CHAPTER 2 - ALTERNATIVES

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2. ALTERNATIVES

2.1. INTRODUCTION

Early in the project, scoping was initiated. Agencies, organizations, and the general public were asked to identify environmental issues concerning several alternative oil and gas leasing scenarios for the LPNF. Comments received were analyzed to identify issues important to the respondents. Based on those issues, the Forest Service developed a range of alternatives with the intent of meeting the purpose and need (as identified in Chapter 1) and responding to the issues, by including (or not including) various stipulations designed to protect or enhance lands and resources important to the respondents. Each alternative specifies:

(1) Lands which would or would not be administratively available for leasing, and
(2) Lease stipulations that would be applied to those lands that would be leased.

This chapter describes the scoping process, identifies the significant issues, describes the development of the alternative leasing scenarios, and identifies the "reasonably foreseeable development" associated with each alternative. It also provides a comparison of the alternatives, including the no action alternative relative to the needs of the proposed action and the significant issue identified. A new Forest Service preferred alternative is identified in response to comments received regarding the DEIS and the environmental analysis.

2.2. SCOPING

Soliciting comments from various federal, state, county, and local agencies, as well as interested organizations and individuals, is the first step in the EIS preparation process. The comments are used to obtain the most accurate and current environmental information and to incorporate public input into planning and decision-making. Scoping is an information gathering process open to the public and agencies early in the course of the analysis process, and is required by NEPA in CEQ regulation 40 CFR 1501.7, 1501.6 and 1508.25. The purpose of the scoping process is not only to characterize significant environmental issues that warrant study or evaluation, but also to identify issues that are not significant so that the environmental analysis and EIS will remain focused. Scoping is not a single, isolated activity, but instead is an ongoing process throughout the preparation of the EIS.

2.2.1. Scoping Activities

The scoping activities and results are documented in a Scoping Report dated January 11, 1996. The Scoping Report is a part of the administrative record on file at the Los Padres National Forest Supervisor's Office in Goleta, CA. The scoping activities consisted of the following notices and meetings.

2.2.1.1. Notices

Notices for the project included an initial informational package, the Notice of Intent to produce an EIS, a news release, and various project newsletters as described below:

2.2.1.1.1. Informational Package

In early September 1995, an informational package was sent to 2,237 persons, organizations, and agencies on the Forest mailing list. The package consisted of: a letter from the Forest Supervisor; an informational packet providing project background; a description of the study; an initial list of issues and alternatives which had been developed by the Forest Service ID team; and dates and locations for the meetings. The package also included a map showing areas of the Forest to be considered for leasing and oil and gas potential.

2.2.1.1.2. Notice of Intent

A Notice of Intent (NOI) to prepare an Environmental Impact Statement was published in the Federal Register on September 15, 1995.

2.2.1.1.3. News release

A news release was sent to 114 newspapers, radio stations, and television stations.

2.2.1.1.4. Newsletters

Newsletters reporting the progress of the analysis were sent to the project mailing list in December 1995, September 1996 and in October 1999.

2.2.1.2. Meetings

A series of five public meetings were held throughout the Los Padres National Forest area of influence in the communities of Frazier Park, King City, Arroyo Grande, Goleta, and Ventura, CA in late September and early October 1995. Participants were asked to provide comments concerning several possible oil and gas leasing scenarios for the LPNF.

The scoping meetings covered the following topics:

- *Purpose and Need for Decisions*
- *Potential for Oil and Gas*
- *Role of the BLM*
- *Decisions to be Made*
- *Schedule for Public Participation*
- *Lands to be Considered for Lease*
- *Environmental Analysis Process*
- *Issues to be Considered*
- *Preliminary Leasing Scenarios*

2.2.2. Significant Issues

Initially, the ID Team, based on their knowledge of the Forest and previous Forest-wide scoping efforts, grouped the issues into several categories. These issue categories were refined as a result of comments received from the public during scoping. The following significant issues were finalized by the ID team. These issues are addressed in detail in Chapters 3 and 4.

Physical Environment

1. Air Quality

2. Watersheds, Wetlands & Riparian

Biological Environment

3. Wildlife, Fisheries and Vegetation

Social Environment

4. Heritage Resources

5. Socioeconomic Impacts/Growth

6. Social Impacts

a. private property
b. local resident impacts
c. local community impacts
d. noise

7. Access and Traffic

Social Environment (continued)

8. Land and Resource Management Plans

a. Forest Plan
b. community plans

9. Oil & Gas Development

a. constraints on development
b. industrial infrastructure

10. Scenic Resources

11. Safety and Hazards

a. fire
b. geologic (landslides, earthquakes)
c. spills (surface water/groundwater)

12. Recreation

a. off road use
b. developed sites
c. primitive use
d. wilderness areas
e. roadless areas

2.2.2.1. Special Geographic Concerns

In addition to the significant issue categories identified above, many people expressed concerns about oil and gas development in the following areas:

A) Increase in transport of hazardous materials adjacent to Lake Casitas and the Ventura River.
B) Decline in production in Cuyama fields compared to "high potential" categorization.
C) Impact on proposed Wagon Cave Research Natural Area.
D) Wildlife migration corridor between Dick Smith and Sespe Wilderness areas and between Monterey and Santa Lucia Ranger Districts west of Highway 101.
E) Community impacts on Frazier Park and Cuddy Valley.
F) Sacred Native American concerns on Figueroa Mountain and in the San Rafael Range.
G) Impact to "Indians" area on Monterey Ranger District south of Arroyo Seco.
H) Impact to solitude in all Wildernesses.
I) Wilderness values in the following roadless areas:

- *Bear Canyon*
- *Bear Mountain*
- *Big Rocks*
- *Black Butte*
- *Condor Point*
- *Cuyama*

- *Dry Lakes*
- *Fox Mountain*
- *Garcia Mountain*
- *Juncal*
- *Los Machos Hills*
- *Nordoff*
- *Sawmill Badlands*
- *Sespe Frazier*
- *Spoor Canyon*
- *Stanley Mountain*
- *Tepusquet Peak*
- *White Ledge*

2.2.2.2. Requested No Leasing Areas

Respondents requested no leasing be allowed in or around the following areas:

- *Entire Los Padres National Forest*
- *South Forest - Solvang to Lake Piru*
- *Figueroa Mountain*
- *Tepusquet Peak*
- *Lopez Reservoir*
- *Highway 33 south of crest*
- *Wheeler Gorge*
- *Matilija Canyon*
- *Matilija Creek*
- *Teague Memorial Watershed*
- *Lake Casitas and watershed*
- *Ojai Valley viewshed*
- *Pine Mountain*
- *Arroyo Seco Watershed*
- *Upper San Antonio River*
- *Santa Lucia Memorial Park*
- *Ballinger Canyon*
- *Rock Front*
- *Kerry Canyon*
- *Tinta Trail*
- *Montecito viewshed*
- *Santa Barbara and Ventura County*
- *San Rafael Range*
- *Sierra Madre Ridge*
- *South of Santa Ynez Mountains*
- *Lake Cachuma*
- *Senior Canyon*
- *"the Indian"*
- *Monterey County*

2.3. ALTERNATIVES

Based on and in response to the issues, the Forest Service developed a range of reasonable alternatives that met the purpose and need as identified in Chapter 1. The following alternatives represent the range of reasonable oil and gas leasing scenarios for LPNF system lands that are not withdrawn from oil and gas leasing. The alternatives respond to the issues by including (or not including) various stipulations designed to provide protection for, or enhancement of, lands and resources important to the respondents. Large maps of each alternative, except alternatives 1 and 2, are contained in the map packet which accompanied the DEIS. The maps can also be found on the LPNF web site.

After consideration of the scoping input, the ID team structured the range of reasonable alternatives to consider alternatives ranging from no oil and gas leasing to maximum oil and gas leasing. The two intermediate alternatives were designed to: 1) meet current forest plan direction, and 2) to provide increased protection for other resources.

The geographically specific alternatives were developed, based on the objectives of each alternative leasing scenario, using the LPNF geographical Information system (GIS) database. GIS was used to estimate environmental sensitivity to oil and gas leasing, develop mitigating stipulations, and estimate Forest Plan compliance. The leasing alternatives vary from not

allowing any new oil and gas leases through the maximum amount of oil and gas leasing possible.

As previously discussed, there are current oil and gas leases on LPNF lands. Existing leases continue in force as long as they produce oil and/or gas and meet existing lease conditions. These existing leases are a part of the "affected environment," which is presented in Chapter 3, and their environmental effects will occur regardless of whether or not any additional future leases are permitted.

2.3.1. Range of Reasonable Alternative Scenarios

This section discusses the development of the seven alternative leasing scenarios, which are analyzed and compared in this EIS. These alternatives are described in detail in Section 2.7. Detailed maps have also been made for five of the alternatives, numbers 3, 4, 4a, 5 and 5a. These are located in the map packet which accompanied the DEIS. Alternatives 1 and 2 were not mapped because Alternative 1 does not lease any new lands and Alternative 2 leases all available lands with the BLM Standard Lease Terms.

2.3.1.1. Alternative 1 – No Action, No New Leasing

The first step in identifying the range of reasonable leasing alternatives was to determine the bounds of the reasonable leasing scenarios. This alternative represents one bound of the range of alternatives that can be considered. It also represents the National Environmental Policy Act (NEPA) requirement to consider a "no action" alternative, which in this situation is considered to be a continuation of the current management situation. No new leasing is allowed under this alternative. Leases are initially leased for a period of ten years. At the end of the ten years the leases are either terminated, if there is no drilling activity or production, or extended as long as they are producing. Alternative 1, as do all alternatives, recognizes the existence, and possible future development, of the 21 leases on 4,863 acres mentioned in Chapter 1. These leases are considered to be a part of the affected environment. Alternative 1 projects activities that are reasonably foreseeable to occur on the existing leases in the future under the existing lease terms and conditions. This alternative serves as a basis of comparison for the other alternatives and is the minimum (no additional) amount of leasing that can occur.

2.3.1.2. Alternative 2 – Emphasize Oil & Gas Development

Alternative 2 represents the other end of the range of reasonable alternative leasing scenarios. This alternative represents the maximum amount of leasing that can be done, with the minimum amount of constraints upon the leases. Alternative 2 would allow leasing of all Los Padres National Forest System lands, not legally withdrawn from mineral entry, with BLM "Standard Lease Terms" (SLTs) as mitigation. Only Forest Service-identified "Information Notices" which interpret the BLM Standard Lease Terms would be added to the Standard Lease Terms. Reform Act regulations require that it be determined that SLTs alone are not sufficient before more stringent stipulations are applied. The analysis of Alternative 2 revels

where SLTs alone are not sufficient to mitigate potentially significant impacts and meet the Forest Plan direction.

2.3.1.3. Alternative 3 – Meet Forest Plan Direction

This alternative was developed as a result of the analysis of Alternative 2. Alternative 3 answers the question, "What changes need to be made to Alternative 2 to bring it into compliance with the standards, guidelines and direction in the Los Padres National Forest Land and Resource Management Plan (Forest Plan)?" These changes would take the form of lease stipulations, in addition to the BLM Standard Lease Terms, which would provide additional mitigation. This alternative would, by definition, be in line with direction contained in the current Forest Plan; it is also consistent with the Southern California Conservation Strategy (See Section 1.8.17.)

2.3.1.4. Alternative 4 – Emphasize Surface Resources

This alternative builds upon Alternative 3, adding further stipulations as mitigation measures to emphasize rehabilitation and enhancement of the surface resources. Alternative 4 provides for mitigation or avoidance of identified potentially significant impacts.

2.3.1.5. Alternative 4a – Alternative 4 With Roadless Area Emphasis

Alternative 4a is the same as Alternative 4 except that no surface occupancy (NSO stipulation) is allowed in any inventoried roadless areas (IRAs).

2.3.1.6. Alternative 5 – Combination of Alternatives 3 and 4

The intent of Alternative 5 is to discourage oil and gas development where oil and gas potential is low and environmental resource values are high and encourage development where oil and gas potential is low and environmental values are high. Inside High Oil and Gas Potential Areas (HOGPAs), Alternative 3 watershed, recreation, and scenic lease stipulations would apply; Alternative 4 biological stipulations would also apply (see Table 2-8). All Alternative 4 lease stipulations would apply outside of HOGPAs. Areas otherwise under a No Surface Occupancy (NSO) stipulation that are considered inaccessible by reasonably forseeable drilling practices on LPNF would not be leased under Alternative 5. These are lands that are otherwise in NSO areas and are more than one-half mile away from a location from which slant drilling under ground could be accomplished.

2.3.1.7. Alternative 5a – Alternative 5 With Roadless Area Emphasis

Alternative 5a is the same as Alternative 5, but with all inventoried roadless areas (IRAs) given a No Surface Occupancy (NSO) stipulation. As with Alternative 5, NSO areas that are considered inaccessible by current drilling practices on LPNF would not be leased. Significant portions of the IRAs would not be leased and the remainder of the IRAs accessible by slant drilling would have the NSO stipulation applied.

2.3.1.8. New Preferred Alternative

A New Preferred Alternative was identified in response to DEIS comments received. The New Preferred Alternative would make portions of the Sespe, San Cayetano, and South Cuyama High Oil and Gas Potential Areas available for oil and gas leasing and authorize BLM to lease lands in accordance with identified stipulations in Alternative 5a. The remainder of the HOGPAs and the Non-HOGPA area would not be available for leasing.

Maps depicting the New Preferred Alternative showing how land is allocated under this alternative are included as figures 2-3 through 2-7. The additional areas available for lease are located adjacent to or in close proximity of existing leases.

2.3.2. Assumptions Common to All Alternatives

Table 2-1 lists the assumptions that are common to all alternatives. These assumptions were made during the development of the Reasonable Foreseeable Development Scenario (See Appendix D). The analysis of environmental consequences presented in Chapter 4 is based upon these assumptions.

2.3.3. Additional Alternatives Identified in Scoping

Respondents suggested the following four additional alternatives.

- *Alternative Energy Sources and Energy Conservation*
- *Lease Existing Producing Areas Only*
- *Lease High Potential Areas Only*
- *No New Access*

These alternatives are not considered in detail for the reasons given below:

2.3.3.1. Alternative Energy Sources and Energy Conservation

Many respondents suggested that alternative energy sources and energy conservation should be considered as an alternative to oil and gas development. This alternative is considered outside the scope of this proposal and does not meet the purpose and need for this action as described in Chapter 1. The purpose and need for this proposal is to identify which NFS lands on Los Padres are available for leasing and which specific lands, with mitigating stipulations, BLM is authorized to consider for lease. The use of alternative energy sources and energy conservation may help reduce the nation's need for oil and gas; however, this is beyond the scope of this proposal.

2.3.3.2. Existing Producing Areas Only

One respondent suggested that we consider leasing only in those areas already producing oil and/or gas. This alternative is essentially the same as Alternative 1, no new leasing, so there is no need to analyze this proposal separately.

2.3.3.3. High Potential Areas Only

Several respondents suggested confining leasing to those areas identified as having high potential for oil and gas resources. This alternative is, in effect, evaluated under alternatives 2, 3, 4, 4a, 5, and 5a since the consequences of each of these alternative leasing scenarios are stated for the individual HOGPA's and for the non-HOGPA area and there is no reasonably foreseeable development in the non-HOGPA. In the New Preferred Alternative, only portions of the three HOGPAs with the greatest oil and gas potential -- Sespe, San Cayetano, and South Cuyama -- are available for lease.

The Forest Supervisor could select different alternative leasing scenarios for different HOGPAs and the non-HOGPA area. In fact, the New Preferred Alternative, as set forth in Section 2.5.7, does not lease any areas outside of the HOGPAs.

2.3.3.4. No New Access

One respondent suggested leasing with no new road access as a means of reducing impacts associated with new road construction. This alternative was eliminated from detailed study because it is not reasonable to not allow new access where our GIS analysis indicates there are areas that can be developed via new access without incurring significant impacts. This alternative would unduly restrict oil and gas development since equipment transport, construction of pipelines and other facilities, would require roads. Development would be restricted to existing lease areas where access currently exists, or areas adjacent to existing roads within other parts of the lease study area, or require access via helicopter. Oil and gas development by helicopter access is not economically given the oil and gas resource that is projected as reasonably foreseeable. Any new development without new access would have to be immediately adjacent to existing roads. This could result in unmitigable significant impacts to scenic and recreational resources since it would be directly visible from the transportation system.

2.3.4. Mitigation Considered As Part of the Alternatives

The U.S. Department of Interior, Bureau of Land Management (BLM), issues oil and gas leases for National Forest System lands (See Appendix A). Since the actions being analyzed in this study are leasing alternatives rather than specific oil and gas exploration and/or development plans, mitigation measures take the form of a decision to lease or not lease specific lands, and the application of various lease terms and stipulations to specific land areas. In order to be effective, mitigation measures must be enforceable and are thus made a part of the oil and gas lease instrument.

2.3.4.1. Types of Lease Terms and Stipulations

BLM's leasing form contains Standard Lease Terms (SLTs) for mitigating environmental impacts. In addition, the Forest Service may develop Information Notices to interpret applications of SLTs and special lease stipulations to further mitigate impacts. Lease stipulations include such measures as "No Surface Occupancy," "Limited Surface Use," or

"Timing Limitations." The leasing process and the types of various lease terms, briefly described below, are described in more detail in Appendices A and B.

2.3.4.1.1. BLM Standard Lease Terms (SLTs)

The BLM lease form (BLM Form 3100-11) provides Standard Lease Terms to be used in leases for oil and gas development on federal lands. Section 6 of BLM lease form 3100-11 reads as follows:

> *Sec. 6. Conduct of operations—Lessee shall conduct operations in a manner that minimizes adverse impacts to the land, air, and water, to cultural, biological, visual and other resources, and to other land uses or users. Lessee shall take reasonable measures deemed necessary by lessor to accomplish the intent of this section. To the extent consistent with lease rights granted, such measures may include, but are not limited to modification to siting or design of facilities, timing of operations, and specifications of interim and final reclamation measures. Lessor reserves the right to continue existing uses and to authorize future uses upon or in the leased lands, including the approval of easements or rights-of-way. Such uses shall be conditioned so as to prevent unnecessary or unreasonable interference with rights of lessee.*
>
> *Prior to disturbing the surface of the leased lands, lessee shall contact lessor to be apprised of procedures to be followed and modifications or reclamation measures that may be necessary. Areas to be disturbed may require inventories or special studies to determine the extent of impact to other resources. Lessee may be required to complete minor inventories or short term special studies under guidelines provided by lessor. If in the conduct of operation, threatened or endangered species, objects of historic or scientific interest, or substantial unanticipated environmental effects are observed, lessee shall immediately contact lessor. Lessee shall cease any operations that would result in the destruction of such species or objects.*

All existing laws and regulations, including the Endangered Species Act, National Environmental Protection Act, National Historic Preservation Act, and others are fully enforced. Any future land disturbances are required to be fully restored under the standard lease terms. SLTs enable the BLM to require operators to take special measures to protect wildlife, wildlife habitat, soil and watershed, and other resources.

TABLE 2-1: ASSUMPTIONS COMMON TO ALL ALTERNATIVES .....

Development Activity	Assumptions
Access road construction and operation	▪ All access roads constructed for the project will be surfaced with native soil for their first year, then paved after one year. ▪ Access roads will be constructed at the rate of 1,000 ft/day. ▪ In a given prospect area, only one access road will be constructed at any one time. ▪ Vehicle speeds on the access roads will be 10 mph for trucks and 15 mph for automobiles. ▪ During both construction and operation, dirt access roads will be watered as needed to reduce fugitive dust emissions from vehicular travel. ▪ Roadway width will be 20 ft.
Well pad preparation	▪ For each well pad, grading will take place over an 8-day period. Each day, land disturbance would be 1.6 acres. ▪ In a given prospect area, only one well pad will be constructed at any one time
Well drilling	▪ For each well, drill rig installation would take place over a 2-day period. ▪ For each well, drilling will take place over a 23-day period. ▪ In a given prospect area, only one well will be drilled at any one time.
Well completion and installation of production equipment	▪ For each well, well completion and installation of production equipment will take place over a 4-day period.
Production testing	▪ At the Sespe oil field, the gas produced during production testing will be piped to a central production facility. At all other prospect areas, the gas will be flared on-site. ▪ Each production test will take place over a 37.5-day period. ▪ In a given prospect area, only one production test will be conducted at any one time.
Production facility construction and operation	▪ Grading would take place over an 8-day period. Each day, land disturbance would be 1.6 acres. ▪ In a given prospect area, only one production facility will be constructed at any one time.
Pipeline construction	▪ During pipeline construction, the trench width is 3 ft and the depth is 4.5 ft. ▪ Pipelines will be constructed at the rate of 333 ft/day. ▪ In a given prospect area, only one pipeline will be constructed at any one time. ▪ During pipeline construction, disturbed areas would be watered on a regular basis for dust control.
Electrical power line installation	▪ Power lines would be constructed at the rate of 1,000 ft/day. ▪ In a given prospect area, only one power line will be constructed at any one time. .
Well operation and maintenance	▪ Well operation and maintenance lasts indefinitely. ▪ Electric well pumps would operate at 50 hp. ▪ For those well pumps converted to electric power, conversion would take place after one year of operation ▪ Emissions from power plants are conservatively assumed to occur in the same air basin as the well pumps consuming the electricity.
Well abandonment	▪ In a given prospect area, only one well will be abandoned at any one time. Well abandonment would take place over a 2-day period. ▪ In a given prospect area, only one well will be converted to water injection at any one time. Well conversion to water injection would take place over a 1-day period
Land reclamation	▪ Land reclamation would take place over a 5-day period for each well pad. Each day, land disturbance would be 1.6 acres. ▪ In a given prospect area, only one well pad will be reclaimed at any one time.

2.3.4.1.2. No Lease (NL)

The Forest Supervisor can make a decision not to lease any portion of LPNF, not already leased, based on discretionary authority as the surface resource manager. Only lands that can reasonably be accessed will be leased.

2.3.4.1.3. No Surface Occupancy (NSO)

No Surface Occupancy stipulations prevent the use and occupancy of the surface for any ground disturbing oil and gas activities. Directional drilling from nearby private lands or from NFS lands where surface occupancy is allowed could access the oil and gas resources. For the purpose of this analysis it has been assumed that the economical distance for directional drilling on LPNF is one-half mile.

2.3.4.1.4. Limited Surface Use (LSU)

Limited Surface Use stipulations constrain use and occupancy of the surface for oil and gas activities to assure a certain concern is met or impact is mitigated.

2.3.4.1.5. Timing Limitations (TL)

Timing Limitation stipulations specify no surface occupancy or limited surface occupancy or activity for a period of time greater than 60 days.

2.3.4.1.6. Information Notices (IN)

Information notices (IN) do not impose further restrictions on oil and gas activities. These measures fall within the definition of "reasonable measures" as explained in Section 6 of the Standard Lease Terms of BLM Form 3100-11, "Offer to Lease for Oil and Gas." These measures would be implemented under all alternatives. The purpose of an IN is to further clarify or specify how the conditions of the BLM Standard Lease Terms and applicable laws and regulations are to be applied in a particular situation. Information notices may be developed at any time as needed to clarify the application of SLTs and applicable laws and regulations.

2.3.4.1.6.1. Scenic Information Notice (IN)

The following scenic mitigation measures, in the form of an IN, were developed for protection of scenic resources.

1. *Select color schemes for above ground structures that blend with the surrounding landscape when viewed from distances of five hundred (500') feet or more.*
2. *Keep height, size and numbers of structures to the minimum necessary for drilling and other operations.*
3. *Utilize topographic features and vegetative cover to screen structures and surface disturbing activities.*
4. *Keep disturbed areas to the minimum size necessary.*
5. *Utilize existing roads for access to drill sites where this could reduce scenic impacts. Plan any new road construction efficiently to minimize impact on scenic resources.*

6. *Employ the following measures for road and drill pad construction:*
    a) *Construct landform cuts and fills to blend with the surrounding topography through the use of slope rounding and other techniques such as those described in Agriculture Handbook 483, Roads.*
    b) *Favor slopes under 30% for road locations.*
    c) *Align roads to minimize scenic impacts, depending on topography and vegetation.*
    d) *Limit roadway centerline gradients to a maximum of fifteen (15%) percent unless otherwise approved by the Forest Service.*
7. *Follow natural vegetative edges, utilize free-form irregular lines and create feathered edges for vegetative clearings for roads, drill pads, electric lines, pipelines, and other facilities.*
8. *Dispose of all debris within disturbed areas immediately after site construction and concurrent with drilling and other operations.*
9. *The following work will be done during reclamation of the site:*
    a) *All junk, trash, etc., will be removed or buried at the direction of the Forest Service.*
    b) *All holes will be filled and the disturbed areas graded to blend with the adjacent natural topography.*
    c) *Topsoil stockpiled during site construction will be spread over the site and finish-graded prior to revegetation.*
    d) *A tractor and disc may be required to prepare a proper seedbed for revegetation.*
    e) *Revegetate all disturbed areas with native plant materials and monitor vegetation to assure continued growth for a period of one year or one full growing season.*
10. *The following timing periods apply for the attainment of Visual Quality Objectives (VQO).*
    a) *Retention VQO - to be achieved concurrent with the beginning of surface disturbing activities and be maintained throughout the duration of operations.*
    b) *Partial Retention VQO - to be achieved within six-months of the beginning of surface disturbing activities and be maintained throughout the duration of operations.*
    c) *Modification VQO - to be achieved within one-year of the beginning of surface disturbing activities and be maintained throughout the duration of operations.*
    d) *Maximum Modification VQO - to be achieved within five-years of the beginning of surface disturbing activities and be maintained throughout the duration of operation.*

2.3.4.1.6.2. Fisheries Information Notice

The following Information Notice regarding fisheries would be applied to all alternatives.

> *Except for approved road crossings, no surface occupancy within 300 feet of anadromous and 150 feet of all fish-bearing perennial streams (Standard Lease Terms allow movement of facilities by up to 200 meters).*

2.3.4.1.6.3. Threatened and Endangered Species Information Notice

The mitigation measures, in the form of an IN, were developed for protection of threatened, endangered, or proposed species.

2.3.4.1.6.3.1. TES Information Notice (General)

> *The lease area may contain threatened and endangered species or habitat necessary for the continued existence of threatened, proposed, candidate or endangered species which are protected by the 1973 Endangered Species Act, as amended (16 USC 1531 et seq.) and implementing regulations (50 CFR 402 et seq.). The lease area may also contain habitat or species, which may*

require protective measures to prevent them from being listed as threatened or endangered; or result in a loss of viability or biological diversity

(36 CFR 219.19 or 219.26). A biological evaluation of the leased lands will be required prior to surface disturbance to determine if endangered, threatened, proposed, candidate or sensitive plant or animal species or their habitat are present and to identify needed mitigation measures. Prior to under taking any surface-disturbing activities on the lands covered by this lease, the lessee or operator shall:

1. Contact the Forest Service to determine which species should be covered by the biological evaluation. The Forest Service is responsible for ensuring that the leased land is examined through a biological evaluation, prior to undertaking any surface-disturbing activities, to determine effects upon any plant or animal species listed or proposed for listing as threatened, endangered, or a sensitive species.

2. The lessee or operator will be required to conduct the evaluation on the leased lands at their cost. This biological evaluation must be done by or under the supervision of a qualified biologist/botanist approved by the Forest Service. An acceptable report must be provided to the Forest Service identifying the anticipated effects of a proposed action on endangered, threatened, proposed, candidate or sensitive species. An acceptable biological evaluation is to be submitted to the Forest Service for review and approval no later than that time when an otherwise complete application for permit to drill or subsequent surface-disturbing operation is submitted. Should the proposed project result in a "likely to adversely affect" determination, then a biological assessment and formal Section 7 consultation would be required. This process could take several months to complete.

3. Implement mitigation measures required by the Forest Service. Mitigation may include the relocation of proposed lease-related activities or other protective measures. The findings of the biological evaluation, biological analysis and consultation (biological opinion) may result in restrictions to the operator's plans or even disallow use and occupancy to comply with the 1973 Endangered Species Act (as amended), threatened and endangered species regulations and Forest Service statutes and regulations.

If endangered, threatened, proposed, candidate or sensitive plant or animal species are discovered in the area after any required biological evaluation has concluded, afurther evaluation will be conducted to assess the effect of ongoing and proposed activities. Based on the conclusion drawn in the evaluation, additional restrictions or prohibitions may be imposed to protect the species or their habitats.

2.3.4.1.6.3.2. TES Information Notice (Conditions of Approval)

The following requirements will be applied as "Conditions of Approval" for specific projects which may be proposed (e.g. construction of roads and drilling of wells) when it is determined that TES species and/or their habitat could be affected by a proposed operation. Consultation with the U.S. Fish and Wildlife Service will be initiated for each application, if needed, and avoidance/mitigation measures as agreed upon during this consultation will be made conditions of project approval. Specific measures that may be required are listed below.

CALIFORNIA CONDOR:

1. *No surface occupancy shall be allowed within 1.5 miles of historic or active nest sites or reintroduction sites, or within 0.5 miles of active roost sites, unless provided for through site-specific ESA consultation.*
2. *Where necessary, all new power transmission and distribution lines directly associated with oil and gas development shall be placed underground to avoid potential for collision by condors; where under grounding of these power lines is not possible, location and design of such lines will be allowed only as provided for through ESA consultation.*
3. *All power lines, poles and guy wires which exist within high use flyways shall be retrofitted with raptor guards, flight diverters and other anti-perching or anti-collision devices as deemed necessary to minimize the potential for collision or electrocution of condors. No new above ground power lines shall be allowed within high use condor flyways unless provided through site-specific ESA consultation.*
4. *All surface structures, associated with oil and gas leasing, which are identified as a risk to condors will be located, modified (e.g. to include installation of raptor guards, anti-perching devices, etc.) or relocated as required following site-specific ESA consultation.*
5. *No open drilling mud, water, oil or other liquid storage or retention structures will be allowed. All such structures will be required to have some sort of netting or other covering that precludes entry or other use by condors or other listed avian species.*
6. *To preclude impacts on condors, all construction debris and other trash (including such small items as screws, nuts, washers, nails, coins, rags, small electrical components, small pieces of plastic, glass or wire, and anything that is colorful or shiny) shall be covered or otherwise removed from a project site at the end of each day or whenever workers are not present at the site.*
7. *All food items and associated trash shall be placed in covered containers to preclude access to or use by condors. This will include small bits of trash and debris, such as soda can pull tabs, electrical connectors, broken glass, and pieces of rubber, plastic, and metal.*
8. *No dogs or other potential predatory domesticated animals will be allowed to run free at oil and gas worksites by either Forest Service or oil company employees or subcontractors*
9. *No loose wires, open containers or other equipment or supplies associated with oil and gas development which could pose a risk to condors shall be allowed at work sites unless approved in a site specific ESA consultation.*
10. *No ethylene glycol based anti-freeze or other ethylene glycol based liquid substances shall be used on oil and gas work sites. Vehicles assigned to regular use of the oil and gas site(s) shall be required to use propylene glycol based antifreeze unless they can show problems with vehicle engine warranties. No changing of antifreeze of any type should be allowed within an oil and gas development area.*
11. *No aircraft use shall be allowed within condor habitat areas without prior review and approval by a designated Forest Service representative.*
12. *Flaring sites for natural gas or other flammable gases or substances shall require prior approval of the designated Forest Service representative. These actions should undergo ESA consultation prior to approval.*
13. *Any use of a well site and its associated facilities by condors shall be reported to designated Forest Service or Fish and Wildlife Service personnel as soon as practical after observation.*

ARROYO TOADS, RED-LEGGED FROGS, STEELHEAD TROUT, AND FAIRY SHRIMP:

1. *Oil and gas facilities and access roads shall be located outside of vernal pools, riparian zones and other aquatic or wetland habitat areas identified as suitable, key, or occupied TEP habitat, unless approved by a site-specific ESA consultation.*
2. *Drill pad location, design and construction shall avoid or minimize sedimentation or other harmful runoff entering key or occupied TEP aquatic or wetland habitat or adversely affecting the natural drainage patterns of such habitat areas.*

GIANT KANGAROO RAT, SAN JOAQUIN KIT FOX, BLUNT-NOSED LEOPARD LIZARD, AND T&E PLANTS:

No ground disturbing activities will be allowed in potential habitat of the giant kangaroo Rat, San Joaquin kit fox, blunt-nosed leopard lizard, or other proposed or listed T&E plants until field surveys are conducted to official protocol and it is determined that there is no occupancy by these species. Habitat areas deemed by the Forest Service as essential for the species' survival would also be precluded from unacceptable adverse modification unless approved by a site-specific ESA consultation.

2.3.4.1.6.4. Noxious Weed Information Notice

The lessee shall be responsible for the prevention and control of noxious weeds and/or exotic plants of concern within lease areas where surface occupancy is authorized by this lease and shall provide prevention and control measures prescribed by the Forest Service. Noxious weeds and exotic plants of concern are defined as those species recognized by the LPNF Noxious Weed Management Coordinator.

The lessee shall also be responsible for prevention and control of noxious weed and exotic plant infestations, which are not within lease areas where surface occupancy is authorized, or outside of the lease area, in areas determined by the authorized officer to be impacted by noxious plants as a result of lessee activities. Lessee will, when determined by the authorized officer, be required to submit a Noxious Weed Risk Analysis as part of any SUPO or APD. Any Noxious Weed Risk Analysis must be prepared to Forest Service standards by personnel acceptable to the authorized officer.

When determined by the authorized officer, based on the Noxious Weed Risk Analysis, lessee shall develop and implement a site-specific Noxious Weed and Exotic Plant Prevention and Control Plan. Such plan shall be subject to Forest Service approval. Upon Forest Service approval, the Noxious Weed and Exotic Plant Prevention and Control Plan shall become a part of the lease, and its provisions shall be enforceable under the terms of the lease.

2.3.4.1.6.5. Cultural Resources Information Notice

Prior to any ground-disturbing activities, a cultural resource inventory covering the area of proposed area of effect/disturbance will be conducted at the expense of the lessee. Mitigation measures necessary to protect any and all cultural resources will be taken by the lessee/operator. Mitigation may include the relocation of the proposed activity, testing, salvage, or recordation or other protective measures. If these measures would not be effective in protecting the cultural values present, then no surface occupancy of the lease area would be allowed.

2.3.4.1.6.6. Traffic Analysis Information Notice

This information notice requires submittal of a Traffic Analysis as a condition of approval of any APD or SUPO. The IN allows for review and fee collection by local government agencies whose roads may be impacted.

> *As a condition of approval of any APD or SUPO, the lessee shall submit a traffic analysis to LPNF and to the county or counties where activities are planned. The lessee will submit a traffic analysis in sufficient detail to show the increase in average daily traffic (ADT) on the County's Regional Road Network attributable to the project. The county can then calculate the Traffic Impact Mitigation Fee (TIMF) amount (if any) which is due to the county.*

2.3.4.1.6.7. Air Quality Information Notice

The following Information Notice clarifies the requirements for protection of air quality. These mitigation measures would reduce the air quality impacts associated with all alternatives. The measures focus on reducing emissions of ozone precursors from sources that would not be subject to new source review. Other measures are recommended to reduce fugitive dust emissions during both project construction and operations. Although project-level analysis would be required to determine the significance of fugitive dust emissions, the mitigation measures are recommended as standard practice for dust control.

These measures will be used where appropriate on each project. After consultation with the applicable county APCD, appropriate measures will be applied to individual projects even if the impacts of the individual project would be less than significant. Also, in consultation with the local APCD, Best Available Control Technology (BACT) will be required at all times during implementation of projects. If additional mitigation measures are identified during project-level analysis, they will supplement the measures presented here.

2.3.4.1.6.7.1. Construction Mitigation

1. *If onsite electricity is available, electric drill rigs will be used.*
2. *During clearing, grading, earth moving, or excavation operations, excessive fugitive dust emissions will be controlled by regular watering, use of dust suppressants, paving construction roads, or other dust preventive measures using the following procedures:*

    A. *All material excavated or graded will be sufficiently watered or treated with environmentally safe dust suppressants to prevent excessive amounts of dust. Watering will occur at least twice daily with complete coverage, preferably in the late morning and after work is done for the day.*
    B. *All clearing, grading, earth moving, or excavation activities will cease during periods of high winds (greater than 20 mph averaged over one hour) so as to prevent excessive amounts of dust.*
    C. *All material transported off-site will be either sufficiently watered or securely covered to prevent excessive amounts of dust.*
    D. *Employees involved in grading or excavation will take appropriate measures consistent with OSHA to minimize the risks of exposure to San Joaquin Valley fever.*
    E. *The area disturbed by clearing, grading, earth moving, or excavation operations will be minimized so as to prevent excessive amounts of dust.*

3. After clearing, grading, earth moving, or excavation operations, and during construction activities, fugitive dust emissions will be controlled using the following procedures:

A. All inactive portions of the construction site will be seeded per Forest Service seeding guidelines and watered until ground cover is grown.

B. All active portions of the construction site will be sufficiently watered or treated with environmentally safe dust suppressants to prevent excessive amounts of dust.

C. On-site vehicle speeds will not exceed 15 miles per hour.

4. All unpaved areas, including roadways, will be periodically watered, treated with environmentally safe dust suppressants, or paved to prevent excessive amounts of dust. On site vehicle speeds will not exceed 15 miles per hour.

2.3.4.1.6.7.2. Mitigation for All Project Phases

1. Prior to project startup, the USDA Forest Service will coordinate with the affected air districts so that the districts can begin to incorporate the expected project emissions into the AQMPs.

2. Electric power will be brought to the site as soon as possible after well production begins.

3. Electric well pumps will be used whenever feasible.

4. All unpaved areas with vehicle traffic will be watered periodically, treated with environmentally safe dust suppressants, or paved to prevent excessive amounts of dust.

5. Equipment engines will be maintained in good condition and in proper tune as per manufacturer's specifications.

6. During smog season (May through October), the number of vehicles and equipment operating at the same time will be minimized.

7. New technologies to control ozone precursor emissions will be used as they become available and feasible.

8. Best Available Control Technology (BACT) will be required for all projects. Additional mitigation measures that will be considered for specific projects include:

A. Use methanol or natural gas powered crew vehicles and on-site mobile equipment.
B. Acquire emission offsets for unpermitted source NO_x and ROC emissions generated by the project.
C. Contribute monetarily to an off-site transportation demand management (TDM) facility (e.g., bike path, transit shelters, etc.)
D. Require all well pumps to be operated on electricity.

9. All trucks hauling excavated or graded material off site will comply with State Vehicle Code Section 23114, with special attention to Sections 23114(b)(2)(F), (e)(4) as amended, regarding the prevention of such material spilling onto public streets and roads.

10. During well drilling and testing all unpaved areas, including roadways, will be periodically watered, treated with environmentally safe dust suppressants, or paved to prevent excessive amounts of dust.

2.3.4.1.6.8. Best Management Practices Information Notice

This information notice requires the implementation of certain "best management practices" (BMPs) to protect water, soils, wetlands, and riparian resources as explained below. Application

of appropriate BMPs will reduce erosion and connected water quality impacts associated with all alternatives.

Best management practices (BMPs) designed to protect water, soils, wetlands, and riparian resources will be applied to the various activities associated with the exploration, development and production of oil and gas resources. The standard BMPs will be reviewed, and during project-specific environmental analysis, the applicable BMPs will be identified. These will be made a part of the Conditions of Approval (COAs) at the time that an Application for Permit to Drill (APD) is made by the lessee/operator.

2.3.4.2. Laws and Regulations

2.3.4.2.1. Laws to Protect Surface Water

Many Federal and State regulations apply to oil and gas operations and are designed to protect surface water:

Bureau of Land Management (BLM):

- *43 CFR Part 3160, Subpart 3162.5, Environmental Obligations, requires the operator to conduct operations in a manner which protects natural resources and environmental quality.*
- *Onshore Order #2, Drilling Operations, requires that blowout prevention equipment (BOPE) be installed and operational to assure well control (prevention of a possible blowout of the well during drilling).*
- *Onshore Order #7, Disposal of Produced Water, requires that all produced water (brine) must be disposed of by injection into the proper zones underground or by other acceptable methods approved by the authorized officer.*

Environmental Protection Agency (EPA):

- *40 CFR Part 112 sets in place EPA's oil spill prevention, control and countermeasures (SPCC) plan. In particular, this requires operators of regulated facilities to prepare a SPCC plan. The plan must address the facility's design, operation, and maintenance procedures established to prevent spills from occurring, as well as countermeasures to control, contain, clean up and mitigate the effects of a potential oil spill.*

U.S. Army Corps of Engineers:

- *Section 404 of the Clean Water Act states: "The Secretary may issue permits… for the discharge of dredged or fill material into the navigable waters at specified disposal sites." Activities requiring Section 404 permits are limited to discharges of dredged or fill materials into the waters of the United States. These discharges include return water from dredged material disposed of on the upland and generally any fill material (e.g., rock, sand, dirt) used to construct fast land for site development, roadways, erosion protection, etc. The use of any defined area for specification as a disposal site would be denied if it is determined that the discharge of possible hazardous materials into such area will have an unacceptable adverse effect on municipal water supplies, shellfish beds*

and fishery areas (including spawning and breeding areas), wildlife, or recreational areas.

State of California, Regional Water Quality Control Board:

- *Anyone proposing to conduct a project that requires a federal permit or involves dredge or fill activities that may result in a discharge to U.S. surface waters and/or "Waters of the State" are required to obtain a Clean Water Act Section 401 Water Quality Certification and/or Waste Discharge Requirements (Dredge/Fill Projects) from the applicable Regional Water Quality Control Board, verifying that the project activities will comply with state water quality standards.*

State of California, Department of Fish and Game:

- *Fish and Game Code section 1602 requires notification to the Department before beginning any activity that will do one or more of the following: 1) substantially obstruct or divert the natural flow of a river, stream, or lake; 2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or 3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake. Fish and Game Code section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state. Based on information received, the Department may require a lake or streambed alteration agreement for the activity. An agreement would be required if the activity **could** substantially adversely affect an existing fish and/or wildlife resource. This agreement will include measures to protect fish and wildlife resources while conducting the project.*

State of California, Code of Regulations:

- *Title 14, Division 2, Chapter 4, Article 3: 1722 (b) requires operators to develop oil spill contingency plans; 1722 (c) requires a blowout prevention and control plan. 1722.5 requires that BOPE be installed and maintained to "prevent an uncontrolled flow of fluid from a well."*

- *Article 3, 1724.2 requires that "all surface equipment, including but not limited to production safety systems, wellheads, separators, pumps, manifolds, valves, and pipelines, used for the production of oil, gas, and waste water shall be maintained in good condition at all times to safeguard life, health, property, and natural resources."*

- *1774, Oilfield Facilities and Equipment Maintenance, states that:*

  - *Well cellars shall be kept covered and drained,*

  - *Production facilities shall be maintained in a manner to prevent leakage for the protection of people, wildlife and domestic animals,*

  - *Pipelines shall be designed and operated in accordance with "good oilfield practice" which includes utilization of corrosion inhibitors and use of equipment such as low-pressure alarms and safety shutdown devices to minimize spill volume in the event of a leak.*

2.3.4.2.2. Laws to Protect Ground Water

Several Federal and State regulations apply to oil and gas operations and are designed to protect ground water:

Bureau of Land Management (BLM):

- *Onshore Order No. 2, Drilling Requirements, requires that "casing and cementing programs shall be conducted… to protect and/or isolate all usable water zones. Also, "all indications of usable water shall be reported to the authorized officer…"*
- *Onshore Order No. 2 also requires that all formations bearing usable quality water shall be protected upon abandonment of the well.*
- *Onshore Order #7, Disposal of Produced Water, requires that all produced water (brine) must be disposed of by injection into the proper zones underground or by other acceptable methods approved by the authorized officer.*

Environmental Protection Agency (EPA):

- *40 CFR Part 144 provides a standard by which to measure wells used for the disposal of wastewater which are known as underground injection wells. § 144.12 prohibits the movement of fluid containing any contaminant into underground sources of drinking water. The EPA's UIC (Underground Injection Control) program works in conjunction with state and local governments to prevent contamination of underground sources of drinking water. Nationally, the UIC program successfully regulates a daily disposal of over two billion gallons of brine from oil and gas operations.*

State of California Code of Regulations:

- *Title 14, Division 2, Chapter 4, Article 3: 1722.4 requires that casing be cemented to prevent well contaminants from flowing into underground fresh water zones.*
- *§ 1723 requires that cement plugs "be placed across specified intervals to protect oil and gas zones, to prevent degradation of usable waters, to protect surface conditions, and for public health and safety purposes."*

2.3.4.3. Lease Stipulations and Los Padres Forest Plan Management Direction

The LPNF Forest Plan (USFS, 1988) provides guidelines intended to be considered by District Rangers in evaluating requests for specific oil and gas leases. The guidelines are contained in Appendix J of the Forest Plan, "Guidelines for Recommending Action On Oil and Gas Lease Applications". Those guidelines are interim direction for the evaluation of individual lease applications until this forest-wide analysis and EIS is completed. The decisions based on this EIS will determine which lands are recommended to be leased and thus will supersede the Forest

Plan Appendix J Guidelines. The stipulations and notices listed in the Forest Plan were considered in this analysis. The direction in Appendix J has been superseded by national direction contained in 36 CFR 228, Subpart E, the regulations that implement the Oil and Gas Leasing Reform Act.

2.4. REASONABLE FORESEEABLE DEVELOPMENT (RFD) SCENARIO

In order to analyze the environmental effects that could occur as a result of alternative leasing decisions under each of several leasing scenarios, hypothetical projections of the kind and amount of activity that could be reasonably anticipated were made. The oil and gas regulations, in 36 CFR 228.102 (c) (3 and 4), require the Forest Service to "project the type / amount of post-leasing activity that is reasonably foreseeable as a consequence of conducting a leasing program consistent with that described for each alternative and analyze the reasonably foreseeable impacts of post-leasing activity under (c)(3) of this section as a part of the analysis." This is the hypothetical projected activity that would be generated if each alternative were implemented. These are the activities that would generate physical/biological and social/economic effects.

The Reasonable Foreseeable Development Scenario (RFD) for oil and gas development on LPNF was developed using historical oil and gas development information, geologic information and interpretation, and projected market trends. It must be recognized that future exploration and development may not occur as predicted in the RFD and that the RFD only provides a reasonable basis for analyzing potential subsequent activities and their effects (refer to Appendix D for a summary discussion and presentation of the RFD).

Oil and gas specialists from the Forest Service and the BLM Bakersfield office and a consultant geologist used a 1993 report by Forest Service Petroleum Engineer Desmond Bain in development of projections of how much oil and gas activities are most likely to take place on the Forest within High Oil and Gas Potential Areas (HOGPAs). The HOGPAs were identified from analysis of existing geologic data. Some of the new wells forecast in the RFD will occur on lands currently leased or leases held by production. Producing wells continue to hold these leases in place until production ceases.

A separate analysis of the Reasonably Foreseeable (oil and gas) Development (RFD) activities that would occur has been performed for all alternative leasing scenarios. The RFD analysis estimates the number of new well pads, the number and type of new wells expected, the additional miles of roads and pipelines, the resultant amount of surface acres disturbed initially and after rehabilitation of initial construction activity and the mean number of barrels of oil equivalent (BOE) expected to result from production of oil and natural gas. For the purpose of calculations, six thousand cubic feet (MCF) of gas equals one barrel of crude oil.

The results of the RFD analysis are presented below for each alternative considered in detail. These, along with the assumptions listed in Table 2-1, are the basis for the environmental consequences presented in Chapter 4. See Appendix D for additional details regarding the RFD.

2.5. MODELING OF ALTERNATIVES CONSIDERED IN DETAIL

The flow chart in Figure 2-1 shows the process utilized to define and analyze alternatives 1, 2, 3, 4, and 5. Alternatives 4a and 5a are modification of alternatives 4 and 5 respectively with all inventoried roadless areas given the "no surface occupancy" stipulation. The New Preferred Alternative is a combination of alternatives 1 and 5a in response to comments received regarding the DEIS.

2.5.1. Identification and Analysis of Alternative 1

As explained earlier, under Alternative 1, additional development is restricted to areas currently leased. The additional wells in the San Cayetano and Sespe HOGPAs are projected on existing well pads resulting in no additional surface disturbance. Four new wells are projected to be drilled from one pad in the South Cuyama HOGPA.

The results of the RFD analysis for Alternative 1 are displayed in Table 2-2. Note that the table only projects additional development and does not include the existing development which is described as part of the affected environment in Chapter 3.

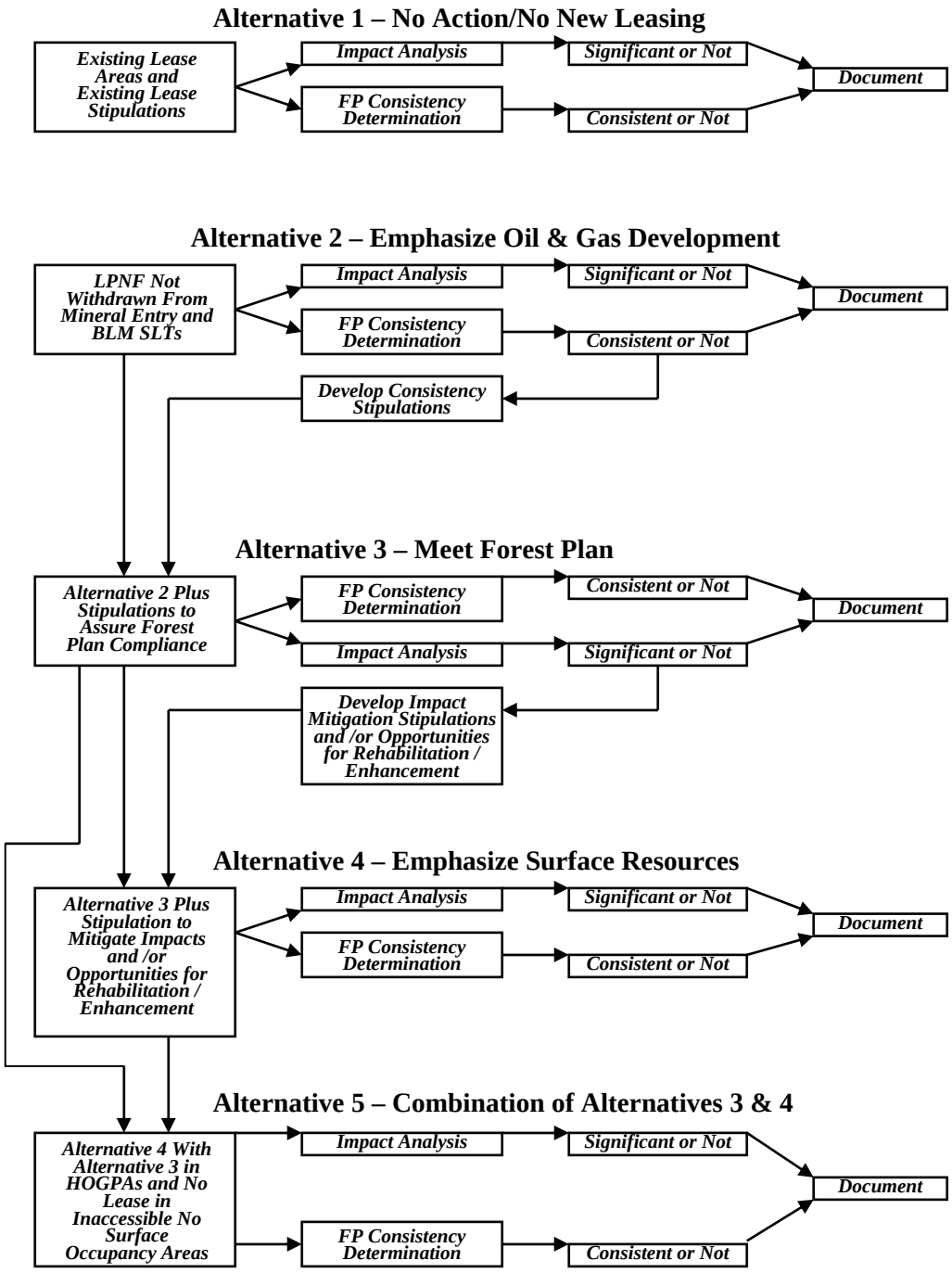
TABLE 2-2: REASONABLY FORESEEABLE DEVELOPMENT FOR ALTERNATIVE 1

High Oil & Gas Potential Areas	**Number of New Wells Estimated**				**Additional Amount of Surface Disturbance Estimated**			**Additional Acres of Surface Disturbance Estimated**		**Oil & Gas Expected**
	Dry	*Produce*	*Inject*	*Total*	*# of Pads*	*Roads (miles)*	*Pipelines (miles)*	*Initial (acres)*	*After Rehab.*	*Millions of BOE*
Piedra Blanca	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
San Cayetano	0	1	0	1	0	0.0	0.0	0.0	0.0	0.1
Sespe	1	4	0	5	0	0.0	0.0	0.0	0.0	0.4
Rincon Creek	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
South Cuyama	1	2	1	4	1	0.5	0.5	3.0	2.0	0.7
La Brea Canyon	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Figueroa Mountain	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Lopez Canyon	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Monroe Swell	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Non-HOGPA Area	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Total	**2**	**7**	**1**	**10**	**1**	**0.5**	**0.5**	**3.0**	**2.0**	**1.2**

2.5.2. Identification and Analysis of Alternative 2

All lands not withdrawn from mineral entry would be available for lease In Alternative 2. In Alternative 2 only BLM Standard Lease Terms and FS Information Notices are available for mitigating potential impacts.

FIGURE 2-1: PROCESS FOR IDENTIFYING, ANALYZING AND DOCUMENTING ALTERNATIVES



Alternative 2 would allow oil and gas leasing in all areas of LPNF except designated Wilderness, the Santa Ynez Watershed, and the Big Sur Coastal Zone, all of which are legally withdrawn from mineral entry. This area being considered for lease (766,867 acres) is referred to as the lease study area or lease consideration area. The withdrawn areas of National Forest System land on LPNF total 1,008,877 acres.

Regulation of oil and gas lease development and operation would operate through application and oversight of BLM's Standard Lease Terms, with advisory information notices provided by the Forest Service. No additional Forest Service lease stipulations are included in this alternative. BLM's Standard Lease Terms (Section 6) provides that the *"lessee shall conduct operations in a manner that minimizes adverse impacts… [and] shall take reasonable measures deemed necessary by lessor to accomplish the intent of this section."* Under current practice, this has been interpreted to include requirements of information notices and allowing for moving a proposed activity up to 200 meters or postponing a current activity up to 60 days within a year.

The level of oil and gas activity (anticipated numbers of wells, well pads, miles of new roads, and miles of new pipelines) is described in the Reasonable Foreseeable Development (RFD) scenario (see appendices of the EIS). A summary of RFD projections for Alternative 2 is shown in Table 2-3. Note again that this RFD table, as well as all RFD tables, only reflects future activities. The table does not include existing development on lands currently leased.

TABLE 2-3: REASONABLY FORESEEABLE DEVELOPMENT FOR ALTERNATIVE 2

High Oil & Gas Potential Areas	**Number of New Wells Estimated**				**Additional Amount of Surface Disturbance Estimated**			**Additional Acres of Surface Disturbance Estimated**		**Oil & Gas Expected**
	Dry	*Produce*	*Inject*	*Total*	*# of Pads*	*Roads (miles)*	*Pipelines (miles)*	*Initial (acres)*	*After Rehab.*	*Millions of BOE*
Piedra Blanca	1	6	1	8	1	5.0	5.0	22.0	12.0	1.3
San Cayetano	4	32	3	39	6	4.0	4.0	38.4	16.0	26.7
Sespe	5	40	4	49	7	2.0	1.0	35.2	12.1	32.1
Rincon Creek	1	2	0	3	1	1.0	0.0	6.0	3.0	0.4
South Cuyama	2	35	4	41	6	3.0	3.0	35.3	14.0	28.3
La Brea Canyon	1	4	0	5	1	1.0	1.0	8.1	4.0	0.8
Figueroa Mountain	1	1	0	2	1	1.0	1.0	6.1	3.0	0.3
Lopez Canyon	1	1	0	2	1	1.0	1.0	6.1	3.0	0.3
Monroe Swell	1	1	0	2	1	1.0	1.0	6.1	3.0	0.0
Non-HOGPA Area	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Total	**17**	**122**	**12**	**151**	**25**	**19.0**	**17.0**	**163.3**	**70.1**	**90.2**

Even though the RFD predicts no development outside of the High Oil and Gas Potential Areas, this analysis assumes that oil and gas activities could occur anywhere within the Forest identified as being legally available for lease consideration.

2.5.3. Identification and Analysis of Alternative 3

The objective of the Alternative 3 leasing scenario is to offer additional LPNF lands for leasing while meeting the requirements of the LPNF Forest Plan. Alternative 3 results from adding stipulations to Alternative 2 to assure the requirements of the Forest Plan are met. This alternative would, by definition, be in line with direction contained in the current Forest Plan; it is also consistent with the Southern California Conservation Strategy (See Section 1.8.17). The ID Team utilized the LPNF GIS database to determine resource (threatened, endangered, proposed, and sensitive animals and plants; watershed; scenery; and recreation) sensitivity to typical oil and gas development activities. Alternative 2 was then analyzed using GIS and stipulations were developed to assure compliance with the LPNF Forest Plan.

Alternative 3 consists of Alternative 2 with the added protection of stipulations, shown below, which were developed to meet current Forest Plan direction. All of the lease study area would be offered for lease.

2.5.3.1. Alternative 3 Stipulations

The following stipulations are introduced in alternative 3 to avoid or mitigate potentially significant impacts that would occur under the alternative 2 scenario and to comply with the Forest Plan standard and guidelines for the management of all resources.

2.5.3.1.1. Watershed Resources Stipulations

2.5.3.1.1.1. No Surface Occupancy, (NSO) in areas of:

- *extremely unstable areas on slopes over 20 percent,*
- *active landslides,*
- *soils with very high erosion hazard ratings,*
- *slopes over 50%*
- *within Casitas Reservoir Watershed.*
- *NSO within following sub-basins with high potential for adverse CWE impacts.*

Region	*Hydrologic Unit*	*Basin*	*Watershed #*
400 – Los Angeles	*403- Santa Clara (700)*	*403.31 Fillmore – (702)*	*702.04*
400 – Los Angeles	*403- Santa Clara (700)*	*403.31 Fillmore – (702)*	*702.07*
400 – Los Angeles	*403- Santa Clara (700)*	*403.32 Topatopa – (701)*	*701.44*
400 – Los Angeles	*403- Santa Clara (700)*	*403.32 Topatopa – (701)*	*701.47*
400 – Los Angeles	*403- Santa Clara (700)*	*403.32 Topatopa – (701)*	*701.48*
400 – Los Angeles	*403- Santa Clara (700)*	*403.41 Santa Felicia (705)*	*705.11*
400 – Los Angeles	*403- Santa Clara (700)*	*403.42 Upper Piru (704)*	*704.42*
400 – Los Angeles	*403- Santa Clara (700)*	*403.42 Upper Piru (704)*	*704.43*

2.5.3.1.1.2. Limited Surface Use (LSU)

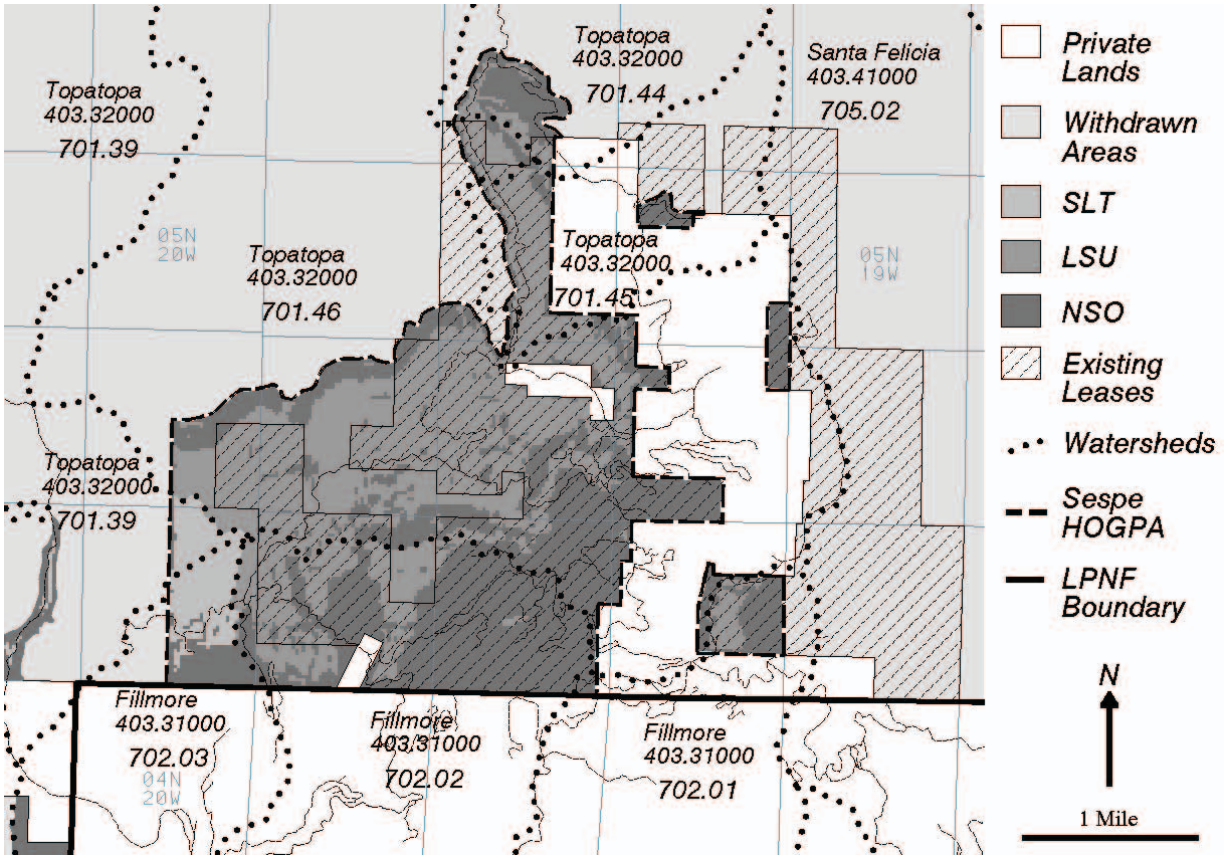
- *Conduct a Watershed Improvement Needs (WIN) inventory per Forest Service specifications and implement watershed improvement projects in watersheds within or adjacent to Sespe Oil Field.*

Applicable watersheds are:

Region	*Hydrologic Unit*	*Basin*	*Watershed #*
400 – Los Angeles	*403- Santa Clara (700)*	*403.31 Fillmore – (702)*	*702.01*
400 – Los Angeles	*403- Santa Clara (700)*	*403.31 Fillmore – (702)*	*702.02*
400 – Los Angeles	*403- Santa Clara (700)*	*403.32 Topatopa – (701)*	*701.44*
400 – Los Angeles	*403- Santa Clara (700)*	*403.32 Topatopa – (701)*	*701.45*
400 – Los Angeles	*403- Santa Clara (700)*	*403.32 Topatopa – (701)*	*701.46*

The locations of these watersheds, approximately five miles north of Fillmore, CA, are shown in Figure 2-2.

FIGURE 2-2: LOCATION OF WATERSHEDS AND STIPULATIONS WITHIN OR ADJACENT TO SESPE OIL FIELD



2.5.3.1.2. Biological Resource Stipulations

2.5.3.1.2.1. Limited Surface Use (LSU)

- *Areas within critical habitat of the California condor. Consultation with USFWS may result in No Surface Occupancy (NSO) designation.*
- *peregrine falcon nesting habitat ranked A-C.*
- *grassland and sagebrush habitat in management areas within San Joaquin kit fox range.*
- *LSU and/or TL (up to NSO) in an alternative 25-acre core habitat area adjacent to occupied northern goshawk nesting sites. Survey and analysis are required which may result in mitigation up to no surface occupancy during nesting.*
-
- *Site specific surveys required on potential habitats of sensitive plant species. LSU (up to NSO) on sites determined to be occupied.*
- *NSO in all designated research natural areas and botanical areas.*

2.5.3.1.2.2. Timing Limits, TL

- *Timing limitations (TL) for designated nesting habitat of California spotted owl. This may result in NSO during nesting season (Mar. 1-Aug. 30)*

2.5.3.1.3. Recreation Stipulations

2.5.3.1.3.1. No Surface Occupancy, (NSO)

- *within one-half (1/2) mile of a developed recreation site.*
- *Areas designated "Semi-Primitive Non-Motorized" ROS class.*
- *All designated and study Wild & Scenic River corridors, specifically 1/4 mile from the high water line on either side of the river channel.*

2.5.3.1.3.2. Limited Surface Use (LSU)

- *Permitted density per square mile of any oil and/or gas facilities is limited, as shown in the following table, based on the Recreation Opportunity Spectrum (ROS) class in which the specific facility is proposed.*

Type of Facility	**Recreation Opportunity Spectrum (ROS) Class**					
	Urban	*Rural*	*Roaded Natural*	*Semi-Primitive Motorized*	*Semi-Primitive Non-Motorized*	*Primitive*
Number of Oil Wells	50	40	16	8	0	0
Number of Well Pads, Treatment Facilities, and/or Tank Farms	16	13	5	3	0	0
Miles of Roads	9	7	2.8	1.4	0	0
Miles of Pipelines	9	7	2.8	1.4	0	0

2.5.3.1.4. Scenic Stipulations

2.5.3.1.4.1. No Surface Occupancy, (NSO)

- *Where oil and gas activities would be visible and in the foreground (within 1/2 mile of sensitivity level one or two travel ways, recreation areas, or water bodies) and that have a "retention" or "partial retention" visual quality objective in the Forest Plan.*
- *Chamise-dominated chaparral, grassland, barren area, coastal-sage-scrub, or great basin sage seen as foreground and/or middleground (within 4 miles of travel ways, recreation areas, or waterbodies) and that has a "retention" or "partial retention" visual quality objective in the Forest Plan.*
- *Chamise-dominated chaparral, grassland, barren area, coastal-sage-scrub, great basin sage, mixed north-slope chaparral, or pinyon juniper seen as foreground (within 1/2 mile of travelways, recreation areas, or water bodies) and that has a "modification" visual quality objective in the Forest Plan.*
- *Slopes in excess of 55% gradient.*

2.5.3.1.4.2. Limited Surface Use, (LSU)

- *In any of the areas described in a., b., or c. below, as part of any lessee proposed plan or application that includes surface disturbance such as Surface Use Plans of Operations, SUPOs, Applications for Permit to Drill, (APDs), and Field Development Plans (FDPs), lessee shall provide Forest Service (FS) with computer generated, color, visual simulations superimposed onto color photography taken from key observation positions (KOPs) identified by FS. For project approval, the simulation must illustrate to FS that the proposed project is adequately designed and situated to meet the VQOs and/or that the existing landform and vegetation will screen the project as seen from the KOPs:*
  - *a. Areas seen as middleground or background, or seldom seen, with a Retention or Partial Retention Visual Quality Objective;*
  - *b. Areas where proposed project facilities will include linear features (such as roads or powerlines) within chamise-dominated-chaparral, grassland; or barren areas, coastal sage scrub, or great basin sage.*
  - *c. Areas with slopes between 35% and 55%.*

- *The Forest Supervisor will allow underachievement of the VQOs by one level under the following conditions. Rehabilitation activities may require NEPA analysis and documentation.*
  - *a. The area is not in landscape variety class A;*
  - *b. The resultant future scenic condition does not go below the minimum VQO specified for the applicable Management Area(s) in the Forest Plan;*
  - *c. The resultant future scenic condition does not constitute a significant impact;*
  - *d. The lessee submits and FS approves a Landscape Rehabilitation Plan to provide mitigation in the form of off-site landscape rehabilitation in area(s) specified by FS that are no smaller in total size than the proposed surface disturbance. If approved, the lessee must implement the landscape rehabilitation plan within six months of starting the surface disturbing activities proposed.*

Table 2-4 shows the number of acres under various types of stipulations for Alternative 3. This table and subsequent Table 2-6, 2-9, 2-11, 2-13 & 2-16 do not include existing lease acres.

RFD projections for Alternative 3 are provided in Table 2-5. Note that the number of wells, estimated surface disturbance, and other data presented are considerably less than that

projected for Alternative 2. This is due to the application of the Alternative 3 stipulations presented earlier in this chapter. These stipulations reduce both the area and type of development projected.

2.5.4. Identification and Analysis of Alternative 4

The objective of the Alternative 4 scenario is to offer additional LPNF lands for leasing while meeting the Forest Plan and further emphasizing surface resources. Alternative 4 would allow additional oil and gas leasing provided that it was consistent with the standard requirements and guidelines of the Forest Plan, mitigated or avoided potentially significant impacts and/or presented opportunities to rehabilitate existing adverse impact areas. All of the lease study area would be offered for lease.

Alternative 3 was analyzed using GIS and additional stipulations were developed to further protect surface resources and to provide off-site mitigation of existing impacts.

TABLE 2-4: ACRES UNDER VARIOUS STIPULATIONS FOR ALTERNATIVE 3

High Oil & Gas Potential Areas	No Surface Occupancy	Limited Surface Use	Both Limited Surface Use and Timing Limitations	Timing Limitations	Standard Lease Terms Only	Totals
Piedra Blanca	2758	34	0	0	23	2,815
San Cayetano	13,138	298	0	0	8	13,444
Sespe	11,777	1,002	0	0	103	12,882
Rincon Creek	6,770	1,610	272	136	264	9,052
South Cuyama	33,248	17,341	203	387	29,079	80,258
La Brea Canyon	6,877	1,568	0	0	828	9,273
Figueroa Mtn	7,900	274	562	1	8	8,745
Lopez Canyon	2,205	41	0	5	6	2,257
Monroe Swell	570	14	0	0	16	600
Total HOGPAs (acres) (percent of study area)	85,243 11.1%	22,182 2.9%	1,037 0.1%	529 0.1%	30,335 4.0%	139,326 18.2%
Non-HOGPA (acres) (percent of study area)	427,056 55.7%	104,750 13.7%	6,988 0.9%	978 0.1%	87,769 11.4%	627,541 81.8%
Total (acres) (percent of study area)	512,299 66.8%	126,932 16.6%	8,025 1.0%	1,507 0.2%	118,104 15.4%	766,867 100.0%

2.5.4.1. Alternative 4 Stipulations

In line with the theme for Alternative 4, the following stipulations are designed to provide additional protection for, or enhance, Forest lands and resources. All Alternative 3 stipulations apply to Alternative 4 as well.

TABLE 2-5: REASONABLY FORESEEABLE DEVELOPMENT FOR ALTERNATIVE 3

High Oil & Gas Potential Areas	**Number of New Wells Estimated**				**Additional Amount of Surface Disturbance Estimated**			**Additional Acres of Surface Disturbance Estimated**		**Oil & Gas Expected**
	Dry	*Produce*	*Inject*	*Total*	*# of Pads*	*Roads (miles)*	*Pipelines (miles)*	*Initial (acres)*	*After Rehab.*	*Millions of BOE*
Piedra Blanca	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
San Cayetano	2	4	0	6	1	0.1	0.0	3.0	3.0	0.5
Sespe	3	10	1	14	3	1.0	1.0	14.5	8.5	2.5
Rincon Creek	1	1	0	2	1	0.0	0.0	3.0	3.0	0.1
South Cuyama	2	30	3	35	5	2.0	2.0	21.5	14.0	18.0
La Brea Canyon	0	2	1	3	1	0.0	0.0	3.0	3.0	0.1
Figueroa Mountain	0	1	0	1	0	0.0	0.0	0.0	0.0	0.1
Lopez Canyon	1	1	0	2	0	0.0	0.0	0.0	0.0	0.1
Monroe Swell	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Non-HOGPA Area	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Total	**9**	**49**	**5**	**63**	**11**	**3.1**	**3.0**	**45.0**	**31.5**	**21.4**

2.5.4.1.1. Biological Resource Stipulations

These biological stipulations are in addition to Alternative 3 stipulations, which also apply where shown on the Alternative 3 map, to Alternative 4.

2.5.4.1.1.1. Limited Surface Use, (LSU)

- *in peregrine falcon nesting habitat ranked A-D.*
- *for all designated nesting habitats (may result in NSO within ½ mile of sites). Timing limitations (TL) of NSO during nesting season (Mar. 1-Aug. 30) for designated nesting habitat of California spotted owl.*
- *LSU and TL (up to NSO) in two 25-acre alternative core habitat areas adjacent to known northern goshawk nesting sites.*

2.5.4.1.2. Recreation Resource Stipulations

These recreation stipulations are in addition to Alternative 3 stipulations, which also apply where indicated to Alternative 4.

2.5.4.1.2.1. Limited Surface Use, (LSU)

- *For any new lease that is situated between one-half (1/2) mile and one (1) mile of any existing developed recreation site, the lessee shall rehabilitate/enhance existing recreation resource values and/or facilities. The lessee shall prepare a Developed Recreation Plan for the rehabilitation/enhancement of the recreation experiences at developed recreation sites, and shall submit the Plan to FS for approval prior to implementation. The lessee and FS shall negotiate recreation rehabilitation work to be done by the*

lessee. These rehabilitation/enhancement activities may require NEPA documents and must result in a minimum of no net loss of developed recreational opportunities as determined by FS.

For any new lease that is within three (3) miles of any "Primitive" ROS class, the lessee shall prepare a Dispersed Recreation Plan for the rehabilitation/enhancement of the recreation experience at dispersed recreation areas, and shall submit the Plan to FS for approval prior to implementation. The lessee and FS shall negotiate recreation rehabilitation work to be done by the lessee. These activities may require NEPA documentation and must result in a minimum of no net loss of dispersed recreational opportunities as determined by FS.

2.5.4.1.3. Scenic Resource Stipulations

2.5.4.1.3.1. Limited Surface Use, (LSU)

In any of the areas described in a., b., or c. below, as part of any lessee proposed plan or application that includes surface disturbance such as Surface Use Plans of Operations, SUPOs, Applications for Permit to Drill, (APDs), and Field Development Plans, lessee shall provide FS with computer generated, color, visual simulations superimposed onto color photography taken from key observation positions (KOPs) identified by FS. For project approval, the simulation must illustrate to FS that the proposed project is adequately designed and situated to meet the VQOs and/or that the existing landform and vegetation will screen the project as seen from the KOPs:

a) *Areas seen as middleground or background, or seldom seen, with a Retention or Partial Retention Visual Quality Objective;*

b) *Areas where proposed project facilities will include linear features (such as roads or power lines) within chamise-dominated-chaparral, grassland; or barren areas, coastal sage scrub, or great basin sage.*

c) *Areas with slopes between 35% and 55%.*

- *In areas where the predicted future scenic conditions, assuming SLTs, meets, but does not exceed, the VQOs the following LSU stipulation shall apply. Rehabilitation activities may require NEPA analysis and documentation. In order to occupy the surface, the lessee must submit and FS must approve a Landscape Rehabilitation Plan to provide mitigation in the form of off-site landscape rehabilitation in area(s) specified by FS that are no smaller in total size than the proposed surface disturbance. If approved, the lessee must implement the landscape rehabilitation plan within six months of starting the surface disturbing activities proposed.*

2.5.4.1.3.2. No Surface Occupancy, (NSO)

- *Where oil and gas activities would be visible as foreground (within 1/2 mile of sensitivity level one or two travel ways, recreation areas, or water bodies) and that has a "retention" or "partial retention" visual quality objective in the Forest Plan.*
- *Chamise-dominated chaparral, grassland, barren area, coastal-sage-scrub, or great basin sage seen as foreground and/or middleground (within 4 miles of travel ways, recreation areas, or water bodies) and that has a "retention" or "partial retention" visual quality objective in the Forest Plan.*
- *Chamise-dominated chaparral, grassland, barren area, coastal-sage-scrub, great basin sage, mixed north-slope chaparral, or pinyon-juniper seen as foreground (within 1/2 mile of travel ways, recreation areas, or water bodies) and that has a "modification" visual quality objective in the Forest Plan.*
- *Slopes in excess of 55% gradient.*
- *Where the scenic condition would be changed from non-human dominated to human dominated.*

These additional scenic stipulations and similar stipulations for other surface resources were applied to create Alternative 4. Table 2-6 shows the number of acres under various types of stipulations and lease terms for Alternative 4.

RFD projections for Alternative 4 are provided in Table 2-7. As could be expected by the more restrictive stipulations, development projections for Alternative 4 are somewhat less than for Alternative 3.

TABLE 2-6: STUDY AREA ACRES UNDER VARIOUS STIPULATIONS FOR ALTERNATIVE 4.

High Oil & Gas Potential Areas	No Surface Occupancy	Limited Surface Use	Limited Surface Use and Timing Limitations	Timing Limitations	Standard Lease Terms Only	Totals
Piedra Blanca	2758	57	0	0	0	2,815
San Cayetano	13,138	306	0	0	0	13,444
Sespe	11,971	911	0	0	0	12,882
Rincon Creek	6,770	1,808	411	0	63	9,052
South Cuyama	35,098	30,230	566	0	14,364	80,258
La Brea Canyon	6,989	2,013	0	0	271	9,237
Figueroa Mtn	7,988	272	482	0	3	8,745
Lopez Canyon	2,205	40	12	0	0	2,257
Monroe Swell	570	22	0	0	8	600
Total HOGPAs (acres) (percent of study area)	87,487 11.4%	35,659 4.6%	1,471 0.2%	0 0.0%	14,709 1.9%	139,326 18.2%
Non-HOGPA (acres) (percent of study area)	434,051 56.6%	152,360 19.9%	7,254 0.9%	21 < 0.1%	33,855 4.4%	627,541 81.8%
Total (acres) (percent of study area)	521,538 68.0%	188,019 24.5%	8,725 1.1%	21 < 0.1%	48,564 6.3%	766,867 100.0%

2.5.5. Identification and Analysis of Alternative 5

As shown in Table 2-8, lands located in the HOGPAs would be offered with Alternative 3 stipulations for watershed, recreation and scenery and Alternative 4 biological stipulations. Non-HOGPA areas would have Alternative 4 stipulations applied. The intent is to dissuade leasing activities where the oil and gas potential is lower and/or the environmental sensitivity is higher. This combination alternative offers the protection of Alternative 3 mitigating stipulations, as a minimum, where the oil and gas potential is high. It is recognized that biological sensitivity is high everywhere on the Forest, so Alternative 4 biological stipulations are applied everywhere, including in the HOGPAs.

TABLE 2-7: REASONABLY FORESEEABLE DEVELOPMENT FOR ALTERNATIVE 4

High Oil & Gas Potential Areas	Number of New Wells Estimated				Additional Amount of Surface Disturbance Estimated			Additional Acres of Surface Disturbance Estimated		Oil & Gas Expected
	Dry	*Produce*	*Inject*	*Total*	*# of Pads*	*Roads (miles)*	*Pipelines (miles)*	*Initial (acres)*	*After Rehab.*	*Millions of BOE*
Piedra Blanca	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
San Cayetano	2	4	0	6	1	0.1	0.0	3.0	3.0	0.5
Sespe	3	10	1	14	3	1.0	1.0	14.5	8.5	2.5
Rincon Creek	1	1	0	2	1	0.0	0.0	3.0	3.0	0.1
South Cuyama	2	24	2	28	4	2.0	2.0	19.5	14.0	14.0
La Brea Canyon	0	2	1	3	1	0.0	0.0	3.0	3.0	0.1
Figueroa Mountain	0	1	0	1	0	0.0	0.0	0.0	0.0	0.1
Lopez Canyon	1	1	0	2	0	0.0	0.0	0.0	0.0	0.1
Monroe Swell	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Non-HOGPA Area	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Total	9	43	4	56	10	3.1	3.0	43.0	31.5	17.4

Alternative 5 would offer less land for lease. BLM staff reviewed alternatives 1 through 4 and commented that some of the NSO lands in alternatives 3 and 4 may not be accessible and that it is BLM policy not to offer land for lease that can't be reasonably accessed. Oil and gas resources below land leased with no surface occupancy (NSO) stipulations are sometimes accessed by slant (directional) drilling from pads located on land outside the NSO area. The assumed economic limit for slant drilling is ½ mile on LPNF. This distance is based on experience with past drilling on the Forest and consultation with geologists familiar with drilling on the Forest. Consequently, land more than ½ mile within NSO areas or more than ½ mile from accessible private land within NSO areas is not offered for lease in Alternative 5.

TABLE 2-8: FORMATION OF ALTERNATIVE 5

Oil and Gas Potential	High	Not High
Alternative Scenario to Apply	Alternative 3, plus Alternative 4 Biological stipulations	Alternative 4

The GIS database was utilized to produce Alternative 5. Alternative 4 was first modified to include Alternative 3 non-biological lease terms within the HOGPAs. An analysis was then performed to determine what parts of areas with NSO stipulations could not be accessed by typical slant drilling methods. NSO areas that were determined not to be accessible, i.e. located further than one-half mile from a potential drill site, were allocated to No Lease (NL).

Table 2-9 shows acres under various stipulations and lease terms for Alternative 5.

RFD projections for Alternative 5 are shown in Table 2-10 and are the same as Alternative 3. Oil and gas development is only reasonably foreseeable in HOGPAs. The stipulations for Alternative 5 within HOGPAs are the same as Alternative 3 except for biological stipulations.

The difference in biological stipulations between alternatives 3 and 4 does not affect the RFD projections. Consequently, the RFD projections for alternatives 5 and 3 are the same.

TABLE 2-9: STUDY AREA ACRES UNDER VARIOUS STIPULATIONS FOR ALTERNATIVE 5.

High Oil & Gas Potential Areas	**No Lease**	**No Surface Occupancy**	**Limited Surface Use**	**Limited Surface Use and Timing Limitations**	**Timing Limitations**	**Standard Lease Terms Only**	**Totals**
Piedra Blanca	1,994	765	33			23	2,815
San Cayetano	4,793	8,310	336			5	13,444
Sespe	3,065	8,701	1,020			96	12,882
Rincon Creek	971	5,892	1,541	391		257	9,052
South Cuyama	3,516	29,787	17,618	587	0	28,750	80,258
La Brea Canyon	251	6,624	1,571			827	9,273
Figueroa Mtn	1,425	6,509	273	533		5	8,745
Lopez Canyon		2,187	53	11		6	2,257
Monroe Swell		570	14			16	600
Total HOGPAs (acres) (percent of study area)	16,015 2.1%	69,345 9.0%	22,459 2.9%	1,522 0.2%	0 0.0%	29,985 3.9%	139,326 18.2%
Non-HOGPA (acres) (percent of study area)	116,716 15.2%	317,335 41.4%	152,360 19.9%	7,254 0.9%	21 < 0.1%	33,855 4.4%	627,541 81.8%
Total (acres) (percent of study area)	132,731 17.3%	386,680 50.4%	174,819 22.8%	8,776 1.1%	21 < 0.1%	63,840 8.3%	766,867 100.0%

TABLE 2-10: REASONABLY FORESEEABLE DEVELOPMENT FOR ALTERNATIVE 5

High Oil & Gas Potential Areas	**Number of New Wells Estimated**				**Additional Amount of Surface Disturbance Estimated**			**Additional Acres of Surface Disturbance Estimated**		**Oil & Gas Expected**
	Dry	*Produce*	*Inject*	*Total*	*# of Pads*	*Roads (miles)*	*Pipelines (miles)*	*Initial (acres)*	*After Rehab.*	*Millions of BOE*
Piedra Blanca	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
San Cayetano	2	4	0	6	1	0.1	0.0	3.0	3.0	0.5
Sespe	3	10	1	14	3	1.0	1.0	14.5	8.5	2.5
Rincon Creek	1	1	0	2	1	0.0	0.0	3.0	3.0	0.1
South Cuyama	2	30	3	35	5	2.0	2.0	21.5	14.0	18.0
La Brea Canyon	0	2	1	3	1	0.0	0.0	3.0	3.0	0.1
Figueroa Mountain	0	1	0	1	0	0.0	0.0	0.0	0.0	0.1
Lopez Canyon	1	1	0	2	0	0.0	0.0	0.0	0.0	0.1
Monroe Swell	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Non-HOGPA Area	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Total	**9**	**49**	**5**	**63**	**11**	**3.1**	**3.0**	**45.0**	**31.5**	**21.4**

2.5.6. Identification and Analysis of Alternatives 4a and 5a

Alternatives 4a and 5a were added to give emphasis to the inventoried roadless areas (IRAs) of LPNF and provide consistency with the Roadless Area Conservation Rule issued on January 12, 2001. As their names imply, these alternatives build upon alternatives 4 and 5. In both alternatives, the IRAs are given the protection of the No Surface Occupancy (NSO) stipulation. In Alternative 5, the NSO areas that could not be accessed by slant drilling under the NSO area from outside the NSO area are not leased. So, in Alternative 5a, land more than ½ mile within an IRA or more than ½ mile from an accessible island of private land within an IRA also is not offered for lease.

Tables 2-11 through 2-14 show the RFD projections and the number of acres under various types of stipulations and lease terms for alternatives 4a and 5a. The RFD projections for alternatives 4a and 5a are the same.

The RFD for alternatives 4a and 5a assume access to the South Cuyama HOGPA from adjacent private lands for almost all of the 14 million barrels projected. This access is speculative but felt to be reasonably foreseeable given the history of similar slant drilling access to National Forest System land on the LPNF. Under several existing leases, slant drilling from adjacent private land accesses oil and gas resources under the Sespe Wilderness and Condor Sanctuary.

2.5.7. Identification and Analysis of a New Preferred Alternative

Alternatives 5 and 5a were listed as preferred in the DEIS. However, a New Preferred Alternative has been developed based on the comments received in response to the Draft Environmental Impact Statement and the comparison of the alternative leasing scenarios considered. The New Preferred Alternative combines Alternative 1 and Alternative 5A as indicated in Table 2-15.

The new Preferred Alternative would make portions of the Sespe, San Cayetano, and South Cuyama High Oil and Gas Potential Areas available for oil and gas leasing and authorize BLM to lease lands in accordance with identified stipulations. The remainder of the HOGPAs and the Non-HOGPA area would not be available for leasing.

The study area considered in this analysis covers 766,867 acres. In this alternative 714,792 acres of the study area are not available for lease and another 47,798 acres would be leased with the no surface occupancy stipulation. This leaves 4,277 acres, or roughly 0.5 percent of the area studied, where oil and gas activities could actually occupy the surface of the land.

Maps depicting the New Preferred Alternative show how land is allocated under this alternative in figures 2-3 through 2-7.

TABLE 2-11: STUDY AREA ACRES UNDER VARIOUS STIPULATIONS FOR ALTERNATIVE 4A

High Oil & Gas Potential Areas	No Surface Occupancy	Limited Surface Use	Limited Surface Use and Timing Limitations	Timing Limitations	Standard Lease Terms Only	Totals
Piedra Blanca	2,805	10	0	0	0	2,815
San Cayetano	13,386	58	0	0	0	13,444
Sespe	12,012	870	0	0	0	12,882
Rincon Creek	7,765	1,060	178	0	49	9,052
South Cuyama	77,326	2,116	175	0	641	80,258
La Brea Canyon	8,551	588	0	0	134	9,273
Figueroa Mtn	8,034	228	482	0	1	8,745
Lopez Canyon	2213	42	2	0	0	2,257
Monroe Swell	570	22	0	0	8	600
Total HOGPAs (acres) (percent of study area)	132,662 17.3%	4,994 0.7%	837 0.1%	0 0.0%	833 0.1%	139,326 18.2%
Non-HOGPA (acres) (percent of study area)	570,629 74.4%	42,874 5.6%	2,722 0.4%	7 < 0.1%	11,309 1.5%	627,541 81.8%
Total (acres) (percent of study area)	703,291 91.7%	47,868 6.2%	3,559 0.5%	7 < 0.1%	12,142 1.6%	766,867 100.0%

TABLE 2-12: REASONABLY FORESEEABLE DEVELOPMENT FOR ALTERNATIVE 4A

High Oil & Gas Potential Areas	Number of New Wells Estimated				Additional Amount of Surface Disturbance Estimated			Additional Acres of Surface Disturbance Estimated		Oil & Gas Expected
	Dry	*Produce*	*Inject*	*Total*	*# of Pads*	*Roads (miles)*	*Pipelines (miles)*	*Initial (acres)*	*After Rehab.*	*Millions of BOE*
Piedra Blanca	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
San Cayetano	2	4	0	6	1	0.0	0.0	3.0	3.0	0.5
Sespe	3	10	1	14	3	1.0	1.0	14.5	8.5	2.5
Rincon Creek	1	1	0	2	1	0.0	0.0	3.0	3.0	0.1
South Cuyama	1	4	0	5	1	0.0	1.0	3.0	3.0	14.0
La Brea Canyon	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Figueroa Mountain	0	1	0	1	0	0.0	0.0	0.0	0.0	0.1
Lopez Canyon	1	1	0	2	0	0.0	0.0	0.0	0.0	0.1
Monroe Swell	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Non-HOGPA Area	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Total	**8**	**21**	**1**	**30**	**6**	**1.0**	**2.0**	**23.5**	**17.5**	**17.3**

TABLE 2-13: STUDY AREA ACRES UNDER VARIOUS STIPULATIONS FOR ALTERNATIVE 5A.

High Oil & Gas Potential Areas	No Lease	No Surface Occupancy	Limited Surface Use	Both Limited Surface Use and Timing Limitations	Timing Limitations	Standard Lease Terms Only	Totals
Piedra Blanca	2,084	722	8	0	0	1	2,815
San Cayetano	5,061	8,334	47	0	0	2	13,444
Sespe	3,117	8,762	908	0	0	95	12,882
Rincon Creek	1,514	6,284	864	179	0	211	9,052
South Cuyama	46,331	30,702	1,703	183	0	1,339	80,258
La Brea Canyon	2,683	5,834	421	0	0	335	9,273
Figueroa Mtn	1,511	6,474	226	533	0	1	8,745
Lopez Canyon	0	2,188	52	11	0	6	2,257
Monroe Swell	0	570	14	0	0	16	600
Total HOGPAs (acres)	62,301	69,870	4,243	906	0	2,006	139,326
(percent of study area)	8.1%	9.1%	0.6%	0.1%	0.0%	0.3%	18.2%
Non-HOGPA (acres)	261,474	309,155	42,874	2,722	7	11,309	627,541
(percent of study area)	34.1%	40.3%	5.6%	0.4%	< 0.1%	1.5%	81.8%
Total (acres)	323,775	379,025	47,117	3,628	7	13,315	766,867
(percent of study area)	42.2%	49.4%	6.1%	0.5%	< 0.1%	1.7%	100.0%

TABLE 2-14: REASONABLY FORESEEABLE DEVELOPMENT FOR ALTERNATIVE 5A

High Oil & Gas Potential Areas	Number of New Wells Estimated				Additional Amount of Surface Disturbance Estimated			Additional Acres of Surface Disturbance Estimated		Oil & Gas Expected
	Dry	*Produce*	*Inject*	*Total*	*# of Pads*	*Roads (miles)*	*Pipelines (miles)*	*Initial (acres)*	*After Rehab.*	*Millions of BOE*
Piedra Blanca	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
San Cayetano	2	4	0	6	1	0.0	0.0	3.0	3.0	0.5
Sespe	3	10	1	14	3	1.0	1.0	14.5	8.5	2.5
Rincon Creek	1	1	0	2	1	0.0	0.0	3.0	3.0	0.1
South Cuyama	1	4	0	5	1	0.0	1.0	3.0	3.0	14.0
La Brea Canyon	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Figueroa Mountain	0	1	0	1	0	0.0	0.0	0.0	0.0	0.1
Lopez Canyon	1	1	0	2	0	0.0	0.0	0.0	0.0	0.1
Monroe Swell	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Non-HOGPA Area	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Total	**8**	**21**	**1**	**30**	**6**	**1.0**	**2.0**	**23.5**	**17.5**	**17.3**

TABLE 2-15: IDENTIFICATION OF NEW PREFERRED ALTERNATIVE

HOGPA/non-HOGPA	**Lands Available**	**Authorize BLM to Lease Specific Lands**
South Cuyama	**Yes** (Alternative 5A)	**Yes** O&G potential; and stipulations protect surface resources
Sespe	**Yes** (Alternative 5A)	**Yes** O&G potential; and stipulations protect surface resources
San Cayetaño	**Yes** (Alternative 5A)	**Yes** O&G potential; and stipulations protect surface resources
Piedra Blanca	**No** (Alternative 1)	**NA** not available
Figueroa Mountain	**No** (Alternative 1)	**NA** not available
La Brea Canyon	**No** (Alternative 1)	**NA** not available
Monroe Swell	**No** (Alternative 1)	**NA** not available
Lopez Canyon	**No** (Alternative 1)	**NA** not available
Rincon Creek	**No** (Alternative 1)	**NA** not available
Non-HOGPA	**No** (Alternative 1)	**No** Low O&G Potential at this time

Table 2-16 shows the acreage of LPNF that would be authorized for lease or not in the new Preferred Alternative. For lands authorized, Table 2-16 shows the acreage under the various stipulations.

Table 2-17 shows the reasonably foreseeable development projected for the new Preferred Alternative.

TABLE 2-16: STUDY AREA ACRES UNDER VARIOUS STIPULATIONS FOR THE NEW PREFERRED ALTERNATIVE

High Oil & Gas Potential Areas	No Lease	No Surface Occupancy	Limited Surface Use	Both Limited Surface Use and Timing Limitations	Timing Limitations	Standard Lease Terms Only	Totals
Piedra Blanca	2,815	0	0	0	0	0	2,815
San Cayetano	5,061	8,334	47	0	0	2	13,444
Sespe	3,117	8,762	908	0	0	95	12,882
Rincon Creek	9,052	0	0	0	0	0	9,052
South Cuyama	46,331	30,702	1,703	183	0	1,339	80,258
La Brea Canyon	9,273	0	0	0	0	0	9,273
Figueroa Mtn	8,745	0	0	0	0	0	8,745
Lopez Canyon	2,257	0	0	0	0	0	2,257
Monroe Swell	600	0	0	0	0	0	600
Total HOGPAs (acres)	87,251	47,798	2,658	183	0	1,436	139,326
(percent of study area)	11.4%	6.2%	0.3%	<0.1%	0.0%	0.2%	18.2%
Non-HOGPA (acres)	627,541	0	0	0	0	0	627,541
(percent of study area)	81.8%	0.0%	0.0%	0.0%	0.0%	0.0%	81.8%
Total (acres)	714,792	47,798	2,658	183	0	1,436	766,867
(percent of study area)	93.2%	6.2%	0.3%	<0.1%	0.0%	0.2%	100.0%

TABLE 2-17: REASONABLY FORESEEABLE DEVELOPMENT FOR THE NEW PREFERRED ALTERNATIVE

High Oil & Gas Potential Areas	Number of New Wells Estimated				Additional Amount of Surface Disturbance Estimated			Additional Acres of Surface Disturbance Estimated		Oil & Gas Expected
	Dry	*Produce*	*Inject*	*Total*	*# of Pads*	*Roads (miles)*	*Pipelines (miles)*	*Initial (acres)*	*After Rehab.*	*Millions of BOE*
Piedra Blanca	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
San Cayetano	2	4	0	6	1	0.0	0.0	3.0	3.0	0.5
Sespe	3	10	1	14	3	1.0	1.0	14.5	8.5	2.5
Rincon Creek	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
South Cuyama	1	4	0	5	1	0.0	1.0	3.0	3.0	14.0
La Brea Canyon	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Figueroa Mountain	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Lopez Canyon	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Monroe Swell	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Non-HOGPA Area	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Total	**6**	**18**	**1**	**25**	**5**	**1.0**	**2.0**	**20.5**	**14.5**	**17.0**

FIGURE 2-3: NEW PREFERRED ALTERNATIVE VICINITY MAP:

FIGURE 2-4: NEW PREFERRED ALTERNATIVE MAP – SOUTH CUYAMA HOGPA (WEST PORTION)

FIGURE 2-5: NEW PREFERRED ALTERNATIVE MAP – SOUTH CUYAMA HOGPA (EAST PORTION)

FIGURE 2-6: NEW PREFERRED ALTERNATIVE MAP – SESPE HOGPA

FIGURE 2-7: NEW PREFERRED ALTERNATIVE MAP – SAN CAYETANO HOGPA

2.6. COMPARISON OF ALTERNATIVE LEASING SCENARIOS

This section compares how the alternative leasing scenarios meet the purpose and need for the proposed action identified in sections 1.6 and 1.7 and how they respond to the significant issues identified in section 2.2.2.

2.6.1. Response of Alternatives to the Purpose and Need

The needs of the proposed action are threefold:

1. *Identify LPNF lands available for oil and gas leasing and stipulations;*
2. *Decide on Outstanding Lease Requests; and*
3. *Determine Future Availability of Currently Leased Land.*

And, in accomplishing these needs, the selected alternative should:

4. *Minimize Impacts to and Maintain the Long-Term Health of the Environment*
5. *Meet Forest Plan Direction*

Table 2-18 summarizes how each alternative responds to the purpose and needs.

TABLE 2-18: RESPONSIVENESS OF ALTERNATIVES TO PROJECT PURPOSE AND NEED

Alternative Leasing Scenario	***Needs***			***Purpose***			
	1. *Identify LPNF lands available for oil and gas leasing and stipulations (acres)*	***2.*** *Responds to Outstanding Lease Requests*	***3.*** *Determines Availability of Existing Leases Once Terminated*	***4.*** *Minimizes Impacts to and Maintain the Long-Term Health of the Environment*			***5.*** *Meet Forest Plan Direction*
				Surface Area That can be Occupied (acres)	*Area Disturbed After Rehab (acres)*	*Risk of Significant Impacts*	
1	*0*	*Yes*	*Yes*	*0*	*0.0*	*Low*	*Yes*
2	*766,867*			*766,867*	*70.1*	*High*	*No*
3	*766,867*			*254,568*	*31.5*	*Low*	*Yes*
4	*766,867*			*245,329*	*31.5*		
4a	*766,867*			*63,576*	*17.5*		
5	*634,136*			*247,456*	*31.5*		
5a	*443,092*			*64,067*	*17.5*		
Preferred	*52,075*			*4,277*	*14.5*		

2.6.1.1. Response of Alternatives in Meeting Needs

All alternatives meet the identified needs (#1, #2, and #3). Since each alternative makes leasing availability decisions for the area of LPNF that can be considered for leasing availability, each alternative:

- *Identifies Land Available for Oil and Gas Leasing and Lease Stipulations;*
- *Responds to Outstanding Lease Requests; and*
- *Determines Availability of Existing Leases Once Terminated.*

Table 2-19 summarizes, by alternative, the acreage of LPNF that would not be available for lease and the acreage under each type of stipulation for the lands that would be available for lease. Table 2-20 shows the same information displayed by percent of LPNF. Tables 2-21 and 2-22 show similar information for the acreage of the lease study area only.

TABLE 2-19: COMPARISON OF LEASE DECISIONS BY ALTERNATIVE FOREST-WIDE (ACRES)

	Lease Decision and Terms/Stipulations (acres)					
Alternative Leasing Scenario	*No New Leases*	*No Surface Occupancy*	*Limited Surface Use*	*Limited Surface Use & Timing Limits*	*Timing Limits*	*Standard Lease Terms*
1	1,775,744	0	0	0	0	0
2	1,008,877	0	0	0	0	766,867
3	1,008,877	512,299	126,932	8,025	1,507	118,104
4	1,008,877	521,538	188,019	8,725	21	48,564
4a	1,008,877	703,291	47,868	3,559	7	12,142
5	1,141,608	386,680	174,819	8,776	21	63,840
5a	1,332,652	379,025	47,117	3,628	7	13,315
Preferred	1,725,105	47,798	2,658	183	0	1,436

TABLE 2-20: COMPARISON OF LEASE DECISIONS BY ALTERNATIVE FOREST-WIDE (%)

	Lease Decision and Terms/Stipulations (percent)					
Alternative Leasing Scenario	*No New Leases*	*No Surface Occupancy*	*Limited Surface Use*	*Limited Surface Use & Timing Limits*	*Timing Limits*	*Standard Lease Terms*
1	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2	56.8%	0.0%	0.0%	0.0%	0.0%	43.2%
3	56.8%	28.8%	7.1%	0.5%	0.1%	6.7%
4	56.8%	29.4%	10.6%	0.5%	< 0.1%	2.7%
4a	56.8%	39.6%	2.7%	0.2%	< 0.1%	0.7%
5	64.3%	21.8%	9.8%	0.5%	< 0.1%	3.6%
5a	75.0%	21.3%	2.7%	0.2%	< 0.1%	0.7%
Preferred	97.1%	2.7%	0.1%	< 0.1%	< 0.1%	0.1%

TABLE 2-21: COMPARISON OF LEASE DECISIONS BY ALTERNATIVE FOR LEASE STUDY AREA (ACRES)

	Lease Decision and Terms/Stipulations (acres)					
Alternative Leasing Scenario	*No New Leases* [1]	*No Surface Occupancy*	*Limited Surface Use*	*Limited Surface Use & Timing Limits*	*Timing Limits*	*Standard Lease Terms*
1	766,867	0	0	0	0	0
2	0	0	0	0	0	766,867
3	0	512,299	126,932	8,025	1,507	118,104
4	0	521,538	188,019	8,725	21	48,564
4a	0	703,291	47,868	3,559	7	12,142
5	132,731	386,680	174,819	8,776	21	63,840
5a	323,775	379,025	47,117	3,628	7	13,315
Preferred	714,792	47,798	2,658	183	0	1,436

TABLE 2-22: COMPARISON OF LEASE DECISIONS BY ALTERNATIVE FOR LEASE STUDY AREA (%)

	Lease Decision and Terms/Stipulations (percent)					
Alternative Leasing Scenario	*No New Leases*	*No Surface Occupancy*	*Limited Surface Use*	*Limited Surface Use & Timing Limits*	*Timing Limits*	*Standard Lease Terms*
1	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
2	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
3	0.0%	66.8%	16.6%	1.0%	0.2%	15.4%
4	0.0%	68.0%	24.5%	1.1%	< 0.1%	6.3%
4a	0.0%	91.7%	6.2%	0.5%	< 0.1%	1.6%
5	17.3%	50.4%	22.8%	1.1%	< 0.1%	8.3%
5a	42.2%	49.4%	6.1%	0.5%	< 0.1%	1.7%
Preferred	93.2%	6.2%	0.3%	<0.1%	0.0%	0.2%

Tables 2-23 through 2-30 show the acres and percent of the HOGPAs and the non-HOGPA area available for new leases, along with the stipulations associated with each of the alternative leasing scenarios being considered.

Table 2-31 displays, by alternative, lease availability decisions and stipulations regarding applications for and expressions of interest in leasing and future lease availability decisions and stipulations for currently leased areas once the existing leases terminate.

Maps showing the geographic location of lands available and where the stipulations apply are contained in the DEIS map packet for alternatives 3, 4, 4a, 5, and 5a. Maps for the New Preferred Alternative are in Figures 2-3 through 2-7. These maps are also displayed on the LPNF web page. Maps are not necessary for alternatives 1 and 2 since these alternatives make either make none of the study area available for new leasing (Alternative 1) or all of the study area available under standard lease terms only (Alternative 2).

TABLE 2-23: STUDY AREA ALLOCATIONS FOR ALTERNATIVE 1.

Portion of Study Area	No New Lease	No Surface Occupancy	Limited Surface Use	Limited Surface Use and Timing Limitations	Timing Limitations	Standard Lease Terms	Totals
Piedra Blanca (acres)	2,815	0	0	0	0	0	2,815
(percent of HOGPA)	100%	0%	0%	0%	0%	0%	100%
San Cayetano (acres)	13,444	0	0	0	0	0	13,444
(percent of HOGPA)	100%	0%	0%	0%	0%	0%	100%
Sespe (acres)	12,882	0	0	0	0	0	12,882
(percent of HOGPA)	100%	0%	0%	0%	0%	0%	100%
Rincon Creek (acres)	9,052	0	0	0	0	0	9,052
(percent of HOGPA)	100%	0%	0%	0%	0%	0%	100%
South Cuyama (acres)	80,258	0	0	0	0	0	80,258
(percent of HOGPA)	100%	0%	0%	0%	0%	0%	100%
La Brea Canyon (acres)	9,273	0	0	0	0	0	9,273
(percent of HOGPA)	100%	0%	0%	0%	0%	0%	100%
Figueroa Mtn (acres)	8,745	0	0	0	0	0	8,745
(percent of HOGPA)	100%	0%	0%	0%	0%	0%	100%
Lopez Canyon (acres)	2,257	0	0	0	0	0	2,257
(percent of HOGPA)	100%	0%	0%	0%	0%	0%	100%
Monroe Swell (acres)	600	0	0	0	0	0	600
(percent of HOGPA)	100%	0%	0%	0%	0%	0%	100%
Total HOGPAs (acres)	139,326	0	0	0	0	0	139,326
(percent of study area)	100%	0%	0%	0%	0%	0%	100%
Non-HOGPA (acres)	627,541	0	0	0	0	0	627,541
(percent of Non-HOGPA)	100%	0%	0%	0%	0%	0%	100%
Study Area (acres)	766,867	0	0	0	0	0	766,867
(percent of Study Area)	100%	0%	0%	0%	0%	0%	100%

TABLE 2-24: STUDY AREA ALLOCATIONS FOR ALTERNATIVE 2.

Portion of Study Area	No New Lease	No Surface Occupancy	Limited Surface Use	Limited Surface Use and Timing Limitations	Timing Limitations	Standard Lease Terms	Totals
Piedra Blanca (acres)	0	0	0	0	0	2,815	2,815
(percent of HOGPA)	0%	0%	0%	0%	0%	100%	100%
San Cayetano (acres)	0	0	0	0	0	13,444	13,444
(percent of HOGPA)	0%	0%	0%	0%	0%	100%	100%
Sespe (acres)	0	0	0	0	0	12,882	12,882
(percent of HOGPA)	0%	0%	0%	0%	0%	100%	100%
Rincon Creek (acres)	0	0	0	0	0	9,052	9,052
(percent of HOGPA)	0%	0%	0%	0%	0%	100%	100%
South Cuyama (acres)	0	0	0	0	0	80,258	80,258
(percent of HOGPA)	0%	0%	0%	0%	0%	100%	100%
La Brea Canyon (acres)	0	0	0	0	0	9,273	9,273
(percent of HOGPA)	0%	0%	0%	0%	0%	100%	100%
Figueroa Mtn (acres)	0	0	0	0	0	8,745	8,745
(percent of HOGPA)	0%	0%	0%	0%	0%	100%	100%
Lopez Canyon (acres)	0	0	0	0	0	2,257	2,257
(percent of HOGPA)	0%	0%	0%	0%	0%	100%	100%
Monroe Swell (acres)	0	0	0	0	0	600	600
(percent of HOGPA)	0%	0%	0%	0%	0%	100%	100%
Total HOGPAs (acres)	0	0	0	0	0	139,326	139,326
(percent of study area)	0%	0%	0%	0%	0%	100%	100%
Non-HOGPA (acres)	0	0	0	0	0	627,541	627,541
(percent of Non-HOGPA)	0%	0%	0%	0%	0%	100%	100%
Study Area (acres)	0	0	0	0	0	766,867	766,867
(percent of Study Area)	0%	0%	0%	0%	0%	100%	100%

TABLE 2-25: STUDY AREA ALLOCATIONS FOR ALTERNATIVE 3.

Portion of Study Area	No New Lease	No Surface Occupancy	Limited Surface Use	Limited Surface Use and Timing Limitations	Timing Limitations	Standard Lease Terms	Totals
Piedra Blanca (acres)	0	2,758	34	0	0	23	2,815
(percent of HOGPA)	0.0%	98.0%	1.2%	0.0%	0.0%	0.8%	100.0%
San Cayetano (acres)	0	13,138	298	0	0	8	13,444
(percent of HOGPA)	0.0%	97.7%	2.2%	0.0%	0.0%	0.1%	100.0%
Sespe (acres)	0	11,777	1,002	0	0	103	12,882
(percent of HOGPA)	0.0%	91.4%	7.8%	0.0%	0.0%	0.8%	100.0%
Rincon Creek (acres)	0	6,770	1,610	272	136	264	9,052
(percent of HOGPA)	0.0%	74.8%	17.8%	3.0%	1.5%	2.9%	100.0%
South Cuyama (acres)	0	33,248	17,341	203	387	29,079	80,258
(percent of HOGPA)	0.0%	41.4%	21.6%	0.3%	0.5%	36.2%	100.0%
La Brea Canyon (acres)	0	6,877	1,568	0	0	828	9,273
(percent of HOGPA)	0.0%	74.2%	16.9%	0.0%	0.0%	8.9%	100.0%
Figueroa Mtn (acres)	0	7,900	274	562	1	8	8,745
(percent of HOGPA)	0.0%	90.3%	3.1%	6.4%	<0.1%	0.1%	100.0%
Lopez Canyon (acres)	0	2,205	41	0	5	6	2,257
(percent of HOGPA)	0.0%	97.7%	1.8%	0.0%	0.2%	0.3%	100.0%
Monroe Swell (acres)	0	570	14	0	0	16	600
(percent of HOGPA)	0.0%	95.0%	2.3%	0.0%	0.0%	2.7%	100.0%
Total HOGPAs (acres)	0	85,243	22,182	1,037	529	30,335	139,326
(percent of study area)	0.0%	61.2%	15.9%	0.7%	0.4%	21.8%	100.0%
Non-HOGPA (acres)	0	427,056	104,750	6,988	978	87,769	627,541
(percent of Non-HOGPA)	0%	68%	17%	1%	0%	14%	100%
Study Area (acres)	0	512,299	126,932	8,025	1,507	118,104	766,867
(percent of Study Area)	0.0%	66.8%	16.6%	1.0%	0.2%	15.4%	100.0%

TABLE 2-26: STUDY AREA ALLOCATIONS FOR ALTERNATIVE 4.

Portion of Study Area	No New Lease	No Surface Occupancy	Limited Surface Use	Limited Surface Use and Timing Limitations	Timing Limitations	Standard Lease Terms	Totals
Piedra Blanca (acres)	0	2,758	57	0	0	0	2,815
(percent of HOGPA)	0.0%	98.0%	2.0%	0.0%	0.0%	0.0%	100.0%
San Cayetano (acres)	0	13,138	306	0	0	0	13,444
(percent of HOGPA)	0.0%	97.7%	2.3%	0.0%	0.0%	0.0%	100.0%
Sespe (acres)	0	11,971	911	0	0	0	12,882
(percent of HOGPA)	0.0%	92.9%	7.1%	0.0%	0.0%	0.0%	100.0%
Rincon Creek (acres)	0	6,770	1,808	411	0	63	9,052
(percent of HOGPA)	0.0%	74.8%	20.0%	4.5%	0.0%	0.7%	100.0%
South Cuyama (acres)	0	35,098	30,230	566	0	14,364	80,258
(percent of HOGPA)	0.0%	43.7%	37.7%	0.7%	0.0%	17.9%	100.0%
La Brea Canyon (acres)	0	6,989	2,013	0	0	271	9,273
(percent of HOGPA)	0.0%	75.4%	21.7%	0.0%	0.0%	2.9%	100.0%
Figueroa Mtn (acres)	0	7,988	272	482	0	3	8,745
(percent of HOGPA)	0.0%	91.3%	3.1%	5.5%	0.0%	0.0%	100.0%
Lopez Canyon (acres)	0	2,205	40	12	0	0	2,257
(percent of HOGPA)	0.0%	97.7%	1.8%	0.5%	0.0%	0.0%	100.0%
Monroe Swell (acres)	0	570	22	0	0	8	600
(percent of HOGPA)	0.0%	95.0%	3.7%	0.0%	0.0%	1.3%	100.0%
Total HOGPAs (acres)	0	87,487	35,659	1,471	0	14,709	139,326
(percent of study area)	0.0%	62.8%	25.6%	1.1%	0.0%	10.6%	100.0%
Non-HOGPA (acres)	0	434,051	152,360	7,254	21	33,855	627,541
(percent of Non-HOGPA)	0%	69%	24%	1%	<0.1%	5%	100%
Study Area (acres)	0	521,538	188,019	8,725	21	48,564	766,867
(percent of Study Area)	0.0%	68.0%	24.5%	1.1%	<0.1%	6.3%	100.0%

TABLE 2-27: STUDY AREA ALLOCATIONS FOR ALTERNATIVE 4A.

Portion of Study Area	No New Lease	No Surface Occupancy	Limited Surface Use	Limited Surface Use and Timing Limitations	Timing Limitations	Standard Lease Terms	Totals
Piedra Blanca (acres)	0	2,805	10	0	0	0	2,815
(percent of HOGPA)	0.0%	99.6%	0.4%	0.0%	0.0%	0.0%	100.0%
San Cayetano (acres)	0	13,386	58	0	0	0	13,444
(percent of HOGPA)	0.0%	99.6%	0.4%	0.0%	0.0%	0.0%	100.0%
Sespe (acres)	0	12,012	870	0	0	0	12,882
(percent of HOGPA)	0.0%	93.2%	6.8%	0.0%	0.0%	0.0%	100.0%
Rincon Creek (acres)	0	7,765	1,060	178	0	49	9,052
(percent of HOGPA)	0.0%	85.8%	11.7%	2.0%	0.0%	0.5%	100.0%
South Cuyama (acres)	0	77,326	2,116	175	0	641	80,258
(percent of HOGPA)	0.0%	96.3%	2.6%	0.2%	0.0%	0.8%	100.0%
La Brea Canyon (acres)	0	8,551	588	0	0	134	9,273
(percent of HOGPA)	0.0%	92.2%	6.3%	0.0%	0.0%	1.4%	100.0%
Figueroa Mtn (acres)	0	8,034	228	482	0	1	8,745
(percent of HOGPA)	0.0%	91.9%	2.6%	5.5%	0.0%	<0.1%	100.0%
Lopez Canyon (acres)	0	2,213	42	2	0	0	2,257
(percent of HOGPA)	0.0%	98.1%	1.9%	0.1%	0.0%	0.0%	100.0%
Monroe Swell (acres)	0	570	22	0	0	8	600
(percent of HOGPA)	0.0%	95.0%	3.7%	0.0%	0.0%	1.3%	100.0%
Total HOGPAs (acres)	0	132,662	4,994	837	0	833	139,326
(percent of study area)	0.0%	95.2%	3.6%	0.6%	0.0%	0.6%	100.0%
Non-HOGPA (acres)	0	570,629	42,874	2,722	7	11,309	627,541
(percent of Non-HOGPA)	0%	91%	7%	0%	<0.1%	2%	100%
Study Area (acres)	0	703,291	47,868	3,559	7	12,142	766,867
(percent of Study Area)	0.0%	91.7%	6.2%	0.5%	<0.1%	1.6%	100.0%

TABLE 2-28: STUDY AREA ALLOCATIONS FOR ALTERNATIVE 5.

Portion of Study Area	No New Lease	No Surface Occupancy	Limited Surface Use	Limited Surface Use and Timing Limitations	Timing Limitations	Standard Lease Terms	Totals
Piedra Blanca (acres)	1,994	765	33	0	0	23	2,815
(percent of HOGPA)	70.8%	27.2%	1.2%	0.0%	0.0%	0.8%	100.0%
San Cayetano (acres)	4,793	8,310	336	0	0	5	13,444
(percent of HOGPA)	35.7%	61.8%	2.5%	0.0%	0.0%	<0.1%	100.0%
Sespe (acres)	3,065	8,701	1,020	0	0	96	12,882
(percent of HOGPA)	23.8%	67.5%	7.9%	0.0%	0.0%	0.7%	100.0%
Rincon Creek (acres)	971	5,892	1,541	391	0	257	9,052
(percent of HOGPA)	10.7%	65.1%	17.0%	4.3%	0.0%	2.8%	100.0%
South Cuyama (acres)	3,516	29,787	17,618	587	0	28,750	80,258
(percent of HOGPA)	4.4%	37.1%	22.0%	0.7%	0.0%	35.8%	100.0%
La Brea Canyon (acres)	251	6,624	1,571	0	0	827	9,273
(percent of HOGPA)	2.7%	71.4%	16.9%	0.0%	0.0%	8.9%	100.0%
Figueroa Mtn (acres)	1,425	6,509	273	533	0	5	8,745
(percent of HOGPA)	16.3%	74.4%	3.1%	6.1%	0.0%	0.1%	100.0%
Lopez Canyon (acres)	0	2,187	53	11	0	6	2,257
(percent of HOGPA)	0.0%	96.9%	2.3%	0.5%	0.0%	0.3%	100.0%
Monroe Swell (acres)	0	570	14	0	0	16	600
(percent of HOGPA)	0.0%	95.0%	2.3%	0.0%	0.0%	2.7%	100.0%
Total HOGPAs (acres)	16,015	69,345	22,459	1,522	0	29,985	139,326
(percent of study area)	11.5%	49.8%	16.1%	1.1%	0.0%	21.5%	100.0%
Non-HOGPA (acres)	116,716	317,335	152,360	7,254	21	33,855	627,541
(percent of Non-HOGPA)	19%	51%	24%	1%	<0.1%	5%	100%
Study Area (acres)	132,731	386,680	174,819	8,776	21	63,840	766,867
(percent of Study Area)	17.3%	50.4%	22.8%	1.1%	<0.1%	8.3%	100.0%

TABLE 2-29: STUDY AREA ALLOCATIONS FOR ALTERNATIVE 5A.

Portion of Study Area	No New Lease	No Surface Occupancy	Limited Surface Use	Limited Surface Use and Timing Limitations	Timing Limitations	Standard Lease Terms	Totals
Piedra Blanca (acres)	2,084	722	8	0	0	1	2,815
(percent of HOGPA)	74.0%	25.6%	0.3%	0.0%	0.0%	<0.1%	100.0%
San Cayetano (acres)	5,061	8,334	47	0	0	2	13,444
(percent of HOGPA)	37.6%	62.0%	0.3%	0.0%	0.0%	<0.1%	100.0%
Sespe (acres)	3,117	8,762	908	0	0	95	12,882
(percent of HOGPA)	24.2%	68.0%	7.0%	0.0%	0.0%	0.7%	100.0%
Rincon Creek (acres)	1,514	6284	864	179	0	211	9,052
(percent of HOGPA)	16.7%	69.4%	9.5%	2.0%	0.0%	2.3%	100.0%
South Cuyama (acres)	46,331	30,702	1,703	183	0	1,339	80,258
(percent of HOGPA)	57.7%	38.3%	2.1%	0.2%	0.0%	1.7%	100.0%
La Brea Canyon (acres)	2,683	5,834	421	0	0	335	9,273
(percent of HOGPA)	28.9%	62.9%	4.5%	0.0%	0.0%	3.6%	100.0%
Figueroa Mtn (acres)	1,511	6,474	226	533	0	1	8,745
(percent of HOGPA)	17.3%	74.0%	2.6%	6.1%	0.0%	<0.1%	100.0%
Lopez Canyon (acres)	0	2,188	52	11	0	6	2,257
(percent of HOGPA)	0.0%	96.9%	2.3%	0.5%	0.0%	0.3%	100.0%
Monroe Swell (acres)	0	570	14	0	0	16	600
(percent of HOGPA)	0.0%	95.0%	2.3%	0.0%	0.0%	2.7%	100.0%
Total HOGPAs (acres)	62,301	69,870	4,243	906	0	2,006	139,326
(percent of study area)	44.7%	50.1%	3.0%	0.7%	0.0%	1.4%	100.0%
Non-HOGPA (acres)	261,474	309,155	42,874	2,722	7	11,309	627,541
(percent of Non-HOGPA)	42%	49%	7%	0%	<0.1%	2%	100%
Study Area (acres)	323,775	379,025	47,117	3,628	7	13,315	766,867
(percent of Study Area)	42.2%	49.4%	6.1%	0.5%	<0.1%	1.7%	100.0%

TABLE 2-30: STUDY AREA ALLOCATIONS FOR THE NEW PREFERRED ALTERNATIVE

Portion of Study Area	No New Lease	No Surface Occupancy	Limited Surface Use	Limited Surface Use and Timing Limitations	Timing Limitations	Standard Lease Terms	Totals
Piedra Blanca (acres)	2,815	0	0	0	0	0	2,815
(percent of HOGPA)	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
San Cayetano (acres)	5,061	8,334	47	0	0	2	13,444
(percent of HOGPA)	37.6%	62.0%	0.3%	0.0%	0.0%	<0.1%	100.0%
Sespe (acres)	3,117	8,762	908	0	0	95	12,882
(percent of HOGPA)	24.2%	68.0%	7.0%	0.0%	0.0%	0.7%	100.0%
Rincon Creek (acres)	9,052	0	0	0	0	0	9,052
(percent of HOGPA)	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
South Cuyama (acres)	46,331	30,702	1,703	183	0	1,339	80,258
(percent of HOGPA)	57.7%	38.3%	2.1%	0.2%	0.0%	1.7%	100.0%
La Brea Canyon (acres)	9,273	0	0	0	0	0	9,273
(percent of HOGPA)	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Figueroa Mtn (acres)	8,745	0	0	0	0	0	8,745
(percent of HOGPA)	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Lopez Canyon (acres)	2,257	0	0	0	0	0	2,257
(percent of HOGPA)	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Monroe Swell (acres)	600	0	0	0	0	0	600
(percent of HOGPA)	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Total HOGPAs (acres)	87,251	47,798	2,658	183	0	1,436	139,326
(percent of study area)	44.7%	50.1%	3.0%	0.7%	0.0%	1.4%	100.0%
Non-HOGPA (acres)	627,541	0	0	0	0	0	627,541
(percent of Non-HOGPA)	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
Study Area (acres)	714,792	47,798	2,658	183	0	1,436	766,867
(percent of Study Area)	93.2%	6.2%	0.3%	<0.1%	0.0%	0.2%	100.0%

TABLE 2-31: FUTURE AVAILABILITY OF EXISTING LEASE LANDS AND LAND WITH LEASE APPLICATIONS OR EXPRESSIONS OF INTEREST BY ALTERNATIVE (ACRES)

Alternative Leasing Scenario	Existing Leases - Future Leasing Status					Applications and Expressions of Interest - Future Leasing Status				
	NL *	NSO	LSU & TL	SLT	Total	NL	NSO	LSU & TL	SLT	Total
1	4,863				4,863	28,602				28,602
2	376			4,487	4,863				28,602	28,602
3	1,804	2,225	594	240	4,863	6,370	12,678	4,823	4,731	28,602
4	1,804	2,363	544	152	4,863	6,370	12,885	7,218	2,129	28,602
4a	1,804	2,526	515	18	4,863	6,370	20,215	1,819	198	28,602
5	1,809	2,211	615	228	4,863	10,349	8,878	6,822	2,553	28,602
5a	1,826	2,383	568	86	4,863	15,704	10,862	1,826	210	28,602
Preferred	1,826	2,383	568	86	4,863	22,522	5,934	65	81	28,602

* *Includes lease LA 0165125 (376 ac) located entirely in the Sespe wilderness.*

2.6.1.2. Response of Alternatives to the Purpose

The alternatives vary in the degree to which they meet the project purposes (# 4 and #5).

2.6.1.2.1. Response of Alternatives to Purpose # 4.

Proposed action purpose # 4 is to minimize impacts to and maintain the long-term health of the environment. Table 2-18 summaries how much of LPNF would be available for leasing and how much would be subject to surface occupancy under the various alternatives. It also indicates, for each alternative, the estimated acres disturbed after rehabilitation and whether or not potentially significant impacts are expected to occur. Please also see section 2.6.2 regarding significant issues since many of these issues deal with maintaining the long-term health of the environment.

Alternative 1 would not lease any additional land and thus would not result in any additional environmental impact. Alternative 2 would make the entire study area available for leasing with no additional stipulations to accompany the BLM standard lease terms. Alternative 2 is the only alternative expected to result in potentially significant impacts to air, watershed, fisheries, vegetation, scenic, and recreational resources.

Alternative 3 stipulations provide the measures to mitigate most of the potentially significant impacts identified in the analysis of Alternative 2. Analysis indicates that short-term potentially significant impacts to ozone levels could occur but this is under a worst-case assumption that all activities occurred at the same time. These are likely to be spread out over a much longer period of time.

Alternative 4 would apply all the stipulations of Alternative 3 plus additional stipulations to emphasize protection of surface resources and provide for some rehabilitation of existing impact areas. Alternative 4 results in less area available for surface occupancy than Alternative 3. As a result Alternative 4 provides more environmental protection than Alternative 3.

Alternative 5 is the same as Alternative 3 in HOGPAs where development is projected and is therefore expected to have similar long-term environmental impacts. However, since areas otherwise NSO that can't be accessed by slant drilling are not available for lease, there are fewer acres available for lease.

Alternatives 4a and 5a are the same as Alternatives 4 and 5 respectively except that Inventoried Roadless Areas (IRAs) are given the protection of the no surface occupancy (NSO) stipulation. Only the portions of IRAs in Recreation Opportunity Spectrum (ROS) class semi-primitive non-motorized (SPNM) were given an NSO stipulation in Alternative 3. Furthermore, in Alternative 5a, areas otherwise NSO that can't be accessed by slant drilling are not available for lease. There is significantly less area where the surface can be occupied in Alternative 4a and 5a and less area available for lease in Alternative 5a.

The New Preferred Alternative leases portions of the three HOGPAs where the oil and gas potential is the highest, i.e. the Sespe, San Cayetano, and South Cuyama HOGPAs. These are in the vicinity of the currently producing oil and gas leases. This alternative greatly reduces the amount of land available for lease and the lands where the surface can be occupied. This alternative is projected to have the least amount of environmental impact of all the action alternatives.

2.6.1.2.2. Response of Alternatives to Proposed Action Purpose # 5.

Proposed action purpose # 5 is to meet Forest Plan direction. Whether an alternative meets Forest Plan direction is evaluated relative to the discretionary action the alternative leasing scenario proposes. There are existing conditions on LPNF that do not meet Forest Plan direction. For example, there are areas in currently leased lands that do not meet the visual quality objectives and Recreation Opportunity System class standards. These oil fields pre-date the current Forest Plan standard and guidelines. Existing oil and gas lease terms are set and cannot be changed without lessee consent. This proposed action would not affect existing lease terms.

Alternative 2 is the only alternative that would not meet the Forest Plan direction. Alternative 2 has no lease stipulations. Standard lease terms allow for moving any proposed activity up to 200 meters in distance or delaying it up to six months in time. However, GIS analysis of the suitability of the study area, assuming standard lease terms, indicates there are numerous areas where moving an activity 200 meters in distance or delaying it six months is not sufficient to meet the Forest Plan direction for watershed, recreation, biological, and scenic resources.

Alternative 1 would meet Forest Plan direction. Since no additional leasing would occur no additional impacts to other resources, other than those already occurring, would result.

Alternative 3 is developed specifically to meet the Forest Plan direction. Stipulations were developed as a result of the analysis of Alternative 2 to address areas where standard lease terms (Alternative 2) are not expected to meet Forest Plan direction.

Since all other alternative add additional stipulations to Alternative 3 and alternatives 5, 5a, and the New Preferred Alternative make less land available for leasing they too meet the Forest Plan direction.

2.6.2. Summary of Alternatives Responsiveness to Significant Issues

Tables 2-32 through 2-34 summarize how each alternative responds to the significant issues identified in scoping.

TABLE 2-32: COMPARISON OF ALTERNATIVES BY PHYSICAL ISSUE AREAS

Alternative Leasing Scenario	***Physical Environment***	
	Air Quality	**Watersheds, Wetlands, Riparian, & Floodplains**
Alternative 1 No Action – No New Leasing (3.0 acres disturbed)	Alternative 1 could produce a short-term, significant unavoidable impact to regional ozone levels in Ventura and Santa Barbara counties during maximum development activity.	Low risk of cumulative watershed effects (CWE) forest-wide. There are no significant unavoidable impacts expected to watershed resources from the reasonably foreseeable additional development of existing leases.
Alternative 2 Emphasize Oil & Gas Development (163.3 acres disturbed)	Alternative 2 could produce a short-term, significant unavoidable impact to regional ozone levels in Ventura, Monterey, San Luis Obispo, and Santa Barbara counties during maximum development activity.	Fifteen sub-basins have potential for significant long-term impacts if all the oil and gas development for the area were to occur in just one sub-basin. In eleven of the sub-basins, this potential impact can be avoided by dispersing development proportionately between the sub-basins.
Alternative 3 Meet Forest Plan Direction (45 acres disturbed)	Could produce a short-term, significant unavoidable impact to regional ozone levels in Ventura, San Luis Obispo, and Santa Barbara counties during maximum development activity.	Low risk of cumulative watershed effects (CWE) forest-wide. Any new leasing under Alternative 3, 4, 4a, 5, 5a or the New Preferred Alternative would not result in significant unavoidable impacts to watershed resources.
Alternative 4 Emphasize Surface Resources (43 acres disturbed)		
Alternative 4a Alternative 4 With Roadless Conservation Area Emphasis (23.5 acres disturbed)		
Alternative 5 Combination of Alternatives 3 and 4 (45 acres disturbed)		
Alternative 5a Alternative 5 With Roadless Conservation Area Emphasis (23.5 acres disturbed)		
New Preferred Alternative Combination of Alternatives 1 and 5a (20.5 acres disturbed)	The New Preferred Alternative could produce a short-term, significant unavoidable impact to regional ozone levels in Ventura and Santa Barbara counties during maximum development activity.	

TABLE 2-33: COMPARISON OF ALTERNATIVES BY BIOLOGICAL ISSUE AREAS

Alternative Leasing Scenario	***Biological Environment*** [1/]		
	Wildlife	**Fisheries**	**Vegetation**
Alternative 1 No Action – No New Leasing (3.0 acres disturbed)	No significant irreversible or irretrievable impacts are anticipated from Alternative 1. No species will be lost or will be put in greater peril due to this alternative, and no resource production will be lost.		
Alternative 2 Emphasize Oil & Gas Development (163.3 acres disturbed)	Given implementation of mitigation measures, no significant irreversible or irretrievable impacts are anticipated from this alternative scenario. No species will be lost or suffer reduced viability due to this alternative, and no resource production will be lost.	Potentially significant impacts to steelhead trout in lower Sespe Creek (as a result of adverse CWE).	Depending upon the location of activities, potentially significant impacts could occur to sensitive plant species.
Alternative 3 Meet Forest Plan Direction (45 acres disturbed)	No additional irreversible or irretrievable impacts to biological resources are anticipated from Alternatives 3, 4, 4a, 5, 5a, or the New Preferred Alternative.		
Alternative 4 Emphasize Surface Resources (43 acres disturbed)			
Alternative 4a Alternative 4 With Roadless Conservation Area Emphasis (23.5 acres disturbed)			
Alternative 5 Combination of Alternatives 3 and 4 (45 acres disturbed)			
Alternative 5a Alternative 5 With Roadless Conservation Area Emphasis (23.5 acres disturbed)			
New Preferred Alternative Combination of Alternatives 1 and 5a (20.5 acres disturbed)			

1/ Threatened and endangered species would be protected under provisions of the Threatened and Endangered Species Act under all alternatives.

TABLE 2-34: COMPARISON OF ALTERNATIVES BY SOCIAL AND ECONOMIC ISSUE AREAS

Alternative Leasing Scenario	***Social and Economic Issue Areas*** *page 1 of 4*		
	Heritage Resources	**Socioeconomic Impacts/Growth**	**Social Impacts** *Private Property & Noise*
Alternative 1 No Action – No New Leasing (3.0 acres disturbed)	No significant impacts are projected for any alternative. Avoidance and/or mitigation would occur at next stage of process.	No significant economic or growth impacts are projected	No significant impacts are projected.
Alternative 2 Emphasize Oil & Gas Development (163.3 acres disturbed)			Greater potential for significant impacts associated with San Cayetano, Sespe, and South Cuyama HOGPAs.
Alternative 3 Meet Forest Plan Direction (45 acres disturbed)			Some impacts could occur but they are not expected to be significant.
Alternative 4 Emphasize Surface Resources (43 acres disturbed)			Some impacts could occur but they are not expected to be significant.
Alternative 4a Alternative 4 With Roadless Conservation Area Emphasis (23.5 acres disturbed)			More off-Forest development would be expected than in Alt. 4, so there is a higher likelihood of operations being closer to sensitive human receptors.
Alternative 5 Combination of Alternatives 3 and 4 (45 acres disturbed)			Some impacts could occur but they are not expected to be significant.
Alternative 5a Alternative 5 With Roadless Conservation Area Emphasis (23.5 acres disturbed)			More off-Forest development would be expected than in Alt. 5, so there is a higher likelihood of operations being closer to sensitive human receptors.
New Preferred Alternative Combination of Alternatives 1 and 5a (20.5 acres disturbed)			Off-Forest development would be expected to be similar to Alternative 5a but only for the Sespe, San Cayetano, & South Cuyama HOGPAs.

TABLE 2-34: COMPARISON OF ALTERNATIVES BY SOCIAL AND ECONOMIC ISSUE AREAS (CONTINUED)

Alternative Leasing Scenario	***Social and Economic Issue Areas*** *page 2 of 4*		
	Access/Traffic	**Land and Resource Management Plans** *Forest Plan; County General Plans*	**Oil & Gas Development** *Development Constraints; Industrial Infrastructure*
Alternative 1 No Action – No New Leasing (3.0 acres disturbed)	None of the Alternatives would generate enough traffic to cause any of the routes to exceed Level of Service (LOS) D that are not already doing so. Significant impact with or without the project are occurring where major links are entering urban areas. This is occurring where Highway 33 enters Ventura and Highway 126 enters Fillmore. The segment of Highway 33 into Ventura would only be utilized for traffic from the Piedra Blanca HOGPA in Alternative 2. No traffic is projected for this section under any other alternative. Significant impacts are also occurring on Highway 126 in the vicinity of Fillmore without any additions from the project. Tanker traffic from the San Cayetano HOGPA and commuter traffic from the Sespe HOGPA would use this segment in all alternatives. This represents less than one percent of the peak hour traffic. However, this would be in addition to an already significant impact. Scheduling the traffic off of the peak hour by allowing crews the use of flexible work schedules would mitigate these impacts on Highways 33 and 126.	Existing leases do not meet all Forest Plan standards and guidelines. County general plan requirements are met.	Projects development of 1.2 BOE.* No significant impacts on infrastructure are projected.
Alternative 2 Emphasize Oil & Gas Development (163.3 acres disturbed)		SLTs are not sufficient to meet numerous Forest Plan standards and guidelines. Not consistent with some requirements of general plans for San Luis Obispo, Santa Barbara and Ventura counties.	Projects development of 90.2 BOE.* No significant impacts on infrastructure are projected.
Alternative 3 Meet Forest Plan Direction (45 acres disturbed)		Except for existing leases, mitigation meets all Forest Plan standards and guidelines. Consistent with requirements of all county general plans.	Projects development of 21.4 BOE.* No significant impacts on infrastructure are projected.
Alternative 4 Emphasize Surface Resources (43 acres disturbed)			Projects development of 17.4 BOE.* No significant impacts on infrastructure are projected.
Alternative 4a Alternative 4 With Roadless Conservation Area Emphasis (23.5 acres disturbed)			Projects development of 17.3 BOE.* No significant impacts on infrastructure are projected.
Alternative 5 Combination of Alternatives 3 and 4 (45 acres disturbed)			Projects development of 21.4 BOE.* No significant impacts on infrastructure are projected.
Alternative 5a Alternative 5 With Roadless Conservation Area Emphasis (23.5 acres disturbed)			Projects development of 17.3 BOE.* No significant impacts on infrastructure are projected.
New Preferred Alternative Combination of Alternatives 1 and 5a (20.5 acres disturbed)			Projects development of 17.0 BOE.* No significant impacts on infrastructure are projected.

* millions of barrels of oil equivalent.

TABLE 2-34: COMPARISON OF ALTERNATIVES BY SOCIAL AND ECONOMIC ISSUE AREAS (CONTINUED)

Alternative Leasing Scenario	***Social and Economic Issue Areas*** *page 3 of 4*		
	Scenic Resources	**Safety and Hazards** *Fire, geologic, spills*	**Recreation** *Off-road vehicle use, developed sites, primitive use, wilderness areas, roadless areas*
Alternative 1 No Action – No New Leasing (3.0 acres disturbed)	San Cayetano, South Cuyama & Sespe HOGPAs all have existing significant impacts which could increase if developed further. Also, South Cuyama could have 7.3 acres of new disturbance.	The likelihood of any adverse impacts associated with safety and hazards are directly related to the projected amount of oil and gas development and any mitigation measures taken. The following measures will mitigate or prevent adverse safety and hazard impacts: Geologic hazards consist of lands prone to landslides, erodable soils, and seismic hazards. Such areas are considered in the Cumulative Watershed Effects (CWE) analysis and, where feasible, such areas are avoided. Seismic events, however, cannot be predicted or avoided. Standard lease terms require preparation of a fire prevention and suppression plan. The preparation and enforcement of a "fire plan," decreases the likelihood that an escaped wildfire would become a major fire. 40 CFR Part 112 sets in place EPA's oil spill prevention, control and countermeasures (SPCC) plan. These plans have been effective in minimizing adverse effects of spills on LPNF.	Existing impacts to recreation opportunities resulting from leases in the Sespe HOGPA would continue.
Alternative 2 Emphasize Oil & Gas Development (163.3 acres disturbed)	A great deal of development projected in the HOGPA areas is expected to result in potentially significant scenic impacts.		Projected development could result in significant direct impacts on the recreational setting (ROS classes) and on the Inventoried Roadless Areas (IRAs) in large portions of the HOGPAs. Significant indirect impacts on Wilderness, Wild and Scenic rivers and developed sites could also result.
Alternative 3 Meet Forest Plan Direction (45 acres disturbed)	Forest Plan adopted VQOs would be met and no additional scenic impacts would occur. However, some development could result in a change to a human-dominated landscape.		There would be no significant impacts on recreation opportunities, Wilderness, Wild and Scenic Rivers or developed sites except as they result from existing leases. There could be some development in IRAs.
Alternative 4 Emphasize Surface Resources (43 acres disturbed)	Forest Plan scenic requirements would be met, no additional significant scenic impacts would occur, and some existing landscape impacts could be rehabilitated.		There would be no significant impacts on recreation opportunities, Wilderness, Wild and Scenic Rivers or developed sites except as they result from existing leases (Alternative 1). Some recreational settings could be rehabilitated/enhanced. There could be some development in IRAs.

TABLE 2-34: COMPARISON OF ALTERNATIVES BY SOCIAL AND ECONOMIC ISSUE AREAS (CONTINUED)

Alternative Leasing Scenario	***Social and Economic Issue Areas*** *page 4 of 4*		
	Scenic Resources	**Safety and Hazards** *Fire, geologic, spills*	**Recreation** *Off-road vehicle use, developed sites, primitive use, wilderness areas, roadless areas*
Alternative 4a Alternative 4 With Roadless Conservation Area Emphasis (23.5 acres disturbed)	Forest Plan scenic requirements would be met, no additional significant scenic impacts would occur, and some existing landscape impacts could be rehabilitated.	See previous page.	There would be no significant impacts on recreation opportunities, Wilderness, Wild and Scenic Rivers or developed sites except as they result from existing leases. Some recreational settings could be rehabilitated/enhanced. There would be no development in IRAs.
Alternative 5 Combination of Alternatives 3 and 4 (45 acres disturbed)	Forest Plan adopted VQOs would be met and no additional scenic impacts would occur. However, some development could result in a change to a human-dominated landscape.		There would be no significant impacts on recreation opportunities, Wilderness, Wild and Scenic Rivers or developed sites except as they result from existing leases. There could be some development in IRAs.
Alternative 5a Alternative 5 With Roadless Conservation Area Emphasis (23.5 acres disturbed)	Forest Plan adopted VQOs would be met and no additional scenic impacts would occur. However, some development could result in a change to a human-dominated landscape.		There would be no significant impacts on recreation opportunities, Wilderness, Wild and Scenic Rivers or developed sites except as they result from existing leases. There would be no development in IRAs.
New Preferred Alternative Combination of Alternatives 1 and 5a (20.5 acres disturbed)	Forest Plan adopted VQOs would be met and no additional scenic impacts would occur. However, some development could result in a change to a human-dominated landscape in South Cuyama HOGPA.		