are identified in the Specially Designated Areas section of Alternative A. For this EIS, the GIS-calculated acreages were used for analysis and discussion of all alternatives to provide a consistent basis for comparison.

Each of the alternative descriptions in the following sections address how the alternative would affect the following:

1. Oil and gas leasing and development.
2. Modification of BLM ownership patterns and ROW corridor designations.
3. Modification and addition of areas with special administrative designation.
4. OHV designations of open, closed, limited.
5. Identification of additional coal leasing areas to meet anticipated production needs for the next 15 to 20 years.

Most of the limitations on land use would be applied through management prescriptions within SDAs or USBR land around Navajo Reservoir. The boundaries of many of the SDAs overlap other areas, with differing management prescriptions described in these overlapping areas. To determine the acreage under each management constraint, the most limiting constraint was applied in overlapping areas and that acreage was tallied and excluded from the acreage of the less limiting constraint. The total acreage of public land or federal minerals listed for the identified constraints under each alternative does not double-count the overlapping acreage. Under Alternative D for example, Cho'li'i (Gobernador Knob) is a cultural ACEC with NSO constraints on oil and gas development whose boundary overlaps Gobernador and Cereza Canyon Fossil Area that has CSU constraints. The acreage of Cho'li'i has been added to the total acreage of NSO constraints under Alternative D, and this acreage has been subtracted from the acreage of CSU constraints. For this reason, totaling the acreage of each SDA under the same constraint will not result in the total acreage listed under each alternative.

Alternative A

Under this alternative, the FFO would continue to manage oil and gas leasing and other resource responsibilities as it does currently. Management guidance, implementation procedures, and special management designations would remain as they currently exist under the 1988 RMP, the 1991 Amendment for oil and gas leasing and development, the 1995 RMP Amendment for OHV use, the 1995 RMP Amendment for OHV use in the GRTS, the 1998 RMP Amendment addressing coal leasing, the 1998 Amendment for cultural resources, the 2000 Final EIS for Riparian and Aquatic Habitat Management in the Farmington Field Office, and the 2000 RMP Amendment providing standards for public land health and guidelines for livestock grazing.

Oil and Gas Leasing and Development

The EIS prepared for the 1991 Oil and Gas Leasing and Development Amendment analyzed the impacts of 4,512 additional wells in the planning area to be developed by 2011, with an estimated 28,750 acres of additional surface disturbance due to oil and gas activities. All of these wells are projected to be located in the high development area shown on **Map 2-1.**

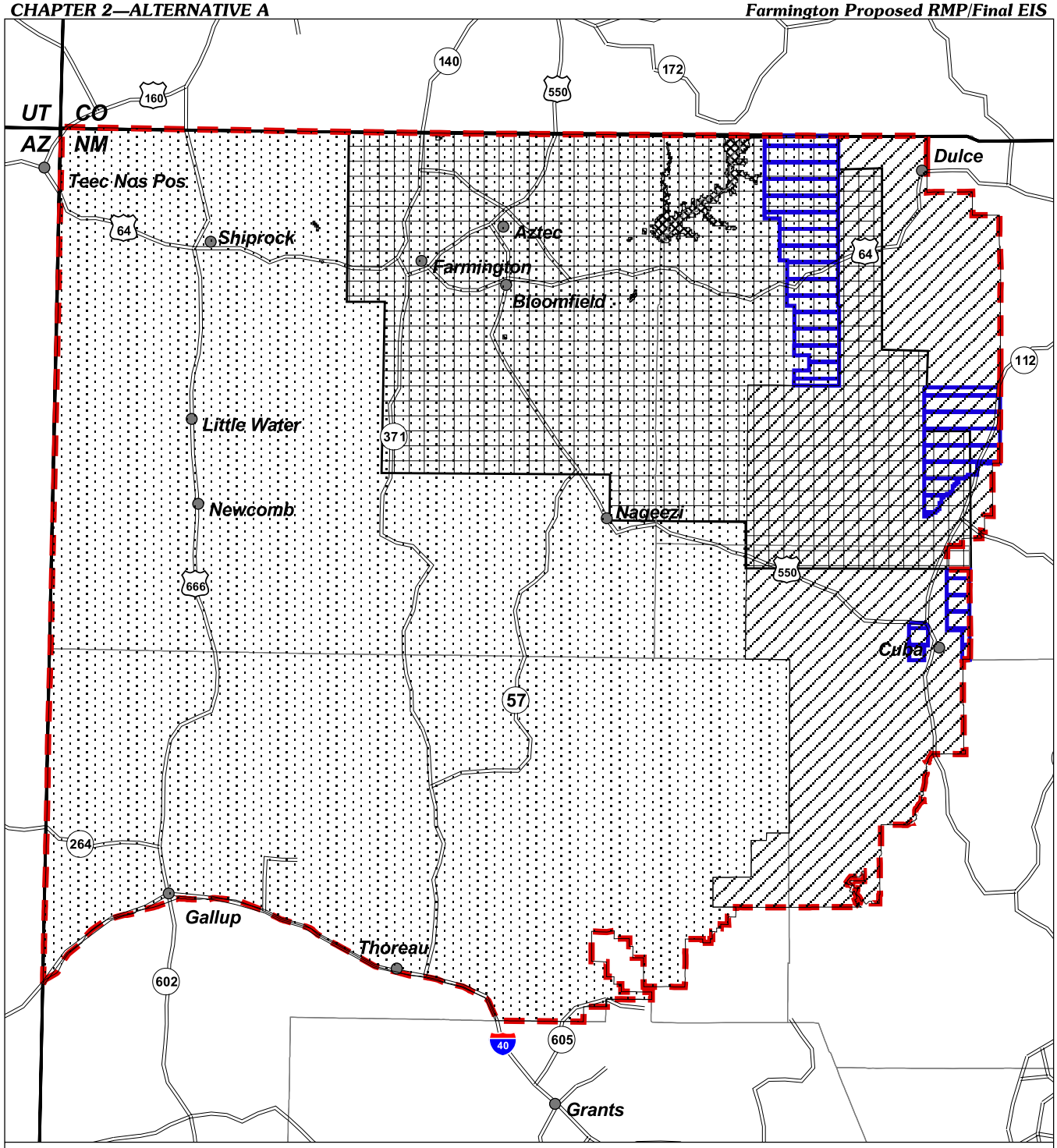
Following is a summary of the acreage of federal minerals in the planning area subject to various constraints under this alternative:

Constraint	Acreage within High Development Area	Acreage in Rest of Planning Area	Total Acreage
Leasing			
Nondiscretionary Closure	349	110,799	111,148
Discretionary Closure	21,545	31,671	53,216
Development			
STC	1,380,723	1,356,971	2,737,694
CSU	81,322	77,392	158,714
NSO	7,769	5,368	13,137
TL	173,786	21,380	195,166

Notes: STC = open under Standard Terms and Conditions; CSU = Controlled Surface Use; NSO = No Surface Occupancy; TL = Seasonal Timing Limitation.

Within the high development area, more than 99 percent of the federal oil and gas resources are currently leased. In areas identified for discretionary closure in the RMP, the development of existing leases would continue according to the terms of the lease. The BLM would continue to implement the portions of the lease that require lessees to conduct operations in a manner that minimizes adverse impacts to other resources and other land uses and users.

Geologic changes over time have created various layers of sedimentary rocks and interspersed reservoirs containing hydrocarbon resources. The resulting formations contain deposits of coal, oil, and gas. There are five primary subsurface hydrocarbon formations in the planning area: the Fruitland Formation (natural gas, coalbed methane [CBM], and coal), Pictured Cliffs (gas), Mesaverde (gas and oil), Mancos (oil and gas), and the Dakota Formation (gas, oil, and coal). More information on the geology of the planning area is provided in Chapter 3.



LEGEND

- RMP/EIS Boundary
- Farmington Field Office
- Albuquerque Field Office
- Bureau of Reclamation Land
- National Forest
- Oil/Gas High Development
- Town
- Major Road
- Interstate Highway
- U.S. Route
- State Highway

N

15 0 15

Scale in Miles

Source: BLM 2002, Engler et al. 2001

Map 2-1: High Development Area for Oil and Gas

The location of a well drilled to a specified formation is determined by the well spacing for that formation. Spacing is regulated by the BLM and the New Mexico Oil Conservation Division (NMOCD) and is intended to maximize the economic recovery of the resource while protecting correlative rights. If spacing is not defined for a formation in a particular area, a well must be drilled according to statewide rules. The formations in the New Mexico portion of the San Juan Basin are all spaced at 160 acres, except for the Dakota, Mesaverde, and Fruitland CBM Formations, which are all spaced at 320 acres. There are provisions for infill wells within a spacing unit if it can be demonstrated that the reservoir will support an increase in well density. The Dakota and Mesaverde have both been approved by the BLM and NMOCD for infill drilling of up to three additional wells per spacing unit. The Fruitland CBM Formation is currently undergoing the same consideration for 160-acre increased density.

Under this alternative, the number of wells analyzed by the EIS prepared for the RMP Amendment for oil and gas development (BLM 1991a) would support approval of approximately 223 new APDs per year over the next 9 years. Once the 17 wells that would be inaccessible due to NSO constraints are subtracted from the total, this would result in 1,990 new wells in the planning area on public land over 9 years, with an amendment to the RMP required at the end of this period. If this rate were continued over the 20-year term of this Proposed RMP/Final EIS, it would result in 4,438 potential new wells. For the purpose of comparing impacts across alternatives, impact analysis will consider the effects of developing 4,421 projected new wells (4,438 less the 17 inaccessible wells due to NSO constraints). No infill drilling with new surface disturbance would be permitted if the increased density was approved after the 1991 Amendment, except where it occurs on existing infrastructure. New oil and gas development would need to be offset with reclaimed area to achieve no net increase in surface disturbance.

The mitigation measures listed in Appendix B-9 of the 1991 Amendment (BLM 1991a) would remain in effect. These measures were developed for environmental protection in cooperation with representatives from industry and state agencies.

A raptor noise policy has been in effect since February 2000 in which the FFO established a buffer zone concept to minimize noise impacts from wellhead compression. This noise policy was developed to minimize disturbances to raptor nest sites for golden eagles, ferruginous hawks, and prairie falcons by providing a reasonable margin around the nest. A buffer zone is defined as an area surrounding the nest for ⅓ mile on either side, or a circle of ⅔ mile diameter, measured from the center of the nest site. Oil and gas operators must meet a maximum noise level of 48.6 dBA (A-weighted decibels) at 300 feet from the compressor. Otherwise they must submit a Sundry Notice prior to installing a compressor to obtain an evaluation of the situation and a recommended mitigation that would not be more than 48.6 dBA. Noise associated with oil and gas development that affects other resource values and receptors are handled on a case-by-case basis. Each case is handled under a collaborative method to arrive at a solution to mitigate the impacts to the affected resource or receptor.

Oil and gas development on the land around Navajo Reservoir would continue to be permitted by the FFO with review and concurrence from the USBR. In addition to the stipulations applied by the BLM, USBR stipulations on oil and gas activities include the following:

- Drilling and well locations would be restricted to more than 1,500 feet from Navajo Dam and its appurtenant structures.
- No wells would be located within 500 feet of the high water line on Navajo Reservoir (elevation 6,101.5 feet

above mean sea level [MSL]) so an NSO constraint applies. An NSO constraint would be applicable along the San Juan River.

- Production facilities would not be located within 650 feet from the shoreline or on the ridgeline above the reservoir. They would be designed to minimize their visibility from the lake and other public use areas.
- The location of compressors would be reviewed to determine if mitigation is needed to minimize noise at recreation use areas and other sensitive locations.
- Co-location of gas well facilities would be encouraged to minimize surface disturbance and the duplication of facilities.
- TL constraints would be in effect within designated elk and mule deer critical winter range between December 1 and March 31, and within designated elk calving areas between December 1 and July 14.

Oil and gas development on USFS land in the planning area would continue to be permitted by the FFO with concurrence by the USFS. Site-specific EAs would continue to be completed by USFS staff for all wells or groups of wells within the same drainage, and clearances would be required to ensure no damage to significant cultural resources, T&E species, and other resources of concern. Winter closures for drilling and workover operations from November 1 to March 31 would remain in effect on the Jicarilla Ranger District. Development on the Santa Fe National Forest would be implemented under Standard Terms and Conditions.

Land Ownership Adjustments

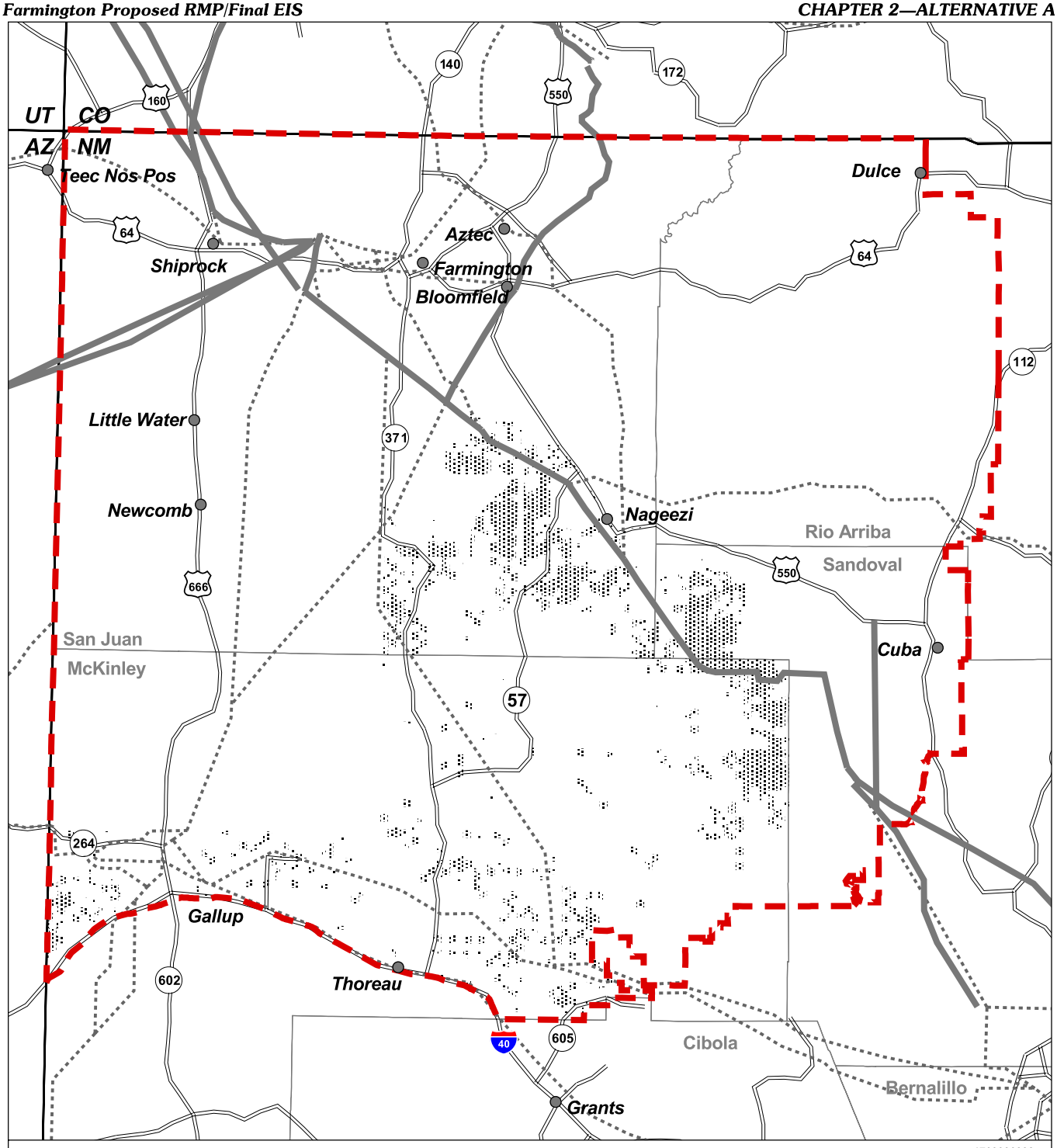
Disposal

Under this alternative, the land ownership adjustments identified in the previous RMP and amendments would be carried forward. Exchange, sale, disposal under the R&PP Act, or other legal disposal would be considered if the disposal met the criteria listed in Chapter 1. These lands include the land south and west of US 550, and approximately 2,640 acres of isolated public lands (Appendix F). **Table 2-1** shows the amount of land that would be available for disposal under Alternative A. **Map 2-2** shows the disposal area under this alternative.

Table 2-1. Land Ownership Adjustments (in Acres) for Alternatives A, B, C and D

Land Adjustment	Alternative A	Alternative B	Alternative C	Alternative D
Disposal	280,782[1]	347,505[1,2]	338,067[1,2]	340,118[1,2,4]
Acquisition	127,782	77,589	189,679[3,5]	178,237[5]

Notes: (1) Includes BLM lands south of US 550, outside of SDAs.
(2) Does not include acreage for parcels with substantial structures that may be identified in the future.
(3) Does not include acreage in riparian areas that may be identified for acquisition in the future.
(4) Does not include acreage for potential R&PP adjustments identified through scoping.
(5) Does not include acreage of BLM lands surrounding SDAs that may be identified for acquisition in the future.



LEGEND

- RMP/EIS Boundary
- ROW Corridor (WRCS)
- Priority Corridors 2 and 3
- Existing Disposal Area
- County Boundary
- Town
- Major Road
- Interstate Highway
- U.S. Route
- State Highway

N

15 0 15

Scale in Miles

Source: BLM 2000 & WRCS 1992

Map 2-2: Existing Disposal Areas and WRCS Corridors (WUG Revision)

Acquisition

Inholdings in all the approved SDAs would remain on the priority list for acquisition. Other lands that consolidate public ownership or benefit a resource program could also be acquired, if the acquisition were determined to be in the public interest. Any lands acquired would be managed in the same manner as the adjacent or surrounding public lands. Table 2-1 shows the amount of land that would be a priority for acquisition under Alternative A.

OHV Use

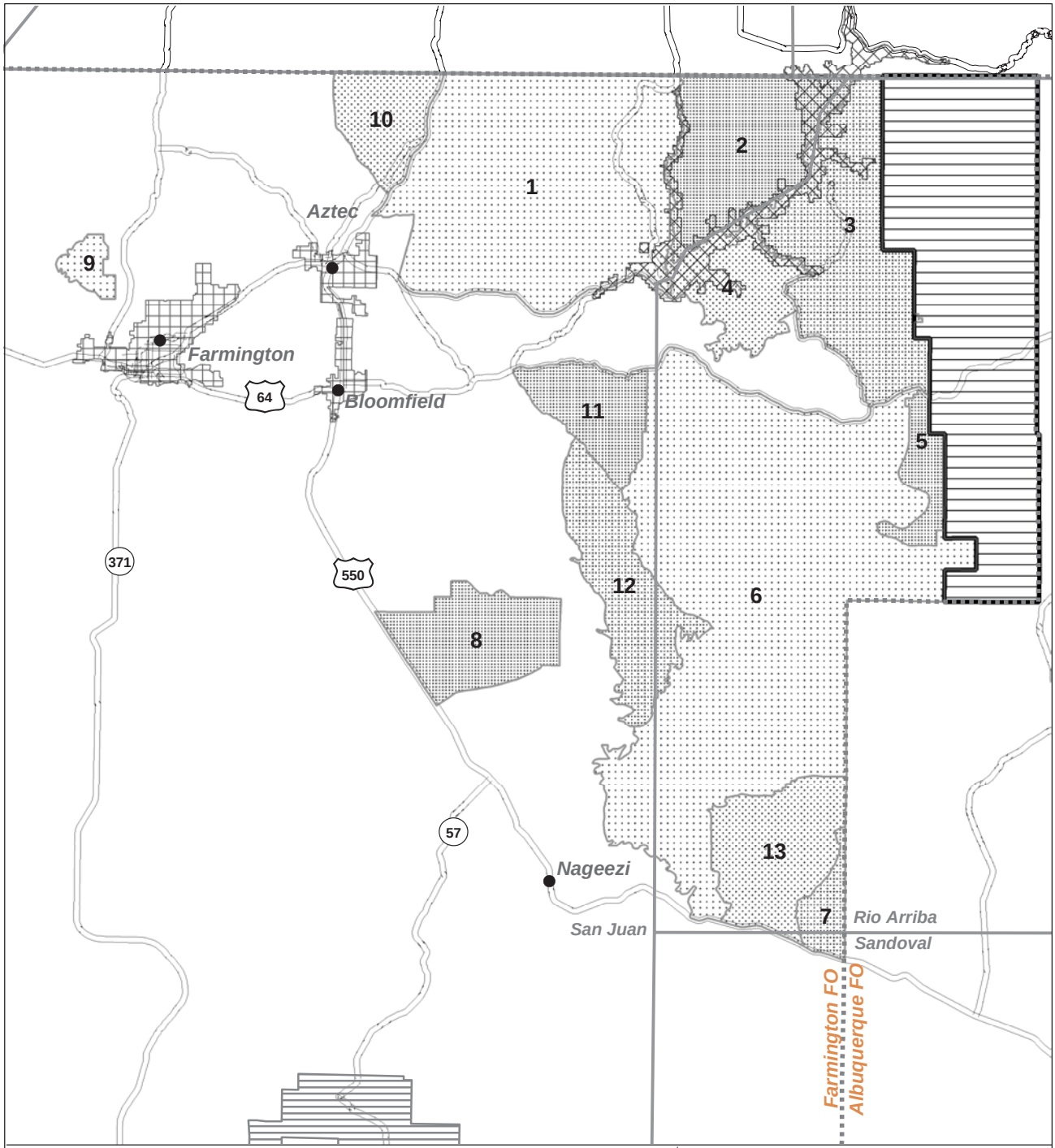
Under Alternative A, public land in the FFO would be open to OHV use as described in the 1988 RMP, unless otherwise designated. In 1995, an RMP Amendment and EA were prepared to address management of OHV use in the FFO to protect wildlife habitat (BLM 1995b). The resulting Decision Record identified 13 OHV Management Units comprising a total of 499,040 acres shown in **Map 2-3**. A plan has been completed for Rosa Mesa that limits OHV use to designated maintained roads and seasonal closures on 40,960 acres of public land. Plans would be developed for 12 units that would specify limitations for the remaining 432,787 acres based on resource needs and public use. Development of plans would involve environmental review and public input. Until then, these areas would continue to be open to OHV use.

Also in 1995, BLM prepared the Proposed GRTS Off-Highway Vehicle RMP Amendment and EA. The resulting 1996 Decision Record limited OHV use to designated routes on approximately 22,800 acres and 4,600 acres under open designation within the GRTS. A 1998 RMP Amendment for 44 new cultural ACECs specified OHV management prescriptions. (Note that some plans specified prescriptions for Off-Road Vehicles, or "ORVs." For consistency in terminology, the FFO is using OHV in future plans or revisions to refer to any motorized or mechanized vehicle. This term will supercede and incorporate any previously approved and continuing guidance for vehicles). **Table 2-2** summarizes open, closed, and limited designation for all public land within the FFO for this alternative. All existing and proposed SMAs and ACECs have specific OHV designations (see section on Specially Designated Areas below). **Table 2-3** lists several activities that may involve cross-country travel and issues related to cross-county travel. For Alternative A, access and cross-country travel would be allowed unless specifically prohibited. OHV designations and management would only apply to BLM surface-owned lands. For lands acquired in the future, the OHV management prescription would generally be the same as the surrounding unit or the SDA.

Table 2-2. Comparison of OHV Designations (in Acres) in the FFO by Alternative

Designation	Alternative A	Alternative B	Alternative C	Alternative D
	BLM[1]	BLM[1]	BLM[1]	BLM[1]
Open	1,230,839	4,616[2]	4,616	4,616[2]
Limited	122,063	1,352,931	1,352,117	1,353,301
Closed	62,384	57,739	58,553	57,369
Total	**1,415,286**	**1,415,286**	**1,415,286**	**1,415,286**

Notes: (1) Existing public (BLM surface-owned) land.
(2) Acreage under open designation does not include additional acreage to be considered for open designations under Alternatives B and D during future activity planning. Open acreage could be as much as 99,003 in Alternative B and 65,806 in Alternative D as shown in Table 2-10.



LEGEND

- 6 — OHV Management Unit*
- Chaco Culture NHP
- Municipal Area
- Navajo Reservoir
- BLM Field Office Boundary
- Carson National Forest
- County Boundary

*Individual OHV units are delineated with unique numbers and shade patterns

- Town
- Major Road
- Interstate Highway
- U.S. Route
- State Highway

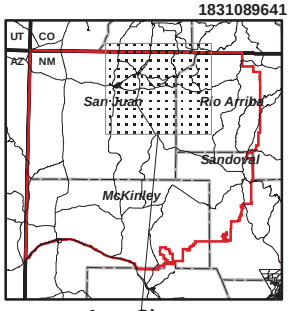
N

6 3 0 6

Scale in Miles

Source: BLM FFO

1831089641



Area Shown

Map 2-3: Existing OHV Management Units in the FFO Area

Table 2-3. Summary of Dispersed Area OHV Cross-Country Issues and Exceptions

Issue	Alternative A	Alternative B	Alternative C	Alternative D
Cross-Country Travel	Majority of the FFO open to cross-country travel.	Permitted in SDAs within OHV Management Units.	Not allowed.	Same as Alternative B.
Emergency Use	Allowed.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Administrative Use	Allowed.	Allowed unless specifically prohibited.	Not allowed unless specifically authorized.	Same as Alternative B.
Lease and Permit Holders	Allowed.	Allowed unless specifically prohibited.	Not allowed unless specifically authorized.	Same as Alternative C.
In Proximity to Residences	Allowed.	Allowed unless specifically prohibited.	Not allowed within ½ mile of any residence unless on a maintained road or a designated trail or route.	Same as Alternative C.
Wetlands and Riparian Areas	Complete limited ORV designation plan to restrict vehicles to designated roads.	Prohibited. Travel limited to maintained roads.	Same as Alternative B.	Same as Alternative B.
Exceptions for OHV Cross-Country Travel				
Camping	Allowed.	Allowed within 300 feet of roads by the most direct route.	Allowed within 50 feet of roads by the most direct route.	Same as Alternative B.
Dry Washes	Allowed unless specifically prohibited.	Allowed unless specifically prohibited for protection of other resources.	Prohibited unless specifically designated.	Same as Alternative B.
Game Retrieval	Allowed unless specifically prohibited.	Allowed by the most direct route unless specifically prohibited.	Prohibited unless specifically authorized.	Same as Alternative B.
Disabled Access	Allowed per provisions of Rehabilitation Act.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A.
Firewood and Christmas Tree Collection	Allowed unless specifically prohibited.	Not allowed unless specifically authorized by permit.	Not Allowed.	Same as Alternative B.

Specially Designated Areas

Under Alternative A, 131 areas in the FFO with special administrative designations (SMAs, ACECs, RNAs, WAs, and WSAs) approved through previous land use planning would be carried forward. **Table 2-4** summarizes the total acreage in these areas under each alternative, and **Table 2-5** summarizes the management prescriptions and actions for each SDA. The acreage in the table is derived from current BLM GIS data, which is different, in some cases, from that shown in previous planning documents. Previous documents were not always consistent in how the acreage was calculated or listed for each area. In some cases, only the acreage of public land within SDAs was listed, while in others the acreage of all land within the boundary was shown. Adjustments have been made in some of the digitized boundaries to correct previous errors and to account for updated information. As activity plans are prepared for these areas in the future, more accurate and detailed maps will be developed. Those new plans will note changes and corrections to GIS mapping. Legal boundaries for cultural ACECs are maintained on Master Title Plats in the field offices (FFO and AFO). These are the official records.

Table 2-4. Acreage of Specially Designated Areas in the FFO

Surface Ownership	Alternative A	Alternative B	Alternative C	Alternative D
BLM	491,945	468,410	713,710	649,470
Non-BLM	127,782	77,589	189,679	158,300
Total Surface[1]	**619,727**	**545,999**	**903,389**	**807,770**

Note: (1) Acres within boundary of SDAs; includes BLM and USBR lands.

The total footprint with special designation is 619,727 acres in the FFO area, of which BLM manages the surface on 491,945 acres (Table 2-4). **Table 2-6** lists the SDAs in the AFO and the oil and gas management prescriptions that would apply under all alternatives. **Map 2-4** (large fold-out map for Alternative A, located at end of document, inside back cover) shows the boundaries of designated areas. The following changes in special designations have been approved and implemented since the 1988 RMP were adopted:

- In 1996, Congress designated the Bisti/De-na-zin WA to create one wilderness unit comprised of the Bisti and De-na-zin WAs and 16,525 additional contiguous acres. The new unit included the Badlands, Log Jam, and Lost Pines ACECs, which were originally within WA boundaries;
- In 1998, an amendment was completed to designate 44 new cultural ACECs, including Chacoan outliers, Chacoan roads, Navajo Refugee sites, Navajo habitation sites, petroglyph and pictograph sites, historic sites, and Native American traditional use sites and sacred area;
- The original 150-acre GRTS was expanded to include 32,423 acres that are managed for recreational opportunities for trail and OHV use.

TO VIEW TABLE 2-5 (PAGES 2-40 THROUGH 2-213), OPEN FILE ENTITLED "TABLE 2-5.PDF"

Table 2-6. Oil and Gas Management Prescriptions for Specially Designated Areas in the AFO

Area	Total Acres[1]	Public Land Acres[1]	Federal Mineral Acres[1]	Resource Value	Management Prescriptions
1870s Wagon Road Trail SMA	630[2]	UNK	UNK	Cultural	Oil and gas: CSU restrictions.
Historic Homesteads SMA	33	33	33	Cultural	Oil and gas: CSU restrictions.
Jones Canyon SMA	651	415	651	Cultural	Oil and Gas: NSO stipulation.
Cuba Airport SMA	176	92	176	Lands	Oil and Gas: NSO stipulation.
San Luis Cliffs Window SMA	9,810	8,283	9,806	Lands	Oil and gas: CSU restrictions.
Torrejon Fossil Fauna ACEC	6,499	6,497	6,084	Paleontology	Oil and gas: CSU restrictions.
Azabache Station SMA	81	0	81	Recreation	Oil and Gas: NSO stipulation.
Cabezon Peak ACEC	1,764	1,187	1,197	Recreation	Oil and Gas: Closed.
Cañon Jarido SMA	1,800	1,800	1,800	Recreation	Oil and gas: CSU restrictions.
Continental Divide Trail SMA	1,940[2]	UNK	UNK	Recreation	Oil and gas: CSU restrictions. TL 2/1-7/1.
Headcut Prehistoric Community SMA	2,276	933	2,276	Recreation	Oil and gas: CSU restrictions.
Ignacio Chavez SMA	42,827	42,650	42,768	Recreation	Oil and gas: All but 830 acres are closed; remaining 830 acres are CSU restrictions. TL 11/16-5/14.
Pelon Watershed SMA	848	848	848	Watershed	Oil and Gas: Closed.
Cabezon WSA	1,817	1,803	1,803	Wilderness	Oil and Gas: Closed.
Chamisa WSA	12,394	12,394	12,394	Wilderness	Oil and Gas: Closed.
Empedrado WSA	8,934	8,869	8,897	Wilderness	Oil and Gas: Closed.
Ignacio Chavez WSA	32,245	32,238	32,240	Wilderness	Oil and Gas: Closed.
La Lena WSA	10,175	10,128	10,163	Wilderness	Oil and Gas: Closed.
Elk Springs ACEC	10,300	6,390	9,996	Wildlife	Oil and Gas: CSU restrictions. TL 11/16-5/14.
Empedrado Watershed Study Area	630	317	78	Watershed	Oil and Gas: Closed.
Juana Lopez RNA	38	38	38	Geology	Oil and Gas: Closed.
San Luis Mesa Raptor ACEC	9,279	7,773	7,802	Wildlife	Oil and gas: CSU restrictions. TL 2/1-7/1.

Notes: (1) All acreage listed is for the planning area, which in some cases is less than the total acreage of the specially designated area.
(2) Estimated acreage.
UNK Unknown.

Coal Leasing Suitability Assessment

Preference Right Leasing Applications

There are 14 PRLAs within the FFO boundaries. The leasing of these tracts was analyzed in the San Juan River Regional Coal EIS (BLM 1984). These tracts were identified for future leasing in the Farmington RMP (BLM 1988).

The PRLAs are located north and east of Chaco Culture National Historic Park. Several PRLAs fall within cultural ACECs, WSAs, RNAs, and WAs. According to regulatory requirements (43 CFR 3461.5), unsuitability criteria (Appendix C) have been applied to the 14 PRLAs. PRLAs NM-003835 (in part) and NM-006802 (in part) have been identified as being unsuitable for leasing under Criterion No. 1. PRLAs NM-003918 (in part) and NM-003919 (in part) were identified as being unsuitable for leasing under Criterion No. 4. Parts of three PRLAs, NM-003753, NM-003754, and NM-003835, were determined to be unsuitable under Criterion No. 6. One PRLA, NM-003755 (in part), was determined to be unsuitable under Criterion No. 7.

There are two PRLAs (NM-006802 and NM-003835 both in part) in the Bisti/De-na-zin WA and two PRLAs (NM-003919 and NM-003918 both in part) in the Ah-shi-sle-pah WSA. Parts of three PRLAs (NM-003753, NM-003835, and NM-003754) fall within the Fossil Forest RNA, and one PRLA (NM-003755 in part) is within the Ah-shi-sle-pah Road cultural ACEC. Congressional designation of the Bisti/De-na-zin WA and Fossil Forest RNA prevents the leasing of coal in these areas and, until Congress reaches a decision, no coal leases would be granted in Ah-shi-sle-pah WSA. Under Public Law 104-333, Section 1022, the Secretary of the Interior is authorized to issue coal leases in New Mexico in exchange for those parcels of PRLAs that are in a WA or RNA, if the exchange is in the public interest. Leasing may occur in the Ah-shi-sle-pah WSA, if Congress does not designate the area as Wilderness.

The remaining seven PRLAs would be processed and the applications approved or denied according to the criteria established by the Mineral Leasing Act (MLA) of 1920, as amended. These leasing criteria are concerned with leasing coal in (1) commercial quantities, (2) in areas with a coal transportation system, and (3) when there is a viable market for the coal. If the MLA criteria are met, leases would be issued to the companies that submitted these applications. At the time lease applications are processed, the unsuitability criteria would be applied again, if necessary.

The PRLA serial numbers, total acreage, surface acreage ownership and acreage affected by unsuitability criteria are presented in **Table 2-7.** The location and boundaries of the 14 PRLAs are shown on Map 2-8**.**

Table 2-7. Preference Right Lease Applications in the Planning Area

PRLA Serial No.	Federal Coal Acreage	BLM Surface Acreage	Indian Surface Acreage	State Surface Acreage	Criterion Removed Acreage
NM-008128	4,499	1,007	2,811	681	0
NM-008130	2,133	608	1,525	0	0
NM-011670	1,119	639	0	480	0
NM-003752	3,760	2,876	844	0	980
NM-003753	2,951	825	2,126	0	825
NM-003754	2,875	1,875	1,000	0	280
NM-003755	2,588	973	1,615	0	669
NM-003918	3,357	2,998	359	0	884
NM-003919	3,598	3,598	0	0	3,124
NM-003835	375	650	0	85	325
NM-003837	560	560	0	0	0
NM-007235	160	160	0	0	0
NM-008745	520	320	200	0	0
NM-006802	213	213	0	0	170
Total Acreage	**28,708**	**17,302**	**10,480**	**1,246**	**7,257**

Source: Digitized from BLM maps.

Competitive Coal Tracts

There are 17 competitive coal tracts available for leasing. The leasing of these tracts was analyzed in the San Juan River Regional Coal EIS (BLM 1984). These tracts were identified for future leasing in the Farmington RMP (BLM 1988).

The La Plata tracts are located southwest of the La Plata Coal Mine. The Kimbeto and Bisti tracts are located northeast and northwest, respectively, of the Chaco Culture National Historic Park. The Catalpa Canyon and Sundance tracts are located south of Gallup, which is outside the planning area but still under the management of the FFO through Inter-Area Agreement NM-010-071, dated July 2, 1992. The Catalpa and Sundance tracts will not be addressed further in this Proposed RMP/Final EIS. The remaining tracts are located south of the Chaco Culture National Historic Park. The tract name, federal surface acres, federal recoverable coal reserves, and federal mineable coal reserves are listed in **Table 2-8**. The boundaries and location of the competitive coal lease tracts are shown on Map 2-8.

These tracts contain approximately 763 million tons of mineable federal coal (647 recoverable) within 48,661 federal subsurface acres (17,927 surface) (BLM 1984). The delineation and designation of these coal tracts were based on the application of the unsuitability criteria, surface owner consultation data, and application of a series of multiple use screens (43 CFR 3461). Companies interested in mining the coal from these tracts would need to submit an application to lease the coal. The 20 unsuitability criteria (Appendix C) described in 43 CFR 3461.5 would be applied during the leasing process.

Table 2-8. Competitive Coal Lease Tracts

Tract Name	Federal Surface (acres)	Federal Coal (acres)	Mineable Coal Reserves (millions of tons)	Recoverable Coal Reserves (millions of tons)
Bisti #1	2,933	3,713	150	127
Bisti #4	1,040	2,600	35	30
Bisti #6/8	240	520	1	1
Sundance	0	720	4	1
Catalpa Canyon	0	120	0.4	0.3
Chico Wash South	10,070	11,670	74	63
Crownpoint East	160	9,880	149	124
Divide	400	3,031	16	14
Gallo Wash #1	120	320	11	10
Kimbeto #2	640	640	20	18
La Plata #1	200	200	9	8
La Plata #3	160	200	2	2
Lee Ranch East	0	969	16	14
Lee Ranch Middle	0	5,068	86	73
Lee Ranch West	160	6,410	101	86
Star Lake East #1	1,364	1,840	61	52
Star Lake West #2	440	760	28	24
Total	**17,927**	**48,661**	**763**	**647**

Source: Digitized from BLM maps.

Coal Belt SMA

The Coal Belt SMA, encompassing approximately 98,800 acres of federal minerals, was established in 1988 to ensure orderly development of coal resources along the Fruitland Formation. The Coal Belt SMA contains an estimated four billion tons of coal (BLM 1988). The SMA is located along the Fruitland coal (outcrop) belt from the Navajo Reservation near Bisti Trading Post to a point near Johnson Trading Post in western Sandoval County. The southern line represents the outcrop of the lowest coal seam; the northern boundary of the SMA is located where the overburden on the uppermost coal seam is 350 feet thick. The depth of the coal seam to the amount of overburden would result in extraction of most of the coal in the SMA using surface mining methods. The FFO would retain the public (surface) land in the SMA because of the large coal deposits and the possibility of conflicts between other future surface owner regarding coal leasing and/or mining.

Companies interested in obtaining a coal lease in the SMA would need to submit an application to the FFO. The 20 unsuitability criteria would be applied during the leasing process. Portions of the Coal Belt SMA are within the southern and western boundaries of the Bisti/De-na-zin WA and entirely within the Fossil Forest RNA and Ah-shi-sle-pah Road cultural ACEC. Another portion of the SMA falls within the Ah-shi-sle-pah WSA. Congressional designation of the Bisti/De-na-zin WA and Fossil Forest RNA prevents the leasing of coal in these areas. Until Congress

reaches a decision on the status of the Ah-shi-sle-pah WSA, no coal leases will be granted in that area. Leasing may occur in the Ah-shi-sle-pah WSA, if Congress does not designate the area as Wilderness. The SMA boundary is mapped by legal subdivisions and shown on Map 2-4.

License to Mine [Home Use Fuel (Coal) Source]

The existing domestic coal licenses on public lands would continue to be managed by the BLM. Navajo allottees in the area have historically used coal from surface outcrops as fuel for cooking and heating. There is one domestic use mining license issued to the Torrejon Chapter. The licenses allow members of a Chapter to collect federal coal for personal use. New domestic coal license applications would be considered on a case-by-case basis.

Fire/Fuels Management

The FFO has developed a Fire Management Plan to provide managers in the Fire Program with a functional document for integrating fire management with all other resource management programs. The plan establishes fire/fuels management and fire response/suppression direction based on safety, resource management objectives, and land use allocation objectives. Within SDAs (SMAs, ACECs, WAs, WSAs, RNAs, etc.), management actions adhere to the following guidance:

- Address Fire/Fuels Management for all land use allocations as part of watershed analysis and/or project planning. This will include determinations of the role of fire and the risk of large-scale, high-intensity wildfires at the landscape level.
- Use prescribed fire or other fuel management treatments to reduce fuel hazards and the risk of large-scale, high-intensity fire, consistent with the natural role of fire and protection standards for each special administrative designation area. Strategies will recognize the role of fire in ecosystem function and identify those instances where fire suppression or fuel management activities could be damaging to long-term ecosystem function.
- Locate incident bases, camps, helibases, staging areas, helispots, and other centers for incident activities outside of special administrative designation areas. If the only suitable location for such activities is within the special administrative designation areas, an exemption may be granted following a review and recommendation by a resource advisor. The advisor will prescribe the location, use conditions, and rehabilitation requirements.
- Minimize delivery of chemical retardant, foam, or other additives to surface waters. An exception may be warranted in situations where overriding immediate safety imperatives exist or, following a review and recommendation by a resource advisor, when an uncontrolled fire would cause more long-term damage.
- Immediately establish an emergency team to develop a rehabilitation treatment plan needed to attain special administrative designation areas objectives, whenever a wildfire or a prescribed fire burning outside prescribed parameters significantly damages them.
- Allow some natural fires to burn under prescribed conditions. This decision will be based on additional analysis and planning.
- Locate and manage water-drafting sites (e.g., sites where water is pumped to control or suppress fires) to minimize adverse effects on riparian habitat and water quality.

Under Alternative A, this guidance would apply to the SDAs in the FFO. In other FFO areas, the emphasis in most cases consists of aggressive initial attack to extinguish fires at the smallest size possible.

For wildland fires that escape initial attack, a Wildland Situation Analysis is performed to develop a suppression strategy to evaluate the damage induced by suppression activities compared to expected wildfire damage. Suppression tactics consider:

- Public and firefighting personnel safety;
- Protection of specific attributes of each land use allocation;
- Coordination of wildfire suppression activities to avoid causing adverse impacts on federal and non-federal lands;
- Appropriate use of suppression tools such as aircraft, dozers, pumps, and other mechanized equipment, and clear definitions of any restrictions relating to their use;
- The potential adverse effects on meeting ecosystem management objectives.

Fuels management activities are employed to modify fuel profiles in order to lower the potential of fire ignition and rate of spread; protect and support land use allocation objectives by lowering the risk of high-intensity, stand-replacing wildfires; and adhere to smoke management and air quality standards. Fire hazards are reduced through methods such as prescribed burning, mechanical or manual manipulation of vegetation and debris, removal of woodland vegetation and debris, and combinations of these methods. Hazard reduction plans will be developed through an interdisciplinary team approach and will consider the following:

- Safety of firefighting personnel;
- Developing a fuel profile that supports land allocation objectives;
- Reducing the risk of wildfire in a cost-efficient manner;
- Interagency cooperation to assure cost-effective fuel hazard reduction across the landscape;
- Adherence to smoke management and air quality standards;
- Consistency with objectives for land use allocations;
- Maintenance or restoration of ecosystem processes or structure;
- The natural role of fire in specific landscapes, current ecosystem needs, and wildfire hazard analysis included in the fire management plan.

Management of woodland fuels is important for preventing and controlling wildfire. In managing woodlands, this involves the manipulation of the fuels (vegetative materials) either by mechanical or manual methods, or through prescribed fire. Fuels treatment is an especially important consideration in the rural/urban interface areas, where forest fuels are in close proximity to private dwellings, businesses, and other structures. Mechanical and manual methods would be used in these areas and in areas where air quality considerations require reduced smoke emissions. Partial entry of prescribed fire may be initiated into natural stands where severe natural fuels buildup would contribute to high-intensity stand-destroying fires.

The use of prescribed fire will be based on the risk of high-intensity wildfire, and the associated cost and environmental impacts of using prescribed burning to meet protection, restoration, and maintenance of critical stands that are currently susceptible to large-scale catastrophic wildfire.

Under-burning will be reintroduced in areas over a period of time to create a mosaic of stand conditions. Treatments should be site-specific because some species with limited distributions are fire intolerant. The use of prescribed burning will be based on an interdisciplinary evaluation. Funding authority, therefore, must reflect the range of objectives identified for using fire under ecosystem management.

Project level prescribed fire plans will be developed using an interdisciplinary team approach. Plans will address: (1) adherence to smoke management and air quality standards,

(2) meeting stated objectives for the land use allocations, (3) maintaining or restoring ecosystem processes or structure, and (4) the role of natural fire in specific landscapes, current ecosystem needs, and wildfire hazard analysis included in the fire management plan.

Prescribed fire is used to emulate the natural role of fire to achieve resource objectives for wildlife enhancement, plant species maintenance, woodland biodiversity, and site preparation. Prescribed under-burning some proportion of homogeneous plant communities would be dependent on the type and amount of complexity that would be needed for any one plant community. The types of plant communities that may be targeted for burning would include contiguous monotypic sagebrush or woodland stands to promote more diversity or heterogeneity. Fire would be the preferred method of disturbance for biological reasons, but other methods of disturbance may produce similar results, such as chemical treatment or manipulation by machine.

In order to ensure that resource objectives such as wildlife and botanical species maintenance are met and that biodiversity elements are perpetuated, it may be necessary to employ applications of natural cycle related cool fires. There are approximately 175,000 acres of the FFO land base that could lend themselves to fire entry under prescription. It is reasonable to assume that at least an annual average of 500 acres of prescribed burning may be implemented to meet resource objectives. This would assume an approximate 30 to 50-year rotation cycle on some sites throughout the 175,000-acre land base. It is neither possible nor desirable to burn every acre on a 30 to 50-year cycle. Some sites would not benefit positively from the entry of either prescribed fire or wildfire; however, many would. Resource specialists must develop specific resource objectives and develop extensive plans to determine specific sites where benefits can occur. The need for prescribed fire varies for each resource. For example, botanical enhancement fires may need to be introduced on an annual basis on some sites. On other sites, such as under old growth stands (Douglas fir), the rotational burning could be up to 60-plus years depending on the particular site, soil structure, or other mixed plant communities. As specific area studies are developed, the need for fire applications upon a particular site will be clearly defined and activity plans developed accordingly.

Air quality considerations are also a factor in prescribed burns, in accordance with regulation and the New Mexico Smoke Management Plan.

Alternative B

Under Alternative B, the Farmington RMP would be amended to allow for maximum oil and gas development in the planning area and maximization of other public use of FFO land. Access and land use limitations would be minimized, consistent with the continuing management guidance. In the event of land use conflicts, priority would be given to minerals recovery.

Oil and Gas Leasing and Development

This alternative would provide for the development of 13,275 wells in the planning area, after the 17 wells that would be inaccessible due to NSO constraints are subtracted from the total. For analysis purposes only, no commingling of wells is assumed to occur under this alternative in order to evaluate maximum potential surface disturbance. Approximately 660 APDs per year would be approved over the next 20 years (Engler et al. 2001). The STCs on oil and gas leases would be the same as those in Alternative A. The mitigation measures listed in Appendix B-9 of the 1991 Amendment (BLM 1991a) would remain in effect.

Following is a summary of the acreage of federal minerals in the planning area subject to various constraints under this alternative:

Constraint	Acreage within High Development Area	Acreage in Rest of Planning Area	Total Acreage
Leasing			
Nondiscretionary Closure	349	110,799	111,148
Discretionary Closure	6,001	22,272	28,273
Development			
STC	1,324,428	1,335,557	2,659,985
CSU	150,083	86,187	236,270
NSO	10,847	2,443	13,290
TL	175,852	64,207	240,059

Note: STC = open under Standard Terms and Conditions; CSU = Controlled Surface Use; NSO = No Surface Occupancy; TL = Seasonal Timing Limitation.

Within the high development area, more than 99 percent of the federal oil and gas resources are currently leased. In areas being considered for discretionary closure in the RMP, the development of existing leases would continue according to the terms of the lease. The BLM would continue to implement the portions of the lease that require lessees to conduct operations in a manner that minimizes adverse impacts to other resources and other land uses and users.

Assumptions related to oil and gas development that were prepared by FFO staff with concurrence from industry include the following:

- New surface disturbance would occur on 54 percent of all new wells, while 46 percent would be on existing sites through re-completion, dual completion, or directional drilling.
- The surface disturbance associated with each new well pad would average 2 acres, after interim reclamation or site rehabilitation takes place.
- The road and pipeline disturbance associated with each new well would average 1 additional acre. The road and pipeline will be constructed within the same 800-foot by 50-foot ROW.

- Reclamation would be completed at an initial rate of 133 well pads and associated ROWs per year and average 3 acres per well. The plugging and abandonment (P&A) rate is projected to increase at the rate of 5 percent per year over 20 years. Most P&As would occur in the fringe areas of the project, with abandoned sites in the high development area likely to be used again.

As described under Alternative A, the raptor noise policy, in effect since February 2000, in which the FFO established a buffer zone to minimize noise impacts from wellhead compression on raptor nest sites for golden eagles, ferruginous hawks, and prairie falcons by providing a reasonable margin around the nest would be implemented.

Oil and gas development on the land around Navajo Reservoir would be managed under CSU constraints approved by the FFO in cooperation with the USBR. There would be no change from Alternative A on the Carson and Santa Fe National Forests.

Land Ownership Adjustments

Disposal

Under this alternative, all of the lands identified for disposal in Alternative A would be available. In addition, lands within three miles of the city limits of Aztec, Bloomfield and Farmington (**Map 2-5**) would be available (except BLM land within SDAs). Exchange, sale, disposal under the R&PP Act, or other legal disposal would be considered if the disposal met the criteria listed in Chapter 1. Parcels on which substantial improvements have be inadvertently placed would also be made available for disposal, if the Authorized Officer determines that such disposal is in the public interest. Table 2-1 shows the total acres available for disposal under this alternative.

Acquisition

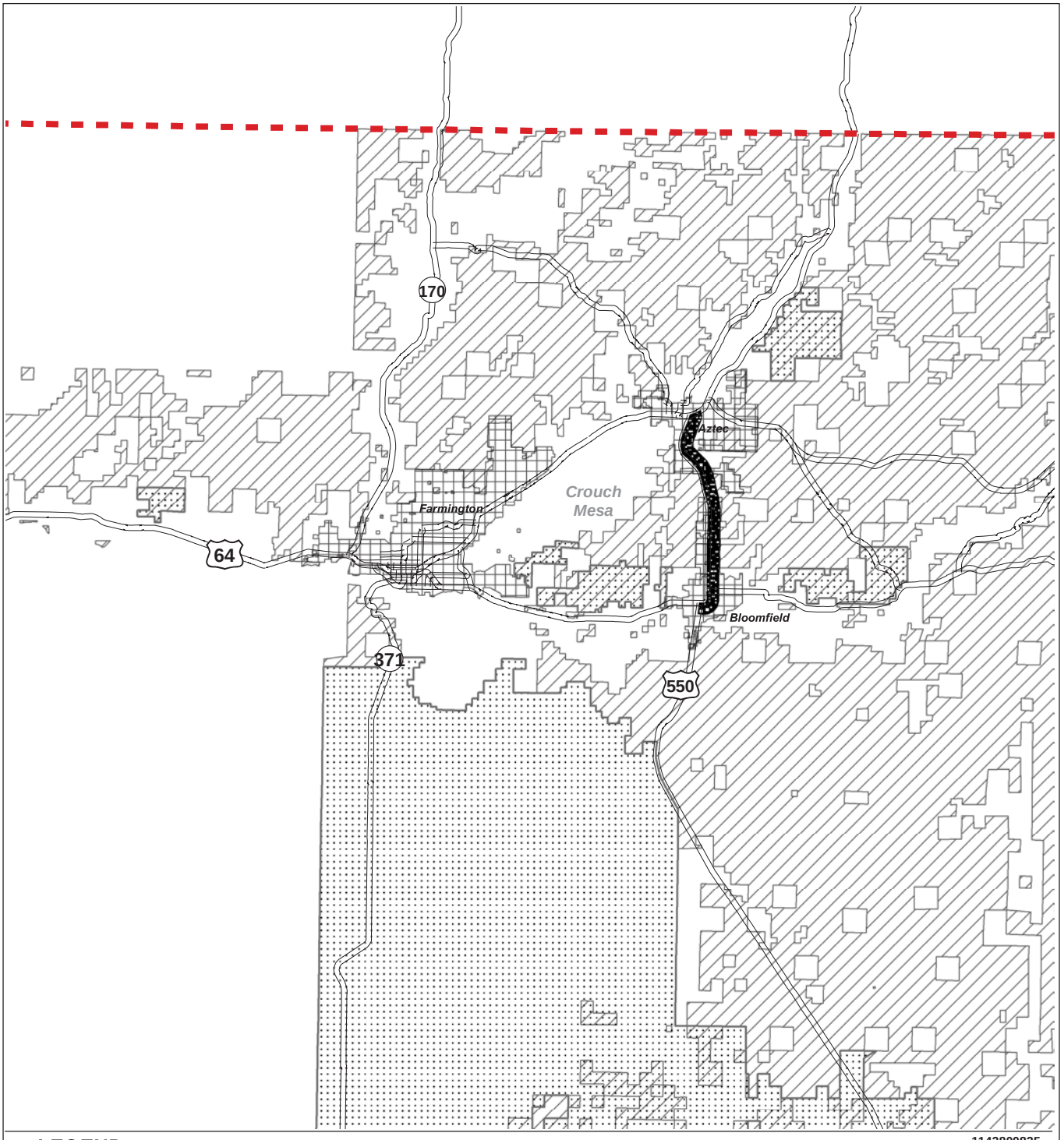
Inholdings in all of the approved SDAs would make up the priority list for acquisitions. Other lands that consolidate public ownership or benefit a resource program could also be acquired, if the acquisition were determined to be in the public interest. Any lands acquired would be managed in the same manner as the adjacent or surrounding public lands. Table 2-1 shows total acquisition under this alternative.

ROW Corridors

Under this alternative, the ROW corridors identified by the 2002 WUG revision (WUG 2002) of the 1992 WRCS would be designated for powerline and pipeline use. Any specific proposals would still be required to go through the environmental and permitting process. Proposed uses that are determined to unreasonably interfere with the use of these corridors may not be authorized. Map 2-2 shows the general alignment of the corridors.

Mineral Materials

The FFO has identified six areas (16,520 acres) of salable minerals such as sand and gravel that needs to be well managed. Additional areas could be identified in the future. Some of these areas are within the disposal area identified above. The purpose of delineating these areas is to inform managers and potential users of other resources in these areas of their value for salable minerals, so that value would be considered prior to the authorization of other actions.



LEGEND

- RMP/EIS Boundary
- Area of Potential Land Disposal
- Municipal Boundary
- BLM Owned Land
- Alt D Aztec-Bloomfield Corridor
- Town
- Major Road
- Interstate Highway
- U.S. Route
- State Highway

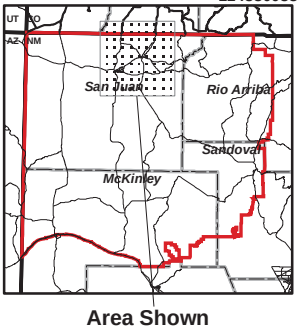
N

4 2 0 4

Scale in Miles

Source: BLM FFO

1143800835



Area Shown

Map 2-5: Disposal Area Around the Tri-Cities Under Alternatives B and D

OHV Use

Under this alternative, the FFO would create 13 new OHV Management Units covering the entire field office. The 13 areas were derived by access routes, entry points, and use patterns for more effective management. **Map 2-6** shows the redefined units. Seven trails have been identified in four OHV Management Units (**Table 2-9**). The general location of these trails is shown in **Map 2-7**. Final alignment and use of the proposed trails would be determined when individual OHV Activity Plans are developed. Additional routes, trails, and areas may be identified, as plans are developed for each OHV Management Unit. Plans would be written based on priority of resource protection needs and the amount of public use. Plan development would be based on environmental review and public involvement. The individual OHV Activity Plans should be completed within 15 years.

OHV designations for SDAs may be different than the surrounding OHV Management Unit. Table 2-2 summarizes the acreage of open, limited and closed OHV designation for Alternative B.

In addition to the preparation of OHV Activity Plans, the FFO will prepare a Transportation Plan. The Transportation Plan will identify collector and resource roads that would be needed for use over the long-term. These roads would remain open for public access when oil and gas development in the area ceases. Roads identified in the Transportation Plan would be included in the individual OHV Activity Plans.

Table 2-9. Proposed Multi-Use Trails for Alternatives B, C, and D

OHV Unit	Trail	Length (miles)
Farmington	Bohanan Canyon	19.7
	Kiffen Canyon	13.4
Aztec	Aztec to Alien Run	6.7
San Juan	Aztec City	12.1
	Bloomfield	9.4
	Horn Canyon	19.7
Bloomfield	Kutz Canyon	12.6

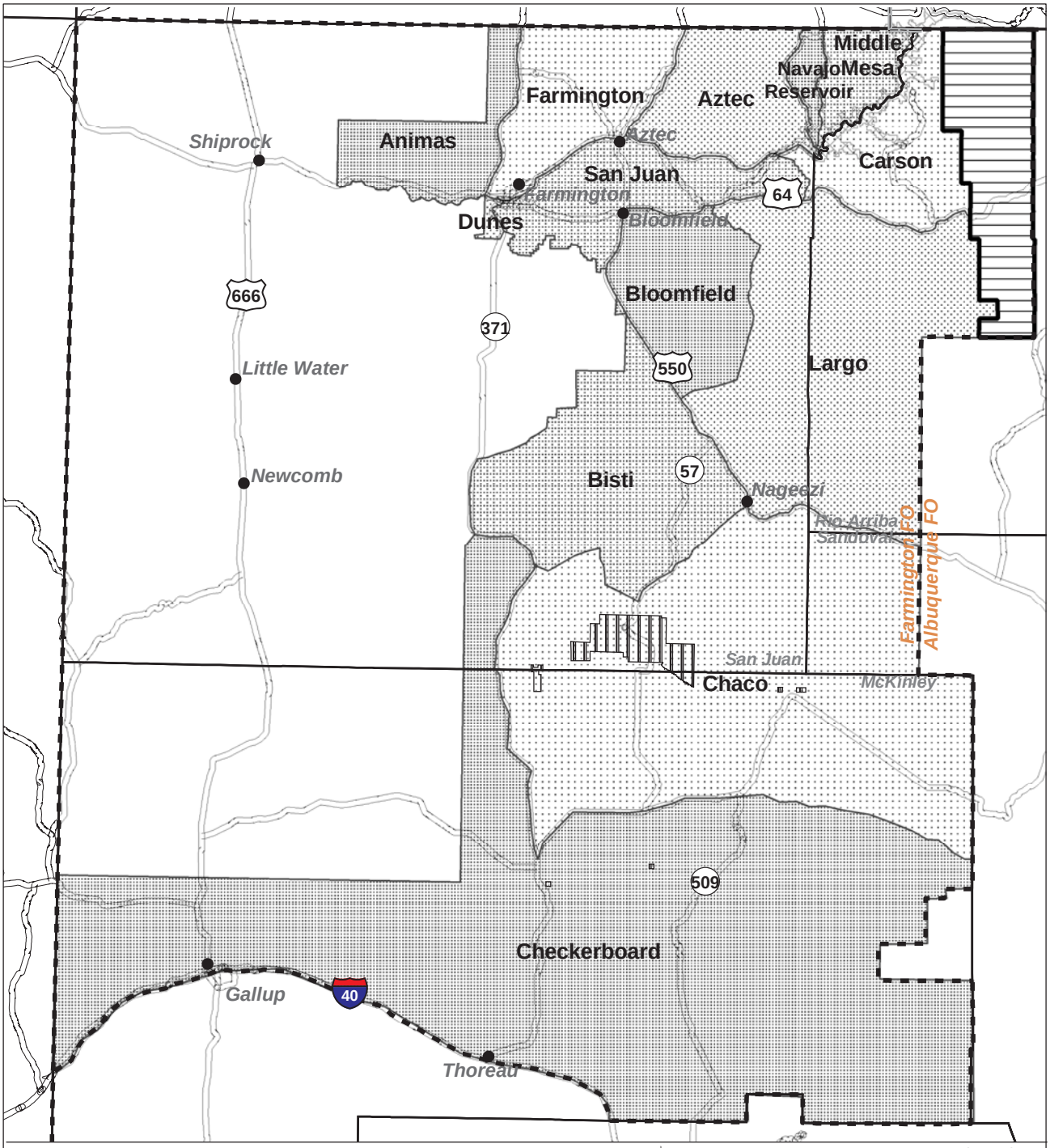
Under Alternative B, OHV use would be limited to maintained roads, designated trails, routes and areas on public lands in all Management Units, except where conditions are determined to be suitable for cross-country travel. **Table 2-10** summarizes the acreage that the FFO considers potentially suitable for cross-country travel in each of the proposed OHV Management Units. To be suitable, the land had to be:

- BLM surface;
- Outside an SDA;
- Outside a designated disposal area.

Land meeting the above criteria were identified as dispersed recreation areas, to which additional criteria were applied to determine the amount of each OHV Management Unit that would not likely be damaged by cross-country travel. In order to exclude the land that would be most susceptible to wind and water erosion, damage to vegetation or soil biological crusts, and prime farmland, land meeting the following criteria were excluded:

- Slopes greater than 30 percent;
- South-facing slopes steeper than 15 percent;
- Seasonal high water table;
- Depth to bedrock less than 20 inches;
- Highly erodible by wind or water.

The dispersed recreation areas that could be designated as open to cross-country travel would be further refined as OHV Management Unit plans are developed by FFO staff. Other site-specific screening criteria that could further restrict the potentially open areas would be applied during plan development, including avoidance of cultural resources, sensitive species habitats, riparian areas, and proximity to residences.



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LEGEND

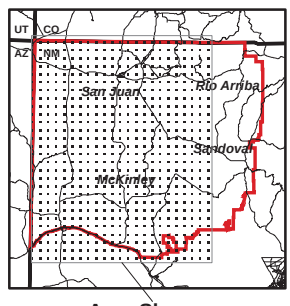
- Bisti — OHV Management Unit*
- Chaco Culture NHP
- Navajo Reservoir
- Carson National Forest
- County Boundary
- BLM Field Office Boundary
- Town
- Major Road
- Interstate Highway
- U.S. Route
- State Highway

N

7 3.5 0 7

Scale in Miles

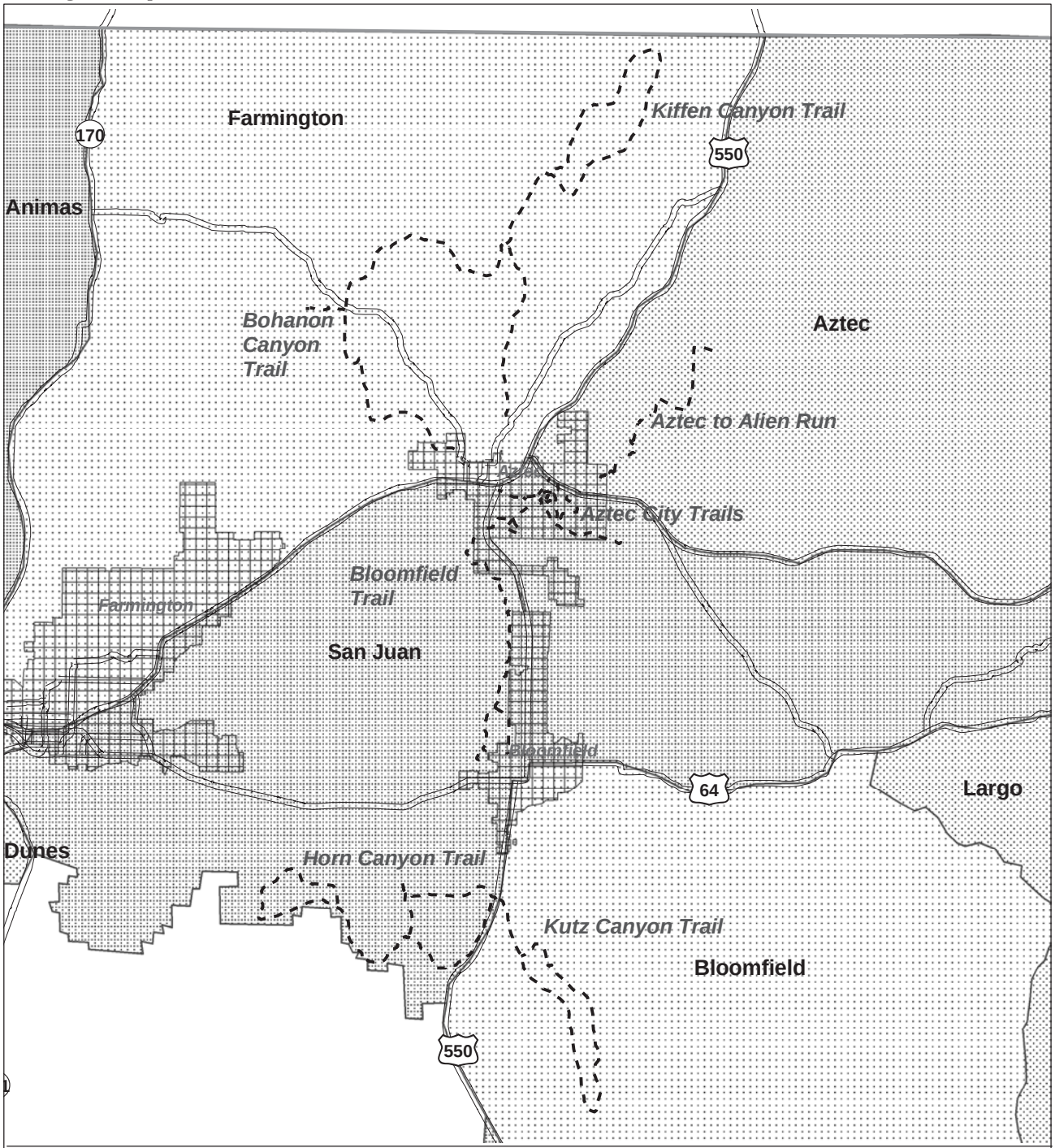
Source: BLM FFO



Area Shown

*Individual OHV units are delineated with unique names and shade patterns

Map 2-6: Proposed OHV Management Units in the FFO Area



LEGEND

- Trail
- Aztec OHV Units*
- Municipal Boundary
- Major Road
- Interstate Highway
- U.S. Route
- State Highway

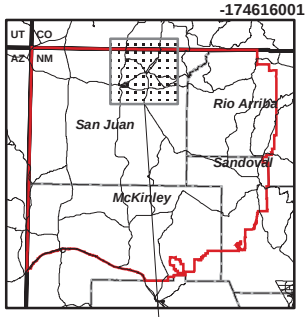
N

1 0.5 0 1 2 3

Scale in Miles

Source: BLM FFO

-174616001



Area Shown

*Individual OHV units are delineated with unique names and shade patterns

Map 2-7: Proposed Recreational Use Trails for Alternatives B, C, and D

Table 2-10. Areas Potentially Suitable for Open OHV Designation, by Management Unit

OHV Management Unit	Total Acres	Alternative B				Alternative D			
		BLM Acres	Dispersed Area (acres)[1]	Potentially Suitable for Open Designation		BLM Acres	Dispersed Area (acres)[1]	Potentially Suitable for Open Designation	
				Acres	%			Acres	%
Animas	105,572	51,758	15,301	311	2%	51,758	13,156	30	0%
Aztec	133,558	101,937	85,725	5,420	6%	101,937	19,651	853	4%
Bisti	291,535	165,040	110,440	7,583	7%	165,040	110,409	7,567	7%
Bloomfield	149,337	121,149	69,917	12,658	18%	121,149	36,896	5,387	15%
Carson	134,783	73,681	39,190	6,365	16%	73,681	2,485	336	14%
Chaco	857,597	216,008	172,956	21,886	13%	216,008	172,367	21,886	13%
Checkerboard	1,509,255	104,842	102,235	874	1%	104,842	102,235	874	1%
Dunes	4,633	2,627	1,814	91	5%	2,627	1,814	91	5%
Farmington	145,066	73,380	41,946	3,872	9%	73,380	26,976	2,135	8%
Largo	484,871	379,455	351,789	37,514	11%	379,455	196,715	23,434	12%
Middle Mesa	52,566	27,276	10,434	106	1%	27,276	9	0	0%
Navajo Reservoir	18,803	12,302	254	10	4%	12,302	17	2	9%
San Juan	143,496	68,696	67,827	3,213	5%	68,696	67,770	3,211	5%
Total	**4,031,072**	**1,398,151**	**1,069,829**	**99,903**	—	**1,398,151**	**750,501**	**65,806**	—

Sources: BLM FFO, SAIC GIS data.

Note: (1) Dispersed area is comprised of BLM surface lands that are not within an SDA (where management prescriptions for OHV use for the managed area would apply).

Specially Designated Areas

Under Alternative B, 545,999 acres in the FFO would have special management, of which BLM currently manages the surface on 468,410 acres. Areas with special administrative designations (SMAs, ACECs, RNAs, WAs, and WSAs) approved through previous land use planning would be carried forward with changes described below. Accounting for these changes, there would be 135 SDAs in the FFO under Alternative B. Changes in management prescriptions for new and existing areas are described in Table 2-5. **Map 2-8** (large fold-out map for Alternative B, located at end of document, inside back cover) shows adjusted boundaries under this alternative. Please refer to Table 2-5 for name changes.

Areas Not Carried Forward

- The Coal Belt SMA would be removed because all areas that are suitable for coal would be available for consideration for coal extraction under the lease by application procedures.
- The Right-of-Way Windows (4 units) would be removed.
- Farmington Lake Watershed would be removed because most of the property within the SMA is not owned by BLM, and a small portion is within the GRTS SMA.
- Lost Pine, Log Jam, and Badlands ACEC designations would be removed because they are within the Bisti/De-na-zin WA and consequently protected for wilderness values.

- Aztec Gilia ACEC designation would be removed, as the range and distribution of Aztec gilia is more extensive than previously identified.
- Tanner Lake Battlefield was dropped because surface ownership was transferred to The Navajo Nation as part of the Navajo-Hopi land exchange.

Areas Added or Changed

Wildlife and Threatened and Endangered Species

- Laguna Seca Mesa SMA would be enlarged and designated as the Mexican Spotted Owl ACEC and the management emphasis would change from forestry to T&E habitat values in order to delineate the critical habitat designated by the USFWS.
- The Ephemeral Wash Riparian Area would be added to provide protection of riparian resources. Management would be applied to promote the attainment and maintenance of proper functioning conditions and provide habitats for wildlife.

Recreation

- Simon Canyon ACEC would be expanded to include the portion of the Simon Canyon Recreation Area that extends beyond the ACEC boundary. The SMA designation would be removed and the area would be managed as an ACEC.
- GRTS will change names to Glade Run Recreation Area. In addition, its boundary would be changed to better reflect the area of current use. This would result in a reduction in acreage.
- Piñon Mesa Recreation Area would be designated for recreational values. There would be several trails with different types of use.
- Rock Garden Recreation Area would be designated for recreational values. The area would be used by OHVs on designated trails.
- Navajo Lake Horse Trail Recreation Area would be designated for recreational values, promoting equestrian use. Designated trail corridors would define the area.
- Alien Run Mountain Bike Trail Recreation Area would be designated for recreational values, and non-motorized use on the trail corridors.
- The boundary of Thomas Canyon Recreation Area would be enlarged and a wildlife management component would be added to the larger SMA, in addition to current recreational emphasis.
- Carracas Mesa Recreation Area would add a wildlife management component in addition to the current recreational emphasis.

Paleontology

- The Piñon Mesa Fossil Area would be added to protect significant paleontological values.
- Gobernador and Cereza Canyon Fossil Areas would be added to protect significant paleontological values.
- The Lybrook Fossil Area would be added to protect significant paleontological values.
- The Bohanon Canyon Complex would be added to protect significant paleontological values.
- The Carson Fossil Pocket would be added to protect significant paleontological values.
- The Kutz Canyon Paleontological Area would be expanded to protect significant paleontological values.

Coal Leasing Suitability Assessment

Under this alternative, emphasis of the other resource uses in the PRLAs and competitive coal tracts would shift so coal

development would become the primary resource use and the emphasis of other, existing resource uses would change. Should any of the existing oil and gas leases expire in these areas, the leases would not be reissued until coal mining is completed. There would be no future leasing of oil and gas resources until all mining is completed or specific areas are released for leasing. Current oil and gas operations and facilities may include, but are not limited to (1) P&A, producing, and abandoned wells, (2) redrilling of these wells after mining has progressed past the well location, (3) purchasing the product estimated to be produced for the remainder of the life of the well, (4) compensating the operator/lessee for any surface damage to facilities, or (5) replacement of surface and pipeline facilities after mining is completed. Future well development on existing oil and gas leases would be coordinated with the BLM staff and the mining company to avoid proposed and active coal mining areas.

Preference Right Leasing Application

Under this alternative, the 14 PRLAs identified and described in Alternative A would be carried forward for further consideration for coal leasing. Those PRLAs that fall within the cultural ACECs, WA, and RNA would not be approved for coal mining. No coal leases or PRLAs would be granted in the Ah-shi-sle-pah WSA until Congress reaches a decision on its wilderness designation. This would include approximately 4,008 (844 acres in PRLA NM-003918 and 3,124 acres in PRLA NM-003919) acres that would not be available for coal leasing. Leasing may occur, if Congress does not designate the area as wilderness. Those portions of PRLAs affected by Congressional designations may be exchanged for coal leases in New Mexico if the exchange is in the public interest. The PRLAs that are not rejected through adjudication would be issued to companies that submitted applications, if they meet the MLA criteria. The 20 unsuitability criteria (Appendix C) described in 43 CFR 3461.5 would be reapplied during the leasing process.

Competitive Coal Tracts

The 17 competitive coal tracts discussed as available for leasing in Alternative A would be considered for leasing under this alternative. Those companies that are interested in mining coal from these tracts would need to submit an application to lease the coal. The 20 unsuitability criteria (Appendix C) described in 43 CFR 3461.5 would be reapplied during the leasing process.

License to Mine [Home Use Fuel (Coal) Source]

The need for domestic home fuel needs would continue as described in Alternative A. New domestic coal license applications would be considered on a case-by-case basis.

Additional Coal Interests

Two coal mining companies, Peabody Natural Resources, Inc. (Peabody) and Broken Hills Proprietary Company, Limited (BHP), have expressed interest that additional tracts of land be considered for future coal leasing. These lands are in the vicinity of the Lee Ranch, Twin Peaks, and East Piñon areas. Map 2-8 shows the location of these tracts.

Peabody owns reserves consisting primarily of state and fee land, which frequently occur in blocks in a checkerboard pattern that do not extend over a logical mining unit. Some of these areas have adjacent federal coal reserves that could be logically developed in conjunction with Peabody's existing holdings. Peabody's additional coal tracts interests would augment the three Lee Ranch competitive coal tracts. There is a potential for coal and coal fired power generation to increase in the southwestern U.S. Therefore, adjacent federal coal reserve areas may provide the potential for new mine development or to extend the life of the existing Lee Ranch Coal Mine.

BHP's San Juan Coal Company (SJCC) currently operates coal surfacing mining operations within the boundaries of the FFO. Presently, SJCC is developing an underground mine (Deep Lease and Deep Lease Extension) adjacent to its present surface mining

operations. The Twin Peaks area contains a coal tract that has the potential to extend SJCC's planned underground mine adjacent to the San Juan Coal Mine, located adjacent to and east of the SJCC's Deep Lease Extension. SJCC has examined the potential that this tract could be mined following completion of mining underground coal within its Deep Lease (Lease No. NM-28093) and the Deep Lease Extension (Lease NM-99144) leases. Information obtained from the U.S. Geological Survey (USGS) for existing gas wells and extrapolation of drilling and trends conducted from the Twin Peaks and East Piñon areas were used to estimate tonnage projections. This potential consists of federal coal with the exception of one state section (Section 16, T30N, R14W). The surface of this area is also federally owned except for approximately 120 acres of fee surface (private) in Section 33, 50 acres in Section 8, all in T30N, R14W, and the state section described above.

To protect recreation values no underground mining would be permitted along the trail corridor in the part of the Twin Peaks area that overlies the Piñon Mesa Trail Corridor. The remainder of the Twin Peaks area would be available for leasing. To protect paleontology values, paleontological surveys would be conducted for fossil remains prior to underground mining. During active underground mining, periodic monitoring may be required for paleontological resources that may be exposed as a result of subsidence.

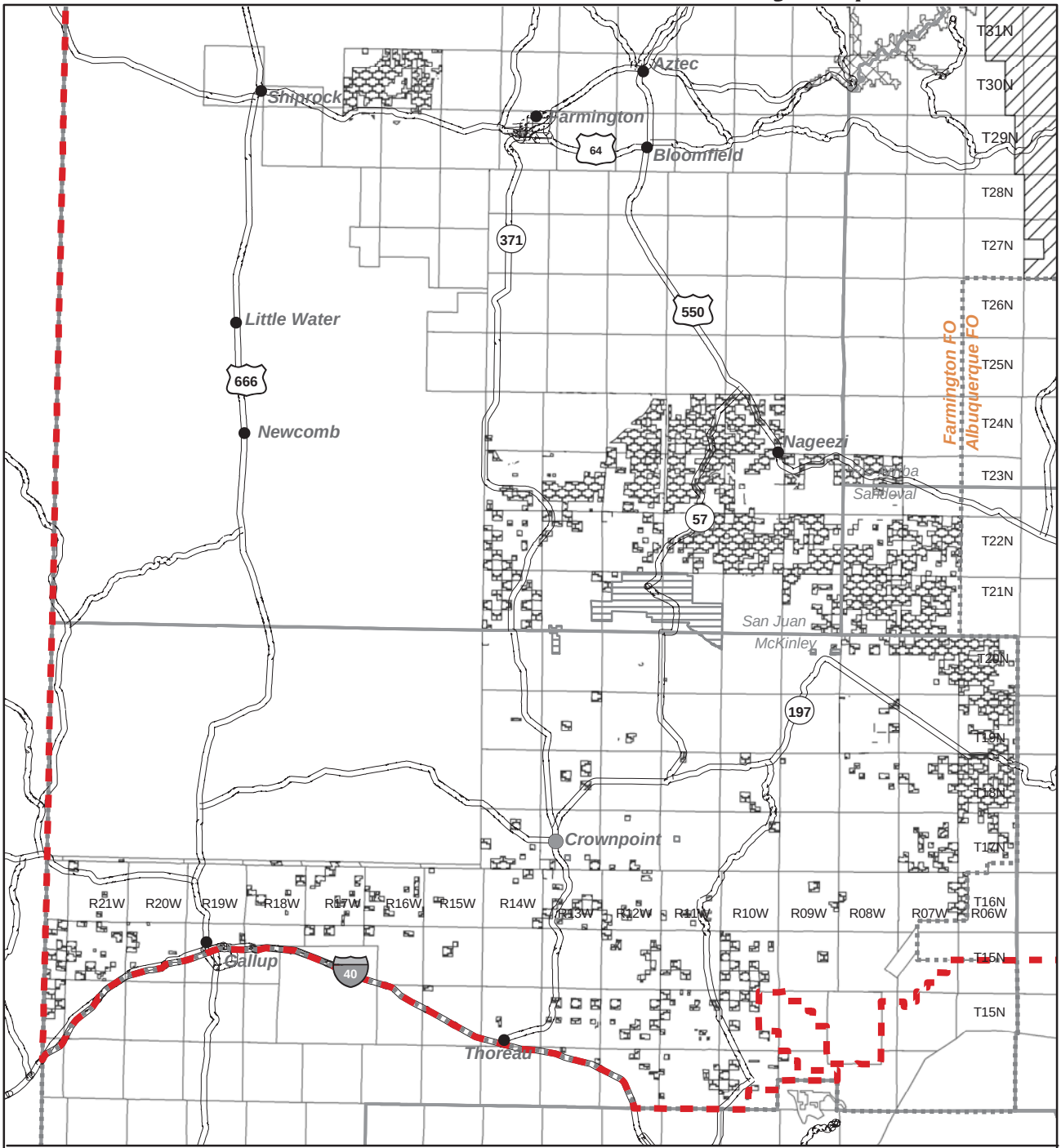
The East Piñon area tract represents a possible coal resource for SJCC to mine by underground methods following completion of mining underground coal within its Deep Lease and the Deep Lease Extension. This area lies adjacent and north of the Deep Lease and Deep Lease Extension areas. No drilling to determine coal tonnage, quality, and trend has been undertaken for this tract. Drilling data of existing SJCC coal leases, USGS data, and gas well information in the area have been used to extrapolate tonnage projections. Coal quality is expected to be comparable to the coal seams being currently mined to the west and the Deep Lease tract to the south. All coal in this is area is federally owned. However, approximately one-third of the surface is federally owned and two-thirds is privately owned fee surface.

Suitable Future Leasing and Development Coal Areas

All lands within the FFO boundaries have been identified as potentially being suitable for future coal mining development. The 20 unsuitability criteria that eliminate such land as wilderness areas, designated T&E species habitat, ROWs/easements, and culturally significant areas (Appendix C**)** have been applied throughout the planning area to the extent possible at a small scale and with currently available data. If changing conditions warrant, the unsuitability criteria would be re-applied. Any proposed areas would be processed through a Lease by Application after undergoing further site-specific application of the unsuitability screening criteria. It was determined that 378,875 acres would be suitable to consider for future leasing and development in the FFO area. The general location of these areas remaining after application of most of the unsuitability criteria is shown on **Map 2-9**. The remainder of the FFO boundary can be considered if there are (1) commercial quantities, (2) areas with a coal transportation system, and (3) when there is a viable market for the coal. Additional data will be required to make determinations on the location of commercial quantities of coal throughout the FFO area. These data would be obtained as companies do developmental exploration to identify potential coal tracts for mining.

Fire/Fuels Management

Fire/fuels management procedures under Alternative B will be the same as Alternative A, except in the number of acres in SDAs. Under this alternative, 468,410 acres of public land would fall under the guidance for these areas. Other areas would be managed in accordance with the procedures described for Alternative A.



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LEGEND

- Areas of Coal Suitability
- Chaco Culture NHP
- Navajo Reservoir
- BLM Field Office Boundary
- County Boundary
- National Forest
- RMP/EIS Boundary
- Township and Range
- Town
- Major Road
- Interstate Highway
- U.S. Route
- State Highway

N

10 5 0 10

Scale in Miles

Source: BLM FFO

Map 2-9: Areas Suitable for Coal Development in the FFO Area

Alternative C

Alternative C emphasizes conservation, protection, and enhancement of natural and cultural resources through management measures that provide limitations on surface disturbing activities. Additional areas would be delineated for special management designation.

Oil and Gas Leasing and Development

This alternative would result in the development of approximately 9,836 wells, after the 134 wells that would be inaccessible due to NSO constraints are subtracted from the total. In addition to the STCs imposed under Alternative A, more limiting stipulations and other agency management restrictions would be imposed. Commingling would be required to minimize surface disturbance. The FFO would permit 80-acre spacings for the Mesaverde and the Dakota Formations, but only on the same well pad. The Fruitland Formation would be approved on 160-acre spacings, but only where the wells fall on or adjacent to existing infrastructure. The BLM would work with NMOCD to allow operators to access the Dakota Formation from Mesaverde sites at the discretion of the operator. The number of APDs to be approved would remain at approximately 500 per year over the next 20 years.

Following is a summary of the acreage of federal minerals in the planning area subject to various constraints under this alternative:

Constraint	Acreage within High Development Area	Acreage in Rest of Planning Area	Total Acreage
Leasing			
Nondiscretionary Closure	349	110,799	111,148
Discretionary Closure	74,897	39,203	114,100
Development			
STC	1,180,511	1,398,772	2,579,283
CSU	200,002	75,190	275,192
NSO	35,949	19,121	55,070
TL	573,980	64,421	638,401

Notes: STC = Open under Standard Terms and Conditions; CSU = Controlled Surface Use; NSO = No Surface Occupancy; TL = Seasonal Timing Limitation.

Within the high development area, more than 99 percent of the federal oil and gas resources are currently leased. In areas being considered for discretionary closure in the RMP, the development of existing leases would continue according to the terms of the lease. The BLM would continue to implement the portions of the lease that require lessees to conduct operations in a manner that minimizes adverse impacts to other resources and other land uses and users.

Noise from oil and gas compressors has been identified by the public as an issue of primary concern in the planning area. To address these concerns, the FFO developed a Noise Policy, which would be implemented in the form of an NTL to oil and gas operators or ROW stipulation that would require mitigation of noise levels measured within and adjacent to designated Noise Sensitive Areas (NSA). The NSAs include 92 SDAs managed by the FFO, as well as all or part of seven areas within the USFS Jicarilla Ranger District, all of the USBR land, and one NPS area. The public land surface of these areas totals approximately 338,680 acres.

Noise levels inside an NSA would be limited to no more than 48.6 dBA equivalent sound level (Leq) at 300 feet in all directions from the noise source. For noise sources located outside of designated NSAs, the standard of 48.6 dBA Leq would be met at the boundary of the NSA.

Noise sources located within 300 feet of the NSA boundary would be allowed to meet the standard 300 feet from the source. For noise sources involving federal or Indian leases located near occupied dwellings or buildings, the standard of 48.6 dBA Leq would be met 100 feet from such structure. Additional information on the Noise Policy is included in Appendix E.

In addition to implementation of the Noise Policy, the raptor noise policy to minimize noise impacts from wellhead compression on raptor nest sites would be implemented as described under Alternative A.

The mitigation measures listed in Appendix B-9 of the 1991 RMP Amendment (BLM 1991a) would be replaced with more generalized narrative that accomplishes the same overall goal of minimizing erosion and wildlife habitat disturbance. The following mitigation measures would be implemented where applicable, depending on site-specific conditions and requirements:

- Make every effort to minimize surface disturbance and intrusion into undisturbed areas through such actions as twinning of wells and directional drilling, unorthodox locations, recompletions, commingling of gas, and closed loop mud systems. Pipelines would follow existing roads.
- Development would be restricted in areas that have special topography (steep or broken and/or on benches) and soil concerns. Development in these areas would be considered on a case-by-case basis and would contain site-specific mitigation stipulations.
- Operators would be encouraged to unitize in areas of heavy development to increase management efficiency and facilitate operations in sensitive areas.
- Off-site mitigation may be indicated in crucial areas, such as areas with wildlife monitoring or studies, habitat replacement, water development, and watershed protection measures.
- Vehicle traffic and resource damage would be reduced by using new technology such as electronic data interchange and piping of produced water.

Listed below is a summary of the types of activities that would not be permissible during a closure period in an area under TL constraints. Emergency repairs needed for human safety and environmental contamination would not require prior authorization. Emergency repairs include a break in a gas or water line, repairs of tank battery facilities, and wellhead repairs.

- Any construction, including new well pads, roads, pipelines, installation of compressors, surfacing of roads, power-lines. Well pad, road construction and road improvement.
- Drilling.
- P&A (unless required to prevent environmental damage).
- Seismic exploration.
- Workovers or any activity requiring a drilling rig, unless required to prevent environmental damage, or to prevent a permanent loss of reserves. Prior approval must be approved before beginning this type of work.

Activities that are routine and do not conflict with the seasonal restrictions include routine daily operations, road maintenance, and routine pipeline maintenance.

Oil and gas development on the land around Navajo Reservoir would be managed under NSO constraints. All of the USBR land around the lake would be identified as NSO. As a result, new wells would be required to be directionally drilled from outside the boundary of USBR land.

There would be no change from Alternative A on the Carson and Santa Fe National Forests, except for the application of the Noise Policy in designated areas on USFS land.

Land Ownership Adjustments

Disposal

Under this alternative, the isolated tracts (approximately 2,640 acres) previously identified and BLM lands south and west of US 550 would remain available for disposal. In addition, the public lands on Crouch Mesa between Aztec, Bloomfield and Farmington (Map 2-5) would be added to the list for disposal. Exchange, sale, disposal under the R&PP act, or other legal disposal would be considered if the disposal met the criteria listed in Chapter 1. Table 2-1 provides the disposal acreage under this alternative.

Acquisition

Inholdings and lands surrounding SDAs would be the priority for acquisition. Additional riparian areas would also be a priority for acquisition, if their acquisition is determined by the Authorized Officer to be in the public interest. Other lands that consolidate public ownership or benefit a resource program could also be acquired. Any lands acquired would be managed in the same manner as the adjacent or surrounding public lands. Table 2-1 provides acquisition acreage under this alternative.

ROW Corridors

Under this alternative, the ROW corridors identified by the 2002 WUG revision of the 1992 WRCS would be designated for powerline and pipeline use. Any specific proposals would still be required to go through the environmental and permitting process. Proposed uses that are determined to unreasonably interfere with the use of these corridors may not be authorized. Map 2-2 shows the general alignment of the corridors.

Mineral Materials

The FFO has identified six areas (16,520 acres) of salable minerals such as sand and gravel that needs to be well managed. Additional areas could be identified in the future. Some of these areas are within the disposal area identified above. The purpose of delineating these areas is to inform managers and potential users of other resources in these areas of their value for salable minerals, so that value would be considered prior to the authorization of other actions.

OHV Use

OHV management would be similar to Alternative B. Management Unit boundaries would be the same as Alternative B, shown in Map 2-6. Acreage for each OHV designation is provided in Table 2-2. The table reflects changes in proposed SDAs for this alternative that would slightly alter the acreage for each designation. Proposed designated trails described for Alternative B would also apply for this alternative (Table 2-9). OHV use would be limited to maintained roads, designated trails, routes, and areas on public lands in all OHV Management Units. Some SDAs would be closed to vehicular use. Additional routes, trails, areas, and final alignments may be identified as plans are developed for each OHV Management Unit.

OHV Activity Plans would be written based on priority of resource protection needs and the amount of public use. The individual OHV Activity Plans should be completed within 15 years. In addition to the preparation of the OHV Activity Plans, the FFO will prepare a Transportation Plan. The Transportation Plan will identify collector and resource roads that would be needed for use over the long-term. These roads would remain open for public access when oil and gas development in the area ceases. Roads identified in the Transportation Plan would be included in the individual OHV Activity Plans.

Specially Designated Areas

Under Alternative C, 903,309 acres in the FFO would have special management, of which BLM currently owns the surface on 713,710 acres. Areas with special administrative designations (SMAs, ACECs, RNAs, WAs, and WSAs) approved through previous land use planning would be carried forward with changes described below. Accounting for these changes, there would be 141 SDAs in the FFO under Alternative C. This reflects consolidation of several areas into larger contiguous areas to

provide for more efficient management. Changes in management prescriptions for new and existing areas are described in Table 2-5. **Map 2-10** (large fold-out map for Alternative C, located at end of document, inside back cover) shows adjusted boundaries under this alternative. Please refer to Table 2-5 for name changes.

Areas Not Carried Forward

- Lost Pine, Log Jam, and Badlands ACEC designations would be removed since they are within the Bisti/De-Na-Zin WA and require no further designation.
- The Coal Belt SMA would be removed because all areas that are suitable for coal would be available for consideration for extraction under the lease by application process.
- The Right-of-Way Windows (4 units) would be removed.
- Farmington Lake Watershed SMA would be removed because the majority of the ownership is non-federal, and a small portion is within the GRTS.
- Aztec Gilia ACEC designation would be removed, as the range and distribution of Aztec gilia is more extensive than previously identified.
- Tanner Lake Battlefield was dropped because surface ownership was transferred to The Navajo Nation as part of the Navajo-Hopi land exchange.

Areas Added or Changed

Wildlife

- East La Plata Wildlife Area would be added for protection of deer winter range.
- Rattlesnake Canyon Wildlife Area would be added for deer winter range and fall/winter use by wild turkeys.
- Middle Mesa Wildlife Area would be added for protection of deer winter range.
- Rosa Mesa Wildlife Area would be added for protection of deer winter range.
- Gonzales Mesa Wildlife Area would be added for protection of deer winter range.
- Crow Mesa Wildlife Area would be added for deer and elk use all year.
- Cox Canyon Wildlife Area would be added for protection of deer winter range.
- Ensenada Mesa Wildlife Area would be added for year-long use by antelope, deer and elk.
- Cereza Canyon Wildlife Area would be added for protection of deer and elk winter range.
- Manzanares Mesa Wildlife Area would be added for protection of deer and elk winter range.
- Delgadito Mesa Wildlife Area would be added to provide for resident and migratory deer and elk.
- Angel Peak Wildlife Area would be added for antelope habitat.
- Laguna Seca Mesa Wildlife Area added for wild turkey, deer, elk, bear and Abert's squirrel.

T&E Species

- The Ephemeral Wash Riparian Area would be added to provide protection of riparian resources. Management would be applied to promote the attainment and maintenance of proper functioning conditions and provide habitats for the southwestern willow flycatcher.
- Within the Laguna Seca Mesa SMA would be the Mexican Spotted Owl ACEC, designated to protect the T&E habitat values in the critical habitat designated by the USFWS.

Cultural

All cultural SMAs carried forward from previous plans and amendments would be designated as ACECs.

Chacoan Outliers

- Twin Angels ACEC would be enlarged.
- Jacques ACEC would be enlarged and renamed as Jacques Chacoan Community ACEC.

Anasazi Communities (Non-Chacoan)

- Cedar Hill ACEC would be added.
- East Side Rincon Site would be enlarged and changed to an ACEC.
- The existing Chacra Mesa Complex ACEC and the Shephard Site SMA would be combined with surrounding lands.
- La Jara ACEC would be added.

Early Navajo Defensive Sites and Communities

- Adams Canyon SMA would change to an ACEC designation and be expanded.
- Blanco Mesa ACEC would be enlarged.
- Cottonwood Divide ACEC would be added upon acquisition of state land and mineral rights.
- Existing Crow Canyon District ACEC, NM-01-39344 ACEC, and Unreachable Rockshelter SMA, would be combined with surrounding lands and would be called Crow Canyon ACEC.
- Deer House ACEC would be enlarged.
- Existing Casa Mesa Diablo SMA and Ye'is-in-Row ACEC would be combined with surrounding lands and called Devil's Spring Mesa ACEC.
- The existing Adolfo Canyon SMA, Big Star ACEC, Carrizo Cranes ACEC, Gomez Canyon Ruin SMA, Gomez Point ACEC, Hill Road Ruin SMA, NM-01-39236 ACEC, and Rabbit Tracks ACEC would be combined with surrounding lands and called Encinada Mesa-Carrizo Canyon ACEC.
- The existing Frances Ruin ACEC and Romine Canyon SMA would be combined with surrounding lands and called Frances Mesa ACEC.
- Kachina Mask ACEC would be enlarged.
- Kiva ACEC would be enlarged.
- Muñoz Canyon ACEC would be added.
- Pointed Butte SMA would be enlarged and designated as an ACEC.
- Pork Chop Pass ACEC would be added upon acquisition of state land and mineral rights.
- Rincon Largo District SMA would be enlarged and designated as an ACEC.
- Rincon Rock Shelter SMA would be enlarged and designated as an ACEC.
- Star Rock ACEC would be added.
- String House ACEC would be added upon acquisition of state land and mineral rights.
- Existing Cibola Canyon ACEC, Compressor Station SMA, Foothold and Overlook Ruins District SMA, Hooded Fireplace and Largo School District ACEC, and Superior Mesa Community ACEC would be combined with surrounding lands and called Superior Mesa ACEC.
- Tapacito and Split Rock ACEC would be enlarged.
- Truby's Tower ACEC would be added upon acquisition of state land and mineral rights.

Petroglyph and Pictograph Sites

- Bi Yaazh ACEC would be enlarged.
- The existing Delgadita/Pueblo Canyons ACEC and Delgadito Pueblito SMA would be combined with surrounding lands into the Delgadita-Pueblo Canyons ACEC.

- Hummingbird Canyon ACEC would be added.
- Star Spring ACEC would be enlarged and renamed Star Springs-Jesus Canyon ACEC.
- Martinez Canyon ACEC would be enlarged.

Historic Sites

- Albert Mesa ACEC would be added.
- The Haynes Trading Post ACEC would be added.
- The Moss Trail ACEC would be added.

Paleontology

- The Piñon Mesa Fossil Area would be added to protect significant paleontological values.
- Gobernador and Cereza Canyon Fossil Area would be added to protect significant paleontological values.
- The Lybrook Fossil Area would be added to protect significant paleontological values.
- The Bohanon Canyon Complex would be added to protect significant paleontological values.
- The Carson Fossil Pocket would be added to protect significant paleontological values.
- The Kutz Canyon Paleontological Area would be expanded to protect significant paleontological values.

Recreation

- Simon Canyon ACEC would be expanded to include the portion of the Simon Canyon Recreation Area that extends beyond the ACEC boundary. The SMA designation would be removed and the area would be managed as an ACEC.
- The GRTS name would change to Glade Run Recreation Area and the boundary would be changed to better reflect the area of current use. This would result in a reduction in acreage.
- Piñon Mesa Recreation Area would be designated for recreational, paleontological, and visual values. There would be several trails with different types of use. The managed area would include the corridors and surrounding land.
- Rock Garden Recreation Area would be designated for recreational values. The area would be for OHV, equestrian and other recreational use on designated trails, routes and areas. Management would be applied to the trails and surrounding land.
- Navajo Lake Horse Trail would be designated for recreational values, promoting equestrian use. The managed area would include the corridors and surrounding land.
- Alien Run Mountain Bike Trail would be designated for recreational values, and non-motorized use on trail corridors and surrounding land.
- The boundary of Thomas Canyon Recreation Area would be enlarged and a wildlife management component would be added to the larger SMA, in addition to the current recreational emphasis.
- In addition to current recreational emphasis, Carracas Mesa Recreation Area would add a wildlife management component in addition to the current recreational emphasis.

Coal Leasing Suitability Assessment

Preference Right Leasing Application

The 14 PRLAs discussed in Alternative A would be carried forward under this alternative. The unsuitability criteria that limited several PRLAs would still be in effect. Those PRLAs that are affected by Congressional designation of the WA and RNA may, under public law, be exchanged for coal leases in New Mexico if it is in the public interest. At the time any of the

PRLAs are processed, the unsuitability criteria would be applied again, if necessary.

The acres in Ah-shi-sle-pah WSA would not be available for future coal leasing and development until Congress reaches a decision on the Ah-shi-sle-pah WSA status.

Competitive Coal Tracts

The 17 competitive coal tracts would not be available for leasing and coal development under this alternative. Existing coal mines would continue to extract from existing coal leases until recovery of in-place coal reserves are complete. The existing La Plata, San Juan, and McKinley Mines would not be able to expand their existing mining operations. The potential for coal mines and a power generating plant in the southern portion of the FFO would no longer exist. Approximately 560 million tons of mineable federal coal would not be recovered.

License to Mine [Home Use Fuel (Coal) Source]

The need for domestic home fuel needs would continue as identified in Alternative A. The historic use of coal from surface outcrops by Navajo allottees in the area would continue. New domestic coal license applications would be considered on a case-by-case basis.

Fire/Fuels Management

Fire/fuels management procedures under Alternative C would be the same as Alternative A, except in the number of acres in SDAs. Under this alternative, 713,710 acres of public land would fall under the guidance for these areas. Other areas would be managed in accordance with the procedures described for Alternative A.

Alternative D

Alternative D includes aspects of the other three alternatives, with the goal of balancing extraction of the mineral resource, multiple uses of public lands, and protection of natural and cultural resources. The goal of this alternative is to have full field subsurface development, as described in the RFDS, while minimizing surface disturbance to the extent possible.

Oil and Gas Leasing and Development

This alternative would provide for development of 9,942 new wells in the planning area, after the 28 wells that would be inaccessible due to NSO constraints are subtracted from the total. This would include some commingling as projected in the RFDS (Engler et al. 2001). Commingling would be encouraged where possible, including consideration of opportunities to combine oil and gas operations across leases and between different companies. The theme of this alternative would focus on permitting mineral production while mitigating impacts to other resources. The number of APDs to be approved would be approximately 500 per year over the next 20 years.

Following is a summary of the acreage of federal minerals in the planning area subject to various constraints under this alternative:

Constraint	Acreage within High Development Area	Acreage in Rest of Planning Area	Total Acreage
Leasing			
Nondiscretionary Closure	349	110,799	111,148
Discretionary Closure	35,000	46,000	81,000
Development			
STC	1,218,650	1,378,543	2,597,193
CSU	206,668	80,242	286,910
NSO	20,041	5,401	25,442
TL	419,386	64,421	483,807

Note: STC = Open under Standard Terms and Conditions; CSU = Controlled Surface Use; NSO = No Surface Occupancy; TL = Seasonal Timing Limitation.

Within the high development area, more than 99 percent of the federal oil and gas resources are currently leased. In areas being considered for discretionary closure in the RMP, the development of existing leases would continue according to the terms of the lease. The BLM would continue to implement the portions of the lease that require lessees to conduct operations in a manner that minimizes adverse impacts to other resources and other land uses and users.

Mitigation of impacts would be accomplished by the application of the following new technology, regulatory changes, and off-site mitigation, as appropriate (practical and reasonable) to reduce the footprint from each proposed well. This framework would be applied on a case-by-case basis for each proposed well, in addition to the implementation of the continuing management guidance that is common to all alternatives.

- New Technology—Construction and Production Techniques: coil tube drilling for CBM wells, directional drilling from existing pads, use of remote sensing and telemetry to reduce traffic, surface use of produced water (could apply off-site) to create riparian and wetland habitats, transport injected produced water via pipeline instead of trucking to reduce traffic, closed loop mud systems.

- Regulatory Changes—Standardize the drilling window off-sets in the federal units; encourage/permit dual completion, re-completion and commingling (both downhole and at the surface), from multiple producing formations, to reduce the total number of well pads; consider the creation of additional federal units.
- Off-Site Mitigation—Utilize the voluntarily contributed funding from the oil and gas industry to monitor impacts, develop adaptive management strategies, implement management prescriptions in the SDAs, and enhance resource conditions off-site. Contributed funds could be utilized to:
  - ♦ Monitor impacts to vegetation, soil, water, air, wildlife and habitats;
  - ♦ Purchase and construct signs, gates, access and property within SDAs;
  - ♦ Stabilize and interpret significant cultural resources;
  - ♦ Enhance habitats and meet public land health standards through vegetation manipulation, creation of additional water sites, application of produced water for riparian areas and wetlands, construction of structures and facilities to support site-specific management objectives such as kiosks, interpretive sites, parking areas, gates, fences, signs, etc.

The mitigation measures described under Alternative C that minimize erosion and wildlife habitat disturbance would be implemented where applicable, depending on site-specific conditions and requirements. They include the following:

- Make every effort to minimize surface disturbance and intrusion into undisturbed areas through such actions as twinning of wells and directional drilling, unorthodox locations, re-completions, commingling of gas, and closed loop mud systems. Pipelines would follow existing roads.
- Development would be restricted in areas that have special topographic (steep or broken and/or on benches) and soil concerns. Development in these areas would be considered on a case-by-case basis and would contain site-specific mitigation stipulations.
- Operators would be encouraged to unitize in areas of heavy development to increase management efficiency and facilitate operations in sensitive areas.
- Off-site mitigation may be indicated in crucial areas, such as areas with wildlife monitoring or studies, habitat replacement, water development, and watershed protection measures.
- Vehicle traffic and resource damage would be reduced by using new technology such as electronic data interchange and piping of produced water.

Listed below is a summary of the types of activities that would not be permissible during a closure period in an area under TL constraints. Emergency repairs needed for human safety and environmental contamination would not require prior authorization. Emergency repairs can include downhole or surface equipment repairs and/or modifications necessary to sustain the productive capability of the well.

- Any construction, including new well pads, roads, pipelines, installation of compressors, surfacing of roads, power-lines. Well pad, road construction and road improvement.
- Drilling.
- Plugging and abandonment (unless required to prevent environmental damage).
- Seismic exploration.
- Workovers or any activity requiring a drilling rig, unless required to prevent environmental damage, or to permanent loss of reserves. Prior

approval must be approved before beginning this type of work.

Activities that are routine and do not conflict with the seasonal restrictions include routine daily operations, road maintenance, and routine pipeline maintenance.

Noise from oil and gas compressors has been identified by the public as an issue of primary concern in the planning area. To address these concerns, the FFO developed a Noise Policy, which would be implemented in the form of an NTL to oil and gas operators or ROW that would require mitigation of noise levels measured within and adjacent to designated NSAs or within a specified distance from designated point receptors.

Receptor-focused controls would apply to specific locations within 46 BLM and four USFS designated areas. Boundary-focused controls would apply to all designated acreage within 7 BLM, 3 USFS, and 1 NPS NSAs. All USBR land would be considered a boundary-focused NSA. For receptor-focused NSAs, the noise standard of 48.6 dBA Leq would be achieved within 100 feet of agency-established receptor points within the designated NSAs. Established receptors are generally defined as visitor use areas, camp or picnic areas, habitat for threatened or endangered species, archaeological sites, and recreation trails, and may vary in size from a single point to several acres based on the features and resource components being managed.

In boundary-focused NSAs, the standard would be 48.6 dBA Leq, at 400 feet in all directions from the noise source. For noise sources located outside of designated NSAs, the noise standard of 48.6 dBA Leq would be met at the boundary of the NSA. Noise sources located within 400 feet of the NSA boundary would generally be allowed to meet the standard 400 feet from the source.

For noise sources involving federal or Indian leases located near occupied dwellings or buildings, the standard of 48.6 dBA Leq would be met 100 feet from such structure. Additional information on the Noise Policy is included in Appendix E.

In addition to implementation of the Noise Policy, the raptor noise policy to minimize noise impacts from wellhead compression on raptor nest sites would be implemented as described under Alternative A.

Oil and gas development on the land around Navajo Reservoir would be managed under NSO constraints in the following areas:

- Within 1,500 feet of Navajo Dam and its appurtenant structures;
- Within 500 feet of the maximum high water line (elevation 6,101.5 feet above MSL);
- Within 500 feet of the San Juan River;
- On all new leases.

The remainder of the area would be managed under CSU constraints. Unless exempted by USBR, there would be a timing limitation applied to the entire area from December 1 through March 31, and all USBR land would be managed as a boundary-focused NSA. Production facilities would not be located on the ridgeline above the reservoir and would be designed to minimize their visibility from the lake and other public use areas. Co-location of gas well facilities would be encouraged to minimize surface disturbance and the duplication of facilities.

Land Ownership Adjustments

Disposal

Under this alternative, all of the land identified for disposal in Alternative A would be available. In addition, the lands on Crouch Mesa and the lands along and less than one mile east of US 550 between Aztec and Bloomfield (Map 2-5) would be a priority for disposal. Exchange, sale, disposal under the R&PP Act or other legal disposal would be considered if the disposal met the criteria listed in Chapter 1. Additional areas identified by the various governmental entities and non-profit organizations during the scoping process for R&PP purposes (Appendix H) may be available for disposal if determined by the Authorized

Officer to be in the public interest. In some instances, the FFO would consider disposal of parcels within SDAs. Decisions would be based on an evaluation of the overall public benefit served by either disposal or continued management of special resource values. Identified parcels on which substantial improvements have been inadvertently placed would be made available for disposal, if the Authorized Officer determines that such disposal would be in the public interest. Table 2-1 provides the disposal acreage under this alternative.

Acquisition

Inholdings and lands surrounding SDAs would be the priority for acquisition. Additional riparian areas would also be a priority for acquisition, if their acquisition is determined by the Authorized Officer to be in the public interest. Other lands that consolidate public ownership or benefit a resource program could also be acquired. Any lands acquired would be managed in the same manner as the adjacent or surrounding public land. Table 2-1 provides the acquisition acreage under this alternative.

ROW Corridors

Under this alternative, the ROW corridors identified by the 2002 WUG revision of the 1992 WRCS would be designated for powerline and pipeline use. Any specific proposals would still be required to go through the environmental and permitting process. Proposed uses that are determined to unreasonably interfere with the use of these corridors may not be authorized. Map 2-2 shows the general alignment of the corridors.

The 2002 WUG revision of the 1992 WRCS proposed corridors as shown on Map 2-2 would be the designated ROW corridors for the FFO. In most cases, these corridors follow the routes of existing major electric transmission lines or petroleum transportation pipelines.

The goal of designating proposed corridors is to facilitate the transport of energy-related resources and products while minimizing environmental impacts to all lands. The FFO would encourage the use of the designated ROW corridors and ROW use areas, to the extent possible, but depending upon on site-specific needs, actual locations may vary. Utility corridors can often accommodate other compatible uses such as maintenance roads and other facilities, thus minimizing the proliferation of separate ROWs.

Designation of ROW corridors does not eliminate the requirement for the environmental analysis of any new ROW project proposals. The designated corridors would function as the agency preferred location for future ROWs. Future proposals may benefit from the surveys and impact analyses conducted for existing projects. ROW proposals outside of designated corridors would not be excluded. However, such proposals may entail greater scope of analyses and increased time necessary to analyze impacts and alternative routes.

Activities which would generally be excluded from ROW corridors include mineral material sales, range and wildlife habitat improvements involving surface disturbance or facility construction (such as water catchments, corrals, holding pens), campgrounds and public recreational facilities or other facilities which would attract public use. New oil and gas wells would be sited outside of ROW corridors.

Fourteen SDAs that would be within or adjacent to proposed WUG corridors are listed in **Table 2-11**. In most cases, the designated SDA is of such small size and/or steep topography that linear energy projects could be routed around these areas. This table identifies proposed management of ROW applications in each SDA.

Table 2-11. SDAs in Proximity to WUG Corridors

SDA Name	ROW Prescription
The Hogback	Allowed with site-specific stipulations.
Piñon Mesa Fossil Area	Allowed with site-specific stipulations.
Glade Run	Allowed with site-specific stipulations.
Rattlesnake Canyon	Allowed with site-specific stipulations.
Crow Mesa	Allowed with site-specific stipulations.
Dzil'na'oodlii (Huerfano Mesa)	No new ROWs on mesa top (37 acres). In remaining area, new ROWs restricted to existing disturbance.
Lybrook Fossil Area	Allowed with site-specific stipulations.
Torrejon Fossil Fauna	Allowed with site-specific stipulations.
North Road Segment #2	No new ROWs. One proposed corridor near north boundary. Minor routing change might be required.
North Road Segment #7	No new ROWs.
San Luis Cliffs Window	New ROWs restricted to existing corridor.
Betonnie Tsosie	Allowed with site-specific stipulations.
Bi Yaazh – Cultural	New ROWs restricted to existing disturbance.
River Tracts	Allowed with site-specific stipulations.

The developed network of existing facilities throughout and across the FFO provides an effective network for using corridors to transport hydrocarbons, and electrical energy resources across or out of the San Juan Basin. This network, in conjunction with the designated utility corridors, should accommodate future ROW needs for the next 10-15 years. Thus, the designation of SDAs in the Farmington RMP will have minimal to no adverse impacts to either interstate or intrastate transportation of energy products.

Mineral Materials

The FFO has identified six areas (16,520 acres) of salable minerals (Map 2-8) such as sand and gravel that needs to be well managed. Additional areas could be identified in the future. Some of these areas are within the disposal area identified above. The purpose of delineating these areas is to inform managers and potential users of other resources in these areas of their value for salable minerals, so that value would be considered prior to the authorization of other actions.

OHV Use

OHV management would be similar to Alternative B. Management unit boundaries would be the same as Alternative B, shown in Map 2-6. Acreage for each OHV designation is provided in Table 2-2. The table reflects changes in proposed SDAs for this alternative that would slightly alter the acreage for each designation. Restrictions on cross-country travel described in Table 2-3 would apply. Proposed designated trails described for Alternative B (Table 2-9) would also apply for this alternative. Table 2-10 quantifies the amount of land in each Management Unit that may potentially be considered suitable for open designation as OHV Management Unit plans are developed. These areas could be further reduced depending on site-specific sensitivities as described under Alternative B.

OHV Activity Plans would be written based on priority of resource protection needs and the amount of public use and should be completed within 15 years. In addition to the preparation of the OHV Activity Plans, the FFO will prepare a Transportation Plan. The Transportation Plan will identify collector and resource roads that would be needed for use over the long-term. These roads would remain open for public access when oil and gas development in the area ceases. Roads identified in the Transportation Plan would be included in the individual OHV Activity Plans.

To improve management of roads used for oil and gas, the AFO would establish a road Management Unit in the Lindrith/Cuba area patterned after the OHV Management Units in the FFO Transportation Plan.

Specially Designated Areas

Under Alternative D, 811,810 acres in the FFO would have special management, of which BLM currently manages the surface on 649,470 acres. Areas with special administrative designations (SMAs, ACECs, RNAs, WAs, and WSAs) approved through previous land use planning would be carried forward with changes described below. Accounting for these changes, there would be 137 SDAs in the FFO under Alternative D. This reflects consolidation of several areas into larger contiguous areas to provide for more efficient management. Changes in management prescriptions for new and existing areas are described in Table 2-5. **Map 2-11** (large fold-out map for Alternative D, located at end of document, inside back cover) shows adjusted boundaries under this alternative. Please refer to Table 2-5 for name changes.

Areas Not Carried Forward

- Lost Pine, Log Jam and Badlands ACEC designations would be removed since they are within the Bisti/De-Na-Zin WA and require no further designation.
- The Coal Belt SMA would be removed because all areas that are suitable for coal would be available for consideration for extraction under the lease by application process.
- The Right-of-Way Windows (4 units) would be removed.
- Farmington Lake Watershed SMA would be removed because the majority of the ownership is non-federal, and a small portion is within the GRTS.
- Aztec Gilia ACEC designation would be removed, as the range and distribution of Aztec gilia is more extensive than previously identified.
- Tanner Lake Battlefield was dropped because surface ownership was transferred to The Navajo Nation as part of the Navajo-Hopi land exchange.

Areas Added or Changed

Wildlife

- The East La Plata Wildlife Area would be added for protection of deer winter range.
- Rattlesnake Canyon Wildlife Area would be added for deer winter range and fall/winter use by wild turkeys.
- The Middle Mesa Wildlife Area would be added for protection of deer winter range.
- The Rosa Mesa Wildlife Area would be added for protection of deer winter range.
- Gonzales Mesa Wildlife Area would be added for protection of deer winter range.
- Crow Mesa Wildlife Area would be added for deer and elk use all year.
- Ensenada Mesa Wildlife Area would be added for year-long use by antelope, deer and elk.
- Cereza Canyon Wildlife Area would be added for protection of deer and elk winter range.

- Laguna Seca Mesa Wildlife Area added for wild turkey, deer, elk, bear and Abert's squirrel.

T&E Species

- The Ephemeral Wash Riparian Area would be added to provide protection of riparian resources. Management would be applied to promote the attainment and maintenance of proper functioning conditions and provide habitats for the southwestern willow flycatcher.
- Within the Laguna Seca Mesa SMA would be the Mexican Spotted Owl ACEC, designated to protect the T&E habitat values in the critical habitat designated by the USFWS.

Cultural

- All cultural SMAs carried forward from previous plans and amendments would be designated as ACECs.

Chacoan Outliers

- Twin Angels ACEC would be enlarged.
- Jacques ACEC would be enlarged and renamed as Jacques Chacoan Community ACEC.

Anasazi Communities (Non-Chacoan)

- Cedar Hill ACEC would be added.
- East Side Rincon Site would be enlarged and changed to an ACEC.
- The existing Chacra Mesa Complex ACEC and the Shephard Site SMA would be combined with surrounding lands. La Jara ACEC would be added.

Early Navajo Defensive Sites and Communities

- Adams Canyon SMA would change to an ACEC designation and be expanded. Blanco Mesa ACEC (130 acres) would be enlarged.
- Cottonwood Divide ACEC would be added upon acquisition of state land and mineral rights.
- Existing Crow Canyon District ACEC, NM-01-39344 ACEC, and Unreachable Rockshelter SMA would be combined with surrounding lands and would be called Crow Canyon ACEC.
- Deer House ACEC would be enlarged.
- Existing Casa Mesa Diablo SMA and Ye'is-in-Row ACEC would be combined with surrounding lands and called Devil's Spring Mesa ACEC.
- The existing Adolfo Canyon SMA, Big Star ACEC, Carrizo Cranes ACEC, Gomez Canyon Ruin SMA, Gomez Point ACEC, Hill Road Ruin SMA, NM-01-39236 ACEC, and Rabbit Tracks ACEC would be combined with surrounding lands and called Encinada Mesa-Carrizo Canyon ACEC.
- The existing Frances Ruin ACEC and Romine Canyon SMA would be combined with surrounding lands and called Frances Mesa ACEC.
- Kachina Mask ACEC would be enlarged.
- Kiva ACEC would be enlarged.
- Muñoz Canyon ACEC would be added.
- Pointed Butte SMA would be enlarged and designated as an ACEC.
- Pork Chop Pass ACEC would be added upon acquisition of state land and mineral rights.
- Rincon Largo District SMA would be enlarged and designated as an ACEC.
- Rincon Rock Shelter SMA would be enlarged and designated as an ACEC.
- Star Rock ACEC would be added.
- String House ACEC would be added upon acquisition of state land and mineral rights.
- Existing Cibola Canyon ACEC, Compressor Station SMA, Foothold and Overlook Ruins District SMA, Hooded

Fireplace and Largo School District ACEC, and Superior Mesa Community ACEC would be combined with surrounding lands and called Superior Mesa ACEC.

- Tapacito and Split Rock ACEC would be enlarged.
- Truby's Tower ACEC would be added upon acquisition of state land and mineral rights.

Petroglyph and Pictograph Sites

- Bi Yaazh ACEC would be enlarged.
- The existing Delgadita-Pueblo Canyons ACEC and Delgadito Pueblito SMA would be combined with surrounding lands into the Delgadita-Pueblo Canyons ACEC (360 acres).
- Hummingbird Canyon ACEC would be added.
- Star Spring ACEC would be enlarged and renamed Star Springs-Jesus Canyon ACEC.
- Martinez Canyon ACEC would be enlarged.

Historic Sites

- Albert Mesa ACEC would be added.
- The Haynes Trading Post ACEC would be added.
- The Moss Trail ACEC would be added.

Paleontology

- The Piñon Mesa Fossil Area would be added to protect significant paleontological values.
- Gobernador and Cereza Canyon Fossil Area would be added to protect significant paleontological values.
- The Lybrook Fossil Area would be added to protect significant paleontological values.
- The Bohanon Canyon Complex would be added to protect significant paleontological values.
- The Carson Fossil Pocket would be added to protect significant paleontological values.
- The Kutz Canyon Paleontological Area would be expanded to protect significant paleontological values.

Recreation

- Simon Canyon ACEC would be expanded to include the portion of the Simon Canyon Recreation Area that extends beyond the ACEC boundary. The SMA designation would be removed and the area would be managed as an ACEC.
- The GRTS boundary would be changed to better reflect the area of current use. This would result in a reduction in acreage.
- Piñon Mesa Recreation Area would be designated for recreational, paleontological, and visual values. There would be several trails with different types of use. The managed area would include corridors and surrounding land.
- Rock Garden Recreation Area would be designated for recreational values. The area would be designated for OHV, equestrian and other recreational use on designated trails, routes and areas. Management would be applied to the area including trails and surrounding land.
- Navajo Lake Horse Trail would be designated for recreational values, promoting equestrian use. The managed area would include corridors and surrounding land.
- Alien Run Mountain Bike Trail would be designated for recreational values, and non-motorized use on trail corridors and surrounding land.
- The boundary of Thomas Canyon Recreation Area would be enlarged and

wildlife management added as a resource value.

- In addition to current recreational emphasis, Carracas Mesa Recreation Area would add a wildlife management component.

Coal Leasing Suitability Assessment

Under this alternative there would be no shift in resource uses, but rather a balanced approach in the proposed leasing areas. Existing program policies and decisions for other resource programs would not change. The BLM would encourage and assist coal lessees and oil and gas lessees in their efforts to reach a cooperative development independently that would achieve the goals of both parties.

Preference Right Leasing Applications

The 14 PRLAs discussed in Alternative A would be carried forward under this alternative. The unsuitability criteria that affected several PRLAs would be in effect. Those PRLAs that are affected by Congressional designation of the WA and RNA may be exchanged for coal leases in New Mexico if it is in the public interest. At the time any of the PRLAs are processed, the unsuitability criteria would be reapplied on a site-specific basis.

The area would not be available for future coal leasing and development until Congress reaches a decision on the Ah-shi-sle-pah wilderness status.

Competitive Coal Tracts

The 17 competitive coal tracts were discussed and available for leasing under Alternative A would be considered for leasing under this alternative. Those companies that are interested in mining coal from these tracts would submit an application to lease the coal and the 20 unsuitability criteria would be reapplied during the leasing process. It was determined that 378,285 acres would be suitable to consider for future leasing and development in the FFO area.

License to Mine [Home Use Fuel (Coal) Source]

The need for domestic home fuel needs would continue as identified in Alternative A. It is assumed that the historic use of coal from surface outcrops by Navajo allottees in the area would continue. New domestic coal license applications would be considered on a case-by-case basis.

Additional Coal Interests

The two Peabody and BHP coal tracts identifying federal lands suitable for coal leasing described under Alternative B would be considered under this alternative. These lands are in the vicinity of Lee Ranch, Twin Peaks, and East Piñon areas (see Map 2-4) for the location of these tracts. The 20 unsuitability criteria would be applied during the leasing process.

In the Twin Peaks area, land acreage totaling approximately four sections in Township 30N Range 14W (Sections 10, 14, 15, 22 [NE ¼ of NE ¼], 23 [E ½ and N ½ of the NW ¼], and 26 [NE ¼ and N ½ of the SE ¼]) underlie the Piñon Mesa Fossil Area and Piñon Mesa Recreation Area. This land would not be available for coal mining. The remaining acreage in the Twin Peaks area would be available for coal mining with stipulations that protect paleontological resources, including paleontological surveys prior to underground mining and periodic monitoring during active underground mining to identify paleontological resources that may be exposed as a result of subsidence.

Fire/Fuels Management

Fire/fuels management procedures under Alternative D would be the same as Alternative A, except in the number of acres under special administrative designation. Under this alternative, 649,470 acres of public land would fall under the guidance for these areas. Other areas would be managed in accordance with the procedures described for Alternative A.

ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

Alternatives A, B, and C represent a range of possible management approaches to oil and gas leasing and development in the planning area and resource management in the FFO area. Alternatives considered and eliminated from detailed analysis are briefly described below.

Prohibit any new oil and gas development on federal land in the planning area. This alternative was considered unreasonable because of the national need for energy resources and the BLM's legal mandate under the Mining and Minerals Policy Act of 1970 and the Minerals Policy Research and Development Act of 1980.

Prohibit any new oil and gas development outside of the high intensity oil and gas area of the FFO. This alternative was rejected because it would severely limit access to available mineral reservoirs and is inconsistent with federal laws and mandates for multiple use of public lands. STCs and NSO provisions were considered adequate to protect sensitive environmental resources without completely prohibiting oil and gas development.

Eliminate NSO restrictions in special management areas. This was not considered a reasonable alternative because it would result in violations of federal laws such as the Wilderness Act, ESA, NHPA, and FLPMA.

Eliminate restrictions on placement of roads and pipelines. This alternative would eliminate the requirement to place roads and pipelines supporting oil and gas development within the same ROWs and allow new roads and pipelines to be constructed cross-country without restrictions. The alternative was rejected because the extreme surface disturbance that would result was considered inconsistent with BLM, USBR, and USFS policies for preserving resources and managing multiple uses.

Eliminate all restrictions on OHV use in the planning area. This alternative was considered unreasonable because the alternatives examined in detail provide for a wide range of OHV access, and removing all restrictions would subject special management areas to damage from OHV use that would jeopardize the resources those areas were established to protect.

Alternatives Proposed During Public Comment Period

Public comments on the Draft RMP/EIS suggested two additional alternatives: one which would allow no new or no net increase in surface disturbance and another which would prohibit further leasing of oil and gas. These alternatives and the reasons they were eliminated from detailed analysis are described below.

No New Surface Disturbance and No Net Increase in Surface Disturbance. Several comments were received on the Draft RMP/EIS requesting consideration of an alternative that would substantially reduce new well development and avoid associated environmental impacts. Specifically, commentors requested an alternative that would preclude further habitat fragmentation in wildlife management areas by limiting well pad, road, and pipeline construction. The FFO has considered such an alternative and determined that it is not practical or reasonable, for reasons explained in the following paragraphs.

The planning area is comprised of a total of approximately 3 million acres of federal minerals. A little over half of this acreage is in the high development area for oil and gas. Within the high development area, more than 99 percent of the federal oil and gas resources are already leased, and many of those leases are held by production. The leaseholders have paid the federal government for the right to extract the minerals covered by those leases. The government, in turn, has entered into a contractual agreement to permit leaseholders to develop those resources. Leaseholders are, in fact, required by regulation to diligently develop and efficiently extract the resources covered by their leases.

Approximately 128,000 acres of public land in the high development area are in existing Critical Big Game Habitat Management Areas. This could increase to as much as 397,000 acres under Alternative C. This is the acreage that would be subject to no new surface disturbance in an alternative designed to prohibit increased habitat fragmentation. Within the 397,000 acres, there are 4,528 existing oil and gas wells and 2,700 new wells projected for development. Assuming an average production of 1.12 billion standard cubic feet (Bscf) per well, if the 2,700 projected new wells were not permitted, the potential loss of production would be approximately 3,000 Bscf (27 percent) of the total production potential of the federal minerals in the region. At an estimated $3 per thousand cubic foot (NMDFA 2001), this would represent lost revenue of about $9 billion to the leaseholders.

Precluding leaseholders from extracting these resources violates the BLM's contract responsibilities and would likely require compensation by the federal government. While it is not known what the extent of the compensation would be, it is clear from the numbers given above that the magnitude of the economic impact far exceeds a reasonable ability of the federal government to compensate leaseholders for the loss. In addition to economic issues, an alternative requiring no net increase in surface disturbance would prevent the orderly drainage of gas from underground formations and could lead to a violation of correlative rights. Linking new development to the rate of plugging and abandonment of old wells would cut the number of new wells to approximately one half that projected for the near future. This would result in a reduction of natural gas output from the Basin requiring existing customers to seek other sources of natural gas. Such an alternative would also run counter to National Energy Policy direction to meet increased demands for natural gas.

Commentors proposing either a no new surface disturbance or no net increase in surface disturbance alternative do not present site-specific data to indicate which wildlife populations would benefit from such an approach. There are virtually no pristine wildlife habitats in the FFO. Over 50 years of development have left no large blocks of unfragmented habitat. The BLM does not have scientific information to indicate which, if any, wildlife populations have declined due to oil and gas development. Mule deer have declined across their range in the West, including many areas without oil and gas development. Other species, such as elk, peregrine falcon, and wintering bald eagles have increased in the San Juan Basin during the past 20 years of ongoing oil and gas development.

Additional oil and gas development and maintenance activities on State and private lands would continue to impact wildlife habitats within the San Juan Basin. In order to protect natural and cultural resources while enabling operations to extract minerals on public lands, the BLM has developed stipulations, BMPs, and constraints, such as timing constraints in the wildlife management areas, which are addressed in the COAs accompanying each APD. These provisions have been implemented in the past to reduce impacts to wildlife. They are expected to mitigate potential adverse impacts and reduce, though not eliminate, further habitat fragmentation.

No Further Leasing. No further leasing of oil and gas has been proposed as an alternative that would reduce impacts of oil and gas development. In the Draft RMP/EIS, no new leasing was presented as a management prescription for some SDAs. However, due to the presence of prior existing leases, application of the prescription can only occur if leases expire.

In addition, it is BLM policy (BLM Manual 3031.06A, Minerals Policy) "…to keep public lands open to mineral exploration and development, unless closure or restriction is mandated by Congress or justified in the national interest."

Over 90 percent of the available lands in the planning area are already under existing oil and gas leases. Virtually all of the leases in the high development area of the planning area

were leased in the 1950s and 1960s and have been held by production. Prohibiting further leasing of Federal oil and gas in the planning area would not have any effect on the ongoing development of existing Federal leases or state or private leases. Lands that are presently available for leasing are generally on the fringes of the oil- and gas-producing region. Through the planning process, the lands with special values such as important cultural resources or crucial wildlife habitats have been designated as requiring special management prescriptions. In some cases these prescriptions indicate no leasing for oil and gas or not re-offering leases if an existing lease is allowed to expire.

Lands nominated for leasing are reviewed for the presence of potential conflicts with existing land use plans or other potential land use conflicts. If conflicts exist, the affected parcels are either withdrawn from the lease offering or special stipulations are attached to the lease. This procedure is effective in protecting sensitive resources while still allowing for the potential development of energy resources.

COMPARISON OF ALTERNATIVES A, B, C, AND D

This section presents the impacts of the alternatives in comparative form to define the differences and provide a basis for choice among the options. **Table 2-12** provides a summary of selected actions proposed under each alternative. **Table 2-13** summarizes the comparative effects of each alternative as reflected in various measurements related to each of the resource areas discussed in detail in Chapter 4, Environmental Consequences.

Table 2-12. Summary of Actions by Alternative

Action	Alternative A	Alternative B	Alternative C	Alternative D
Number of New Wells on Federal Land (over 20-year period)	4,421	13,275	9,836	9,942
New Roads for Oil and Gas Development (miles)	358	1,075	797	805
FFO Land Available for Disposal (acres)	280,782	347,505	338,067	340,118
Acres Identified for Acquisition by FFO (acres)	127,782	77,589	189,679	178,237
OHV Limitations in the FFO (acres)				
Open	1,230,839	4,616[1]	4,616	4,616[1]
Limited	122,063	1,352,931	1,352,117	1,353,301
Closed	62,384	57,739	58,533	57,369
Public Land in SDAs (acres)	491,945	468,410	713,710	649,470
Federal Minerals with Oil and Gas Stipulations (acres)				
Non-Discretionary Closures	111,148	111,148	111,148	111,148
Discretionary Closures	53,216	28,273	114,100	81,000
Controlled Surface Use	158,714	236,270	275,192	286,910
No Surface Occupancy	13,137	13,290	55,070	25,442
Open with STCs	2,737,694	2,659,985	2,579,283	2,597,193
Timing Limitations	195,166	240,059	638,401	483,807

Note: (1) Open acreage could be as much as 99,003 in Alternative B and 65,806 in Alternative D as shown in Table 2-10.

Table 2-13. Comparison of Impacts by Alternative

	Alternative A	Alternative B	Alternative C	Alternative D
Net Long-Term Surface Disturbance from Oil and Gas Development (acres)	934	24,781	18,238	18,577
Initial, Short-term Surface Disturbance from Oil and Gas Development (acres)	13,971	41,941	31,459	36,451
Estimated Future Oil and Gas Production (Bscf)	4,910	11,158	11,002	11,125

	Alternative A	Alternative B	Alternative C	Alternative D
Potential for Soils Impacts	Increase in erosion due to increase in bare ground, unpaved roads, and open OHV access.	Greatest increase in erosion due to increase in bare ground, unpaved roads.	Increase in erosion due to increase in bare ground, unpaved roads (more than Alternative A).	Increase in erosion due to increase in bare ground, unpaved roads (more than Alternative A).
Water Required for Drilling Operations (acre-feet)	3,313	9,347	6,925	7,000
Native Vegetation Loss (acres)	13,971	41,941	31,459	36,451
Riparian Areas and Wetlands	Beneficial impacts within designated River Tracts SMA (2,500 acres). Increased potential for damage due to open OHV access.	Beneficial impacts within more protected riparian areas (10,000 acres) and more limited OHV access. Potential negative impacts on isolated patches of riparian vegetation from OHV traffic in dry washes.	Beneficial impacts within more protected riparian areas (10,000 acres) and more limited OHV access. Potential negative impacts on isolated patches of riparian vegetation from OHV traffic in dry washes.	Beneficial impacts within more protected riparian areas (10,000 acres) and more limited OHV access. Potential negative impacts on isolated patches of riparian vegetation from OHV traffic in dry washes.
Potential Habitat Loss in FFO Wildlife Habitat Areas (acres)				
Within 660 Feet of Roads	245,440	285,760	273,600	273,600
Within 1,320 Feet of Roads	405,870	486,510	462,190	462,190
Special Status Species Effects	Sensitive species and habitats not protected under ESA receive special management when warranted.	Sensitive species and habitats not protected under ESA receive special management when warranted.	Sensitive species and habitats not protected under ESA receive special management when warranted.	May affect, not likely to adversely affect, all listed or proposed species and designated critical habitats (BLM 2002c). Sensitive species and habitats not protected under ESA receive special management when warranted.
Air Emissions, Net Change over 20 Years (tons per year) before Mitigation	VOC: 744.1 CO: 12,621.7 NOx: 13,102.7 PM_{10}: 5.3	VOC: 2,771.5 CO: 60,462.3 NOx: 62,160.7 PM_{10}: 26.2	98% of that under Alternative B.	99.7% of that under Alternative B.
FFO Land in SDAs Limiting Grazing (acres)	17,954	17,273	72410	33,673
Increase in Split Estate (acres)	264,800	329,300	14,000	329,000

	Alternative A	Alternative B	Alternative C	Alternative D
Impacts on Wilderness	Potential for direct and indirect impacts from mineral development on Indian-allotted lands in WA, on prior existing leases in WSA, and open OHV designation on surrounding land.	Potential for direct and indirect impacts from mineral development on Indian-allotted lands in WA and on prior existing leases in WSA. Beneficial impact from changing OHV designation on surrounding land from Open to Limited. Proposed acquisition of adjacent lands would benefit WA and WSA.	Same as Alternative B	Same as Alternative B.
Acres in VRM Classes				
Class I	71,948	100,600	135,106	83,433
Class II	399,466	409,960	590,479	560,143
Class III	1,013,099	1,020,084	1,123,830	1,104,717
Class III/IV	2,587,591	2,541,460	2,222,689	2,323,810
Acres Managed for Recreational Values in the FFO	52,804	51,881	75,174	74,664
Estimated Number of Recorded Archaeological Sites Affected by Oil and Gas Activity	736	2,211	1,658	1,896
Effects on Cultural Resources	Least potential for damage from surface distur-bance; least effect due to land disposal; greatest potential for impacts due to OHV cross-country travel.	Highest potential for damage from surface distur-bance; greatest effect due to land disposal; decreased potential for impacts due to OHV cross-country travel.	Less potential for damage from surface disturbance than Alternative B and more than Alternative A; least effect due to land disposal and OHV cross-country travel; highest acreage of protected areas.	Less potential for damage from surface disturbance than Alternative B and more than Alternative A; similar to but slightly greater than Alternative C in potential effects due to land disposal, OHV cross-country travel, and acreage of protected areas.

	Alternative A	Alternative B	Alternative C	Alternative D
Effects on Paleontological Resources	Least potential for damage from surface disturbance.	Highest potential for damage from surface disturbance. Increase in acreage of protected areas.	Less potential for damage from surface disturbance than Alternative B. Increase in acreage of protected areas.	Similar to Alternative C.
Noise Mitigation	N/A	N/A	101 boundary-focused NSAs mitigate noise in 206,000 acres.	12 boundary-focused NSAs and receptors in 50 other NSAs mitigate noise in less acreage than under Alternative C.
Oil and Gas Employment, Change from Current Level over 20 Years	-1,210	1,460	500	540
Total Oil and Gas Expenditures over 20 Years ($000)	$3,448,200	$10,345,000	$7,887,000	$7,973,000
Environmental Justice Impacts	No disproportionately high and adverse impacts expected.	No disproportionately high and adverse impacts expected.	No disproportionately high and adverse impacts expected.	No disproportionately high and adverse impacts expected.

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