SOUTHERN RIO GRANDE

PLAN AMENDMENT/

ENVIRONMENTAL

IMPACT STATEMENT

DRAFT

PROPOSED STATE LAND EXCHANGE

AND DONA ANA COUNTY

LAND TENURE ADJUSTMENT

U.S. DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

LAS CRUCES DISTRICT OFFICE

NEW MEXICO

MARCH 1986

NOTICE

THE DRAFT SOUTHERN RIO GRANDE PLAN AMENDMENT/ENVIRONMENTAL IMPACT STATEMENT (SRGPA/EIS) SHOULD BE RETAINED TO BE USED IN CONJUNCTION WITH THE FINAL SRGPA/EIS. IF CHANGES RESULTING FROM PUBLIC REVIEW AND COMMENT ON THIS DRAFT ARE RELATIVELY MINOR, THE FINAL STATEMENT WILL NOT REPRODUCE THE DRAFT TEXT IN FULL; HOWEVER, THE FINAL STATEMENT WILL INCLUDE THE MODIFICATIONS AND CORRECTIONS WHICH SHOULD BE MADE TO THIS DRAFT AS A RESULT OF PUBLIC COMMENT, AS WELL AS A RECORD OF PUBLIC COMMENTS ON THIS DRAFT AND THE RESPONSES TO THOSE COMMENTS.

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICT OFFICE
1800 Marquess St.
Las Cruces, New Mexico 88005

IN REPLY REFER TO
1600 (036)

MAR 1986

Dear Reader:

This Draft Southern Rio Grande Plan Amendment/Environmental Impact Statement (SRGPA/EIS) on proposed land tenure adjustments for Dona Ana County, New Mexico, and a proposed State land exchange, is submitted for your review and comment. The document contains three reasonable alternative plans that respond to the land tenure adjustment issue and provides managment direction for the public land. Alternative III was selected as the Preferred Alternative. The purpose of this review is to improve the impact analysis and decision-making process. We welcome your comments on this Draft SRGPA/EIS.

Comments on the Draft SRGPA/EIS may be submitted in writing or presented verbally at the scheduled public hearings. Public hearings will be held at 1:30 p.m. and 7:30 p.m. on June 4, 1986, in the BLM Las Cruces District Office Conference Room, 1800 Marquess Street, Las Cruces, New Mexico.

In order to be considered in the Final SRGPA/EIS, all comments must be received by July 2, 1986. Please make your comments as specific as possible. Comments will be more helpful if they include suggested changes, sources, or methodologies. Comments providing only opinions or preferences will not have a formal response, but will be considered as a part of the decision-making process.

A copy of the Final SRGPA/EIS will be sent to all persons who provide comments on the Draft and to anyone requesting a copy. Written comments or requests for copies of the Draft or Final SRGPA/EIS should be addressed to:

William J. Harkenrider, Jr.
Area Manager
Las Cruces/Lordsburg Resource Area
1800 Marquess Street
Las Cruces, New Mexico 88005

Sincerely,

H. James Fox
District Manager

DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

DRAFT
SOUTHERN RIO GRANDE PLAN AMENDMENT
ENVIRONMENTAL IMPACT STATEMENT

Abstract: This Southern Rio Grande Plan Amendment Environmental Impact Statement (SRGPA/EIS) assesses the environmental consequences of implementing proposed land tenure adjustments for Dona Ana County, New Mexico, and a proposed State land exchange. Three alternatives are assessed in detail: Alternative I, which is the no action alternative and favors retention of the public land; Alternative II favors disposal; and Alternative III, which is the Preferred Alternative and provides a balanced management direction for the land tenure adjustment issue.

Type of Action: (x) Administrative ( ) Legislative

For Further Information Contact: William J. Harkenrider, Jr.
Area Manager
Las Cruces/Lordsburg Resource Area
1800 Marquess Street
Las Cruces, New Mexico 88005

Telephone: Commercial: (505) 525-8228
FTS: 571-8350

Comments Have Been Requested From: See Chapter 5

Date Draft Filed with Environmental Protection Agency: MAR 19 1986

Date on Which Comments are Due: JUL 2 1986

Recommended:

H. James Jeff
District Manager
Las Cruces District Office
Las Cruces, New Mexico

Approved:

Charles W. Luscher
State Director, New Mexico

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SUMMARY

SUMMARY

The Draft Southern Rio Grande Plan Amendment/Environmental Impact Statement (SRGPA/EIS) considers a State of New Mexico land exchange proposal and other land tenure adjustments for Dona Ana County. The Draft SRGPA/EIS is prepared as a single planning issue document for land tenure adjustment. Three alternatives are considered in detail: the Favor Retention Alternative (No Action Alternative) (Alternative I), the Favor Disposal Alternative (Alternative II), and the Preferred Alternative (Alternative III).

ALTERNATIVE I--FAVOR RETENTION ALTERNATIVE (NO ACTION ALTERNATIVE)

The objective of the Favor Retention Alternative (No Action Alternative) is to continue current management direction and existing land use plan decisions for land tenure adjustment.

Major Components

Dona Ana County

Under the Favor Retention Alternative (No Action Alternative), disposal is proposed for 1,010 acres of isolated tracts and 552 acres of small tracts. The remaining 1,105,125 acres of public land in Dona Ana County would generally be retained in BLM ownership. Potential acquisition is proposed for the Rough and Ready Station (160 acres), Fort Mason (160 acres), and selected State and private lands in the Organ Mountains (7,422 acres).

State Land Exchange Area

No action would be taken on the State land exchange proposal, and the 10,000 acres of public land identified by the State of New Mexico on the East Mesa would be retained.

Environmental Consequences

Lands

Dona Ana County

Impacts to the land resource would be insignificant under the Favor Retention (No Action) Alternative. The disposal of 1,562 acres of public land represents less than 1 percent (0.14) of the total acreage managed by the BLM in Dona Ana County (excluding military withdrawn lands).

The acquisition of 7,742 acres (0.69 percent) of State and private lands to be included under the management of the BLM would result in no significant impacts to the existing land resource under the Favor Retention (No Action) Alternative.

State Land Exchange Area

Impacts to the land resource within the State Land Exchange Area would be insignificant under the Favor Retention (No Action) Alternative.

Access

Dona Ana County

Impacts on access to public land within Dona Ana County would be insignificant under the Favor Retention (No Action) Alternative.

State Land Exchange Area

Impacts on access to public land within the State Land Exchange Area would be insignificant under the Favor Retention (No Action) Alternative.

Geology and Minerals

Dona Ana County

No impacts would occur, in that current management procedures on public land would continue. The land designated for disposal and acquisition would have no significant effect on mineral exploration and development.

State Land Exchange Area

No impacts. Current management procedures would continue.

Soils

Dona Ana County

Current management procedures would continue resulting in no change in surface use. Compaction, erosion, and sedimentation would remain constant, in that activities such as grazing and off-road use would not change.

State Land Exchange Area

No changes or impacts. Current management practices would continue.

Water Resources

Dona Ana County

Under this alternative, water quantity, quality, and surface water structures would not be affected. Current BLM procedures would continue on lands presently in Federal ownership.

State Land Exchange Area

The 10,000 acres would be kept in Federal ownership, and, therefore, current management policies would continue. No impacts would result from retention.

Vegetation

Dona Ana County

The disposal of 1,010 acres of public land would not have a significant impact on vegetation and its uses. The remaining 552 acres of small tracts would not impact vegetation. If these lands are disposed of, Opuntia arenaria (sand prickly pear) a Federal candidate species, and its habitat would no longer be under management control of the BLM.

Retention of 1,105,125 acres of public land in the County would provide management and protection by BLM for the vegetation resources, and existing threatened, endangered, candidate, or sensitive plant species.

Acquisition of 320 acres of State land would not impact vegetation and its uses significantly. Acquisition of State and private lands (7,422 acres) in the Organ Mountains would provide Federal protection for the vegetation and several threatened, endangered, candidate, and sensitive plant species.

State Land Exchange Area

Within the exchange area, the 10,000 acres of public land would be kept in Federal ownership.

Wildlife

Dona Ana County

Acquisition of lands in the Organ Mountains would improve opportunities for deer habitat management by the BLM.

State Land Exchange Area

All of the habitats in the State Land Exchange Area would remain in public ownership.

Recreation

Dona Ana County

Disposal of 1,562 acres of isolated and small tracts would not significantly affect recreation resources. Retention of the balance of public land would allow the continuation of existing recreation opportunities on that land. Acquisition of 7,422 acres in the Organ Mountains would provide additional public recreation opportunities and contribute significantly to more effective management of the recreation resources in that area.

State Land Exchange Area

Retention of the 10,000 acres of public land would allow continued ORV use and dispersed recreation use in the area.

Cultural Resources

Dona Ana County

Disposal of 1,562 acres of public land would remove 6 recorded sites and an estimated 22 unrecorded sites from management by the BLM. Retention of 1,105,125 acres of public land would leave 943 recorded sites and an estimated 16,050 unrecorded sites under management by the BLM. Management by BLM of

2 recorded sites, as well as an estimated 3 unrecorded sites, could result from acquisition of 320 acres of State land. Acquisition of 7,422 acres of State and private lands in the Organ Mountains would add 12 previously recorded sites, as well as an estimated 110 unrecorded ones to management by the BLM.

State Land Exchange Area

If a 10,000-acre parcel on the East Mesa is retained, 18 previously recorded sites and 50 unrecorded sites would remain under management by the BLM.

Wilderness

Dona Ana County

Disposal of 1,562 acres of isolated and small tracts would not significantly affect the wilderness values of the six Wilderness Study Areas (WSAs). Retention of the balance of public land would allow the continuation of existing management in the WSAs. Acquisition of 1,180 acres immediately adjacent to the Organ Mountains WSA would enhance the manageability of that WSA.

State Land Exchange Area

Retention of the 10,000 acres of public land would not significantly affect the wilderness values of the WSAs.

Livestock Grazing

Dona Ana County

The disposal of 1,010 public acres of isolated tracts and 552 public acres of small tracts would affect an insignificant 5 animal units (AUs). Rangeland improvements located on these lands include 4 miles of fence.

Retention of 1,105,125 acres on which 8,185 AUs are grazed would continue at the present level. Rangeland improvements would remain as at the present time.

The acquisition of 320 acres affecting 3 AUs for livestock grazing is also not significant. Rangeland improvements located on these lands include 1/4 mile of pipeline. Acquisition of State and private lands in the Organ Mountains would affect grazing of 115 AUs. Since only land status would change but not land management, livestock grazing would continue at the present level. Rangeland improvements located on the lands include 5 dirt tanks (1 base water), 4 wells (3 base waters), 4 springs (1 base water), and 6 miles of fence.

State Land Exchange Area

Within the exchange area, there are 47 AUs grazed on 3 allotments. Grazing privileges would remain the same. Rangeland improvements would remain as at the present time.

Visual Resources

Dona Ana County

Disposal of 1,562 acres of isolated and small tracts would not significantly affect visual resources. Retention of the balance of public land would allow the continuation of existing visual resource management on that land. Acquisition of 7,422 acres in the Organ Mountains would give the BLM the authority to manage the visual resources of those lands. Acquisition of 40 acres within the Organ Mountains Scenic Area of Critical Environmental Concern (ACEC) would enhance management of visual quality in the ACEC.

State Land Exchange Area

Retention of the 10,000 acres of public land would allow continued management of the area under Visual Resource Management (VRM) Class III guidelines.

Social and Economic Conditions

Dona Ana County

This alternative would not significantly impact the demographic characteristics, infrastructure, social conditions, or economic structure of Dona Ana County.

The disposal of 1,562 acres of isolated and small tracts would cause Payment in Lieu of Taxes (PILT) to decline by $1,171. BLM AUs would decline by 5 AUs with a corresponding decrease in grazing fees of approximately $81. If the affected livestock operators are unable

to acquire the lands identified for disposal, their grazing permit values would be negatively affected by a range of $1,200 to $4,800. Possible tax revenue generated for the County could be approximately $2,600 for undeveloped land. BLM managerial costs are estimated to increase by approximately 1 percent above 1985 managerial costs for the Resource Area.

The retention of 1,105,125 acres of public land for multiple-use purposes could be favorably perceived by the public.

The acquisition of 7,742 acres of State and private lands could cause PILT to increase by approximately $3,592. Possible tax revenue generated is estimated to decline by a range of $109 if the private land is classified as grazing, to $8,067 if the private land is classified as undeveloped. BLM managerial costs are estimated to increase by $1,440 or .26 percent over 1985 managerial costs for the Resource Area. Taylor Grazing receipts are estimated to increase by approximately $1,912. Consolidation of land status under BLM ownership could be favorably perceived from a multiple-use perspective.

State Land Exchange Area

The retention of the 10,000 acres of public land on the East Mesa would mitigate the public concern regarding the State of New Mexico's ability to manage for multiple-use purposes in conjunction with generating revenue.

ALTERNATIVE II--FAVOR DISPOSAL ALTERNATIVE

The objective of the Favor Disposal Alternative is to emphasize making public land available for disposal with retention of land with resource values where required by laws, regulations, or policies.

Major Components

Dona Ana County

Under the Favor Disposal Alternative, disposal is proposed for 83,302 acres on the East Mesa, 19,379 acres on the West Mesa, and 5,791 acres of land that is difficult and uneconomical to manage or where interest has been shown. The remaining 998,215 acres of public land in Dona Ana County would generally be retained in BLM ownership.

State Land Exchange Area

For the State land exchange proposal, up to 10,000 acres of public land would be disposed of on the East Mesa and 5,000 acres of State land would be acquired in the Organ Mountains.

Environmental Consequences

Lands

Dona Ana County

Impacts to the land resource would be significant under the Favor Disposal Alternative. The disposal of 108,472 acres of public land represents almost 10 percent (9.7) of the total acreage managed by the BLM in Dona Ana County (excluding military withdrawn land).

Additionally, the disposal of 108,472 acres would mean that Government and non-profit organizations that make use of the Recreation and Public Purposes (R&PP) Act for public purpose needs, specifically east of Las Cruces, would be required to purchase lands needed for public purposes at the fair market rate from either State or private landholders. However, prior to the disposal of any public land, the public purpose needs of local Government entities within which the lands are located will be considered on a site-specific basis.

State Land Exchange Area

Impacts to the land resource within the State Land Exchange Area would be moderate under the Favor Disposal Alternative. The disposal of 10,000 acres of public land by exchange to the State of New Mexico (NM 61209) represents approximately 1 percent (0.895) of the total acreage managed by the BLM in Dona Ana County (excluding military withdrawn land).

The disposal of 10,000 acres would mean that Government and non-profit organizations that make use of the R&PP Act for public purpose needs would be required to purchase lands needed for public purposes at the fair market rate from either State or private landholders. However, prior to the disposal of any public land, the public purpose needs of local Government entities within which the lands are located will be considered on a site-specific basis.

The acquisition of 5,000 acres (0.45 percent) of State land within the Organ Mountains would result in no significant impacts to the existing land resource under the Favor Disposal Alternative.

Access

Dona Ana County

Impacts on access to public land within Dona Ana County would be insignificant under the Favor Disposal Alternative.

State Land Exchange Area

Impacts on access to public land within the State Land Exchange Area would be insignificant under the Favor Disposal Alternative.

Geology and Minerals

Dona Ana County

No significant impacts would occur with regard to locatable minerals, in that locations with historic mineral production are generally in retention areas. Should the mineral estate be lost in disposal areas, important resources of sand and gravel and geothermal energy would no longer be under Federal management.

State Land Exchange Area

Sand and gravel and geothermal energy are found on the considered 10,000 acres. The mineral estate would be kept in Federal ownership, protecting exploration and development rights. Future development of these resources could affect exchange suitability in some areas.

Soils

Dona Ana County

Title transfer of the lands considered for disposal under this alternative, would not create impacts to soil quality or condition. Erosion and sedimentation would remain constant. Impacts due to acquisition and retention would not be significant.

State Land Exchange Area

Soils on the 10,000 acres considered for disposal would not be significantly affected by title transfer. The elimination of off-road vehicle use on allotted acreage could slightly reduce local erosion and sedimentation.

Water Resources

Dona Ana County

Water resources on lands considered for disposal, acquisition, and retention would not be impacted by title transfer. Water quality and quantity would be unaffected, as well as surface water structures. The BLM has no ownership or maintenance responsibilities for retention or diversion structures.

State Land Exchange Area

Change in ownership would not necessitate changes in surface or ground waters. Quantity and quality of waters would remain the same, and surface water structures would be maintained by the current permittees.

Vegetation

Dona Ana County

The disposal of 83,302 acres of public land on the East Mesa would have little impact on vegetation and its uses. These lands would no longer be managed and protected by the BLM. Habitat for Corypantha sneedii var. sneedii (Sneed's pincushion cactus), a Federally-listed species, located in the Franklin Mountains would no longer be under management control of the BLM under this alternative. Opuntia arenaria (sand prickly pear), a Federal candidate species is also found in the disposal area.

Disposal of 19,379 acres of public land on the West Mesa would not have a significant impact on the vegetation and its uses. The disposal of 5,791 acres of land that is difficult and uneconomical to manage or where interest has been shown would also not have a significant impact on the vegetation resources. If some of these parcels were disposed, Opuntia arenaria and its habitat would no longer be under management control of the BLM.

Retention of 998,215 acres of public land in the County would provide management and protection by BLM for the vegetation resources and existing threatened, endangered, candidate, or sensitive plant species.

State Land Exchange Area

Within the exchange area, 10,000 acres on the East Mesa would be removed from the BLM's multiple-use management and protection. There are several large arroyos with unique vegetation which provides habitat for wildlife species and could provide an educational experience for the general public.

Acquisition of 5,000 acres in the Organ Mountains would provide Federal protection for the vegetation, its uses, and several threatened, endangered, candidate, and sensitive plant species.

Wildlife

Dona Ana County

Disposals on the East and West Mesas would preclude habitat management by the BLM on about 30 percent of the arroyo-riparian habitat type and about 19,379 acres of habitat where quail are to be a featured species.

As much as 300 acres of riparian habitat in areas designated as difficult and uneconomical to manage or where interest has been shown would be available for disposal.

State Land Exchange Area

All of the habitat in the 10,000 acres, including 800 acres of arroyo-riparian habitat, would be removed from public land management, while the land acquired in the Organ Mountains would become available for deer habitat management by the BLM.

Recreation

Dona Ana County

Disposal of 108,472 acres would eliminate management control by the BLM for recreation resources on that land, including the Dona Ana Recreation Area, the Franklin Mountains, the Isaack Lake area, the Mossman Arroyo and Airport ORV Areas, the Box Canyon area, and the Old Refuge area. Retention of the balance of public land would allow the continuation of existing recreation opportunities on that land.

State Land Exchange Area

Disposal of the 10,000 acres of public land could eliminate most recreation activities on that land except hunting. The Alameda Arroyo ORV Area would be lost from management control by the BLM. Acquisition of the 5,000 acres in the Organ Mountains would provide additional public recreation opportunities and greatly enhance the management of the recreation resources in that area.

Cultural Resources

Dona Ana County

Disposal of parcels totalling 108,472 acres would remove 114 recorded sites and approximately 1,375 unrecorded sites from management by BLM. Retention of 998,215 acres of public land would leave 806 recorded sites, as well as an estimated 12,000 unrecorded sites, under management by the BLM.

State Land Exchange Area

There are 18 recorded sites and an estimated 50 unrecorded ones which would be removed from management by the BLM if 10,000 acres of public land are disposed. Acquisition of 5,000 acres of State land would add 5 recorded sites, as well as an estimated 75 unrecorded sites, to management by BLM.

Wilderness

Dona Ana County

Disposal of 108,472 acres would not significantly affect the wilderness values of the six WSAs. Retention of the balance of public land would allow the continuation of existing management in the WSAs.

State Land Exchange Area

Disposal of the 10,000 acres of public land would not significantly affect the wilderness values of the WSAs. Acquisition of 520 acres immediately adjacent to the Organ Mountains WSA would enhance the manageability of that WSA.

Livestock Grazing

Dona Ana County

Disposal of 83,302 acres of public land on the East Mesa could have a significant impact on livestock grazing if leases are not granted or renewed. There are 470 animal units (AUs) grazed in 8 different allotments. Rangeland improvements located on these lands include 2 wells (both base waters), 2 1/4 miles of pipeline, 74 1/2 miles of fence, 10 dirt tanks (2 base waters), 1 corral, and 1 erosion control structure.

Disposal of 19,379 acres of land on the West Mesa could also have a significant impact. There are 119 AUs grazed on these lands in 3 different allotments. Rangeland improvements located on these lands include 16 1/2 miles of fence (boundary and interior) and 3 dirt tanks.

Disposal of 5,791 acres of land that is difficult and uneconomical to manage or where interest has been shown would not impact livestock grazing. There are 30 AUs grazed on these lands in 7 different allotments. Rangeland improvements located on these lands include 12 miles of fence (boundary and interior), 1 spring (base water), and 2 dirt tanks.

The remainder of Dona Ana County (998,215 acres) which has a grazing preference of 7,571 AUs would provide existing livestock grazing uses to the permittees. Rangeland improvements would remain as at the present time.

State Land Exchange Area

Within the exchange area, there are 47 AUs grazed in 3 different allotments. The Commissioner of Public Lands has stated that current livestock grazing uses would be authorized on these lands. Rangeland improvements located on these lands include 10 1/2 miles of fence (boundary and interior), 1/4 mile of pipeline, 1 trough (base water), 2 dirt tanks, and 3 concrete erosion control structures.

Acquisition of 5,000 acres of State land in the Organ Mountains would affect 57 AUs in 3 different allotments. If these lands are acquired by the BLM, grazing uses would be permitted to current holders of State grazing leases. Rangeland improvements located on these lands include 2 3/4 miles of fence (boundary and interior), 3 springs (1 base water), and 5 dirt tanks (1 base water).

Visual Resources

Dona Ana County

Disposal of 108,472 acres would eliminate BLM visual resource management for that land, including the Franklin Mountains. Retention of the balance of public land would allow the continuation of existing visual resource management on that land.

State Land Exchange Area

Disposal of the 10,000 acres of public land would remove that land from management control under VRM Class III guidelines. Acquisition of the 5,000 acres in the Organ Mountains would give the BLM the authority to manage the visual resources of that land.

Social and Economic Condition

Dona Ana County

Disposal of 108,472 acres in Dona Ana County could cause Payment in Lieu of Taxes (PILT) to decline by approximately $81,354. There could be a decrease of approximately 619 AUs from BLM administration with a corresponding decrease in rangeland improvement funds of approximately $5,000. If the 17 affected livestock operators are unable to acquire the land or are not allowed to continue grazing, there could be a loss of AUs ranging from 1 AU to 160 AUs depending on the particular operation. The value of their grazing permits could also be affected ranging from a decrease in value of $1,200 to $190,800. Those affected operators are presently paying approximately $41,600 for 2,567 BLM AUs which are attached to approximately 351,700 acres. This is estimated to be approximately 12 cents per acre. If the State grazing fee is greater than this amount, the operators would incur an increase in grazing fees. Additionally, the operators could experience a financial strain to existing debt and operating loans if they pursue acquisition of lands identified for disposal.

The Federal Government could lose approximately $79,000 from oil and gas and geothermal leases if the mineral estate is included in the disposal. All profits from exploitation of the minerals resource would accrue either to the State or private parties.

The County tax base would expand as private ownership increased. The potential generation of tax revenue for undeveloped lands could increase by approximately $182,000.

BLM managerial costs are estimated to increase by approximately 10 percent above 1985 managerial costs for the district.

Those who have a deep appreciation for protection of multiple-use values would favorably perceive retention of 998,215 acres. These lands would continue to be important for current and future users.

State Land Exchange Area

The exchange of 10,000 acres of public land to the State of New Mexico would cause PILT to decline by $7,500. BLM AUs would decrease by 47 AUs, grazing fees collected would decline by $761. Three livestock operators could incur an increase in grazing fees as a result of the exchange. If the affected operators are not allowed to continue grazing, their permit values could be affected by a decline of $1,200 for one operator, $24,000 for another operator, and $31,200 for the third operator.

The County tax base could expand by approximately $16,800 as private ownership increased. The actual generation of tax revenue depends on the actual use and classification of the lands. The general attitude regarding the exchange concerns the State's ability to manage for multiple-use purposes. The public is also concerned about why Dona Ana County was solely selected to compensate the State while lands within the Missile Range are also in Socorro, Sierra, Lincoln, and Otero counties.

The acquisition of the 5,000 acres of State land could be favorably perceived by those users of the Organ Mountains. Approximately 57 AUs would be transferred from the State, affecting three operators.

ALTERNATIVE III---PREFERRED ALTERNATIVE

The objective of the Preferred Alternative is to provide a balanced management direction for land tenure adjustment with retention of land with important environmental values and sensitive resources.

Major Components

Dona Ana County

Under the Preferred Alternative, disposal is proposed for 71,957 acres on the East Mesa, 3,936 acres on the West Mesa, and 5,791 acres of land that is difficult and uneconomical to manage or where interest has been shown. The remaining 1,025,003 acres of public land in Dona Ana County would generally be retained in BLM ownership, including the Dona Ana Recreation Area and the Franklin Mountains on the East Mesa. Potential acquisition is proposed for 37,568 acres of lands in and immediately adjacent to special management areas and 3,433 acres of lands identified by BLM and the public for management programs of the BLM.

State Land Exchange Area

For the State land exchange proposal, up to 10,000 acres of public land would be disposed of on the East Mesa and 5,000 acres of State land would be acquired in the Organ Mountains.

Environmental Consequences

Lands

Dona Ana County

Impacts to the land resource would be significant under the Preferred Alternative. The disposal of 81,684 acres of public land represents over 7 percent (7.31) of the total acreage managed by the BLM in Dona Ana County (excluding military withdrawn land).

Additionally, the disposal of 81,684 acres would mean that Government and non-profit organizations that make use of the R&PP Act for public purpose needs, specifically east of Las Cruces, would be required to purchase lands needed for public purposes at the fair market

rate from either State or private landholders. However, prior to the disposal of any public land, the public purpose needs of local Government entities within which the lands are located will be considered on a site-specific basis.

The acquisition of 41,001 acres (3.67 percent) of State and private lands to be included under the management of the BLM would result in no significant impacts to the existing land resource under the Preferred Alternative.

State Land Exchange Area

Impacts to the land resource within the State Land Exchange Area would be moderate under the Preferred Alternative. The disposal of 10,000 acres of public land by exchange to the State of New Mexico (NM 61209) represents approximately 1 percent (0.895) of the total acreage managed by the BLM in Dona Ana County (excluding military withdrawn land).

There are 340 acres within the 10,000-acre disposal area that would be set aside and retained by the Federal Government for future public purpose uses as proposed by certain Government and non-profit entities.

The acquisition of 5,000 acres (0.45 percent) of State land within the Organ Mountains would result in no significant impacts to the existing land resource under the Preferred Alternative.

Access

Dona Ana County

Impacts on access to public land within Dona Ana County would be insignificant under the Preferred Alternative.

State Land Exchange Area

Impacts on access to public land within the State Land Exchange Area would be insignificant under the Preferred Alternative.

Geology and Minerals

Dona Ana County

The greatest effect on mineral exploration and development comes by the loss of the mineral estate in the disposal of lands. Under this alternative, the most significant impacts would come from the loss of sand and gravel and geothermal areas on lands designated for disposal. If the mineral estate is retained, no significant impacts to exploration and development would occur.

State Land Exchange Area

Sand and gravel and geothermal energy are found on the considered 10,000 acres. The mineral estate would be kept in Federal ownership protecting exploration and development rights. Future development of these resources could affect exchange suitability in some areas.

Soils

Dona Ana County

Soils on the land identified for disposal under this alternative would not be impacted by land tenure adjustment. Title transfer would not require changes in surface use affecting soil condition or quality.

State Land Exchange Area

Soils on the 10,000 acres considered for disposal would not be significantly affected by title transfer. The elimination of off-road vehicle use on allotted acreage could slightly reduce local erosion and sedimentation.

Water Resources

Dona Ana County

Ground waters and surface waters would not be affected by land tenure adjustments on land identified for disposal under this alternative. Quantity and quality of both ground and surface waters would remain constant. The BLM has no ownership or maintenance responsibilities for water diversion or retention structures on land designated for disposal.

State Land Exchange Area

Change in ownership would not necessitate changes in surface or ground waters. Quantity and quality of waters would remain the same with surface water structures being maintained by the permittees.

Vegetation

Dona Ana County

The disposal of 71,957 acres of public land on the East Mesa would have little impact on vegetation and its uses. The cactus, Opuntia arenaria (sand prickly pear), a Federal candidate species and its habitat would no longer be under management control of the BLM through disposal of these lands.

The disposal of 5,791 acres of land that is difficult to manage or where interest has been shown and 3,936 acres on the West Mesa would not significantly impact vegetation or its uses. If these parcels were disposed of, O. arenaria and its habitat would no longer be under management control of the BLM.

Retention of 1,013,658 acres of public land would give BLM protection and management to all vegetation resources and Federal and State-listed plants on these lands.

Retention of 8,480 acres of in the Franklin Mountains would give the Federally-listed species Corypantha sneedii var. sneedii (Sneed's pincushion cactus) and its habitat protection. Retention of the 2,865 acres in the Dona Ana Mountains would also give BLM protection and management to the vegetation resources.

The acquisition of 37,568 acres in and adjacent to special management areas and the 3,433 acres for management programs of the BLM would block up public land and provide protection for vegetation and its uses and Federal and State-listed plant species.

State Land Exchange Area

Within the exchange area, 10,000 acres on the East Mesa would be removed from the BLM's multiple-use management and protection. There are several large arroyos with unique vegetation which provides habitat for wildlife species and could provide an educational experience for the general public.

Acquisition of 5,000 acres in the Organ Mountains would provide Federal protection for the vegetation, its uses, and several threatened, endangered, candidate, and sensitive plant species.

Wildlife

Dona Ana County

As much as 2,793 total acres of riparian habitat could become available for habitat management by the BLM through acquisitions in the Rio Grande riparian area and the "Old Refuge," while as much as 300 acres of riparian or wetland habitat could be removed from public land management by disposal of tracts that are difficult and uneconomical to manage or where interest has been shown.

State Land Exchange Area

All of the habitat in the 10,000 acres, including about 800 acres of arroyo-riparian habitat, would be removed from public land management, while the land acquired in the Organ Mountains would become available for deer habitat management by the BLM.

Recreation

Dona Ana County

Disposal of 81,684 acres would eliminate management control by the BLM for recreation resources on that land, including the Isaack lake area and the Mossman Arroyo and Airport ORV Areas. Retention of the balance of public land would allow the continuation of existing recreation opportunities on that land. Acquisition of 18,488 acres in the Organ Mountains would provide additional public recreation opportunities and would very significantly enhance effective management of the recreation resources in that area by consolidating public land ownership. Acquisition of 320 acres within the Kilbourne Hole National Natural Landmark would enhance its manageability. Acquisition of lands in the Rio Grande riparian area, the Old Refuge area, and the Franklin Mountains would provide additional public recreation opportunities in those areas.

State Land Exchange Area

Disposal of the 10,000 acres of public land could eliminate most recreation activities on that land except hunting. The Alameda Arroyo ORV Area would be lost from management control by the BLM. Acquisition of the 5,000 acres in the Organ Mountains would provide additional

public recreation opportunities and greatly enhance the management of the recreation resources in that area.

Cultural Resources

Dona Ana County

Disposal of 81,684 acres of public land would remove 71 recorded sites and an estimated 1,150 unrecorded sites from management by BLM. Retention of 1,022,138 acres of public land would ensure that 819 recorded sites, as well as an estimated 15,100 unrecorded ones, continue under management by the BLM. Thirty recorded sites, along with an estimated 640 unrecorded sites, would be added to management by the BLM if 41,001 acres of State and private lands are acquired.

State Land Exchange Area

If 10,000 acres of public land are disposed of, there are 18 recorded sites and an estimated 50 unrecorded ones which would be removed from management by the BLM. Acquisition of 5,000 acres of State land would add 5 recorded sites, as well as estimated 75 unrecorded sites, to management by BLM.

Wilderness

Dona Ana County

Disposal of 81,684 acres would not significantly affect the wilderness values of the six WSAs. Retention of the balance of public land would allow the continuation of existing management in the WSAs. Acquisition of 19,405 acres in and immediately adjacent to the WSAs would very significantly enhance their manageability and wilderness values. Consolidation of public land ownership in the WSAs would form blocks of public land that could be more easily managed.

State Land Exchange Area

Disposal of the 10,000 acres of public land would not significantly affect the wilderness values of the WSAs. Acquisition of 520 acres immediately adjacent to the Organ Mountains WSA would enhance the manageability of that WSA.

Livestock Grazing

Dona Ana County

The disposal of 71,957 acres of public land on the East Mesa would have a significant impact on livestock grazing if leases are not granted or renewed. There are 388 animal units (AUs) grazed on 8 different allotments. Rangeland improvements located on these lands include 2 wells (both base waters), 2 1/4 miles of pipeline, 58 miles of fence (boundary and interior), 10 dirt tanks (2 base waters), 1 corral, and 1 erosion control structure.

Disposal of 5,791 acres of lands that are difficult to manage or where interest has been shown and 3,936 acres on the West Mesa would not have a significant impact on livestock grazing. There are 59 AUs grazed on this land in 9 different allotments. Rangeland improvements located on these lands include 17 miles of fence (boundary and interior), 6 dirt tanks, and 1 spring (base water).

Retention of the remainder of Dona Ana County (1,013,658 acres) which includes 7,743 AUs would guarantee existing livestock grazing uses to the permittee. Rangeland improvements would remain as at present.

Grazing would continue as at present in the 8,480 acres in the Franklin Mountains and 2,865 acres of the Dona Ana Mountains which would be retained and set aside for other compatible uses. Rangeland improvements would remain as at the present time.

The acquisition of 37,568 acres in and adjacent to special management areas and 640 acres in the Franklin Mountains would form blocked up public land which could be more easily managed. Livestock grazing would continue with 241 AUs grazed on 13 different allotments. Rangeland improvements located on these lands include 11 3/4 miles of fence (boundary and interior), 10 wells (8 base waters), 5 dirt tanks (3 base waters), and 4 springs (2 base waters) would remain as at the present time.

The 2,793 acres (private lands) to be acquired primarily for wildlife and riparian purposes would probably not be grazed after it is acquired.

State Land Exchange Area

Within the exchange area, there are 47 AUs grazed in 3 different allotments. The Commissioner of Public Lands has stated that current livestock grazing uses would be authorized on these lands. Rangeland improvements located on these lands include 10 1/2 miles of fence (boundary and interior), 1/4 mile of pipeline, 1 trough (base water), 2 dirt tanks, and 3 concrete erosion control structures.

Acquisition of 5,000 acres of State land in the Organ Mountains would affect 57 AUs in 3 different allotments. If these lands are acquired by the BLM, grazing uses would be permitted to current holders of State grazing leases. Rangeland improvements located on these lands include 2 3/4 miles of fence (boundary and interior), 3 springs (1 base water), and 5 dirt tanks (1 base water).

Visual Resources

Dona Ana County

Disposal of 81,684 acres would eliminate BLM visual resource management for that land. Retention of the balance of public land would allow the continuation of existing visual resource management on that land. Acquisition of 41,001 acres would give the BLM the authority to manage the visual resources of those lands, most of which are located in or adjacent to existing special management areas classified as VRM Class II. Consolidation of public land ownership would form blocks of public land that could be more easily managed. Acquisition of 450 acres in the Organ Mountains Scenic ACEC would significantly enhance effective management of the ACEC.

State Land Exchange Area

Disposal of the 10,000 acres of public land would remove that land from management control under VRM Class III guidelines. Acquisition of the 5,000 acres in the Organ Mountains would give the BLM the authority to manage the visual resources of that land.

Social and Economic Conditions

Dona Ana County

Disposal of 81,684 acres would cause Payment in Lieu of Taxes (PILT) to decline by approximately $61,263. BLM AUs would decline by 447 AUs with a decrease in grazing fees of approximately $7,241.

If the land is acquired by the State, and livestock grazing is not allowed to continue, 17 operators could experience a loss of AUs ranging from 1 to 138 AUs depending on the particular operation. This could amount to a decrease in the operator's grazing permit value ranging from $1,200 to $165,600. If grazing is allowed to continue, then operators could experience increased costs in the form of higher grazing fees.

If the disposal includes the mineral estate, then approximately $36,463 for geothermal leases, and $22,348 in oil and gas leases could be lost annually. All revenues and royalties from future production could also be lost.

Possible tax revenue generated could be approximately $137,572 for undeveloped land. The transfer of public land could be perceived by the public as an irreversible impact regarding availability for multiple-use purposes.

BLM managerial costs are estimated to increase by approximately 7.6 percent above 1985 managerial costs for the district.

The retention of 1,025,003 acres of public land would continue to be available for multiple-use purposes. These lands will continue to be important for current and future users.

The acquisition of 41,001 acres of State and private lands could cause PILT to increase by approximately $8,852. Taylor Grazing Receipts are estimated to increase by $3,900. Tax revenue generated is estimated to decline by a range of $268 if the private land is classified as grazing to $19,900 if the private land is classified as undeveloped. BLM managerial

costs are estimated to increase by approximately 1.4 percent above 1985 managerial costs for the Resource Area. Any attempt to consolidate the land status under BLM ownership would be favorably perceived from a multiple-use perspective.

State Land Exchange Area

The exchange of 10,000 acres would cause PILT to decline by approximately $7,500. There would be a loss of 47 AUs which accounts for a decrease in grazing fees collected of $761. Three livestock operators would be affected by the exchange. If the State does not allow grazing, the operators could experience a decrease in their grazing values ranging from $1,200 for one operator, $24,000 for another operator, and $31,200 for the third operator.

The County tax base could expand as the State of New Mexico provides land to private parties. Potential tax revenue could be approximately $16,800. As the lands are developed and the land classification changes, tax revenue generated would increase accordingly.

There is a certain amount of uncertainty among the public regarding the exchange of these lands. Some feel the generation of State revenues would take precedence over protecting multiple-use values. The acquisition of the 5,000 acres of State land would enhance the manageability of the Organ Mountain Recreation lands. Approximately 57 AUs would be transferred from the State affecting three operators.

SUMMARY OF ALTERNATIVES

Component	Acres
ALTERNATIVE I - NO ACTION	
Dona Ana County	
Disposal	1,562
Isolated Tracts	1,010
Small Tracts	552
Retention	1,105,125
Acquisition	7,742
Rough and Ready Station and Fort Mason	320
Lands in Organ Mountains	7,422
State Land Exchange Area	
Disposal	0
Retention	10,000
Acquisition	0
ALTERNATIVE II - FAVOR DISPOSAL	
Dona Ana County	
Disposal	108,472
East Mesa	83,302
West Mesa	19,379
Land Difficult and Uneconomical to Manage or Where Interest Shown	5,791
Retention	998,215
Acquisition	0
State Land Exchange Area	
Disposal	10,000
Retention	0
Acquisition	5,000
ALTERNATIVE III - PREFERRED	
Dona Ana County	
Disposal	81,684
East Mesa	71,957
West Mesa	3,936
Land Difficult and Uneconomical to Manage or Where Interest Shown	5,791
Retention	1,025,003
West Mesa and Organ Mountains	1,013,658
Dona Ana Recreation Area	2,865
Franklin Mountains	8,480

SUMMARY OF ALTERNATIVES

Component	Acres
Acquisition	41,001
Lands in WSAs, Organ Mountains, and Kilbourne Hole	37,568
Rio Grande Riparian Area	2,310
Old Refuge Area	483
Franklin Mountains	640
State Land Exchange Area	
Disposal	10,000
Retention	0
Acquisition	5,000

Source: BLM, Las Cruces District Office Files, 1986.

SUMMARY OF IMPACTS

Resource	Alternative I Favor Retention (No Action) DAC	Alternative I Favor Retention (No Action) SLEA	Alternative II Favor Disposal DAC	Alternative II Favor Disposal SLEA	Alternative III Preferred DAC	Alternative III Preferred SLEA
LANDS						
BLM Ownership	+0.69%[a]	NC	-9.7%	-0.45%[a]	-3.64%[a]	-0.45%[a]
ACCESS	NS	NS	NS	NS	NS	NS
GEOLOGY AND MINERALS						
Exploration and Development						
Estate Retained	NC	NC	NS	NS	NS	NS
Estate Lost	NA	NA	D	NA	D	NA
SOILS						
Erosion	NC	NC	NS	NS	NS	NS
Sedimentation	NC	NC	NS	NS	NS	NS
Compensation	NC	NC	NS	NS	NS	NS
WATER RESOURCES						
Ground Water						
Quality	NC	NC	NS	NS	NS	NS
Quantity	NC	NC	NS	NS	NS	NS
Surface Water						
Quality	NC	NC	NS	NS	NS	NS
Quantity	NC	NC	NS	NS	NS	NS
VEGETATION	NS	NS	-	NS	-	NS
Threatened and Endangered						
Plants (Habitat)	-	NS	-	NS	-	NS
WILDLIFE						
Management Opportunities						
Arroyo-Riparian	NC	-	-	-	+	-
Big Game	NC	+	NC	+	NC	+
Quail	NC	NC	-	NC	NC	NC
Threatened and Endangered						
Fauna	NC	-	-	-	+	-
RECREATION						
Opportunities	+	NC	-	+	+	+
CULTURAL RESOURCES						
Previously Recorded Sites						
Retention	943	18	806	0	819	0
Disposal	6	0	114	18	71	18
Acquisition	14	0	0	5	30	5

SUMMARY OF IMPACTS
(concluded)

Resource	Alternative I Favor Retention (No Action) DAC	Alternative I Favor Retention (No Action) SLEA	Alternative II Favor Disposal DAC	Alternative II Favor Disposal SLEA	Alternative III Preferred DAC	Alternative III Preferred SLEA
WILDERNESS	+	NS	NS	+	+	+
LIVESTOCK GRAZING						
Animal Units						
Retention	8,185	47	7,571	0	7,743	0
Disposal	5	0	619	47	447	47
Acquisition	118	0	0	57	241	57
Rangeland Improvements	NS	-	-	-	-	-
VISUAL RESOURCES	+	NC	-	+	+	+
ECONOMIC CONDITIONS[b]						
Payments in Lieu of Taxes (Dollars)	+$2,421	NC	-$81,354	-$7,500	-$52,411	-$7,500
Taylor Grazing Receipts (Dollars)	+$1,831	NC	-$10,028	+$162	-$3,337	+$162
Potential Tax Revenue[c] (Dollars)	-$5,436	NC	+$182,688	+$16,842	+$117,693	+$16,842
BLM Managerial Costs[d]	+$6,217	NC	+$329,902	NC	+$265,529	NC

Source: BLM, Las Cruces District Office Files, 1985.

Notes: [a] Includes potential land aquisition by the BLM.
[b] Cumulative impact for each alternative.
[c] Assumes classification for undeveloped lands.
[d] Las Cruces/Lordsburg 1985 Managerial Costs, $540,127.
DAC -- Dona Ana County
SLEA -- State Land Exchange Area
D -- Decrease
NS -- Not Significant
NC -- No Change
NA -- Not Applicable
- -- Negative Impact
+ -- Beneficial Impact

CHAPTER 1
INTRODUCTION

INTRODUCTION

PURPOSE AND NEED

The purpose of this document is to consider amending the Southern Rio Grande Management Framework Plan (MFP) (BLM 1982) for land tenure adjustment in Dona Ana County. The Southern Rio Grande Plan Amendment/Environmental Impact Statement (SRGPA/EIS) will consider the following two areas.

Dona Ana County

For the purposes of this document, the Dona Ana County area is defined as all lands within Dona Ana County except for the State Land Exchange Area, which is defined below and shown on Maps 1-1 and 1-2. Within the Dona Ana County area, the BLM has identified public land for retention and public land that is suitable for disposal to City, County, or State Governments or other Federal agencies or individuals. The BLM has also identified private and State lands for potential acquisition and land that could be relinquished by the U.S. Army (area north of Soledad Canyon) that would consolidate public ownership and enhance the management opportunities for BLM programs. This document contains a broad, general level of planning detail and environmental analysis for the Dona Ana County area; site-specific analysis will be completed later when specific land tenure adjustments are proposed and applications processed.

State Land Exchange Area

This area is defined as those lands involved in a proposal by the State of New Mexico to exchange certain State land within and near the White Sands Missile Range (WSMR) for selected public land east of Las Cruces, New Mexico. These areas are shown on Maps 1-1 and 1-2. The offered land is approximately 73,560 acres of State land in the WSMR not currently in litigation and 5,000 acres of State land in the Organ Mountains. The selected public land is 10,000 acres east of Las Cruces. This document contains a site-specific analysis for the 10,000 acres of public land and the 5,000 acres of State land. If the 73,560 acres of State land in the WSMR is exchanged, it will come under the jurisdiction of the U.S. Army.

The State land exchange proposal considered in this document was initiated by the New Mexico Commissioner of Public Lands on August 5, 1985. In the late 1970's, the New Mexico Commissioner of Public Lands and the State grazing lessees brought suit in the Court of Claims on approximately 270,240 acres of the 343,800 acres of State land in the WSMR. The suit addressed those lands where the State grazing lessee was willing to enter into the suit with the Commissioner. A decision on the suit, Court of Claims Suit No. 94-79L, was made on October 21, 1981. The Court decided that a "taking" had occurred. An agreement between the parties set the date of the "taking" on July 1, 1976. The compensation for approximately 270,240 acres of State land has yet to be resolved. The other 73,560 acres of State land in the WSMR that is not under litigation is proposed for exchange in this document.

The title transfer of the 73,560 acres of State land in the WSMR to the Federal Government would assist the acquisition program of the U.S. Army and compensate the State of New Mexico with public land. The United States has a special trust responsibility to the State to ensure it has use of all lands granted under the State's Enabling Act for public education.

The identification of public land that is suitable for disposal would provide (a) compensation to the State for State land in WSMR, (b) the base lands for possible future State and private exchanges, whereby each entity could consolidate their ownership, (c) accommodate the demonstrated needs expressed by City, County, and State Governments, other Federal agencies, or individuals, and (d) a basis for disposal of public land that is difficult or uneconomical for BLM to manage.

Public land that is in a retention area will continue to be managed by BLM for its multiple-use values. However, limited disposal will be permitted in retention areas for public purposes and private and State exchanges. The purpose of an exchange in a retention area would be to consolidate the ownership of each entity for management efficiency.

The SRGPA/EIS is being prepared in accordance with the Federal Land Policy and Management Act, the National Environmental Policy Act (NEPA), the BLM's planning regulations (43 Code of Federal Regulations [CFR] 1600), and the Council on Environmental Quality regulations (40 CFR 1500). This document considers only land tenure adjustments; decisions for other resources are contained in the Records of Decisions for the Southern Rio Grande Management Framework Plan (MFP)(BLM 1982) and Las Cruces/Lordsburg MFP Amendment (BLM 1984).

LOCATION

Dona Ana County and the WSMR are located in south-central New Mexico. Dona Ana County contains approximately 2.4 million acres of which 46 percent (1.1 million acres) is public land, 12 percent (.3 million acres) is State land, 14 percent (.3 million acres) is privately-owned, and 25 percent (.6 million acres) is withdrawn land. The BLM has minerals management responsibility either fully or jointly on 1.8 million acres. (See Visuals located in map pocket for land status.)

WSMR is a National range which supports missile development and test programs for the U.S. Army, Navy, and Air Force, National Aeronautics and Space Administration (NASA), and other government agencies. The WSMR contains approximately 1.8 million acres, of which 1.4 million acres are withdrawn public land, .3 million acres are State land, and .1 million acres are private land that has been acquired in fee by the Department of the Army.

PLANNING PROCESS

The planning process is designed to enable BLM to address the issues and concerns of the public while complying with the laws and policies established by Congress and the Executive Branch of the Federal Government. The SRGPA/EIS process involves nine basic actions and emphasizes the role of public participation at several key stages. The nine planning actions are as follows:

- Identification of Issues
- Development of Planning Criteria
- Inventory and Data Collection
- Analysis of Management Situation
- Formulation of Alternatives
- Estimation of Effects of Alternatives
- Selection of Preferred Alternative
- Selection of Plan Amendment
- Monitoring and Evaluation

Identification of Issues

An amendment to the existing Southern Rio Grande MFP is being prepared as a single planning issue document with the EIS to address the State exchange proposal and other land tenure adjustments for Dona Ana County. This issue was developed by BLM managers and specialists together with the public, other Federal agencies, and State and local Governments for the planning effort.

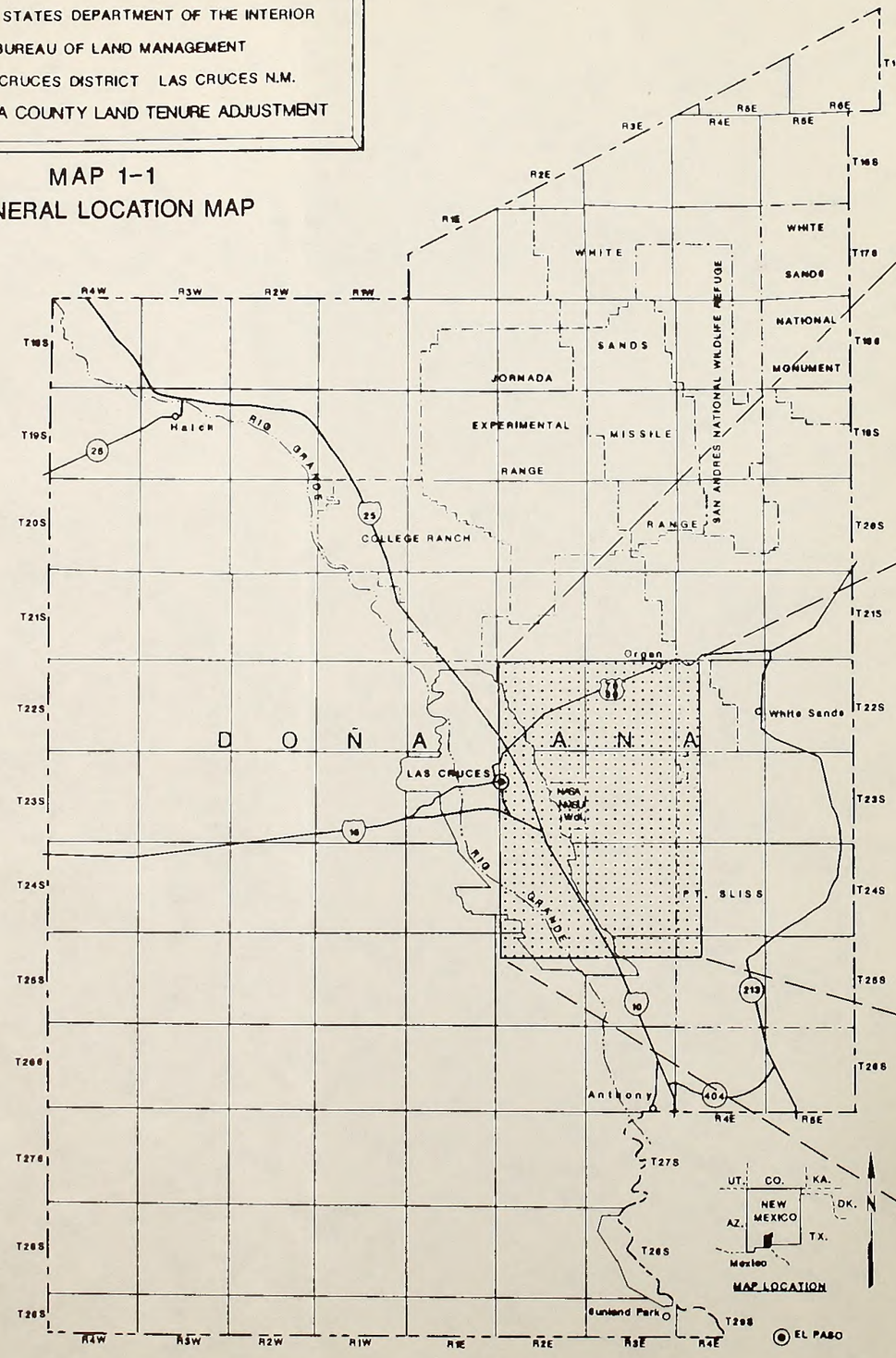
Development of Planning Criteria

After the issue was identified, planning criteria were developed to guide this plan amendment. The criteria were developed from laws, executive orders, regulations, planning principles, National and BLM State guidance, public involvement, and resource information. The criteria helped to set the standards for data collection, to establish alternatives to be examined, and to select the preferred alternative and final plan. Planning criteria ensure that the plan is tailored to the issue and that unneeded data collection and analysis are avoided. The following are planning criteria which were used in preparation of the SRGPA/EIS for land tenure adjustment:

> Public land in Dona Ana County will be retained under management by the BLM in the following priority:
>
> (1) Public land that has unusual or historic, cultural, mineral, recreational, natural hazard, or scenic value; that represent natural systems or processes; and which has significance and special worth, consequence, meaning, distinctiveness, or cause for concern.

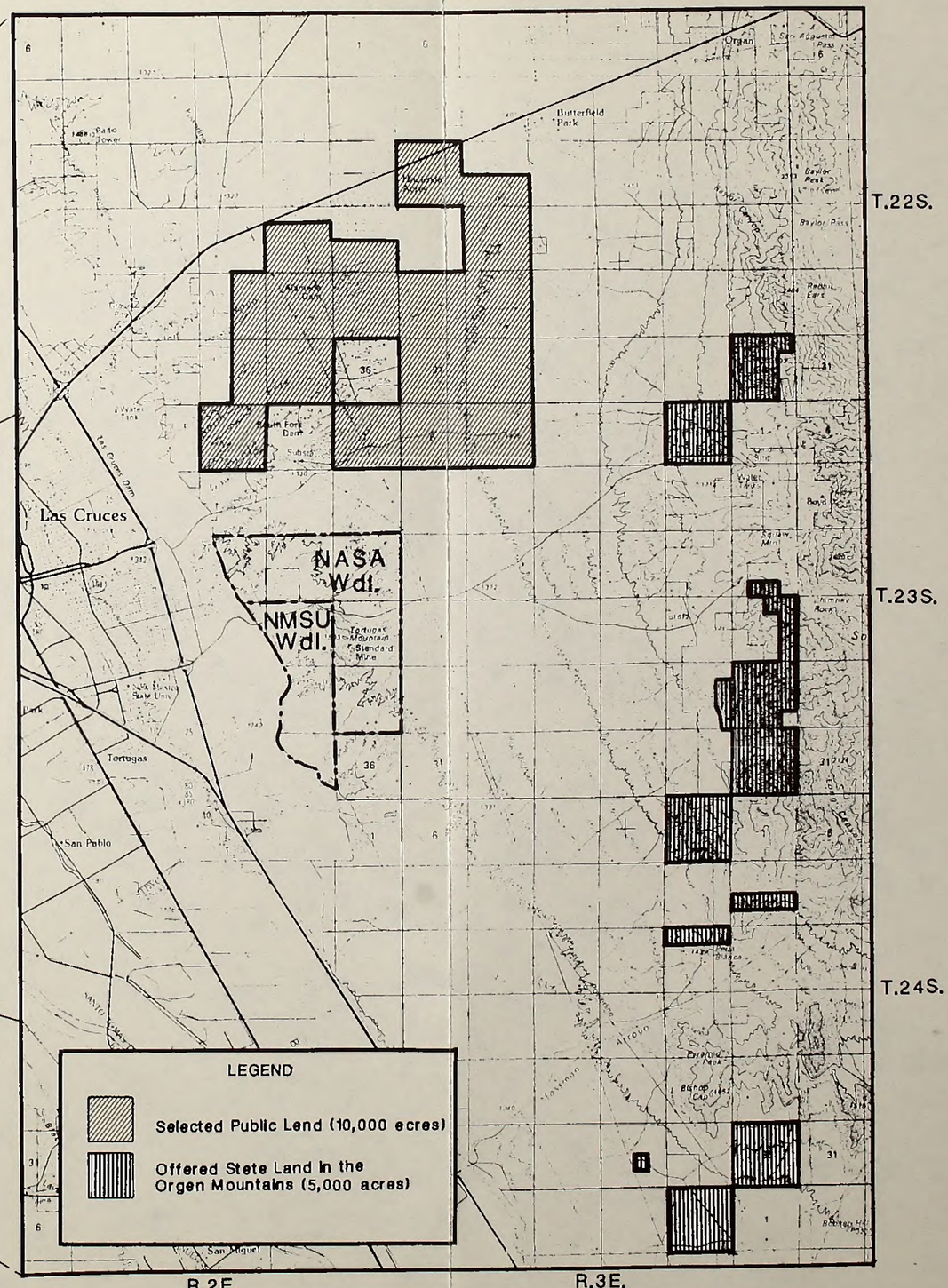
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICT LAS CRUCES N.M.
DONA ANA COUNTY LAND TENURE ADJUSTMENT

MAP 1-1
GENERAL LOCATION MAP



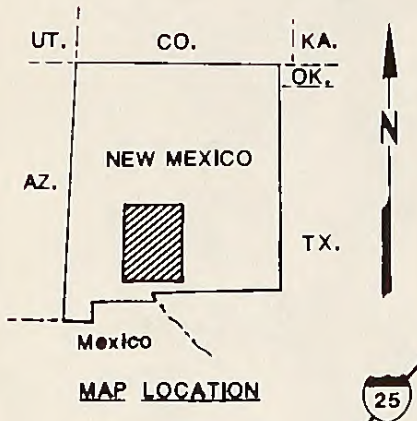
SOURCE: BLM Las Cruces District Files, 1985

STATE LAND EXCHANGE AREA



MAP 1-2

STATE OFFERED LANDS WITHIN WHITE SANDS MISSILE RANGE



MAP LOCATION

N

San Antonio

380

Rio Grande

25

T.5S.
T.6S.
T.7S.
T.8S.
T.9S.
T.10S.
T.11S.
T.12S.
T.13S.
T.14S.
T.15S.
T.16S.
T.17S.
T.18S.
T.19S.
T.20S.
T.21S.
T.22S.
T.23S.

SOCORRO COUNTY

LINCOLN COUNTY

SIERRA COUNTY

OTERO COUNTY

DONA ANA COUNTY

Carrizozo

Oscuro

54

Three Rivers

Tularosa

Alemogordo

70

Truth or Consequences

WHITE SANDS MISSILE RANGE BOUNDARY

Rio Grande

Post Area

Orogrende

LAS CRUCES

R.2E. | R.3E. | R.4E. | R.5E. | R.6E. | R.7E. | R.8E. | R.9E.

LEGEND

State Land

County Lines

Kilometers

0 5 10 15 20 25

Miles

0 5 10 15 20 25

Source: Department of the Army White Sands Missile Range, 1985

- o Acquire where possible non-Federal lands located in Special Management Areas in Dona Ana County that have high resource values or unique characteristics that would enhance management of the public land.

(2) Public land located in large blocks which do not require special management but should be retained due to the land ownership pattern and for multiple-use values.

- o Improve land management potential by consolidating land ownership by exchange of public, State, and private lands. Only those parcels which will enhance overall consolidation of public land will be considered for exchange.

- o In the retention area, public land will be considered for disposal for needed public purposes.

-- Public land in Dona Ana County will be considered for disposal in the following priority:

(1) Entertaining a State exchange application for 78,560 acres of State land within the WSMR and the Organ Mountains for 10,000 acres east of Las Cruces, New Mexico.

(2) Public land in Dona Ana County to accommodate the demonstrated needs expressed by local, city, County, State Governments or individuals.

(3) Public land in Dona Ana County for disposal whose size, location, or other physical characteristics make them difficult or uneconomical for BLM to manage.

Inventory and Data Collection

Using the planning criteria and focusing on the issue of a State exchange proposal and other land tenure adjustments for Dona Ana County, BLM specialists identified resource inventory needs and collected data accordingly. The inventories involved data collection, field examination, literature searches, and consultation with agencies, organizations, and individuals.

Analysis of Management Situation

The BLM gathered information and evaluated the capability and condition of the physical and biological characteristics of the County. This analysis provided the data base for developing and evaluating alternatives. The Management Situation Analysis (MSA) is available for public review at the BLM Las Cruces District Office.

Formulation of Alternatives

The SRGPA/EIS analyzes potential impacts of the alternatives. The following alternatives were developed on the basis of the land tenure adjustment issue and the concerns raised during scoping: Favor Retention [(No Action Alternative)(Alternative I)], Favor Disposal Alternative (Alternative II), and Preferred Alternative (Alternative III). Other alternatives were initially considered but eliminated from detailed analyses. These alternatives are discussed in the Alternatives Considered but Eliminated from Detailed Analysis section of Chapter 2.

Estimation of Effects of Alternatives

In accordance with NEPA, the SRGPA/EIS analyzes the physical, biological, economic, and social effects of implementing the alternatives. A site-specific analysis was completed for the 10,000 acres of public land and 5,000 acres of State land based on the assumption that the exchange is only a change of ownership and the present uses of the land would continue for the foreseeable future. A general analysis was completed for the other land tenure adjustment, but a site-specific environmental assessment will be prepared when future proposals are acted upon by BLM. See Chapter 4 for details.

Selection of Preferred Alternative

The Preferred Alternative is Alternative III. Its formulation was based on (a) the issue and concerns identified through the planning process, (b) information obtained from public meetings and letters, (c) formal coordination

and consultation with other agencies, (d) decision criteria developed and considered by management, and (e) impact analyses of the alternatives. The Las Cruces/Lordsburg Resource Area Manager and the District Manager recommended the Preferred Alternative to the New Mexico State Director, who reviewed the analysis and approved the alternative. The Preferred Alternative along with the other alternatives has been analyzed in the Draft SRGPA/EIS. The public has 90 days, following the notice of filing with the Environmental Protection Agency (EPA), to review and comment on the Draft SRGPA/EIS.

Selection of Plan Amendment

The Las Cruces/Lordsburg Area Manager and District Manager will evaluate comments received on the Draft SRGPA/EIS. Depending on the comments, the managers may reassess or modify the Preferred Alternative or select from the range of other alternatives identified in the Draft SRGPA/EIS. After reviewing the District Manager's recommendation, the BLM New Mexico State Director will file the proposed plan amendment and Final EIS with the EPA.

The Governor of the State of New Mexico and the Governor of the State of Texas will be given a 60-day consistency review to allow the States to determine whether the Final SRGPA/EIS is consistent with or conflicts with State and local Government plans and policies. This review of the Final SRGPA/EIS will begin when the Governors receive copies of the camera-ready document.

If no protest is received within 30 days after the Final SRGPA/EIS is filed, the State Director will approve the plan and publish a Record of Decision (ROD).

Implementation of the decision could then take place. It is anticipated that implementation would take place during the next 20 years which is the expected life of the Plan. For the State Land Exchange Area, it is anticipated that implementation would take place within a much shorter time period (3 years or less).

Monitoring and Evaluation

After the ROD is published, intervals and standards for monitoring and evaluating the plan will be established. The intervals will not exceed 5 years. Standards will be developed to determine whether the mitigation measures are satisfactory, assumptions used in the assessment of impacts are correct, or significant changes have occurred in the related plans of other Federal, State, or local Governments. The information gained will be incorporated into any future planning.

CONFORMANCE STATEMENT

The Southern Rio Grande MFP, completed in 1982, did not identify the selected land for disposal. In accordance with the planning regulations (43 CFR 1600 Subpart 1610.5), the alternatives as discussed in this document propose changes in the scope, terms, and conditions contained in the Southern Rio Grande MFP and will require an amendment.

CONSISTENCY WITH OTHER PLANS

At this time, there are no known inconsistencies between any of the alternatives and officially approved and adopted resource related policies and programs of other Federal agencies, State and local Governments, and Indian tribes. Continuing coordination and consultation will take place during the public comment period on the Draft Plan Amendment, the Final Plan Amendment, and the ROD. As previously noted, the Governors of New Mexico and Texas will have 60 days to review the Proposed Plan which is contained in the Final Plan Amendment to determine consistency with State plans.

CHAPTER 2
ALTERNATIVES

ALTERNATIVES

INTRODUCTION

Three different alternatives were developed for resolution of the land tenure adjustment issue for public land in Dona Ana County. This chapter contains management guidance applicable to all three alternatives, a description of each of the three alternatives, and a discussion of other alternatives that were considered but not analyzed in detail. Tables 2-1 and 2-2, at the end of this chapter, summarize the components and effects of the three alternatives.

Development of the three alternatives for the land tenure adjustment issue was guided by the planning criteria (see Chapter 1), public consultation, coordination with other agencies, and evaluation by the BLM. The three alternatives represent a reasonable range of options, from favoring retention to favoring disposal.

MANAGEMENT GUIDANCE COMMON TO ALL ALTERNATIVES

The following management guidance is applicable to, and thus constitutes a part of, all alternatives considered in detail. This section also contains mitigation measures and standard stipulations used to minimize environmental impacts. It also provides background information explaining how the plan fits into program actions.

Public land will be considered for disposal when (a) the lands are determined to be no longer required for a Federal project or a resource management activity; (b) disposal of the lands will serve important public objectives; or (c) the lands are isolated and difficult to manage under present BLM management. Disposal of the public land may be accomplished by sale, exchange, or Recreation and Public Purposes (R&PP) patent pursuant to applicable Federal authority, such as Sections 203 and 206 of the Federal Land Policy and Management Act (FLPMA) of 1976 (Public Law 94-579) or the R&PP Act (43 United States Code 869 et. seq.) and other applicable disposal authority.

Items to be examined while considering the merits of any disposal or acquisition action include:

1. Consistency and Conformance
2. Threatened or Endangered Plant and Animal Species and Their Habitat
3. Wilderness Values
4. Prime and Unique Farmlands
5. Floodplain and Flood Hazard Evaluation
6. Cultural and Paleontological Resource Values
7. Visual Resources
8. Areas of Critical Environmental Concern (ACECs)
9. Wetlands
10. Existing Rights and Uses
11. Controversy
12. Health and Safety
13. Mineral Resources
14. Adjacent Uses and Ownership
15. Access

Additionally, for disposals or acquisitions, other items to be considered would include:

1. Is the disposal or acquisition in the public interest?
2. Are the lands being offered of comparable value to the public land selected?

There is a general goal to consolidate public land holdings in a blocked-up pattern of land ownership. The areas shown on Visuals A and B are flexible and may be adjusted via disposals and acquisitions consistent with the Memorandum of Understanding (MOU) dated October 3, 1984, between BLM and the New Mexico State Land Office, and subsequent documents, and other applicable Federal authority for disposal of public land. Land not identified for land tenure adjustment in this plan amendment will generally be retained in compliance with Section 102(a)(1) of FLPMA. Any land not identified for disposal but which is selected for disposal in the future will be removed from BLM ownership only if the action is consistent with the planning criteria (see Chapter 1). Any adjustments in the pattern of land

ownership would be done in order to allow BLM to efficiently carry out its management of the public land. Priorities for blocking-up would include wilderness study areas (WSAs), wildlife habitat, watersheds, land treatment areas, grazing administration, cultural values, and other resource considerations.

Support for land disposal and acquisition actions would include cadastral survey, appraisal, and conflict resolution. Site-specific Notices of Realty Action, land reports, and Environmental Assessments (EAs) would be completed prior to any disposal or acquisition (except for the State Land Exchange proposal which is analyzed in detail in this document).

Other lands-related activities that may occur in addition to sales, exchanges, easement acquisitions, and R&PP patents include: (a) R&PP leases; (b) permits, leases, and easements; (c) rights-of-way (ROWs); (d) withdrawals and withdrawal reviews; (e) classifications; and (f) other activities necessary to accomplish BLM's mandated tasks.

Those isolated parcels of public land within the boundaries of the Elena Gallegos Exchange are reserved by MOUs with the City of Las Cruces and the Las Cruces School District No. 2 for future development under the R&PP Act. Within the 10,000 acres of public land in the State Land Exchange Area, the following 45 acres will be reserved for existing and pending R&PP leases: T. 22 S., R. 3 E., Section 17, N1/2NE1/4SE1/4, SE1/4NE1/4SE1/4, NM 0559218 Dona Ana County-Butterfield Park Landfill; T. 22 S., R. 3 E., Section 18, S1/2S1/2 of Lot 4, NM 57117 Dona Ana County-Hacienda Acres Park; T. 23 S., R. 2 E., Section 3, W1/2SW1/4SW1/4SW1/4, NM 52173 Las Cruces Christian Church (See Map 2-1).

The BLM's preferred method for land tenure adjustments will be to include both surface and subsurface estates, where possible. For the State Land Exchange proposal, only the surface estates would be exchanged. Prior to the disposal of any parcel of public land, whether surface only or surface and subsurface (mineral estate), a mineral report must be completed. Depending upon the type of disposal proposed, the report may be required to assess the mineral potential or mineral character of the involved lands or determine if disposal of the surface will unreasonably interfere with development of the mineral estate. Recommendations are made concerning the suitability of the parcel for disposal based upon the findings of the report. In this way, impacts to mineral exploration and development resulting from land disposal are minimized. Within the 10,000 acres of public land in the State Land Exchange Area, the following 140 acres will be retained for existing sand and gravel claims: T. 23 S., R. 2 E., Section 3, S1/2SE1/4NE1/4, S1/2SW1/4NE1/4, N1/2NE1/4SE1/4, N1/2NW1/4SE1/4, S1/2SW1/4SE1/4, SE1/4SE1/4 (see Map 2-1).

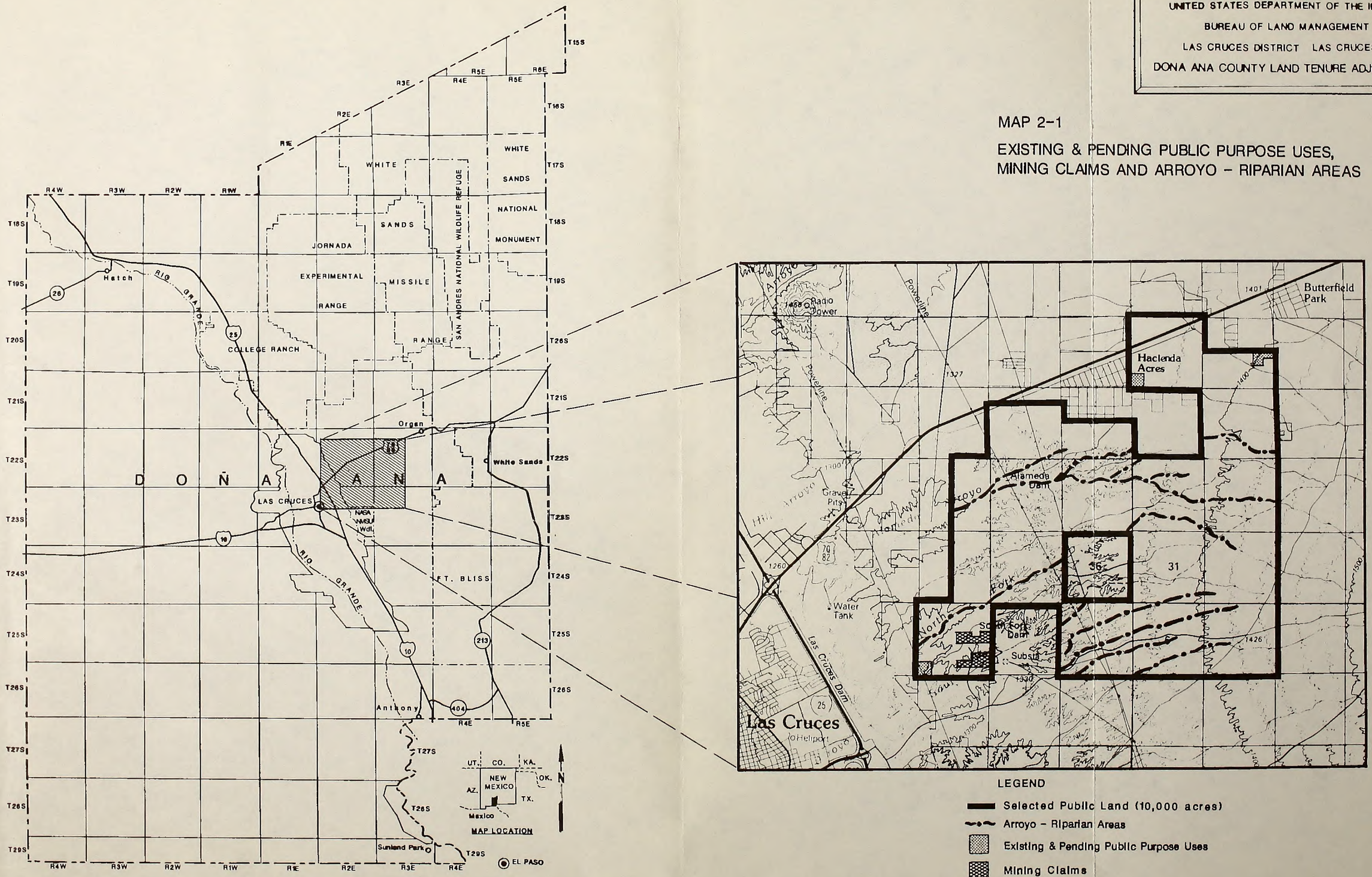
Any water rights held by BLM would be transferred along with any land disposal. Water rights on public land held by a grazing permittee or other private party would remain the property of the private party and would not be transferred as part of the proposal.

Federal-listed threatened or endangered and sensitive species will be managed according to applicable laws and policies. Consultations with the U.S. Fish and Wildlife Service will occur as necessary on specific actions, and all identified habitats for threatened or endangered and sensitive species will be managed for recovery of the listed species or to prevent listing of sensitive species. The purposes of the Endangered Species Act [Public Law 97-304 as amended, Sec. 2 (b)] "are to provide a means whereby the ecosystems upon which endangered and threatened species depend may be conserved, ..." Section 7 (a) of Public Law 97-304 (1) directs "The Secretary (of the Interior) shall review other programs administered by him and utilize such programs in furtherance of the purposes of this Act." Section 7 also directs all Federal agencies to, "in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act." The BLM has developed policies and guidance to implement its responsibilities under Public Law 97-304. Included is a policy of management of "sensitive species" and their habitat to avoid the need for official listing as threatened or endangered species. Included in the category of "sensitive species" are those plant and animal species whose numbers are declining so rapidly that official listing may become necessary as a conservation measure.

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICT LAS CRUCES N.M.
DONA ANA COUNTY LAND TENURE ADJUSTMENT

MAP 2-1

EXISTING & PENDING PUBLIC PURPOSE USES, MINING CLAIMS AND ARROYO - RIPARIAN AREAS



LEGEND

- Selected Public Land (10,000 acres)
- Arroyo - Riparian Areas
- Existing & Pending Public Purpose Uses
- Mining Claims

SOURCE : BLM Las Cruces District Files, 1985

All riparian and wetland areas will be retained in Federal ownership except in compliance with BLM policy (Manual 6740) or in compliance with Executive Order 11990. Executive Order 11990 requires "When Federally-owned wetlands or portions of wetlands are proposed for lease, easement, right-of-way or disposal to non-Federal public or private parties, the Federal agency shall (a) reference in the conveyance those uses that are restricted under identified Federal, State or local wetland regulations, and (b) attach other appropriate restrictions to the uses of properties by the grantee or purchaser and any successor, except where prohibited by law; or (c) withhold such properties from disposal." Map 2-1 shows the locations of the arroyo-riparian areas within the 10,000 acres of public land in the State Land Exchange Area. These arroyo-riparian areas, although recognized as valuable wildlife areas, are not within the intent of Manual 6740 or Executive Order 11990.

Regulations (43 Code of Federal Regulations [CFR] 4120.3-6(c)(d)) provide for reimbursement of rangeland improvements to the rangelands users for their contributions. This reimbursement is based on the appraised value of the improvement at the time of disposal or exchange. However, if the land is transferred to the State of New Mexico, a reimbursement may not be appropriate since grazing use would continue as in the past and the rangeland user would be issued a permit for the improvement on State land. The cost of compensating the permittee would be borne by the agency requesting or benefitting from the exchange. The value of Federally appropriated funds used in rangelands improvements would be included in the appraised value of the land, but there would be no reimbursement to the Range Betterment Fund.

For the proposed State Land Exchange with the State of New Mexico, the conditions are described in a letter from the Commissioner of Public Lands (see Appendix J.) As stated in the letter, the existing livestock grazing use will be authorized by the State and hunting will continue to be allowed during established seasons. Recreation uses on State land will be at the discretion of the State and their lessees. The mineral estate will be reserved by the U.S. Government and the mineral leasees will retain the right of exploration and development of the leasehold. For cultural resources, a Memorandum of Agreement between the New Mexico State Historic Preservation Officer and the BLM was signed on February 19, 1985, which established cooperative procedures to be followed in protecting significant cultural resources on public land which is transferred to the State of New Mexico (see Appendix F-1 for a copy of the Agreement).

ALTERNATIVES CONSIDERED IN DETAIL

Alternative I - Favor Retention Alternative (No Action)

Objective

The Favor Retention Alternative (No Action Alternative) reflects a continuation of current management direction and existing land use plan decisions for land tenure adjustment.

Components

Current management would continue as outlined in the Southern Rio Grande Management Framework Plan (MFP) (BLM 1982). Proposals for land tenure adjustment would be processed and analyzed as they are proposed and received. Approximately 200 acres would be considered annually. The following areas would be considered for disposal, retention, or acquisition. Map 2-2 shows the locations of the areas. (See Appendix A for legal descriptions of lands in the State Land Exchange Area; legal descriptions for other proposed disposal and acquisition areas are given in Technical Report I.)

Dona Ana County

Disposal (1,562 acres)

1. Dispose of 1,010 acres of isolated tracts of public land that are uneconomical to manage and do not have sufficient multiple-use values to warrant their retention.

2. Dispose of 552 acres of small tracts of public land which have been identified for disposal to resolve existing occupancy trespass or for which individuals have expressed an interest.

Retention (1,105,125 acres)

1. Public land in Dona Ana County would generally be retained in BLM ownership except for the tract-specific disposal decisions previously listed.

Acquisition (7,742 acres)

1. Pursue acquisition of the Rough and Ready Station (160 acres) and Fort Mason (160 acres) on State land as historic sightseeing areas.

2. Pursue acquisition of 7,422 acres of State and private lands in the Organ Mountains.

State Land Exchange Area

Retention (10,000 acres)

1. Retain the 10,000 acres of public land identified by the State of New Mexico on the East Mesa as part of the proposed State Land Exchange. No action would be taken on the proposed State Land Exchange. Within the 10,000 acres, a total of 190 acres would continue to be set aside for existing sand and gravel claims and existing R&PP leases.

Alternative II - Favor Disposal Alternative

Objective

The Favor Disposal Alternative emphasizes making public land available for disposal, with a general goal of consolidating public, State, and private land ownership. Land with resource values would be retained where required by laws, regulations, or policies.

Components

The following areas would be considered for disposal, retention, or acquisition. Visual A shows the locations of the areas. (See Appendix A for legal descriptions of lands in the State Land Exchange Area; legal descriptions for other proposed disposal and acquisition areas are given in Technical Report I.)

Dona Ana County

Disposal (108,472 acres)

1. Dispose of public land on the East Mesa except where retention is required by laws, regulations, or policies (83,302 acres).

2. Dispose of public land on the West Mesa that has been identified by the public and local, City, County, and State Governments (19,379 acres).

3. Dispose of public land that is difficult and uneconomical to manage or where interest has been shown (5,791 acres).

Retention (998,215 acres)

1. Retain the balance of the public land that is managed for multiple-use values and selected special management areas. On the East Mesa, the Organ Mountain Recreation Lands (OMRLs), the Organ Mountains WSA, and the Organ Mountains ACEC would be retained.

State Land Exchange Area

Disposal (10,000 acres)

1. Dispose of up to 10,000 acres of public land identified by the State of New Mexico on the East Mesa as part of the proposed State Land Exchange. Within the 10,000 acres, a total of 190 acres would continue to be set aside for existing sand and gravel claims and existing R&PP leases.

Acquisition (5,000 acres)

1. Acquire 5,000 acres of State land in the Organ Mountains as part of the proposed State Land Exchange.

Alternative III - Preferred Alternative

Objective

The Preferred Alternative is designed to provide a balanced management direction for land tenure adjustment with a general goal of

MAP 2-2
ALTERNATIVE I
FAVOR RETENTION ALTERNATIVE
(No Action Alternative)

UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

LAS CRUCES DISTRICT LAS CRUCES N.M.

DONA ANA COUNTY LAND TENURE ADJUSTMENT

LEGEND

A ISOLATED TRACTS FOR DISPOSAL

B SMALL TRACTS FOR DISPOSAL

C EXISTING & PENDING PUBLIC PURPOSE USES IN STATE LAND EXCHANGE AREA

RETENTION AREAS

D MINING CLAIMS IN STATE LAND EXCHANGE AREA

STATE LAND FOR POTENTIAL ACQUISITION

E PRIVATE LAND FOR POTENTIAL ACQUISITION

5 0 5 10

Scale in Miles

T15S T16S T17S T18S T19S T20S T21S T22S T23S T24S T25S T26S T27S T28S T29S

R4W R3W R2W R1W R1E R2E R3E R4E R5E R6E

WHITE SANDS NATIONAL MONUMENT

WHITE SANDS MISSILE RANGE

JORNADA EXPERIMENTAL RANGE

SAN ANDRES NATIONAL WILDLIFE REFUGE

COLLEGE RANCH

STATE LAND EXCHANGE AREA

Hatch

Organ

White Sands

LAS CRUCES

NASA NMSU Wdl.

FT. BLISS

Anthony

Sunland Park

RIO GRANDE

D O N A A N A

26 25 10 213 404

MAP LOCATION

UT. CO. KA. OK. NEW MEXICO AZ. TX. Mexico

N

EL PASO

SOURCE : BLM Las Cruces District Files, 1985

consolidating public, State, and private land ownership. Selected public land would be available for disposal while land with important environmental values and sensitive resources would be retained.

Components

The following areas would be considered for disposal, retention, or acquisition. Visual B shows the locations of the areas. (See Appendix A for legal descriptions of lands in the State Land Exchange Area; legal descriptions for other proposed disposal and acquisition areas are given in Technical Report I.)

Dona Ana County

Disposal (81,684 acres)

1. Dispose of public land on the East Mesa except for areas with critical resources and areas where retention is required by laws, regulations, or policies (71,957 acres).

2. Dispose of selected public land on the West Mesa that has been identified by the City of Las Cruces and the State of New Mexico (3,936 acres).

3. Dispose of public land that is difficult and uneconomical to manage or where interest has been shown (5,791 acres).

Retention (1,025,003 acres)

1. Retain the balance of the public land that is managed for multiple-use values and selected special management areas (1,013,658 acres). On the East Mesa, the OMRLs, the Organ Mountains WSA, and the Organ Mountains ACEC would be retained.

2. Retain areas with critical resources (11,345 acres). On the East Mesa, the Dona Ana Recreation Area (2,865 acres) would be retained for recreation resources and the Franklin Mountains (8,480 acres) would be retained for endangered plant, recreation, and visual resources.

Acquisition (41,001 acres)

1. Pursue acquisition of lands in and immediately adjacent to special management areas: the six WSAs, the OMRLs, the Organ Mountains ACEC, and the Kilbourne Hole National Natural Landmark (37,568 acres). This would include relinquishment of 9,794 acres of Ft. Bliss withdrawn land north of Soledad Canyon in the Organ Mountains.

2. Pursue acquisition of lands identified by BLM and by the public for BLM management programs (3,433 acres). These lands are located in the Rio Grande riparian area (2,310 acres), the Old Refuge area (483 acres), and the Franklin Mountains (640 acres).

State Land Exchange Area

Disposal (10,000 acres)

1. Dispose of up to 10,000 acres of public land identified by the State of New Mexico on the East Mesa as part of the proposed State Land Exchange. Within the 10,000 acres, a total of 190 acres would continue to be set aside for existing sand and gravel claims and existing R&PP leases. In addition, the following 340 acres would be set aside for future R&PP leases: T. 22 S., R. 2 E., Section 23, SW1/4NW1/4, N1/2N1/2NW1/4SW1/4, Section 25, NW1/4, Section 26, E1/2NE1/4; T. 22 S., R. 3 E., Section 18, S1/2N1/2NW1/4NW1/4, S1/2NW1/4NW1/4, SW1/4SW1/4 (North of Highway 70).

Acquisition (5,000 acres)

1. Acquire 5,000 acres of State land in the Organ Mountains as part of the proposed State Land Exchange.

ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

In developing the alternatives, the following proposals were brought up, discussed, and subsequently eliminated from detailed analysis for the reasons listed below.

When the Commissioner of Public Lands filed the State exchange application NM 61209 for the selected 10,000 acres of public land, he identified an additional 70,000 acres of public land that the State would like to select for future exchanges. Subsequently, he requested that another 161,000 acres of public land be added for future exchanges. The 161,000 acres of public land are located southwest of La Mesa, New Mexico and extend to the International Boundary between the United States and Mexico. The BLM plans to retain these lands because they meet the approved planning criteria, are well-blocked, and the management potential could be improved by acquiring the non-Federal inholdings.

The City of El Paso Water Utilities Public Service Board has filed ROW applications NM 63876 (Hueco Bolson well HU 12 through HU 71 inclusive) and NM 63877 (Mesilla Bolson wells LRG 93 through LRG 357 inclusive) for well sites, interconnecting pipelines, access roads, and electric powerlines. The City of El Paso would like the public land to remain in Federal ownership and be able to acquire the ROWs from BLM rather than from a private party or another Government entity. Before the ROW applications can be processed by the BLM, the City of El Paso must complete their application by obtaining approval from the New Mexico State Engineer to appropriate the underground water and comply with the applicable rules for a ROW application. The issue is whether the City of El Paso can acquire water in New Mexico and not whether the public land should be retained in Federal ownership. The water resource is adjudicated by the New Mexico State Engineer, and is not under the jurisdiction of the BLM. ROWs may be obtained from private parties or other Government entities as well as the BLM. The retention or disposal of public land will not affect the City of El Paso's application to appropriate water in New Mexico.

Two public comments requested that the BLM consider acquisition of State and private lands in the Isaack Lake area. The BLM also considered proposing acquisition of a riparian area on State land located in T. 21 S., R. 3 W., Section 25, S1/2. These acquisition proposals were not incorporated into any of the three alternatives because of the general goal to consolidate public land holdings in a blocked-up pattern of ownership. Riparian areas proposed for acquisition under the Preferred Alternative are the Rio Grande riparian area and the Old Refuge area (see Visual B).

COMPARISON OF ALTERNATIVES

Table 2-1 summarizes the specific components of each alternative. Table 2-2 summarizes and compares the potential impacts of each alternative on the different resources affected. Chapter 4 more fully describes those potential impacts.

TABLE 2-1
SUMMARY OF ALTERNATIVES

Component	Acres
ALTERNATIVE I - NO ACTION	
Dona Ana County	
Disposal	1,562
Isolated Tracts	1,010
Small Tracts	552
Retention	1,105,125
Acquisition	7,742
Rough and Ready Station and Fort Mason	320
Lands in Organ Mountains	7,422
State Land Exchange Area	
Disposal	0
Retention	10,000
Acquisition	0
ALTERNATIVE II - FAVOR DISPOSAL	
Dona Ana County	
Disposal	108,472
East Mesa	83,302
West Mesa	19,379
Land Difficult and Uneconomical to Manage or Where Interest Shown	5,791
Retention	998,215
Acquisition	0
State Land Exchange Area	
Disposal	10,000
Retention	0
Acquisition	5,000
ALTERNATIVE III - PREFERRED	
Dona Ana County	
Disposal	81,684
East Mesa	71,957
West Mesa	3,936
Land Difficult and Uneconomical to Manage or Where Interest Shown	5,791
Retention	1,025,003
West Mesa and Organ Mountains	1,013,658
Dona Ana Recreation Area	2,865
Franklin Mountains	8,480

TABLE 2-1
SUMMARY OF ALTERNATIVES

Component	Acres
Acquisition	**41,001**
Lands in WSAs, Organ Mountains, and Kilbourne Hole	37,568
Rio Grande Riparian Area	2,310
Old Refuge Area	483
Franklin Mountains	640
State Land Exchange Area	
Disposal	**10,000**
Retention	**0**
Acquisition	**5,000**

Source: BLM, Las Cruces District Office Files, 1986.

TABLE 2-2
SUMMARY OF IMPACTS

Resource	Alternative I Favor Retention (No Action) DAC	Alternative I Favor Retention (No Action) SLEA	Alternative II Favor Disposal DAC	Alternative II Favor Disposal SLEA	Alternative III Preferred DAC	Alternative III Preferred SLEA
LANDS						
BLM Ownership	+0.69%[a/]	NC	-9.7%	-0.45%[a/]	-3.64%[a/]	-0.45%[a/]
ACCESS	NS	NS	NS	NS	NS	NS
GEOLOGY AND MINERALS						
Exploration and Development						
Estate Retained	NC	NC	NS	NS	NS	NS
Estate Lost	NA	NA	D	NA	D	NA
SOILS						
Erosion	NC	NC	NS	NS	NS	NS
Sedimentation	NC	NC	NS	NS	NS	NS
Compensation	NC	NC	NS	NS	NS	NS
WATER RESOURCES						
Ground Water						
Quality	NC	NC	NS	NS	NS	NS
Quantity	NC	NC	NS	NS	NS	NS
Surface Water						
Quality	NC	NC	NS	NS	NS	NS
Quantity	NC	NC	NS	NS	NS	NS
VEGETATION	NS	NS	-	NS	-	NS
Threatened and Endangered						
Plants (Habitat)	-	NS	-	NS	-	NS
WILDLIFE						
Management Opportunities						
Arroyo-Riparian	NC		-	-	+	-
Big Game	NC	+	NC	+	NC	+
Quail	NC	NC	-	NC	NC	NC
Threatened and Endangered						
Fauna	NC	-	-	-	+	-
RECREATION						
Opportunities	+	NC	-	+	+	+
CULTURAL RESOURCES						
Previously Recorded Sites						
Retention	943	18	806	0	819	0
Disposal	6	0	114	18	71	18
Acquisition	14	0	0	5	30	5

TABLE 2-2
SUMMARY OF IMPACTS
(concluded)

Resource	Alternative I Favor Retention (No Action) DAC	Alternative I Favor Retention (No Action) SLEA	Alternative II Favor Disposal DAC	Alternative II Favor Disposal SLEA	Alternative III Preferred DAC	Alternative III Preferred SLEA
WILDERNESS	+	NS	NS	+	+	+
LIVESTOCK GRAZING						
Animal Units						
Retention	8,185	47	7,571	0	7,743	0
Disposal	5	0	619	47	447	47
Acquisition	118	0	0	57	241	57
Rangeland Improvements	NS	-	-	-	-	-
VISUAL RESOURCES	+	NC	-	+	+	+
ECONOMIC CONDITIONS[b]						
Payments in Lieu of Taxes (Dollars)	+$2,421	NC	-$81,354	-$7,500	-$52,411	-$7,500
Taylor Grazing Receipts (Dollars)	+$1,831	NC	-$10,028	+$162	-$3,337	+$162
Potential Tax Revenue[c] (Dollars)	-$5,436	NC	+$182,688	+$16,842	+$117,693	+$16,842
BLM Managerial Costs[d]	+$6,217	NC	+$329,902	NC	+$265,529	NC

Source: BLM, Las Cruces District Office Files, 1985.

Notes: [a] Includes potential land aquisition by the BLM.
[b] Cumulative impact for each alternative.
[c] Assumes classification for undeveloped lands.
[d] Las Cruces/Lordsburg 1985 Managerial Costs, $540,127.
DAC -- Dona Ana County
SLEA -- State Land Exchange Area
D -- Decrease
NS -- Not Significant
NC -- No Change
NA -- Not Applicable
- -- Negative Impact
+ -- Beneficial Impact

CHAPTER 3
AFFECTED ENVIRONMENT

AFFECTED ENVIRONMENT

INTRODUCTION

This chapter describes the environmental components of Dona Ana County that could be impacted by implementing the alternatives. The components that could be affected include: physical setting, lands, access, geology and minerals, soils, water resources, vegetation, wildlife, recreation, cultural resources, wilderness, livestock grazing, visual resources, and social and economic conditions. Air quality, paleontology, and fire would not be affected.

Much of the information contained in this Chapter is extracted from the Management Situation Analysis (MSA) which is available for review in the Las Cruces District Office.

PHYSICAL SETTING

Climate

Most of Dona Ana County is arid, except for small semiarid areas at higher elevations where precipitation is greater and temperatures cooler. The average annual rainfall ranges from 7 to 9 inches throughout most of the County, but the highest elevations receive as much as 16 inches. Annual totals as low as 3 inches and as high as 19.6 inches have been recorded. In most years, over half the annual rainfall is received during the summer months when moisture-laden air from the Gulf of Mexico enters southern New Mexico. Strong surface heating and upslope flows of air often cause brief, heavy thundershowers. Fall, winter, and spring are relatively dry seasons because easterly circulating air masses from the Pacific Ocean lose much of their moisture before reaching southern New Mexico. Snowfall is generally light throughout the County, averaging less than 4 inches per year at lower elevations, however as much as 9 inches of snow have fallen within a 24-hour period.

The average annual temperature of Dona Ana County is about 60°F. The average maximum temperature during July, the warmest month, averages about 95°F. During January, the coldest month, minimum temperatures average about 25°F. Recorded extreme temperatures have ranged from over 110°F to 20 degrees below zero. Throughout the year, daily high to low temperature ranges of 30° or more are common, as is characteristic of southern desert climates.

The spring months are commonly referred to as the windy season, when dry gusty winds predominate from the west, sometimes in excess of 30 mph. The gusty winds coupled with dry soils occasionally cause severe afternoon dust storms.

Topography

Dona Ana County is located in the Rio Grande sector of the Mexican Highlands portion of the Basin and Range physiographic province. The region is characterized by broad basins separated by volcanic and fault block mountains. The major morphological and structural features from west to east include Las Uvas Mountains and the Robledo Mountains in the northwest, the West Potrillo Mountains and associated features in the southwest, the East Potrillo Mountains, the Rio Grande rift, the Dona Ana Mountains, the Organ Mountains, the San Andres Mountains, the Franklin Mountains, and the Tularosa Basin.

The topography of Dona Ana County is diverse, ranging from Organ Needle which stands over 8,900 feet to the Rio Grande Valley at approximately 3,800 feet. The eastern boundary of the County lies along the west side of the Tularosa Basin which quickly grades upward to the west, toward north-trending mountain ranges. These ranges are generally contiguous and include the San Andres Mountains to the north, and the Organ Mountains and the Franklin Mountains extending across the southern border.

West of these mountain ranges, the terrain grades toward the river valley which bisects the County northwest to southeast. The Dona Ana Mountain range lies approximately 10 miles north of Las Cruces. This range covers approximately 25 square miles and has steep rocky slopes that rise abruptly from the plain around it.

Northwest Dona Ana County is a mountain and valley topography. Las Uvas Mountains, Rough and Ready Hills, Sleeping Lady Hills, and Robledo Mountains are barren and rocky with steep slopes and cliffs. Valley bottom to mountain top relief is up to 2,000 feet, with 1,000 feet of relief more typical.

The southwestern part of the County is a very low relief plain with the volcanic West Potrillo Mountains set on the central to southwestern part of this plain. The plain, known as the La Mesa Surface, is the top of an alluvial-filled desert basin. The East Potrillo Mountains are an inselberg (mountain island) in the alluvial plain, rising more than 1,000 feet.

The West Potrillo Mountains are built by cinder cones and lava flows over the surrounding plain. Many steep-sided cones form the peaks on this rise.

Mason Draw is a major arroyo in the west central part of the County. This draw has a low gradient and ends in Muzzle Lake, a playa with interior drainage. Broad Canyon, originating in Las Uvas Mountains, is the largest canyon in the County west of the river. It drains to the east into the Rio Grande.

The south central part of the County contains many large coppice sand dunes, some reaching 15 to 20 feet in height and 60 to 100 feet across.

LANDS

Dona Ana County

Dona Ana County contains 2,434,560 acres of which approximately 1.1 million acres are public land administered by the BLM. In addition, approximately 600,000 acres of public land have been withdrawn for specific uses by other Federal agencies. Private land accounts for approximately 350,000 acres and State land totals approximately 300,000 acres. Acreage figures for the major landholders/managers within the County are shown in Table 3-1.

The public land in Dona Ana County is fairly well consolidated, except for areas north of U.S. Highway 70-82, the southeast corner of the County near the Dona Ana-Otero County line, and in Range 4 west along the Dona Ana-Luna County line. (See Visuals located in map pocket for land status.)

TABLE 3-1
DONA ANA COUNTY LAND STATUS

Land Status	Acres
Public Land	1,116,687
Other Surface, Federal Minerals	69,927.31
Withdrawn	605,362
Total Federal[a/]	1,794,474
State[a/]	292,621
Private and Inland Waters[a/]	347,465
Total Federal, State, and Private[a/]	2,434,560

Sources: [a/]Statistical Abstract, 1984 and BLM Las Cruces District Records, 1985.

On most of the public land in Dona Ana County, the primary use is livestock grazing under grazing permits. This use runs concurrently with other land uses, including rights-of-way (ROWs), leases, permits, mineral material extraction, mining, and a variety of recreational activities.

The City of Las Cruces and residents of the East Mesa (East Mesa Steering Committee) are currently discussing plans to annex portions of numerous East Mesa communities (Butterfield Park, Hacienda Acres) into Las Cruces. The comprehensive plan for Las Cruces does address the possibility of expansion on the East Mesa, but no specific plans have been developed to date. However, potential areawide annexations for the City of Las Cruces are delineated on Map 3-1.

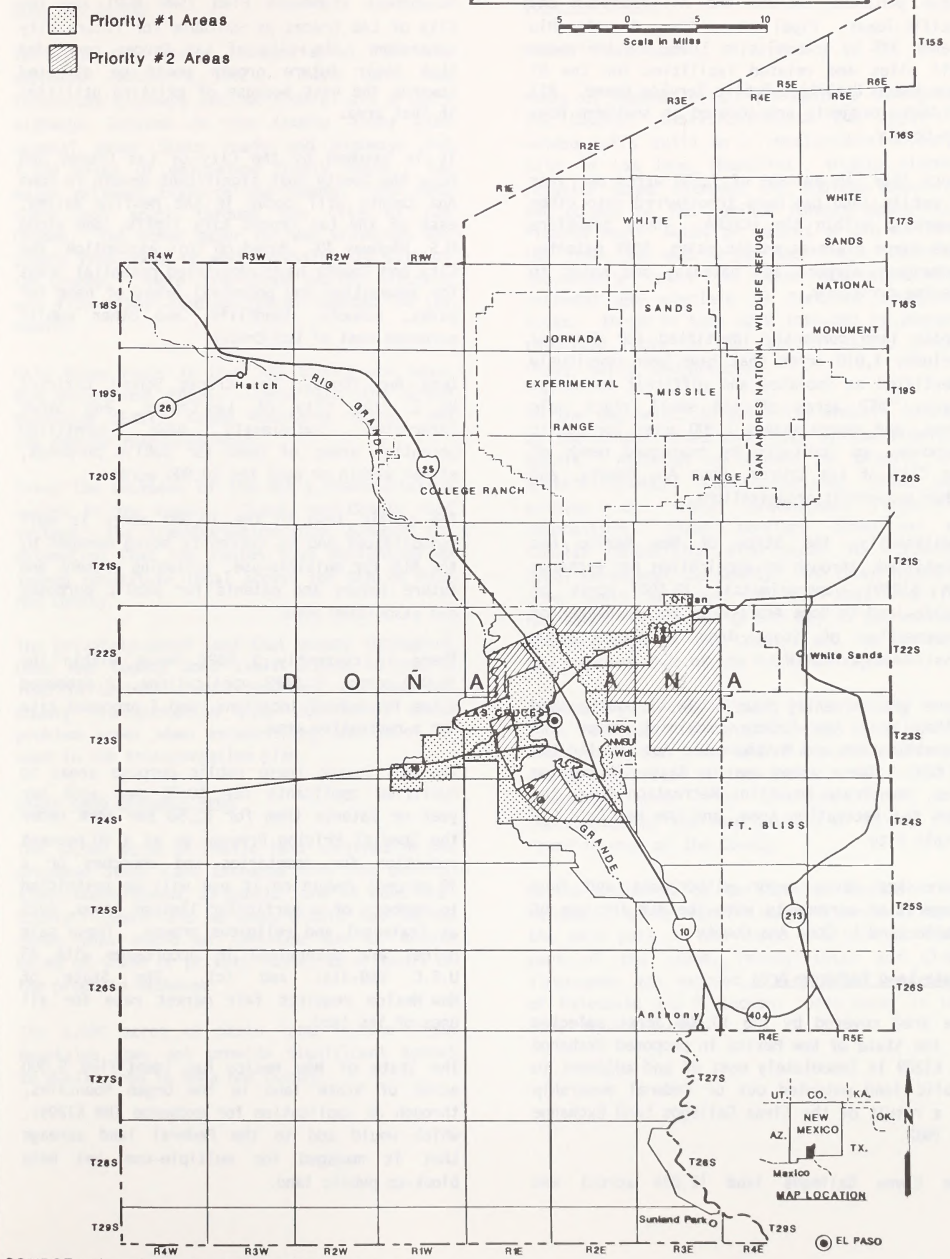
Public purpose areas on public land in Dona Ana County consist of 31 recreation and public purposes (R&PPs) leases or patents, accounting for approximately 50 percent of the total R&PP leases/patents in Las Cruces District 8-county area of jurisdiction. Since 1982, the receipt of R&PP lease applications has increased due to a greater public awareness of public land uses in Dona Ana County, due in part to the BLM's "Good Neighbor Policy".

Las Cruces/Lordsburg Resource Area (LC/LRA) processes an average of 40 ROWs per year; 90

MAP 3-1

POTENTIAL AREAWIDE ANNEXATIONS FOR THE CITY OF LAS CRUCES

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICT LAS CRUCES N.M.
DONA ANA COUNTY LAND TENURE ADJUSTMENT



SOURCE : City of Las Cruces Planning Department, 1985

percent within Dona Ana County. The LC/LRA is currently working on a number of large ROWs. These projects include the All American and Pacific-Texas Pipelines, the Greenlee-Rio Grande 345 kv transmission line, and the water well sites and related facilities for the El Paso Water Utilities Public Service Board. All of these projects are located in southern Dona Ana County.

Since 1979, an average of 7,300 acres per year of public land has been transferred into other ownership within the LC/LRA. These transfers have taken place as public sales, R&PP patents, exchanges, airport act patents, and sales to resolve occupancy.

Public land currently identified for disposal includes 1,010 acres that have been previously identified as isolated and difficult to manage tracts, 552 acres of old small tract sale areas, and approximately 1,700 acres for public purposes, as indicated by expressed needs of the City of Las Cruces, Dona Ana County, and other non-profit organizations.

Additionally, the State of New Mexico has identified, through an application for exchange (NM 61209), approximately 10,000 acres of public land in Dona Ana County for exchange for compensation of State land in White Sands Missile Range (WSMR).

There are currently four areas of public land within Dona Ana County remaining under the Classification and Multiple-Use Act (Public Law 88-607). These areas are the Baylor Recreation Area, the Organ Mountains Recreation Area, the Dona Ana Recreation Area, and the Needle's Eye Picnic Site.

There are seven major withdrawals and four cooperative agreements with the BLM for use of public land in Dona Ana County.

State Land Exchange Area

The area covered by the 10,000 acres selected by the State of New Mexico in proposed Exchange NM 61209 is immediately east of and adjacent to public land patented out of Federal ownership as a result of the Elena Gallegos Land Exchange in 1982.

The Elena Gallegos land (2,834 acres) was selected for the exchange process in 1982 due to its designation by the Southern Rio Grande Management Framework Plan (SRG MFP) and the City of Las Cruces as suitable for future city expansion. The City of Las Cruces concluded that their future growth would be directed towards the east because of existing utilities in that area.

It is assumed by the City of Las Cruces and Dona Ana County that significant growth in Dona Ana County will occur in the Mesilla Valley, east of the Las Cruces city limits, and along U.S. Highway 70. Based on this assumption, the City and County have identified potential areas for annexation and potential areas of need for parks, schools, landfills, and other public purposes east of Las Cruces.

Dona Ana County, Las Cruces School District No. 2, the City of Las Cruces, and other interested individuals have identified potential areas of need for public purposes, either within or near the 10,000 acres.

The public land in the 10,000 acres is well consolidated and is currently being managed by the BLM for multiple-use, including present and future leases and patents for public purposes and associated ROWs.

There is currently 1 R&PP lease within the 10,000 acres, 2 R&PP applications, 2 proposed sites for school locations, and 1 proposed site for a recreation area.

The BLM leases these public purpose areas to qualified applicants for $0.25 per acre per year or patents them for $2.50 per acre under the Special Pricing Program or at a 50 percent reduction for cemetaries and churches or a 10 percent reduction if use will be restricted to members of a particular limited group, such as fraternal and religious groups. These sale prices are determined in accordance with 43 U.S.C 869-1(a) and (c). The State of New Mexico requires fair market rate for all uses of its land.

The State of New Mexico has identified 5,000 acres of State land in the Organ Mountains, through an application for exchange (NM 61209), which would add to the Federal land acreage that is managed for multiple-use and help block-up public land.

ACCESS

Dona Ana County

The Dona Ana County Transportation Plan was approved October 4, 1982. There are two interstate highways and two Federal aid primary highways located in the County along with several other State roads and highways and 1,374 miles of maintained County roads. Two major railways traverse the County. One runs north and south through the City of Las Cruces. The other major railway traverses the County from south to west bypassing the City of Las Cruces. There are three public airports and five other landing fields located in the County.

Only three roads in Dona Ana County are legal BLM maintained roads. These are the Organ Mountains (East), Organ Mountains (West), and the Robledo Mountains roads.

Since the backbone of the BLM's transportation system is the Federal, State, and County road systems, the transportation plan accepts the assumption that the routes thus designated do indeed constitute legal access for BLM in Dona Ana County.

The privately-owned land that occurs throughout Dona Ana County does limit access to public land in certain areas. However, the Dona Ana County transportation plan considered these problem areas when establishing the level of need in the transportation plan.

State Land Exchange Area

The 10,000 acres of public land involved in the proposed State Land Exchange does not provide significant access to public land in Dona Ana County. There are no uses within the 10,000 acres that would be isolated due to access being on State or private lands, as a result of the proposed exchange.

The 5,000 acres of State land in the Organ Mountains does not provide significant access to public land in Dona Ana County.

GEOLOGY AND MINERALS

Dona Ana County

General Rock Types

Rocks of igneous origin predominate throughout the County. Basaltic-andesite and rhyolitic welded tuffs build up a considerable volcanic pile in Las Uvas Mountains. Highly viscous rhyolite magma intruded the Robledo Mountains and pushed to the surface forming domes like Picacho Peak. Rocks of igneous origin dominate the Dona Ana and Organ Mountains. Existing sedimentary rocks in these mountains were intruded and overlain by Tertiary andesitic rocks. These in turn were intruded by younger rhyolitic rocks in the form of sills, dikes, flows, tuffs, and breccias.

In the southwest, an extensive area is covered by the cinder cones and flows of the Potrillo basalt. Although surrounded by basalt, the Mount Riley-Mount Cox intrusions stand out because of their predominant rhyolitic composition. Other Tertiary formations of similar composition also occur in scattered areas throughout the County: the Camel Mountain area south and west of the West Potrillo Mountains, Sierra del Cristo Rey in the extreme southern part of the County, and the northern and southern ends of the Robledo Mountains.

Sedimentary strata existing in the County range from Paleozoic to Cenozoic with a noticeable Mesozoic hiatus. The oldest rocks are Cambrian and are exposed in the Bishop's Cap-Franklin Mountains area. The youngest strata are represented by the vast amounts of valley fill found in most of the County.

Marine sediments of the Robledo Mountains are Paleozoic where Permian Hueco limestone forms the main part of the range. In the northern part of the range, Pennsylvanian and older limestones are exposed. Very minor exposures of Paleozoic and Cretaceous rocks occur in the Camel Mountain area.

Cretaceous rocks are exposed in the East Potrillo Mountains with minor outcrops at Sierra del Cristo Rey. Extensive deposits of semiconsolidated and unconsolidated sediment fill the basins and cover La Mesa Surface.

Very minor amounts of contact-metamorphosed rocks occur in the Organ and Dona Ana Mountains.

Mineral Resources

Locatable Minerals

The Organ Mining District has been the chief producer of metals in Dona Ana County since discovery of the Stevenson Mine in 1849. The most productive period was from 1863 to 1912. There has been no production since 1952. Most of the production has come from mines located on or near the Torpedo-Bennett fault zone extending along the west side of the Organ Mountains. About 75 percent of the District now lies within the WSMR. The town of Organ is situated about midway in the mineral trend. The chief ore producers in the Organ District have been the Stevenson-Bennett Mine, the Torpedo Mine, the Modoc Mine, the Morman Mine, the Memphis Mine, the Excelsior Mine, and the Merrimac Mine. Extracted minerals include: gold, silver, copper, lead, zinc, bismuth, fluorspar, and gypsum.

That portion of the San Andres Mountains within Dona Ana County, between the Organ Mining District and the northern boundary of the County, contains the following mining districts and associated minerals: San Andrecito-Hembrillo, copper; San Andres Canyon, lead; Bear Canyon, lead and barite; Black Mountain, gold, lead, and barite.

Fluorspar found at Bishop's Cap commonly occurs in fracture and fault zones as massive crystalline pods. All of the fluorspar produced has been mined from fault zones where open-space filling has occurred. About 500 tons of fluorspar have been produced.

The faulted eastern side of Tortugas Mountain is extensively mineralized with fluorspar. Past ore production totaled some 20,000 tons. Tortugas Mountain is closed to mineral activity except for four valid mining claims.

At San Diego Mountain, barite and fluorite veins trend north and northwest and are largely confined to Precambrian rocks. Most of the veins are short, narrow, (8 inches to 1 foot), and discontinuous. Mining in the past has been confined to some of the wider fluorite-rich veins, but presently there is no activity. Economic reserves of barite and fluorite do not appear to be substantial.

Gypsum beds outcrop in Pennsylvanian and Permian strata of the north Franklin Mountains. There are two gypsum horizons southwest of Anthony Gap. The upper bed is early Permian in age and is approximately 40 feet thick. The lower bed, Upper Pennsylvanian in age, is 320 feet below the upper bed, with limestone and shale in between the two horizons. The lower gypsum bed is 30 feet thick and follows the same general strike and dip of the upper bed. A considerable amount of gypsum has been mined from the upper bed in Section 32 and from both beds in Section 33 by open pit methods. An attempt was made to mine the lower bed in Section 33 by underground methods, but the extent of the workings are not known.

Gypsite occurs in the Jornada del Muerto near the Flat Lake playa in northern Dona Ana County. The gypsite ranges in thickness from 18 inches to 2 1/2 feet; however, the extent of the deposit is not clearly delineated at this time.

The vicinity of Organ on the west side of the Organ Mountains appears to be a favorable location for the discovery of a new ore body. Several companies have conducted exploration (drilling) on the pediment west of and adjacent to the Torpedo-Bennett mineralized trend. Their efforts have revealed strongly altered and mineralized ground. Subsurface information and associated geophysical data indicate this mineralization may extend southward beyond U.S. Highway 70.

Map 3-2 shows general locations of locatable minerals within Dona Ana County.

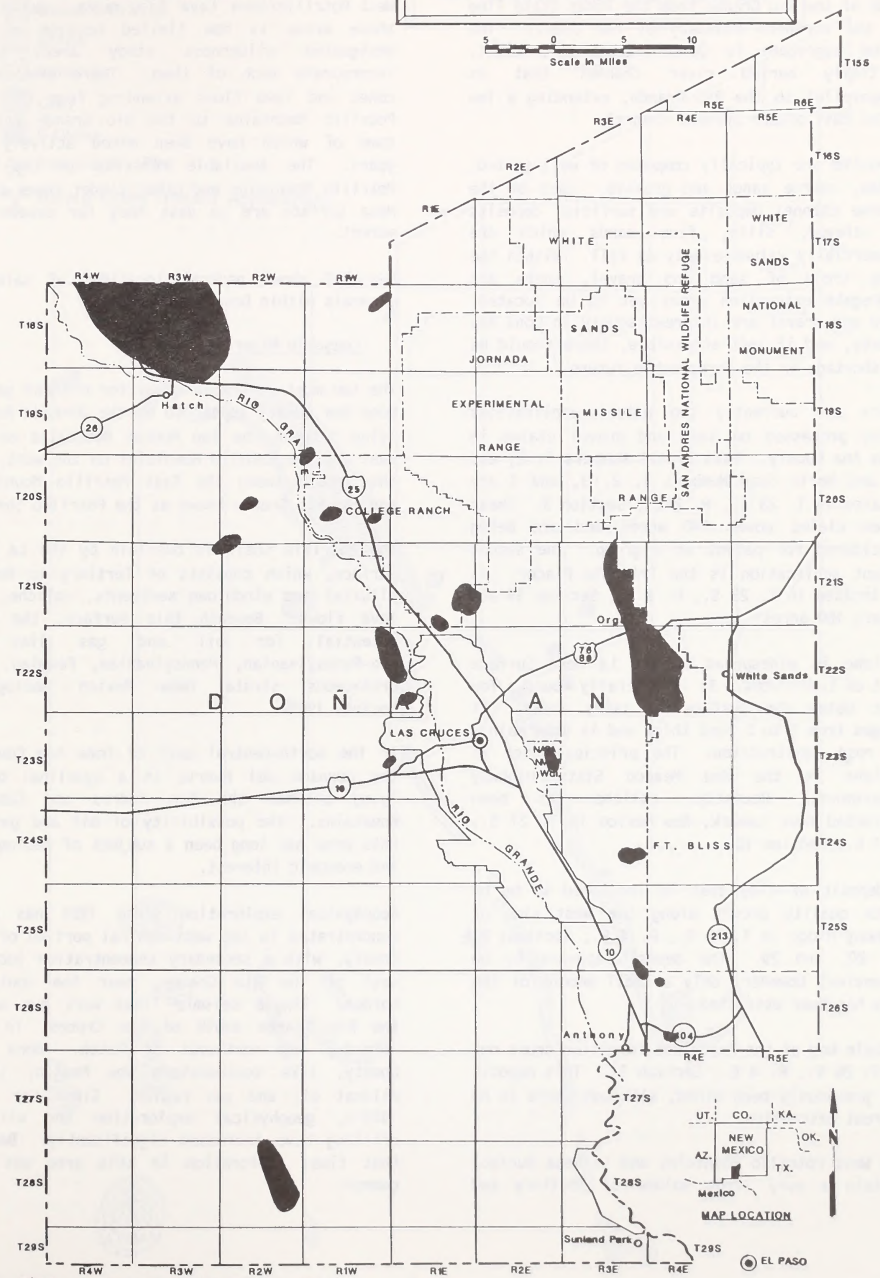
Saleable Minerals

Extraction and processing of sand and gravel for construction aggregate is, by far, the largest

MAP 3-2

LOCATABLE MINERALS

(General Location)



SOURCE : BLM Las Cruces District Files, 1985

mineral production within Dona Ana County. Best sand and gravel deposits occur along the east side of the Rio Grande from the Texas State line to the northern boundary of the County. The prime aggregate is contained in an ancient, partially buried river channel that is subparallel to the Rio Grande, extending a few miles east of the present channel.

Deposits are typically composed of well-sorted, clean, coarse sands and gravels. East of the coarse channel deposits are surficial deposits of clayey, silty, fine sands which are commercially valuable only as fill. Within the long trend of sand and gravel, there are aggregate extraction areas yet to be located. Sand and gravel are in great supply in Dona Ana County, and if left accessible, there should be no shortage in the foreseeable future.

There are currently two patent applications being processed on sand and gravel claims in Dona Ana County. East Gravel Numbers 1, 2, and 3, and North Sand Numbers 1, 2, 3, and 4 are located in T. 23 S., R. 2 E., Section 3. These seven claims cover 140 acres and are being considered for patent as a group. The second patent application is the Triangle Placer. It is located in T. 23 S., R. 2 E., Section 14 and covers 160 acres.

Caliche is widespread on the La Mesa Surface west of Las Cruces. It is generally found a few feet below the surface in sandy areas. It ranges from 3 to 5 feet thick and is used mainly in road construction. The principal user of caliche is the New Mexico State Highway Department. Recently, caliche has been extracted near Lanark, New Mexico in T. 27 S., R. 1 E., Section 10.

A deposit of clay that is indicated to be of brick quality occurs along the west side of Anthony Ridge in T. 26 S., R. 4 E., Sections 8, 17, 20, and 29. The deposit appears to be extensive; however, only a small amount of the clay has been extracted.

A shale bed of the Magdalena formation crops out in T. 26 S., R. 4 E., Section 34. This deposit has previously been mined, although there is no current extraction.

The West Potrillo Mountains and La Mesa Surface contain a very large volume of Tertiary and Quaternary volcanics. The major source of cinder and lava building stone is the West Potrillo/Aden Lava Flow area. Access to these areas is now limited because of the designated wilderness study areas which incorporate much of them. There are cinder cones and lava flows extending from the West Potrillo Mountains to the Rio Grande Valley, some of which have been mined actively for years. The available reserves in the West Potrillo Mountains and other cinder cones on La Mesa Surface are so vast they far exceed the market.

Map 3-3 shows general locations of saleable minerals within Dona Ana County.

Leasable Minerals

The two most favorable areas for oil and gas in Dona Ana County appear to be the Jornada Basin, lying between the San Andres Mountains on the east and the Caballo Mountains on the west, and the area between the East Potrillo Mountains and the Rio Grande known as the Potrillo Shelf.

The Potrillo Shelf is overlain by the La Mesa Surface, which consists of Tertiary to Recent alluvial and windblown sediments, caliche, and lava flows. Beneath this surface, the best potential for oil and gas lies in pre-Pennsylvanian, Pennsylvanian, Permian, and Cretaceous strata (New Mexico Geological Society 1969).

In the north-central part of Dona Ana County, the Jornada del Muerto is a synclinal basin lying between the San Andres and Caballo Mountains. The possibility of oil and gas in this area has long been a subject of geological and economic interest.

Geophysical exploration since 1981 has been concentrated in the west-central portion of the County, with a secondary concentration located west of the Rio Grande, near the southern border. Single seismic lines were run along the Rio Grande south of Las Cruces, in the Jornada, and northwest of Hatch. Dona Ana County, like southwestern New Mexico, is a wildcat oil and gas region. Since the late 1970's, geophysical exploration and wildcat drilling have increased significantly. Before that time, exploration in this area was not common.

MAP 3-3

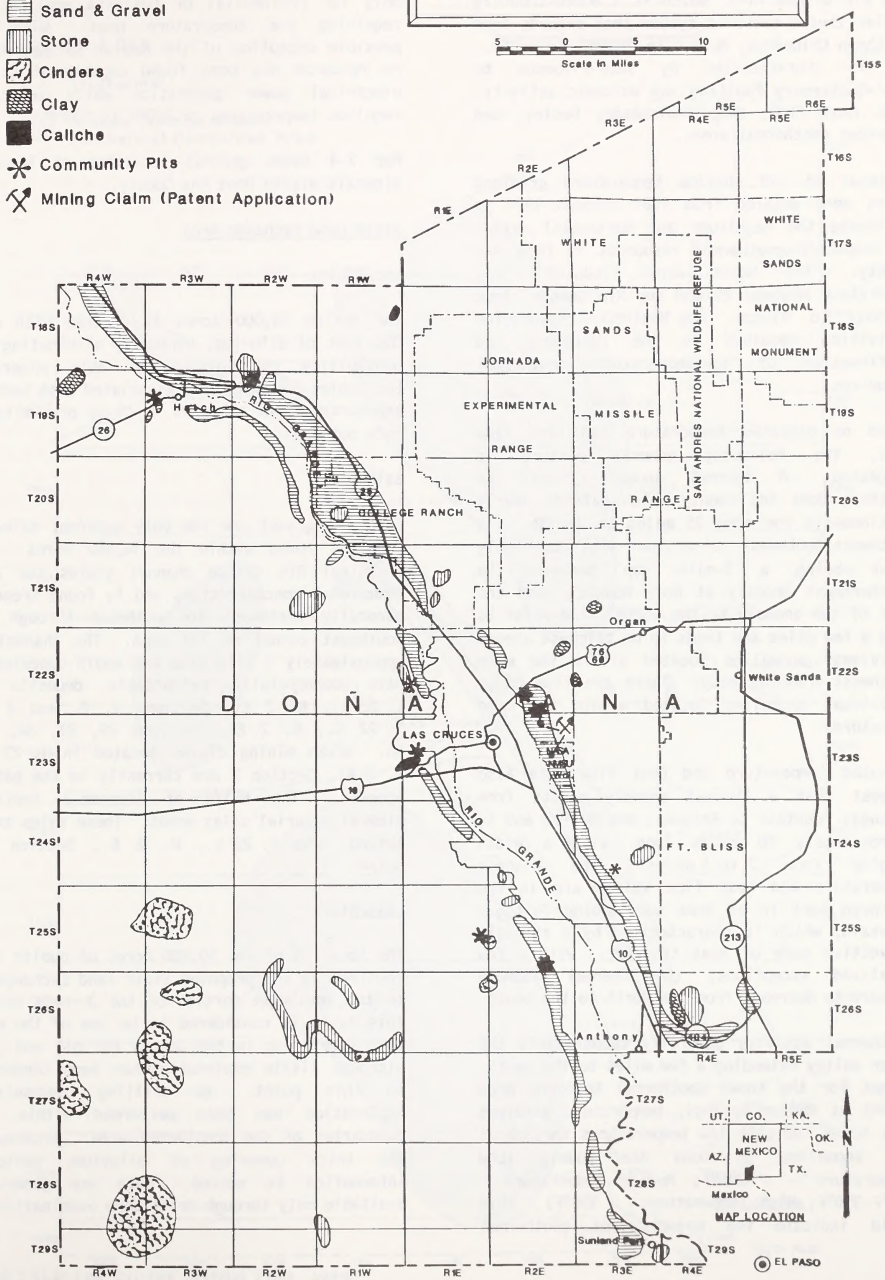
SALEABLE MINERALS
(General Location)

LEGEND

- Sand & Gravel
- Stone
- Cinders
- Clay
- Caliche
- Community Pits
- Mining Claim (Patent Application)

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICT LAS CRUCES N.M.
DONA ANA COUNTY LAND TENURE ADJUSTMENT

5 0 5 10
Scale in Miles



SOURCE : BLM Las Cruces District Files, 1985

Dona Ana County is tectonically situated within the Rio Grande rift, which is a north-trending active thermo-tectonic system that extends from northern Chihuahua, Mexico to central Colorado. It is characterized by late-Pliocene to late-Quaternary faulting and volcanic activity, high heat flow, deep sedimentary basins, and numerous geothermal areas.

A total of 118 shallow temperature gradient holes were drilled from 1981 through 1984 to delineate the magnitude and horizontal extent of suspected geothermal resources in Dona Ana County. The holes were situated along Interstate Highway 25 and the Rio Grande, from Anthony to Rincon, New Mexico. Exploration activities resulted in the discovery and confirmation of low-temperature geothermal resources.

Based on elevated temperature and heat flow data, the following general picture is suggested. A thermal anomaly exists in northern Dona Ana County which extends nearly continuously for some 25 miles in length in a northwest-southeast direction with the only break being a 5-mile gap between the southernmost anomaly at Goat Mountain and the rest of the anomaly to the north. The width is only a few miles and tends to be thickest around individual anomalies located within the main northwest-trending body. There are five major individual anomalies located within the main structure.

Elevated temperature and heat flow data also suggest that a thermal anomaly exists from Tortugas Mountain to Anthony, New Mexico and is approximately 28 miles long, with a width ranging from 2 to 5 miles. The highest temperature and heat flow values are in the northern part in an area surrounding Tortugas Mountain, which is characterized by a strongly convective mode of heat transfer. With a few localized exceptions, the thermal anomaly appears to decrease from the north to the south.

Geothermal activity generally subparallels the river valley extending a few miles to the east. Except for the Known Geothermal Resource Area (KGRA) at Radium Springs, temperature gradient test holes indicate low temperatures throughout the anomalies in Dona Ana County (Low Temperature - < 200°F; Medium Temperature - 200°F-350°F; High Temperature - > 350°F). This would indicate the majority of geothermal resources in Dona Ana County would be useful only for residential or business applications requiring low temperature heat. With the possible exception of the Radium Springs KGRA, no resource has been found capable of direct electrical power generation which generally requires temperatures of 350°F to 500°F.

Map 3-4 shows general locations of leasable minerals within Dona Ana County.

State Land Exchange Area

Locatables

The entire 10,000 acres is covered with over 800 feet of alluvium, virtually eliminating the possibility of finding locatable minerals. Locatables are generally associated with bedrock exposures or in alluvium in close proximity to rock outcrops.

Saleables

Sand and gravel are the only apparent saleable products found within the 10,000 acres. The ancestral Rio Grande channel yields the best commercial concentrations and is found trending generally northwest to southeast through the southwest corner of the area. The channel is approximately 1 mile wide and would conceivably have commercially extractable deposits in T. 23 S., R. 2 E., Sections 1, 2, and 3 and T. 22 S., R. 2 E., Sections 26, 27, 34, and 35. Seven mining claims located in T. 23 S., R. 2 E., Section 3 are currently in the patent process. The NE1/4 of Section 3 contains mineral material sales areas. These sales areas extend into T. 22 S., R. 2 E., Section 35, SW1/4.

Leasables

The location of the 10,000 acres of public land involved in the proposed State Land Exchange is in the southwest portion of the Jornada Basin. This Basin is considered to be one of the most favorable areas in the County for oil and gas, although little exploration has been conducted to this point. No drilling or seismic exploration has been performed within the boundaries of the considered area. Because of the thick covering of alluvium, geologic information is scarce. Data are generally available only through drill core examination.

MAP 3-4

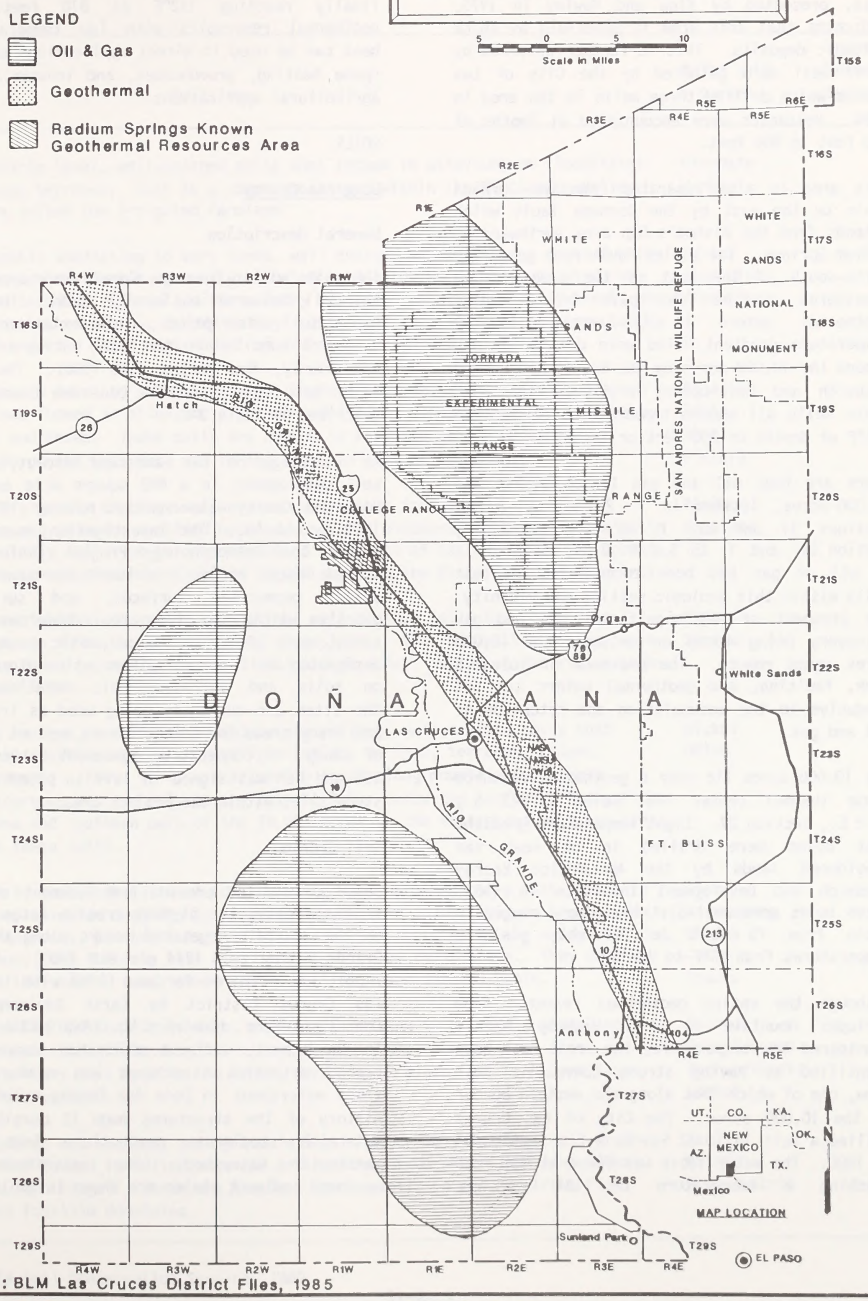
LEASABLE MINERALS

(Areas considered to have highest potential)

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICT LAS CRUCES N.M.
DONA ANA COUNTY LAND TENURE ADJUSTMENT

LEGEND

- Oil & Gas
- Geothermal
- Radium Springs Known Geothermal Resources Area



SOURCE : BLM Las Cruces District Files, 1985

Cross-sectional information based on water well data, presented by King and Hawley in 1975, indicates that this area is underlain by thick volcanic deposits. This is further enforced by water well data gathered by the City of Las Cruces which drilled three wells in the area in 1980. Volcanics were encountered at depths of 300 feet to 800 feet.

This area is also separated from the Jornada Basin on the east by the Jornada fault which extends from the Bishop's Cap area northward to Radium Springs. The Valley fault runs generally north-south to the west of the area and is considered to be the path of ascending geothermal waters in the area. Several temperature gradient holes were drilled on and around the 10,000 acres by the New Mexico Energy Research and Development Institute in 1983. These wells all showed temperatures of 75°F to 125°F at depths of 200 feet or less.

There are four oil and gas leases within the 10,000 acres, located in T. 22 S., R. 3 E., Sections 31 and 32; T. 22 S., R. 2 E., Section 34; and T. 23 S., R. 2 E., Section 1. No oil or gas has been encountered in test wells within this geologic setting and vicinity. The prospect of any significant oil and gas discovery being found on or near the 10,000 acres seems remote. The presence of volcanic rock, faulting, and geothermal waters are not conducive to the accumulation and retention of oil and gas.

The 10,000 acres lie over a geothermal resource whose thermal center lies below T. 22 S., R. 2 E., Section 27. Eight temperature gradient test holes were drilled in or near the considered lands by the New Mexico Energy Research and Development Institute in 1983. These holes were well-distributed and ranged in depth from 75 feet to 200 feet, yielding temperatures from 75°F to 125°F.

Although the entire geothermal resource from Tortugas Mountain to U.S. Highway 70 is considered low temperature, two areas have been identified as having strong convective heat flow, one of which lies along the western border of the 10,000 acres. The City of Las Cruces drilled a well in T. 22 S., R. 2 E., Section 34 in 1980. The water table was found at 430 feet reaching a temperature of 121° F. The temperature continued to rise with depth, finally reaching 152°F at 870 feet. In geothermal reservoirs with low temperatures, heat can be used in direct applications such as space heating, greenhouses, and industrial and agricultural applications.

SOILS

Dona Ana County

General Description

The soils within Dona Ana County were mapped by the Soil Conservation Service (SCS). The soil maps, soil descriptions, interpretations, and uses are compiled in the Soil Survey of Dona Ana County, New Mexico (SCS 1980). The nine major soil types found in Dona Ana County are described in Table 3-2.

An investigation of landscape evolution and soil development in a 400 square mile area of Dona Ana County was conducted between 1957 and 1972 by the SCS. The investigation, named the Desert Soil-Geomorphology Project (informally termed Desert Project) included the mapping of soils, geomorphic surfaces, and surficial deposits within the study area. Numerous study sites, many of which are on public land, were designated and used to gather basic information on soils and soil-geomorphic relationships. The sites are currently being used as training and study areas for scientists in various fields of study. A cooperative agreement between the SCS and BLM was signed in 1977 to preserve the study sites within the project area.

Soil Erosion

Based on limited erosion and sediment studies in the County, the highest erosion rates occur on the sparsely vegetated breaks along the Rio Grande Valley (SCS 1971 and BLM 1980). A 1979 report was prepared for and filed with the BLM Las Cruces District by Earth Environmental Consultants Inc. (Contract No. YA-512-CT8-170). In the report, sediment which had accumulated behind detention structures was measured on three watersheds in Dona Ana County. The past history of the structures made it possible to determine sediment production from the particular watershed. The watersheds and measured sediment yields are shown in Table 3-3.

TABLE 3-2
MAJOR SOILS TYPES OF DONA ANA COUNTY

Soil Type	Major Soil Series	Approximate Percent of Survey Area
1. Deep, nearly level, well-drained soils that formed in alluvium; on floodplains and stream terraces. This is a common soil type within the Rio Grande Valley. They are suited for irrigated farmland.	Glendale Harkey	6
2. Deep, gently undulating to very steep, well-drained to excessively drained soils that formed in alluvium, gravelly alluvium, and alluvium modified by wind; on fans and terraces. These are the primary soils on gravelly and sandy breaks and upper margins of the Rio Grande Valley. This soil type is severely dissected by arroyos and is a major contributor of sediment to the Rio Grande.	Caliza Bluepoint Yturbide	10
3. Deep, nearly level to undulating, well-drained to somewhat excessively drained soils that formed in alluvium, alluvium modified by wind, and eolian material; on fans and mesas. These soils are common in mesquite sand dune areas primarily on the West Mesa and in the southern part of the County.	Pajarito Onite Wink Pintura	21
4. Deep, very gently sloping, well-drained soils that formed in alluvium and alluvium modified by wind; on fans, piedmonts, and valley and basin floors. This soil type is commonly found northeast of Las Cruces in the Jornada Basin and the northern part of the 10,000 acres in the State Land Exchange Area.	Berino Dona Ana	9
5. Deep, nearly level to gently undulating, well-drained soils that formed in alluvium; on fans, basin floors, and floodplains. This productive soil type is commonly found in small playas and tobosa draw areas, including the Isaack Lake and Mason Draws.	Mimbres Stellar	2
6. Shallow to deep, undulating to moderately rolling, well-drained soils that formed in gravelly and very gravelly alluvium; on fans, terraces, ridges, and piedmonts. These soils are primarily found along mountain footslopes are calcareous and commonly have a caliche layer below the surface. Much of the East Mesa and southern part of the 10,000 acres in the State Land Exchange Area include these soils.	Nickel Upton	15
7. Shallow to deep, nearly level to undulating, well-drained soils that formed in alluvium, alluvium modified by wind, eolian material, and residuum from sandstone; on mesas, plains, fans, and basin floors. These soils are sandy textured, calcareous, and commonly have a caliche layer below the surface. They comprise much of the shallow sandy areas on the West Mesa and Jornada Basin.	Wink Harrisburg Simona Cacique Cruces	15
8. Rock outcrop and shallow to deep, moderately rolling to extremely steep, well-drained soils that formed in alluvium and colluvium; on mountain. This is the primary soil type on the Organ, Dona Ana, Robledo, Las Uvas, and East Potrillo Mountains.	Motoqua Rock Outcrop Torriorthents Lozier	14
9. Rock outcrop and shallow, gently undulating to moderately rolling, well-drained soils that formed in eolian material and residuum from basalt; on lava flows, uplands, and ridges. These are the more common soils on the Aden Lava Flow and West Potrillo Mountains.	Akela Aftaden Rock Outcrop	8

Source: USDA Soil Conservation Service, 1980.

TABLE 3-3
MEASURED SEDIMENT YIELDS
FROM THREE MAJOR WATERSHEDS IN DONA ANA COUNTY

Watershed	Measure Sediment Yield ac. ft./ sq. mi./year
Fillmore Arroyo	0.61
Tortugas Arroyo	0.86
Uvas (Broad Canyon)	0.42

Source: Earth Environmental Consultants, Inc., 1979.

Previous studies were conducted in the 1950's and 1960's by the Elephant Butte Irrigation District with guidance from the SCS. The studies were part of the work plans drawn up under the authority of the Watershed Protection and Flood Prevention Act of 1954 (Public Law 566) prior to constructing floodwater detention dams on some of the major watersheds in the County. Sediment yields between 0.3 and 1.5 acre-feet per square mile per year were estimated for some of the major drainages in the County, such as the Anthony, Fillmore, and North Fork arroyos.

Much of Dona Ana County shows evidence of active wind erosion. Soils with a fine sand surface texture are most susceptible to wind erosion such as those found in mesquite dune areas on the West Mesa southwest of Las Cruces. Soil series having the most susceptibility to wind erosion include the Bluepoint, Pajarito, Onite, Pintura, Wink, Berino, Dona Ana, Harrisburg, Simona, Cacique, and Cruces. These soils account for over 25 percent of the surface soils in Dona Ana County.

State Land Exchange Area

The southern part of the 10,000 acres of public land in the proposed State Land Exchange Area is characterized by gravelly ridges dissected by arroyos. The major soils are of the Nickel and Upton series which account for over 50 percent of the exchange area (see Table 3-2).

The northern part of the proposed exchange area extends into the southern edge of the Jornada Basin. Soils are more level and generally have a sandy surface texture. The major soils are of the Berino and Dona Ana series which account for approximately 10 percent of the proposed exchange area.

The 5,000 acres of State land that would be acquired in the proposed exchange is characterized by shallow, rocky soils typical of most of the soils in and around the Organ Mountains. At higher elevations, slopes are very steep and soils are commonly interspersed between areas of rock outcropping. Along the base of the mountains, slopes become more gentle. Soils are less rocky and are dissected by numerous drainages which originate in the Organ Mountains.

WATER RESOURCES

Dona Ana County

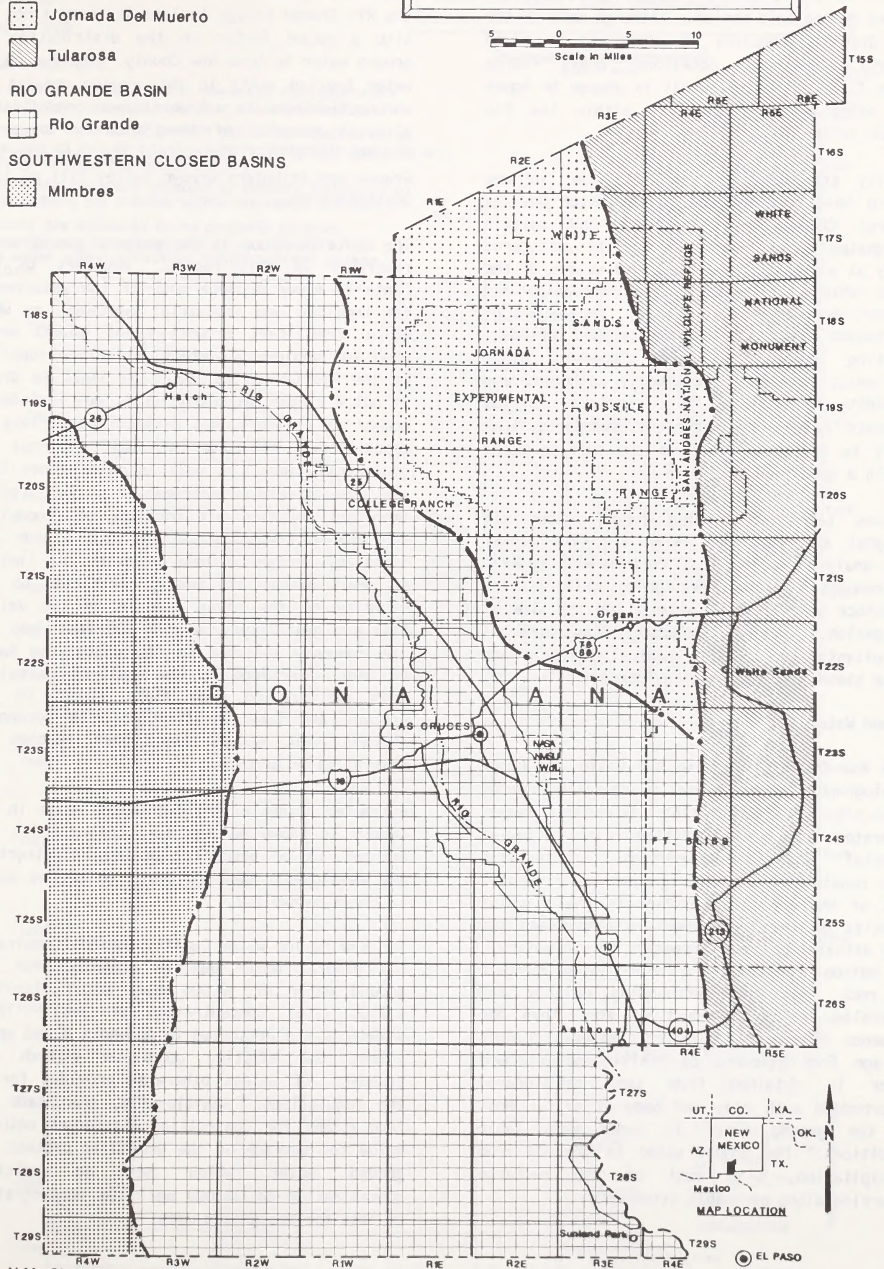
Surface Water

Dona Ana County includes parts of four major surface water drainage basins as recognized by the New Mexico State Engineer (see Map 3-5). Three of the four basins are closed--the Jornada del Muerto, Tularosa, and Mimbres. The closed basins have no surface drainage outlets and are usually dry, but runoff water will accumulate in lowland areas for short durations during periods of high rainfall. The Rio Grande Basin is an open basin with the south running river being the major perennial water. Throughout the County, the river channel and flow are completely controlled by dams, levees, and canals. Average annual discharge at El Paso for 1938 through 1980 was 363,700 acre-feet.

In Dona Ana County, tributaries to the Rio Grande are ephemeral, flowing only in times of storm events. At higher elevations, short stretches of stream flow occur below springs, but the water seeps back into the ground long before reaching the Rio Grande. That part of precipitation that manifests itself as flow in surface streams is known as runoff. The annual runoff is the total runoff produced by the many rains during the year. The estimated mean annual runoff for the County ranges from 1 inch in the mountains to 0.1 inch in the valleys. The variability of runoff from place to place and from year to year is largely associated with corresponding variations in precipitation. Intense thundershowers during July through

MAP 3-5
SURFACE WATER BASINS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICT LAS CRUCES N.M.
DONA ANA COUNTY LAND TENURE ADJUSTMENT



SOURCE : N.M. State Engineer, 1980

September generally contribute 50 percent of the annual rainfall, and most of the annual runoff occurs during this period. Although most of the Rio Grande floodplain is protected by flood control structures, occasional heavy storms cause flooding, which result in damage to homes and other personal property within the Rio Grande Valley.

Quality standards for surface water in New Mexico have been adopted by the Water Quality Control Commission to protect and sustain designated uses. General quality standards apply at all times to all surface waters of the State which are suitable for recreation and support desirable aquatic life. Parameters of particular importance that are covered include: floating solids; oil and grease; plant nutrients; hazardous substances; pathogens and turbidity. Additionally, certain stream segments have more stringent standards that apply to designated uses of the surface water within a specified stream reach.

Samples taken of flowing runoff water (in arroyos) and impounded water (in dirt tanks) were analyzed and found to conform with Federal Environmental Protection Agency criteria for livestock and wildlife waters and for use as irrigation waters (Earth Environmental Consultants Inc. 1979). Federal criteria and State standards are shown in Appendix B.

Ground Water

Dona Ana County is within the Basin and Range physiographic province and is characterized by north-trending subparallel mountain ranges separated by basins filled with alluvial material. This is an important characteristic when considering regional ground water supply. Most of the ground water lies in the alluvial deposits on the lower mountain slopes and the deep alluvial or bolson deposits in the valley. The bolson deposits are a heterogeneous mixture of rock from the surrounding uplands and generally are the product of more than one sequence of erosion. The fill material ranges in age from Pliocene to Pleistocene. Ground water is obtained from sand and gravel interbedded with clay and beds of silt. Most of the ground water is under water-table conditions. The ground water is derived from precipitation, with most of the recharge occurring along permeable streambeds.

The evolution of the Rio Grande Valley, particularly the detrital material that filled the Rio Grande trough in late Tertiary time, is also a major factor in the distribution of ground water in Dona Ana County. The two major water bearing units in this region consist of unconsolidated to moderately consolidated alluvial deposits of the Santa Fe Group of Miocene to middle Pleistocene age, and the Rio Grande and tributary arroyo valley fill of late Quaternary age.

The Santa Fe Group is the primary ground water reservoir in this region. Aquifers in the Santa Fe Group produce most of the water used for domestic and industrial purposes, as well as a significant proportion of ground water used to supplement surface irrigation supplies in the Rio Grande Valley. The Santa Fe Group is not a single hydrologic unit, but includes a number of aquifers that reflect the variety of depositional environments that occurred in geological times, as well as major zones that are relatively impermeable. The other important aquifer unit consists of floodplain and channel deposits of the Rio Grande and tributary arroyos. These deposits are limited in areal extent and mostly restricted to the vicinity of the river. Wells in the valley fill are generally less than 200 feet deep and are commonly finished in the underlying Santa Fe beds. Recharge to the aquifers is mainly from infiltration from flash floods in the arroyos and some infiltration from perennial streams that occupy the upper reaches of several major arroyos.

Estimated potential yield of water wells in the County is shown on Map 3-6. Water wells are assumed to be properly located, constructed, and developed. General depth to ground water is shown on Map 3-7.

The New Mexico Water Quality Control Commission has general water quality standards for all ground water of 10,000 mg/l total dissolved solids (TDS) concentration or less. These standards are presented in Appendix B and apply unless the existing condition exceeds the standard, or unless otherwise provided for in the regulations. Additionally, the State has regulations for controlling discharges onto or below the surface of the ground to protect all ground water which has an existing concentration of 10,000 mg/l TDS concentration or less for designated uses.

MAP 3-6 ESTIMATED POTENTIAL YIELD OF WATER WELLS

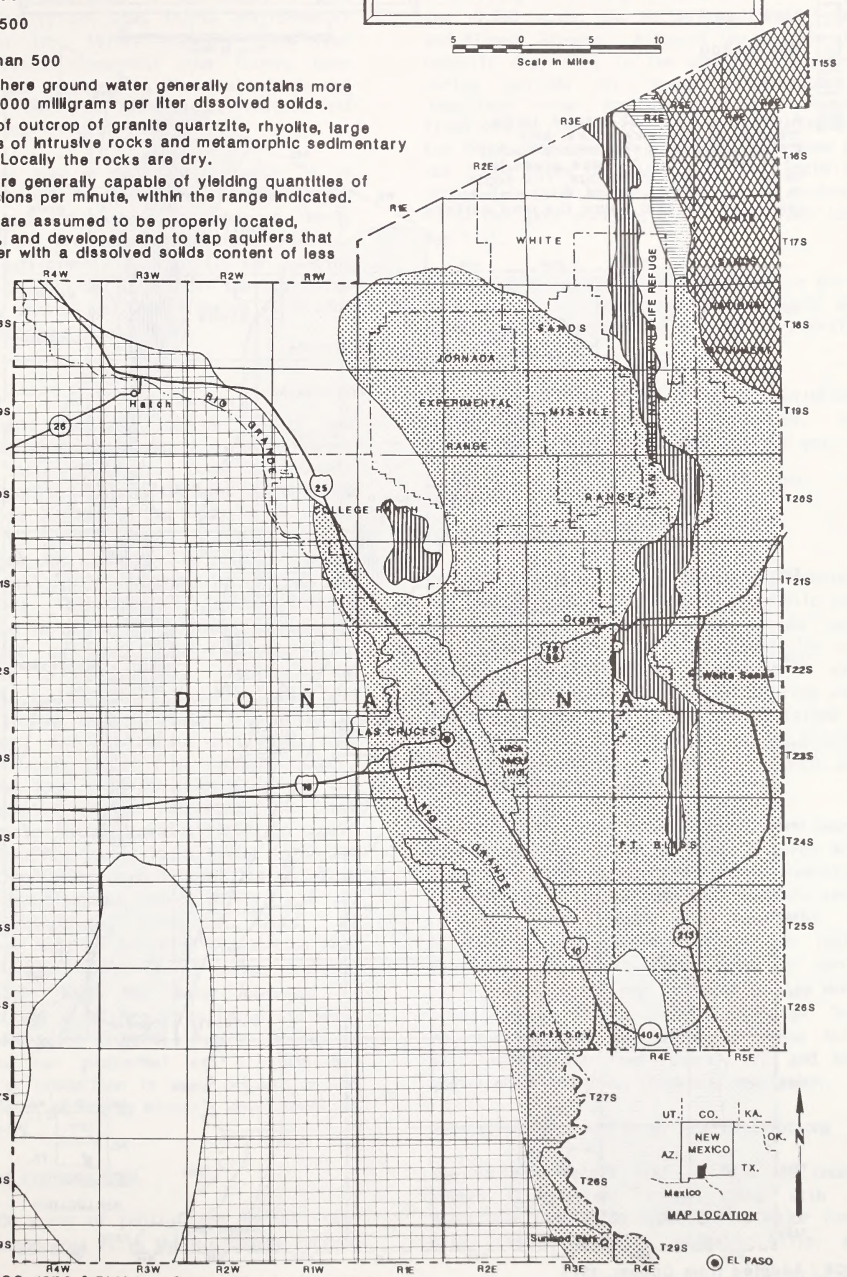
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICT LAS CRUCES N.M.
DONA ANA COUNTY LAND TENURE ADJUSTMENT

LEGEND

- Less than 25
- 25 to 100
- 100 to 500
- More than 500
- Area where ground water generally contains more than 3,000 milligrams per liter dissolved solids.
- Areas of outcrop of granite quartzite, rhyolite, large masses of intrusive rocks and metamorphic sedimentary rocks. Locally the rocks are dry.

Area wells are generally capable of yielding quantities of water, in gallons per minute, within the range indicated.

Water wells are assumed to be properly located, constructed, and developed and to tap aquifers that contain water with a dissolved solids content of less than 3,000 milligrams per liter.



SOURCE : USGS, 1972 & BLM Las Cruces District Files 1985

MAP 3-7

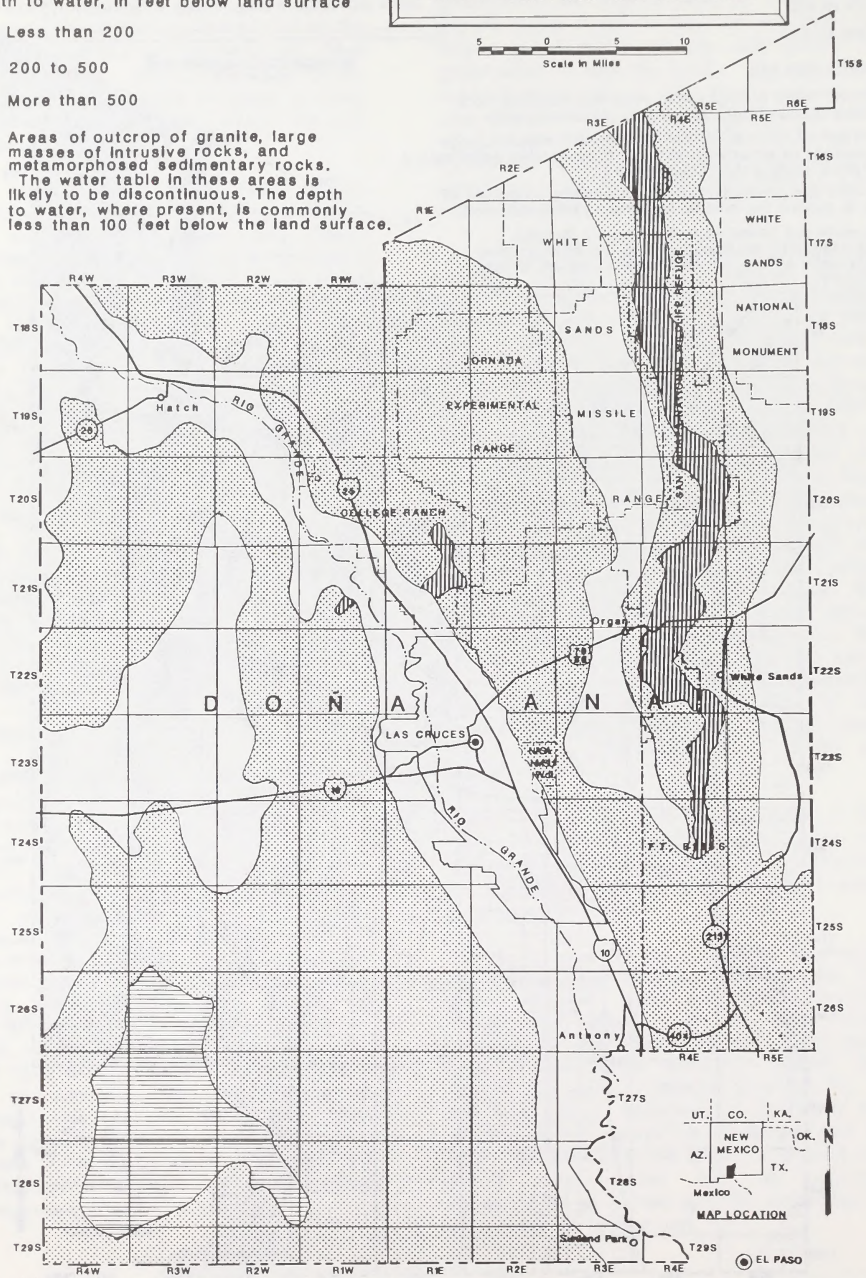
GENERAL DEPTH TO GROUND WATER

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICT LAS CRUCES N.M.
DONA ANA COUNTY LAND TENURE ADJUSTMENT

LEGEND

Depth to water, in feet below land surface

- Less than 200
- 200 to 500
- More than 500
- Areas of outcrop of granite, large masses of intrusive rocks, and metamorphosed sedimentary rocks. The water table in these areas is likely to be discontinuous. The depth to water, where present, is commonly less than 100 feet below the land surface.



SOURCE : Adapted from Copper, 1971

Overall, except for the isolated cases, the quality of ground water in the County is good for practically all uses (Earth Environmental Consultants Inc. 1979). Samples taken from wells located throughout the County were analyzed and compared to State standards and Federal criteria for domestic, livestock and wildlife, and irrigation uses.

The largest area of poor quality water is in the Jornada del Muerto; where, in some areas, sulfates and TDS exceeded recommended levels for human and livestock consumption. However, water of sufficiently good quality for watering stock may be obtained in most of the basin from relatively shallow wells that derive water from the fill (Conover et al. 1955).

Water Use

Water rights for the use of surface and underground water in the State are administered by the State Engineer. Dona Ana County includes parts of five declared underground water basins as shown on Map 3-8.

Within Dona Ana County, the primary use of water on the public rangeland is by livestock and wildlife. Water provided for this purpose is depleted in two ways: (a) water consumed by animals and (b) evaporation from facilities constructed to furnish water supplies. The facilities include steel storage tanks and drinking troughs that hold water from windmills and springs, and constructed dirt tanks that generally receive water from surface sources. Evaporation from dirt tanks accounts for the largest quantity of water depleted. The total water depleted from water facilities on public land in Dona Ana County is estimated to be 314 acre-feet per year, consisting of 144 acre-feet consumed by livestock and wildlife, and 170 acre-feet evaporated from dirt tanks. No attempt was made to determine evaporation from steel storage tanks or drinking troughs. Approximately half the water consumed by livestock and wildlife is estimated to come from ground water sources. Present levels of water use for geothermal and oil and gas drilling or production is small because of the limited level of energy minerals development at this time.

State Land Exchange Area

The 10,000 acres of public land in the State Land Exchange Area is in the Rio Grande Surface Water Basin. Three major ephemeral streams originating in the Organ Mountains flow through the 10,000 acres; the North Fork, South Fork, and Alameda arroyos. Although the arroyos are normally dry, flow in the arroyos are common during periods of heavy thundershowers. Downstream areas are protected by numerous flood control structures, the largest being the Las Cruces Dam east of Interstate 25. Some of the 5,000 acres of State land that would be acquired by BLM in the proposed land exchange is in the upper portions of the watersheds (see Map 1-1).

Ground water in the 10,000 acres is in basin fill material at a depth ranging from about 350 to 600 feet. Ground water quality is generally good for all uses.

Since most of the 10,000 acres is unallotted, water used by livestock, wildlife, and evaporation is less than 1 acre-foot per year.

VEGETATION

Dona Ana County

In 1978 and 1979, a soil-vegetation inventory was conducted on 1,116,687 acres of public land in Dona Ana County. Range sites were delineated based on soil characteristics and landform. Vegetation was identified on each range site. Further information dealing with and derived from this inventory is contained in Chapters 2 and 3 and Appendix B of the Grazing Environmental Impact Statement Southern Rio Grande Planning Area (BLM 1981).

Dona Ana County lies within the Southern Desert Subresource Area-SD2 Major Land Resource Area (MLRA-42), which is characterized by elevations of 3,800 feet to 5,000 feet with mountain areas up to 8,000 feet (U.S. Department of Agriculture Soil Conservation Service 1982). Gently sloping plains are broken by abrupt rising desert mountains. Climate in this warm, arid region is described on page 3-1. Potential natural vegetation on these soils will support grassland (short, mid, and tall grass) and mixed grass-shrubland vegetation.

Vegetation Types and Range Site Descriptions

The Southern Desert MLRA in Dona Ana County covers 11 different range sites with 24 associated vegetation types. Five major range sites (sandy, gravelly, malpais, hills, and

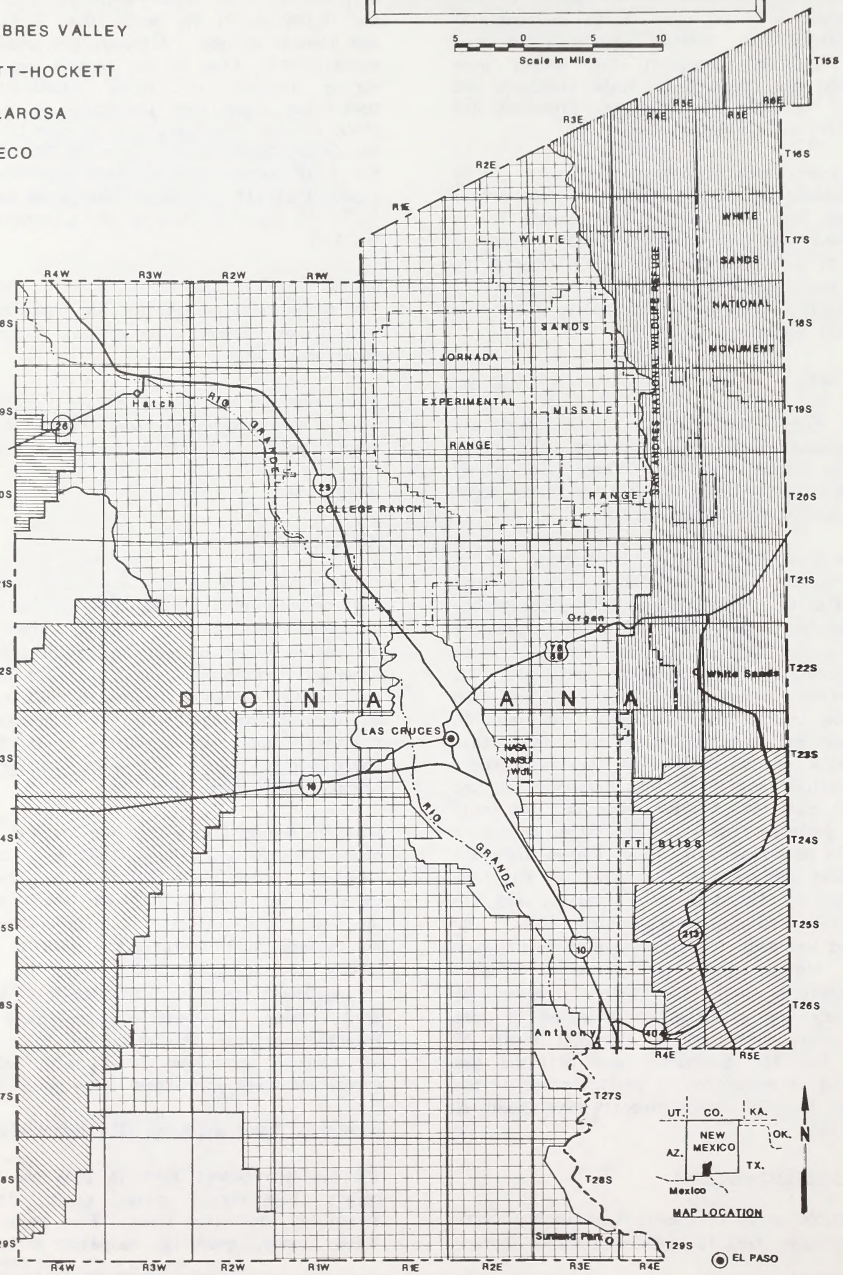
MAP 3-8

DECLARED UNDERGROUND WATER BASINS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICT LAS CRUCES N.M.
DONA ANA COUNTY LAND TENURE ADJUSTMENT

LEGEND

- LOWER RIO GRANDE
- MIMBRES VALLEY
- NUTT-HOCKETT
- TULAROSA
- HUECO



SOURCE : N.M. State Engineer, 1980

shallow sand) occur in the MLRA. Major range site locations and associated vegetation types are contained in the Grazing Environmental Impact Statement Southern Rio Grande Planning Area (BLM 1981).

Major Range Sites--Southern Desert MLRA and Associated Vegetation Types

Sandy range sites usually occur on level to gently sloping or undulative piedmont slopes or plains. Slopes range from 1 to 15 percent, averaging less than 10 percent. Mesquite and snakeweed are the dominant vegetation types on these areas. Yucca, mixed desert shrub (snakeweed and creosotebush), and annual forbs occur in lesser amounts. Mesquite is usually in the sand dunes with snakeweed occurring in the interdune areas. This mesquite-snakeweed association also occurs on the deep sand range site. Small amounts of midgrasses (dropseeds and tobosa) occur in association with mesquite and snakeweed.

Gravelly range sites occur along the footslopes of desert mountains and side slopes of arroyos and water courses. The landscape is characterized by low hills, ridges, fans, and footslopes with 5 to 30 percent slope. Creosotebush is the dominant vegetation type on the gravelly range site. Small amounts of midgrasses (gramas and tobosa) and mixed desert shrub (snakeweed, mariola, and mesquite) also occur on gravelly sites.

The malpais range site (lava flow) is characterized by nearly level to moderately steep with small areas exceeding 25 percent slopes. Terrain is frequently interrupted by basalt outcrops, rocks, and occasional boulders. Creosotebush and snakeweed are the dominant vegetation types on this range site. Midgrasses (gramas, tobosa, muhlys, and dropseeds) occur in lesser amounts in the small pockets which hold the soil in the lava flow. Many annual and perennial forbs are also present in these areas.

The hills range site is characterized by rolling to steep hills and mountain footslopes. Slopes average from 15 to 50 percent while direction of slope is variable. Midgrass, mixed desert shrub, and mixed mountain shrub are the dominant vegetation types on these areas. Midgrasses are the most productive vegetation type. Major midgrass species include gramas, muhlys, dropseeds, and in smaller amounts, threeawns, tobosa, panicums, bluestems, and lovegrasses. The mixed desert shrub type includes snakeweed, mariola, fourwing saltbush, various cacti, mesquite, Mormon tea, sotol, mimosa, and creosotebush. The mixed mountain shrub type includes oak brush, mountain mahogany, pinyon-juniper, sumac, Ponderosa pine, snakeweed, sotol, mesquite, mimosa, Apacheplume, and Mormon tea.

The shallow sand range site occurs on gently sloping to undulating and gently rolling upland slopes. Slopes average less than 9 percent. The dominant vegetation types are snakeweed and mixed desert shrubs, which include snakeweed, creosotebush, mesquite, yucca, tarbush, and mariola. Annual and perennial forbs and small amounts of warm season perennial grasses (gramas and dropseeds) are also present.

Other range sites present (in order of number of acres present) are gravelly sand, loamy, deep sand, bottomland and draw, gravelly loam, and clayey.

Forage Species and Poisonous Plants

The forage species for livestock (grasses) and wildlife (shrubs) are comprised primarily of warm-season perennial grasses and a few cool-season shrubs. Annual grasses and forbs are recognized as being vitally important and contribute substantially to the diet of livestock and wildlife on semidesert rangelands.

In some areas, poisonous plants can cause problems to livestock during certain times of the year. Many poisonous plant species, particularly annual and perennial forbs, grow in disturbed or heavily used areas. The plants, their persistence, animals affected, and toxic season can be found in Appendix B-10 of Las Cruces/Lordsburg Resource Area Management Framework Plan Amendment Environmental Impact Statement (BLM 1983).

Threatened, Endangered, Candidate, or Sensitive Plants Species

Plant species occurring in Dona Ana County which are Federally-listed (threatened, endangered, or candidate) and those selected by the New Mexico State Heritage Program as sensitive are listed in Appendix C.

Other Vegetation Uses

Vegetation in the Dona Ana County area has a variety of uses and users. These include vegetative sales, woodcutting, vegetation study areas, and brush control areas.

Vegetative Sales

There are two vegetative sale areas in the County. Prickly pear cactus is sold on the Corralitos Ranch in T. 21 S., R. 3 W., Sections 4 and 9, and sotol in T. 21 S., R. 3 W., Sections 4, 10, and 15. Soaptree yucca is sold from the West Mesa (T. 25 S., R. 1 W., Sections 1, 3-15, 17-30, and 33-35 and T. 25 S., R. 1 E., Sections 5-8, 17-20, and 29-31). An attempt is made to salvage desirable desert plants for landscaping whenever possible. Locations of vegetative sales areas are shown on Map 3-9.

Woodcutting Areas

In Dona Ana County, there are no designated woodcutting areas due to the minimal amount of wood available. Mesquite is used in small amounts by the public when it is made available from other projects.

Vegetation Study Areas

The Parker 3-Step vegetation studies were designed to show changes in vegetation and ground cover over time. The six plots are still read periodically. Location of the Parker 3-Step plots are shown on Map 3-9.

The Roderick Ecological Plot is located in Dona Ana County in T. 24 S., R. 2 W., Section 15 (see Map 3-9). This plot has fenced and unfenced areas (1-open, 1-cattle excluded, and 1-cattle and rodents excluded), where changes in vegetation and ground cover are measured over time. This plot is still read periodically.

Brush Control Areas

There are three areas in Dona Ana County where mesquite or creosotebush have been chemically treated. A 160-acre test plot of mesquite was treated in T. 27 S., R. 1 E., Section 27, SW1/4. Three different applications of Tebuthiuron (Graslan) were used and are being evaluated.

Four hundred and sixty-eight acres of creosotebush on the H. Kane allotment in T. 22 S., and T. 23 S., R. 4 W., and 1,580 acres of creosotebush on the W. N. Castle allotment in T. 18 S., R. 2 W., and 3 W., were treated with Tebuthiuron in 1984. Studies are ongoing to determined the effectiveness of the brush control. Full chemical effects will not be apparent for 3 years. (See Map 3-9 for general locations.)

State Land Exchange Area

Major Range Sites

Range sites included on the 10,000 acres of public land in the proposed State Land Exchange Area are gravelly loam, gravelly, and gravelly sand. Range sites included in the 5,000 acres of State land to be acquired by the BLM include hills, gravelly loam, gravelly, and sandy. Hills, gravelly, and sandy were discussed under the Dona Ana County section.

Gravelly loam range sites occur on nearly level to rolling piedmont slopes and alluvial fans. Slopes occasionally reach 30 percent but average less than 15 percent. Creosotebush and snakeweed are the dominant aspect vegetation type. Other associated shrubs include whitethorn acacia, catclaw mimosa, mesquite, range ratany, cacti, and Mormon tea. Bush muhly is the major grass species on this range site.

Gravelly sand range sites usually occur in drained washes, as arroyo terraces, alluvial fans, or dissected piedmont slopes. Slopes range to 30 percent, but average less than 15 percent. Creosotebush and desert willow are the dominant vegetation types. Associated shrub species include mesquite, tarbush, snakeweed, fourwing saltbush, and in the arroyos, little leaf sumac, Apacheplume, and brickelbush. Grasses and forbs occur in a diverse variety but in small amounts.

Threatened, Endangered, Candidate, or Sensitive Plant Species

Plant species occurring in the 10,000 acres of public land and 5,000 acres of State land which are Federally-listed and those selected by the New Mexico State Heritage Program as a State sensitive species are listed in Appendix C.

MAP 3-9
OTHER VEGETATION USES

LEGEND

- Parker 3 Step Transect
- A Roderick Ecological Plot
- B Brush Control Area
- C Sotol Sale Area
- D Prickly Pear Sale Area
- Soaptree Yucca Sale Area

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LAS CRUCES DISTRICT LAS CRUCES N.M.
DONA ANA COUNTY LAND TENURE ADJUSTMENT

SOURCE : BLM Las Cruces District Office Files, 1985

Other Vegetation Uses

There are no brush control areas, test plots, vegetation studies, or vegetative sales areas in the 10,000 acres or the 5,000 acres. An attempt is being made to salvage desirable desert plants for landscaping in the mineral material extraction sites.

WILDLIFE

Dona Ana County

Dona Ana County was mapped into habitat sites based on vegetation and landform. Selected habitat sites were sampled for occurrence of vertebrate species. The Standard Habitat Sites (SHS's) (grouping of like habitat sites) on Table 3-4 were identified in the County. The inventory data included the hills landform. The hills landform data have been included with the rolling upland landform (for example, grass hills would be included in grass rolling upland in the discussions). Wildlife species and their preferred SHS's are shown in Appendix D-1. As shown in Appendix D-1, some species use several habitat types equally, while other species are restricted in habitat use. Big game species are discussed in relation to the SHS's and separately in relation to herd units (Map 3-10). Raptors are discussed separately because they are not easily related to SHS's. (See Appendix D-2 for methodology used in the wildlife section.)

Standard Habitat Sites (SHS's)

A thorough discussion of each SHS can be found in the Grazing Environmental Impact Statement Southern Rio Grande Planning Area (BLM 1981).

Table 3-4 gives the acreages of each SHS which has been inventoried in Dona Ana County. Large tracts of private land and the White Sands Missile Range area are excluded. Table 3-4 also includes data which indicate the relative value of each SHS to wildlife populations, but not to individual species.

Big Game

Deer

Deer, primarily mule deer, may be found throughout Dona Ana County. The areas shown on Map 3-10 are those areas within herd units where the habitat is believed to be capable of supporting more than .5 deer per section. Most of the better deer habitat is found on the mountain landform, with some inclusion of rolling uplands. Arroyo-riparian habitats are also important, as shown on Table 3-5. All of the herd unit populations are below optimum according to information jointly developed by the New Mexico Department of Game and Fish (NMDGF) and BLM. Compilation of the vegetation inventory data obtained for the County indicates that there is currently sufficient forage available to support optimum deer populations. However, browse transect data show that with existing numbers of deer, browse utilization is close to allowable use, indicating that competition with livestock is contributing to the existing less than optimum populations.

Pronghorn

Pronghorn habitat presently occupied in the County (in order of decreasing value) include grass rolling upland, grass mountain, half-shrub rolling upland, creosote rolling upland, mesquite rolling upland, and grass flat.

In addition to the occupied areas shown on Map 3-10, pronghorn may occasionally be seen in other areas and the NMDGF is currently formulating plans to reintroduce pronghorn into suitable habitats in the County, which are historic ranges (Findley 1975). According to Donaldson (1980), a large half-shrub rolling upland and grass rolling upland area west of Las Cruces is a likely location for reintroduction.

Raptors

Raptors (hawks, eagles, and owls) were surveyed by recording incidental observations, and by driving raptor routes on dirt roads and recording the raptors seen. The raptor data are difficult to relate to SHS's. In the County, a portion of Las Uvas Planning Unit (PU) was noted as having a high relative abundance of wintering raptors, at 21 individuals per 100 miles of route driven, or 3 times the relative abundance of the remainder of the County. The attraction of Las Uvas PU for wintering raptors is uncertain, but based on the available habitat types, and the percentages of those types in the other PUs, a combination of the percentage of mesquite rolling upland and mesquite sand dunes most closely matches the relative abundance of

TABLE 3-4
STANDARD HABITAT SITES COMPARISON DATA[a/]

Standard Habitat Site	Inventoried Acres in County	Diversity Index Small Mammals	Diversity Index Plants	Average Number Plant Species	Number Vert. Species Using As Preferred	Number Vert. Species Reliant on SHS for Preferred	Diversity Index Summer Birds[b/]	Average Structural Diversity Index
Riparian	960 .1%	1.796	.0610	12.2	153	128	3.488	.070
Arroyo-riparian	10,720 .8%	ND	.730	10.6	31	13	2.402	.083
Grass Rolling Upland	31,520 2.4%	1.707	.0478	14.6	49	11	1.557	.034
Grass Flat	27,360 2.1%	1.294	.0457	17.3	49	11	.878	.023
Grass Mountain	64,320 5.0%	1.212	.0669	19.1	35	9	2.280	.053
Mixed Shrub Rolling Upland	20,000 1.6%	1.162	.0611	15.3	32	12	2.046	.056
Mixed Shrub Mountain	28,960 2.2%	1.162	.1005	16.25	32	12	1.296	.064
Mesquite Rolling Upland	57,920 4.5%	1.033	.0567	12.6	10	6	1.668	.070
Half-Shrub Rolling Upland	112,580 8.7%	0.915	.0594	14	10	6	1.659	.063
Pinyon-Juniper Grass Mountain	5,120 .4%	0.858	.0673	21.4	68	62	1.884	.126
Malpais	6,720 .5%	ND	.0669	13.3	2	0	ND	.040
Creosote Rolling Upland	346,720 26.9%	0.682	.0517	12.4	32	8	1.969	.039
Creosote Breaks	104,800 8.1%	ND	.0612	12	23	3	2.058	.042
Mesquite Sand Dunes	473,760 36.7%	0.617	.0573	9	14	10	1.937	.069

Sources: BLM Las Cruces District Office Inventory Files, 1980; Davis, 1980; American Ag International, 1979.

Notes: [a/] See Appendix D-2 for Methodology.
[b/] Calculated from Caballo and Organ Mountain Planning Unit Inventory Records.

MAP 3-10

DEER & PRONGHORN HERD UNITS

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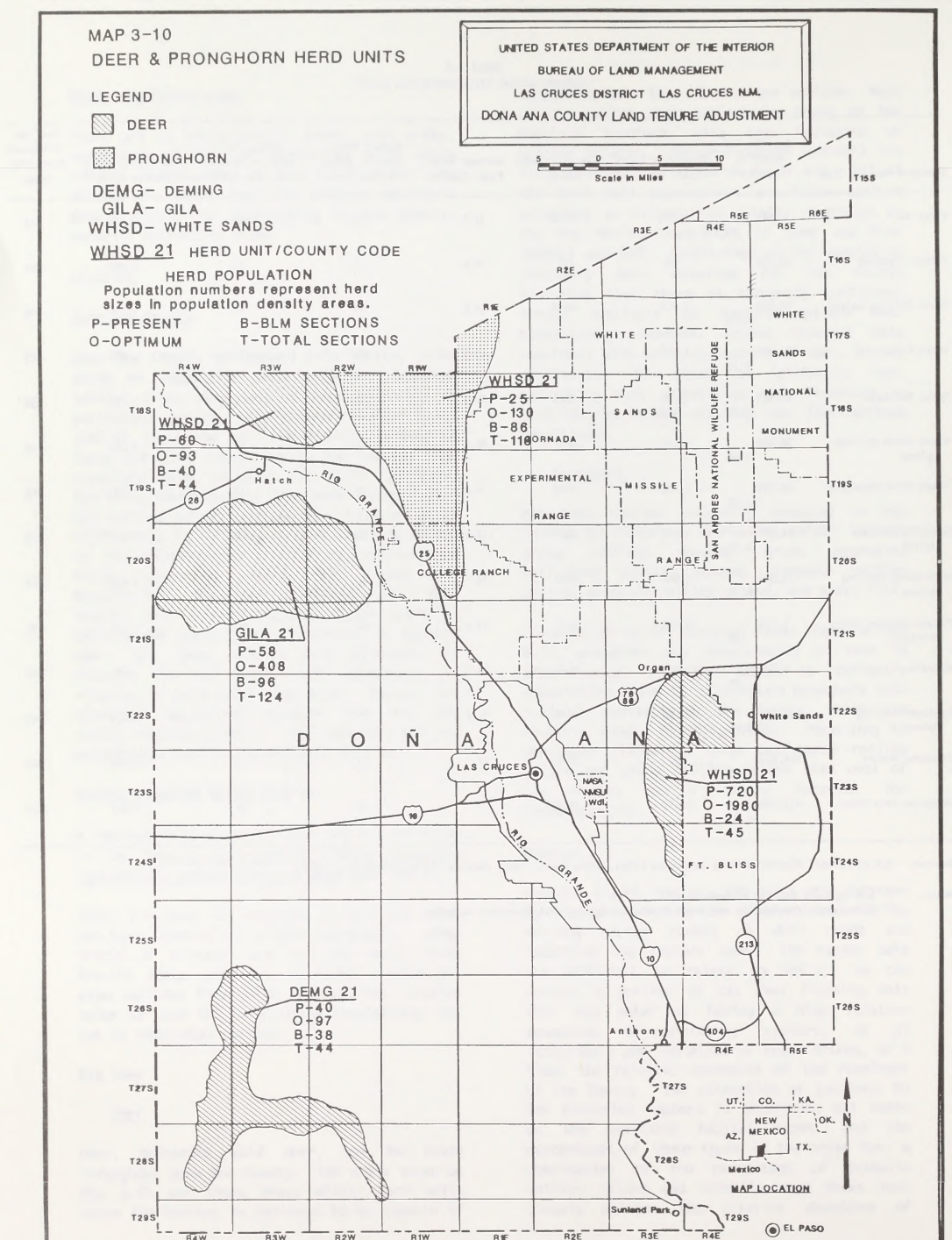


SOURCE : N.M. Dept. of Game & Fish and BLM Las Cruces District Files, 1985

TABLE 3-5
ESTIMATED GAME USE OF STANDARD HABITAT SITES

Standard Habitat Sites	Estimated Big Game per Section in County from Observation Recrods[a/]		Estimated Pounds Annual Production per Acre, Desirable & Intermediate Shrubs	Percent of Upland Game Bird Records by SHS		
	Deer	Pronghorn		Mourning Dove	Scaled Quail	Gambel's Quail
Riparian	1.4	0	ND	4	8	39
Arroyo-riparian	3.9	0.1	8	84	3	46
Grass Rolling Upland	0.3	0.4	14	1	15	7
Grass Flat	0.1	0.1	86	1	1	0
Grass Mountain	1.9	0.3	13	0	5	0
Mixed-Shrub Rolling Upland	1.6	T	28	2	17	1
Mixed-Shrub Mountain	2.1	0	31	1	7	0
Mesquite Rolling Upland	0	0.2	33	3	21	1
Half-Shrub Rolling Upland	0.1	0	13	1	1	7
Pinyon-Juniper Grass Mountain	2.3	T	19	0	0	0
Malpais	ND	T	18	ND	ND	ND
Creosote Rolling Upland	0.1	T	8	3	18	0
Creosote Breaks	0.1	0	9	0	2	0
Mesquite Sand Dune	T	0	32	0	1	0

Source: BLM Las Cruces District Office Files, 1980.

Note: [a/]Bias is probable in observations. Deer are more easily observed in grass mountain habitats than in mixed shrub mountain habitats. T = Estimates of less than 0.1 animals per section, but with recorded use. Estimates are based on 1,500 deer and 500 pronghorn over the County, or an additional 137 deer outside the population areas shown on Map 3-10. The above provides a measure of relative use of Standard Habitat Sites by big game and game birds.

wintering raptor populations. For those raptors which are opportunistic feeders or prey primarily on small mammals, the mesquite types provide high levels of prey biomass as represented on Table 3-4.

Swainson's hawk nests were the most abundant raptor nests located in the County. Most of the nests were located on soaptree yuccas in the PU. Unpublished food habits information taken in Las Uvas PU shows the highest biomass food item to be spotted ground squirrels, which are most abundant in the mesquite types. The highest frequency food item (32 percent) is the western whiptail lizard, which may be primarily associated with the half-shrub rolling upland SHS, but also occurs in mesquite sand dunes. Another factor which may contribute to the high relative abundance of raptors in Las Uvas is the abundant soaptree yucca, which is used for nest and perch sites. The only sightings of peregrine falcons during the inventory were in Las Uvas where three individual sightings occurred during the winter.

Special Habitat Features

During the wildlife inventory, both natural and man-made habitat features considered significant to wildlife were recorded. The types of special habitat features recorded within the County include: cliffs, rock outcrops, high peaks of the Organ Mountains, steep-walled canyons, springs, playas, earth dams, windmills, wells, drinking troughs, dirt tanks, and quail guzzlers.

Threatened or Endangered Fauna Species

Table 3-6 summarizes threatened or endangered fauna species occurring or potentially occurring in the County and the habitat preferences of these species.

State Land Exchange Area

Standard Habitat Sites (SHS's)

Table 3-7 shows the approximate acres of each SHS which is in the State Land Exchange Area including the 10,000 acres east of Las Cruces and the 5,000 acres of State land within the Organ Mountains.

TABLE 3-7
APPROXIMATE ACRES BY SHS
STATE LAND EXCHANGE AREA

Standard Habitat Sites	Disposal Area	Organ Mountains (State Land)
Mesquite Sand Dunes	880	--
Creosote Rolling Upland	8,000	1,760
Mesquite Rolling Upland	--	--
Half-Shrub Rolling Upland	320	320
Creosote Breaks	--	--
Mixed-Shrub Mountain	--	1,920
Arroyo-Riparian	800	--
Mixed-Shrub Rolling Upland	--	800

Source: BLM Las Cruces District Office Inventory Files, 1980.

Big Game

Deer

One mule deer record was made at one of the earth dams by the inventory crew.

Special Habitat Features

Special habitat features included on the proposed disposal lands include three earth dams (flood control) and dirt tanks. Special habitat features on the State land in the Organ Mountains area being considered for acquisition include two dirt tanks and one steep-walled canyon.

Threatened or Endangered Fauna Species

Species listed on Table 3-6 for which there are records in the vicinity of the proposed State Land Exchange Area and for which the area could provide habitat are the Trans-Pecos rat snake and the Sonora Mountain kingsnake.

TABLE 3-6
THREATENED, ENDANGERED, OR SENSITIVE[a/] ANIMAL SPECIES OF DONA ANA COUNTY

	COMMON NAME	STATUS[b/]	PREFERRED HABITAT(S)	GENERAL DISTRIBUTION	REMARKS/MANAGEMENT RECOMMENDATIONS
1.	Common Black-hawk	S-II	Riparian.	Arizona, New Mexico, Texas in United States.	Regular occurrence in Dona Ana County is unlikely. Preservation and restoration of riparian habitat.
2.	Bald eagle	FE, S-II	Riparian, wetlands (water oriented).	North America. Primarily winter in New Mexico.	No key habitats in Dona Ana County. Management of riparian habitat helpful.
3.	Peregrine falcon	FE, S-I	Cliffs in wooded or forested habitat.	Widespread. In the Las Cruces District, primarily as a winter migrant.	BLM inventory records are for winter migrants only and west of the Rio Grande in Dona Ana County.
4.	Mississippi kite	S-II	Riparian or other areas with tree belts, such as golf courses	Illinois and Carolinas into Gulf Coast states in summer. In New Mexico primarily east.	Regular occurrence likely in recent time. Management of riparian areas helpful.
5.	Buff-collared nightjar	S-I	Variable.	Southern United States into South America.	Dona Ana County vagrant.
6.	Common ground dove	S-I	Agricultural and other undeveloped areas below 1,650 meters.	Southeast California to south Texas into Latin America. Valley areas in south New Mexico.	Protection of native shrubland and weedy areas at lower elevations, particularly in riparian areas, helpful.
7.	Baird's sparrow	S-II	Grasslands.	In New Mexico in eastern plains and southern lowlands in migration.	Management needs include grassland improvements of cover and grass seed production.
8.	McCown's longspur	S-II	Grassland (shortgrass).	New Mexico - Migrates through east and south.	Management needs include grassland improvements of cover and grass seed production.
9.	Whooping crane	FE, S-II	Riparian, wetlands, fields, valley pastures.	New Mexico - Rio Grande Valley.	Experimental population in New Mexico should increase range to include more occurrence in Dona Ana County. Management of riparian habitat helpful.
10.	Least tern	S-II	Water, sand bars, alkali flats, etc.	Widespread, primarily east in New Mexico.	Vagrant in Dona Ana County.
11.	Olivaceous cormorant	S-II	Large bodies of water.	In New Mexico, Rio Grande Valley, especially Elephant Butte and Caballo Lakes.	Irregular occurrence along Rio Grande in Dona Ana County. Management of riparian habitat helpful.
12.	Costa's hummingbird	S-II	Generally, arid habitats and agricultural areas.	In New Mexico, primarily Hidalgo County.	Vagrant in Dona Ana County.
13.	Bell's vireo	S-II	Dense shrubland or woodland along streams, riparian.	In New Mexico, Primarily south.	Irregular in Dona Ana County. Management of riparian habitat helpful.

TABLE 3.6
THREATENED, ENDANGERED, OR SENSITIVE[a/] ANIMAL SPECIES OF DONA ANA COUNTY
(concluded)

	COMMON NAME	STATUS[b/]	PREFERRED HABITAT(S)	GENERAL DISTRIBUTION	REMARKS/MANAGEMENT RECOMMENDATIONS
14.	Gray vireo	S-II	Woodland/shrubland featuring evergreens. (Pinyon Juniper Grass Mountain.)	In New Mexico, widespread but irregular except in northwest and southwest.	Irregular in Dona Ana County.
15.	Mexican tetra	S-II	Rivers.	Rio Grande and Eddy County in New Mexico.	Once introduced into Dona Ana County.
16.	Mississippi silvery minnow	S-II	Large streams with shifting sand or silty bottoms.	In New Mexico, the Pecos and the Rio Grande.	Irregular occurrence in Dona Ana County.
17.	Phantom Shiner	S-I	Main channel areas with low velocity flows and sandy substrate.	Rio Grande from central New Mexico to southern Texas. May be extinct.	Not recorded from Dona Ana County, although probably once occurring here.
18.	Bluntnose shiner	S-I	Main channel areas with low-velocity flows.	In New Mexico in the Pecos River.	The Rio Grande race has declined to the point it may be extinct.
19.	Bighorn sheep (desert race)	S-I	Arid rocky mountains.	In New Mexico, formally in most southern mountain ranges. Now in the San Andres, Big Hatchet, and Peloncillo Mountains.	In Dona Ana County, on the White Sands Missile Range. Perhaps occasionally in the Organ Mountains.
20.	Colorado chipmunk (Organ Mountain race)	S-II	Ponderosa pine stands and into oak, juniper, and Apacheplume stands.	In the basin around the Aguirre Spring basin in the Organ Mountains.	Habitat preservation is essential.
21.	Trans-Pecos rat snake	S-II	Desert shrub, mixed-desert shrub.	In New Mexico, south-central counties.	In Dona Ana County, around the Organ Mountains. Conservation measures include preserving as much habitat as possible.
22.	Sonora Mountain kingsnake	S-II	Moist canyon bottoms in mountain woodlands.	In New Mexico, in the southwest counties.	Irregular in Dona Ana County.
23.	Gila monster	S-I	Lower mountain slopes and outwash areas. Often with rocks and other cover.	In New Mexico, the southwest counties.	Irregular in Dona Ana County. Perhaps Dona Ana County occurrences unnatural.

Source: "Handbook of Species Endangered in New Mexico," New Mexico Department of Game and Fish, Santa Fe, New Mexico, 1985.

Notes: [a/] Sensitive species include Federal Proposed and Candidate 1 species (none include here) and State-listed species.

[b/] FE = Federal Endangered
S-I = State-listed Group 1 (equivalent to Federal Endangered)
S-II = State-listed Group 2 (equivalent to Federal Threatened)

RECREATION

Dona Ana County

A wide variety of recreational opportunities exists in Dona Ana County. Opportunities are available for hiking, camping, picnicking, sightseeing, rockhounding, nature study, rock climbing, off-road vehicle (ORV) use, hunting, shooting, and general leisure. These opportunities occur in two categories, dispersed and developed.

Dispersed recreational opportunities are independent of recreational developments. These opportunities usually occur in natural or rural settings. Contact with other recreational groups is usually infrequent on trails and away from roads. The most popular dispersed recreation activities in Dona Ana County are camping/picnicking and ORV use. Other popular forms of dispersed recreation are hiking, shooting, and rock and mineral collection. The majority of the use occurs on the public land around the cities of Las Cruces, New Mexico and El Paso, Texas. Three popular areas for dispersed recreation near Las Cruces are Box Canyon, the Old Refuge, and Isaack Lake (see Map 3-11).

The Organ Mountains Recreation Lands (OMRLs), 27,167 acres of public land east of Las Cruces, are a significant recreational resource in Dona Ana County. (See Maps 3-11 and 3-12.) The OMRLs were designated in 1971 and are managed primarily for recreation. A management plan for the OMRLs was completed in 1985 and is available for public review in the BLM Las Cruces District Office. The OMRLs provide both dispersed and developed recreation opportunities. The Aguirre Spring Campground is currently the only developed recreation site in the County. The Aguirre Spring Campground provides approximately 120,000 visits per year. The Baylor Recreation Area and the Organ Mountains Recreation Area are areas within the OMRLs that have been classified for recreational purposes under the Classification and Multiple-Use (C&MU) Act. The classification of these areas under the C&MU Act also segregated the areas from all forms of appropriation under the public land laws, including the general mining and mineral leasing laws. The Needle's Eye Picnic Site is also presently classified under the C&MU Act, but the classification is in the process of being removed from this area as a result of a decision made in the Las Cruces/Lordsburg MFP Amendment (BLM 1984). Major activities within the OMRLs are picnicking, camping, hiking, horseback riding, sightseeing, rockhounding, and rock climbing. A Recreation Opportunity Spectrum (ROS) analysis has been completed for the OMRLs (See Map 3-12). The acreage breakdown by class is as follows: Rural (R), 17 acres; Roaded Natural (RN), 5,860 acres; Semiprimitive Motorized (SPM), 14,820 acres, and Semiprimitive Non-Motorized (SPNM), 6,470 acres. Appendix E describes the methodology used in determining ROS classes.

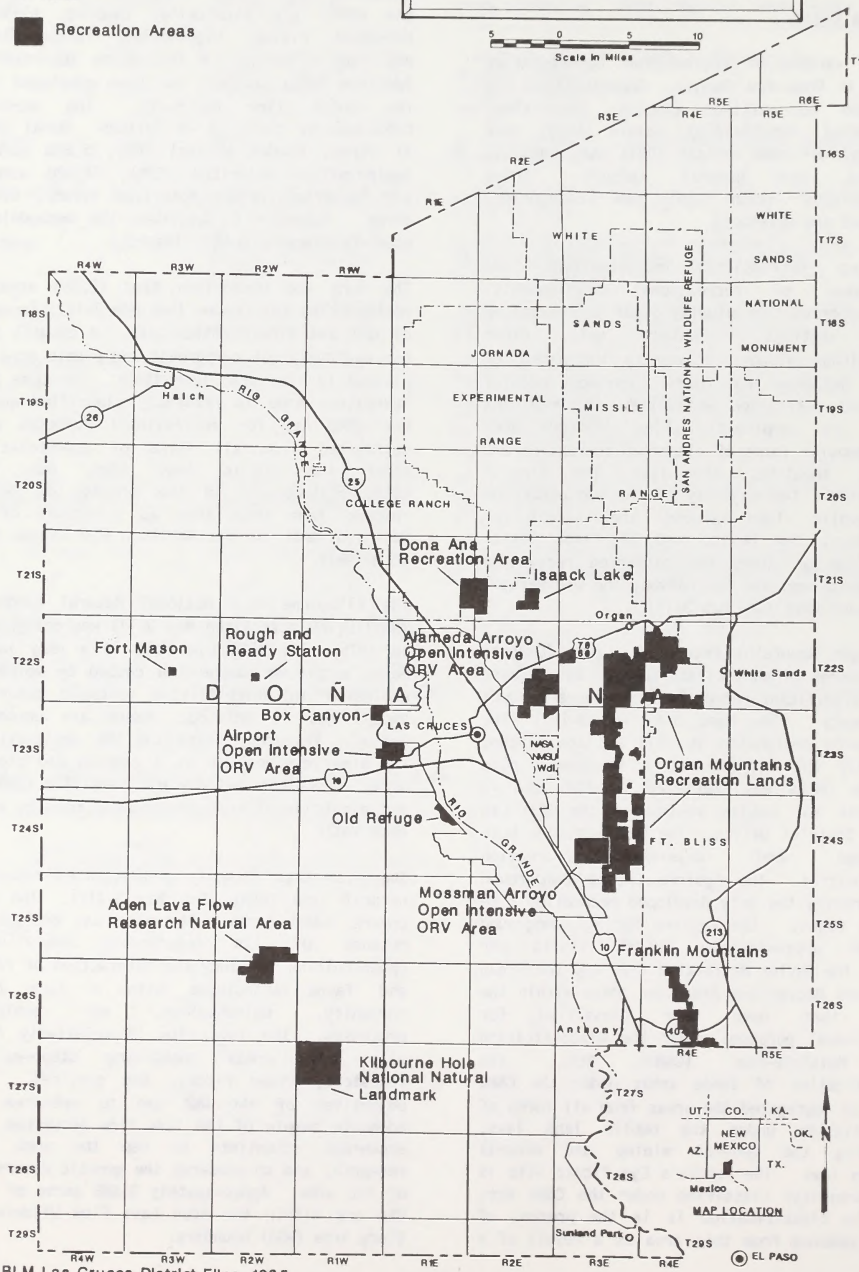
The Dona Ana Recreation Area (2,865 acres), northeast of Las Cruces (see Map 3-11), is used by ORV and picnic enthusiasts. A 25-unit day use and overnight campground and picnic area is planned for the area (BLM 1982). The Dona Ana Recreation Area is presently classified under the C&MU Act for recreational purposes and segregated from all forms of appropriation under the public land laws, but the classification is in the process of being removed from this area as a result of a decision made in the Southern Rio Grande MFP (BLM 1982).

The Kilbourne Hole National Natural Landmark (NNL)(5,760 acres)(see Map 3-11) was designated in 1975. The Kilbourne Hole is a very large maar; a pit or depression caused by volcanic explosion in which little volcanic material except gas is emitted. Maars are uncommon geologic features, hence the NNL designation. The area receives use as a camping and picnic area. Overnight and day use primitive camping and picnic facilities are planned for the area (BLM 1982).

The Aden Lava Flow is a designated research natural area (RNA) (See Map 3-11.). The RNA covers 4,008 acres. The area was designated because of its outstanding educational opportunities to study the interaction of flora and fauna associated with a lava flow community, paleontology, and geologic processes. The lava flow is relatively flat with some areas containing steep-walled fenesters, steep ridges, and crevices. The objectives of the RNA are to preserve an adequate sample of the lava flow ecosystem, to encourage scientists to use the area for research, and to preserve the genetic diversity of the area. Approximately 3,688 acres of the RNA are within the Aden Lava Flow Wilderness Study Area (WSA) boundary.

MAP 3-11
RECREATION AREAS

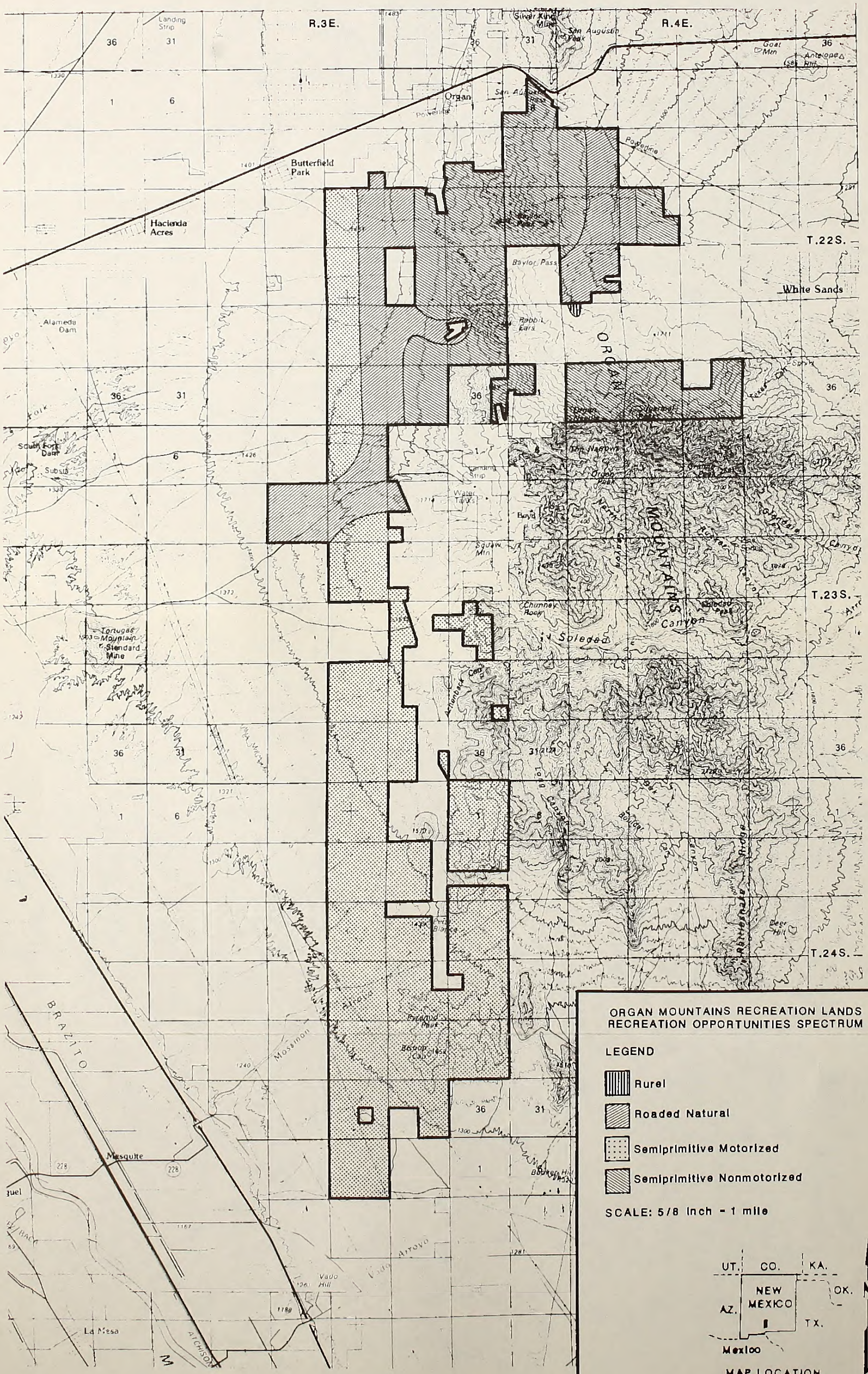
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICT LAS CRUCES N.M.
DONA ANA COUNTY LAND TENURE ADJUSTMENT



SOURCE : BLM Las Cruces District Files, 1985

MAP 3-12

ORGAN MOUNTAINS RECREATION LANDS
RECREATION OPPORTUNITIES SPECTRUM

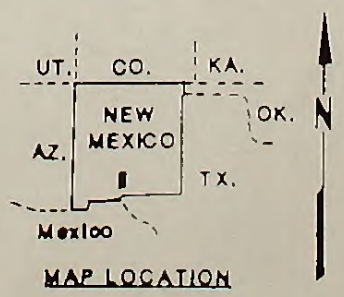


ORGAN MOUNTAINS RECREATION LANDS
RECREATION OPPORTUNITIES SPECTRUM

LEGEND

- Rurel
- Roaded Natural
- Semiprimitive Motorized
- Semiprimitive Nonmotorized

SCALE: 5/8 inch = 1 mile



MAP LOCATION

Source: BLM Las Cruces District Files, 1985

An area of 1,272 acres in the Franklin Mountains on the New Mexico-Texas State line, south of State Highway 404, is physically and topographically contiguous to the approximately 30,000-acre Franklin Mountains State Park in Texas (See Map 3-11). The Park receives heavy use from the population of El Paso in the form of hiking and primitive camping. Legislation creating the Park was passed in 1979 and a master plan is being prepared. However, it is expected that management will emphasize primitive, dispersed recreation opportunities with limited developed sites along the periphery of the Park (Hardie 1982). An additional 2,860 acres in the Franklin Mountains extend approximately 5 miles north of State Highway 404 to the Fort Bliss Military Reservation boundary. Recreational use of the northern part of the Franklin Mountains will probably increase as the populations of El Paso, Texas, and Alamogordo and Las Cruces, New Mexico, grow.

The Rough and Ready Station and Fort Mason are two stage stops on State land along the Butterfield Trail (see Map 3-11). The Butterfield Trail was a major transportation corridor from the period of the Gold Rush to the 1880's when the railroad displaced it.

Recreational ORV use occurs throughout Dona Ana County. The majority of the ORV use is around the major population centers of Las Cruces, New Mexico and El Paso, Texas. ORV designations were completed for Dona Ana County in 1985 as a result of decisions made in the Southern Rio Grande MFP (BLM 1982). Areas designated as "open intensive", "limited", or "closed" for ORV use are listed below and shown on Map 3-11; the remainder of Dona Ana County is designated "open" to ORV use.

- The Airport ORV management area (2,160 acres) east of Las Cruces Crawford Airport is designated open intensive for ORV use.

- Las Uvas Mountains Wilderness Study Area (WSA), Robledo Mountains WSA, West Potrillo Mountains and Mount Riley WSAs, Aden Lava Flow WSA, and Organ Mountains WSA are designated limited to existing roads and trails. (See Map 3-13.)

- The OMRLs, Dona Ana Mountains, Kilbourne Hole NNL, Aden Lava Flow RNA, and the Franklin Mountains are designated limited to designated roads and trails.

- A 1/4-mile strip along the International Border with Mexico is designated limited to permitted or licensed use only.

- Roderick Ecological Plot and 21 2 1/2-acre Soil and Vegetation Inventory Method (SVIM) sites are designated closed to ORV use.

- Mossman Arroyo and Alameda Arroyo were designated as open intensive for ORV use during the interim ORV designation process in 1980. These two areas were also designated open intensive in the Southern Rio Grande MFP (BLM 1982), but final designation as open intensive has not been made, so the two areas presently remain under the interim open intensive designation of 1980.

State Land Exchange Area

The only recreation area within the 10,000 acres of public land in the State Land Exchange Area is the Alameda Arroyo open intensive ORV area (see Map 3-11). Alameda Arroyo was designated as open intensive for ORV use during the interim ORV designation process in 1980. The OMRLs are located about 3 miles east of the 10,000 acres. The 10,000-acre area is popular for dispersed recreation such as hiking and shooting.

The 5,000 acres of State land in the State Land Exchange Area are located immediately adjacent to the OMRLs and have similar recreation opportunities as described for the OMRLs under the Dona Ana County section.

CULTURAL RESOURCES

Dona Ana County

A BLM Class I survey of prehistoric resources in south-central and southwestern New Mexico was conducted by the Office of Contract Archaeology at the University of New Mexico

(LeBlanc and Whalen 1980). A historical profile of southwestern New Mexico was conducted by New Mexico State University (Wilson 1975).

A number of small Class III surveys have been performed for surface disturbing projects in Dona Ana County. These include surveys performed by various contract archaeological companies and by BLM personnel. The District Archaeologist's staff estimates that less than 5 percent of Dona Ana County has been surveyed for archaeological remains. As of September 1, 1985, a total of 926 sites have been recorded for the County. Table 3-8 shows approximate dates of cultural periods, and Table 3-9 shows cultural site types. The number of recorded sites assignable to specific time periods are shown in Table 3-10.

TABLE 3-8
CULTURAL PERIODS PRESENT IN DONA ANA COUNTY

Period	Date*
Paleo Indian	13,500 BC - 7000 BC
Archaic	7000 BC - 200 BC
Mogollon	
Mesilla Phase	200 AD - 1100 AD
Dona Ana Phase	1100 AD - 1200 AD
El Paso Phase	1200 AD - 1400 AD
Mimbres	1000 AD - 1150 AD
Apachean	1500 AD - 1880 AD
Hispanic	1581 AD - Present
Anglo	1847 AD - Present

Source: BLM Las Cruces District Office Files, 1985.

Note: *These dates may be altered by further archaeological and historical studies.

Two sites from Dona Ana County are on the National Register. They are Fort Selden (near Radium Springs) and the International Boundary Marker Number One (near Anapra).

Fort Fillmore and the Butterfield Overland Mail Route are listed on the New Mexico State Register of Cultural Properties.

There are a number of prehistoric and historic sites on public land in Dona Ana County which are significant sites not yet on the National or State Registers. These include:

1. Historic
   a. Camino Real (Jornada del Muerto)
   b. Pat Garrett Murder Site
   c. Mason's Ranch
2. Prehistoric
   a. Bruton Bead Site
   b. Los Tules
   c. Rattlesnake Mountain (Providence Cone) Site
   d. Hatch Mimbres Site
   e. Pena Blanca Rock Shelters
   f. Hilley Folsom Site
   g. Gow Site
   h. BLM 030-1311
   i. Chavez Cave

State Land Exchange Area

Of the 10,000 acres of public land for disposal, approximately 132 acres had been surveyed prior to August 1985. Only one site, BLM 030-2998, a small scatter of basalt flakes was found during the course of these surveys.

Because of a lack of data from the 10,000 acres, a Class II survey was performed by the Las Cruces District Office in August, September, October, and November 1985. Approximately 800 acres were inventoried for cultural remains, and a total of 17 sites were recorded. These sites are as follows: 10 lithic scatters, 2 lithic/ceramic scatters, 1 historic structure, 1 historic marker, 1 historic wagon road, and 1 multiple component (lithic scatter/historic) site, and 1 campsite.

In the State land proposed for acquisition in the Organ Mountains, little archaeological work has been done. Five sites have been recorded in the 5,000 acres.

A copy of the Memorandum of Agreement for the Protection of Cultural Resources in State Exchange Actions signed by the BLM State Director, the State Land Commissioner, and the State Historic Preservation Office (SHPO) is

TABLE 3-9
CULTURAL SITE TYPES

Type	Distinguishing Features	Period
Lithic Scatter	Area where flakes, cores, and stone tools are located either through the manufacture or use of the tools.	All Prehistoric
Quarry	An area containing materials used in the manufacture of stone tools. All steps in the manufacture of tools from natural rock to finished tools are present.	All Prehistoric
Pottery Scatter	Area where potsherds are concentrated, usually a small site.	Mogollon to Historic
Campsite	A temporary habitation area containing a lithic scatter, evidence of fire use, usually ground stone, and often a pottery scatter.	All Periods
Rock Shelter	An area protected by overhanging cliff. Often associated with the same materials as a campsite as well as rock art.	All Periods
Villages	A permanent habitation area containing several types of artifacts, evidence of agriculture, and structures.	Mogollon to Historic
Rock Art (Petroglyph or Pictograph)	Pecked or painted figures such as people, animals, plants, or abstracts on a rock surface.	Archaic to Modern
Trails	Routes used for trade and migration.	Mogollon(?) to Historic
Mines	An excavation with or without associated outbuildings for the extraction of mineral ore.	Historic
Ranches	A series of buildings associated with the livestock industry.	Historic

Source: BLM Las Cruces District Office Files, 1985.

contained in Appendix F-1. Also included are letters written by the BLM Las Cruces District and SHPO regarding the proposed State land exchange.

TABLE 3-10
RECORDED SITES - DONA ANA COUNTY

Cultural Period	Number of Sites or Components
Paleo Indian	3
Archaic	90
Mogollon	
Mesilla Phase	11
Dona Ana Phase	0
El Paso Phase	9
Not Assignable to Any Phase	461
Apachean	1
Historic	33
Rock Art	10
Indeterminate	333

Source: BLM Las Cruces District Office Files, 1985.

WILDERNESS

Dona Ana County

As part of the wilderness review process, BLM designated six WSAs in Dona Ana County. These WSAs are listed in Table 3-11 and shown on Map 3-13.

The Robledo Mountains and Las Uvas Mountains WSAs have been recommended nonsuitable for wilderness designation and the Organ Mountains, Aden Lava Flow, and West Potrillo Mountains and Mount Riley WSAs have been recommended suitable. All of the above WSAs are being managed in accordance with the Interim Management Policy and Guidelines for Lands Under Wilderness Review (BLM 1979; revised 1983) to prevent impairment of their wilderness values until they are reviewed and acted upon by Congress.

A brief description of each WSA and its wilderness values and special features is given below. For more detail, see the New Mexico Statewide Wilderness Study, Wilderness Analysis Reports (BLM 1985). Due to split estate additions to the WSAs, the Wilderness Analysis Reports will be slightly revised and reissued with a Revised Statewide Draft EIS in September 1986.

TABLE 3-11
WILDERNESS STUDY AREAS IN DONA ANA COUNTY

Name	Number	Acres[a/]
Las Uvas Mountains	NM-030-065	11,067
Robledo Mountains	NM-030-063	12,946
Organ Mountains	NM-030-074	7,283
Aden Lava Flow	NM-030-053	25,287
West Potrillo Mountains and Mount Riley	NM-030-052	157,105

Source: Bureau of Land Management, 1985.

Note: [a/] Due to split estate additions to the WSAs, acres may be slightly adjusted in revised Wilderness Analysis Reports to be issued with a Revised Statewide Draft EIS in September 1986.

Las Uvas Mountains WSA

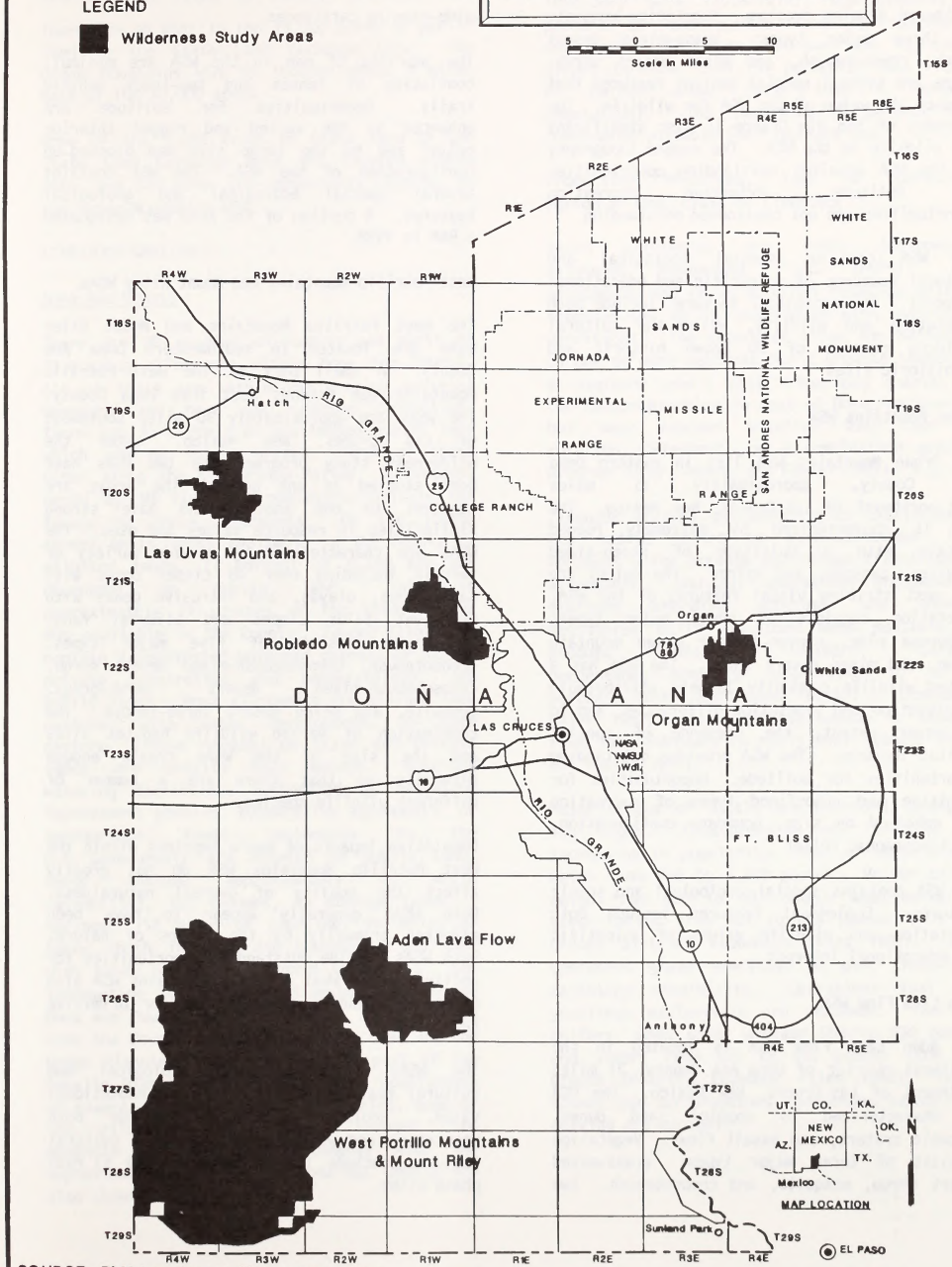
Las Uvas Mountains WSA is located in northwestern Dona Ana County, approximately 30 miles northwest of Las Cruces and 7 miles south of Hatch, New Mexico. The WSA is characterized by bedded volcanic rock with gentle slopes and cliffs and numerous mesas, buttes, and deep canyons. Vegetation consists of two major types: grass and creosotebush. The variation of vegetation in the WSA allows for more diversity in the wildlife community than would be otherwise expected. Common wildlife species include mule deer, golden eagles, banded rock rattlesnakes, and rock squirrels. The WSA provides outstanding opportunities for solitude, but does not offer a wide diversity of high quality primitive recreation opportunities.

Robledo Mountains WSA

The Robledo Mountains WSA is located in central Dona Ana County and is approximately 8 miles northwest of Las Cruces, New Mexico, on the

MAP 3-13
WILDERNESS STUDY AREAS

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICT LAS CRUCES N.M.
DONA ANA COUNTY LAND TENURE ADJUSTMENT



SOURCE: BLM Las Cruces District Files, 1985

west bank of the Rio Grande. The WSA is characterized by rugged, steep canyons and southward dipping cuestas. Vegetation consists of three major types: grass-mixed desert shrub, creosotebush, and mixed desert shrub. There are several special habitat features that enhance the value of the WSA for wildlife. The nearness of the Rio Grande is also significant for wildlife in the WSA. The rugged topography of the WSA provides outstanding opportunities for solitude. Primitive recreation opportunities are not considered outstanding.

The WSA contains special ecological and cultural features of scientific and educational interest. The ecological features include both vegetation and wildlife, while the cultural features consist of 20 known historic and prehistoric sites.

Organ Mountains WSA

The Organ Mountains WSA lies in eastern Dona Ana County, approximately 15 miles east-northeast of Las Cruces, New Mexico. The WSA is characterized by extremely rugged terrain with a multitude of steep-sided crevices, canyons, and spires. The spires are the most striking visual features of the WSA. Vegetation consists of three major types: ponderosa pine, pinyon-juniper mixed mountain shrub, and mixed desert shrub. The WSA has a varied wildlife community largely attributable to elevation and vegetation differences, and to a lesser extent, the presence of special habitat features. The WSA provides outstanding opportunities for solitude. Opportunities for primitive and unconfined types of recreation are enhanced by size, boundary configuration, and topographic relief.

The WSA contains special ecological and scenic features. Ecological features include both vegetation and wildlife values of scientific and educational interest.

Aden Lava Flow WSA

The Aden Lava Flow WSA is located in the southwest quarter of Dona Ana County, 21 miles southwest of Las Cruces, New Mexico. The WSA is characterized by coppice sand dunes, volcanic craters, and basalt flows. Vegetation consists of three major types: grass-mixed desert shrub, mesquite, and creosotebush. Two melanistic species are found in the WSA along with numerous species of bats, raptors, and wide-ranging carnivores.

The imprints of man in the WSA are minimal, consisting of fences and two-track vehicle trails. Opportunities for solitude are enhanced by the varied and rugged interior relief and by the large size and blocked-up configuration of the WSA. The WSA contains several special ecological and geological features. A portion of the area was designated a RNA in 1978.

West Potrillo Mountains and Mount Riley WSAs

The West Potrillo Mountains and Mount Riley WSAs are located in southwestern Dona Ana County. A small part of the West Potrillo Mountains WSA extends west into Luna County. The WSAs are approximately 30 miles southwest of Las Cruces, New Mexico. Under the wilderness study program, the two WSAs have been studied as one because the areas are adjacent to one another and have strong similarities in resource values and uses. The WSAs are characterized by a wide variety of terrain including over 48 cinder cones with sand dunes, playas, and intrusive peaks with prominent talus slopes and alluvial fans. Vegetation consists of five major types: creosotebush, creosotebush-mixed desert shrub, creosotebush-mixed desert shrub-grass, mesquite, and mixed desert shrub-tobosa. The combination of varied wildlife habitat sites and the size of the WSAs create enough diversity so that there are a number of different wildlife species.

Cumulative impacts of man's imprints within the West Potrillo Mountains WSA do not greatly affect the quality of overall naturalness. Both WSAs generally appear to have been affected primarily by the forces of nature. Both WSAs provide outstanding opportunities for solitude. The West Potrillo Mountains WSA also offers outstanding opportunities for primitive recreation.

The WSAs contain special ecological and cultural features of scientific and educational value. Ecological features include both vegetation and wildlife values, while cultural features include Classic Mimbres and El Paso phase sites.

State Land Exchange Area

There are no WSAs in the 10,000 acres of public land in the State Land Exchange Area. The Organ Mountains WSA is located about 2 miles east of the 10,000 acres.

None of the 5,000 acres of State land in the State Land Exchange Area are located within WSAs, but 520 acres are immediately adjacent to the Organ Mountains WSA.

LIVESTOCK GRAZING

Dona Ana County

There are 48 grazing allotments and parts of 19 grazing allotments within Dona Ana County. All of these are within the grazing District boundary and have set grazing capacities. There are 13 parcels of unallotted public land which are no longer grazed. Most of these occur along the Rio Grande Valley. Livestock, owned by 60 livestock operators, utilize the forage on these allotments. Of the 10,652 animal units (AUs) available in the County on allotted lands, 77 percent or 8,190 AUs are dependent on public land. This is approximately 77 percent of the total 10,652 AUs available in the County. Fenced allotments contain intermingled unfenced parcels of State, private (controlled and uncontrolled), and public lands. Most allotments are divided into pastures with water developments in each pasture. Those located on State and private lands are usually base waters. Numerous watering facilities, authorized by rangeland improvement permits, cooperative agreements, or appropriate funds (belonging to the U.S. Government) are located on public land. These include approximately 42 wells (windmills), 101 troughs, 45 storage tanks, 7 springs, 152 miles of pipeline, 903 miles of fence (both interior and boundary), and 137 dirt tanks or erosion control structures. For information pertaining to livestock grazing in Dona Ana County, see Appendix G. Allotments in Dona Ana County include all of Las Uvas and the Organ Planning Units, and a small part of the Caballo Planning Unit. Due to the realignment of planning units by County boundaries, some of the allotment numbers have changed (See Appendix G). Partial allotments with the approximate percentage in Dona Ana County are also shown in Appendix G.

Based on the Southern Rio Grande range inventory data (1978-1979), approximately 3 percent of the public land is considered unsuitable for livestock use due to steep slopes (greater than 70+ percent), lava flow, or barren areas (less than 2 percent vegetation). The remaining 97 percent are considered suitable for livestock use.

Production Practices, Type of Operation, Period of Use, Class of Livestock

Seven allotments are under implemented Allotment Management Plans (AMPs). AMP allotments are on a deferred rotation grazing schedule set up in cooperation with individual permittees. The schedules allow for deferment on one or more pastures for a growing season or a complete year's rest. Yearlong grazing is the common practice in most of Dona Ana County, but many ranches practice some type of rotation, deferment, or a combination grazing program (Gray, Jones, and Fowler 1981).

Licensed grazing use consists of cattle and a few saddle horses on each allotment (see Appendix G for acreage and forage allocation by allotment). Cow-calf operations predominate. Yearlong breeding programs are common. Registered bulls are used when possible to produce replacement heifers. Calving percentages normally range from 70 to 83 percent (BLM Las Cruces District Economics Files 1982). Peak calving season is usually from late February to early April (Gray, Jones and Fowler 1981).

Major breeds of cattle are Hereford, Brangus, and Angus. Crossbreeding of livestock is increasing in popularity. Cows of these breeds weigh from 850 to 1,000 pounds. Heifer calves weigh from 430 to 441 pounds when marketed; steer calves from 437 to 460 pounds (BLM Las Cruces District Economics Files 1982). Some operators graze yearlings to give themselves marketing flexibility. Operations that run yearlings exclusively are uncommon. Yearling heifers, when sold, average 558 to 630 pounds and steers from 620 to 660 pounds (BLM Las Cruces District Economic Files 1982). Death losses due to predators, poisonous plants, or calving are minimal.

State Land Exchange Area

In the proposed State Land Exchange Area, there are four grazing allotments, A. B. Cox (5002), Baylor Canyon (5013), P. Price (5013), and Jeff Isaacks (5007), and one unallotted parcel. Acres, AUs, and rangeland improvements by allotment affected by the proposed exchange are shown in Table 3-12.

VISUAL RESOURCES

Dona Ana County

The inventory of visual resources and development of Visual Resource Management (VRM) classes were completed for Dona Ana County in 1979-80. The VRM classes are shown on Map 3-14. A discussion of the inventory and evaluation process is presented in Appendix H. VRM classes can also reflect management considerations. For example, each WSA is managed as a VRM Class II area.

In addition to the development of VRM classes, the VRM inventory can result in the identification of potential Areas of Critical Environmental Concern (ACECs) for visual resources. One ACEC for visual resources, the Organ Mountains Scenic ACEC, was designated for 8,947 acres in Dona Ana County in 1984 (See Map 3-14). A management plan for the ACEC was completed in 1984 and is available for public review in the BLM Las Cruces District Office. The Organ Mountains form the eastern backdrop for the City of Las Cruces. The mountains are one of the most unique and spectacular topographic features in the region. Characterized by a palisade of massive, jagged granite peaks with bare rock caps, the landform visually dominates the landscape within a 25 to 30 mile radius. The highest elevations of the Organ Mountains are almost a mile above the adjacent valley bottom. The jagged spires and needles of the range were presumably named for their resemblance to an enormous pipe organ.

State Land Exchange Area

The 10,000 acres of public land in the State Land Exchange Area are classified as VRM Class III, which allows for evident contrast, but the contrast should remain subordinate to the existing landscape. The Organ Mountains Scenic ACEC is located about 2 1/2 miles east of the 10,000 acres.

The 5,000 acres of State land in the State Land Exchange Area are located immediately adjacent to public land that is classified as VRM Class II. None of the 5,000 acres are within the Organ Mountains Scenic ACEC.

SOCIAL AND ECONOMIC CONDITIONS

History

The Spanish began exploring what is now the United States in the 1500's by traveling through the Mesilla Valley. The early expeditions were in search of the "Seven Cities of Gold", while the later ones focused on exploring the Southwest and establishing missions at the Indian pueblos in northern New Mexico (EDAW, Inc. 1983).

The first European settlers were brought into the United States through the Mesilla Valley and were led by Don Juan de Onate in 1598. These early settlers were reluctant to settle in the area since they encountered many difficulties including conflict with the Apache and the Mansos. During this era, death was commonplace as indicated by the names given to landmarks in the area. For instance, Las Cruces was the name given a burial ground for settlers who met their fate along the trail. The Robledo Mountains were named for Pedro Robledo who drowned at the foot of the mountain, and the Jornada del Muerto (Journey of Death) appropriately named for a 90-mile expedition through the desert in which death from thirst or the Apache threatened those who journeyed the trail (EDAW, Inc. 1983).

Settlement in what is now Dona Ana began in large numbers in 1842. Las Cruces was established in 1849 and Mesilla was established in 1850 but remained part of Mexico until the Gadsden Purchase of 1854. The Santa Fe Railroad reached Las Cruces in 1881 linking the Mesilla Valley with the rest of the Nation, making transportation more convenient. With the coming of the railroad, the town of Anthony was founded in 1881 (EDAW, Inc. 1983).

The New Mexico College of Agriculture and Mechanic Arts (New Mexico State University) was established in 1888 and has contributed practical educational skills to the area since (EDAW, Inc. 1983).

TABLE 3-12
ACRES, ANIMAL UNITS, AND RANGELAND IMPROVEMENTS
BY LAND STATUS AND ALLOTMENT
STATE LAND EXCHANGE AREA

Allotment Name and Number	Acres		Animal Units		Rangeland Improvements	
	BLM (Disposal)	State (Acquire)	BLM (Disposal)	State (Acquire)	BLM (Disposal)	State (Acquire)
Baylor Canyon (5013)	2,884	280	26	3	6 miles of fence (boundary and interior); 1/4 mile of pipeline; 1 trough (base water)	1/4 mile of fence (boundary); 2 springs
A. B. Cox (5002)	1,890	2,444	20	39	3 1/2 miles of fence (boundary); 2 dirt tanks	2 1/2 miles of fence (boundary and interior); 3 dirt tanks 1 spring (base water)
P. Price (5009)	--	2,280	--	15	--	2 dirt tanks (1 base water)
Jeff Issacks (5007)	80	--	1	--	1 mile of fence (boundary)	--
Unallotted	5,146	--	--	--	3 concrete erosion control structures	--
TOTALS	10,000	5,000	47	57		

Source: BLM Las Cruces District Office Files, 1985.

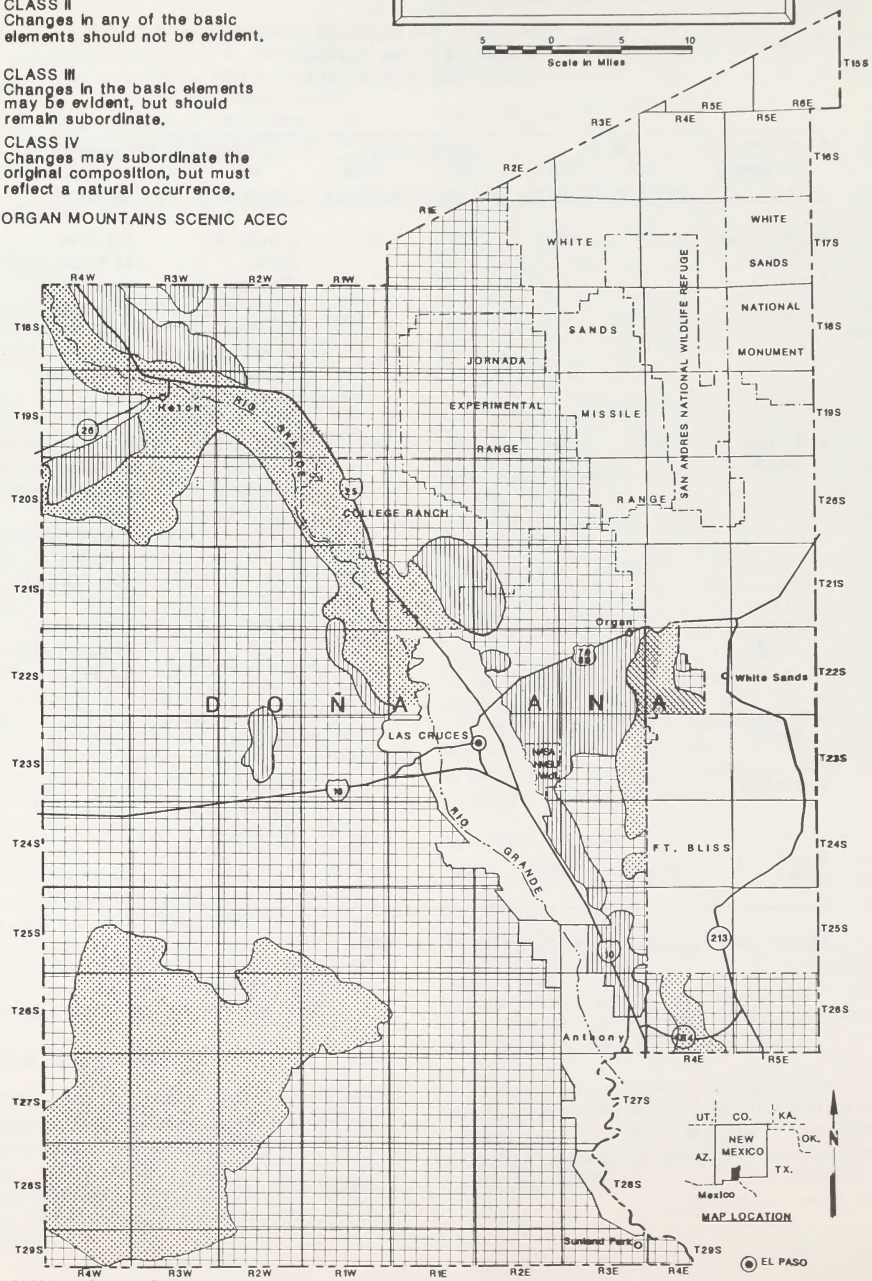
MAP 3-14

VISUAL RESOURCE MANAGEMENT CLASSES AND ACEC

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICT LAS CRUCES N.M.
DONA ANA COUNTY LAND TENURE ADJUSTMENT

LEGEND

- CLASS II — Changes in any of the basic elements should not be evident.
- CLASS III — Changes in the basic elements may be evident, but should remain subordinate.
- CLASS IV — Changes may subordinate the original composition, but must reflect a natural occurrence.
- ORGAN MOUNTAINS SCENIC ACEC



SOURCE : BLM Las Cruces District Files, 1980

The Rio Grande plays an important role as a source of irrigation water for agricultural production. Construction of large canals to provide water for farming began in 1882 and irrigation from ground water sources occurred as early as 1896. In the early 1890's, water shortages occurred in the area which caused a severe hardship to agricultural production. The construction of Elephant Butte Dam was completed in 1916, and Caballo Reservoir was completed in 1938. The dam and its system of smaller dams and channels provided farmers the opportunity to protect their fields from drought (U.S. Department of Agriculture 1982).

In 1945, the U.S. Army opened the White Sands Missile Range facility establishing a primary contributor to the economy of Dona Ana County (Greater Las Cruces Economic Development Council 1984).

Demography

In 1980, Dona Ana County had a population of 96,340 persons which accounted for an average annual population growth rate since 1970 of 3.8 percent. The urbanized area of Las Cruces which includes Mesilla, University Park, San Andres-Alameda Estates, part of Dona Ana-Hill, and part of Fairacres had a 1980 population of 55,072 persons (U.S. Department of Commerce PC80-1-A33 1982). (See Map 3-15 for Census County Divisions and Urbanized Areas.) Some of the population increase can be attributed to the presence of New Mexico State University, White Sands Missile Range, NASA, and the City of Las Cruces becoming more of a commercial center.

Those incorporated and Census Designated Places (CDP) for Dona Ana County include Anthony (CDP), Hatch Village, Las Cruces City, Meadow Vista, San Andres-Alameda Estates (CDP), University Park (CDP), and White Sands (CDP)(U.S. Department of Commerce PC80-1A33, 1982). See Table 3-13 for population levels and average annual growth rates.

In 1980, those living in urban areas accounted for 57.2 percent of the County population. During the period from 1970 to 1980, the percentage of the population living in urban areas had increased by 40.4 percent (U.S. Department of Commerce PC80-1-A33 1982).

Dona Ana County contains approximately 3,819 square miles of territory. In 1980, the population density was 25.3 persons per square mile. This was an increase of 38.2 percent from the 1970 population density of 18.3 persons per square mile (U.S. Department of Commerce PC80-1-A33 1982).

The 1984 population for Dona Ana County was estimated to be 114,925 persons (Greater Las Cruces Economic Development Council 1984). This accounted for a population density of 30 persons per square mile. The urbanized area of Las Cruces was estimated to be 59,593 persons with the City of Las Cruces having a population of 49,266 persons for 1984 (Greater Las Cruces Economic Development Council 1984). Because of the proposed areawide annexation, population for the urbanized area of Las Cruces will increase within the next year (City of Las Cruces Planning Department 1985). The annexation is focused primarily on the East Mesa and north of the City limits north of the Microswitch facilities. (See Map 3-1.)

The City of Las Cruces has grown 19.1 percent from 1970 through 1980 (U.S. Department of Commerce PC80-1-A33 1982) which accounts for an average annual growth rate of 1.9 percent for the decade. The 1984 population estimates for the Las Cruces Metropolitan Statistical Area range from an estimate of 112,200 from the U.S. Department of Commerce (U.S. Department of Commerce 1985a) to 114,925 from the Greater Las Cruces Economic Development Council. Therefore, the average annual growth rate ranges from 4.1 percent to 4.8 percent, respectively. The different estimates are due to the difference in methodologies employed.

For comparison purposes, the City of Albuquerque has grown 35.6 percent from 1970 through 1980 which accounts for an average annual growth rate of 3.56 percent for the decade (U.S. Department of Commerce PC80-1-A33 1982). The Albuquerque Metropolitan Statistical Area grew by 6.9 percent from 1980 to 1984 which accounted for an average annual growth rate of 1.725 percent (U.S. Department of Commerce 1985a).

The population projections for Dona Ana County estimated by the Bureau of Business and Economic Research indicate the average annual

TABLE 3-13
POPULATION OF DONA ANA COUNTY AND INCORPORATED
AND CENSUS DESIGNATED PLACES (CDP)

	1960	1970	1980	Average Annual Percent Change 1970-1980
Dona Ana County	59,948	69,773	96,340	3.8
Anthony (CDP)	NA	1,728	3,285	9.0
Hatch Village	888	867	1,028	1.8
Las Cruces City	29,367	37,857	45,086	1.9
Meadow Vista	NA	1,402	3,377	14.1
Mesilla Town	NA	1,713	2,027	1.8
San Andres-Alameda Estates (CDP)	NA	NA	2,024	--
University Park (CDP)	NA	NA	4,353	--
White Sands (CDP)	NA	4,167	3,120	-2.5

Source: U.S. Department of Commerce, Bureau of Census 1982.

Note: NA - Not applicable.

UNITED STATES DEPARTMENT OF THE INTERIOR

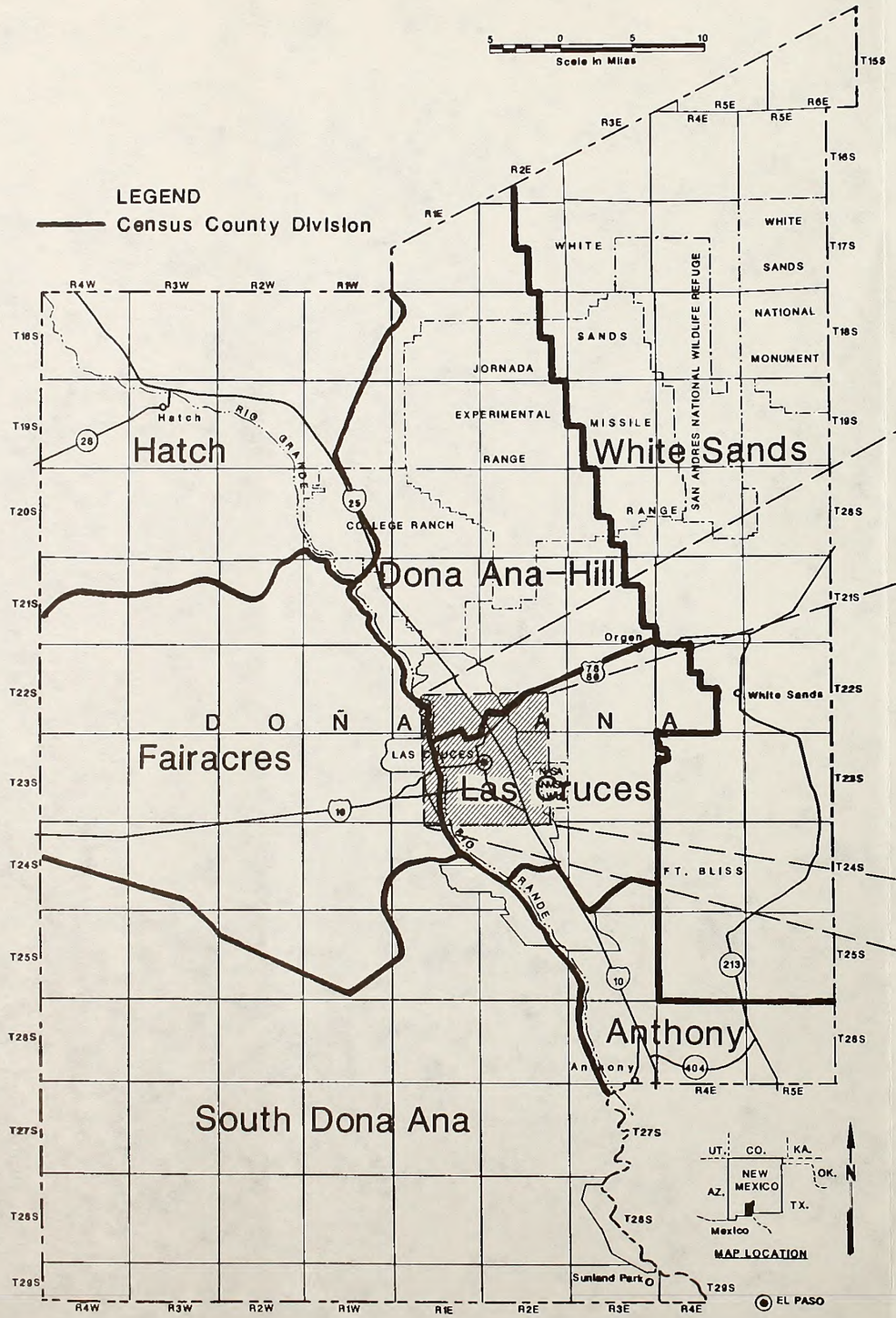
BUREAU OF LAND MANAGEMENT

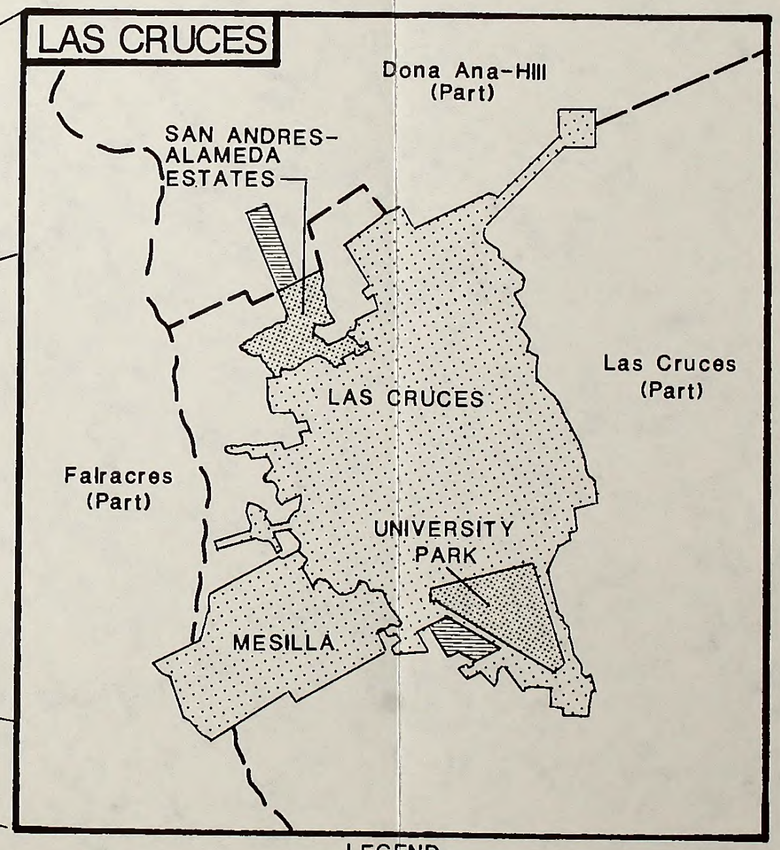
LAS CRUCES DISTRICT LAS CRUCES N.M.

DONA ANA COUNTY LAND TENURE ADJUSTMENT

MAP 3-15

CENSUS COUNTY DIVISIONS AND URBANIZED AREAS





LEGEND

- Incorporated place
- Census designated place
- Other area

SOURCE : U.S. Department of Commerce, Bureau of Census, 1982

growth rate to be 3.5 percent from 1980 to 1990 and tapering off to 2.1 percent for the following decade from 1990 to 2000. The average annual growth rate for the 5-year period from 2000 to 2005 was estimated to be 1.6 percent. Table 3-14 shows projection estimates.

The distribution of age groups for Dona Ana County in 1980 were concentrated in the 18-44 age group. Approximately 44 percent of the population appeared in this age group. Those under age 5 made up approximately 9 percent of the population, approximately 24 percent of the population was from ages 5-17, those from 45-64 years of age accounted for 16 percent of the population and those 65 and over comprised 7 percent of the population. The median age for Dona Ana County in 1980 was 24.7 years which was lower than the median age for the State of New Mexico of 27.3 years for the same time period (Bureau of Business and Economic Research 1984).

TABLE 3-14
DONA ANA COUNTY POPULATION PROJECTIONS

YEAR	POPULATION
1980	97,100
1985	115,800
1990	131,300
1995	145,000
2000	158,300
2005	171,400

Source: Bureau of Business and Economic Research 1985.

In 1980, the ethnic makeup of Dona Ana County was primarily of Spanish origin (51.8 percent). Approximately 45 percent of the population was White, 1.7 percent of the population was Black, and .8 percent of the population was American Indian (U.S. Department of Interior, Bureau of Land Management 1985a).

Infrastructure and Social Conditions

The education levels in 1980 for Dona Ana County were comparable to the State levels. The median number of school years completed for the County was 12.5 versus the median of 12.6 for the State (Bureau of Business and Economic Research 1984). The distribution of years of school completed by persons 25 years and over identified 35 percent completing one or more years of college, 30 percent completed 4 years of high school, 11 percent completed 1 to 3 years of high school, and 24 percent completed 0 to 8 years of elementary school (U.S. Department of Commerce PHC80-S2-33 1983). The percentage of those completing one or more years of college reflects the local influence of New Mexico State University.

The County and Las Cruces are served by Memorial General Hospital which has 286 beds. The hospital has inpatient and outpatient services as well as emergency services. Emergency medical services are also provided by El Paseo Emergency Clinic. Emergency medical transportation is provided by Three Crosses Ambulance Company (EDAW, Inc. 1983). There are 3 nursing homes that have a total of 161 beds and 1 retirement home which has 60 beds (a 131-bed expansion was planned for 1984) (Greater Las Cruces Economic Development Council 1984).

In 1984, there were 93 physicians and 32 dentists in and around Las Cruces (Greater Las Cruces Economic Development Council 1984).

There are plans to build two psychiatric hospitals, in the County, one with 45 beds and the other with 85 beds (St. John 1985).

The State of New Mexico distributed approximately $9.6 million in financial and food stamp assistance to residents of Dona Ana County during Fiscal Year 1980-81. This was the third largest distribution in the State behind Bernalillo and McKinley Counties, respectively. Approximately 14.7 percent of the population in Dona Ana County was receiving food stamps as of December 1982 (Bureau of Business and Economic Research 1984).

The primary mode of transportation in the County is by private automobile. The two most important routes are Interstate 25 which runs north to Albuquerque and eventually to Denver, from its junction with Interstate 10 in Las Cruces which runs west from El Paso to Tucson and ultimately Los Angeles.

Air service is available from two airports in the County, Las Cruces Crawford Municipal Airport which is 8 miles west of Las Cruces and Southern Dona Ana County/Santa Teresa Airport which is approximately 30 miles southeast of Las Cruces. The El Paso International Airport is also utilized by Dona Ana County residents.

Rail service is provided by the Santa Fe Railway Company and Southern Pacific. These companies provide rail freight including piggyback service. Bus service is provided by Trailways Bus System and Greyhound Lines, Inc. Buses carry both passengers and packages. Motor freight service is also available from a number of trucking firms (Greater Las Cruces Economic Development Council 1984).

Dona Ana County is serviced by 10 area newspapers including the Albuquerque Journal and the El Paso Times. There are two television stations originating in Las Cruces, five originating in El Paso, Texas, and 18 channels available from cable networks. There are radio stations that broadcast from communities throughout southwestern New Mexico which Dona Ana County residents enjoy listening to as well as stations from El Paso and Juarez, Mexico. Telephone and telegraph service is provided by Mountain Bell, AT&T, and Western Union. The mail and parcel services are provided by the U.S. Post Office, United Parcel Service, Federal Express, and Purolater (Greater Las Cruces Economic Development Council 1984).

The El Paso Electric Company and El Paso Natural Gas supply electricity and natural gas to the County. The El Paso Electric Company serves as the supplier and distributor of electricity, while El Paso Natural Gas Company serves as the supplier, and the City of Las Cruces serves as the distributor (Greater Las Cruces Economic Development Council 1984). In 1980, approximately 14 percent of all occupied housing units in the County depended on liquified petroleum gas as the main source of residential heating fuel (U.S. Department of Commerce PHC80-S2-33 1983). There are five distributors of liquified petroleum gas and ten distributors of fuel oil (Greater Las Cruces Economic Development Council 1984).

Wells constitute the primary source of water for municipal and industrial uses. Water supply systems are confined to larger communities with individual wells meeting the needs of separate households in rural areas. In 1980, approximately 82 percent of the year-round housing units in the County depended on a public system or private company as a source of water (Bureau of Business and Economic Research 1984). The largest of these water systems is operated by the City of Las Cruces. The City has 23 deep wells which have a maximum capacity of 25 million gallons per day and a peak load of 23 million gallons per day (Greater Las Cruces Economic Development Council 1984).

In 1980, approximately 65 percent of the year-round housing units in the County were connected to a public sewer system for sewage disposal and approximately 33 percent relied on a septic tank or cesspool for sewage disposal (Bureau of Business and Economic Research 1984).

There are 19 permitted landfills in Dona Ana County on public land (U.S. Department of Interior, BLM 1985a) which serve to meet the needs of solid waste disposal sites.

There are 237 personnel involved in volunteer fire departments throughout the County with 37 fire trucks, 7 tankers, and 8 Emergency Medical Service rescue units available. The City of Las Cruces has 64 personnel in the Fire Department and 6 pumpers, one utility truck, two sedans, two pickups, and one elevating platform truck all emergency equipped (Greater Las Cruces Economic Development Council 1984).

The Sheriff's Department has 56 personnel involved in law enforcement for the County while the City of Las Cruces has a roster of 113 personnel involved in law enforcement (Greater Las Cruces Economic Development Council 1984). In addition to those personnel, the State Police, Border Patrol, and the New Mexico Department of Game and Fish are stationed in the County.

During Fiscal Year 1983-84, Dona Ana County receipts totaled more than $12.7 million. The primary source of revenue for the County came from property taxes which totaled approximately $3.3 million (New Mexico Department of Finance and Administration 1984). Payments in Lieu of Taxes (PILT) totaled $829,414, in Dona Ana County for Fiscal Year 1984. The Revenue Sharing Federal Allotment Fund contributed approximately $804,351 or 6.3 percent of the County budget. The County received $849,170 in PILT monies for Fiscal Year 1985. The County

was eligible to receive $874,441; however, because of funding limitations 97.110 percent was paid (U.S. Department of Interior, BLM 1985).

The City of Las Cruces had total receipts of over $44 million for Fiscal Year 1983-1984. The primary source of revenue came from local utilities which collected approximately $18.2 million or 41 percent of the total. The gross receipts (or sales) taxes are also important contributors to the municipal budget comprising 22 percent of total receipts (New Mexico Department of Finance and Administration 1984). See Table 3-15 for Balance of Local Government Revenues and Expenditures in Dona Ana County from 1983-84.

Attitudes and Values

The public is very interested in the outcome of the exchange proposal and has voiced concern about the potential for growth of Las Cruces being controlled by the State of New Mexico (U.S. Department of Interior, BLM 1985c). If any development would occur on the East Mesa, any change in current land use would be determined by State Land Office Rules and Regulations, Rule No. 8.002 (See Appendix J). The public has further expressed the opinion that management of the land would be in the best interest of the public if it were retained in Federal ownership and be disposed of as the need arises. There is widespread concern among the public regarding the expertise the State Land Office has to manage the lands for multiple-use values and whether the generation of revenue would take precedence over protection of these values. Surrounding landowners have a genuine concern regarding the value of their land and whether the exchange would negatively affect their property value (U.S. Department of Interior, BLM 1985c).

There is concern regarding the minerals exploration of the lands considered for exchange. Specific interest regarding sand and gravel deposits in the Tortugas ("A") Mountain area and geothermal values on the East Mesa was expressed (U.S. Department of Interior, BLM 1985a).

The public has also expressed concern over wildlife habitats and natural resources, and the possibility that the exchange of public land could threaten these values if development occurs. There were specific areas the public had identified as being especially valuable and deserving of protection under BLM control. Box Canyon and the Old Refuge were identified as having a high incidence of rare and protected birds occupying them. The Franklin Mountains were also mentioned as having high recreational, scenic, and biological values (U.S. Department of Interior, BLM 1985c).

Rangeland and watershed management concerns were expressed regarding the possibility of an increase in flooding as a result of development on the East Mesa and whether there would be a potential loss of grazing lands as a result of the exchange. There was also concern over why public land is being considered for exchange for lands of a less equal value (U.S. Department of Interior, BLM 1985c).

Wilderness and recreation were items of concern expressed by the public. Many felt the need for retention and acquisition of lands to maintain and enlarge WSAs. The Organ Mountains WSA was specifically mentioned for expansion by possibly exchanging military land for State and public lands. The need for open space and parks in Dona Ana County for recreation was also expressed. Preservation of open space in the form of regional parks and recreation zones was expressed (U.S. Department of Interior, BLM 1985c).

Water resources in the proposed disposal areas are also a matter of concern. The importance of water rights to the Mesilla Valley and their effect on the agricultural productivity and urban expansion are undoubtedly important factors of continued and potential prosperity for the County (U.S. Department of Interior, BLM 1985c).

There is widespread concern that any form of development within the proposed lands for exchange would have an effect on not only the physical characteristics of the land but also on the rural values of many residents of the Mesilla Valley. Many feel overdevelopment and the destruction of natural areas around Las Cruces would occur. Many residents of Dona Ana County have deep appreciation for recreation on public land and find the open and natural spaces especially attractive. It is perceived the exchange of public land would threaten not only recreation, but other multiple-use values of the land for the pecuniary benefit of a select few.

TABLE 3-15
BALANCE OF LOCAL GOVERNMENT REVENUES AND EXPENDITURES
DONA ANA COUNTY 1983-1984

Local Government	Revenues	Expenditures	Balance
Dona Ana County	$12,757,427	$11,955,738	$801,689
Hatch	1,149,377	1,115,208	34,169
Las Cruces	44,304,642	39,634,592	4,670,050
Mesilla	558,401	468,675	89,726
Sunland Park	88,816	40,755	48,061

Source: New Mexico Department of Finance and Administration, 1984.

Structure of the Economy

In 1983, Dona Ana County had an average per capita income of $8,485 as compared to the average per capita income of $9,656 for the State of New Mexico (Bureau of Business and Economic Research 1985).

In terms of total personal income, the Government Sector was the leading sector in the County with a contribution of $286.5 million for 1983. The Services Sector was second with $72.3 million followed by the Manufacturing Sector with $64 million, Retail Trade was fourth with $58.5 million, and the Farm Sector was fifth with $42.9 million. The distribution of total personal income is shown on Table 3-16.

Total Non-Agricultural employment for Dona Ana County in 1983 was 33,300. In terms of employment, the Government Sector (Federal, State, Local) appears to be the primary employer followed by the Retail Trade and Services Sector in that order. The Manufacturing Sector was the fourth largest employer in the County. See Table 3-17 for Non-Agricultural Employment in Dona Ana County as collected by the New Mexico Employment Security Department.

The Government Sector had total employment of 14,400 in 1983, 14,500 in 1984, and preliminary estimates as of September 1985 of 14,900. It is apparent that the Government Sector continues to be the leading sector in terms of employment for Dona Ana County. The larger Government employers are White Sands Missile Range, New Mexico State University, and the City of Las Cruces.

The Manufacturing Sector in the United States and elsewhere in the Southwest region represents a larger share of the economy than in Dona Ana County or New Mexico. In the United States, the Manufacturing Sector represented 23 percent of all non-agricultural jobs in 1979 (EDAW Inc. 1983). In 1985, the preliminary estimates indicate the Manufacturing Sector represented 10.0 percent of all non-agricultural employment. This is greater than the 1982 rate of 8.7 percent for Dona Ana County. The Manufacturing Sector has grown by 192 percent from 1970 to 1984 and is the leading sector in growth for the County. The County sectoral growth rate from 1970-1984 is as follows: Services, 179 percent; Construction, 168 percent; Finance, Insurance, and Real Estate, 118 percent; Trade, 106 percent; Government, 35 percent; and

TABLE 3-16
DISTRIBUTION OF TOTAL PERSONAL INCOME, 1983

Source	Total Personal Income (Thousands of Dollars)
Farm	$ 42,963
Non-Farm	595,662
Agricultural Service, Forestry, Fish, and Other	10,784
Mining	381
Construction	37,879
Manufacturing	64,131
Transportation and Public Utilities	33,078
Wholesale Trade	12,513
Retail Trade	58,469
Finance, Insurance, Real Estate	19,569
Services	72,326
Federal, Civilian Government	118,975
Federal, Military	26,180
State and Local	141,377

Source: Bureau of Economic Analysis, Regional Economic Information System 1985.

TABLE 3-17
NON-AGRICULTURAL EMPLOYMENT-DONA ANA COUNTY

	1983	1984	Preliminary September 1985
Total Non-Agriculture Employment	33,300	35,300	37,000
Mining	-0-	-0-	-0-
Construction	2,300	2,600	2,700
Manufacturing	3,300	3,500	3,700
Transportation and Public Utilities	1,300	1,400	1,400
Wholesale Trade	800	900	850
Retail Trade	5,400	6,300	7,100
Finance, Insurance, Real Estate	1,300	1,400	1,550
Services	4,500	4,700	4,800
Federal Government	4,400	4,500	4,500
State Government	5,400	5,500	5,600
Local Government	4,600	4,500	4,800

Source: New Mexico Employment Security Department, 1985.

Transportation and Public Utilities, 25 percent. The growth of these sectors can be attributed to a population that is growing faster than the rest of the State and the business expansion of new and existing businesses. The availability of high quality and inexpensive labor is also a contributing factor that makes the area attractive for business (St. John 1985).

The preliminary reports as of September 1985 identified the civilian labor force to be 44,828 for Dona Ana County. Total employment which includes labor disputes was 40,661. Total unemployment was 4,167 for an unemployment rate of 9.3 percent (Bureau of Business and Economic Research, New Mexico Business 1985). The preliminary unemployment rate for New Mexico as of September 1985 was 8.7 percent.

Dona Ana County and Las Cruces were spotlighted in a recent report by M/PF Research Inc. of Dallas, Texas which stated the area was a particularly good market for shopping centers and light-industrial facilities such as offices, warehouses, and light-assembly plants. This report is important in that it gives the area recognition nationwide to potential investors and leading institutions. The report was based largely on economic areas such as employment, trend in building permits, and the number of residential and commercial buildings being built compared to the demand. Approximately 500 requests a month for information on the area are received from potential investors nationwide (St. John 1985).

The most current employment information available for the Agricultural Sector is 1982 data from the Bureau of Economic Analysis Regional Economic Information System. Using this data, the Agricultural Sector accounted for 5.1 percent of total wage and salary employment in Dona Ana County. Table 3-18 shows the sectoral distribution for that year. This table merely indicates the level of significance for the Agricultural Sector and its relationship to the other sectors for 1982. The data in this table should not be compared with the preceding data on employment since the Bureau of Economic Analysis utilizes different methodology than the New Mexico Employment Security Department.

In 1984, Dona Ana County had the highest yield per acre in the State for wheat, was second in yield per acre for alfalfa and other hay, was the fourth leading County for production of barley, grew 95 percent of the spring and fall lettuce, had the highest yield per acre for American-Pima cotton, produced 88 percent of the pecans in the State, 82 percent of the onions and approximately 49 percent of the chile grown in New Mexico came from Dona Ana County (U. S. Department of Agriculture, New Mexico Department of Agriculture 1984). The major crops and value of production are shown on Table 3-19.

On January 1, 1985, the value of livestock for Dona Ana County was estimated to be approximately $18.7 million. (See Table 3-20.) On January 1, 1985, all cattle in Dona Ana County represented approximately 3.3 percent of all cattle in the State. Approximately 19 percent of the cattle in Dona Ana County are beef cows, 51 percent are milk cows, and 30 percent are other cattle which includes cattle on feed. Dona Ana County ranked twenty-third of 32 counties in the State for number of sheep on farms. Less than 1 percent of the sheep in the State came from Dona Ana County. The County ranked fifth in the State for number of hogs and pigs, with approximately 5.7 percent of the State total. In 1984, the County ranked first in the State for number of chickens, with approximately 60 percent of all chickens in the State coming from Dona Ana County (U.S. Department of Agriculture, New Mexico Department of Agriculture 1984).

In 1984, Dona Ana County ranked first in the State for cash receipts from all farm commodities with $160.7 million (see Table 3-21). The cash receipts from all livestock were $75.1 million (47 percent) and $85.6 million (53 percent) coming from all crops. The cash receipts for all farm commodities declined by $6.8 million from the 1983 level of $167.5 million to $160.7 million. This accounted for a 4 percent decline.

There are 60 livestock operators in Dona Ana County. Their average percent dependency on public land is approximately 77 percent. The majority of the operations are yearlong and are

TABLE 3-18
DISTRIBUTION OF EMPLOYMENT, DONA ANA COUNTY, 1982

Total Employment	39,022
Number of Proprietors	3,216
Farm Proprietors	923
Nonfarm Proprietors	2,293
Total Wage and Salary Employment	35,856
Farm	1,831
Nonfarm	34,025
Agricultural Services, Forestry, Fish, and Other	1,498
Mining	-0-
Construction	1,773
Manufacturing	2,995
Transportation and Public Utilities	1,313
Wholesale Trade	844
Retail Trade	5,135
F.I.R.E.	1,266
Services	4,797
Government	
Federal Civilian	4,400
Military	1,467
State and Local	8,569

Source: Bureau of Economic Analysis, 1985.

TABLE 3-19
DONA ANA COUNTY CROPS AND VALUE OF PRODUCTION, 1984

Crop	Acreage Planted	Acreage Harvested	Production	Season Average Price (Dollars)	Value of Production
All Hay	--	19,900	123,000 Tons	$99.00	$12,177,000
Alfalfa and Other Hay	--	19,000	120,500 Tons	89.83	10,824,515
All Wheat	3,700	3,200	256,000 Bushels	3.35	857,600
Corn	2,700	200	28,000 Bushels	2.95	82,600
Sorghum	1,200	1,200	102,000 Bushels	2.63	268,260
Upland Cotton	9,550	9,450	8,117,550 lbs.	.621	5,040,999
American-Pima Cotton	8,900	8,900	5,402,300 lbs.	.993	5,364,484
Pecans	--	13,645[a/]	21,060,000 lbs.	.83	17,479,800
Spring Lettuce	2,850	1,805	25,270,000 lbs.	.064	1,617,280
Fall Lettuce	2,850	1,330	29,260,000 lbs.	.12	3,511,200
Onions	3,300	3,200	112,000,000 lbs.	.118	13,216,000
Chile	8,300	8,300	13,280 Tons[b/]	1,100.00	14,608,000[b/]
Barley	1,500	1,450	130,500 Bushels	2.80	365,400
Total Value of Production[b/]					$85,413,138

Source: New Mexico Agricultural Statistics, 1984.

Notes: [a/] 1980 Survey shows 260 orchards, 13,645 acres, and 718,000 trees in Dona Ana County.
[b/] Does not include value of processed chile.

TABLE 3-20
DONA ANA COUNTY LIVESTOCK INVENTORY AND VALUE, 1984

Livestock	Inventory (January 1, 1985)	Value Per Head	Total Value
All Cattle	47,000	$350.00	$16,450,000
All Sheep	1,400	55.00	77,000
Hog and Pigs	2,000	179.81	359,620
All Chickens	900,000	2.00	1,800,000
			$18,686,620

Source: New Mexico Agricultural Statistics, 1984.

TABLE 3-21
DONA ANA COUNTY CASH RECEIPTS (1,000 DOLLARS)

Commodity	1983 Cash Receipts	Percentage of Total	1984 Cash Receipts	Percentage of Total
Cattle and Calves	$11,558	6.9%	$12,134	7.5%
Milk	44,767	26.7%	51,382	32%
Sheep	37	.02%	41	.02%
Poultry	9,367	5.6%	10,457	6.5%
Hogs	408	.24%	315	.19%
Other Livestock	730	.43%	758	.47%
Total Livestock	$66,867 40%		$75,087 47%	
Wheat	594	.35%	793	.49%
Hay	5,270	3.1%	7,253	4.5%
Sorghum	323	.19%	190	.11%
Corn	64	.03%	64	.03%
Barley	126	.07%	198	.12%
Cotton	11,111	6.6%	9,608	6.0%
Vegetables	32,557	19.4%	18,632	11.6%
Chile	15,867	9.5%	14,608	9.1%
Fruits and Nuts	18,553	11.1%	17,458	11%
Other Crops	16,250	9.7%	16,886	10.5%
Total All Crops	$100,715 60%		$85,690 53%	
TOTAL	$167,582		$160,777	

Source: New Mexico Agricultural Statistics, 1984.

cow-calf operations. There are 8,190 BLM AUs currently used for grazing. At the 1985 grazing rate of $1.35 per AUM, this equals approximately $132,700 in grazing fees of which 12.5 percent is distributed to the State.

There are two operations located in the area northeast of Las Cruces which the State has identified for exchange. The Federal dependency on public land is approximately 68 percent. The average herd size of the operations ranges from 151 AUs to 246 AUs.

CHAPTER 4
ENVIRONMENTAL CONSEQUENCES

ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This chapter provides the scientific and analytic basis for the selection of the preferred alternative. It discusses the significant impacts that are anticipated to result from implementation of each of the alternatives. Both the beneficial and adverse impacts affecting the environmental components, as discussed in Chapter 3, will be documented. If impacts are not discussed, the analysis determined that impacts would not occur or would be insignificant. None of the alternatives would have significant impacts on climate, topography, air quality, paleontology, or fire.

The cause of an impact is tied to a component of the alternatives as identified in Chapter 2. The effect of the impact is tied to a component of the environment described in Chapter 3. The impacts discussed in this chapter were assessed on the basis of the description of the alternatives presented in Chapter 2. This assessment took into account the mitigation measures and standard stipulations described in Chapter 2, Management Guidance Common to All Alternatives. Because of those design features included to minimize environmental impacts, the impacts assessed in this chapter are considered to be unavoidable.

Knowledge of the area and professional judgment, based on observation and analysis of similar conditions and responses in similar areas, have been used to infer environmental impacts where data are limited.

The analysis of alternatives is based on the following assumptions:

1. Funds and personnel will be available for implementation.

2. Minor adjustments in management actions may occur.

3. Baseline data are accurate.

4. A Notice of Realty Action and an Environmental Assessment (EA) will be completed prior to any disposal or acquisition (except for the State Land Exchange which is analyzed in detail in this plan amendment).

5. The direct and indirect effects of a change in ownership of lands are being addressed in this plan amendment. End uses of the 10,000 acres of public land in the State Land Exchange Area proposed for disposal cannot be credibly forecast except what has been given in the State of New Mexico's letter on what they intend to do with the land (see Appendix J). In summary, for the land that would be acquired by the State in the State Land Exchange Area, the existing livestock grazing use and public hunting would be authorized by the Commissioner of Public Lands; the mineral estate would be reserved by the U.S. Government and the lessee would retain the right of exploration and development of the leasehold. It is known that the City of Las Cruces is growing in all directions and that they have even talked about plans to annex a portion of the East Mesa. While an indirect effect of this proposed exchange may thus be urbanization of currently open lands, it is not possible to quantify the amount of lands so affected or the type of changes that would occur. To analyze community expansion with the information we know at this time is beyond the scope of this document. Once the State acquires the land, it would be governed by their regulations and laws. The State has indicated that they would develop a Master Land Use Plan including public participation and review should they decide to put the land to a higher and better use.

6. The impact analysis period for this plan amendment is until land ownership change occurs, i.e., there is no differentiation of short-term and long-term impacts.

7. The BLM's preferred method for land tenure adjustments will be to include both surface and subsurface estates, where possible. For the State Land Exchange, only the surface estates would be exchanged.

IMPACTS OF ALTERNATIVES

Alternative I -- Favor Retention (No Action)

Lands

Dona Ana County

The disposal of 1,010 acres of isolated tracts of public land that are uneconomical to manage and do not have sufficient multiple-use values to warrant their retention and approximately 552 acres of previously designated small tract areas which were identified by the BLM based on an expressed need of the community would not impact the multiple-use management of the remaining public land by BLM.

The public land in Dona Ana County is well consolidated, except for areas north of U.S. Highway 70-82, the southeast corner of the County near the Dona Ana-Otero County line, and in Range 4 west along the Dona Ana-Luna County line. Therefore, the management action to retain and manage the remainder of public land in Dona Ana County (1,105,125 acres) would not impact the multiple-use management of the remaining public land by BLM.

Public land would continue to be available to government and non-profit organizations for public purposes under the Recreation and Public Purposes Act (R&PP).

The acquisition of 320 acres of State land for the Rough and Ready Station (160 acres) and Fort Mason (160 acres) and 7,422 acres of State and private lands in the Organ Mountains for historic, sightseeing, and recreation areas would increase the public land acreage, but would not impact the land resource in Dona Ana County.

State Land Exchange Area

The retention of 10,000 acres of public land identified by the State of New Mexico in application NM 61209 for possible exchange would not impact the current multiple-use management of the subject public land by the BLM.

The retention of the 10,000 acres of public land could impact those areas that the City of Las Cruces has identified for potential annexation and future city expansion by limiting the acreage of land available for residential growth.

However, any commercial, industrial, or public purpose needs within the potential annexation and future city expansion areas would still be available for site-specific processing by the BLM for rights-of-way, leases, permits, and patents.

The existing R&PP lease, NMO559218 Dona Ana County-Butterfield Park Landfill, would remain in force until such time that guidance is provided on how to address existing landfill leases as per BLM Instruction Memorandum NM-86-84.

The two pending R&PP applications, NM 52173 Las Cruces Christian Church and NM 57117 Dona Ana County-Hacienda Acres Park would be processed on a site-specific basis by the BLM.

The area under claims for sand and gravel would also be retained.

Access

Dona Ana County

The Dona Ana County Transportation Plan considered access to all public land within the County. Therefore, the areas identified for disposal and retention have already been addressed from a standpoint of access needs.

The acquisition of State land for the Rough and Ready Station (160 acres) and Fort Mason (160 acres) and 7,422 acres of State and private lands in the Organ Mountains would not require any additional access. Existing access is adequate for the proposed uses of these lands.

State Land Exchange Area

The retention of 10,000 acres of public land identified by the State of New Mexico in application NM 61209 for possible exchange would not require additional access.

Geology and Minerals

Dona Ana County

The 1,562 acres comprising the small and isolated tracts of land designated for

disposal, occur in areas with potential mineral value. The areas adjacent to the river valley have potential for sand and gravel development; however, they are not in currently producing areas.

Lands a few miles east of the river valley lie within a determined geothermal area. This resource runs continuously from the southeastern to the northwestern part of the County paralleling the valley. (See Map 3-4.)

If the minerals are kept in Federal ownership, no change would occur in current management procedures affecting the public's right to exploration and development. However, because of the extensive surface use in the development of sand and gravel and geothermal resources, significant conflicts could occur between the surface owner and the mineral extractor should the surface be disposed of and the minerals retained. If the estates are kept intact, disposal could eliminate the possibility of resource development.

The 320 acres designated for acquisition at Fort Mason and the Rough and Ready Hills Station lie in an area considered favorable for oil and gas retention. Acquiring mineral rights in these areas could increase revenues from oil and gas leasing, providing mineral entry was not withdrawn because of the intended use as a historical area. If minerals are not acquired, it is possible the surface could be used by the mineral owner.

The 7,422 acres of State and private lands designated for potential acquisition are near historic mining districts and may contain undetermined amounts of locatable minerals. Acquiring the mineral rights would allow the Federal Government to decide whether to permit mineral entry, thus totally controlling surface use.

Retention of designated lands would create no impacts, in that existing management practices would continue, allowing for mineral exploration and development.

State Land Exchange Area

If the 10,000 acres are retained, no impact would occur. Current management practices would continue, allowing the public to explore for and develop mineral resources.

Soils

Dona Ana County

Under the No Action Alternative, approximately 1,105,125 acres would remain in Federal ownership. There would be no major changes in the management or uses of the lands, therefore, there would not be any significant impacts to the soils resource. The 24 study sites on public land used for the Desert Soil-Geomorphology Project conducted by the Soil Conservation Service (SCS) from 1957 through 1972 would be protected under this alternative. The sites are still used for training and study areas, and would continue to be used for educational field trips in the future.

The disposing of 1,562 acres of small and isolated tracts would have no significant impact to the soils resource of the County. These small and isolated tracts generally do not have sufficient multiple-use values to justify retention.

Acquiring the Rough and Ready Station, Fort Mason, and State and private lands in the Organ Mountains would place approximately 7,742 acres under the ownership and management of the Federal Government. Most of soils acquired would be shallow and rocky, common on mountain ranges. The 160 acres around Fort Mason are primarily of the Berino, Mimbres, and Stellar series, being primarily of a sandy loam and clay loam texture. There would be no significant impact to the soils resource by acquiring the 7,742 acres of private and State lands.

State Land Exchange Area

Under the No Action Alternative, the 10,000 acres east of Las Cruces would remain in Federal ownership. The two study sites used for the Desert Soil-Geomorphology Project which are located in the area would remain in Federal ownership and thus remain protected as per Cooperative Agreement NM-030-10 between the Soil Conservation Service (SCS) and BLM.

Water Resources

Dona Ana County

Under the No Action Alternative, approximately 1,105,125 acres would remain in Federal

ownership. There would be no major changes in the management or uses of the lands; therefore, there would be no significant changes in the quality or quantity of water used by livestock and wildlife. Water rights and maintenance responsibilities of livestock water facilities would not change on lands retained by the Federal Government.

Water quality, quantity, or the amount of runoff from areas proposed for disposal (1,562 acres) or acquisition (7,742 acres) would not be affected under this alternative. The lands acquired by the BLM would be for multiple-use purposes, but no significant change in livestock or wildlife numbers is expected. Therefore, there would be no significant change in water use.

State Land Exchange Area

The 10,000 acres in the State Land Exchange Area would remain in Federal ownership. There would be no major changes in management or uses of the lands; therefore, there would be no significant changes in the quality, quantity, or uses of waters in this area.

Vegetation

Dona Ana County

The disposal of 1,010 acres of isolated tracts of public land would not have a significant impact on vegetation and its uses. The remaining 552 acres of small tracts for disposal have no significant impacts on vegetation. If three of these parcels were disposed of, Opuntia arenaria (sand prickly pear), a candidate for Federal listing and its habitat would no longer be under management control of the BLM. This cactus is likely to be listed in 1986 and BLM policy is to maintain habitat for a candidate species in order to avoid listing.

Retention of 1,105,125 acres of public land would provide BLM protection and management for the vegetation resources and existing threatened, endangered, candidate, or sensitive plant species.

The acquisition of the lands around the Rough and Ready Station and Fort Mason (320 acres) would not have a significant impact on vegetation. Acquisition of the State and private lands in the Organ Mountains (7,422 acres) would provide Federal protection for several threatened, endangered, candidate, or sensitive plant species (see Appendix C).

State Land Exchange Area

The 10,000 acres within the State Land Exchange Area would be kept in Federal ownership. There are several large arroyos with unique vegetation which provide habitat for wildlife species and could provide an educational experience (i.e., birdwatching, field trips, outdoor classroom, etc.) for the general public.

Wildlife

Dona Ana County

All of the habitat types showing higher diversities and species use would be retained as would the deer herd unit and quail areas.

Acquisition of State and private lands in the Organ Mountains would improve opportunities for deer habitat management by the BLM for the Organ Mountains deer herd unit. However, no specific management needs for the Organ Mountains deer herd have been identified and the area is low priority for preparation of a habitat management plan within the Las Cruces District.

State Land Exchange Area

Table 3-4 shows acreages of various habitats which would be retained in BLM ownership by retention of the State Land Exchange Area. The most significant is retention of 800 acres of arroyo-riparian habitat, representing about 7 percent of the arroyo-riparian habitat in Dona Ana County. The arroyo-riparian habitat type is high value wildlife habitat as shown on Table 3-4.

Recreation

Dona Ana County

Disposal of 1,562 acres of isolated and small tracts of public land would remove that land from management control by the BLM for dispersed recreation activities, but would not significantly affect recreation resources in Dona Ana County.

Retention of the balance of public land (1,105,125 acres) would allow the continuation of existing recreation opportunities in the County. On the East Mesa, retention of the Dona Ana Recreation Area, the Franklin Mountains, and the Isaack Lake area would allow the continuation of recreation activities such as hiking, camping, picnicking, sightseeing, nature study, and general leisure in those areas. In addition, the Mossman Arroyo Open Intensive off-road vehicle (ORV) area would continue to be available for recreational ORV use. On the West Mesa, the Airport Open Intensive ORV area would be retained for ORV use, and the Box Canyon and Old Refuge areas would be retained for dispersed recreation opportunities. Not processing land exchanges to acquire non-Federal lands would limit the ability to improve the manageability of the recreation resources.

Acquisition of the Rough and Ready Station and Fort Mason would provide historic sightseeing opportunities. Acquisition of 7,422 acres in the Organ Mountains would contribute significantly to more effective management of the recreation resources in that area and provide additional public recreation opportunities as described in the Recreation section of Chapter 3.

State Land Exchange Area

Retention of the 10,000 acres of public land in the State Land Exchange Area would allow continued ORV use in the Alameda Arroyo Open Intensive ORV area. Retention of the 10,000 acres also would allow a continuation of dispersed recreation such as hiking and shooting.

Cultural Resources

Dona Ana County

The disposal of small and isolated tracts proposed under this alternative would mean that 6 previously recorded archaeological sites as well as an estimated 22 unrecorded sites in the 1,562 acres would be removed from management by the BLM.

To date, 943 archaeological sites have been documented in Dona Ana County. This includes 926 sites recorded prior to September 1, 1985, as well as 17 sites recorded during the Class II Survey finished in November 1985. A majority of these sites are on public land, and general retention of 1,105,125 acres of public land in the County would ensure that these resources would continue to be managed by BLM.

Acquisition of the Rough and Ready Stage Station and Fort Mason would allow BLM to manage two sites whose preservation and study could contribute significant historical information, as well as provide historic sightseeing areas.

Acquisition of land in the Organ Mountains has the potential of protecting and managing sites which are not well represented in this District. These sites, which could include prehistoric rock shelters as well as open sites, could contribute significant information about prehistoric subsistence and exploitation of mountain zone resources. There are 12 previously recorded or known sites in this parcel, as well as an estimated 110 unrecorded sites.

State Land Exchange Area

General retention of public land in the 10,000 acres of public land in the State Land Exchange Area would ensure that unique sites such as the Pat Garrett Murder Site and the Scott Haul Historic Wagon Road would be retained and managed by the BLM. Sixteen other sites recorded in this parcel include lithic procurement/reduction sites, ceramic scatters, prehistoric campsites, and a historic habitation site.

Wilderness

Dona Ana County

Disposal of 1,562 acres of isolated and small tracts of public land would not affect the wilderness values of any of the six Wilderness Study Areas (WSAs) in Dona Ana County.

Retention of the balance of public land (1,105,125 acres) would allow the continuation of existing management in the six WSAs to prevent impairment of wilderness values. However, not processing land exchanges to acquire Non-Federal lands would limit the ability to improve the manageability of the WSAs.

Acquisition of the Rough and Ready Station and Fort Mason would not significantly affect the

wilderness values of any of the six WSAs. Of the 7,422 acres proposed for acquisition in the Organ Mountains, none are within the Organ Mountains WSA. However, 1,180 of the 7,422 acres of State and private lands are located immediately adjacent to the WSA. Acquisition of these lands would enhance the manageability of the WSA.

State Land Exchange Area

Retention of the 10,000 acres of public land in the State Land Exchange Area would not significantly affect the wilderness values of any of the six WSAs.

Livestock Grazing

Dona Ana County

Disposal of 1,010 acres of isolated tracts of public land would not have a significant impact on livestock grazing as only 5 animal units (AUs) are grazed. The remaining 552 acres of small tracts for disposal are ungrazed. Rangeland improvements located on these lands include 4 miles of fence.

Retention of 1,105,125 acres on which 8,185 AUs are grazed would continue at the present level. Rangeland improvements would remain as at the present time.

The acquisition of the Rough and Ready Station and Fort Mason also would not be significant for livestock grazing as only 3 AUs are grazed. Rangeland improvements located on these lands include 1/4 mile of pipeline. Acquisition of the State and private lands in the Organ Mountains would affect 115 AUs. Since land status would change but not land management, livestock grazing would continue at the present level so cattle numbers would not change. Rangeland improvements located on these lands include 5 dirt tanks (1 base water), 4 wells (3 base waters), 4 springs (1 base water), and 6 miles of fence.

State Land Exchange Area

Within the State Land Exchange Area, there are 47 AUs grazed in three allotments. Grazing privileges would be honored if these lands stayed in Federal ownership. Rangeland improvements would remain as at the present time.

Visual Resources

Dona Ana County

Disposal of 1,562 acres of isolated and small tracts of public land would remove that land from BLM visual resource management control, but would not significantly affect visual resources in Dona Ana County.

Retention of the balance of public land (1,105,125 acres) would allow the continuation of existing visual resource management on that land in accordance with the guidelines for the Visual Resource Management (VRM) classes shown on Map 3-14.

Acquisition of the Rough and Ready Station and Fort Mason would provide control of surface modifications of those areas. Acquisition of 7,422 acres of State and private lands in the Organ Mountains would give BLM the authority to manage the visual resources of those lands and maintain their high visual quality. Of the 7,422 acres proposed for acquisition, 40 acres are within the Organ Mountains Scenic Area of Critical Environmental Concern (ACEC). Acquisition of this land would enhance management of visual quality in the ACEC by providing control of surface modifications on the land.

State Land Exchange Area

Retention of the 10,000 acres of public land in the State Land Exchange Area would allow continued management of the area under VRM Class III guidelines, which allow for evident changes, but the changes should remain subordinate to the existing landscape.

Social and Economic Conditions

Dona Ana County

The demographic characteristics, infrastructure, social conditions, and economic structure of Dona Ana County would not significantly change as a result of this alternative. Any changes that would occur would be due to other factors unrelated to actions under this alternative.

The disposal of the small and isolated tracts could result in a slight decrease in existing managerial costs of approximately $290.

However, the preparation work and actual disposal of these lands is estimated to be approximately $5,068, which is approximately 1 percent above 1985 managerial costs for the Resource Area.

The County tax base is estimated to decline by approximately $2,631 if the land is classified as undeveloped (See Appendix I-4). The County would experience a reduction of approximately $1,171 in Payments in Lieu of Taxes (PILT). (See Appendix I-1.)

It is estimated that Taylor Grazing receipts would decrease by approximately $81 of which the State is eligible to receive 12.5 percent. (See Appendix I-3.) If the two affected livestock operators are unable to acquire the lands identified for disposal, they could be affected by a loss of 1 to 4 AUs. Using a 1984 grazing permit value of $1,200 per AU (Torell and Fowler 1985), the grazing permit values could decline by $1,200 to $4,800, respectively.

The acquisition of 7,742 acres of State and private lands could cause PILT to increase by approximately $3,592 due to the acquisition of the 4,790 acres of private land which would qualify as "entitlement lands". Approximately 2,952 acres of State land identified for acquisition, however, would not qualify as "entitlement lands" according to 31 USC 6902. (See Appendix I-1). Conversely, because of the private acreage identified for acquisition, estimated tax revenue could decline by a range of $109 if the land is classified as grazing to approximately $8,067 if the land is classified as undeveloped. (See Appendix I-4.)

Approximately 45 AUs from State land and 73 AUs from private land affecting three operators are identified for acquisition. This could cause Taylor Grazing receipts to increase by approximately $1,912. The distribution of receipts to the State of New Mexico could increase by approximately $239. (See Appendix I-3.) Monies for the Range Betterment Fund could increase by approximately $956. The acquisition of private AUs could affect the ranch value of one operator since the private AUs comprise approximately 30 percent of the operation. A standard rule of thumb used by professional ranch brokers, appraisers, and bank credit officers is that leased land is worth approximately 1/3 the value of deeded grazing land (Torell and Fowler 1985). The average ranchland values for the Southwest region of New Mexico which includes Dona Ana, Luna, Hidalgo, and parts of Grant and Sierra counties for 1984 was $3,925 for 100 percent deeded land; $2,110 for 1/2 deeded, 1/2 permit land; and $1,292 for permit ranches (Torell and Fowler 1985). The transfer of State leases to BLM permits would not significantly change the associated grazing permit values. Torell and Fowler (1985) estimated that the overall 1984 AU value estimated for U.S. Forest Service, BLM, and State permits were not statistically different at the 5 percent level of probability. "This indicates no apparent price discrimination or price advantage for one type of permit over another" (Torell and Fowler 1985). The acquisition would not significantly affect the social well-being nor the economic characteristics of the County. The public perception regarding acquisition of these lands could be viewed as favorable since there would be additional opportunities for recreational pursuits on public land.

Retention of 1,105,125 acres of public land could be favorably perceived by the public since the availability of public land for multiple-use activities is considered to be an asset by many Dona Ana County residents. (U.S. Department of the Interior, BLM 1985c). Management actions to retain the public land and provide for community expansion and other purposes on an as needed basis could be viewed favorably from a multiple-use perspective. Management actions under this alternative would not disrupt the existing uses of the public land users.

State Land Exchange Area

Retention of 10,000 acres of public land on the East Mesa could be viewed favorably by the public. Many residents feel the best interest of the public would be served if the lands would be retained in Federal ownership and disposed of on an as needed basis for public purposes or community expansion (U.S. Department of the Interior, BLM 1985c). The widespread concern regarding management of multiple-use values and whether generation of revenues would take precedence over these values would be mitigated under this alternative.

Alternative II--Favor Disposal

Lands

Dona Ana County

The disposal of 83,302 acres of public land on the East Mesa would remove them from the operation of the land laws and multiple-use management by the BLM.

It is assumed by the City of Las Cruces and Dona Ana County that significant growth in Dona Ana County will occur in the Mesilla Valley, east of the Las Cruces City limits, and along U.S. Highway 70. This was concluded because of existing utilities in that area. Based on this assumption, the City, Dona Ana County, the Las Cruces School District No. 2, and other interested individuals have identified potential areas of need for public purposes.

The BLM leases these public purpose areas to qualified applicants (Government and non-profit organizations) for $0.25 per acre per year or patents them for $2.50 per acre under the Special Pricing Program or at a 50 percent reduction for cemeteries and churches or a 10 percent reduction if use will be restricted to members of a particular limited group, such as fraternal and religious groups. These sale prices are determined in accordance with 43 USC 869-1(a) and (c). Should these lands be removed from the operation of the land laws either by patenting to State or private entities, the Government and non-profit organizations that make use of the R&PP Act would be required to purchase or lease needed lands at the fair market rate. However, prior to the disposal of any public land, the public purpose needs of local Government entities within which the lands are located would be considered on a site-specific basis.

As indicated in the Management Situation Analysis (MSA) for this planning effort, the total R&PP authorizations in Dona Ana County account for approximately 50 percent of the total R&PP leases/patents in the Las Cruces District 8-County area of jurisdiction. The Las Cruces/Lordsburg Resource Area receives an average of eight R&PPs applications per year. Ninety-five percent of these requests are for locations within Dona Ana County.

The disposal of 19,379 acres of public land on the West Mesa would remove them from the operation of the land laws and multiple-use management by the BLM. As these lands were identified by the public and local, city, County, and State Governments for potential disposal, it is assumed that these Governmental agencies have planned potential development without the benefit of the R&PP Act.

The disposal of 5,791 acres of public land that are uneconomical to manage, do not have sufficient multiple-use values to warrant their retention, were identified by individuals, or were previously designated small tract areas based on an expressed need of the community would not impact the multiple-use management of the remaining public land by the BLM.

The retention of the remaining 998,215 acres of public land in Dona Ana County would not alter the existing land resource base or the multiple-use management of those lands.

State Land Exchange Area

The disposal of 10,000 acres of public land identified by the State of New Mexico in application NM 61209 for possible exchange would remove those lands from the multiple-use management of the BLM.

It is assumed by the City of Las Cruces and Dona Ana County that significant growth in Dona Ana County will occur in the Mesilla Valley, east of the Las Cruces City limits, and along U.S. Highway 70. This was concluded because of existing utilities in that area. Based on this assumption, the City, Dona Ana County, the Las Cruces School District No. 2, and other interested individuals have identified potential areas of need for public purposes.

The BLM leases these public purpose areas to qualified applicants (Government and non-profit organizations) for $0.25 per acre per year or patents them for $2.50 per acre under the Special Pricing Program or at a 50 percent reduction for cemeteries and churches or a 10 percent reduction if use will be restricted to members of a particular limited group, such as fraternal and religious groups. These sale prices are determined in accordance with 43 USC 869-1(a) and (c). Should these lands be removed from the operation of the land laws, either by patenting to State or private entities, the Government and non-profit organizations that make use of the R&PP Act would be required to purchase or lease needed

lands at the fair market rate. However, prior to the disposal of any public land, the public purpose needs of local Government entities within which the lands are located would be considered on a site-specific basis.

The one existing R&PP lease, NM 0559218 Dona Ana County-Butterfield Park Landfill and the two pending R&PP lease applications, NM 52173 Las Cruces Christian Church and NM 57117 Dona Ana County-Hacienda Acres Park, would be retained by the BLM within the proposed exchange area. Also retained would be the areas under claims for sand and gravel.

The acquisition of 5,000 acres of State land in the Organ Mountains would increase the public land acreage and help block-up public land, but would not impact the land resource.

Access

Dona Ana County

The Dona Ana County Transportation Plan considered access to all public land within the County. Therefore, the areas identified for disposal and retention have already been addressed from a standpoint of access needs.

State Land Exchange Area

The disposal of 10,000 acres of public land identified by the State of New Mexico in application NM 61209 for possible exchange would not negate any access that is required for the multiple-use management of public land.

The acquisition of 5,000 acres of State land in the Organ Mountains would not require any additional access. Existing access is adequate for the multiple-use management of these lands.

Geology and Minerals

Dona Ana County

The 83,302 acres of land on the East Mesa designated for disposal include several areas with known mineral resources. Low temperature geothermal energy and sand and gravel exist in a band extending continuously from the southern to the northern County boundary, along the east side of the river valley. Although most locatable minerals are found in the retention area along the west side of the Organ Mountains, some lead, silver, and gypsum have been extracted in the Franklin Mountains. The additional 25,170 acres of land designated for disposal located on the West Mesa and land difficult and uneconomical to manage or where interest has been shown, have no significant occurrences of locatable minerals. The isolated tracts along the river have potential value for saleable minerals, but none are in high production areas. The 19,379 acres around the Las Cruces/Crawford Airport have a relatively high number of acres under oil and gas lease; however, there have been no discoveries in the area.

If the mineral estate is not exchanged with the surface, no significant immediate impacts would occur, in that current mineral management practices would continue.

If the mineral estate is exchanged with the surface, public exploration and development of mineral resources would be encumbered, if not lost. These activities could only be done with the permission of the new mineral right owner.

The mineral estate would not be disposed of if valid mining claims were present. If leases were present, the mineral rights would be retained in Federal ownership until the expiration of the lease, at which time the mineral rights would pass to the new owner. If the leased land were being used in production, the lease would be continued until production ceased and the lease expired.

The 998,215 acres of land designated for retention would maintain present mineral tenure and be subject to current mineral management procedures and therefore, no impacts should result.

State Land Exchange Area

The 10,000 acres designated for disposal in the proposed State Land Exchange Area contain both sand and gravel deposits of economic value and a geothermal resource capable of at least direct use. These areas occupy the same geographical location within the considered lands, forming a band approximately 2 miles wide, quartering across the southwest corner of the block.

The proposed exchange provides for the mineral estates to be maintained in current ownership, and therefore, no immediate impacts should occur. Because of the extensive surface use in

both sand and gravel extraction and geothermal development, significant conflicts could arise between the surface owner and the mineral extractor, in that in both cases the mineral extractor has a right to use as much of the surface as necessary to develop the resource. If surface development encroaches on the sand and gravel deposits, their development and sale would be evaluated through a site-specific analysis.

The lands designated for acquisition (5,000 acres in the Organ Mountains) would not involve transfer of the mineral estate. Mineral development would then involve a leasing process among the Federal Government, State Government, and the mineral extractor.

Soils

Dona Ana County

Under the Favor Disposal Alternative, 108,472 acres of land have been identified for disposal in Dona Ana County. This includes land on the East and West Mesas as well as difficult and uneconomical to manage tracts or where interest has been shown. Since impacts generally affect all areas similarly, they will be discussed together. Neither erosion nor sedimentation would be affected by land tenure adjustment, in that title transfer would not mandate significant changes in surface use. Therefore, impacts to soils in these areas would be insignificant assuming no major changes in use or management. Approximately 19 study sites used for the Desert Soil-Geomorphology Project are on the areas proposed for disposal, thus would no longer be protected under cooperative agreement.

Under this alternative, the remaining 998,215 acres of land in Dona Ana County would be recommended for retention. Current management procedures would continue; therefore, no impacts would occur.

State Land Exchange Area

The disposal of the 10,000 acres of public land in the State Land Exchange Area would have no significant impacts on the soil resource, assuming no significant change in surface use or management. The two soil study pits used for the Desert Soil-Geomorphology Project would no longer be protected under cooperative agreement.

Acquiring the 5,000 acres of State land in the Organ Mountains would have no significant impact to the soil resource in these areas.

Water Resources

Dona Ana County

The 108,472 acres of land designated for disposal in Dona Ana County under this alternative, generally overlay the lower Rio Grande ground water basin; however, land tenure adjustment would have no impacts on the quantity or quality of its water. The disposal area also incorporates two surface-water basins, the Jornada del Muerto and the Rio Grande Basin. Like the ground water basins, little impact would result from disposal due to the fact that the BLM has no maintenance responsibility or ownership for surface water structures on the considered lands. All permitted structures are maintained by the permittees. Issack Lake, an interior drainage playa which seasonally holds surface water, would no longer be on public land and therefore, no longer be subject to management under the BLM. All surface water in the disposal areas originates as ephemeral drainage so quantity and quality of the water would not be affected by ownership change.

The balance of public land in the County (998,215 acres) is recommended for retention under this alternative, and consequently, would be subject to current management procedures resulting in no impacts.

The consolidation or "blocking up" of public land will aid in the planning of and acquiring easements for watershed improvement projects.

State Land Exchange Area

The 10,000 acres designated for disposal in the proposed land exchange area overlie the Lower Rio Grande ground water basin. Exchange would not affect the basin or the quality or quantity of water since water use and rights would continue to be administered by the New Mexico State Engineer.

Surface waters are ephemeral in nature and their quality and quantity would likewise be unaffected by land tenure adjustment. Occasional flooding occurs in the ephemeral streambeds (arroyos), but the Rio Grande floodplain and City of Las Cruces are protected

from flooding from this area by the Las Cruces Dam. The BLM has no ownership or maintenance responsibility for water diversion or retention structures on the considered lands, so no impact would result from title transfer.

The 5,000 acres of State land designated for acquisition in the Organ Mountains, originate runoff into many of the arroyos on the East Mesa. Federal acquisition of these areas would not impact surface or ground water on them or the surrounding areas.

Vegetation

Dona Ana County

The disposal of 83,302 acres of public land on the East Mesa would have little impact on the vegetation resources. These lands would no longer be managed and protected by the BLM. One Federal-listed cactus species, Corypantha sneedii var. sneedii (Sneed's pincushion cactus), is located in the Franklin Mountains. BLM policy is to maintain and protect listed threatened, endangered, candidate, or sensitive species and their habitat. Opuntia arenaria (sand prickly pear), a Federal candidate plant species is also found in the disposal area.

The disposal of 19,379 acres on the West Mesa would not be a significant impact to vegetation and its uses. The disposal of 5,791 acres of land that is difficult and uneconomical to manage or where interest has been shown would not have a significant impact on vegetation and its uses. If some of these parcels were disposed of, O. arenaria, a candidate species and its habitat would no longer be under management control of the BLM.

Retention of 998,215 acres of public land in the County would grant management and protection for this remaining public land, their uses, and existing threatened, endangered, candidate, or sensitive plant species.

State Land Exchange Area

Within the State Land Exchange Area, the 10,000 acres on the East Mesa would be removed from BLM multiple-use management and protection. There are several large arroyos with unique vegetation which provide habitat for wildlife species and could provide an educational experience (i.e., birdwatching, field trips, outdoor classroom, etc.) for the general public.

Acquisition of 5,000 acres in the Organ Mountains would provide Federal protection for the vegetation and several threatened, endangered, candidate, and sensitive plant species. (See Appendix C.)

Wildlife

Dona Ana County

Disposal of public land on the East Mesa would result in the loss of management opportunities by the BLM for an estimated 30 percent of the arroyo-riparian habitat type remaining on public land in the County.

Disposal of public land on the West Mesa would preclude management opportunities by the BLM for 19,379 acres of habitat where quail are to be managed as a featured species. Some management opportunity by the BLM for arroyo-riparian habitat also would be lost.

A high percentage of the public land that is designated as difficult and uneconomical to manage is wetland or riparian in character and represents a significant percentage of riverine and river break habitats remaining in BLM ownership in Dona Ana County.

As much as 300 acres of the public land that is designated as difficult and uneconomical to manage (5,791 acres) is wetland or riparian in character and represents about 30 percent of the riparian habitat (930 acres) remaining in BLM ownership in Dona Ana County.

Most of the big game herd units would remain intact in the acres retained in BLM ownership.

State Land Exchange Area

Approximately 7 percent of the arroyo-riparian habitats in Dona Ana County is located within the identified 10,000 acres in the State Land Exchange Area. Management opportunities by the BLM would be lost on these areas.

Most of the State land which would be acquired in the Organ Mountains are within the Organ Mountains deer herd area. Acquisition of these lands would improve management opportunities for the BLM for deer habitat in the Organ

Mountains. However, the Organ Mountains area is a low priority for an active habitat management program within the Las Cruces District because no specific habitat problems have been identified.

Recreation

Dona Ana County

Disposal of 83,302 acres of public land on the East Mesa could generally eliminate recreation opportunities on that land unless ownership was transferred to another Federal agency, a State agency, or a City or County Government that would maintain the opportunities. The Dona Ana Recreation Area, the Franklin Mountains, the Isaack Lake area, and the Mossman Arroyo Open Intensive ORV Area would be lost from management control by the BLM. These areas presently provide recreation opportunities for hiking, camping, picnicking, sightseeing, nature study, ORV use, and general leisure. Other dispersed recreation opportunities on the East Mesa that would be lost from management control by the BLM are rock and mineral collection, hunting, shooting, and rock climbing.

Disposal of 19,379 acres of public land on the West Mesa would remove the Box Canyon area, the Old Refuge area, and the Airport Open Intensive ORV area from management control by the BLM. These area are presently used for dispersed recreation activities such as hiking, nature study, picnicking, shooting, ORV use, and general leisure.

Disposal of 5,791 acres of public land that is difficult and uneconomical to manage or where interest has been shown would not significantly affect recreation resources. The land would no longer be under management control by the BLM for dispersed recreation activities.

Retention of the balance of public land in Dona Ana County (998,215 acres) would allow the continuation of existing recreation opportunities on that land. On the East Mesa, retention of the OMRLs would ensure the availability of the recreation opportunities described in the Recreation section of Chapter 3.

State Land Exchange Area

Disposal of the 10,000 acres of public land in the State Land Exchange Area could eliminate most recreation activities on that land because recreation use of State land is at the discretion of the State and the livestock lessee. However, hunting would continue to be allowed during established seasons. The area currently provides opportunities for recreational ORV use, hiking, and shooting. The Alameda Arroyo Open Intensive ORV Area would be lost from management control by the BLM.

Acquisition of 5,000 acres of State land in the Organ Mountains would greatly enhance the management of the recreation resources in that area and add to the public recreation opportunities described for the OMRLs in the Recreation section of Chapter 3.

Cultural Resources

Dona Ana County

Disposal of public land on the East Mesa would mean that 36 previously recorded sites, as well as an estimated 1,100 unrecorded sites in the 83,302 acres, would be removed from management by the BLM.

Disposal of 19,379 acres of public land on the West Mesa would mean that 55 previously recorded sites, as well as an estimated 200 unrecorded sites, would be removed from management by the BLM. Los Tules, a Mesilla Phase pithouse village, is one of the 55 recorded sites in this parcel.

Disposal of 5,791 acres of public land in parcels that are difficult and uneconomical to manage or where interest has been shown would mean that 23 previously recorded sites, as well as an estimated 75 unrecorded sites, would be removed from management by the BLM.

Retention of 998,215 acres of public land in the County would ensure that 806 previously recorded sites, as well as an estimated 12,000 unrecorded sites, would remain under management by the BLM.

State Land Exchange Area

Disposal of 10,000 acres of public land on the East Mesa would mean that 18 previously recorded sites, as well as an estimated 50 unrecorded sites, would be removed from management by the BLM. The 18 recorded sites include such unique sites as the Pat Garrett Murder Site and the Scott Haul Historic Wagon Road.

Acquisition of land in the Organ Mountains has the potential of protecting and managing sites which are not well represented in this District. These sites, which could include prehistoric rock shelters as well as open sites, could contribute significant information about prehistoric subsistence and exploitation of mountain zone resources. Five sites have been recorded in the 5,000 acres, and it is estimated that there may be 75 sites which have not been recorded.

Wilderness

Dona Ana County

The proposed disposal of 108,472 acres of public land would not significantly affect the wilderness values of any of the six WSAs in Dona Ana County.

Retention of the balance of public land including the six WSAs would allow the continuation of existing management in the WSAs to prevent impairment of wilderness values.

State Land Exchange Area

Disposal of the 10,000 acres of public land in the State Land Exchange Area would not significantly affect the wilderness values of any of the six WSAs.

Of the 5,000 acres proposed for acquisition in the Organ Mountains, none are within the Organ Mountains WSA. However, 520 of the 5,000 acres are located immediately adjacent to the WSA. Acquisition of this land would enhance the manageability of the WSA as wilderness.

Livestock Grazing

Dona Ana County

Disposal of 83,302 acres of public land on the East Mesa could have a significant impact on livestock grazing if leases are not granted or renewed. There are 470 animal units (AUs) grazed on these lands in 8 different allotments. Rangeland improvements located on these lands include 2 wells (both base waters), 2 1/4 miles of pipeline, 74 1/2 miles of fence (boundary and interior), 10 dirt tanks (2 base waters), 1 corral, and 1 erosion control structure.

Disposal of 19,379 acres of land on the West Mesa could also have a significant impact if leases are not granted or renewed. There are 119 AUs grazed on these lands in 3 different allotments. Rangeland improvements located on these lands include 16 1/2 miles of fence (boundary and interior) and 3 dirt tanks.

Disposal of 5,791 acres of parcels that are difficult and uneconomical to manage or where interest has been shown would not have a significant impact on livestock grazing. Since they are not concentrated in one area (several are not grazed), loss of AUs per allotment would not be significant. There are 30 AUs grazed on these lands in 7 different allotments. Rangeland improvements located on these lands include 12 miles of fence (boundary and interior), 1 developed spring (base water), and 2 dirt tanks.

Retention of the remainder of Dona Ana County (998,215 acres) which has 7,571 AUs of grazing preference attached would provide existing livestock grazing uses to existing permittees. Rangeland improvements would remain as at the present time.

State Land Exchange Area

Within the State Land Exchange Area, there are 47 AUs grazed in 3 allotments. The Commissioner of Public Lands has stated that current livestock grazing use would be authorized on these lands (See Appendix J). (See the Livestock Grazing section of Chapter 3 for AUs in each allotment.) Rangeland improvements located on these lands include 10 1/2 miles of fence (boundary and interior), 1/4 mile of pipeline, 1 trough (base water) 2 dirt tanks, and 3 concrete erosion control structures. (See the Livestock Grazing section of Chapter 3 for information on each allotment.)

Acquisition of 5,000 acres of State land in the Organ Mountains would affect 57 AUs in 3 different allotments. If this land is acquired

by the BLM, grazing use would be permitted to current holders of State grazing leases. Rangeland improvements located on these lands include 2 3/4 miles of fence (boundary and interior), 3 springs (1 base water), and 5 dirt tanks (1 base water). (See the Livestock Grazing section of Chapter 3.)

Visual Resources

Dona Ana County

Disposal of 108,472 acres of public land would eliminate BLM visual resource management for that land. The land is presently being managed in accordance with the guidelines for VRM Classes shown on Map 3-14. On the East Mesa, BLM control of surface modifications in the Franklin Mountains would be lost. Most of the Franklin Mountains area is currently classified as VRM Class II, which does not allow changes in the landscape that would attract attention.

Retention of the balance of public land (998,215 acres) would allow the continuation of existing visual resource management on that land (see Map 3-14).

State Land Exchange Area

Disposal of the 10,000 acres of public land in the State Land Exchange Area would remove that land from BLM visual resource management control. The land is presently classified as VRM Class III, which allows for evident changes, but the changes should remain subordinate to the existing landscape.

Acquisition of 5,000 acres of State land in the Organ Mountains would give the BLM the authority to manage the visual resources of that land and maintain its high visual quality by controlling surface modifications. None of the 5,000 acres proposed for acquisition are within the Organ Mountains Scenic ACEC.

Social and Economic Conditions

Dona Ana County

The disposal of public land in the County would have a direct impact on Payments in Lieu of Taxes (PILT), Federal AUs, Taylor Grazing receipts, Range Betterment Fund, County tax base, managerial costs, and public attitudes.

For analysis purposes, it was assumed the land would either be exchanged to the State of New Mexico or would be sold to private parties. This presents a range of impacts that could occur between the two extremes. There is also the possibility that private land exchanges could occur, but were not analyzed because of the myriad of proposals that could be presented. Site-specific analysis would occur when an environmental assessment is prepared prior to disposal.

Disposal of 108,472 acres in Dona Ana County would cause PILT to decline by $81,354 which is approximately 9.8 percent of the 1984 PILT payment of $829,414 (U.S. Department of the Interior, BLM 1985b). Other Federal revenue sharing programs that use Federal acreage to determine award amounts would negatively impact the State and County programs dependent on these funds (Advisory Commission on Intergovernmental Relations 1978).

There would be a decrease of approximately 619 AUs which accounts for approximately 7.6 percent of total BLM AUs in the County. Since the State receives 12.5 percent of the grazing fees collected, then approximately $1,253 would be lost. (See Appendix I-3.) This accounts for approximately 6 percent of the $20,762 in Taylor Grazing monies the County received in Fiscal Year 1984 (New Mexico Department of Finance and Administration 1984). Likewise, the BLM Las Cruces District receives funding based on the amount collected from grazing fees for rangeland improvements from the Range Betterment Fund. It is estimated the District would forego approximately $5,000 annually for potential rangeland improvements. (See Appendix I-3.)

There are 17 livestock operators who could be affected under this alternative. These operators could experience a loss of AUs ranging from 1 AU to 159 AUs if they are unable to acquire the lands for their operation. The range of impact would cause 1 operator to experience a reduction of 1 percent of the total operation while another operator would experience a 94 percent reduction of the total operation (U.S. Department of the Interior, BLM 1985d). The livestock inventory and grazing permit value for the particular operations could become negatively affected. Using a 1984 BLM grazing permit value of $1,200 per AU

(Torell and Fowler 1985), the potential impact could range from a loss of $1,200 for 1 AU to $190,800 for 159 AUs.

If the land is acquired by the State of New Mexico, then these operators would incur an increase in grazing fees. It is recognized that the State grazing fee would increase substantially over current rates and would further impact future grazing fees. Those affected operators are presently paying a total of approximately $41,600 for 2,567 BLM AUs which are attached to the 351,700 acres. By using the 1985 grazing fee of $1.35 per animal unit month (AUM), the acreage cost averages approximately 12 cents per acre. The operators would obviously incur an additional expense if they are required to pay the State more than 12 cents per acre for these lands (U.S. Department of the Interior, BLM 1985d).

If the livestock operators desire purchasing public land identified for disposal, for many operators, this could be an additional financial burden to existing debt and operating loans. This could be significant given the unfavorable financial condition of the livestock industry. According to Fowler and Torell (1985), "The long-run trends in net returns to labor, management, and capital invested is unfavorable. In many years, cash costs, depreciation and operator labor and management are barely covered leaving little, if any, to service existing debt and operator loans."

If the disposal of 108,472 acres also includes the mineral estate, then assuming a worst case scenario, the Federal Government could lose approximately $42,600 in oil and gas leases and approximately $36,500 in geothermal leases which the State of New Mexico receives 50 percent. The amount that could possibly be foregone from oil and gas leases represents approximately 5 percent of what was collected in Dona Ana County. Similarly, approximately 47 percent of what was collected for geothermal leases in the County could be lost (U.S. Department of the Interior, BLM 1985e). There is the possibility the operators may experience inconveniences and additional costs when dealing with the new landowner. The Federal Government would also lose potential revenue from royalties paid from potential production. Profits from future mineral materials sales would also be foregone if the minerals were transferred from Federal ownership.

If the State of New Mexico acquires the surface and subsurface estate, then the revenues from leases and royalties would be transferred to the State. The State therefore, could receive at least $79,000 from leases as well as future royalties from production of the leases. Operators may experience inconveniences and additional costs when complying with State regulations.

If the mineral estate is retained by the Federal Government, then development of the minerals could become affected depending on the stipulations the surface owner imposes. The possibility of potential impacts that could occur may include additional costs resulting from surface damages.

The County tax base would expand as private ownership increased. Future tax revenue would depend on the assessed valuation and the mill rates charged. If the lands were classified as grazing lands, the revenue generated using 1985 average mill rates could be approximately $2,466. If the lands were classified as undeveloped land, the revenue generated could be approximately $182,700 (See Appendix I-4). As development occurs and the land classification changes, total tax revenue would increase accordingly.

If the 108,472 acres are acquired by the State of New Mexico, the aforementioned benefits would not be realized if the land remained in State ownership. Potential tax revenues would be lost; there would be a loss of PILT payments of approximately $81,000 in addition to the loss of $1,253 from Taylor Grazing receipts. There would also be a corresponding decrease in Federal revenue receipt sharing programs that use Federal acreage to determine payments (Advisory Commission on Intergovernmental Relations, 1978). Livestock operators would incur an economic burden resulting from increased grazing fees.

If the State of New Mexico sells the lands to private parties then the types of economic impacts similar to those already discussed regarding private ownership impacts would occur; however, the degree of the impacts would be dictated by the actual fair market value and the potential uses of the lands.

It should be noted that a massive sale of lands over a short period of time could have a negative impact on the value of surrounding

lands and could tend to depress land values (Gray and Fowler 1981).

The transfer of 108,472 acres of public land would cause management costs in the Resource Area to decline by approximately $20,175 (4 percent of the 1985 Resource Area budget). However, it is anticipated these costs may increase by approximately 10 percent above 1985 levels for the district as preparation work is completed for the lands transfer. (See Appendix I-2.)

The transfer of public land would cause for mixed reactions from the public depending on the type of land tenure adjustment used. There is the perception that any type of land transfer would have an irreversible impact regarding the preservation of multiple-use values. It is also perceived that existing uses of the land may become affected and could possibly cause unfavorable economic consequences.

If the lands were sold to private parties, current users would obviously become impacted. Looking at one extreme, the users may have negative feelings towards the BLM because the transfer of lands could affect their lifestyle since patterns of use have been established and would be adjusted depending on the new landowner's objectives. Conversely, existing users may regard the opportunity to purchase the lands as a means to separate themselves from the Bureaucratic procedures they have endured over the years. The opportunity to have control over their endeavors may also be perceived as a desirable situation.

If the lands were transferred to the State of New Mexico, public sentiment is such that the potential for growth of Las Cruces could be hampered since the State would have title to those lands on the East Mesa that have potential for possible community expansion. Since it is unknown how long the lands would be held by the State of New Mexico before they are disposed, it is also unknown how long the County would forego potential tax revenue from these lands which would aid in alleviating the loss of PILT payments and reductions in Federal Revenue Receipts Sharing programs. The public is also concerned that the State would only look at the highest and best use of the lands and the possibility exists that generation of revenue would take precedence over protecting multiple-use values.

Retention of 998,215 acres of public land would be favorably perceived by those who are primarily concerned with protecting multiple-use values. Since the Organ Mountains, the Organ Mountains WSA, and the Organ Mountains ACEC would be retained, existing and future uses of these areas would be ensured. These areas would continue to provide recreational and educational opportunities and the natural conditions of the lands would be managed to ensure protection of multiple-use values. The users of the special management areas throughout the County would also benefit from BLM actions ensuring the protection of these lands and their unique characteristics that make them attractive to visit.

State Land Exchange Area

The exchange of 10,000 acres to the State of New Mexico would cause PILT to decline by $7,500 or .9 percent of the 1984 PILT payment of $829,414 (see Appendix I-1). Other Federal Revenue Receipts sharing programs which use Federal acreage to determine award amounts could be affected (Advisory Commission on Intergovernmental Relations 1978).

There would be a decrease of approximately 47 AUs which accounts for .6 percent of total BLM AUs in the County. By using the 1985 grazing fee of $1.35 per AUM, approximately $761 in grazing fees would be lost. As a result of the exchange, three livestock operators would be affected. These operators would be allowed to continue their operations without a decrease in AUs; however, the costs of grazing the newly acquired State lands would be greater than the existing BLM fees. The existing BLM permits would be honored by the State Land Office until the expiration of said permit at which time a State lease would be negotiated with the BLM permittee utilizing State Land Office Rules and Regulations. If the State of New Mexico does not allow the operators to continue their operations at existing levels, then approximately 1 AU for one operator, 20 AUs for another operator, and 26 AUs for the third operator would be affected (U.S. Department of the Interior, BLM 1985d). This could amount to a decrease in the value of the operators livestock inventories. BLM grazing permit values could also be affected by $1,200, $24,000 and $31,200, respectively.

If the mineral estate is retained by the Federal Government, then possible economic impacts could occur resulting from the operators making payment of surface damages to the new landowner as a result of production.

The County tax base would expand as the State of New Mexico provides lands to private parties. If the lands were classified as undeveloped land, then potential tax revenue would be approximately $16,800 (see Appendix I-4). As the lands are developed and the land classification changes, total tax revenue would increase.

The general attitude regarding the exchange ranges from why Dona Ana County was the only County selected to the State's ability regarding management of lands for multiple-use values. Existing users in the area are concerned since many have financial resources at stake. Those who use the area for recreational purposes feel their future recreational opportunities are threatened by the exchange since they could no longer have the opportunity to visit their favorite sites.

The acquisition of the 5,000 acres of State land enhance the manageability of the Organ Mountains Recreation Lands. The public would favorably perceive this acquisition since concern for retention and acquisition of lands for recreational purposes has been expressed (U.S. Department of the Interior BLM 1985c). The newly acquired State lands would not qualify as "entitlement land" for calculation of Payment in Lieu of Taxes (PILT) (31 USC 6902b)(See Appendix I-1). Approximately 57 AUs would be transferred from the State, affecting three operators (U.S Department of the Interior, BLM 1985d).

Alternative III --- Preferred Alternative

Lands

Dona Ana County

The disposal of 71,957 acres of public land on the East Mesa would remove them from the operation of the land laws and multiple-use management by the BLM.

It is assumed by the City of Las Cruces and Dona Ana County that significant growth in Dona Ana County will occur in the Mesilla Valley, east of the Las Cruces City limits, and along U.S. Highway 70. This was concluded because of existing utilities in that area. Based on this assumption, the City, Dona Ana County, the Las Cruces School District No. 2, and other interested individuals have identified potential areas of need for public purposes.

The BLM leases these public purpose areas to qualified applicants (Government and non-profit organizations) for $0.25 per acre per year or patents them for $2.50 per acre under the Special Pricing Program or at a 50 percent reduction for cemeteries and churches or a 10 percent reduction if use will be restricted to members of a particular limited group, such as fraternal and religious groups. These sale prices are determined in accordance with 43 USC 869-1(a) and (c). Should these lands be removed from the operation of the land laws, either by patenting to State or private entities, the Government and non-profit organizations that make use of the R&PP Act would be required to purchase or lease needed lands at the fair market rate. However, prior to the disposal of any public land, the public purpose needs of local Government entities within which the lands are located would be considered on a site-specific basis.

As indicated in the MSA for this planning effort, the total R&PP authorizations in Dona Ana County account for approximately 50 percent of the total R&PP leases/patents in the Las Cruces District 8-County area of jurisdiction. The Las Cruces/Lordsburg Resource Area receives an average of eight R&PP applications per year. Ninety-five percent of these requests are for locations within Dona Ana County.

The disposal of 3,936 acres of public land on the West Mesa would remove them from the operation of the land laws and multiple-use management by the BLM.

As these lands were identified by the public and local city, County, and State Governments for potential disposal, it is assumed that these Governmental agencies have planned potential development without the benefit of the R&PP Act.

The disposal of 5,791 acres of public land that are uneconomical to manage, do not have sufficient multiple-use values to warrant their retention, were identified by individuals, or were previously designated small tract areas based on an expressed need of the community

would not impact the multiple-use management of the remaining public land by the BLM.

The retention of the remaining 1,025,003 acres of public land in Dona Ana County would not alter the existing land resource base or the multiple-use management of those lands.

The retention of the Franklin Mountains (8,480 acres) for endangered plant, recreation, and visual resources and the Dona Ana Recreation Area (2,865 acres) for recreation resources would not alter the existing land resource base or the multiple-use management of those lands.

The acquisition of 41,001 acres of private and State lands identified by the BLM and by the public, within and adjacent to special management areas would increase the public land acreage and help block-up public land, but would not impact the land resource.

State Land Exchange Area

The disposal of up to 10,000 acres of public land identified by the State of New Mexico in application NM 61209 for possible exchange would remove those lands from the multiple-use management of the BLM.

It is assumed by the City of Las Cruces and Dona Ana County that significant growth in Dona Ana County will occur in the Mesilla Valley, east of the Las Cruces City limits, and along U.S. Highway 70. This was concluded because of existing utilities in that area. Based on this assumption, the City, Dona Ana County, the Las Cruces School District No. 2, and other interested individuals have identified potential areas of need for public purposes. There are 340 acres within the 10,000-acre disposal area that would be set aside and retained by the Federal Government for future public purpose uses as proposed by certain Government entities.

The one existing R&PP lease, NM 0559218 Dona Ana County-Butterfield Park Landfill and the two pending R&PP lease applications, NM 52173 Las Cruces Christian Church and NM 57117 Dona Ana County-Hacienda Acres Park, would be retained by the BLM within the proposed exchange area. Also retained would be the areas under claims for sand and gravel.

The acquisition of 5,000 acres of State land in the Organ Mountains would increase the public land acreage and would help block-up public land, but would not impact the land resource.

Access

Dona Ana County

The Dona Ana County Transportation Plan considered access to all public land within the County. Therefore, the areas identified for disposal and retention have already been addressed from a standpoint of access needs.

The acquisition of 41,001 acres of private and State lands identified by the BLM and by the public within and adjacent to special management areas would not require any additional access and would in most instances improve the access situation in these areas.

State Land Exchange Area

The disposal of 10,000 acres of public land identified by the State of New Mexico in application NM 61209 for possible exchange would not remove any access that is required for the multiple-use management of the public land.

Access would not be reserved to the 340 acres that would be set aside and retained by the Federal Government for future public purpose uses.

The acquisition of 5,000 acres of State land in the Organ Mountains would not require any additional access. Existing access is adequate for the multiple-use management of these lands.

Geology and Minerals

Dona Ana County

The 81,684 acres of land designated for disposal under this alternative include two areas with conceivably important mineral resources. Low temperature geothermal energy exists in a continuous band traversing the County along the east side of the river valley. This resource has been determined to be capable of at least direct use, and has been relatively well defined geographically having 27 leases and over 38,000 acres leased. Coincidently, good quality sand and gravel deposits follow the same course as the geothermal, with several areas having been in production for years. Locatable minerals are

generally found along the slopes of the Organ and Franklin Mountains, both of which are recommended for retention under this alternative. The remaining disposal areas determined to be difficult to manage, or where interest has been shown lie generally along the river valley and have potential for saleable mineral production, although none are in high production areas. The area around the Las Cruces/Crawford Airport has a large number of acres under oil and gas lease; however, no discoveries have been made.

If the mineral estate is exchanged with the surface, public exploration and development of the mineral resources would be encumbered or lost.

If valid mining claims exist on the lands, the mineral estates would not be exchanged. If leases were present, the mineral rights would be retained in Federal ownership until the expiration of the lease, at which time the mineral rights would pass to the new mineral right owner. If the leased land were being used in production, the lease would be renewed until production ceased and the lease expired.

The areas designated for retention (totaling 1,025,003 acres) would not be subject to surface or mineral exchange, and therefore current management procedures would continue and no impacts would occur.

The 41,001 acres of land designated for acquisition contain three areas of potential mineral value. The lands around the West Potrillo Mountains are in an area believed to be conducive to the retention of oil and gas, and in fact, contain many acres under lease. The inclusion of much of this land in the West Potrillo Mountains, Mount Riley, and Aden Lava Flow WSAs could limit their availability for exploration.

The Rio Grande riparian area and the Old Refuge could be valuable as mineral material sites, but sales would probably be denied because of their wildlife values.

The private land in Kilbourne Hole could have value in terms of geothermal leasing, although currently there are no active leases in the surrounding area.

State Land Exchange Area

The 10,000 acres designated for disposal in the proposed State Land Exchange Area contain both sand and gravel deposits of economic value and a geothermal resource capable of at least direct use. These areas occupy the same geographical location within the considered lands, forming a band approximately 2 miles wide, quartering across the southwest corner of the block.

The proposed exchange provides for the mineral estates to be maintained in current ownership, and therefore, no immediate impacts should occur. Because of the extensive surface use in both sand and gravel extraction and geothermal development, significant conflicts could arise between the surface owner and the mineral extractor, in that in both cases the mineral extractor has a right to use as much of the surface as necessary to develop the resource. If surface development encroaches on the sand and gravel deposits, their development and sale may be denied through a site-specific evaluation and environmental assessment.

The 5,000 acres in the Organ Mountains designated for acquisition would not involve transfer of the mineral estate. Mineral development would then involve a leasing process among the Federal Government, State Government, and the mineral extractor.

Soils

Dona Ana County

The 81,684 acres of land designated for disposal under the Preferred Alternative, include lands on the East Mesa, lands east of the Las Cruces/Crawford Airport, and difficult and uneconomical land to manage or where interest has been shown throughout the County. Impacts to the soils created by actions under this alternative, generally affect these areas equally. Loss of surface management responsibilities by the BLM would not immediately change surface use and therefore, no impacts would result affecting soil quality or condition. Approximately 19 study sites used for the Desert Soil-Geomorphology Project are on the areas proposed for disposal, this would not longer be protected under cooperative agreement.

The retention of special management areas and lands with critical resources would not affect the soils, providing current management procedures are continued.

The lands identified for acquisition would not be subject to significant management changes if transferred into Federal ownership, therefore, impacts to the soils would be negligible.

State Land Exchange Area

The disposal of up to 10,000 acres of public land in the proposed State Land Exchange Area, would have no significant impacts on the soil resource, assuming no significant change in surface use or management. The two soil study pits used for the Desert-Soil Geomorphology Project would no longer be protected under cooperative agreement.

Acquiring the 5,000 acres of State land in the Organ Mountains would have no significant impact to the soil resource in these areas.

Water Resources

Dona Ana County

The 81,684 acres identified for disposal under this alternative overlie the Lower Rio Grande ground water basin; however, no actions required by the alternative would affect the basin's water quality or quantity. The Jornado del Muerto and Rio Grande surface water basins are also found in part on the disposal lands. Water in these surface basins would be unaffected by title transfer, in that the BLM currently has no ownership or maintenance responsibilities of diversion or retention structures in the disposal areas. All permitted structures are maintained by the permittees. Surface waters in the disposal areas originate as ephemeral drainage, which would not be impacted by land tenure adjustment.

The retention of 1,025,003 acres comprising special management areas and areas with critical resources, would have no affect on water resources. Since these areas would remain in Federal ownership, current management procedures would continue.

Acquisition of lands described under this alternative would create no impacts to surface or ground waters, in that Federal management procedures would not significantly affect present conditions.

The consolidation or "block up" of public land would aid in the planning of and acquiring easements for watershed improvement projects.

State Land Exchange Area

The 10,000 acres designated for disposal in the proposed land exchange overlie the Lower Rio Grande ground water basin. Exchange would not affect this basin or the quality or quantity of its water.

Surface waters are ephemeral in nature and their quality and quantity would likewise be unaffected by land tenure adjustment. Occasional flooding occurs in the ephemeral streambeds (arroyos), but the Rio Grande floodplain and City of Las Cruces are protected from flooding from this area by the Las Cruces Dam. The BLM has no ownership or maintenance responsibility for water diversion or retention structures on the considered lands, so no impact would result from title transfer.

The 5,000 acres of State land designated for acquisition in the Organ Mountains originate runoff into many of the arroyos on the East Mesa. Federal acquisition of these areas would not impact surface or ground water on them or the surrounding areas.

Vegetation

Dona Ana County

The disposal of 71,957 acres of public land on the East Mesa would have little impact on the vegetation resources. These lands would no longer come under management and protection by the BLM. The cactus species, Opuntia arenaria (sand prickly pear), a candidate species proposed for listing would no longer be under management control of the BLM through disposal of lands on the East Mesa.

The disposal of 5,791 acres of public land that is difficult and uneconomical to manage or where interest has been shown and 3,936 acres on the West Mesa would not have a significant impact on vegetation and its uses. If three of these parcels were disposed of, O. arenaria (sand prickly pear) and its habitat would no longer be under management control of the BLM.

Retention of 1,013,658 acres of public land in the County would give BLM protection and management for the vegetation resource and all existing threatened, endangered, candidate, or sensitive plant species.

Retention of 8,480 acres in the Franklin Mountains would grant protection for the Federally-listed species, Corypantha sneedii var. sneedii (Sneed's pincushion cactus) and its habitat. Retention of 2,865 acres in the Dona Ana Mountains would also give BLM protection and management to the vegetation resources.

The acquisition of 37,568 acres in and adjacent to special management areas and the 3,433 acres for management programs by the BLM would form blocks of public land which would be more easily managed. These would provide habitat and protection for vegetation, its uses, and the Federal and State-listed plant species in these areas.

State Land Exchange Area

Within the State Land Exchange Area, the 10,000 acres on the East Mesa would be removed from BLM multiple-use management and protection. There are several large arroyos with unique vegetation which provide habitat for wildlife species and could provide an educational experience (i.e., birdwatching, field trips, outdoor classroom etc.) for the general public.

Acquisition of 5,000 acres in the Organ Mountains would provide Federal protection for the vegetation and several threatened, endangered, candidate, and sensitive plant species. (See Appendix C.)

Wildlife

Dona Ana County

Disposal of public land on the East Mesa would result in the loss of management opportunities for the BLM for an estimated 30 percent of the arroyo-riparian habitat type remaining on public land in the County.

As much as 300 acres of the public land that is designated as difficult and uneconomical to manage or where interest has been shown (5,791 acres) is wetland or riparian in character and represents about 30 percent of the riparian habitat (930 acres) remaining in BLM ownership in Dona Ana County.

The proposed retention areas include all big game herd unit areas and the quail management area within Dona Ana County.

Acquisition of lands in the Rio Grande riparian area and the Old Refuge would bring a potential total of 2,793 acres of critical riparian habitat into public land management so that there would be an opportunity to improve the ecological condition and habitat value of those areas.

State Land Exchange Area

Table 3-4 shows the acreages of various habitat types which would be removed from public land management, including 800 acres of arroyo-riparian habitat.

Acquisition of 5,000 acres of State land in the Organ Mountains would improve opportunities for the BLM for habitat management of the White Sands deer herd. However, development of a habitat management plan for the Organ Mountains area is a low priority within the Las Cruces District.

Recreation

Dona Ana County

Disposal of 71,957 acres of public land on the East Mesa could generally eliminate recreation opportunities on that land unless ownership was transferred to another Federal agency, a State agency, or a City or County Government that would maintain the opportunities. The Isaack Lake area and the Mossman Arroyo Open Intensive ORV area would be lost from management control by the BLM. These areas presently provide recreation opportunities for hiking, nature study, ORV use, and general leisure. Other dispersed recreation opportunities on the East Mesa that would be lost from management control by the BLM are rock and mineral collection, hunting, and shooting.

Disposal of 3,936 acres of public land on the West Mesa would remove that land from management control by the BLM for dispersed recreation activities such as hiking, ORV use, nature study, picnicking, shooting, and general leisure. The Airport Open Intensive ORV area would be lost from management control by the BLM.

Disposal of 5,791 acres of public land that is difficult and uneconomical to manage or where interest has been shown would remove that land from management control by the BLM for dispersed recreation activities but would not significantly affect recreation resources.

Retention of the balance of public land in Dona Ana County (1,025,003 acres) would allow the continuation of existing recreation opportunities on that land. On the East Mesa, retention of the OMRLs, the Dona Ana Recreation Area, and the Franklin Mountains would ensure the public availability of the recreation opportunities in those areas as described in the Recreation section of Chapter 3.

Acquisition of 18,488 acres in the Organ Mountains would very significantly enhance effective management of the recreation resources in that area and add to the public recreation opportunities described for the area in the Chapter 3 Recreation section. Management control of these lands by the BLM would ensure their availability for high quality recreation experiences. Consolidation of public land ownership in the Organ Mountains would form blocks of public land that could be more easily managed. Acquisition of the 320 acres of private land within the Kilbourne Hole NNL would greatly enhance the manageability of that special management area. Acquisition of lands in the Rio Grande riparian area, the Old Refuge area, and the Franklin Mountains would provide additional public recreation opportunities in those areas.

State Land Exchange Area

Disposal of the 10,000 acres of public land in the State Land Exchange Area could eliminate most recreation activities on that land because recreation use of State land is at the discretion of the State and the livestock lessees. However, hunting would continue to be allowed during established seasons. The area currently provides opportunities for recreational ORV use, hiking, and shooting. The Alameda Arroyo Open Intensive ORV Area would be lost from management control by the BLM.

Acquisition of 5,000 acres of State land in the Organ Mountains would greatly enhance the management of the recreation resources in that area and add to the public recreation opportunities described for the OMRLs in the Recreation section of Chapter 3.

Cultural Resources

Dona Ana County

Disposal of 71,957 acres of public land on the East Mesa would mean that 35 previously recorded sites, as well as an estimated 1,000 unrecorded sites, would be removed from management by the BLM. This would include Archaic and Jornada Mogollon camp sites on the mesa.

Disposal of 9,727 acres of public land (3,936 acres on the West Mesa, and 5,791 difficult and uneconomical to manage or where interest has been shown) would mean that 36 previously recorded sites, as well as an estimated 150 unrecorded sites, would be removed from management by the BLM. This would include the Rincon Quarry Site.

Retention of 1,025,003 acres of public land in the County would ensure that 819 previously recorded sites, as well as an estimated 15,000 unrecorded sites, would continue to be managed by BLM. The 819 includes the Hilley Folsom Site, the Gow Site (El Paso Phase), and the Hatch Mimbres Site. Palm Park Quarry and Painted Cave are two significant sites among those as yet unrecorded.

Because there has been little archaeological work done in the Franklin Mountains, no sites have been recorded in the 8,480-acre parcel recommended for retention. It is estimated that there are 100 unrecorded sites in this parcel which could be retained in management by BLM.

Acquisition of 37,568 acres of land in parcels adjacent to Special Management Areas would allow BLM to manage 14 previously recorded sites, as well as an estimated 600 unrecorded

sites. Because this land currently belongs to private individuals or to the military, very few sites have been recorded. Unrecorded sites which are generally well-known include Dripping Springs Resort, Pena Blanca, La Cueva, Stevenson Bennett Mine, and ranches in Soledad Canyon. Further archaeological surveys in these parcels could contribute significant information about prehistoric subsistence and exploitation of mountain zone resources.

Acquisition of 640 acres in the Franklin Mountains and 2,793 acres along the Rio Grande from management programs by the BLM would add 16 previously recorded sites, as well as an estimated 40 unrecorded sites, to management by the BLM. Habitation sites in or along the margins of the valley, if located, could provide significant information about sedentary adaptive strategies.

With respect to site patrol and surveillance, consolidation of public land would offer one distinct advantage. Archaeological sites in a large block of land could be patrolled more often (for the same expenditure of time) than sites in small parcels scattered over a much larger area.

State Land Exchange Area

Disposal of 10,000 acres of public land on the East Mesa would mean that 18 previously recorded sites, as well as an estimated 50 unrecorded sites, would be removed from management by the BLM. The 18 recorded sites include such unique sites as the Pat Garrett Murder Site and the Scott Haul Historic Wagon Road.

Acquisition of land in the Organ Mountains area has the potential of protection and managing sites which are not well represented in this District. These sites, which could include prehistoric rock shelters as well as open sites, could contribute significant information about prehistoric subsistence and exploitation of mountain zone resources. Five sites have been recorded in the 5,000 acres, and it is estimated that there may be 75 sites which have not been recorded.

Wilderness

Dona Ana County

The proposed disposal of 81,684 acres of public land would not significantly affect the wilderness values of any of the six WSAs in Dona Ana County.

Retention of the balance of public land (1,025,003 acres) including the six WSAs would allow the continuation of existing management in the WSAs to prevent impairment of wilderness values.

Acquisition of 19,405 acres in and immediately adjacent to the six WSAs would very significantly enhance the manageability and wilderness values of the WSAs and contribute greatly to their capability of being managed as wilderness in the long-term. These acquisitions would provide the BLM with management control of the WSAs to prevent nonwilderness or incompatible uses that would impair wilderness values. Consolidation of public land ownership in the WSAs would form blocks of public land that could be more easily managed.

State Land Exchange Area

Disposal of the 10,000 acres of public land in the State Land Exchange Area would not significantly affect the wilderness values of any of the six WSAs.

Of the 5,000 acres proposed for acquisition in the Organ Mountains, none are within the Organ Mountains WSA. However, 520 of the 5,000 acres are located immediately adjacent to the WSA and acquisition of this land would enhance the manageability of the WSA.

Livestock Grazing

Dona Ana County

Disposal of 71,957 acres of public land on the East Mesa would have a significant impact on livestock grazing if leases were not granted or renewed. There are 388 animal units (AUs)

grazed on these lands in 8 different allotments. The major portions of all 8 allotments would be subject to a lease agreement instead of the privileges granted by the BLM. Rangeland improvements located on these lands include 2 wells (both base waters), 2 1/4 miles of pipeline, 58 miles of fence (boundary and interior), 10 dirt tanks (2 base waters), 1 corral, and 1 erosion control structure.

Disposal of 5,791 acres of parcels that are difficult and uneconomical to manage or where interest has been shown and 3,936 acres on the West Mesa would not have a significant impact on livestock grazing. Since they are not concentrated in any one area (several are not grazed), loss of AUs per allotment would not be significant. There are 59 AUs grazed on these lands in 9 allotments. Rangeland improvements located on these lands include 17 miles of fence (boundary and interior), 6 dirt tanks, and 1 spring (base water).

Retention of the remainder of Dona Ana County (1,025,003 acres) which includes 7,743 AUs would guarantee existing livestock grazing uses to the permittees. Rangeland improvements would remain as at the present time.

Grazing would continue as at present in the 8,480 acres in the Franklin Mountains and 2,865 acres in the Dona Ana Mountains which would be retained and set aside for other compatible uses. Rangeland improvements would remain as at the present time.

The acquisition of 37,568 acres in and adjacent to special management areas and the 640 acres in the Franklin Mountains would form blocks of public land which would more easily be managed. Livestock grazing would continue with 241 AUs grazed on 13 different allotments. Rangeland improvements located on these lands include 11 3/4 miles of fence (boundary and interior), 10 wells (8 base waters), 5 dirt tanks (3 base waters) and 4 springs (2 base waters) would remain as at the present time.

The 2,793 acres to be acquired primarily for wildlife and riparian purposes would probably not be grazed after it is acquired. These are not allotted areas since they are in private ownership and are not part of a grazed allotment.

State Land Exchange Area

Within the State Land Exchange Area, there are 47 AUs grazed in 3 allotments. The Commissioner of Public Lands has stated that current grazing use would be authorized on these lands (See Appendix J). (See the Livestock Grazing section of Chapter 3 for AUs in each allotment.) Rangeland improvements located on these lands include 10 1/2 miles of fence (boundary and interior), 1/4 mile of pipeline, 1 trough (base water), 2 dirt tanks, and 3 concrete erosion control structures. (See the Livestock Grazing section of Chapter 3 for information on each allotment.)

Acquisition of 5,000 acres of State land in the Organ Mountains would affect 57 AUs in 3 different allotments. If this land is acquired by the BLM, grazing use would be permitted to the current holders of State grazing leases. Rangeland improvements located on these lands include 2 3/4 miles of fence (boundary and interior), 3 springs (1 base water), and 5 dirt tanks (1 base water). (See the Livestock Grazing section of Chapter 3.)

Visual Resources

Dona Ana County

Disposal of 81,684 acres of public land would eliminate BLM visual resource management for that land. The land is presently managed in accordance with the guidelines for VRM Classes shown on Map 3-14.

Retention of the balance of public land (1,025,003 acres) would allow the continuation of existing visual resource management on that land (see Map 3-14). On the East Mesa, retention of the Franklin Mountains would allow continued BLM control of surface modifications in that VRM Class II area.

Acquisition of 41,001 acres would give BLM the authority to manage the visual resources of those lands. Most of the lands are located in or adjacent to existing special management areas classified as VRM Class II, which does not allow changes in the landscape that would attract attention. Acquisition of the lands would significantly assist in maintaining the high visual quality of these areas by providing control of surface modifications.

Consolidation of public land ownership would form blocks of public land that could be more easily managed. Of the 41,001 acres proposed for acquisition, 450 acres are within the Organ Mountains Scenic ACEC. Acquisition of these lands would significantly enhance effective management of the ACEC by providing control of surface modifications on all land within the ACEC boundary.

State Land Exchange Area

Disposal of the 10,000 acres of public land in the State Land Exchange Area would remove that land from BLM visual resource management control. The land is presently classified as VRM Class III, which allows for evident changes, but the changes should remain subordinate to the existing landscape.

Acquisition of the 5,000 acres of State land in the Organ Mountains would give the BLM the authority to manage the visual resources of that land and maintain its high visual quality by controlling surface modifications. None of the 5,000 acres proposed for acquisition are within the Organ Mountains Scenic ACEC.

Social and Economic Conditions

Dona Ana County

The disposal of 81,684 acres in Dona Ana County would cause Payments in Lieu of Taxes (PILT) to decline by approximately $61,263 or approximately 7.4 percent of the 1984 PILT payment (U.S. Department of the Interior, BLM 1985b). Other Federal Revenue sharing programs may become affected as a result of the decrease in Federal acreage within the County.

The total number of BLM AUs in Dona Ana County would decline by 5.4 percent. The State could ultimately forego approximately $905 from distribution of Taylor Grazing receipts shared (see Appendix I-3). This amount represents approximately 4.4 percent of what the County received from Taylor Grazing monies during Fiscal Year 1984.

There are 17 livestock operators who would be affected under this alternative. These operators could experience a loss of AUs ranging from 1 AU to 138 AUs if they are unable to acquire the lands for their operation. The range of impact would include 1 operator experiencing a reduction of 1 percent of the total operation while another operator would experience a 94 percent reduction of the total operation (U.S. Department of the Interior, BLM 1985d). The associated permit values could decline by a range of $1,200 to $165,600 and could be significant depending on the operators total indebtedness.

If the land is acquired by the State of New Mexico, then the operators may incur an additional expense in the form of higher grazing fees. The operators are presently paying approximately $23,927 for 1,477 BLM AUs. These AUs are attached to approximately 225,296 acres equalling approximately 10.6 cents per acre (U.S. Department of the Interior, BLM 1985d). If the State of New Mexico charges more than this amount, then the operators would obviously experience a negative impact. The operators could also experience a financial strain to existing debt and operating loans if they pursue acquisition of lands identified for disposal.

If the disposal of 81,684 acres in Dona Ana County also includes the mineral estate, then, theoretically, approximately $36,463 in geothermal leases could be lost annually, of which the State of New Mexico receives 50 percent (U.S. Department of the Interior, BLM 1985e). The oil and gas leases would not be affected on the West Mesa under this alternative since the leases are all outside the boundary identified for disposal; however, for the remainder of the County, approximately $22,348 in annual oil and gas leases could be lost. The amount that could be lost from geothermal and oil and gas leases represents approximately 47 percent of what was collected in the County for geothermal leases, and 2.5 percent of what was collected from oil and gas leases for the County (U.S. Department of the Interior, BLM 1985e). It is possible that inconveniences and additional operating costs may be experienced when operators are dealing with the new landowners. The Federal Government could also lose revenues and royalties from potential production. Profits from future mineral materials sales could also be lost if the minerals were transferred from Federal ownership.

If the State of New Mexico acquires the surface and subsurface estate, then revenues derived from leases and royalties would accrue to the

State. The State could receive approximately $58,800 from leases which represents approximately 6 percent of leases within the County, as well as future royalties from production and revenues from mineral materials sales (U.S. Department of the Interior, BLM 1985a). Operators may experience inconveniences and additional operating costs when dealing with the State's regulations and procedures.

If the mineral estate is retained by the Federal Government, then development of the minerals could become affected depending on the stipulations the surface owner imposes. The possibility of potential impacts may also include additional operating costs to mitigate surface damages during production.

If the lands were classified as grazing, the estimated tax revenue generated using 1985 average mill rates could be approximately $1,857; if the lands were classified as undeveloped land, revenue generated could be approximately $137,570 (See Appendix I-4). It is recognized that actual revenue generated from property taxes depends on the actual valuation of the lands which would be determined during the appraisal process and the ultimate use of the land.

It should be noted that a massive sale of lands over a short period of time could have a negative impact on the value of surrounding lands and could tend to depress land values (Gray and Fowler 1981).

The transfer of 81,684 acres could cause BLM management costs to decline by approximately $9,400 (1.7 percent of the Resource Area budget). However, it is estimated managerial costs may increase by approximately 7.8 percent above the Las Cruces District Fiscal Year 1985 budget, as the preparation work is completed for the lands transfer. (See Appendix I-2.)

The transfer of public land from Federal ownership could be perceived by the public as an irreversible impact regarding its availability for multiple-use purposes. Any existing and potential users of these lands could experience unfavorable economic consequences. Current users may have to deal with the new private or State landowner, while potential users may not have the same opportunity to use the lands if they are not in Federal ownership. Existing users of the land could also have the opportunity to purchase the land they use which could allow them to have total control over their endeavors.

There is strong feeling regarding State ownership of land that has potential for possible community expansion of Las Cruces. Many feel it would be in the best interest of the public if the lands remained in Federal ownership and disposed of as the community expands. Others feel the State may have control over the future growth of Las Cruces. There is also equal concern regarding the State's objective regarding the highest and best use of the land. It is perceived that economic returns from the lands may take precedence over the natural resource values (U.S. Department of the Interior, BLM 1985c).

The retention of 1,013,658 acres of public land for multiple-use values and selected special management areas, the 2,865 acres in the Dona Ana Recreation area, as well as the 8,480 acres in the Franklin Mountains, would be favorably perceived by those who have an interest in the management and use of the public domain and are concerned with protection of multiple-use values. These lands would continue to play a role in the economic, recreational, educational, and social well-being of all who use them.

The acquisition of 41,001 acres of State and private lands could cause PILT to increase by approximately $8,852 due to the acquisition of the 11,803 acres of private land which would qualify as "entitlement lands". Approximately 19,400 acres of State land would not qualify as "entitlement land" for calculation of PILT (31 USC 6902b). (See Appendix I-1.) Conversely, estimated tax revenue generated could decline by a range of $268 if the private land is classified as grazing to approximately $19,900 if the private land is classified as undeveloped (see Appendix I-4).

Approximately 133 AUs from State land and 108 AUs from private land are identified for acquisition. This could cause Taylor Grazing Receipts to increase by approximately $3,904. The distribution of Taylor Grazing Receipts distributed to the State of New Mexico could increase by approximately $488. Monies for the

Range Betterment Fund could increase by approximately $1,950. The acquisition of private AUs could affect the ranch value of at least two operators since the private AUs comprise 28 percent and 30 percent of the total operation for each operator. A standard rule of thumb used by professional ranch brokers, appraisers, and bank credit officers is that leased land is worth approximately 1/3 the value of deeded grazing land (Torell and Fowler 1985). The average ranchland values for the Southwest region of New Mexico which includes Dona Ana, Luna, Hidalgo, and parts of Grant and Sierra Counties for 1984 was $3,925 for 100 percent deeded land, $2,110 for 1/2 deeded, 1/2 permit land, and $1,292 for permit ranches (Torell and Fowler 1985). The transfer of State leases to BLM permits would not significantly change the associated grazing permit values. Torell and Fowler (1985) estimated that the overall 1984 AU value estimated for the U. S. Forest Service, BLM, and State permits were not statistically different at the 5 percent level of probability. "This indicates no apparent price discrimination or price advantage for one type of permit over another" (Torell and Fowler 1985).

If the lands are acquired by exchange with a private landowner, then it is presumed an equitable economic exchange would occur. If the lands are purchased by the Federal Government, then any existing uses of the land which generate economic benefits for the user could be threatened depending on the future management of these lands. Actual site-specific analysis which would outline the methodology and the types of impacts that could occur would be prepared prior to the acquisition. Since approximately 74 percent of Dona Ana County is public land and many in the surrounding area use the lands on a regular basis, any attempt to consolidate the land status under BLM ownership could be favorably perceived by the public.

BLM managerial costs resulting from acquiring the lands are estimated to be approximately 1.4 percent of the Resource Area's 1985 budget. Since the acquisition of these lands would consolidate the public land, the management for multiple-use purposes would be enhanced.

State Exchange Land Area

The exchange of 10,000 acres to the State of New Mexico would cause PILT to decline by approximately $7,500 which is .9 percent of the 1984 PILT payment of $829,414. Approximately 47 BLM AUs would be affected. This represents approximately .6 percent of total BLM AUs in the County. The State would lose approximately $95 from the distribution of the grazing fees collected. This amount represents approximately .4 percent of what the County received from Taylor Grazing monies during Fiscal Year 1985. Using the 1985 grazing fee of $1.35 per AUM, approximately $761 would be foregone by the Federal Government.

The exchange would affect three livestock operators. If the operators would be allowed to continue their operations without a decrease in AUs, the grazing fees on the State land would be greater than what the operators are presently paying. These operators are presently paying approximately $6,950 for 429 BLM AUs. These AUs are attached to approximately 50,800 acres. The average cost per acre of these lands is approximately 13.6 cents per acre (U.S. Department of the Interior, BLM 1985d). As previously mentioned, if the State grazing fee per acre is greater than this amount, the operators would obviously experience an increased economic cost. The existing BLM permits would be honored by the State Land Office, until the expiration of said permit at which time a State lease would be negotiated with the BLM permittee utilizing State Land Office rules and regulations. If the State of New Mexico does not allow grazing, then these operators could experience a decrease in their herd size ranging from 1 AU (.3 percent of the operation, to 20 AUs (8 percent of the operation), to 26 AUs (17 percent of the operation). This could have an effect on the value of the operators livestock inventory. The grazing permit value could also be decreased by a range of $1,200 for one operator to $24,000 for another operator, and $31,200 for the third operator, and may be significant depending on the operators total indebtedness.

Since approximately 6,400 acres of subsurface estate are authorized oil and gas leases and approximately 3,500 acres are geothermal

leases, there is the possibility that potential development of these leases may result in inconveniences if exploration and development occurs. This could have an effect on the exploration and development costs depending on what the surface owner stipulates regarding surface damages. There is also the possibility that extraction of sand and gravel deposits could cause inconveniences and additional costs since the mineral extractor would be required to deal with the new landowner and the required stipulations regarding surface damages.

The County tax base would expand as the State of New Mexico sells land to private parties. If the lands were classified as undeveloped, then potential tax revenue could be approximately $16,800. (See Appendix I-4.) As the lands are developed and the land classification changes, tax revenue generated would increase accordingly.

If the State of New Mexico retains ownership of the 10,000 acres, then the County would not realize any of the abovementioned economic benefits. This would be in addition to the decrease in PILT and Taylor Grazing receipts. The County would experience these economic disadvantages until the State sells the land to private parties.

The public attitude regarding the disposal of the 10,000 acres involves a certain degree of uncertainty. The public is concerned about the intentions of the State of New Mexico after they receive title to the lands (U.S. Department of the Interior, BLM 1985c). If any development would occur on the East Mesa, any change in current land use would be determined by State Land Office Rules and Regulations Rule No. 8.002 (see Appendix J). As mentioned previously in the document, many feel the generation of revenue for the State may take precedence over natural resource values. Some residents are also concerned about why Dona Ana County was the only County selected for this type of exchange. Others have an interest in the State's ability to manage lands for multiple-use values. Any form of development in the area is perceived to have an impact on the physical characteristics of the land as well as to the rural values of residents in the area. Many residents have a deep appreciation for the open and natural spaces and feel these values could be threatened for the pecuniary benefit of a select few.

The acquisition of the 5,000 acres of State land would enhance the managability of the Organ Mountains Recreation Lands. The public would favorably perceive this acquisition since concern for retention and acquisition of lands for recreational purposes has been expressed. There would be approximately 57 AUs transferred from the State which would affect three operators (U.S. Department of the Interior, BLM 1985d). The acquired State land would not be qualify as "entitlement" land for Payment in Lieu of Taxes (31 USC 6902b). (See Appendix I-1.)

CHAPTER 5
PUBLIC PARTICIPATION AND COORDINATION

PUBLIC PARTICIPATION AND COORDINATION

INTRODUCTION

This chapter summarizes the consultation and coordination conducted in preparation of the Draft Southern Rio Grande Plan Amendment/ Environmental Impact Statement (SRGPA/EIS). In the course of preparing this document, formal and informal efforts have been made to involve the public, other Federal agencies, and State and local Governments in the planning process. Several points of public involvement are mandated by regulations and were complied with, but numerous other actions were taken to further involve the public.

Prior to the actual writing of the document, an involved process of data gathering and other preparatory activities occurred. This process included inventory, public participation, interagency coordination, and preparation of a Management Situation Analysis (MSA). The MSA, as well as documentation of consultation and coordination efforts, are on file in the Las Cruces District Office.

The Draft SRGPA/EIS was prepared by an interdisciplinary team of resource specialists from the Las Cruces District Resource Management Staff and Las Cruces/Lordsburg Resource Area. Table 5-1 lists the names and qualifications of each team member.

PUBLIC PARTICIPATION

The planning process began in August 1985 with publication of a Notice of Intent to do a Planning Amendment and Notice of Realty Action to do a Land Exchange in the Federal Register (Volume 50, No. 153, Thursday, August 8, 1985, pages 32116-32117).

Several meetings were held in August 1985 with Las Cruces City officials, Dona Ana County Commissioners, New Mexico State University officials, and members of the Las Cruces Office Congressional delegation to gather information concerning their desires and plans. In addition, BLM and State Land Office representatives were invited to the Dona Ana County Commission Meeting in August to present a workshop on the exchange proposal.

On August 23, 1985, a scoping report was sent to approximately 800 individuals, State and Federal agencies, units of local Government, organizations, and members of private industry. Included in the report were the preliminary planning criteria which had been identified by the BLM and the proposed schedule for preparation of the SRGPA/EIS. The public was asked to evaluate the proposed criteria and to identify any significant concerns related to the land tenure adjustment issue that should be addressed in the amendment. These comments and concerns were due back to the BLM by September 23, 1985. A postage-paid comment/response form was provided with the report for the convenience of those who wanted to respond. As of September 30, 1985, 11 letters were received by the District in response to the call for comment. The letters included 3 from individuals, 2 from organizations, 2 from Federal Government, 2 from City Government, and 2 from New Mexico State Government. In response to the booklet, 61 individuals, groups, or agencies returned the comment form with official comments. Thirty-three returned the form with no comment but indicated a desire to remain on the mailing list. Twenty returned the form requesting that they be removed from the mailing list.

On September 10, 1985, a meeting/workshop of the Las Cruces District Advisory Council was held to discuss the SRGPA/EIS and to obtain information from the Council on the planning criteria and the basis for alternative formulation. Eleven individuals, other than the five board members, attended. Special invitation was extended to local and regional Governmental agencies. Those in attendance included representatives from the City of Las Cruces, Dona Ana County, Congressman Joe Skeen's Office, New Mexico State Land Office, and the El Paso Water Utilities Public Service Board.

In addition to sending the scoping booklet, the District held two public meetings. The public meetings were held at 1:30 p.m. and 7:00 p.m. on September 12, 1985 at the Las Cruces District Office. BLM personnel were available to explain the land tenure adjustment issue and

associated planning criteria, and to discuss the concerns of those in attendance. Approximately 50 people attended the afternoon session, and 14 attended the evening session. In addition to the general public and concerned East Mesa residents, the following special interest groups were represented: local ranchers, City and County Government, Las Cruces Public Schools, Congressional Representatives, New Mexico Department of Agriculture, Mesilla Valley Audubon Society, White Sands Missile Range, State Land Office, El Paso Water Utilities Public Service Board, Moongate Water Company, Dona Ana County Associated Sportsmen, New Mexico Research Institute, and the El Paso Wilderness Park Coalition.

In November 1985, a letter containing the formally approved planning criteria that would be used in preparation of the SRGPA/EIS was sent to approximately 600 people.

Other informal coordination with the public such as telephone calls, and personal contacts have occurred in developing the SRGPA/EIS. Records of these contacts are located in the Las Cruces District Office.

CONSULTATION

Consultation with the U.S. Fish and Wildlife Service (USFWS) is required before any project initiated or approved by the BLM is implemented that may affect any Federally threatened, endangered, or sensitive plant or animal or their habitat. This consultation is required by Section 7 of the Endangered Species Act of 1973. The SRGPA/EIS is considered a major project and informal consultation was initiated with the USFWS on August 20, 1985. On September 24, 1985, the USFWS sent a list of the threatened or endangered species which may occur in Dona Ana County. The Biological Assessment was completed and sent to the USFWS on February 11, 1986. (The Biological Assessment is contained in Technical Report II, which is available for review in the Las Cruces District Office.) Correspondence concerning the consultation process is found in Appendix D-3.

The BLM cultural resource management program operates in accordance with 36 Code of Federal Regulations (CFR), Part 800, which provides specific procedures for consultation between BLM and the State Historic Preservation Officer (SHPO). Memorandum of Agreement (MOA) NMSO-168 between the SHPO, Advisory Council on Historic Preservation, and the BLM New Mexico State Office became effective October 19, 1982. This MOA coordinates the provisions of 36 CFR 800 with existing BLM procedures, emphasizing the BLM planning system. The MOA incorporates procedures for exchanging information with the SHPO concerning cultural resources on public and private lands. It defines those undertakings and activities requiring or not requiring consultation and establishes reporting standards.

A MOA for the Protection of Cultural Resources in State Exchange Actions was signed by the BLM State Director, the Commissioner of Public Lands, and the SHPO on February 19, 1985. This MOA and letters written by the BLM, Las Cruces District and SHPO regarding the State Land Exchange proposal are contained in Appendix F.

PUBLIC REVIEW OF THE DRAFT

In addition to members of the interested public, the Draft SRGPA/EIS has been sent to and comments requested from:

Congressional Delegation and New Mexico State Legislators

U.S. Senator Jeff Bingaman
U.S. Senator Pete V. Domenici
U.S. Congressman Manuel Lujan, Jr.
U.S. Congressman Bill Richardson
U.S. Congressman Joe Skeen
State Senator, District 35
State Senator, District 36
State Senator, District 37
State Senator, District 38
State Senator, District 39
State Senator, District 40
State Representative, District 33
State Representative, District 34
State Representative, District 35
State Representative, District 36
State Representative, District 37
State Representative, District 51
State Representative, District 52
State Representative, District 53

New Mexico State Agencies

Agriculture Department
Bureau of Mines and Mineral Resources
Commerce and Industry Department
Department of Finance and Administration
Museum of New Mexico

New Mexico State Agencies
(continued)

- Historic Preservation Division
- State Planning Division
- Department of Game and Fish
- Economic Development and Tourism Department
- Energy and Minerals Department
  - Oil Conservation Division
- Governor's Office
- Health and Environment Department
  - Environmental Improvement Division
- Highway Department
- Human Services Department
  - Office of Indian Affairs
- Land Office
  - Commissioner's Office
- Natural Resources Department
  - Administrative Services Division--Heritage Section
  - Forestry Division
  - Parks and Recreation Division
  - Soil and Water Division
- State Engineer/Interstate Stream Commission
  - Water Rights Division
- State Police
- Taxation and Revenue Department

Federal Agencies

- Department of Agriculture
  - Agricultural Research Service
    - Jornada Experimental Range
  - Agricultural Stabilization and Conservation Service
  - Environmental Quality Acts
  - Farmer's Home Administration
  - Forest Service
  - Soil and Conservation Service
- Department of Commerce
- Department of Defense
  - Department of the Army
    - Corps of Engineers
    - Fort Bliss
    - White Sands Missile Range
  - Department of the Air Force
- Department of Energy
- Department of Housing and Urban Development
- Department of Justice
  - Immigration and Naturalization Service
    - Border Patrol
- Department of the Interior
  - Advisory Council on Historic Preservation
  - Bureau of Indian Affairs
  - Bureau of Land Management
    - Las Cruces District Advisory Council
    - Las Cruces District Grazing Advisory Board

Federal Agencies
(continued)

- Bureau of Mines
- Bureau of Reclamation
- Fish and Wildlife Service
- Geological Survey
- National Park Service
- National Resources Library
- Office of Environmental Project Review
- Department of the Transportation
  - Federal Aviation Administration
  - Federal Highway Administration
- Department of Treasury
  - Customs Service
- Environmental Protection Agency
- International Boundary and Water Commission

Local and Regional Governments, Agencies, and Indian Tribes

- Caballo Soil and Water Conservation District
- Chamber of Commerce (El Paso, Las Cruces, and Truth or Consequences)
- Cities of El Paso and Las Cruces
- Dona Ana County Commissioners
- El Paso County Commissioners
- Elephant Butte Irrigation District
- Jornada Resource Conservation and Development Council
- La Corporacion de los Indigenes de Nuestra Senora de Guadalupe
- Lincoln County Commissioners
- New Mexico Border Commission
- Otero County Commissioners
- Sierra County Commissioners
- Socorro County Commissioners
- Southern Rio Grande Council of Governments
- Town of Anthony
- Village of Hatch

Livestock-Related Organizations

- New Mexico Cattle Growers Association
- New Mexico Farm and Livestock Bureau
- Sierra County Farm and Livestock Bureau
- Society for Range Management
- Southwestern New Mexico Livestock Grazing Association

Conservation Organizations

- Albuquerque Archaeological Society
- Continental Divide Trail Society
- Earth Environmental Consultants
- Earth First!

Conservation Organizations
(continued)

Environmental Management Services Company
El Paso Archaeological Society
Izaak Walton League
Mesilla Valley Audubon Society
Mesilla Valley Grotto
National Council of Public Land Users
National Wildlife Federation
Natural Resources Defense Council
Nature Conservancy
Nevada Outdoor Recreation Association
New Mexico Archaeological Society
New Mexico Natural History Institute
New Mexico Wildlife Federation
New Mexico Wildlife Society
Public Lands Council
Public Lands Institute
Sierra Club
    Albuquerque Group
    El Paso Regional Group
    Rio Grande Chapter
Soil Conservation Society
Texas Archaeological Society
Wilderness Society
Wildlife Management Institute

Other Organizations

Burn Construction Company, Inc.
El Paso Electric
El Paso Natural Gas Company
El Paso Water Utilities Public Service Board
Federal Land Bank Association of Albuquerque
Federal Land Bank Association of Las Cruces
Las Cruces Christian Church
Las Cruces Production Credit Association
Las Cruces School District No. 2
Minerals Exploration Coalition
New Mexico Oil and Gas Association
Public Service Company of New Mexico
Valley Transit Mix

Other Groups

Butterfield Trail 4x4 Club
Dona Ana County Historical Society
Dona Ana Rockhound Club
East Mesa Planning District
4 Wheel Drive Center
Human Systems Research, Inc.
Las Cruces Four Wheelers
Luna County Historical Society
Moongate Water Co. Inc.
New Mexico Research Institute
Picacho Gun Club

Universities and Libraries

Quivera Research Center
Wheelsport
Deming Public Library
El Paso Public Library
Lordsburg Hidalgo Library
New Mexico Southwestern Regional Library
New Mexico State Library
New Mexico State University
    Library
    Range Improvement Task Force
Silver City Public Library
Thomas Branigan Memorial Library
University of New Mexico
University of Texas at El Paso
Western New Mexico University

HEARINGS

Public hearings will be held on the Draft SRGPA/EIS. These hearings will be held on June 4, 1986 at 1:30 p.m. and 7:00 p.m. in the Las Cruces District Office Conference Room, 1800 Marquess Street, Las Cruces, New Mexico.

TABLE 5-1
LIST OF PREPARERS

Name	Responsibility	Education	Experience
Marvin M. James	Team Leader	B.S., Animal Husbandry Colorado State University	BLM 22 yrs. - Chief, Planning and Environmental Assistance Staff Planning Coordinator Environmental Coordinator Realty Specialist Appraiser
Bill Gilbert	Technical Coordinator, Recreation, Wilderness, Visual Resources	B.S., Biology University of Nebraska	BLM 9 yrs. - Natural Resource Specialist
Bruce G. Call	Soils, Water Resources, Climate	B.S., Agriculture (Range and Soil Science) New Mexico State University	BLM 8 yrs. - District Soil Scientist Range Conservationist Range Technician USFS 6 mos. - Soil Technician Forestry Technician
Madeline L. Dzielak	Lands, Access	B.A., Recreation University of New Mexico Professional Resource Management (Lands) Phoenix Training Center	BLM 10 yrs. - Realty Specialist Office Manager Legal Clerk (Drafting)
Rena Gutierrez	Writer-Editor	B.A., Journalism/Mass Communications New Mexico State University	BLM 8 yrs. - Writer-Editor Clerk-Typist Public Information Aid
Marylin Harkey	Cultural Resources	B.S., Elementary Education B.A., Anthropology New Mexico State University	BLM 1 yr. - Archaeology Technician Human Systems Research 1 yr. NMSU 4 yrs. - Archaeology Assistant
Kenneth E. Holmes	Wildlife, Threatened and Endangered Animals	B.S., M.A., Biology Sul Ross State University	BLM 9 yrs - Wildlife Management Biologist EPA 4 yrs. - Environmental Protection Specialist Ecologist Biologist Corps of Engineers 3 yrs. - Biologist
Lorraine J. Salas	Planning Clerk/Word Processing	Las Cruces High School	BLM 1 1/2 yrs. - Planning Clerk (Typing) Clerk-Typist
Gerald Sanchez	Social and Economic Conditions	B.B.A., Economics New Mexico State University	BLM 6 yrs. - Regional Economist Budget Analyst Support Services Supervisor
Michael R. Steffey	Geology and Minerals	B.S., Geology New Mexico State University	BLM 9 mos. - Geologist
Gilbert Valencia	Cartographic Technician	Electronics Las Cruces Community College	BLM 9 yrs. - Cartographic Technician

TABLE 5-1
LIST OF PREPARERS
(concluded)

Name	Responsibility	Education	Experience
Beatrice A. Wade	Livestock Grazing, Vegetation, Threatened and Endangered Plants	B.S., Forestry (Minor-Wildlife Management) 10 Quarters-Range Ecosystem Management 2 yrs.-Master's Thesis Work University of Florida Professional Resource Management (Range) Phoenix Training Center	BLM 9 yrs. - Range Conservationist University of Florida 5 yrs. - Range Research Biologist

SUPPORT PERSONNEL

M. Isabel Diaz
Margie Guzman
Shirley Jaramillo
Ronald G. White

CONTRIBUTORS AND REVIEWERS

Las Cruces District

H. James Fox, District Manager
William Harkenrider, Jr., Area Manager, Las Cruces/Lordsburg
Tom Birch, District Range Specialist
Robert Calkins, Chief, Division of Resource Management
Tom Custer, District Geologist
Charles Hodgin, District Planning Coordinator
Juan Padilla, District Realty Specialist
Pam Smith, District Archaeologist
C. Dwayne Sykes, District Outdoor Recreation Planner

New Mexico State Office

Chris Anderson, Air Quality Specialist
Bob Armstrong, Environmental Specialist
Ron Bartel, Petroleum Engineer
Phil Beck, Realty Specialist
Steve Fosburg, Archaeologist
Ed Heffern, Geologist
Bob Heidemann, Outdoor Recreation Planner
Bill Jonas, Geologist
Jon Joseph, Wilderness Specialist
John Kenny, Chief, Planning & Environmental Coordination Staff
Brian Mills, Wildlife Management Biologist
Charles Pettee, Hydrologist
Verlyn D. Saladen, Soil Scientist
Jerry Townsend, Range Conservationist
John W. Whitney, Natural Resource Specialist

APPENDICES

APPENDIX A
LANDS

APPENDIX A-1
SELECTED PUBLIC LAND ON THE EAST MESA

TOWNSHIP	RANGE	SECTION	SUBDIVISION	ACRES
22 S	2 E	23	S1/2N1/2, S1/2	480
		24	S1/2	320
		25	All	640
		26	All	640
		27	E1/2	320
		34	E1/2	320
		35	All	640
22 S	3 E	17	S1/2	320
		18	Lot 1	42.75
			Lot 2	42.51
			Lot 3	42.28
			Lot 4	42.05
			E1/2, E1/2W1/2	480
		20	All	640
		29	All	640
		30	Lot 1	41.06
			Lot 2	40.90
			Lot 3	40.74
			Lot 4	40.59
			E1/2, E1/2W1/2	480
		31	Lot 1	40.45
			Lot 2	40.32
			Lot 3	40.19
			Lot 4	40.06
			E1/2, E1/2W1/2	480
		32	All	640
23 S	2	1	Lot 1	40.07
			Lot 2	40.22
			Lot 3	40.37
			Lot 4	40.52
			S1/2N1/2, S1/2	480
		2	Lot 1	39.57
			Lot 2	39.52
			Lot 3	39.47
			Lot 4	39.42
			S1/2N1/2, S1/2	480
23 S	3 E	5	Lot 1	36.06
			Lot 2	36.77
			Lot 3	37.42
			Lot 4	38.08
			S1/2N1/2, S1/2	480

APPENDIX A-1
SELECTED PUBLIC LAND ON THE EAST MESA
(concluded)

TOWNSHIP	RANGE	SECTION	SUBDIVISION	ACRES
23 S	3 E	6	Lot 1	39.51
			Lot 2	39.90
			Lot 3	39.29
			Lot 4	39.69
			Lot 5	39.17
			Lot 6	38.69
			Lot 7	38.17
			S1/2NE1/4, SE1/4NW1/4, E1/2SW1/4, SE1/4	360
			TOTAL	10,075.81

APPENDIX A-2
OFFERED STATE LAND WITHIN THE WHITE SANDS MISSILE RANGE

TOWNSHIP	RANGE	SECTION	SUBDIVISION	ACRES
6 S	3 E	32	All	640.00
		36	All	640.00
6 S	4 E	32	All	640.00
		36	All	640.00
7 S	3 E	2	Lot 1	41.26
			Lot 2	41.21
			Lot 3	41.16
			Lot 4	41.11
			S1/2N1/2, S1/2	480.00
7 S	4 E	2	Lot 1	39.30
			Lot 2	39.29
			Lot 3	39.27
			Lot 4	39.26
			S1/2N1/2, S1/2	480.00
		16	All	640.00
8 S	4 E	32	All	640.00
		36	All	640.00
8 S	5 E	32	Lot 1	31.29
			Lot 2	40.00
			N1/2, N1/2SW1/4, SE1/4	560.00
		36	All	640.00
8 S	6 E	32	W1/2	320.00
8 S	7 E	16	All	640.00
		32	All	640.00
9 S	2 E	33	S1/2S1/2	160.00
9 S	3 E	34	All	640.00
		35	All	640.00
		36	All	640.00
9 S	4 E	2	S1/2	320.00
		16	All	640.00
		32	All	640.00
		36	All	640.00

APPENDIX A-2
OFFERED STATE LAND WITHIN THE WHITE SANDS MISSILE RANGE
(continued)

TOWNSHIP	RANGE	SECTION	SUBDIVISION	ACRES
9 S	5 E	2	Lot 1	19.90
			Lot 2	19.96
			Lot 3	20.00
			Lot 4	20.06
			Lot 5	40.00
			Lot 6	40.00
			Lot 7	40.00
			Lot 8	40.00
			S1/2N1/2	160.00
		32	Lot 1	22.89
			Lot 2	33.88
			Lot 3	37.27
			Lot 4	37.11
			Lot 5	36.96
			N1/2, NE1/4SW1/4, N1/2SE1/4	440.00
9 S	5 E	36	Lot 1	37.31
			Lot 2	38.08
			Lot 3	38.85
			Lot 4	39.20
			Lot 5	36.84
			Lot 6	37.75
			Lot 7	38.66
			W1/2NE1/4, NW1/4, N1/2SW1/4, NW1/4SE1/4	360.00
9 S	6 E	16	All	640.00
		19	Lot 3	39.88
			Lot 4	39.71
			E1/2SW1/4, SE1/4	240.00
		30	Lot 1	39.63
			Lot 2	39.86
			Lot 3	39.68
			Lot 4	39.71
			E1/2, E1/2W1/2	480.00
		31	Lot 1	39.61
			Lot 2	39.37
			Lot 3	39.15
			Lot 4	38.91
			E1/2, E1/2W1/2	480.00
		32	All	640.00
		36	All	640.00

APPENDIX A-2
OFFERED STATE LAND WITHIN THE WHITE SANDS MISSILE RANGE
(continued)

TOWNSHIP	RANGE	SECTION	SUBDIVISION	ACRES
10 S	3 E	2	S1/2	320.00
		16	All	640.00
		36	All	640.00
10 S	4 E	2	Lot 1	40.88
			Lot 2	40.14
			Lot 3	40.18
			Lot 4	40.24
			S1/2N1/2, S1/2	480.00
		16	All	640.00
		32	Lot 1	38.93
			Lot 2	38.13
			Lot 3	38.18
			Lot 4	38.81
			N1/2, N1/2S1/2	480.00
		36	Lot 1	39.06
			Lot 2	37.81
			Lot 3	37.88
			Lot 4	39.29
			N1/2, N1/2S1/2	480.00
10 S	5 E	2	Lot 1	40.05
			Lot 2	39.96
			Lot 3	39.86
			Lot 4	39.77
			S1/2N1/2, S1/2	480.00
		16	All	640.00
		32	All	640.00
		36	All	640.00
10 S	6 E	2	Lot 1	40.11
			Lot 2	40.14
			Lot 3	40.16
			Lot 4	40.19
			S1/2N1/2, S1/2	480.00
		6	Lot 1	39.76
			Lot 2	39.82
			Lot 3	39.90
			Lot 4	38.76
			Lot 5	38.89
			Lot 6	38.95

APPENDIX A-2
OFFERED STATE LAND WITHIN THE WHITE SANDS MISSILE RANGE
(continued)

TOWNSHIP	RANGE	SECTION	SUBDIVISION	ACRES
10 S	6 E		Lot 7	39.01
			S1/2NE1/4, SE1/4NW1/4, E1/2SW1/4, SE1/4	360.00
		7	Lot 1	39.07
			Lot 2	39.13
			NE1/4, E1/2NW1/4	240.00
		32	All	640.00
10 S	7 E	14	W1/2SW1/4	80.00
11 S	4 E	2	Lot 1	11.07
			Lot 2	10.83
			Lot 3	10.57
			Lot 4	10.33
			S1/2S1/2	160.00
		6	Lot 5	36.47
11 S	5 E	2	Lot 1	19.88
			Lot 2	19.49
			Lot 3	19.09
			Lot 4	18.70
			S1/2S1/2	160.00
		16	All	640.00
11 S	6 E	1	Lot 1	17.05
			Lot 2	17.15
			Lot 3	17.25
			Lot 4	17.35
			S1/2S1/2	160.00
		2	Lot 1	17.48
			Lot 2	17.62
			Lot 3	17.78
			Lot 4	17.92
			S1/2S1/2	160.00
		3	Lot 1	18.13
			Lot 2	18.39
			Lot 3	18.65
			Lot 4	18.91
			S1/2S1/2	160.00
		16	All	640.00
		28	All	640.00
		32	All	640.00
		33	All	640.00
		34	All	640.00
		36	All	640.00

APPENDIX A-2
OFFERED STATE LAND WITHIN THE WHITE SANDS MISSILE RANGE
(continued)

TOWNSHIP	RANGE	SECTION	SUBDIVISION	ACRES
12 S	4 E	36	All	640.00
13 S	4 E	2	Lot 1	39.58
			Lot 2	39.54
			Lot 3	39.50
			Lot 4	39.46
			S1/2N1/2, S1/2	480.00
13 S	6 E	2	Lot 1	32.12
			Lot 2	31.17
			Lot 3	30.21
			Lot 4	29.26
			Lot 5	40.00
			Lot 6	40.00
			Lot 7	40.00
			Lot 8	40.00
			S1/2N1/2, S1/2	480.00
		32	All	640.00
		36	Lot 1	29.43
			Lot 2	30.28
			Lot 3	31.13
			Lot 4	36.71
			W1/2E1/2, W1/2	480.00
14 S	4 E	25	E1/2	320.00
		36	E1/2, SW1/4	480.00
14 S	5 E	16	All	640.00
		21	E1/2SW1/4, SE1/4	240.00
		22	N1/2S1/2	160.00
		23	S1/2	320.00
		24	S1/2	320.00
		25	All	640.00
		26	E1/2, E1/2W1/2	480.00
		28	NE1/4NE1/4, W1/2E1/2, W1/2	520.00
		29	All	640.00
		30	Lot 1	39.29
			Lot 2	39.58
			Lot 3	40.13
			Lot 4	40.13
			E1/2, E1/2W1/2	480.00

APPENDIX A-2
OFFERED STATE LAND WITHIN THE WHITE SANDS MISSILE RANGE
(continued)

TOWNSHIP	RANGE	SECTION	SUBDIVISION	ACRES
14 S	5 E	31	Lot 1	40.26
			Lot 2	40.29
			Lot 3	40.29
			Lot 4	40.32
			E1/2, E1/2W1/2	480.00
		33	NW1/4NE1/4, W1/2, S1/2SE1/4	440.00
		34	S1/2SW1/4	80.00
		35	E1/2, E1/2W1/2, SW1/4SW1/4	520.00
		36	All	640.00
14 S	9 E	32	N1/2NE1/4, SW1/4NE1/4	120.00
15 S	4 E	1	Lot 1	39.93
			Lot 2	39.78
			S1/2NE1/4, N1/2SE1/4	160.00
		2	Lot 1	39.42
			Lot 2	39.39
			Lot 3	39.39
			Lot 4	39.36
			S1/2N1/2, S1/2	480.00
		3	SE1/4NE1/4	40.00
		16	All	640.00
15 S	5 E	1	Lot 1	40.04
			Lot 2	40.12
			Lot 3	40.20
			Lot 4	40.28
		2	Lot 1	40.21
			Lot 2	40.00
			Lot 3	39.80
			Lot 4	39.58
			S1/2N1/2, S1/2	480.00
			Lot 1	39.45
			Lot 2	39.37
			Lot 3	39.31
			Lot 4	39.23
		4	Lot 1	39.25
			Lot 2	39.36
			Lot 3	39.47
			Lot 4	39.59
			S1/2N1/2, N1/2SW1/4	240.00

APPENDIX A-2
OFFERED STATE LAND WITHIN THE WHITE SANDS MISSILE RANGE
(continued)

TOWNSHIP	RANGE	SECTION	SUBDIVISION	ACRES
15 S	5 E	5	Lot 1	39.74
			Lot 2	39.95
			Lot 3	40.15
			Lot 4	40.36
			SE1/4NE1/4, S1/2NW1/4, SW1/4, NE1/4SE1/4	320.00
		6	Lot 1	40.40
			Lot 2	40.28
			Lot 3	40.17
			Lot 4	40.41
			Lot 5	40.37
			Lot 6	40.41
			Lot 7	40.44
			S1/2NE1/4, SE1/4NW1/4, E1/2SW1/4, SE1/4	360.00
		7	Lot 1	40.41
			Lot 2	40.31
			Lot 3	40.21
			Lot 4	40.11
			E1/2, E1/2W1/2	480.00
		8	W1/2	320.00
		16	All	640.00
		17	W1/2	320.00
		18	Lot 1	40.00
			Lot 2	39.88
			Lot 3	39.76
			Lot 4	39.64
			E1/2, E1/2W1/2	480.00
		19	Lot 1	39.55
			E1/2, E1/2NW1/4, NE1/4SW1/4	440.00
		20	W1/2	320.00
		29	W1/2	320.00
		30	Lot 1	39.37
			Lot 2	39.43
			Lot 3	39.50
			Lot 4	39.56
			E1/2, E1/2W1/2	480.00
		31	Lot 1	39.65
			N1/2NE1/4, NE1/4NW1/4	120.00
		36	All	640.00
15 S	6 E	32	Lot 1	48.38
			Lot 2	47.99
			Lot 3	47.59

APPENDIX A-2
OFFERED STATE LAND WITHIN THE WHITE SANDS MISSILE RANGE
(continued)

TOWNSHIP	RANGE	SECTION	SUBDIVISION	ACRES
15 S	6 E		Lot 4	47.20
			N1/2, N1/2S1/2	480.00
		36	Lot 1	41.46
			Lot 2	41.03
			Lot 3	40.63
			Lot 4	40.20
			N1/2, N1/2S1/2	480.00
15 S	7 E	16	All	640.00
		32	All	640.00
		36	All	640.00
15 S	8 E	32	All	640.00
16 S	3 E	2	Lot 1	42.22
			Lot 2	42.12
			Lot 3	42.00
			Lot 4	41.90
			S1/2N1/2, S1/2	480.00
		36	All	640.00
16 S	4 E	2	Lot 1	41.03
			Lot 2	41.01
			Lot 3	40.99
			Lot 4	40.97
			S1/2N1/2, S1/2	480.00
		3	Lot 1	40.95
			Lot 2	40.93
			Lot 3	40.91
			S1/2NE1/4, SE1/4NW1/4, E1/2SW1/4, SE1/4	360.00
		10	N1/2NE1/4, NE1/4NW1/4	120.00
		11	NW1/4NW1/4	40.00
16 S	5 E	2	Lot 1	37.63
			Lot 2	37.77
			Lot 3	37.91
			Lot 4	38.05
			S1/2N1/2, S1/2	480.00
		16	All	640.00
		32	All	640.00
		36	All	640.00

APPENDIX A-2
OFFERED STATE LAND WITHIN THE WHITE SANDS MISSILE RANGE
(continued)

TOWNSHIP	RANGE	SECTION	SUBDIVISION	ACRES
16 S	6 E	2	Lot 1	47.32
		16	Lot 2	46.68
		32	Lot 3	46.04
		36	Lot 4	45.40
			S1/2N1/2, S1/2	480.00
		16	All	640.00
		32	Lot 1	49.82
			Lot 2	49.35
			Lot 3	48.87
			Lot 4	48.40
			N1/2, N1/2S1/2	480.00
		36	Lot 1	41.82
			Lot 2	41.58
			Lot 3	41.09
			Lot 4	40.36
			N1/2, N1/2S1/2	480.00
16 S	7 E	16	All	640.00
		32	All	640.00
17 S	3 E	2	Lot 1	48.35
			Lot 2	49.57
			Lot 3	50.79
			Lot 4	52.01
			S1/2N1/2, S1/2	480.00
17 S	4 E	2	Lot 1	40.44
			Lot 2	40.35
			Lot 3	40.27
			Lot 4	40.18
			S1/2N1/2, S1/2	480.00
17 S	8 E	32	All	640.00
18 S	7 E	23	SE1/4NE1/4, SE1/4	200.00
18 S	8 E	32	All	640.00
19 S	4 E	2	Lot 1	40.39
			Lot 2	40.38
			Lot 3	40.36
			Lot 4	40.35

APPENDIX A-2
OFFERED STATE LAND WITHIN THE WHITE SANDS MISSILE RANGE
(concluded)

TOWNSHIP	RANGE	SECTION	SUBDIVISION	ACRES
19 S	4 E		S1/2N1/2, S1/2	480.00
		16	E1/2	320.00
		32	All	640.00
19 S	5 E	32	All	640.00
19 S	7 E	32	All	640.00
		36	All	640.00
20 S	6 E	7	Lot 1	37.91
			Lot 2	37.89
			Lot 3	37.87
			Lot 4	37.85
			E1/2, E1/2W1/2	480.00
21 S	5 E	16	All	640.00
				TOTAL 73,559.29

APPENDIX A-3
OFFERED STATE LAND WITHIN THE ORGAN MOUNTAINS

TOWNSHIP	RANGE	SECTION	SUBDIVISION	ACRES
22 S	3 E	36	N1/2NE1/4, SW1/4NE1/4, W1/2, W1/2SE1/4	520.00
23 S	3 E	2	Lots 1-9, S1/2N1/2	612.50
23 S	3 E	13	SE1/4SW1/4, SW1/4SE1/4	80.00
		24	N1/2NE1/4, SE1/4NE1/4, E1/2SE1/4	200.00
		25	N1/2, SW1/4, N1/2SE1/4, SW1/4SE1/4	600.00
		26	Lots 7, 8, SE1/4NE1/4	102.67
		36	All	640.00
24 S	3 E	2	Lots 1-4, S1/2N1/2, S1/2	640.32
		12	N1/2S1/2	160.00
		14	N1/2N1/2	160.00
		34	NW1/4SE1/4	40.00
		36	All	640.00
25 S	3 E	2	Lots 1-4, S1/2N1/2, S1/2	639.84
				TOTAL 5,035.33

APPENDIX B
WATER RESOURCES

APPENDIX B-1

STATE WATER QUALITY STANDARDS

RIO GRANDE BASIN

1. Includes the main stem of the Rio Grande from the International Boundary and Water Commission sampling station above American Dam at El Paso upstream to 1 mile below Percha Dam. Designated uses include: irrigation, limited warm water fishery, livestock and wildlife watering, and secondary contact recreation.

Parameter	Standard
Dissolved Oxygen	>5.0 mg/l
pH	6.6 to 8.8
Temperature	<34°C (93.2°F)
Fecal Coliform	<1,000/100 ml
TDS	<2,000 mg/l
Sulfate	<500 mg/l
Chlorides	<400 mg/l
Discharge	350 c.f.s.

Source: New Mexico Water Quality Control Commission 85-1, Water Quality Standards for Interstate and Intrastate Streams in New Mexico, February 15, 1985.

APPENDIX B-2

WATER QUALITY CRITERIA
FOR LIVESTOCK AND WILDLIFE USE

Parameter	Recommended Upper Limit
Salinity	7,000 mg/l
Chloride	1,500 mg/l
Fluoride	2.0 mg/l
Sulfate	1,000 mg/l
Nitrate	100 mg/l
Nitrite	10 mg/l
Arsenic	0.2 mg/l
Boron	5 mg/l
Mercury	0.01 mg/l
Selenium	0.05 mg/l
Zinc	25 mg/l

Sources: Federal Water Pollution Control Administration, 1968.

Environmental Protection Agency, 1972.

APPENDIX B-3

WATER QUALITY STANDARDS FOR GROUNDWATER OF 10,000 mg/l TDS CONCENTRATION OR LESS

A. Human Health Standards - Groundwater shall meet the standards of Section A and B unless otherwise provided.

Arsenic (As)	0.1 mg/l
Barium (Ba)	1.0 mg/l
Cadmium (Cd)	0.01 mg/l
Chromium (Cr)	0.05 mg/l
Cyanide (CN)	0.2 mg/l
Floride (F)	1.6 mg/l
Lead (Pb)	0.05 mg/l
Total Mercury (Hg)	0.002 mg/l
Nitrate (NO_3 as N)	10.0 mg/l
Selenium (Se)	0.05 mg/l
Silver (Ag)	0.05 mg/l
Uranium (U)	5.0 mg/l
Radioactivity: Combined Radium-226 and Radium-288	30.0 pCi/l
Benzene	0.01 mg/l
Polychlorinated biphenyls (PCBs)	0.001 mg/l
Toluene	0.75 mg/l
Carbon Tetrachloride	0.01 mg/l
1, 2-dichloroethane (EDC)	0.01 mg/l
1, 1-dichloreothylene (1, 1-DCE)	0.005 mg/l
1, 1, 2, 2-tetrachloroethylene (PCE)	0.02 mg/l
1, 1, 2-trichoroethylene (TCE)	0.1 mg/l
Vinyl Chloride	0.001 mg/l
1, 1 Dichloroethane	0.025 mg/l
1, 2 Dibromoethane	0.0001 mg/l
1, 1, 1 Trichloroethane	0.06 mg/l
1, 1, 2 Trichloroethane	0.01 mg/l
1, 1, 2, 2 Tetrachloroethane	0.01 mg/l
Methylene Chloride	0.1 mg/l
Chloroform	0.1 mg/l
Ethylbenzene	0.75 mg/l
Total Xylene	0.62 mg/l
Total Napthalene and Monomethyl Napthalenes	0.03 mg/l
Benzo (a) pyrene	0.0007 mg/l

B. Other Standards for Domestic Water Supply

Chloride (Cl)	250. mg/l
Copper (Cu)	1.0 mg/l
Iron (Fe)	1.0 mg/l
Manganese (Mn)	0.2 mg/l
Phenols	0.005 mg/l
Sulfate (SO_4)	600 mg/l
Total Dissolved Solids (TDS)	1000. mg/l
Zinc (Zn)	10.0 mg/l
p^H	between 6 and 9

C. Standards for Irrigation Use - Ground water shall meet the standards of subsections A, B, and C unless otherwise provided.

Aluminum (Al)	5.0 mg/l
Boron (B)	0.75 mg/l
Cobalt (Co)	0.05 mg/l
Molybdenum (Mo)	1.0 mg/l
Nickel (Ni)	0.2 mg/l

Source: New Mexico Water Quality Control Commission Regulations as Amended Through December 11, 1985.

APPENDIX C
VEGETATION

APPENDIX C
THREATENED, ENDANGERED, CANDIDATE, AND SENSITIVE PLANT SPECIES
POTENTIALLY OCCURRING ON PUBLIC LAND IN THE DONA ANA COUNTY[a/]

Plant Persistence[b/]	Scientific Name	Common Name (Family)	Status	Occurrences in Dona Ana County	Habitat
PF	Agastache cana	Grayish white giant hyssop (Lamiaceae)	SS	Found in Dona Ana County, New Mexico. North of the College Ranch.	Occurs in low mountain elevations from 5,250 to 6,225 feet.
PF	Aletes filifolius	Threadleaf false carrot (Apiaceae)	SS (C)	Collected or found in the Organ Mountains on the military reservation, and private and public lands.	Occurs in rocky canyons and on cliffs between 6,200 and 7,300 feet with pinyon and juniper species; are apparently widespread.
PF	Castilleja organorum	Organ Mountain paintbrush (Scrophulariaceae)	SS	Found in Dripping Springs, Organ Mountains on private land.	Occurs on rocky sides of the Organ Mountains at altitudes of 5,700 feet.
C	Cereus greggii	Night-blooming cereus (Cactaceae)	SE	Found in the Rough & Ready Hills, Las Uvas Mountains, Franklin Mountains, Organ Mountains, and Potrillo Mountains.	Populations are widespread with a few individuals in each. Grows on gravelly range sites with bush muhly, Mormon tea, creosotebush, and range ratany; under or near creosotebush and mesquite in rocky areas; common at lower elevations; granite soil (rhyolite) and deep light soils. Altitudes 4,000 to 4,500 feet.
AF	Cleome multicaulis	Slender spiderflower (Capparaceae)	FL/C (CAT III) SE	Collected in the Mesilla Valley and Dona Ana County.	Occurs on alkaline sinks, old saline lake beds, and cienegas from 3,000 to 7,000 feet.
C	Coryphantha organensis	Organ Mountain pincushion cactus (Cactaceae)	SE	Found on the Needles, in Dripping Springs, and Fillmore Canyon, Organ Mountains on private land and the military reservation.	Occurs on west-facing mountain slopes.
C	Coryphantha scheeri (All varieties)	Scheer's pincushion cactus (Cactaceae)	SE	Occurs in Dona Ana County, New Mexico (East Mesa).	Found on open plains and flats, often in alluvial soils at about 3,000 to 5,000 feet.
C	Coryphantha sneedii var. sneedii	Sneed's pincushion cactus (Cactaceae)	FL/E SE	Collected in Anthony Gap, Franklin Mountains.	Occurs on limestone hills on south- and west-facing slopes with sotol, creosotebush, sumac, and Dalea between 4,300 to 5,400 feet.
C	Echinocereus lloydii	Lloyd's hedgehog cactus (Cactaceae)	FL/E SE	Found in the East Potrillo Mountains.	Occurs on arid hills and hillsides. Found near black limestone with creosotebush, ocotillo, sideoats grama, and Yucca.

APPENDIX C
THREATENED, ENDANGERED, CANDIDATE, AND SENSITIVE PLANT SPECIES
POTENTIALLY OCCURRING ON PUBLIC LAND IN THE DONA ANA COUNTY[a/]
(continued)

Plant Persistence[b/]	Scientific Name	Common Name (Family)	Status	Occurrences in Dona Ana County	Habitat
C	Ferocactus wislizenii	Southwestern barrel cactus (Cactaceae)	SS	Widespread in Southwest. In trouble from overcollecting (East and West Mesa).	Rock, sandy, or gravelly slopes in deserts, grasslands, or canyons from 3,000 to 5,000 feet.
PF	Hymenoxys vaseyi	Vasey's bitterweed (Asteraceae)	SS (C)	Found in Dona Ana County, New Mexico (West Mesa).	Occurs on dry hills between 4,500 and 6,500 feet.
BF	Machaeranthera amplifolia	Organ Mountain aster (Asteraceae)	SS (C)	Found in Fillmore Canyon, Organ Mountains on the military reservation.	Mountainous regions.
C	Mammillaria wrightii (All varieties)	Wright's Fish-hook cactus (Cactaceae)	SE	Widespread, sporadic distribution, declining due to overcollection (East Mesa).	Found on gravelly hills, sandy hills or plains, desert grassland to pinyon-juniper; altitudes 3,000 to 7,000 feet.
PF	Oenothera organesis	Organ Mountain evening primrose (Onagraceae)	FL/C (CAT II) SE	Found in numerous canyons and on various peaks in the Organ Mountains mostly on the military reservation and public land.	Occurs in wet areas forming dense mats and in steep rocky canyons from 6,000 to 7,000 feet.
C	Opuntia arenaria	Sand prickly pear (Cactaceae)	FL/C (CAT II) SE	Found near Mesquite, New Mexico, on private land and around the Franklin Mountains.	Grows on dunes and interdune sandy areas in small (5-12 plants) patches with creosotebush and mesquite.
PF	Penstemon alamosensis	Alamo penstemon (Scrophulariaceae)	FL/C (CAT II) SE	Collected on Black Mountain, San Andres Mountains on the military reservation.	Grows in crevices and ledges in limestone cliffs and along canyon bottoms.
PF	Perityle cernua	Nodding cliff daisy (Asteraceae)	FL/C (CAT II) SE	Collected in various canyons in the Organ Mountains on the military reservation.	Occurs in crevices and overhangs on northeast-facing vertical monzonite and granite cliff faces at elevations of 5,800 to 7,200 feet. Areas receive no sunlight or less than 2 hours per day.
PF	Perityle staurophylla	None (Asteraceae)	SS (C)	Collected on Quartzite Mountain in the San Andres Mountains on the military reservation.	Found on east-facing limestone cliffs at 5,800 feet and in the pinyon-juniper zone.
S	Rosa stellata	Desert rose (Rosaceae)	SS (B)	Collected in Fillmore Canyon, Organ Mountains on the military reservation.	Occurs on steep, north-facing, heavily shaded igneous cliffs between 6,000 and 8,000 feet.
PF	Salvia summa	Supreme sage (Lamiaceae)	SS (C)	Found on Rattlesnake Ridge, Organ Mountains on the military reservation.	Occurs at the base of limestone outcrops on a ridge at 5,500 feet.

APPENDIX C
THREATENED, ENDANGERED, CANDIDATE, AND SENSITIVE PLANT SPECIES
POTENTIALLY OCCURRING ON PUBLIC LAND IN THE DONA ANA COUNTY[a/]
(concluded)

Plant Persistence[b/]	Scientific Name	Common Name (Family)	Status	Occurrences in Dona Ana County	Habitat
PF	Scrophularia laevis	Organ Mountain figwort (Scrophulariaceae)	SS (C)	Found and collected on the Organ Needle and Organ Peak, Organ Mountains on public land and the military reservation.	Found on the highest peak in the Organ Mountains and on a moist, shaded slope high on Organ Peak (7,200 feet).
AF	Sicyos glaber	Smooth cucumber (Cucurbitaceae)	SS	Collected in various locations on the west side of the Organ Mountains on the military reservation and on public land.	Occurs in rocky soils on open slopes and in canyons on the west face of the Organ Mountains from 5,000 to 6,000 feet.
PF	Silene plankii	Campion; Plan's catchfly (Caryophyllaceae)	SS (C)	Collected in the Organ Mountains on the military reservation.	Found on vertical east- and west-facing heavily shaded igneous cliffs in canyons and in nitches receiving less than 2 hours sunlight per day; between 5,800 and 8,000 feet.
PF	Sphaeralcea wrightii	Wright's globemallow (Malvaceae)	SS (B)	Found in Dona Ana County, New Mexico (West Mesa).	Occurs on rocky slope in arid grassland or desert from 4,000 to 6,000 feet.
PG	Stipa curvifolia	Curlleaf needlegrass (Poaceae)	SS (B)	Found near Bishop's Cap, Organ Mountains on the military reservation, and on Tortugas Mountain.	Found on north- and northeast-facing slopes at 4,500 feet.
PF	Talinum longipes	Long-stemmed flame flower (Portulacaceae)	SE	Collected on Tortugas Mountain, Dona Ana County.	Mountainous regions.

Sources: Spellenburg, 1978; Spellenburg, 1979; New Mexico Heritage Program, 1982; New Mexico Native Plants Protection Advisory Committee, 1984.

Notes: [a/]To ensure complete coverage of all threatened, endangered, candidate, or sensitive plant species, consideration was given to all species on public land or within 1 mile of public land.

[b/]Plant Persistence:
PG - Perennial Grass
AF - Annual Forb
BF - Biannual Forb
PF - Perennial Forb
S - Shrub
C - Cactus

[c/]Status:
FL/E - Federally-Listed/Endangered
FL/C - Federally-Listed/Candidate (species designated as "candidate species" by the Fish and Wildlife Service)
CAT II - Category II, plant species on which information indicates the plant may need protection but more information is needed
CAT III - Category III, these plants are no longer being considered for listing
SS - State Sensitive (species selected by the New Mexico Heritage Program as a special concern element)
A - Highest Priority
B - High Priority
C - Low Priority
SE - State Endangered

APPENDIX D
WILDLIFE

APPENDIX D
WILDLIFE

APPENDIX D-1

WILDLIFE SPECIES THAT MAY OCCUR IN DONA ANA COUNTY

Key: Preferred Habitats - (1) Riparian; (2) Arroyo-riparian; (3) Grass Rolling Upland; (4) Grass Flats; (5) Grass Mountains; (6) Mixed Shrub Rolling Uplands; (7) Mixed Shrub Mountain; (8) Mesquite Rolling Uplands; (9) Half Shrub Rolling Upland; (10) Pinyon-Juniper Grass Mountain; (11) Creosote Rolling Upland; (12) Creosote Breaks; (13) Mesquite Dune; (14) Malpais; (15) Special Habitat Feature*; (NP) None

*Special Habitat Features (SHF) include natural and man-made features and include old building, stock waters, cliffs, rock outcrops, caves, mine tunnels, etc. A large majority of the listed species with a SHF preferred habitat are associated with earth tanks.

Notes: V - Verified. Occurrence substantiated by records gathered by EIS field team.

* - Threatened, endangered, or sensitive species.

Numbers after each species refer to preferred habitat types as given in American Ag Interl. Contract Report.

Sources: Habitat Descriptions and Wildlife Inventory Results of the Southern Rio Grande EIS Area, 1979.

American Ag International Contract Report, 1979.

Gerald Wisdom, New Mexico Department of Game and Fish, Las Cruces, 1980.

BIRDS OF DONA ANA COUNTY

Common loon	15	
Arctic loon		
Eared grebe	15	V
Western grebe	15	V
Pied-billed grebe	15	V
White pelican	15	V
Double-crested cormorant	1, 15	V
*Olivaceous cormorant	1, 15	
Anhinga	1, 15	
Magnificent frigatebird	NP	V
Great blue heron	1, 15	V
Green heron	1	
Little blue heron	1, 15	
Cattle egret		
Great egret	1	
Snowy egret	15	V
Louisiana heron	1, 15	
Black-crowned night heron	1	
Least bittern	15	
American bittern	15	V
Wood stork		
White-faced ibis	15	V
Whistling swan	15	
Canada goose	15	V
White-fronted goose	15	
Snow, goose	15	V
Ross' goose	15	
Fulvous whistling duck	1	
Mallard	15	V
Mexican duck	15	V
Gadwall	15	V
Pintail	15	V
Green-winged teal	15	V
Blue-winged teal	15	V
Cinnamon teal	15	V
European widgeon	15	V
American widgeon	15	V
Shoveler	15	V
Wood duck	1	
Redhead	15	V
Ring-necked duck	15	V
Canvasback	15	V
Lesser scaup	15	V
Common goldeneye	15	V
American goldeneye		
Bufflehead	15	V
Ruddy duck	15	V
Hooded merganser	1	
Common merganser	15	V
Turkey vulture	NP	V
Black vulture	NP	V
White-tailed kite		
*Mississippi kite		
Sharp-shinned hawk	NP	V
Cooper's Hawk	NP	V
Red-tailed hawk		V
Swainson's hawk	8	V
Rough-legged hawk	3, 4, 5	V
Zone-tailed hawk	1	
White-tailed hawk	3, 4, 5	
Ferruginous hawk	3, 4, 5	V
Harris hawk	8	
*Black hawk	1	
Golden eagle	NP	V
*Bald eagle	1	V
Marsh hawk	3, 4, 5	V
Osprey	15	V
*Caracara	3, 4, 5	
Prairie falcon	3, 4, 5	V
*Peregrine falcon	NP	V
*Aplomado falcon	3, 4, 5, 9	
Merlin	NP	V
American kestrel	NP	V
Scaled quail	3, 4, 5, 9, 11	V
Gambel's quail	2	V
Harlequin quail	5	V
Turkey	5	V
Ring-necked pheasant	1	
Sandhill crane	4	V
*Whooping crane		V
Virginia rail	15	
Sora	15	V
Common gallinule	15	
American coot	15	V
Killdeer	15	V
Mountain plover	3, 4, 5	
Black-bellied plover	15	
American woodcock		
Common snipe	15	V
Long-billed curlew	15	V
Whimbrel	15	V
Upland plover	1, 4	
Spotted sandpiper	15	V
Solitary sandpiper	15	V
Willet	15	V
Greater yellowlegs	15	V
Lesser yellowlegs	15	V
Knot		V
Pectoral sandpiper	15	V
Baird's sandpiper	15	
White-rumped sandpiper	15	
Least sandpiper	15	V
Western sandpiper	15	V
Dunlin	15	
Long-billed dowitcher	1	V
Semipalmated sandpiper	15	V

BIRDS OF DONA ANA COUNTY
(continued)

Marbled godwit	1	V
Sanderling	15	
American avocet	15	V
Black-necked stilt	15	V
Wilson's phalarope	15	V
Northern phalarope	15	V
Thayer's gull	15	
Ring-billed gull	15	
Franklin gull	15	V
Bonaparte's gull	15	
Forster's tern	15	V
Black tern	15	V
Band-tailed pigeon	10	V
Rock dove	NP	V
White-winged dove	1	V
Mourning dove	1, 2	V
Ground dove	1	
Inca dove	1, 4	
Yellow-billed cuckoo	1	
Roadrunner	NP	V
Groove-billed ani	1	
Barn owl	11, 12	V
Great horned owl	1	V
Pygmy owl	13	V
Burrowing owl	13	V
Long-eared owl	3, 4, 5	V
Short-eared owl	3, 4	V
Saw-whet owl	1	
Whip-poor-will	1	
Poor-will	1, 2	V
Common nighthawk	1, 15	V
Lesser nighthawk	1, 15	V
White-throated swift	1	V
Black-chinned hummingbird	1	V
Costa's hummingbird	2, 3, 4, 5	
Anna's hummingbird		
Broad-tailed hummingbird	1	V
Rufous hummingbird	1	V
Calliope hummingbird	1, 7	V
Rivoli's hummingbird	7	V
Blue-throated hummingbird	1	V
Belted kingfisher	1	V
Common flicker	1	V
Acorn woodpecker	10	V
Lewis' woodpecker	10	
Yellow-bellied sapsucker	1	V
Williamson's sapsucker	1	
Hairy sapsucker	1	V
Downy woodpecker	1	
Ladder-backed woodpecker	1	V
Eastern kingbird	1, 2	
Western kingbird	1	V
Cassin's kingbird	1, 2	V
Scissor-tailed flycatcher	11, 12	
Ash-throated flycatcher	1	V
Black phoebe	1	V
Say's phoebe	13	V
Traill's flycatcher	1	V
Western flycatcher	1	V
*Buff-breasted flycatcher	1, 7	V
*Beardless flycatcher	1	V
Eastern phoebe	NP	
Willow flycatcher		V
Hammond's flycatcher	1	
Dusky flycatcher	1	V
Gray flycatcher	10	
Coues' flycatcher	7, 10	V
Western wood pewee	1	V
Olive-sided flycatcher	10	V
Vermilion flycatcher	1	V
Horned lark	3	V
Violet-green swallow	9	V
Tree swallow	1	V
Bank swallow	1	V
Rough-winged swallow	15	V
Barn swallow	15	V
Cliff swallow	1	V
Purple martin	10	
Mexican jay	10	V
Blue jay		
Steller's jay	1	V
Scrub jay	10	V
Black-billed magpie		
Common raven	NP	V
White-necked raven	3, 4	V
Common crow	NP	
Pinon jay	10	V
Clark's nutcracker	10	
Mountain chickadee	10	V
Plain titmouse	10	V
Bridled titmouse	10	V
Verdin	12	V
Common bushtit	1, 10	V
White-breasted nuthatch	10	V
Red-breasted nuthatch	10	
Pygmy nuthatch	10	
Brown creeper	10	
Dipper	1	
House wren	NP	V
Bewick's wren	10	V
Cactus wren	6, 7	V
Long-billed marsh wren	15	
Canyon wren	6, 7	V
Rock wren	5, 7	V
Mockingbird	NP	V
Catbird	1	
Brown thrasher	10	V
Bendire's thrasher	8, 11, 12,	V
Curve-billed thrasher	13	V
Crissal thrasher	6, 13	V

BIRDS OF DONA ANA COUNTY
(continued)

Sage thrasher	7	V
Robin	1	V
Hermit thrush	10	V
Wood thrush	10	V
Swainson's thrush	10	V
Eastern bluebird	10	
Western bluebird	10	V
Mountain bluebird	10	V
Townsend's solitaire	5	V
Blue-gray gnatcatcher	2	V
Black-tailed gnatcatcher	12	V
Golden tailed kinglet	10	
Ruby-crowned kinglet	15	V
Water pipit	15	V
Sprague's pipit	3, 4, 5	
Bohemian waxwing		V
Cedar waxwing	10	V
Phainopepla	7	V
Loggerhead shrike	NP	V
Starling	NP	V
Hutton's vireo	10	V
*Bell's vireo	1	V
Gray vireo	10	V
Solitary vireo	1	V
Philadelphia vireo	1	V
Warbling vireo	1	V
Orange-crowned warbler	1	V
Black-and-white warbler	1	
Prothonotary warbler		
Worm-eating warbler		
Tennessee warbler	1	V
Nashville warbler	1	V
Virginia's warbler	1	V
Lucy's warbler	1	V
Parula warbler	1	
Yellow warbler	1	V
Black-throated blue warbler		V
Yellow-rumped warbler	2	V
Black-throated gray warbler	10	
Townsend's warbler	2	V
Grace's warbler	10	V
Ovenbird	1	
Northern waterthrush	15	
MacGillivray's warbler	2	V
Yellowthroat	15	
Yellow-breasted chat	1	V
Red-faced warbler	10	
Wilson's warbler	1	V
American redstart	1	V
Painted redstart	10	V
House sparrow	NP	V
Eastern meadowlark	3, 4, 5	
Western meadowlark	3, 4, 5	V
Yellow-headed blackbird	15	V
Red-winged blackbird	1	
Orchard oriole	1	
Hooded oriole	1	
Scott's oriole	6, 7, 13	
Northern oriole		
Brewer's blackbird	1	
Great-tailed grackle	2	
Common grackle		
Brown-headed cowbird	1	
Western tanager	10	
Hepatic tanager	10	
Summer tanager	2	
Cardinal	1	
Pyrrhuloxia	2	
Rose-breasted grosbeak	6, 7	
Black-headed grosbeak	6, 7	
Blue grosbeak	1	
Indigo bunting	NP	
Lazuli bunting	1	
Pointed bunting	10	
Dickcissel	4, 9	
Evening grosbeak	1	
Cassin's finch	10	
House finch	NP	
Pine siskin	10	
American goldfinch	3, 4, 5	
Lesser goldfinch	1	
Lawrence's goldfinch	15	
Red crossbil	10	
Green-tailed towhee	2	
Rufous-sided towhee	7	
Brown towhee	10	
Lark bunting	4	
*Baird's sparrow	3, 4, 5	
Field sparrow	4	
Vesper sparrow	9	
Lark sparrow	8	
Rufous sparrow		
Cassin's sparrow	3, 4, 5	
Black-throated sparrow	11	
Sage sparrow	3	
Dark-eyed junco		
Oregon junco	5	
Gray-headed junco	10	
Chipping sparrow	1	
Clay-colored sparrow	3, 4	
Botteri's sparrow	2	
Brewer's sparrow	8, 13	
Black-chinned sparrow	10	
Harris' sparrow	10	
White-crowned sparrow	15	
Golden-crowned sparrow		
Grasshopper sparrow	3	
White-throated sparrow	1	

BIRDS OF DONA ANA COUNTY
(concluded)

Fox sparrow	1	V	*McCown's longspur	5	
Lincoln's sparrow	1		Chestnut-collared longspur	3, 4, 5	
Swamp sparrow	15		Savannah sparrow	4	
Song sparrow	1	V			

REPTILES AND AMPHIBIANS OF DONA ANA COUNTY

Tiger salamander	15	Ambystoma tigrinum	V
Plains spadefoot	3, 4, 5	Scaphiopus bombifrons	
Western spadefoot	15	S. hammondi	V
Couch's spadefoot	11	S. couchi	V
Great plains toad	7, 2, 1	Bufo cognatus	V
Texas toad	15	B. speciosus	V
Desert toad	8	B. punctatus	V
Little green toad	11, 12	B. debilis	V
Woodhouse's toad	1	B. woodhousei	
Canyon tree frog	1	Hyla arenicolor	
Leopard frog	1, 15	Rana pipiens	V
Bullfrog	1, 15	R. catesbeiana	V
Spiny softshell	1	Trionyx spiniferus	
Western box turtle	8	Terrapene ornata	V
Painted turtle	1	Chrysemys picta	
Pond slider	15	C. scripta	
Yellow mud turtle	1, 15	Kinosternon flavescens	V
Great plains skink	1	Eumeces obsoletus	
Many-lined skink	1, 3, 4	E. multivirgatus	V
Western whiptail	9	Cnemidophorus tigris	V
Checkered whiptail	11, 12	C. tesselatus	V
New Mexico whiptail	2	C. neomexicanus	V
Chihuahua whiptail	5, 10	C. exsanguis	V
Desert-grassland whiptail	9, 2	C. uniparens	V
Little striped whiptail	9	C. inornatus	V
Plateau whiptail	10	C. velox	V
Roundtailed horned lizard	11	Phrynosoma modestum	V
Short-horned lizard	7	P. douglassi	V
Texas horned lizard	4	P. cornutum	V
*Gila monster	6	Heloderma suspectum	
Greater earless lizard	3, 4, 5	Cophosaurus texanum	V
Lesser earless lizard	13	Holbrookia maculata	V
Clark's spiny lizard	1	Sceloporus clarki	
Desert spiny lizard	5	S. magister	V
Crevice spiny lizard	2	S. poinsetti	V
Eastern fence lizard	11, 12	S. undulatus	V
Collared lizard	3, 4	Crotaphytus collaris	V
Leopard lizard	11, 12	C. wislizenii	V
Tree lizard	1	Urosaurus ornatus	V
Side-blotched lizard	13	Uta stansburiana	V
Texas blindsnake	5	Leptotyphlops dulcis	
Western blindsnake	11, 12	L. humilis	
Massasauga	9	Sistrurus catenatus	
Rock rattlesnake	7	Crotalus lepidus	V
Western diamondback	11, 12	C. atrox	V
Prairie rattlesnake	4	C. viridis	V

REPTILES AND AMPHIBIANS OF DONA ANA COUNTY
(continued)

Black-tailed rattlesnake	6, 7	C. molossus	V
Western hognose snake	2, 1	Heterodon nasicus	V
Smooth green snake	1	Opheodrys vernalis	
Corn snake	1	Elaphe guttata	
*Trans-Pecos ratsnake	9	E. subocularis	
Gopher snake	11, 12	Pituophis melanoleucus	V
Checkered garter snake	1	Thamnophis marcianus	
Common garter snake	1	T. sirtalis	V
Black-necked garter snake	1	T. cyrtopsis	V
Long-nosed snake	11, 12	Rhinocheilus lecontei	V
Lyre snake	11, 12	Trimorphodon biscutatus	
Glossy snake	7	Arizona elegans	V
Milk snake	1	Lampropeltis triangulum	
Common kingsnake	1	L. getulus	
*Sonora Mt. Kingsnake	5, 10	L. pyromelana	
Mountain patched-nosed snake	1	Salvadora grahamiae	V
Big Bend patched-nose snake	1, 7, 5	S. deserticola	V
Coachwhip snake	1	Masticophis flagellum	V
Sonora whipsnake	6, 7	M. bilineatus	
Striped whipsnake	10	M. taeniatus	V
Ringneck snake	1	Diadophis punctatus	
Western ground snake	1, 2	Sonora semiannulata	
Western black-headed snake	6, 7	Tantilla planiceps	
Plains black-headed snake	11	T. nigriceps	V
Western hook-nosed snake	3, 4, 5	Gyalopion canum	
Night snake	3, 4, 5	Hypsiglena torquata	V

MAMMALS OF DONA ANA COUNTY

Hispid Pocket mouse	3	P. hispidus	V
Rock pocket mouse	11, 12	P. intermedius	V
Desert pocket mouse	1	P. penicillatus	
Ord's kangaroo rat	13	Dipodomys ordii	V
Merriam's kangaroo rat	11, 12	D. merriami	V
Banner-tailed kangaroo rat	3, 4, 5	D. spectabilis	V
Beaver	1	Castor canadensis	
Plains harvest mouse	4	Reithrodontomys montanus	V
Western harvest mouse	4	R. megalotis	V
Cactus mouse	11	Peromyscus eremicus	V
Deer mouse	3, 4	P. maniculatus	V
Whitefooted mouse	3, 4	P. leucopus	V
Brush mouse	10	P. boylii	V
Pinyon mouse	10	P. truei	V
Rock mouse	8	P. difficilis	
Northern grasshopper mouse	13	Onychomys leucogaster	V
Southern grasshopper mouse	11, 12	O. torridus	V
Hispid cotton rat	4	Sigmodon hispidus	V
Tawny-bellied cotton rat	4	S. fulviventer	V
Yellow-nosed cotton rat	5	S. ochrognathus	
Southern woodrat	11	Neotoma micropus	

MAMMALS OF DONA ANA COUNTY
(continued)

White-throated woodrat	7	N. albigula	V
Mexican woodrat	7	N. mexicana	
Muskrat	1	Ondatra zibethicus	
Porcupine	2	Erethizon dorsatum	V
Coyote	NP	Canis latrans	V
*Gray wolf	NP	C. lupus	
Red fox	1	Vulpes fulva	
Kit fox	4	V. macrotis	
Gray fox	10	Urocyon cinereoargenteus	V
Ringtail	1	Bassariscus astutus	V
Raccoon	1	Procyon lotor	V
Longtailed weasel	1	Mustela frenata	V
Badger	3, 5	Taxidea taxus	V
Western spotted skunk	1	Spilogale gracilis	
Striped skunk	11	Mephitis mephitis	V
Hooded skunk	1	M. macroura	
Hognosed skunk	12	Conepatus mesoleucas	V
Mountain lion	NP	Felis concolor	V
Bobcat	10	Lynx rufus	V
Black bear	10, 7	Ursus americanus	V
Mule deer	2	Odocoileus hemionus	V
Whitetail deer	7	O. virginianus	
Pronghorn	3	Antilocapra americana	V
Bighorn sheep	7	Ovis canadensis mexicanus	
Collared peccary	6, 2	Dicotyles tajacu	
Virginia opossum	1	Didelphis virginiana	
Vagrant shrew	5	Sorex vagrans	
Desert shrew	1, 2	Notiosorex crawfordi	
Cave myotis	NP	Myotis velifer	V
Yuma myotis	11, 12	M. yumanensis	V
Little brown myotis	NP	M. lucifugus	V
Southwestern myotis	NP	M. auriculus	
Fringed myotis	NP	M. thysanodes	V
Long-legged myotis	NP	M. volans	
California myotis	1	M. californicus	V
Small-footed myotis	1	M. leibii	V
Silverhaired bat	1	Lasionycteris noctivagans	
Western pipistrelle	1, 15	Pipistrellus hesperus	V
Big brown bat	NP	Eptesicus fuscus	V
Red bat	1	Lasiurus borealis	
Hoary bat	1	L. cinereus	
*Southern yellow bat	1	L. ega	
Spotted bat	NP, 15	Euderma maculatum	
Western big-eared bat	NP	Plecotus townsendii	V
Pallid bat	11, 12	Antrozous pallidus	V
Braziilian freetailed bat	2	Tadarida brasiliensis	
Pocketed freetailed bat	NP	T. femorosacca	
Big freetailed bat	NP	T. macrotis	
Western mastiff bat	NP	Eumops perotis	
Eastern cottontail	7, 10, 2	Sylvilagus floridanus	
Audubon's cottontail	2	S. audubonii	V

MAMMALS OF DONA ANA COUNTY
(concluded)

Black-tailed jackrabbit	11, 8, 13	Lepus californicus	V
Cliff chipmunk	10	Eutamias dorsalis	V
Gray-collared chipmunk	10	E. cinereicollis	V
Texas antelope squirrel	2, 10, 11, 12	Ammospermophilus interpres	V
13-lined ground squirrel	9	Spermophilus tridecemlineatus	
Spotted ground squirrel	13	S. spilosoma	V
Rock squirrel	10	S. variegatus	V
Golden-mantled ground squirrel	10, 6	S. lateralis	
Black-tailed prairie dog	3, 4	Cynomys ludovicianus	
Gunnison's prairie dog	5	C. gunnisonii	
Botta's pocket gopher	5	Thomomys bottae	V
Desert pocket gopher		Geomys arenarius	V
Yellow-faced pocket gopher	13	Pappogeomys castanops	
Silky pocket mouse	4	Perognathus flavus	V
Plains pocket mouse	3, 4	P. flavescens	

APPENDIX D-2

Wildlife Methodology

The IHICS (Integrated Habitat Inventory and Classification System) inventory conducted for the Southern Rio Grande Planning Area was the primary source of information for this document. The records from the inventory are located in the Las Cruces District Office files.

Standard Habitat Sites (SHS)

A complete description of SHSs can be found in the SRG Environmental Impact Statement (EIS). The term arroyo-riparian used herein describes the same SHS as pseudoriparian in the SRG EIS. The basic methodology is found in Bureau Manual 6602.

Vertebrate Species

A description of methods used to collect vertebrate species occurrence records can be found in the SRG EIS.

Big Game Herd Units

The same big game herd units identified in the SRG EIS are used here for Dona Ana County. Population numbers were reduced in the herd units acres for acre from the Southern Rio Grande Planning Area to establish big game population numbers for Dona Ana County.

SHS Comparison Data, Table 3-4

The information on Table 3-4 in this document was taken directly from the SRG EIS. The original information was based on actual field data collection as described in the SRG EIS.

EIS Acres in the State Land Exchange Area

The acres shown in Table 3-7 were developed from SRG EIS maps by the dot count method.

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICT OFFICE
1800 Marquess Street
Las Cruces, New Mexico 88005

NM 61209
1600 (036)

AUG 2 0 1985

Field Supervisor
U. S. Fish and Wildlife Service
P. O. Box 4487
Albuquerque, NM 87196

Dear Sir:

The Bureau of Land Management (BLM), Las Cruces District, is preparing a Southern Rio Grande Plan Amendment/Environmental Impact Statement to describe Dona Ana County Land Tenure Adjustment. The alternatives for the EIS are not firmly developed, but the enclosed Notice of Intent describes the basic proposed action. The four priority areas for state exchange are also indicated on the enclosed map.

In accordance with the Endangered Species Act, we request a list of candidate and listed species which potentially occupy Dona Ana County, New Mexico.

We will be planning for land tenure adjustments for all of Dona Ana County, which will include exchanges and other disposals, land acquisitions, and land retention. We suggest that your list provide information for all of Dona Ana County, but give special emphasis to the priority areas, if possible.

We intend to complete our planning and EIS in about one year. This is a process that ordinarily takes two years. We may, therefore, need to request that you expedite any consultations which may be required on our proposed actions.

If you have any questions, please contact Ken Holmes at (505) 525-8228 or FTS 571-8312.

Sincerely,

H. James Fox
District Manager

Enclosures (2)
1-Notice of Intent
2-Map

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

Field Supervisor
Ecological Services, USFWS
Post Office Box 4487
Albuquerque, New Mexico 87196

Cons. #2-22-85-I-123

September 24, 1985

Memorandum

To: District Manager, Bureau of Land Management, Las Cruces, New Mexico

From: Field Supervisor, FWS, Ecological Services, Albuquerque, New Mexico

Subject: Endangered or Threatened Species List for Dona Ana County Land Tenure Adjustment (BLM)

This responds to your letter dated August 20, 1985 requesting a list of species Federally listed or proposed to be listed as threatened or endangered. The proposed action involves land tenure adjustments for all BLM land in Dona Ana County, New Mexico, which will include exchanges and other disposals, land acquisitions, and land retention.

We have used the information in your request to narrow the attached species list to those which may be affected by your proposed project.

Information relating to the Section 7 consultation process has been enclosed for your use in project planning. We suggest you contact the New Mexico Department of Game and Fish and the New Mexico Heritage Program for information concerning fish, wildlife and plants of State concern. If we can be of further assistance, please call Gerald Roehm at (505) 766-3966 or FTS 474-3966.

John C. Peterson

Enclosures

cc: (w/cy encls)
Director, New Mexico Department of Game and Fish, Santa Fe, New Mexico
Director, New Mexico Heritage Program, New Mexico Natural Resources Department, Santa Fe, New Mexico
Regional Director, FWS, HR and SE, Albuquerque, New Mexico

Species List for Proposed BLM Land Tenure Adjustment
Dona Ana County, New Mexico
September 24, 1985

Listed Species

Sneed Pincushion Cactus (Coryphantha Sneedii sneedii) - This species usually prefers limestone ledges in the desert and grassland at 4,300 to 5,400 feet elevation.

Authority: Saustrup, A. and M.C. Johnston. 1977. Report on status of Coryphantha sneedii var. sneedii. Rare Plant Study Center, U. T. at Austin.

Proposed Species

None

Candidate Species

None

Critical Habitat

None

ENDANGERED SPECIES ACT
SECTION 7 CONSULTATION PROCESS

Section 7 of the Endangered Species Act requires that all Federal Agencies consult/confer with the U.S. Fish and Wildlife Service or National Marine Fisheries Service (hereafter referred to as Service) regarding endangered species. This consultation is necessary to insure actions authorized, funded or carried out by such agencies do not jeopardize the continued existence of any listed or proposed endangered or threatened species or adversely modify or destroy critical habitat of such species. The purpose of these requirements is to identify and resolve, at the early planning stage, potential conflicts between the action and these species and their critical habitat. The following explains the processes used to comply with these requirements.

For Section 7 consultation purposes actions are placed in two categories: one consisting of major construction actions significantly affecting the quality of the human environment and a second consisting of non-construction actions. A major construction action is defined as a construction action which will require preparation of an EIS. Actions not requiring an EIS are treated as non-construction category actions.

CONSULTATION PROCESS

NON-CONSTRUCTION ACTIONS. For actions in this category it is incumbent upon the Federal action agency to assess whether its action may affect endangered and threatened species. If no effect is evident, there is no need for further consultation. However, if it is determined the proposed action may affect listed species, the Federal action agency shall initiate formal Section 7 consultation with the Service.

While not required, a list of listed or proposed species found in the vicinity of the proposed action may be obtained from the Service by the Federal agency or their agent.

CONSULTATION PROCESS

CONSTRUCTION ACTIONS. For proposed actions in this category, the Federal agency or their agent requests from the Service information on any species listed or proposed to be listed that may be affected by the action. The Service will provide this information within 30 days after receiving the request.

Based on the list provided by the Service, the Federal action agency, or their delegated agent, conducts a biological assessment of the total area affected by the proposed project to identify impacts upon those species as a result of the proposed action. This assessment shall be completed within 180 days after receiving a list of species from the Service. If the assessment is not initiated within 90 days after receipt of the species list, the accuracy of the list should be verified before conducting the assessment.

Biological assessments should include as a minimum:

(1) An on-site inspection of the area affected by the proposed action including a detailed survey of the area to determine if listed or proposed species are present and if suitable habitat exists for expanding the existing population or potential reintroduction of the population;

(2) Interviews with recognized experts on the species involved including personnel of the Service, State conservation departments, universities, and others who may have data not yet found in scientific literature;

(3) A review of literature and other scientific data to determine the species distribution, habitat needs, and other biological requirements;

(4) An analysis of direct and indirect effects of the proposed action on the individuals and population of the involved species and their habitat;

(5) An analysis of alternative actions that may promote conservation of the species;

(6) Other relevant information; and

(7) A written report documenting the assessment results.

If the Federal action agency determines that its proposed action may affect listed species, that agency initiates formal Section 7 consultation with the Service. If the Federal action agency determines that there will be no effect, there is no need for further consultation. However, the Service would appreciate the opportunity to review the biological assessment.

PROPOSED SPECIES AND PROPOSED CRITICAL HABITAT. If the proposed Federal action is likely to jeopardize species proposed for listing as endangered or threatened, or adversely modify proposed critical habitat, Section 7 requirements are met by conferring with the Service. Information similar to that listed below for formal consultation is needed from the action agency when conferring with the Service on proposed species and proposed critical habitat.

FORMAL CONSULTATION INFORMATION NEEDS

Requests for formal consultation should include information necessary for the Service to determine impacts on listed species as follows:

(A) DESCRIPTION OF ACTION.

(B) DESCRIPTION OF THE ACTION AREA AFFECTED. INCLUDES ALL AREAS AFFECTED DIRECTLY OR INDIRECTLY BY THE FEDERAL ACTION, NOT MERELY THE IMMEDIATELY AREA INVOLVED IN THE ACTION.

(C) STATUS OF THE SPECIES AND IT'S CRITICAL HABITAT IN THE AREA AND WHAT THE AFFECTED AREA PROVIDES FOR THE SPECIES.

(D) AN ASSESSMENT OF HOW THE LISTED SPECIES OR CRITICAL HABITAT WILL BE AFFECTED AS A RESULT OF THE FEDERAL ACTION.

(E) OTHER RELEVANT INFORMATION

DickM/me: 2/13/85
February 2: DickM (ESA-SEC7)

IN REPLY REFER TO:
NM 61209
1600 (036)

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICT OFFICE
1800 Marquess St.
Las Cruces, New Mexico 88005

SEP 1 3 1985

Ms. Ann Cully
National Resources Department
Villagra Building, Suite 129
Santa Fe, NM 87503

Dear Ms. Cully:

We are enclosing a map of Dona Ana County and an overlay which shows four priority land exchange areas, pursuant to your discussion with Ken Holmes of this office.

Also enclosed is a Notice of Intent to do a Planning Amendment and Notice of Realty Action which further describes what is being proposed. Please note that the State land on the overlay, which is within the Organ Mountain Recreation Lands, will transfer to BLM under the proposal.

In our planning, we will be considering the entire realm of land tenure adjustments including exchanges, acquisitions, and disposals. We will concentrate our effort on priority area 1 on the east side of Las Cruces.

We would appreciate knowing about any specific concerns you may have about State listed plant species in relation to our proposals as well as obtaining information about these plants which might be pertinent to preparation of an Environmental Impact Statement.

As Ken Holmes indicated to you, we are working on an abbreviated schedule for completion of this planning effort and would appreciate your prompt attention to this information request.

Please call Ken Holmes or Bea Wade at (505) 525-8228, if you have any questions.

Sincerely,

H. James Fox
District Manager

Enclosures

STATE OF NEW MEXICO
NATURAL RESOURCES DEPARTMENT
Santa Fe 87503
(505) 827-7835

TONEY ANAYA
GOVERNOR

LEO GRIEGO
SECRETARY

September 24, 1985

Mr. H. James Fox, District Manager
Bureau of Land Management
Las Cruces District Office
1800 Marquess St.
Las Cruces, New Mexico 88005

Attention: Mr. Ken Holmes

Dear Mr. Fox,

We received the map and overlay showing the four priority land exchange areas in Dona Ana County. Since area 1 is your top priority, I have searched our files for occurrences of plant species of concern in the townships, ranges, and sections listed on page one of the Proposed Plan Amendment and Land Exchange. No plant speices of concern appear in our records for those designated locations. However, in the nearby Tortugas Mountains, there is a record for Talinum longipes (longstemmed flame flower) which is on the proposed state endangered species list. This species occurs on low hills in Dona Ana County. Another plant species occurring nearby (at T22S, R3E, Sec. 30, SW1/4) is Cereus greggi or night blooming cereus. Night blooming cereus is a candidate for federal protection and is on the proposed state endangered species list. It occurs in gravelly or silty areas in washes or flats at about 3000 - 5000 ft. Paul Knight believes that these two species as well as Opuntia arenaria (sand pricklypear) may occur on area 1. Opuntia arenaria and Cereus gregii may also occur on areas 2 and 3. Area 4 may encompass a number of plant species of concern:

Opuntia arenaria	sand pricklypear (FC,SE)
Coryphantha organensis	Organ Mountain pincushion cactus (SE)
Coryphantha sneedii var. sneedii	Sneed's pincushion cactus (FE,SE)
Coryphantha scheeri	Scheer's pincushion cactus (SE)
Mammilaria wrightii	wright's pincushion cactus (SE)

Cereus greggii	night-blooming cereus (FC,SE)
Sibara grisea	gray sibara (SE)
Chrysothamnus spathulatus	spoonleaf rabbitbrush
Pseudocymopterus longiradiatus	desert parsley
Sphaeralcea wrightii	Wright's globemallow
Stipa curvifolia	curlleaf needlegrass

FC=Federal candidate, FE=Federally Endangered, SE=State Endangered

Information on general habitat for these taxa can be found in A handbook of rare and endemic plants of New Mexico, New Mexico Native Plants Protection Advisory Committee, UNM Press, 1984. If you would like us to search our files for locations of plant and animal species in areas 2, 3, and 4 we will be happy to do so. There will be a small fee for future searches.

For information on animal species, we suggest you contact the New Mexico Game and Fish Department, Endangered Species Office.

If you have any questions, do not hesitate to contact us.

Sincerely,

Anne Cully

Anne Cully
Botanist

IN REPLY REFER TO:
1600 (036)

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICT OFFICE
1800 Marquess Street
Las Cruces, New Mexico 88005

DEC 24 1985

Dr. John Hubbard
New Mexico Department of Game and Fish
State Capitol, Villagra Building
Santa Fe, NM 87503

Dear Dr. Hubbard:

Enclosed is a draft table of endangered species to be included in our Southern Rio Grande Plan Amendment/Environmental Impact Statement. We would appreciate any comments you would care to make concerning the table. A copy of preliminary draft alternatives is also enclosed.

We will be preparing a biological assessment for the planned action, which is basically a transfer of title. We anticipate that the only impacts to endangered species from the planned action will be either enhanced or reduced management opportunities. We would also like to know if you have any comments on the anticipated impacts.

Because we are working within a short timeframe, we would like to have your comments by January 15, 1986. If you have any questions, please contact Ken Holmes at (505) 525-8228.

Sincerely,

H. James Fox
District Manager

Enclosures (2)

GOVERNOR
TONEY ANAYA
DIRECTOR AND SECRETARY
TO THE COMMISSION
HAROLD F. OLSON

January 23, 1986

Mr. H. James Fox
District Manager
Bureau of Land Management
1800 Marquess Street
Las Cruces, New Mexico 88005

Dear Mr. Fox:

My staff has reviewed your draft table of endangered species for the Rio Grande Plan Amendment/Environmental Impact Statement. The listings are complete as far as state-endangered animals are concerned, except the peregrine falcon (occasion in winter and migration) and phantom shiner (probably former resident--now possibly extinct) should be added. In terms of the impacts that might be anticipated under your proposal on such species, the draft document does not provide an easy understanding of the locations of the tracts that are involved. Under the circumstances, and because we are not familiar with the value of these tracts as fish and wildlife habitat, we cannot comment meaningfully on the potential impacts of the proposed actions.

Sincerely,

Harold

Harold F. Olson
Director

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APPENDIX E
RECREATION

APPENDIX E

RECREATION OPPORTUNITY SPECTRUM INVENTORY AND EVALUATION PROCESS

The Recreation Opportunity Spectrum (ROS) provides a framework for inventory planning and management of the recreation resource. The ROS recognizes that people differ in their needs and the experience they desire. Also, the resource base is not uniform; it varies with its potential for providing recreational experiences (i.e., recreational opportunities available on the Organ Mountains are not the same as those available in the Aden Lava Flow). The ROS allows managers to characterize all possible combinations of recreational opportunities and resources and arrange combinations of activity, setting, and experience opportunities along a continuum. Once these opportunities have been defined, managers are able to ensure that these opportunities are provided and are able to assess the impacts of other resource actions on the recreation resource.

To facilitate its use in planning, the ROS is divided into six classes which are defined in a combination of activity, setting, and experience opportunities. Evaluation of ROS classes is based upon their application against specific criteria. These are:

1. Remoteness. The distance the area is from roads.

2. Size. The size of an area provides a partial measure of the opportunity to experience feelings of isolation and self-reliance.

3. Evidence of Human Use. The extent to which the natural scenery has been modified by land treatments or construction of structures.

4. Social Setting. The number and types of contacts between recreationists.

5. Managerial Setting. The type and extent of facilities provided to support recreation use and the type of restrictions imposed on recreationists by the managing agency.

Using this system, the predicted impacts of each proposal are anticipated and extreme impacts to the recreation resource are mitigated through the planning and design stage. For a more thorough discussion of the ROS procedures, see BLM Manual, Section 8500.

APPENDIX E (continued)

THE RECREATION OPPORTUNITY SPECTRUM CLASS DESCRIPTIONS

Opportunity Class	Experience Opportunity	Setting Opportunity	Activity Opportunity[a/]
Primitive	Opportunity for isolation from the sights and sounds of man, to feel a part of the natural environment, to have a high degree of challenge and risk, and to use outdoor skills.	Area is characterized by an essentially unmodified natural environment of fairly large size. Concentration of users is very low. Only facilities essential for resource protection are used. Spacing of groups is informal and dispersed to minimize contacts between groups. Motorized use within the area is not permitted.	Camping Hiking Climbing Enjoying Scenery or Natural Features Nature Study Photography Horseback Riding Spelunking Hunting (big game, small game, upland bird, waterfowl) Ski Touring and Snowshoeing Swimming Diving (Skin and Scuba) Fishing Canoeing Sailing River Running (nonmotorized craft)
Semiprimitive Nonmotorized	Some opportunity for isolation from the sights and sounds of man, but not as important as for primitive opportunities. Opportunity to have a high degree of interaction with the natural environment, to have moderate challenge and risk, and to use outdoor skills.	Area is characterized by a predominantly unmodified natural environment of moderate to large size. Concentration of users is low and on-site restrictions are subtle. Facilities are provided for the protection of resource values and the safety of users only. Spacing of groups may be formalized to disperse use and limit contacts between groups. Motorized use is not permitted.	
Semiprimitive Motorized	Some opportunity for isolation from the sights and sounds of man. Opportunity to have a high degree of interaction with the natural environment, to have moderate challenge and risk, and to use outdoor skills. Explicit opportunity to use motorized equipment while in the area.	Area is characterized by a predominantly unmodified natural environment of moderate to large size. Concentration of users is low and on-site restrictions are subtle. Facilities are provided for the protection of resource values and the safety of users only. Spacing of groups may be formalized to disperse use and limit contacts between groups. Motorized use is permitted.	Same as the above, plus the following: Off-Road Vehicle Use (4-wheel drive, dune buggy, dirt bike, snowmobile) Power Boating
Roaded Natural	About equal opportunities for affiliation with other groups and for isolation from the sights and sounds of man. Opportunity to have a high degree of interaction with the natural environment. Challenge and risk opportunities are not very important. Practice of outdoor skills may be important. Opportunities for both motorized and nonmotorized recreation are present.	Area is characterized by a generally natural environment. Resource modification and utilization practices harmonize with the natural environment. Concentration of users is low to moderate. Rustic facilities are provided for user convenience as well as for safety and resource protection. Conventional motorized use is provided for in construction standards and design of facilities.	All activities listed previously plus the following: Picnicking Rock Collecting Wood Gathering Auto Touring Downhill Skiing Snowplay Ice Skating Water Skiing and Other Water Sports Hang Gliding Interpretive Use Rustic Resorts and Organized Camps

THE RECREATION OPPORTUNITY SPECTRUM CLASS DESCRIPTIONS

Opportunity Class	Experience Opportunity	Setting Opportunity	Activity Opportunity[a/]
Rural	Opportunities to experience affiliation with individuals and groups are prevalent as is the convenience of sites and opportunities. These factors are generally more important than the natural setting. Opportunities for wildland challenges, risk-taking, and testing of outdoor skills are unimportant.	Area is characterized by a substantially modified natural environment. Resource modification and utilization practices are obvious. The concentration of users is often moderate to high. A considerable number of facilities are present. Facilities are often provided for specific activities and are designed for moderate to high use. Facilities for intensive motorized use are available.	All activities listed previously plus the following: Competition Games Spectator Sports Bicycling Jogging Outdoor Concerts Modern Resorts
Modern Urban	Opportunities to experience affiliation with individuals and groups are prevalent as is the convenience of sites and opportunities. Experiencing the natural environment and the use of outdoor skills are largely unimportant.	Area is characterized by a highly modified environment. Vegetation is often exotic and manicured. Sights and sounds of man, on-site, are predominant. Large numbers of users can be expected. Modern facilities are provided for the use and convenience of large numbers of people. Controls and restrictions are obvious and numerous. Facilities for high intensity motor use and parking are present with forms of mass transit often available.	All activities listed previously.

Source: BLM Las Cruces District Office Files, 1986.

Note: a/This listing of activity opportunities is provided for illustrative purposes. It is not an all-inclusive list of activity opportunities on the public land.

APPENDIX F
CULTURAL RESOURCES

United States Department of the Interior

2200 (932)

BUREAU OF LAND MANAGEMENT
NEW MEXICO STATE OFFICE
Post Office and Federal Building
P.O. Box 1449
Santa Fe, New Mexico 87504-1449

May 28, 1985

Instruction Memorandum No. NM-85-211
Expires: 9/30/86

To: DM's

From: State Director

Subject: Memorandum of Agreement (MOA) for the Protection of Cultural Resources in State Exchange Actions

Enclosed is a copy of the subject agreement among the Bureau of Land Management (BLM), the State Land Office (SLO) and the State Historic Preservation Office. The agreement has been set up to facilitate an expanded exchange program with the SLO by transferring protection responsibilities to them. Please review the provisions of the agreement carefully.

The Zuni Salt Lake Exchange is the first to be processed under the agreement. From our experience with the Zuni exchange, we suggest the following process:

Upon development of a firm State exchange proposal, the District Office will:

1. Complete a Class I survey of the selected public lands.

2. On the basis of Class I information, determine if a Class II level survey is needed to determine the suitability of the lands for transfer.

3. If the Class I information is sufficient, present the data and recommendations to the SHPO and the SLO for concurrence.

o If the Class I information is not sufficient, develop a strategy of field reconnaissance appropriate to the specific lands giving consideration to anticipated end uses.

o Present the reconnaissance plan to the SHPO and negotiate my suggested modifications as recommended. In developing the plan, note that the objective of the reconnaissance is not Section 106 compliance, which is provided by this MOA, but rather the identification of sites and conditions which may present special management problems which either the BLM or SLO may find unsuitable for transfer.

4. Complete the survey according to the plan.

5. Prepare and submit a report of the survey findings to the SHPO, the SLO and NM (930).

6. Negotiate any adverse comments or additional work requirements with the SHPO.

7. In coordination with NM (930), negotiate a final land selection by the SLO.

Under the agreement, the SLO will assume the cost of survey work and mitigation if and when development of the selected land takes place. The above process will provide the SLO with information they need to properly evaluate the responsibility they will be assuming and guide their final selections.

Charles D. Fischer

1 Enclosure:
Encl. 1 - MOA on Cultural Resource
Protection Responsibilities

Distribution
WO (320), Rm. 3643 - 1
D-470 - 1
NM (932, P. Beck) - 1

MEMORANDUM OF AGREEMENT
REGARDING CULTURAL RESOURCE PROTECTION RESPONSIBILITIES
AMONG
USDI BUREAU OF LAND MANAGEMENT, NEW MEXICO
AND
NEW MEXICO STATE LAND OFFICE
AND
NEW MEXICO HISTORIC PRESERVATION DIVISION

I. Purpose

This Memorandum of Agreement, developed and entered into by the New Mexico State Director, USDI Bureau of Land Management (BLM), the Commissioner of Public Lands, New Mexico State Land Office (SLO) and the New Mexico State Historic Preservation Officer (SHPO), establishes cooperative procedures to be followed by the three parties in protecting significant cultural resources on public lands, administered by BLM, which are to be transferred to the State of New Mexico subsequent to the date of this memorandum.

II. Authority

Bureau of Land Management:

* Federal Land Policy and Management Act of 1976
* National Historic Preservation Act of 1966, as amended

State of New Mexico:

* Cultural Properties Act of 1969, as amended
* National Historic Preservation Act of 1966, as amended

III. Policy.

It is Bureau policy:

A. To protect and preserve representative samples of the full array of cultural resources for the benefit of scientific and socio-cultural use by present and future generations.

B. To ensure that cultural resources are given full consideration in all land use planning and management decisions regarding retention or disposal of public lands.

C. To ensure that inadvertent damage to cultural resources from Bureau undertakings is avoided and that adverse effects from Bureau undertakings on identified cultural resources are appropriately mitigated.

It is the policy of the State of New Mexico:

A. To consider the historical and cultural heritage of the State as one of the State's most valued and important assets and to provide for the preservation, protection and enhancement of structures, sites and objects of historical significance within the State.

B. In cooperation with federal and State agencies, local governments, private organizations and individuals, to identify, evaluate and register significant cultural properties on all classes of land in New Mexico.

C. To cooperate with the Secretary of the Interior, the Advisory Council on Historic Preservation, and federal and State agencies, local governments, organizations and individuals to ensure that historic properties are taken into consideration at all levels of planning and development.

D. To prepare and implement a statewide historic preservation plan.

E. To carry out its responsibilities under 36 CFR 800.

IV. Definitions.

For the purpose of this document:

A. Class I (existing data) Inventory: An inventory of a defined area to (1) provide a narrative cultural resource overview derived from existing cultural resources information and (2) provide a compilation of existing cultural resources site records.

B. Cultural Property or Resource. Any definite location of past human activity, occupation, or use, identifiable through field inventory (survey), historical documentation, or oral evidence. Such term may include archaeological, historic or architectural sites, structures, or places, or sites or places of traditional cultural or religious importance to specified social and/or cultural groups, whether or not represented by physical remains. Cultural properties are managed through the system of inventory, evaluation, protection, and utilization described in federal and State laws and regulations.

C. Data Recovery: With regard to cultural properties, the professional application of scientific techniques of controlled observation, contextual measurement, controlled collection, excavation, and/or removal of physical remains, including the analysis, interpretation, explanation, reporting and curatorial safeguarding of recovered remains and associated records in an appropriate public institution and, the collection of historical and/or anthropological data, such as oral histories, genealogies, folklore and related data, as appropriate. Data recovery under this agreement must be according to standards and guidelines established by the Cultural Properties Review Committee (CPRC).

D. Evaluation: The analysis of cultural resource inventory records, the application of professional judgment to identify characteristics which contribute to possible uses for recorded cultural resources, considered individually or in collective groupings of similar resources and the recommendation of appropriate use(s) for each resource or grouping. Evaluation must be according to determination of eligibility procedures set forth in 36 CFR 60 or established procedures for entry of properties into the State Register of Cultural Properties, as appropriate.

E. Significant Cultural Property: A cultural property which is listed on the National or State Register or is eligible for nomination thereto.

V. Cooperative Procedures Agreement.

1. Development of Selection Proposals

Bureau of Land Management

Review selection proposals received from SLO on basis of Class 1 (existing) cultural resource data; inform SLO and SHPO of results of review.

State Land Office

Develop selection proposals and, where possible, develop classification of land uses, in consultation with SHPO, with object of avoiding selection of public lands with known cultural properties which may be susceptible to vandalism, degradation or other management problems, or which should be preserved in place.

State Historic Preservation Officer

Consult with SLO in developing selection proposals; advise SLO of known cultural properties which may be susceptible to vandalism, degradation or other management problems, or which should be preserved in place. Note presence or likelihood of stable sites and other sites not threatened or endangered.

2. Information and Analysis

Bureau of Land Management

In agreement with SHPO, determine further actions necessary to identify threatened, unstable or vulnerable sites, or sites which should be preserved in place. Perform surveys as needed to identify such sites. The Bureau and SHPO will concur in determining what extent and level of survey to perform. Determine National Register eligibility of identified sites in consultation with SHPO.

State Land Office

When informed by BLM, SHPO or other knowledgeable source that cultural properties likely to constitute management problems are located on lands embraced by proposal, reconsider proposed selection.

State Historic Preservation Officer

Consult with BLM to determine requirements for cultural resource survey. Advise SLO of probable requirements for further survey and mitigation of adverse effect. Coordinate with Cultural Properties Review Committee in review and registration of properties eligible to State Register of Cultural Properties.

3. Considerations for Exchange

Bureau of Land Management

In consultation with SHPO and SLO, determine tracts to be offered for selection, and any areas to be retained to protect cultural resource values. The Bureau will consider the type and number of cultural resources, the status of acreage adjacent to area proposed for transfer, the size and configuration of selected lands, topography and vegetation of the area proposed for exchange, the proposed use of acreage adjacent to known cultural resources, and the geographical location of known cultural resources in making this determination.

State Land Office

In consultation with BLM and SHPO, select tracts to be accepted into the trust.

State Historic Preservation Officer

Consult with and advise BLM and SLO during land exchanges.

4. Planning and Management

State Land Office

Upon receipt of lease or land use applications, consult with SHPO to determine whether prospective use is compatible with preservation and protection of significant cultural properties. If land use proposal involves a change of use from the use while under BLM ownership and such use is determined by SHPO to threaten the integrity or preservation of significant cultural properties, require the performance of an appropriate level of survey or inventory, as agreed between SLO and SHPO, for the area of land affected by the change of use. Such survey may be performed by SLO field personnel, when the archaeological training of such personnel is determined by the Historic Preservation Division to meet minimum professional standards. Incorporate provisions in regulations, land use plans, or leases to ensure that SHPO is given reasonable and timely opportunity to participate in planning any land or structure-modifying undertakings so as to avoid or minimize adverse effects on significant cultural properties and to preserve and protect such properties.

Where the Commissioner determines that a proposed use of land which is incompatible with the preservation and protection of a significant cultural property is in the best interest of the trust, he shall cause adverse effects

to be appropriately mitigated by data recovery and dissemination of information. Any such data recovery will be subject to permit by the Cultural Properties Review Committee pursuant to state law.

State Historic Preservation Officer

In consultation with SLO, determine whether proposed land use is compatible with preservation and protection of significant cultural properties. Assist SLO to create provisions in regulations or leases to ensure that SHPO has reasonable and timely opportunity to participate in planning undertakings as stated above. Where use incompatible with preservation is determined by Commissioner to be in the best interest of the trust, guide and assist SLO or lessee in formulating program for data recovery and dissemination of information.

5. Legal Remedies; Legislation; Sales

State Land Office

Within available means and under applicable laws, provide for surveillance, protection and management, including oversight by lands personnel, of significant cultural properties on selected lands. In cooperation with SHPO, proceed against violations of state laws regarding cultural resources. Cooperate with SHPO to pursue State legislation relating to cultural resource planning and site protection. In cooperation with SHPO and CPRC, assess and nominate eligible properties to State Register of Cultural Properties. When the SLO, in consultation with SHPO, determines that it is advantageous for the preservation and protection of cultural resources on selected lands, the SLO, consistent with the requirements of the trust, may provide for the sale, exchange or lease of lands to governmental, non-profit or private entities. Such transfers will contain binding requirements for cultural resource protection and preservation.

State Historic Preservation Officer

Cooperate with SLO in surveillance and protection of significant sites. Cooperate with SLO in proceeding against violations of state laws regarding cultural resources. Cooperation with SLO to pursue legislation relating to site protection and cultural resource planning. Cooperate with SLO as otherwise provided for in this section.

For the purposes of land selection and management as described herein, the SHPO will provide available cultural resource information to SLO or its designees as required in 1-4 above, and may charge the actual cost of data retrieval and processing. The SHPO will enter all relevant site information in the Archaeological Records Management System or Historic Archaeological Resources Management System as appropriate. The SLO will support or require lessees of selected lands to support such data storage and retrieval at actual cost thereof.

All parties, in executing their responsibilities under this Memorandum, will take into account the standards set forth at 36 CFR Part 61, Appendix A; Section 8111 of the BLM Manual; the handbook of the Advisory Council on Historic Preservation entitled "Treatment of Archaeological Properties," and regulations and guidelines by the Cultural Properties Review Committee.

VI. Modification and Termination

A. This memorandum will be reviewed at least every three years, at which time modifications may be proposed.

B. Any party to this memorandum may suggest modifications, in writing to the other parties, at any time. Modifications may be made when all parties agree by signing a supplementary Memorandum of Agreement, or by signing a replacement to this Memorandum.

C. Any party is authorized to terminate its participation under this memorandum by notifying each participant three months in advance of the desired termination date. This notice shall be in writing explaining the rationale for which termination is desired. The parties expressly agree, however, that the responsibilities of each and all of them, as defined in this agreement, shall in the event of termination of the agreement continue in full force and effect upon and for any lands or resources transferred during the life of this agreement.

This Memorandum of Agreement is entered into and effective as of the last date shown below.

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Charles W Luscher
State Director

Date 2-19-85

COMMISSIONER OF PUBLIC LANDS
NEW MEXICO STATE LAND OFFICE
STATE OF NEW MEXICO

Jim Baca
Commissioner

Date 2/19/85

STATE OF NEW MEXICO
HISTORIC PRESERVATION DIVISION

State Historic Preservation Officer

Date 2-19-85

IN REPLY REFER TO

United States Department of the Interior

8110 SHPO (034)
NM 61209

BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICT OFFICE
1800 Marquess Street
Las Cruces, New Mexico 88005

AUG 13 1985

Mr. Thomas W. Merlan
New Mexico State Historic Preservation Officer
Villa Rivera, Room 101
228 East Palace Avenue
Santa Fe, NM 87503

Dear Mr. Merlan:

As discussed in our meeting on August 6, 1985, the Las Cruces District Office is initiating the consultation process for preparation of a planning amendment which will analyze a potential land exchange with the State of New Mexico. The lands in question total 10,080 acres in Dona Ana County.

In accordance with MOA 223, paragraph V.1, we have performed a Class I survey of existing data. Approximately 132 acres have been surveyed within the 10,080 acres. According to our files and those of the Laboratory of Anthropology, only one site has been recorded within that parcel.

As cultural resource information for the subject lands is lacking, we propose to do a Class II survey in hopes of identifying sites which are threatened, unstable or vulnerable, as well as those sites which should be preserved in place.

The enclosed topographic map shows in green those areas we propose to survey initially. Selection of areas for survey was based on soil and vegetation types, proximity to major drainages, and overlook potential. Combined with these areas are east-west and north-south linear transects crossing areas of unknown site probability. As we discussed at our meeting, however, information gained early in the survey may dictate changes in the overall survey strategy.

Marylin Harkey of this office will be in charge of this survey, which will begin August 19, 1985. Field work should be completed by September 30, 1985.

Please advise us if you concur with our plan for survey of this parcel. We would appreciate a response by August 19, 1985.

Sincerely,

H. James Fox
District Manager

Enclosures (2) Maps

STATE OF NEW MEXICO

OFFICE OF CULTURAL AFFAIRS
HISTORIC PRESERVATION DIVISION

TONEY ANAYA
GOVERNOR

VILLA RIVERA, ROOM 101
228 EAST PALACE AVENUE
SANTA FE, NEW MEXICO 87503
(505) 827-8320

THOMAS W. MERLAN
DIRECTOR

September 12, 1985

H. James Fox, District Manager
Bureau of Land Management
Las Cruces District
1800 Marquess Street
Las Cruces, New Mexico 88005

Dear Mr. Fox:

Thank you for your letter of August 15, 1985 regarding the proposed land exchange between the State Land Office and the Bureau of Land Management. As published in the Federal Register of August 8, 1985 (pages 32116 to 32118), approximately 10,061.91 acres of BLM lands in Dona Ana County have been identified as Priority 1 lands for exchange to the State.

Federal land exchanges must comply with Sections 106 and 110 of the National Historic Preservation Act, as amended, which require federal agencies to consider the effect of their actions on significant cultural resources, and to exercise caution that significant cultural resources are not inadvertently transferred from federal ownership or control.

Specific cultural resource responsibilities regarding exchange of Bureau lands to the State Land Office are defined in a February 1985 Memorandum of Agreement (MOA) among the Bureau, this office, and the State Land Office. This agreement outlines steps to be taken to insure that cultural resources are given appropriate consideration in the land exchange selection process. It also outlines the legal responsibilities that the State Land Office will assume for management of cultural resources on exchanged federal lands in order to provide long-term protection that would be consistent with established federal requirements. Some of these responsibilities include requiring the completion of surveys and data recovery before surface-disturbing activities are authorized on the exchanged lands, as well as more broad-ranging responsibilities such as providing protection from vandalism. Specific procedures are outlined in that MOA.

Section V-1 of the MOA requires the Bureau to review existing archaeological records for proposed exchange tracts in order to assist in the development of selection proposals. As noted in your letter, in completing this Class I overview for the Priority 1 lands, the Bureau found that only 1% (132 acres) of the 10,000 acre area had been previously surveyed. This did not provide enough information for making assessments of the types and frequency of

archaeological sites in the proposed exchange area. This necessitated the completion of additional inventory by the Bureau in accordance with the responsibilities outlined in Section V-2 of the MOA.

As noted in your letter, representatives of this office and the Bureau met on August 6, 1985 to discuss what additional inventory would be necessary to identify sites which may be unstable, threatened or vulnerable, or those sites which should be preserved in place. The combination of judgmental inventory and random transects as outlined in your letter is consistent with that discussed at the August 6 meeting. The intent of inventory at this stage was not to identify all cultural resources in the proposed exchange tract, but rather to assess the overall archaeological sensitivity of the proposed exchange tract and to identify specific sites or areas which could pose major management problems.

As noted in your letter, selection of the areas to be surveyed at this time was based on soil and vegetation types, proximity to major drainages, and overlook potential. Several extended linear transects were also to be completed across various parts of the exchange area in order to provide information on areas of unknown site probability. The survey report should discuss the survey rationale in greater detail. It should also draw on archaeological data from the larger region, as well as specific survey results, in order to provide the best information possible regarding the suitability of these lands for exchange, in accordance with Section V-3 of the MOA.

When the inventory results are available, we look forward to additional consultation with your office regarding the National Register eligibility of known sites in the proposed exchange tract. When this is completed, this office will write a letter to the State Land Office advising them of the results of the inventory and of the probable requirements for future survey and mitigation of adverse effect in these lands, in accordance with Section V-2 of the MOA. We can then proceed with further considerations for exchange, in accordance with Section V-3 of the MOA.

Thank you for your cooperation. If possible, we would appreciate receiving two copies of the inventory report.

Sincerely,

Thomas W. Merlan
State Historic Preservation Officer

TWM/NW
3024.nw

cc: Ron Fellows, BLM State Office
Jim Baca, Commissioner of Public Lands
Carlos Anaya, State Land Office

APPENDIX G
LIVESTOCK GRAZING

APPENDIX G-1
ALLOTMENTS IN DONA ANA COUNTY

Allotment Number	Allotment Number	Percent Federal Range	Animal Units		Acres					8LM Animal Units Dona Ana County
			8LM	Total	8LM	State	Private	Other	Total	
	DONA ANA COUNTY									
3001	Aden Hills (Waggoner)	91	109	120	18,378	2,076	80	0	20,534	109
3002	J. Arrington	92	125	136	21,817	1,730	81	0	23,628	125
3003	J. Hay	90	132	146	22,445	2,465	160	0	25,070	132
3004	H. N. Bailey	100	8	8	961	0	275	0	1,236	8
3007	C. Brewster	70	16	23	1,950	640	106	0	2,696	16
3008	B and W Cattle Co. (Burke)	72	83	114	10,166	1,029	3,679	0	14,874	83
3010	J. Bustamante	84	21	25	3,465	935	320	0	4,720	21
3011	Castle South	60	31	52	2,930	1,280	430	0	4,640	31
3012	D. Johnson	77	115	150	6,695	560	1,160	0	8,415	115
3013*	Corralitos (Foster)	70	1,136	1,631	126,448	49,629	4,379	0	180,456	1,136
3014	H. Cothern (Hayner)	75	21	28	3,720	68	590	0	4,378	21
3015*	W. Cothern	85	271	319	14,654	1,280	600	660	17,194	271
3018	J. Hurt	71	38	53	3,280	680	995	0	4,955	38
3020	Beacon (Johns)	91	342	374	58,002	5,086	800	0	63,888	342
3022	La Union (Johns)	86	211	243	42,968	6,016	0	0	48,984	211
3023	J. Wagner	92	480	520	85,488	5,302	1,940	0	92,730	480
3025	Broad Canyon (Gray)	57	30	53	2,870	1,920	1,040	0	5,830	30
3026*	L. A. Horner	96	24	25	3,030	0	40	0	3,070	24
3027	O. L. Smith	84	47	56	3,795	560	140	0	4,495	47
3033	Mt. Riley (Wagner)	92	451	488	74,977	6,921	160	0	82,058	451
3034	Mundy and Morrow	84	10	12	1,680	0	120	0	1,800	10
3036	H. Kane	90	90	100	7,100	0	640	0	7,740	90
3038	F. Deerman	74	237	320	27,588	6,363	1,308	0	35,259	237
3040	K. Cohorn (Rasmussen)	50	53	106	8,968	0	458	0	9,426	53
3043	Horse Canyon (Ward)	100	25	25	2,330	0	65	0	2,395	25
3044	W. Oil Co. (Arrington)	74	32	43	9,338	1,660	130	0	11,128	32
3045	E. Schmidt	80	16	20	4,230	0	848	0	5,078	16
3046	Wilson Estate (Green)	75	3	4	351	310	155	0	816	3
3047	Indian Springs (Kirby)	92	141	154	14,931	1,480	238	0	16,649	141
3048	J. Hay	93	28	30	8,690	640	0	0	9,330	28
3051	G. Difabio	100	3	3	510	0	0	0	510	3
3056	R. Cosimati	82	107	130	22,000	3,698	480	0	26,178	107
3058*	W. N. and J. A. Castle	95	69	73	13,615	735	59	0	14,409	69
3061	E. Ward	100	36	36	7,195	0	20	0	7,215	36
3062	W. N. Castle	70	64	91	15,177	1,885	45	650	17,172	64
3063	L. Cluff	83	113	136	12,941	2,358	190	0	15,489	113
3064	Placita Arroyo (Johnson)	100	42	42	7,289	0	0	0	7,289	42
3067	C. Hudson	85	80	94	11,241	1,329	370	0	12,940	80
3068	C. Cluff	91	220	241	22,566	2,287	40	0	24,893	220
3069*	P. Tisler	81	99	122	8,320	2,090	80	0	10,490	99
5001	W. Blythe	74	79	106	15,680	3,759	1,491	0	21,030	79
5002	A. B. Cox	51	126	246	15,180	3,084	4,856	0	23,120	126
5003	San Augustine Ranch (R. Cox)	52	52	100	4,897	0	2,651	1,881	9,429	52
5004	Blythe (Hall and Knapps)	100	41	41	8,663	0	0	0	8,663	41
5007	Jeff Isaacks	54	160	294	23,146	9,600	2,880	0	35,626	160
5008	R. Isaacks	94	33	35	4,316	191	50	0	4,557	33
5009	P. Price	79	132	168	32,024	4,287	2,271	0	38,582	132
5012	S. A. Walter	42	14	33	1,180	0	1,480	0	2,660	14
5013	Baylor Canyon (Miller/Hopkins)	94	143	151	12,476	800	50	0	13,326	143
SUB-TOTALS					831,661	134,733	37,950	2,606	1,006,950	

APPENDIX G-1
ALLOTMENTS IN DONA ANA COUNTY
(concluded)

Allotment Number	Allotment Number	Percent Federal Range	Animal Units		Acres					BLM Animal Units Dona Ana County
			BLM	Total	BLM	State	Private	Other	Total	
	PARTIALLY IN DONA ANA COUNTY									
2002	Johnson Estate	84	36	43	5,566	0	1,102		6,668	6
3009	G. W. Burris	58	328	559	32,211	15,997	3,630	7,312	59,150	203
3016	Pol E. (Herrmann)	81	474	584	83,114	17,664	590	-	101,368	209
3019	Camilu-Vig (Garcia)	30	32	106	4,034	6,543	2,319		12,896	32
3028	Hyatt and Hyatt	67	869	1,298	54,955	21,553	7,669		84,177	123
3029	W. Potrillos (Groff)	75	703	935	94,682	31,537	144	1,110	127,473	642
3031	Las Uvas (Hilborn)	52	257	495	17,289	10,250	3,922		31,461	240
3032*	Saddle Mtns. (Burris)	73	220	300	14,673	2,330	2,971		19,974	202
3039	Border Ranch (Thousand Springs Cattle Co.)	75	459	613	52,327	12,558	3,193		68,078	117
3065	A. R. Hille	92	264	288	29,278	2,546	0		31,824	166
3066	L. Johnson	61	16	26	2,830	1,220	40		4,090	1
6022	L. Cain	62	461	738	46,831	15,285	810		62,926	39
6045	B. Gonzales	38	18	48	2,830	960	465		4,255	9
6046	Gonzales Community	47	38	81	5,599	0	250	1,157	7,006	7
6053	N. Graham South	88	531	603	81,042	7,505	2,294		90,841	231
6057	R. Apodaca	100	19	19	2,718	0	3		2,721	2
6057	R. Hackey	49	282	579	20,111	17,640	2,383		40,134	18
6110*	E. J. Ward	87	127	143	19,432	2,505	477		22,414	4
SUB-TOTALS					569,522	166,093	32,262	9,579	777,456	
TOTAL					1,401,183	300,826	70,212	12,185	1,784,406	

Note: Allotments under Allotment Management Plans.

APPENDIX G-2

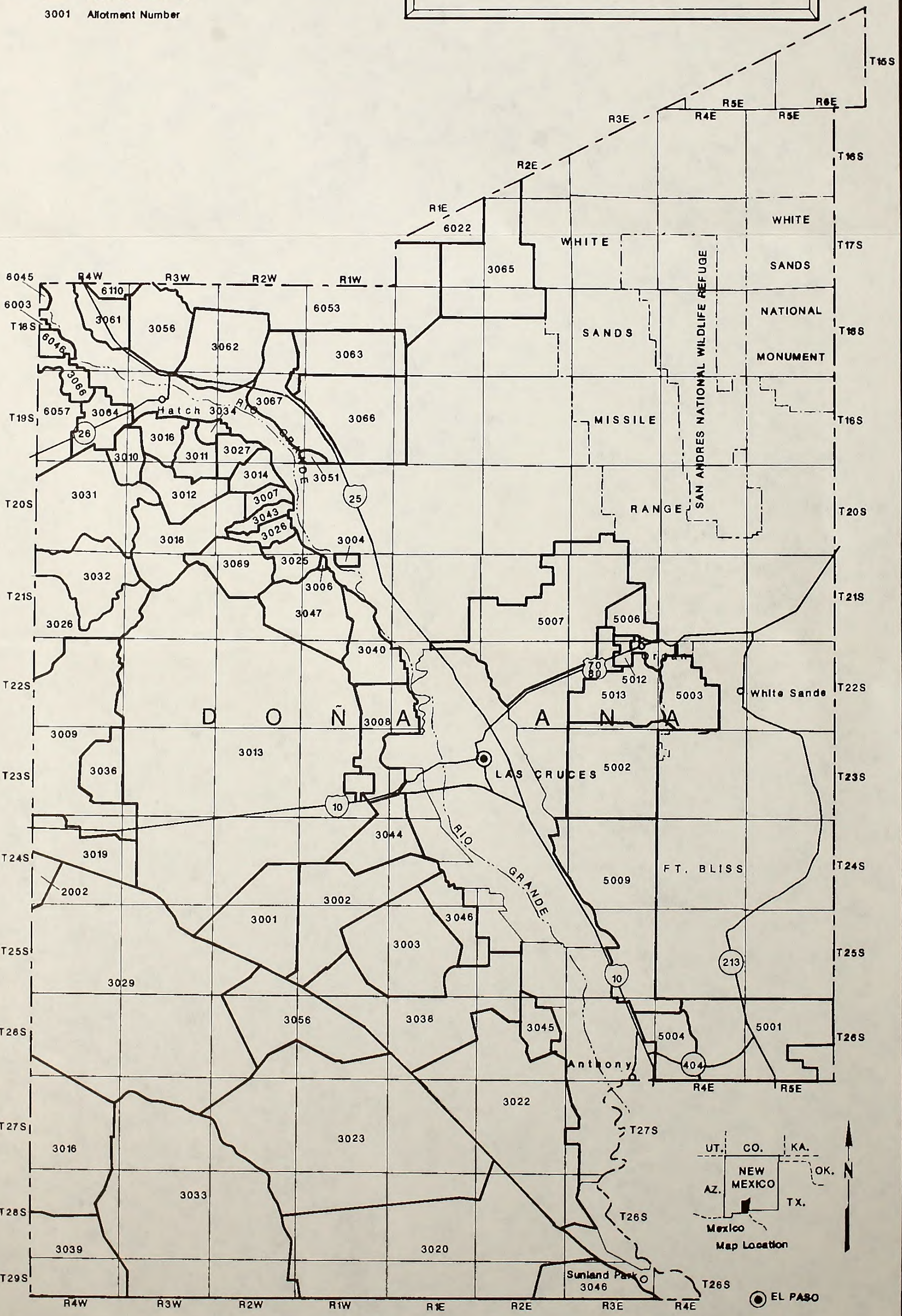
GRAZING ALLOTMENTS WITHIN DONA ANA COUNTY

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICT LAS CRUCES N.M.
DONA ANA COUNTY LAND TENURE ADJUSTMENT

LEGEND

Allotment Boundary

3001 Allotment Number



Source: BLM Las Cruces District Office Files, 1665

APPENDIX H
VISUAL RESOURCES

APPENDIX H

VISUAL RESOURCES INVENTORY AND EVALUATION PROCESS

The BLM's Visual Resource Management (VRM) program functions in two ways. First, all public land is inventoried and the visual resources evaluated. The end result is the identification of VRM classes. Second, the program provides the framework for evaluation of proposed projects relative to their anticipated impact on the visual resource. The contrast rating system is used to make this evaluation.

Inventory

Evaluation of the scenic quality of a landscape, the visual sensitivity of that landscape to change, and the distance of the landscape from a viewer determines the final VRM class. A discussion of each aspect of this evaluation follows.

Scenic Quality

Perhaps scenic quality is best described as the overall impression one retains after driving through or walking through an area. During the inventory, an area is divided into units which are primarily homogeneous in terms of landforms, vegetation, and structures. Each of these units are then evaluated in terms of seven key factors (landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications). Rating scores are assigned to each factor according to uniform criteria. The sum of the rating scores are translated into three scenic quality classes: A, B, or C.

Visual Sensitivity

Sensitivity of the landscape is measured in terms of the degree of concern expressed by the public toward scenic quality. A matrix combines user attitude and use volume to an overall rating of high, medium, or low sensitivity.

Distance Zones

Distance zones are determined in the field by traveling along each major route and observing the area that can be viewed. The areas are defined as the foreground/middle ground, background, or seldom seen.

Management Classes

VRM classes describe the different degree of modification allowed in the basic elements of the landscape. These classes are determined through a matrix which combines scenic quality, visual sensitivity, and distance zones. The resulting classes are mapped and become the basis used to assess the impact of proposed activities. Map 3-14 illustrates the final classes and describes the degree of modification allowed in each class.

Contrast Rating System

The degree to which a proposed project affects the visual quality of the landscape depends on the amount of visual contrast that is created between the activity and the existing landscape. The contrast rating system is used to assess this contrast.

The system reduces a landscape to its major features (land and water, vegetation, and structures) and each feature into its basic elements (form, line, color, and texture). The predicted contrast of the proposal against each landscape feature then indicates the total anticipated visual impact.

For each management class, there are maximum acceptable ratings for each element and any one feature.

Conclusion

Using this system, the predicted impacts of each proposal are anticipated and extreme visual contrasts are mitigated during the planning and design stage. For a more thorough discussion of the Visual Resource Management procedures, see BLM Manual Sections 8411 and 8431.

APPENDIX I
ECONOMIC CONDITIONS

APPENDIX I-1
PAYMENTS IN LIEU OF TAXES

Payments in Lieu of Taxes (PILT) are compensation to local Government units for fiscal impacts caused by the presence of tax-exempt Federal lands within their boundaries. The annual payments, approved for distribution to counties, townships, and other eligible units of Government approved for distribution by the Department of Interior, Bureau of Land Management are based on a formula approved by Congress in 1976. The recipients may use the funds for any governmental purpose.

These payments are in addition to revenues from oil and gas leases and sales of minerals, timber, and other materials and products derived from public land which the Federal Government also shares with State Governments.

> The Authority and Eligibility as defined in 31 U.S.C. 6902 states that "(a) The Secretary of the Interior shall make a payment for each fiscal year to each unit of general local government in which entitlement land is located. A unit may use the payment for any governmental purpose.
>
> (b) A unit of general local government may not receive a payment for land which payment under this chapter otherwise may be received if the land was owned or administered by a State or unit and was exempt from real estate taxes when the land was conveyed to the United States Government. This subsection does not apply to payments for land a State or unit acquires from a private party to donate to the Government within 8 years of acquisition."

The term "entitlement land" means land owned by the United States Government. This is further defined in 31 U.S.C. 6901B which includes land "...the Secretary of the Interior administers through the Bureau of Land Management...".

The payments as defined in 31 U.S.C. 6903(b)(1) states that:

> "A payment under Section 6902 of this title is equal to the greater of -
>
> (A) 75 cents for each acre of entitlement lands located within a unit of general local government (but not more than the limitation determined under subsection (c) of this section) reduced (but not below 0) by amounts the unit received in the prior fiscal year under a payment law; or
>
> (B) 10 cents for each acre of entitlement lands located in the unit (but not more than the limitation determined under subsection (c) of this section).
>
> (b)(2) The Chief executive officer of a State shall submit to the Secretary of the Interior a statement on the amounts of payments the State transfers to each unit of general local government in the State out of amounts received under a payment law.

(c)(1) The limitation for a unit of general local government with a population of not more than 4,999 is $50 times the population.

(2) The limitation for a unit of general local government with a population of at least 5,000 is the following amount (rounding the population to the nearest thousand)."

The table presented under 31 U.S.C. 6903(c) depicts the population ranging from 5,000 with a limitation of $50 per capita, to a population of 50,000 with a limitation of $20 per capita. Since the population for Dona Ana County exceeds 50,000, the payment limitation is equal to 50,000 times $20 equaling $1 million.

The PILT Dona Ana County received for fiscal year 1985 totaled $849,170. This was estimated using the following method:

1,193,604	acres "entitlement lands"
X $.75	
$895,203	
- 20,762	Federal Land Payments County Received FY 84
$874,441	
X 97.110%	Payment Prorated due to Funding Limitations
$849,169.66	PILT payment FY 85.

The PILT Dona Ana County received in fiscal year 1984 was $829,414.

1,191,094.00	acres "entitlement lands"
X $.75	
$893,320.50	
-27,664.00	Federal Land Payments County Received FY 83
$865,656.50	
X 95.81329%	Payment Prorated due to Funding Limitations
$829,414.00	PILT Payment FY 84

Since the amount received under "payment law" varies from year-to-year, the PILT payments for each alternative were assessed using 75 cents per acre of "entitlement lands" with no allowance made for the amount the County could receive under "payment law" during the prior fiscal year. Actual PILT payments could possibly be less than what is presented depending on the amounts the County received under "payment law" in the prior fiscal year and whether the payment is prorated because of funding limitations.

Alternative I - No Action

Dispose 1,562 acres X $.75 = $1,171.50

Acquire 7,742 acres
State 2,952 acres
Private 4,790 acres X $.75 = $3,592.50

Calculation of PILT Impact: $3,592.50 - $1,171.50 = $2,421 increase in PILT.

The acquisition of 2,952 acres of State land would not qualify as "entitlement lands".

Alternative II - Favor Disposal

Dona Ana County
Dispose 108,472 acres

Calculation of PILT Impact: 108,472 acres X $.75 = $81,354 decrease in PILT ($81,354 ÷ $829,414 [FY 84 PILT] = 9.8% decrease).

State Land Exchange Area
Dispose 10,000 acres

Calculation of PILT Impact: 10,000 acres X $.75 = $7,500 decrease in PILT. Acquisition of 5,000 acres of State land would not qualify as "entitlement lands" for calculation of PILT.

Cumulative PILT Impact: $81,354 + $7,500 = $88,854 decrease in PILT ($88,854 ÷ $829,414 [FY 84 PILT] = 10.7 ~ 11% decrease).

Alternative III - Preferred Alternative

Dona Ana County
Dispose 81,684 acres X $.75 = $61,263 decrease in PILT ($61,263 ÷ $829,414 [FY 84 PILT] = 7.4% decrease).

Acquire 41,001 acres
State 19,404 acres
Private 11,803 acres X $.75 = $8,852.25 increase in PILT ($8,852.25 ÷ $829,414 = 1.06% increase).

Calculation of PILT Impact: $61,263 - $8,852.25 = $52,410.75 decrease in PILT ($52,410.75 ÷ $829,414 = 6.3% decrease).

Acquisition of 19,404 acres of State land would not qualify as "entitlement lands" for calculation of PILT.

State Land Exchange Area

Dispose 10,000 acres X $.75 = $7,500 decrease in PILT.

Acquisition of 5,000 acres of State land would not qualify as "entitlement lands" for calculation of PILT.

Cumulative PILT Impact: $52,410.75 + $7,500 = $59,910.75 decrease on PILT ($59,910.75 ÷ $829,414 = 7.2% decrease).

APPENDIX I-2
BLM MANAGERIAL COSTS

The BLM managerial costs are the actual fiscal year 1985 labor costs from October 1984 to September 1985 for the Las Cruces/Lordsburg Resource Area (LC/LRA). Data were extracted from the BLM Manpower Correlation computer file.

The total labor cost per acre for the Resource Area was estimated by dividing the total labor cost by the number of acres in the Resource Area. The labor cost per acre was then applied to the number of BLM acres in Dona Ana County to derive the labor cost for Dona Ana County. Since Dona Ana County is the only County affected in the Resource Area, it was necessary to estimate the labor cost to determine how the Resource Area would be affected under each alternative. The change in labor costs for the Resource Area for each alternative was compared to the 1985 labor costs for the District to depict the level of significance.

Total Labor Costs FY 85 LC/LRA	$540,127.25
Total BLM acres LC/LRA	2,896,371 acres

Total Labor Cost Per Acre $540,127.25 ÷ 2,896,371 acres = $.186 per acre
Dona Ana County Labor Costs 1,116,687 acres X $.186 = $207,703.78

In addition to the recurring annual labor costs for the Resource Area are costs required to process lands actions. It is estimated that approximately 346 hours are required for an average sale of 65 acres which includes an environmental assessment, appraisal, and survey. The cost per acre was estimated by converting the number of hours into work months and multiplying by the average work month cost planned for FY 85 and dividing by 65 acres. It should be noted that these are average estimates for analysis purposes only; actual costs may depend on the location and size of the parcel processed.

It was assumed the lands identified for disposal would occur over the 20 year life of the plan.

Land Sale Cost per Acre:
346 hrs/sale ÷ 173.33 hrs/wm = 1.966 wm X $2,113 average wm cost = $4,217.95
$4,217.95 ÷ 65 acres = $64.89/acre.

Alternative I - No Action

Recurring Annual Labor Costs:

Retain	1,105,125 acres X $.186/acre =	$205,553.23
Acquire	7,742 acres X .186/acre =	1,440.01
State Land Exchange Area	10,000 acres X .186/acre =	1,860.00
Total Dona Ana County Annual Labor Cost		$208,853.24

Estimated Land Disposal Processing Costs:
1,562 acres X $64.89/acre = $101,358.18 ÷ 20 years = $5,067.91

Total Managerial Costs:
$208,853.24 + $5,067.91 = $213,921.15 Dona Ana County Managerial Costs

Summary:

$540,127.25	1985 LC/LRA Managerial Costs
-207,703.78	1985 Dona Ana Managerial Costs (estimated)
332,423.47	
+213,921.15	Estimated Dona Ana County Managerial Costs (No Action Alternative)
546,344.62	Estimated LC/LRA Costs (No Action Alternative)
-540,127.25	
$ 6,217.37	Estimated increase in Managerial Costs (No Action Alternative)

Managerial Cost Comparison

Las Cruces District Managerial Costs FY 85 $3,267,104
LC/LRA Managerial Costs FY 85 $540,127
$540,127 ÷ $3,267,104 = 16.5 percent of LCDO FY 85 Costs

LC/LRA Managerial Costs (No Action Alternative) $546,345
$546,345 ÷ $3,267,104 = 16.7 percent of LCDO FY 85 Costs.

Las Cruces District Managerial Costs (No Action Alternative) $3,273,322
$3,273,322 ÷ $3,267,104 - 1 = .2 percent increase in LCDO Costs.

Alternative II - Favor Disposal

Recurring Annual Labor Costs:
Retain 998,215 acres X $.186 = $185,667.99

Estimated Land Disposal Processing Costs:
Dispose 108,472 acres X $64.89 = $7,038,748.10 ÷ 20 years = $351,937.40

Total Managerial Costs:
$185,667.99 + $351,937.40 = $537,605.39 Dona Ana County Managerial Costs.

Summary:

$540,127.25	1985 LC/LRA Costs
-207,703.78	1985 Dona Ana County Costs
332,423.47	
+537,605.39	Estimated Dona Ana County Costs (Favor Disposal Alternative)
870,028.86	Estimated LC/LRA Costs (Favor Disposal Alternative)
-540,127.25	
$329,901.61	Estimated Increase in Managerial Costs (Favor Disposal Alternative)

Managerial Cost Comparison

Las Cruces District Managerial Costs FY 85 $3,267,104
LC/LRA Managerial Costs FY 85 $540,127
$540,127 ÷ $3,267,104 = 16.5 percent of LCDO FY 85 Costs

LC/LRA Managerial Costs (Favor Disposal Alternative) $870,028.86
$870,029 ÷ $3,267,104 = 26.6 percent of LCDO FY 85 Costs

Las Cruces District Managerial Costs
(Favor Disposal Alternative) $3,597,005
$3,597,005 ÷ $3,267,104 - 1 = 10.1 percent increase in LCDO Costs.

Alternative III - Preferred

Recurring Annual Labor Costs:
Retain 1,025,003 acres X .186 = $190,650.56
Acquire 41,001 acres X .186 = 7,628.18
5,000 acres X .186 = 930.00
Dona Ana County Annual Labor Cost $199,208.74

Estimated Land Disposal Processing Costs:
Dispose 81,684 acres X $64.89/acres = $5,300,474.76 ÷ 20 years = $265,023.74

Total Managerial Costs
$199,208.74 + $265,023.74 = $464,232.48 Dona Ana County Managerial Costs

Summary:

$540,127.25	1985 LC/LRA Costs
-207,703.78	1985 Dona Ana County Costs
332,423.47	
+464,232.48	Estimated Dona Ana County Costs (Preferred Alternative)
$796,655.95	Estimated LC/LRA Costs (Preferred Alternative)
-540,127.25	
$265,528.69	Estimated Increase in Managerial Costs (Preferred Alternative)

Managerial Cost Comparison

Las Cruces District Managerial Cost FY 85 $3,267,104
LC/LRA Managerial Costs FY 85 $540,127
$540,127 ÷ $3,267,104 = 16.5 percent of LCDO FY 85 Costs

LC/LRA Managerial Costs (Preferred Alternative) $796,655.95
$796,655.95 ÷ $3,267,104 = 24.4 percent of LCDO FY 85 Costs

Las Cruces District Managerial Costs (Preferred Alternative) $3,523,633
$3,523,633 ÷ $3,267,104 - 1 = 7.8 percent increase in LCDO Costs.

APPENDIX I-3
TAYLOR GRAZING RECEIPTS

The Taylor Grazing Receipts for each alternative were estimated by converting the animal units (AUs) into animal unit months (AUMs) and multiplying by the 1985 grazing fee of $1.35 per AUM. It should be noted that the information presented under the current situation is based on the estimated number of BLM AUs in Dona Ana County.

The State of New Mexico is eligible to receive 12.5 percent of the monies collected as grazing fees under Section 3 of the Taylor Grazing Act to be expended as the State legislature may prescribe for the benefit of County or counties in which the grazing districts producing such monies are situated. The amount presented under the current situation does not compare to the $20,762 in Taylor Grazing monies the County received in 1984. This difference may be attributed to the State of New Mexico's allocation of funds.

Congress directed in the Federal Land Policy and Management Act of 1976 that 50 percent of all monies received by the United States as grazing fees be credited to a separate account in the Treasury. This is the Range Betterment Fund. These funds may be used for on-the-ground rehabilitation, protection, and improvement of the public land that will arrest rangeland deterioration and improve forage conditions with resulting benefits to wildlife, watershed protection, and livestock production. Range Betterment Funds are distributed to Districts in proportion to grazing fees collected by each District.

Current Situation Dona Ana County

8,190	AUs
98,280	AUMs
$132,678	Taylor Grazing Receipts
$16,584.75	12.5% State Allocation
$66,339	Range Betterment Fund

Alternative I - No Action

Disposal 5 AUs
Acquire 118 AUs

Taylor Grazing Receipts

Disposal:	5 AUs X 12 X $1.35 = $81.00 decrease
Acquisition:	118 AUs X 12 X $1.35 = $1,911.60 increase
Net Change:	113 AUs X 12 X $1.35 = $1,830.60 net increase
Significance:	$1,830.60 ÷ $132,678 = 1.4 percent increase

Allocation to State

Disposal:	$81 X 12.5% = $10.12 decrease
Acquisition:	$1,911.60 X 12.5% = $238.95 increase
Net Change:	$1,830.60 X 12.5% = $228.83 net increase

Range Betterment Fund:

Disposal: $81 X 50% = $40.50 decrease
Acquisition: $1,911.60 X 50% = $955.80 increase
Net Change: $1,830.60 X 50% = $915.30 net increase

Alternative II - Favor Disposal

Dona Ana County
Disposal 619 AUs

Taylor Grazing Receipts

Disposal: 619 AUs X 12 X $1.35 = $10,027.80 decrease
Significance: $10,027.80 ÷ $132,678 = 7.5 percent decrease

Allocation to State

Disposal: $10,027.80 X 12.5% = $1,253.47 decrease

Range Betterment Fund

Disposal: $10,027.80 X 50% = $5,013.90 decrease

State Land Exchange Area
Disposal 47 AUs
Acquire 57 AUs

Taylor Grazing Receipts

Disposal: 47 AUs X 12 X $1.35 = $761.40 decrease
Acquisition: 57 AUs X 12 X $1.35 = $923.40 decrease
Net Change: 10 AUs X 12 X $1.35 = $162.00 net increase
Significance: $162 ÷ $132,678 = .12 percent increase

Allocation to State

Disposal: $761.40 X 12.5% = $95.17 decrease
Acquisition: $923.40 X 12.5% = $115.42 increase
Net Change: $162 X 12.5% = $20.25 net increase

Range Betterment Fund

Disposal: $761.40 X 50% = $380.70 decrease
Acquisition: $923.40 X 50% = $461.70 increase
Net Change: $162 X 50% = $81 net increase

Cumulative Impact (Favor Disposal)

Taylor Grazing Receipts

Dona Ana County:	$10,027.80 decrease
State Land Exchange Area:	$162 increase
Net Change:	$9,865.80 net decrease
Significance:	$9,865.80 ÷ $132,678 = 7.4 percent decrease

Allocation to State

Dona Ana County:	$1,253.47 decrease
State Land Exchange Area:	$20.25 net increase
Net Change:	$1,233.22 net decrease

Range Betterment Fund

Dona Ana County:	$5,013.90 decrease
State Land Exchange Area:	$81 increase
Net Change:	$4,932.90 net decrease

Alternative III - Preferred

Dona Ana County
Dispose 447 AUs
Acquire 241 AUs

Taylor Grazing Receipts

Disposal:	447 AUs X 12 X $1.35 = $7,241.40 decrease
Acquisition:	241 AUs X 12 X $1.35 = $3,904.20 increase
Net Change:	206 AUs X 12 X $1.35 = $3,337.20 net decrease
Significance:	$3,337.20 ÷ $132,678 = 2.5 percent decrease

Allocation to State

Disposal:	$7,241.40 X 12.5% = $905.17 decrease
Acquisition:	$3,904.20 X 12.5% = $488.02 increase
Net Change:	$3,337.20 X 12.5% = $417.15 net decrease

Range Betterment Fund

Disposal:	$7,241.40 X 50% = $3,620.70 decrease
Acquisition:	$3,904.20 X 50% = $1,952.10 increase
Net Change:	$3,337.20 X 50% = 1,668.60 net decrease

State Land Exchange Area
Disposal 47 AUs
Acquire 57 AUs

Taylor Grazing Receipts

Disposal:	47 AUs X 12 X $1.35 = $761.40 decrease
Acquisition:	57 AUs X 12 X $1.35 = $923.40 increase
Net Change:	10 AUs X 12 X $1.35 = $162 net increase
Significance:	$162 ÷ $132,678 = .12 percent increase

Allocation to State

Dona Ana County:	$761.40 X 12.5% = $95.17 decrease
State Land Exchange Area:	$923.40 X 12.5% = $115.42 increase
Net Change:	$162 X 12.5% = $20.25 net increase

Range Betterment Fund

Dona Ana County:	$761.40 X 50% = $380.70 decrease
State Land Exchange Area:	$923.40 X 50% = $461.70 increase
Net Change:	$162 X 50% = $81 net increase

Cumulative Impact (Preferred Alternative)

Taylor Grazing Receipts

Dona Ana County:	$3,337.20 net decrease
State Land Exchange Area:	$162 net increase
Net Change:	$3,175.20 net decrease
Significance:	$3,175.20 ÷ $132,678 = 2.4 percent decrease

Allocation to State

Dona Ana County:	$417.15 net decrease
State Land Exchange Area:	$20.25 net increase
Net Change:	$396.90 net decrease

Range Betterment Fund

Dona Ana County:	$1,668.60 net decrease
State Land Exchange Area:	$81 net increase
Net change:	$1,587.60 net decrease

APPENDIX I-4
COUNTY TAX REVENUE

The methodology used to estimate the effects to potential tax revenue involved using a 1985 average mill rate for District 2 Las Cruces, as well as using two tax classifications of land to estimate a range of potential tax revenue generated for each alternative. This was necessary since it is presently unknown what the potential uses of the land will be; therefore, a grazing classification of lands and an undeveloped classification of lands were used. The estimated range of tax revenue generated is for analysis purposes to provide an indication of significance for each alternative. It is recognized that actual tax revenue generated depends on the actual valuation and the ultimate use of the land.

Estimation of average mill rates District 2, Las Cruces, 1985:

	TOTAL
2 IN R	.028612
2 IN NR	.028830
2 OUT R	.021810
2 OUT NR	.021810
	.101062
Average Mill Rate	.0252655

Source: Dona Ana County Assessor's Office, 1985.

No Action Alternative

Dispose: 1,562 acres
Acquire: 7,742 acres
State: 2,952 acres
Private: 4,790 acres

Grazing Land Classification

Dispose: 1,562 acres X $2.70 per acre X .3333 X .0252655 = $35.51 increase
Acquire: 4,790 acres X $2.70 X .3333 X .0252655 = $108.91 decrease
Net Effect: $73.40 decrease

Undeveloped Land Classification

Dispose: 1,562 acres X $200 per acre X .3333 X .0252655 = $2,630.72 increase
Acquire: 4,790 acres X $200 X .3333 X .0252655 = $8,067.31 decrease
Net Effect: $5,436.59 decrease

Favor Disposal Alternative

Dona Ana County

Dispose: 108,472 acres

APPENDIX I-4
COUNTY TAX REVENUE
(continued)

Grazing Land Classification

Dispose: 108,472 acres X $2.70 per acre X .3333 X .0252655 = $2,466.29 increase

Undeveloped Land Classification

Dispose: 108,472 acres X $200 X .3333 X .0252655 = $182,688.35 increase

State Land Exchange Area

Dispose: 10,000 acres

Grazing Land Classification

Dispose: 10,000 acres X $2.70 X .3333 X .0252655 = $227.37 increase

Undeveloped Land Classification

Dispose: 10,000 acres X $200 X .3333 X .0252655 = $16,841.98 increase

Preferred Alternative

Dona Ana County

Dispose: 81,684 acres
Acquire: 41,001 acres
State: 19,404 acres
Private: 11,803 acres
Ft. Bliss: 9,794 acres

Grazing Land Classification

Dispose: 81,684 acres X $2.70 per acre X .3333 X .0252655 =
$1,857.22 increase
Acquire: 11,803 acres X $2.70 X .3333 X .0252655 = $268.36 decrease
Net Effect: $1,588.86 increase

Undeveloped Land Classification

Dispose: 81,684 acres X $200 per acre X .3333 X .0252655 = $137,572.05 increase
Acquire: 11,803 acres X $200 per acre X .3333 X .0252655 = $19,878.59 decrease
Net Effect: $117,693.46 increase

State Land Exchange Area

Dispose: 10,000 acres

Grazing Land Classification

Dispose: 10,000 acres X $2.70 X .3333 X .0252655 = $227.37 increase

APPENDIX I-4
COUNTY TAX REVENUE
(concluded)

Undeveloped Land Classification

Dispose: 10,000 acres X $200 X .3333 X .0252655 = $16,841.98 increase

APPENDIX J
NEW MEXICO STATE LAND OFFICE POLICY

State of New Mexico

OFFICE OF THE

Commissioner of Public Lands

Santa Fe

JIM BACA
COMMISSIONER

P.O. BOX 1148
SANTA FE, NEW MEXICO 87504-1148

January 21, 1986

Mr. Charles W. Luscher
State Director
Bureau of Land Management
P. O. Box 1449
Santa Fe, New Mexico 87504

Dear Mr. Luscher:

Regarding the proposed land exchange of State Trust Lands in the White Sands Missle Range (WSMR) for Federal (BLM) lands in Dona Ana County, a number of State Land Office Rules and Regulations and Statutes would be implemented in the management of the BLM lands once title was transferred to the State of New Mexico.

Existing BLM allotments would be honored by the State Land Office until the expiration of said allotment, at which time a State Lease would be negotiated with the BLM allottee utilizing State Land Office Rules and Regulations for determining rental rates, term and type of lease.

In addition, the former lands would be included in the existing easement between the State Land Office and the N.M. Department of Game and Fish. This easement provides that all State Trust Lands are open for hunting during the designated hunting times by holders of valid hunting licenses issued by the N.M. Department of Game and Fish.

The revenue generated by the leasing of these former BLM lands would be credited to the beneficiaries of the lands the State will be giving up title to in WSMR. The following is a preliminary indication of the distribution of funds generated by the State Land in WSMR:

80.20%	Common Schools
1.60%	University (UNM)
17.50%	Ag. College (NMSU)
.60%	Water Reservoirs
.10%	Miners Hospital

Any change in current land use is determined by State Land Office Rules and Regulations. A copy of Rule No. 8.002 which specifically addresses this issue has been enclosed for your review.

In closing, it would be noted that the only estate which will transfer is the surface estate. The N.M. State Land Office will retain ownership of the sub-surface rights of the lands in WSMR and likewise, the Federal Government (BLM) will retain the sub-surface rights to the land formally identified as Priority Area 1 lands in Dona Ana County.

Please advise us if further information is needed.

Sincerely,

Jim Baca

Jim Baca
Commissioner of Public Lands

Enclosure

cc: Marvin James

8.002 Lands Subject to Lease; Classification; Reservations.

A. An application to lease grazing land or cultivated land may be filed for lands shown as oper acreage in the tract books of the State Land Office. An application to lease grazing land or cultivated land already under lease may be filed according to Rule 8.012.

B. The Commissioner may determine and classify as business property any lands particularly adapted to lease for business purposes and withhold such lands from leasing for agricultural purposes.

C. The Commissioner, in his discretion, may at any time, either before or after any application for an agricultural lease is made, withhold any land from leasing if in his opinion the best interests of the trust would be served by so doing.

D. The Commissioner reserves the right to withdraw from an agricultural lease during its term no more than six hundred forty acres provided that:

1. The land to be withdrawn is to be used for an industrial, residential development or commercial use. As used in this rule the term "industrial, residential development or commercial use" does not include "Recreational or State Park Use";

2. The Commissioner makes a written determination that the land to be withdrawn has a current higher and better monetary value than agricultural purposes. Such determination shall also include:

(a) a general description of the proposed project for which the land is to be withdrawn;

(b) a description of the location and extent of the land to be withdrawn, with sufficient detail for reasonable identification;

(c) a finding that the proposed project is planned or located in a manner that will result in the least private injury;

(d) an estimated time schedule for the commencement and completion of the project; and

(e) the appraised value of the land for the proposed use;

3. The Commissioner shall provide the lessee by certified mail with a written notice of his intent to make a withdrawal of land, including a copy of the lessor's written determination, ninety (90) days before making the withdrawal; provided, however, the lessee shall have the right to continued use of such land under all terms of the lease until thirty (30) days after receipt of notice to vacate as provided by the Commissioner to the lessee by certified mail;

4. The industrial, residential development or commercial lessee or owner shall fence in his industrial, residential development or commercial project from adjoining land under agricultural lease;

5. The Commissioner shall reimburse the lessee for advanced rentals in proportion to the amount of lands to be withdrawn and surrendered;

6. The Commissioner shall comply with applicable laws and rules regarding the payment of compensation to the lessee. The lessee shall not forfeit any right to compensation by agreeing to the terms of an agricultural;

7. The Commissioner shall not withdraw lands pursuant to this rule if such withdrawal would adversely affect the lessee's water supply or water rights, unless the lessee has a reasonable alternative to mitigate the adverse effect; and

8. Upon withdrawal and surrender of a portion of lands leased, the lease shall be amended to show the current land included in the lease.

GLOSSARY

GLOSSARY

ACRE-FOOT. The amount of water that will cover one acre of land to a depth of one foot (325,851 gallons or 43,560 cubic feet).

AGGREGATE. A mineral material such as sand, gravel, shells, or broken stone.

ALLOTMENT. An area of land designated and managed for grazing of livestock.

ALLOTMENT MANAGEMENT PLAN (AMP). A documented program which applies to rangeland operations on public land, which is prepared in consultation with the permittee(s) or lessee(s) involved, and which: (1) prescribes the manner in and extent to which livestock operations will be conducted in order to meet the multiple-use, sustained-yield, economic, and other needs and objectives as determined for public land through land use planning; (2) describes the type, location, ownership, and general specifications for the rangeland developments to be installed and maintained on public land to meet the livestock grazing and other objectives of land management; and (3) contains such other provisions relating to livestock grazing and other objectives as may be prescribed by the authorized officer consistent with applicable law.

ALLUVIAL. Pertaining to material that is transported and deposited by running water.

ALLUVIAL FAN. A fan-shaped accumulation of disintegrated soil material; water deposited and located in a position where the water departs from a steep course to enter upon a flat plain or open valley bottom.

ALLUVIUM. Material, including clay, silt, sand, gravel, or similar unconsolidated sediments, deposited by a stream or other body of running water.

ANDESITE. A volcanic rock composed essentially of andesine and one or more mafic constituents. The mafic constituents may be pyroxene, hornblende, or biotite.

ANIMAL UNIT (AU). Considered to be one mature cow (1,000 pounds) or its equivalent based upon average daily forage consumption of 26 pounds of dry matter per day.

ANIMAL UNIT MONTH (AUM). The amount of food or forage required by an animal unit for one month.

ANNUAL PLANT SPECIES. A plant that completes its life cycle and dies in 1 year or less.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC). Areas within the public land where special management attention is needed to protect and prevent irreparable damage to important historical, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards.

ARROYO-RIPARIAN. Areas with vegetation development, usually streamside, similiar to riparian areas, but which do not have sufficient soil water to produce phreatophytes typical of areas with high water tables within the same geographic region. Arroyo-riparian areas are important wildldife habitat zones.

BASE WATER. Water that is suitable for consumption by livestock and is available and accessible to authorized livestock on public land used for livestock grazing. Grazing preference is tied to control of base waters.

BASIN AND RANGE PHYSIOGRAPHIC PROVINCE. A province in the southwestern United States characterized by a series of tilted fault blocks forming longitudinal ridges or mountains and broad intervening basins.

BOLSON. A flat-floored desert valley that drains toward a playa or central depression.

BOUNDARY FENCE. Fences used to divide allotments into grazing units.

BRUSH CONTROL. Methods used to control the growth and spread of undesirable vegetation. Control can be by chemical or mechanical means or by fire.

CALF CROP. The number of calves weaned from a given number of cows bred, usually expressed in percentages.

CALICHE. A layer in the soil more or less cemented by calcium carbonates ($CaCO_3$), commonly found in arid and semiarid regions.

CANDIDATE SPECIES. Plant species currently being evaluated for possible Federal (threatened or endangered) listing.

Category II - plant species on which information indicates the plant may need protection but more information is needed.

Category III - these plants are no longer being considered for listing.

CAMPSITE. A cultural site type representative of all periods consisting of temporary habitation areas which usually contain a lithic scatter, evidence of fire use, ground stone, and pottery scatter.

CENSUS DESIGNATED PLACES (CDP). Boundary delineated by the Census Bureau for closely settled population centers without corporate limits. The minimum CDP population inside an urbanized area with one or more cities of 50,000 is 5,000, and a minimum of 1,000 with no city of 50,000 or more as well as being outside urbanized areas.

CLASSIFICATION AND MULTIPLE-USE ACT (Public Law 88-607)(C&MU). Repealed by FLPMA, provided for the classification of public land for retention to provide for needed recreation, conservation, scenic areas, and open space.

CLOSED BASIN. A basin is considered closed with respect to surface flow if its topography prevents the occurrence of visible outflow. It is closed hydrologically if neither surface nor underground outflow can occur.

COLLUVIUM (COLLUVIAL). A deposit of soil material and rock fragments accumulated at the base of steep slopes as a result of gravitational action.

CONTIGUOUS LANDS. As it pertains to wilderness, lands or legal subdivisions having a common boundary. Lands having only a common corner are not contiguous.

CONTRAST RATINGS. A method of determining the extent of visual impact for an existing or proposed activity that will modify any landscape feature.

CONTROLLED LANDS. Private or state lands within an allotment which are owned or leased by the permittee.

COOL SEASON PLANT SPECIES. A plant that does most of its growing during the early spring and late fall and can set seed at either time.

COOPERATIVE AGREEMENT. To document agreements and establish working relationship where there is no transfer of money or property.

COPPICE DUNES. Sand dunes stabilized around shrubs.

CRETACEOUS. Last period of the Mesozoic era. Approximately 65 to 136 million years ago.

CULTURAL RESOURCE INVENTORY CLASSES.

Class I--Existing Data Inventory: an inventory study of a defined area designed to provide a narrative overview (cultural resource overview) derived from existing cultural resource information and to provide a compilation of existing cultural resource site record data on which to base the development of the BLM's site record system.

Class II--Sampling Field Inventory: a sample-oriented field inventory designed to locate and record, from surface and exposed profile indications, all cultural resource sites within a portion of a defined area in a manner which will allow an objective estimate of the nature and distribution of cultural resources in the entire defined area. The Class II inventory is a tool utilized in management and planning activities as an accurate predictor of cultural resources in the area of consideration. The primary area of consideration for the implementation of a Class II inventory is a planning unit. The secondary area is a specific project in which an intensive field inventory (Class III) is not practical or necessary.

Class III--Intensive Field Inventory: an intensive field inventory designed to locate and record, from surface and

exposed profile indications, all cultural resource sites within a specified area. Normally, upon completion of such inventories in an area, no further cultural resource inventory work is needed. A Class III inventory is appropriate on small project areas, all areas to be disturbed, and primary cultural resource areas.

DEFERRED ROTATION GRAZING. Discontinuance of grazing on various parts of rangeland in succeeding years, allowing each part to rest successively during the growing season to permit seed production, establishment of seedlings, or restoration of plant vigor. At least two, but usually three or more separate units are required. Control is usually ensured by unit fencing, but may be obtained by camp unit herding.

DIRT TANK. Usually a permanent earthen structure for holding water temporarily. These are built in high rainfall runoff areas such as an arroyo, canyon, or swale area.

DISCHARGE. Rate of flow at a given instant in terms of volume per unit of time; pumping discharge equals pumping rate, usually given in gallons per minute (gpm); stream discharge, usually given in cubic feet per second (cfs).

DRAINAGE BASIN. A part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded water.

EASEMENT. An authorization for a non-possessory, non-exclusive interest in lands which specifies the rights of the holder and the obligation of the BLM to use and manage the lands in a manner consistent with the terms of the easement. [2920.05-5(b)].

ENDANGERED SPECIES.

Federally Listed: any species of animal or plant in danger of extinction throughout all or a significant portion of its range.

State Listed: any plant species whose prospects of survival within the State are in jeopardy or are likely to become jeopardized.

ENVIRONMENTAL ASSESSMENT (EA). A concise public document for which a Federal agency is responsible that serves to: (a) briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact; (b) aid an agency's compliance with the National Environmental Policy Act (NEPA) when no environmental impact statement is necessary; (c) facilitate preparation of a statement when one is necessary. An EA includes brief discussions of the need for the proposal, of alternatives as required by Sec. 102(2) of NEPA, of the environmental impacts of the proposed action and other alternatives, and a listing of agencies and persons consulted.

EPHEMERAL STREAM. A stream or portion of a stream which flows only in direct response to precipitation. Such flow is usually of short duration.

EROSION CONTROL STRUCTURES. Usually one large earthen, rock, wire, or cement structure used to hold large concentrated flows of water and release this water in small non-eroding amounts.

EXCHANGE. A trading of public land (surface or subsurface estates) that usually does not have high public value, for lands in other ownerships which do not have value for public use, management, and enjoyment. The exchange may be for the benefit of other Federal agencies as well as BLM.

FAULT. A fracture in the earth's crust along which there has been displacement of one side with respect to the other.

FAULT BLOCK. A block of the earth's crust bounded on at least two opposite sides by faults; it may be elevated or depressed relatively to the adjoining region.

FLPMA. Federal Land Policy and Management Act of 1976, mandate from Congress to the BLM for the administration of Federal land under its jurisdiction.

FORB. Any herbaceous non-woody plant that is not a grass or grass-like plant.

GEOPHYSICAL EXPLORATION. The use of geophysical instruments and methods to determine subsurface conditions by analysis of

such properties as specific gravity, electrical conductivity, or magnetic susceptibility. This usually has an economic objective, e.g. discovery of fuel or mineral deposits.

GEOTHERMAL ENERGY. Useful energy that can be extracted from naturally occurring steam, hot water, or hot rock in the earth's crust.

GRAZING CAPACITY. The maximum livestock stocking rate possible without inducing damage to vegetation or related resources such as watershed. This incorporates factors such as suitability of the rangeland for grazing as well as the proper use which can be made on all of the plants within the area. Normally expressed in terms of acres per animal unit month (Ac/AUM) or sometimes referred to as the total AUMs that are available in any given area, such as an allotment. Areas that are unsuitable for livestock use are not computed in the grazing capacity. Grazing capacity may or may not be the same as the stocking rate.

GRAZING DISTRICT (BOUNDARY). Is the specific area within which the public land is administered under Section 3 of the Taylor Grazing Act. Public land outside grazing district boundaries is administered under Section 15 of the Taylor Grazing Act.

GRAZING PERMIT. A document authorizing use of public land within a grazing district for the purpose of grazing livestock under Section 3 of the Taylor Grazing Act.

GRAZING PREFERENCE. The total number of animal unit months of livestock grazing on public land apportioned and attached to base property owned or controlled by a permittee or lessee.

HEAT FLOW. Dissipation of heat coming from within the earth by conduction or radiation at the surface.

HISTORIC CULTURAL RESOURCES. Historic cultural resources include all mines, ranches, towns, resorts, railroads, trails, and other evidence of human use from the entrance of the Spanish to 1932.

HYDROTHERMAL WATER. Warm water ascending from a deeper zone within the earth.

IGNEOUS ROCKS. Rocks formed by solidification of magma.

INTERIOR FENCE. Fences used to divide allotments into pastures or holding areas.

INTRUSIVE. Igneous rock formed by the emplacement of molten material in pre-existing rock.

ISOLATED TRACT. A tract of one or more contiguous legal subdivisions completely surrounded by lands held in non-Federal ownership or so effectively separated from other Federally-owned lands by some permanent withdrawal or reservations as to make its use with such lands impracticable. A tract is considered isolated if the contiguous lands are all patented, even though there are other public land cornering upon the tract. For sale purposes, an isolated tract is a parcel of vacant public land (not exceeding 1,520 acres) which is surrounded by appropriated public land or private land.

KIND OF LIVESTOCK. Kinds of domestic livestock grazing on rangeland including cattle, horse, sheep, goats, or a combination of these. May be broken down to greater detail such as cows with calves, yearlings, steers, ewes, ewes with lambs, etc.

LAND TENURE ADJUSTMENT. Refers to changes made in the ownership pattern of public land in order to adjust the Resource Area land base. Using various authorities (exchanges, sales, Recreation and Public Purposes patents, etc.), these changes improve the management of public, private, and State lands.

LEASABLE MINERALS. Mineral commodities including hydrocarbons, geothermal energy, sodium phosphate, and potossium available for leasing under the Mineral Leasing Act of 1920.

LEGAL ACCESS. An instrument granting the right to cross privately-owned or State-owned land in order to reach public land. The document conveying this right is an easement or right-of-way.

LITHIC. A stone or rock exhibiting modification by humans. It generally applies to projectile points, scrapers, and chips, rather than ground stone.

LITHIC SCATTER. A prehistoric cultural site type where flakes, cores, and stone tools are located either through the manufacture or use of the tools.

LOCATABLE MINERALS. Metallic and nonmetallic minerals (gold, silver, lead, barite, fluorspar) open to mining claim location under the 1872 Mining Law.

MAJOR LAND RESOURCE AREA (MLRA). Large geographic areas of land characterized by particular patterns of soil, climate, water resources, and land use.

MALPAIS. A Spanish word meaning rough country underlain by dark basaltic lava.

MANAGEMENT FRAMEWORK PLAN (MFP). A planning decision document that establishes for a given planning area land use allocations, coordination guidelines for multiple use, and management objectives to be achieved for each class of land use or protection. A MFP is prepared in three steps: (1) resource recommendations, (2) impact analysis and alternative development, and (3) decision-making.

MANAGERIAL COSTS. BLM labor costs to administer the public land for multiple-use purposes.

MEMORANDUM OF UNDERSTANDING. To document agreements and establish working relationship where there is no transfer of money or property.

MESOZOIC. Geologic era ranging from 240 to 63 million years ago.

METAMORPHIC ROCKS. Rocks formed in the solid state in response to changes of temperature, pressure, and chemical environment.

METAMORPHISM. Process by which consolidated rocks are altered in composition, texture, or internal structure by conditions and forces not resulting simply from burial and the weight of subsequently accumulated overburden.

MINERALIZATION. The process of converting or being converted into a mineral, as a metal into an oxide, sulfide, etc.

MIOCENE. Fourth epoch of Tertiary period ranging from 26 to 7 million years ago.

MOGOLLON. One of the three major cultural traditions in the Southwest. It spans a time period of about 200 BC to AD 1200. In the Resource Area, it is divided into the Mimbres and Jornada sequences which intermingle near the Dona Ana-Luna County line. Throughout its time span, it is characterized by increasingly complex agricultural practices and habitation patterns as well as increasing trade with other regions.

MULTIPLE-USE. The management of the public land and its various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people.

NATIONAL RANGE. The National Range is described as a Department of Defense (DOD) complex of range instrumentation deployed over a designated geographic area and configured for the support of research, development, test, and evaluation of weapon and space systems, subsystems, and components. Because of its size and general purpose facilities, the National Range is considered a National asset equally available to all U.S. Government users on a common basis. Also, National Range resources are considered to be those personnel, support facilities, and land areas utilized in providing National Range services as defined by DOD Directive 3200.11, 18 June 1974, subject: Use, Management, and Operation of Department of Defense National Ranges and Space Ground Support Facilities. National Range resources are equally available for support of programs of all military departments, other government agencies, and authorized non-government agencies, including foreign governments. (Department of the Army, March 1985. Installation Environmental Assessment. White Sands Missile Range, New Mexico.)

NEPA. The National Environmental Policy Act of 1969, to establish a National policy for the environment and provide for the establishment of a Council on Environmental Quality.

OFF-ROAD VEHICLE (ORV). Any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other terrain.

PALEOZOIC. Geologic era ranging from 570 to 240 million years ago.

PAYMENTS IN LIEU OF TAXES (PILT). Compensation to local Government units for fiscal impacts caused by the presence of tax-exempt Federal lands within their boundaries.

PEDIMENT. A broad gentle sloping bedrock surface that is situated at the foot of a much steeper mountain slope in an an arid or semiarid region.

PENNSYLVANIAN. Sixth period of Paleozoic era ranging from 325 to 280 million years ago.

PERENNIAL STREAM. A stream or portion of a stream which flows continuously.

PERIOD OF USE. The times of the year when domestic animals would be allowed to graze on a specific unit of rangeland as designated by license.

PERMIAN. Last period of Paleozoic era ranging from 280 to 225 million years ago.

PETROGLYPH. A form of rock art manufactured by incising, scratching, or pecking designs into rock surfaces.

PLACER. A place where gold is obtained by washing; an alluvial or glacial deposit, as of sand or gravel, containing particles of gold or other valuable minerals.

PLAYA. The usually dry and nearly level lake plain that occupies the lowest part of a closed depression.

PLEISTOCENE. First epoch of Quaternary period ranging from 2.5 million to 5,000 years ago.

PLIOCENE. Last epoch of Tertiary period ranging from 7 to 2.5 million years ago.

POTTERY SCATTER. A Mogollon to Historic cultural site type where pot-sherds are concentrated; usually a small site.

PROVINCE. A large area or region unified in some way and considered as a whole.

PUBLIC LAND. Any land and interest in land owned by the United States and administered by the Secretary of the Interior through the Bureau of Land Management, without regard to how the United States acquired ownership, except:

--lands located on the Outer Continental Shelf

--lands held for the benefit of Indians, Aleuts, and Eskimos

--lands in which the United States retains the minerals, but surface is private.

PUBLIC PURPOSE. Facilities or services for the benefit of the public in connection with, but not limited to, public health, safety, or welfare. See also recreation and public purposes (R&PP).

PUMICE. An excessively cellular, glassy lava, generally composed of rhyolite.

RANGE BETTERMENT FUND. The separate account in the National Treasury established by Section 401(b)(1) of the Federal Land Policy and Management Act of 1976, consisting of 50 percentum of all monies received by the United States as fees for grazing livestock on public land.

RANGE SITE. Rangeland that differs in its ability to produce a characteristic natural plant community. A range site is the product of all the environmental factors responsible for its development. It is capable of supporting a native plant community typified by an association of species that differ from other range sites in the kind or proportion of species or in total production.

RANGELAND. Land used for grazing by livestock and big game animals on which the vegetation is dominated by grasses, grass-like plants, forbs, or shrubs.

RANGELAND IMPROVEMENT. Any activity or program on or relating to rangelands which is designed to improve production of forage, change vegetation composition, control patterns of use, provide water, stabilize soil and water conditions, and provide habitat for livestock or wildlife.

RECREATION AND PUBLIC PURPOSES (R&PP). Use of the public land by any State, local, Federal, or political instrumentality, or any nonprofit organization for any recreational or public purpose.

REST ROTATION GRAZING SYSTEM. A grazing system providing for systematic and sequential grazing by livestock and resting from livestock use on a rangeland area to provide for the production of livestock while simultaneously maintaining or improving the vegetation and soil fertility.

REVENUE SHARING FEDERAL ALLOTMENT FUND. Funds the County receives directly from Federal Revenue Receipts sharing programs.

RHYOLITE. The extrusive equivalent of granite.

RIFT. A rift or rift zone usually refers to a system of fractures (faults) in the earth's crust and the associated valley or depression.

RIGHT-OF-WAY. An easement or permit which authorizes public land to be used for a specified purpose that generally requires a long narrow strip of land. Examples are roads, powerlines, pipelines, etc.

RIPARIAN HABITAT. A specialized form of wetland restricted to areas along, adjacent to, or contiguous with perennially and intermittently flowing rivers and streams, also, periodically, flooded lake and reservoir shore areas, as well as lakes with stable water levels with characteristic vegetation. This habitat is transitional between true bottomland wetlands and upland terrestrial habitats and, while associated with water courses, may extend inland for considerable distances. Soils of the riparian habitat may not exhibit typical wet soil characteristics of other wetlands. If not, exhibit typical wet soil characteristics of other wetlands. If not, wet soil characteristics will exist close enough to the surface for the water to be used directly by vegetation. This vegetation may range from water-loving hydrophytes (such as pond weeds) through terrestrial forms (such as sycamores, cottonwoods, and willows).

ROCK ART (PETROGLYPH OR PICTOGRAPH). An Archaic to Modern cultural site type consisting of incised figures such as people, animals, plants, or abstracts on a rock surface.

ROCK SHELTER. A cultural site type representative of all periods consisting of an area protected by an overhanging cliff. Often associated with the same materials as a campsite or rock art.

SALEABLE MINERALS. Common variety mineral materials including sand and gravel, clay, cinder, petrified wood, pumice, pumicite, and stone available for sale under the Material Sale Act of 1947.

SCOPING. To encourage affected parties to participate in an early and open process for determining the scope of issues to be addressed in a planning document and for identifying the significant issues related to a proposed action.

SEDIMENTARY ROCKS. Rocks formed by the consolidation of loose sediment that has accumulated in layers. Sedimentary is one of the three main classes into which all rocks are divided.

SITE. An archaeological site is defined as a complex of artifacts or features which reflect the past location of a significant human activity or habitation.

SOCIAL WELL-BEING. Expectations of the conditions that should prevail in one's life. A feeling one has about one's life.

SOIL PARTICLES (SEPARATES). Mineral particles ranging between specified size limits:

clay	.002 mm diameter
silt	.05 to .002 mm diameter
sand	2.0 to .05 mm
gravels	76.0 mm (3 inches) to 2.0 mm
cobbles	250 mm (20 inches) to 76.0 mm
stones	250 mm (10 inches)

SOIL TEXTURE. The relative proportions of sand, silt, and clay in a soil as described by classes of soil texture. Soil textural classes recognized are:

sand	silt loam	silty clay loam
loamy sand	silt	sandy clay
sandy loam	sandy clay loam	silty clay
loam	clay loam	clay

Modifiers placed on textural classes when appropriate are:

gravelly	very cobbly
very gravelly	stony
cobbly	very stony

STANDARD METROPOLITAN STATISTICAL AREA (SMSA). A metropolitan area that has a large population nucleus together with adjacent communities which have a high degree of economic and social integration with that nucleus. Each SMSA has one or more central counties containing the area's main population concentration; an urbanized area with at least 50,000 inhabitants.

STATE SENSITIVE. Plant species considered rare or endangered by the New Mexico State Heritage Program, but not legislatively protected.

SPLIT ESTATE. Refers to the situation where the subsurface mineral estate is owned or controlled by a party other than the owner of the surface of the same land area.

STOCKING RATE. The number of specified kind and class of animals grazing a unit of land for a specified period of time; may be expressed as a ratio, such as animal unit (AU)/section, acres/AU, or acres/animal unit month.

STORAGE TANK. A permanent water holding structure used to supply water to troughs, pipelines, etc.

TAKING. A "taking" has occurred when the entity clothed with power of eminent domain substantially deprives owner of use and enjoyment of his property.

TERTIARY. First geologic period of the Cenozoic era, ranging from 63 to 2 million years ago.

THREATENED SPECIES. Any species likely to become endangered within the foreseeable future throughout all or a significant part of its range.

UNALLOTTED FEDERAL LAND. Federal land which currently is not committed to livestock grazing use.

UNCONTROLLED LANDS. Private or state lands within an allotment that are not owned or leased by the permittee.

VEIN. A tubular body, long in two dimensions and short in the third. An occurrence of ore minerals, usually disseminated throughout gangue, or veinstone.

VILLAGE. A Mogollon to Historic cultural site type consisting of a permanent habitation area containing several types of artifacts, evidence of agriculture, and structures.

VISUAL CONTRAST. The effect of a difference in the form, line, color, or texture of an area being viewed.

VISUAL CONTRAST RATING. See Contrast Rating.

VISUAL RESOURCES MANAGEMENT (VRM) CLASSES. VRM Classes are based on relative visual ratings of inventoried lands. Each class describes the different degree of modification allowed to the basic elements of the landscape. The following are the minimum management objectives for each class.

Class I: Natural ecological changes and very limited management activity are allowed. Any contrast created within the characteristic landscape must not attract attention. This classification is applied to Visual Areas of Critical Environmental Concern, wilderness areas, wild and scenic rivers, and other similar situations.

Class II: Changes in any of the basic elements (form, line, color, texture) caused by a management activity should not be evident in the landscape. A contrast may be seen but should not attract attention.

Class III: Contrasts to the basic elements caused by a management activity may be evident and begin to attract attention in the landscape. The changes, however, should remain subordinate in the existing landscape.

Class IV: Contrasts may attract attention and be a dominant feature in the landscape in terms of scale. However, the changes should repeat the basic elements of the landscape.

VOLCANIC ROCK. An igneous rock resulting from volcanic action at or near the earth's surface.

WARM SEASON PLANT SPECIES. A plant that does most of its growing during the spring and summer and sets seed in the late summer or early fall. It is normally dormant in winter.

WATER DEPLETION. Water supply consumptively used and no longer available as a water source.

WILDERNESS. The definition contained in Section 2(c) of the Wilderness Act of 1964 is as follows: "A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." Wilderness is an area of undeveloped Federal land

retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least 5,000 acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features or scientific, educational, scenic, or historical value.

WILDERNESS AREA. An area formally designated by Congress as part of the National Wilderness Preservation System.

WILDERNESS CHARACTERISTICS. Those characteristics of wilderness as described in Section 2(c) of the Wilderness Act. These include size, naturalness, solitude, primitive and unconfined type of recreation, and supplemental values.

WILDERNESS INVENTORY. An evaluation of the public land in the form of a written description and a map showing those lands that meet the wilderness criteria as established under Section 603(a) of the Federal Land Policy and Management Act and Section 2(c) of the Wilderness Act. The lands meeting the criteria will be referred to as Wilderness Study Areas (WSAs). Those lands identified as not meeting wilderness criteria will be released from further wilderness consideration.

WILDERNESS REVIEW. The term used to cover the entire wilderness inventory, study, and reporting phases of the wilderness program of the BLM.

WILDERNESS STUDY. The process of analyzing and planning wilderness preservation opportunities along with other resource opportunities within the BLM's planning system.

WITHDRAWAL. An action that restricts the use of public land and segregates the land from some or all of the public land or mineral laws.

YEARLING. An animal approximately 1 year of age. A short yearling is from 9 to 12 months of age and a long yearling is from 12 to 18 months.

YEARLONG GRAZING. Continuous grazing for a calendar year.

ACRONYMS AND ABBREVIATIONS

ACEC	Area of Critical Environmental Concern
ACHP	Advisory Council on Historic Preservation
C&MU	Classification and Multiple Use Act
EA	Environmental Assessment
EIS	Environmental Impact Statement
FLPMA	Federal Land Policy and Management Act
IMP	Interim Management Policy
KGRA	Known Geothermal Resource Area
LC/LRA	Las Cruces/Lordsburg Resource Area
MFP	Management Framework Plan
MOU	Memorandum of Understanding
NASA	National Aeronautics and Space Administration
NEPA	National Environmental Policy Act
NMSU	New Mexico State University
NNL	National Natural Landmark
OMRLs	Organ Mountains Recreation Lands
ORV	Off-Road Vehicle
PILT	Payment in Lieu of Taxes
ROW	Right-of-Way
R&PP	Recreation and Public Purposes
SCS	Soil Conservation Service
SHPO	State Historic Preservation Office
SRGPA/EIS	Southern Rio Grande Plan Amendment/Environmental Impact Statement
TDS	Total Dissolved Solids
VRM	Visual Resource Management
WSA	Wilderness Study Area
WSMR	White Sands Missile Range

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REFERENCES

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VISUAL A

ALTERNATIVE II

FAVOR DISPOSAL ALTERNATIVE

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICT LAS CRUCES, NEW MEXICO

SOUTHERN RIO GRANDE PLAN AMENDMENT / ENVIRONMENTAL IMPACT STATEMENT

PROPOSED STATE LAND EXCHANGE AND
DONA ANA COUNTY LAND TENURE ADJUSTMENT

LAND STATUS

- PUBLIC LAND
- STATE LAND
- PRIVATE LAND

LEGEND

RETENTION AREAS INCLUDE ALL PUBLIC LAND NOT PROPOSED FOR DISPOSAL

(1) DISPOSAL AREAS

(2) DIFFICULT AND UNECONOMICAL TO MANAGE LAND OR LAND WHERE INTEREST HAS BEEN SHOWN FOR DISPOSAL

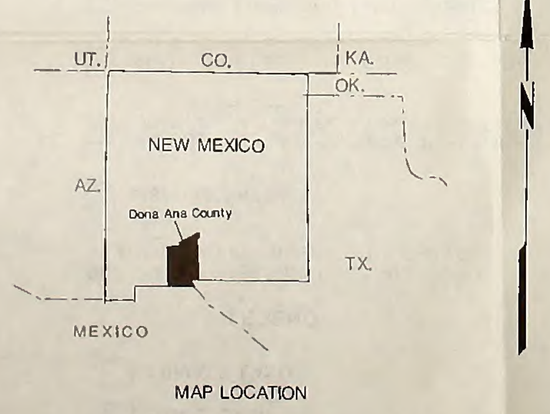
(3) STATE LAND EXCHANGE DISPOSAL AREA

(4) EXISTING & PENDING PUBLIC PURPOSE USES IN STATE LAND EXCHANGE AREA

(5) MINING CLAIMS FOR RETENTION IN STATE LAND EXCHANGE AREA

(6) STATE LAND EXCHANGE ACQUISITION LAND

SCALE : 1/4 INCH = 1 MILE



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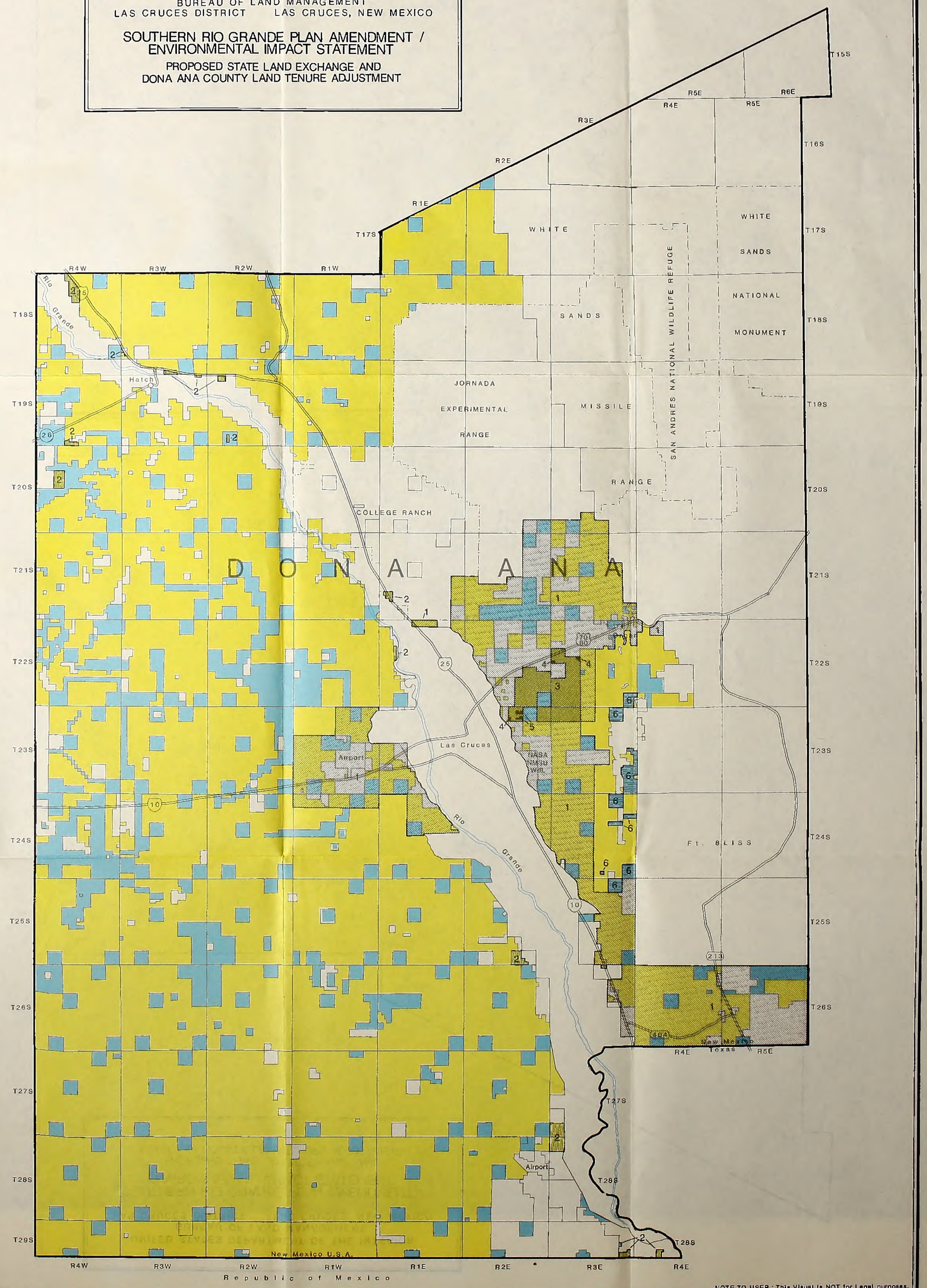

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VISUAL B

ALTERNATIVE III

PREFERRED ALTERNATIVE

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICT LAS CRUCES, NEW MEXICO

SOUTHERN RIO GRANDE PLAN AMENDMENT / ENVIRONMENTAL IMPACT STATEMENT

PROPOSED STATE LAND EXCHANGE AND
DONA ANA COUNTY LAND TENURE ADJUSTMENT

LAND STATUS

- PUBLIC LAND
- STATE LAND
- PRIVATE LAND

LEGEND

RETENTION AREAS INCLUDE ALL PUBLIC LAND NOT PROPOSED FOR DISPOSAL

(1) DISPOSAL AREAS

(2) DIFFICULT AND UNECONOMICAL TO MANAGE LAND OR LAND WHERE INTEREST HAS BEEN SHOWN FOR DISPOSAL

(3) STATE LAND EXCHANGE DISPOSAL AREA

(4) EXISTING & PENDING PUBLIC PURPOSE USES IN STATE LAND EXCHANGE AREA

(5) PROPOSED PUBLIC PURPOSE USES IN STATE LAND EXCHANGE AREA

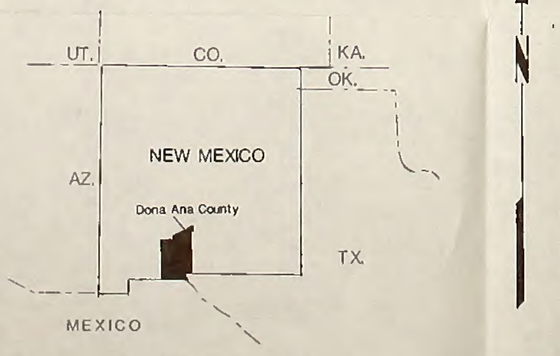
(6) MINING CLAIMS FOR RETENTION IN STATE LAND EXCHANGE AREA

(7) MILITARY WITHDRAWAL LAND FOR POTENTIAL RELINQUISHMENT

(8) STATE LAND FOR POTENTIAL ACQUISITION

(9) PRIVATE LAND FOR POTENTIAL ACQUISITION

SCALE : 1/4 INCH = 1 MILE



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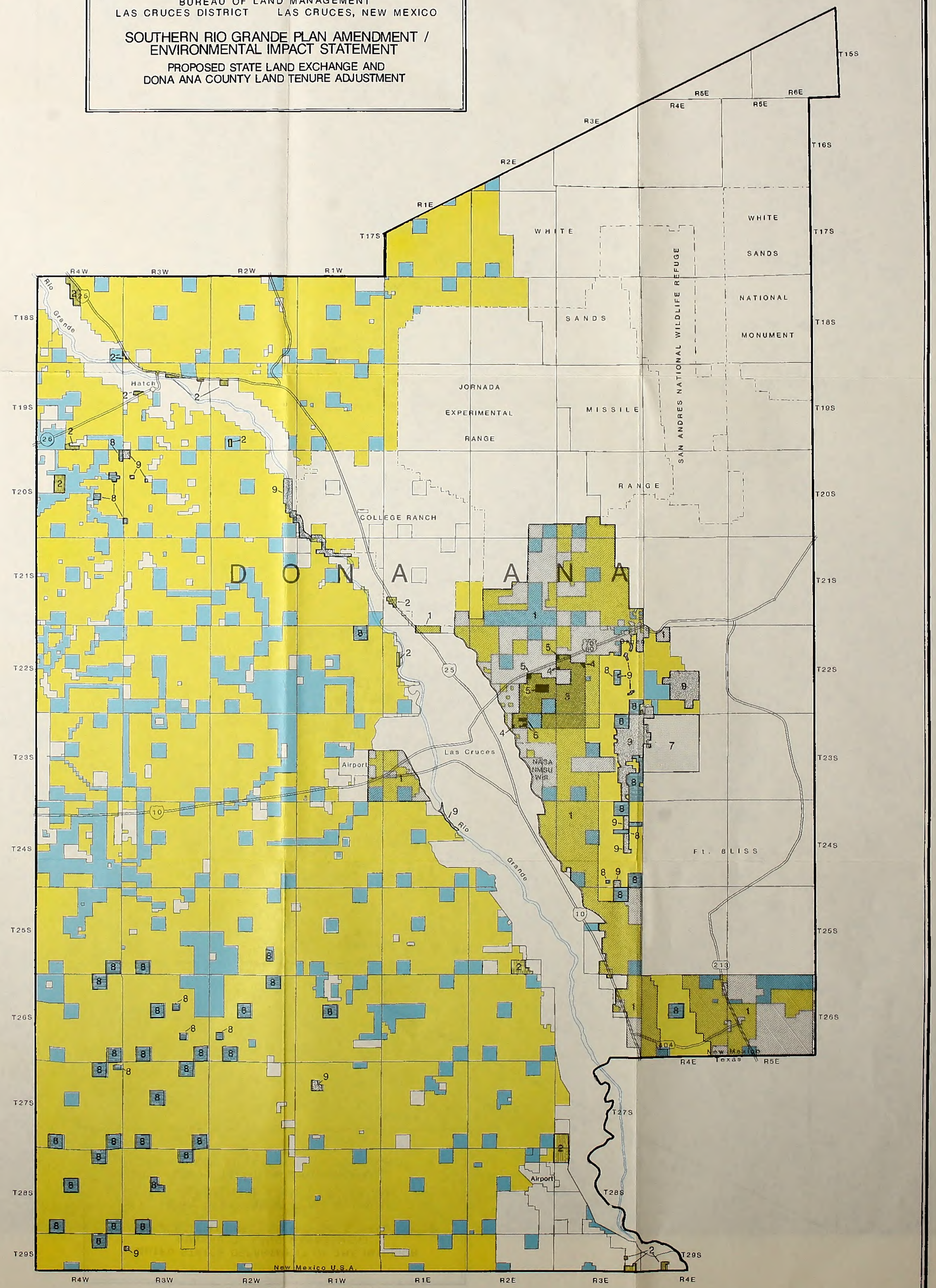

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