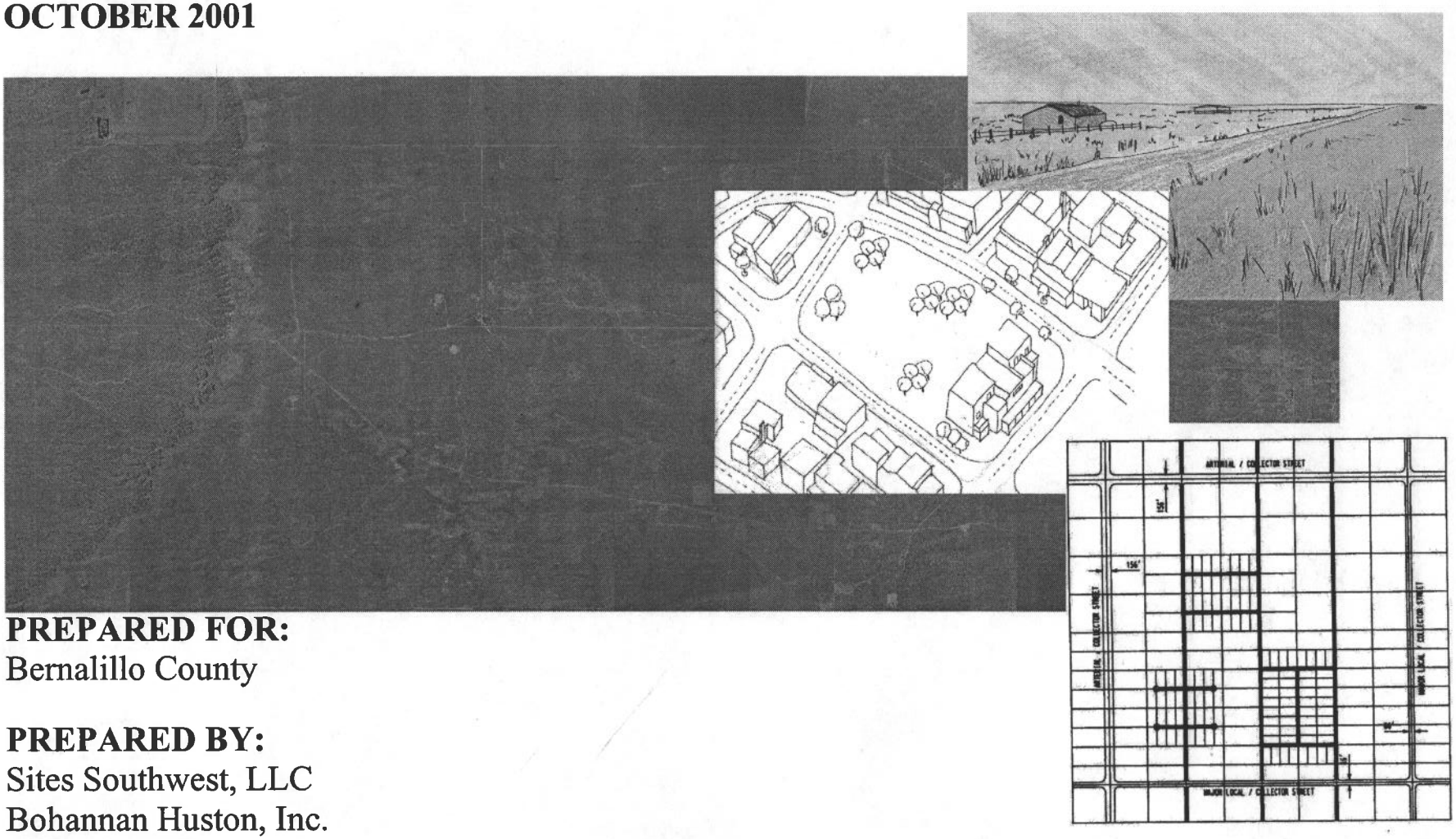
PAJARITO MESA
LAND USE AND ACCESS STUDY

OCTOBER 2001



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EXECUTIVE SUMMARY

This report analyzes the existing conditions and presents a range of options for addressing the development issues on Pajarito Mesa, an approximately 18,000-acre tract of largely vacant land in southwest Bernalillo County.

Development Issues. In general, development on Pajarito Mesa does not meet the County's development standards. The area was divided into 10-acre parcels and sold by metes and bounds descriptions beginning in the 1930s with no legal access provided. Consequently, many current residents purchased land, now zoned A-1, through real estate contracts and either installed mobile homes or built homes on the property. Most residents have no legal roadways to their homes and many lack permits for mobile homes and septic tanks. They haul water from various sources. Lack of legal access prevents emergency providers and school buses from providing needed services and poses obstacles for residents' attempts to obtain telephone service and power. While some residents intended to live "off the grid," others desire and were told by landowners to expect full County services within a few years.

Constraints and Opportunities. Because so few people—perhaps 100 or so families—currently live on the Mesa top and no legal roads (other than Pajarito Road) cross the area, the County has an opportunity to determine the future type of development in the area.

The biggest environmental constraint to development is the water supply. Water drawn from test wells indicate the quality is poor and the flow rate is only 15 percent of the flow of typical City wells. Wells would have to be drilled as deep as 600-900 feet on the Mesa top, less on the slopes, and power obtained to pump it. Offset water rights would have to be purchased for anything beyond a single domestic well.

Other environmental constraints are minimal. In a few places, soils on or near steep slopes pose problems for septic seepage. The County should consider protecting as open space a swath of land along the Ceja (eastern edge) and the southwestern sand dunes to preserve views and fragile soils and prevent septic seepage onto the escarpments. It might also consider restricting development in the floodplain and creating a wildlife corridor.

The typical 10-acre parcel size offers the opportunity for rural development or a cluster of four lots sharing one domestic well. As the top ten landowners control a significant, albeit scattered, percentage of total land area, it also could be possible to consolidate lots to create village clusters or planned communities. Comprehensive Plan policies favor planned communities or village clusters on the Mesa top and lower density rural development on the slopes.

County actions at this point in time can either help to facilitate a more desirable type of development on the Mesa or miss the opportunity to set in motion any alternative beyond the trend.

Development Alternatives. The report describes and analyzes four longer-term land use alternatives for the Pajarito Mesa top and two for the eastern slopes. All of these assume the County would enforce existing ordinances and address code violations related to land subdivision, access, water quality, liquid and solid waste disposal, and storm drainage to make sure development meets County standards.

- The Trend Alternative assumes the Mesa would continue to develop as a predominantly semi-rural area with homes built on lots from one to 10 or more acres. A maximum population of about 11,000 at build-out could eventually support a grocery store, drug store, gas stations, and some restaurants in strip patterns along arterial and collector streets. Until then, residents would buy goods and services from stores along Coors Road and Isleta Boulevard.

- The Rural Alternative would preserve the current low-density, rural character of the area by rezoning the Mesa top to allow one dwelling unit per 10-acre lot. A maximum population of approximately 3,400 persons would support very few retail and service businesses. As with the Trend above, the Rural Alternative places the burden on individual residents to obtain all services but major roads, which would follow a one-mile grid pattern. The County would have to secure access rights-of-way from landowners through replatting. As densities are low, utility services would likely be obtained through on-site systems.

- The Planned Communities Alternative assumes the Mesa would be developed into two or three planned communities of from 5,000 to 10,000 acres each resulting in a total build-out population of approximately 100,000 people. This alternative would accommodate the most people on the land area. These self-sufficient communities typically consist of four to eight villages and include a mix of urban uses including housing, shopping, work places, civic uses, and parks and open space. They would build out over a long period of time, up to 50 years. For this alternative, the County would place a much greater emphasis on strategies that prevent premature development. This alternative is consistent with adopted policy.

  Private developers would provide utilities and roads, which would be aligned as properties are assembled. Water and sewer service would be provided through private community systems or eventual connection to metropolitan utilities. Sufficient off-set water rights would have to be purchased. The County would acquire rights-of-way for major streets from private developers, with streets to be provided as resources became available. Infrastructure is to be developed at no net expense to local government.

- The Village Clusters Alternative assumes that the Mesa top would be developed into two to three villages of 650 to 1,200 acres each. Each village would have a center with a core area of 20 to 35 acres for businesses and public facilities. It would be surrounded by higher density housing, schools, and parks. A maximum population of 5,000 to 10,000 persons for each village could support a limited mix of retail and service businesses. Outside the villages, most development would follow the existing 10-acre platting pattern. Open space subdivisions—houses clustered together leaving the remainder as open space—on 50 or more acres could also be developed where owners assembled five or more 10-acre lots.

  Private developers would provide adequate roads and utilities as part of the planned villages. Water and sewer service and other utilities would be available through community systems within the villages or eventual connection to metropolitan utilities. Residents outside the villages would have available the same options as those in the Rural Alternative for services.

- Conclusion: The study recommends that the County pursue the Village Cluster development alternative for Pajarito Mesa. This alternative would strike a balance between planned communities and rural villages, offering some urban and rural features. Given the ownership pattern on the Mesa, it would be more feasible to assemble sufficient land for the Villages than for planned communities. At the same time, it would provide a

planned mix of denser development and more opportunities for creating jobs than the current trend.

Recommendations, Implementation, and Phasing. The study's recommendations were formulated to address the following goal:

To provide for the public health, safety, and welfare of current residents within the County financial constraints, while bringing existing development up to County standards and preventing new development that does not meet County standards.

The report makes four general recommendations that would apply County-wide and divides the remaining recommendations into those that address immediate health, safety and welfare needs of existing residents and those that address future development.

General Recommendations:

1) **Bernalillo County establish a task force of staff representative—some bilingual— from Planning, Building and Zoning; the Legal Department; Environmental Health; and Public Works to designate staff responsible for issues on Pajarito Mesa.**

2) **Bernalillo County provide Spanish language versions of all County development process applications and instructions.**

3) **Bernalillo County adopt County rural road standards that will reduce the expense of roads in very sparsely populated areas, while providing an acceptable level of service.**

4) **Bernalillo County consider adding a large-lot holding zone to the Zoning Code.**

Recommendations to Address Immediate Health, Safety, and Welfare of Existing Residents. The County should:

5) **Identify all code violations and work with residents and local non-profit organizations to bring all existing development into compliance with current codes within five years.**

6) **Require residents who have not brought their properties into compliance by the end of this period to relocate.**

7) **Assist landowners in completing roadway improvements where landowners have secured rights-of-way and agreed to fund the improvements.**

8) **Support efforts by the County Environmental Health Department to develop a clean water source where residents can obtain water to haul to their homes.**

9) **Provide legal assistance to residents and landowners.**

Recommendations for Future Development:
The County should:

10) **Aggressively enforce codes and ordinances to stop further illegal subdivision and development.**

    a) The County should pass an ordinance requiring disclosures on all land sales, leases, or conveyances.
    b) The County should require all land sales and other conveyances to be recorded.
    c) The County should cite code violations and follow through with legal actions as necessary.

11) **Prepare a Sector Development Plan for the part of the Pajarito Mesa designated "Rural" (the eastern slope) in the Comprehensive Plan.**

12) **Adopt the Village Clusters development pattern as the preferred land use alternative .**

13) **Work with major landowners to assemble land into large parcels suitable for "Village Clusters".** Possible actions include:

- Sponsor creation of an Area Plan for the entire Mesa to further define locations for Urban, rural, and mobile home development and to address potential zoning changes.
- Sponsor the development of Sector Development Plans for each Village Cluster.
- Develop a handbook describing development limitations under current conditions, the sector development plan process, and the advantages of cooperative planning and land assembly. These could be distributed to major landowners, realtors, and applicants who cannot meet access requirements.

More aggressive actions would include:

- Help obtain easements and rights-of-way for roads to serve Villages. Owners of individual lots and subdivisions would have to obtain these on their own. Landowners would have financial responsibility for roadway improvements.
- Enact a moratorium on development—subdivisions and new construction--until the area plan or plans for one or more Village Clusters is complete.
- Mandate land assembly through powers of eminent domain. The County would set a minimum size for a Village and mandate that land be assembled or that landowners jointly plan for an area of the appropriate size. The County, even with urban county status, does not currently have the authority to condemn land for redevelopment, although it could purchase land from willing sellers. It would take a change in State law to enable the County to use its powers of eminent domain for redevelopment.
- Establish a program to allow transfer of development rights. Other communities have used this technique that allows people who own land in an area that is not suitable for development to transfer their development right to a parcel of land that is in an area that is suitable for development. The owner receives economic value for the development right.
- Buy out landowners. The County could purchase property at fair market value from landowners who want to own a piece of property that has services. This option could also include relocation assistance.

1. Introduction and Overview of Issues

Pajarito Mesa covers approximately 18,000 acres or 28 square miles in southwest Bernalillo County, encompassing the Pajarito Land Grant. It is bounded by Coors Boulevard on the east, Isleta Reservation on the south, the Rio Puerco Escarpment on the west and the Atrisco land grant boundary on the north.

The Pajarito Land Grant was acquired in the 1930s by Norins Realty, and subsequently sold by metes and bounds descriptions to owners throughout the United States. The area has been divided into parcels ranging from 2.5 acres to 500 acres. Most parcels are approximately 10 acres, although the A-1 zoning allows one dwelling unit per lot with a minimum lot size of one acre. No legal access was provided by easements or rights-of-way at the time the land was sold.

The area is predominantly vacant. Approximately 100 families, as counted from a 1999 aerial photograph, live in mobile homes or a few frame or masonry houses located throughout the area. Most of the residents live north and south of Powers Way, an unpaved east-west common use road in the eastern part of the study area. According to County records, a majority of the mobile homes on the Pajarito Mesa were placed without permits. No utilities are available so residents must haul their own water and supply their own electricity by generator or other means. A few owners have installed septic tanks, most of which do not have permits, and other owners have no safe method of liquid waste disposal.

Although the existing development on the Mesa affects a small percentage of the total area, development activity is increasing. This poses potential threats to the public health and safety as residents by and large do not meet requirements of County ordinances governing building, drinking water, liquid waste disposal, and access. Continuing development in this manner could also preclude more appropriate development on the Mesa in the future.

Even though a very small number of lots have been developed, homes are widely scattered on the Mesa. These dispersed homes will be difficult to serve with roads and utilities. Another concern is the potential for encouraging sprawl across the Mesa if roads are built to remote properties.

1.1. Purpose of the Study

The Pajarito Mesa Land Use and Access Study was initiated by Bernalillo County in response to demands from residents that the County provide service to an area that has been identified in the Albuquerque/Bernalillo County Comprehensive Plan as reserved for future urban development. The purpose of this study was to evaluate existing conditions and propose solutions to problems that have been identified by County staff and by local residents through community meetings, including:

- the lack of easements required for utilities and legal roads
- illegal land sales and subdivisions
- homes without legal building permits
- homes without legal water and liquid waste disposal systems.

The initial goal of this study was to identify alternative patterns of future development for the Pajarito Mesa based on environmental considerations, County policies, and the desires of current residents and property owners. However, it became obvious during initial research and meetings that short-term solutions to the existing problems on the Mesa also must also be implemented if the County

is to accomplish reasonable development in the future. Even though existing development did not follow the proper processes for subdivision and construction, a community is now established.

The study contains recommendations for both short-term strategies and costs to address the immediate health, safety and welfare needs of existing residents and long-term strategies and costs of development for alternatives ranging from very low density rural to higher density urban. A phasing and implementation plan will help guide Bernalillo County in achieving the preferred development pattern. The findings of the study will help the County to determine where and how future homes, roads, and utilities should be built.

1.2. Public Participation

Public involvement was a key element of this study. The public participation process for the study was designed to provide continuous public involvement in the development of the products of the study. An advisory group composed of residents, the South Valley Coalition of Neighborhoods, the Southwest Organizing Project and a realtor active in the area met frequently during the early part of the study to set direction and review the consultants' work. The project team also coordinated on an ongoing basis with County staff, other public and private agencies with an interest in the area.

In addition, the team held four public meetings with residents and landowners to present and discuss components of the study as drafts were completed. Informational materials were available in both Spanish and English.

1.3. Issues

The need for the study is the result of a large number of issues and concerns about current development. The concerns to be taken into account in the study were identified through review of existing documents; meetings with County staff, officials and the study advisory committee; and community meetings. The following problems illustrate the need for the County to intervene and change the current trend.

1.3.1. Resident Expectations

- Residents have purchased their properties with varying expectations about County services.
- Some were aware when they purchased lots that the County had no plans to serve the area. Their preference is to remain isolated from urban Albuquerque and to discourage improvements that would bring in more residents.
- Landowners who sold other parcels promised purchasers electricity within a year, and residents are frustrated by the lack of services.

1.3.2. Development Review Issues

- Some landowners have sold parcels illegally or through real estate contracts that are not recorded with Bernalillo County. Because there is no record of these sales, the County is not aware of the current owner.
- Current residents seem to be confused or unknowledgeable about County codes. Owners state that they can't get a septic tank permit without a mobile home permit, but can't get a mobile home permit without a permit for the septic tank. Because owners are frustrated with or don't understand the County process, they ignore it.
- Homes are placed without proper permits and may be in locations that are inappropriate for development because of slopes, soils or drainage patterns. Inappropriate building in environmentally sensitive areas without proper drainage could contribute to flooding and sedimentation in Valley areas to the east.

- New residences, predominantly mobile homes, are being placed without proper permits.

1.3.3. Roads

- Legal access easements or rights-of-way are limited. Existing rights-of-way, easements obtained through plat, easements that have not been properly dedicated, and common use roads result in an incomplete and unimproved roadway system.
- The Long-Range Roadway Plan for the Albuquerque region designates two major corridors through the area, the Southwest Corridor and Pajarito Road. However, no planning has been done for these roads, and their construction is many years in the future.
- The extension of Rio Bravo/Senator Dennis Chavez to connect with Paseo del Volcan will bring paved access to within approximately one mile of the northern boundary of Pajarito Mesa.
- Existing common use roads can be nearly impassible. School buses do not pick up children in the interior of Pajarito Mesa and emergency service providers cannot respond adequately to calls from residents.
- The County cannot legally maintain any of the private roads due to the anti-donation clause of the State Constitution.

1.3.4. Emergency Services

- Because there are no addresses, emergency service providers cannot find homes. Currently, if someone calls in with an emergency, they must meet the fire truck or sheriff at a paved road and lead them into the area.

1.3.5. Private Utilities

- Power cannot be extended to homes without legal easements.
- Residents use cell phones or radios. Emergency (911) calls are sometimes relayed to Los Lunas, approximately four miles from the Mesa's southern boundary, rather than to the correct jurisdiction in Bernalillo County.
- Current County codes present obstacles to alternative technology.

1.3.6. Hydrology and Soils

- Water availability and quality are questionable. A review of the area's water resources indicates that wells in the area may exceed U.S. Environmental Protection Agency (EPA) standards for certain substances, and well production capacities may be inadequate.
- The Comprehensive Plan recommends preserving the sand dunes, parts of the Ceja and the playas to retain water and keep soils from eroding.

1.3.7. Environmental Health

- The County Environmental Health Department is concerned about hauled water and septic tanks in the area. To help alleviate some of the existing problems, the County has requested an education grant to deal with health and safety and environmental justice issues.
- Residents haul water for household use. Some of this water may be from unsafe sources or stored in unsafe containers. Residents have hired a consultant to help them find a safe alternative. A safe alternative for hauled water may offer a short-term solution to lack of individual wells or water service.

1.3.8. County Financial Resources

- The County has limited financial resources, and other parts of the County also have unmet needs. The South Valley in

particular has been working for many years to improve services to long-time County residents. Solutions to Pajarito Mesa problems are potentially very expensive. The study should help the County determine the most effective investment of County resources for this area.

1.3.9. Other Issues

- Illegal dumping, illegal use of firearms and other illegal activity occurs, particularly in the more remote western parts of the Mesa near the Rio Puerco Escarpment.

1.4. Outline of the Study

The remainder of the study has the following sections:

2.0 Existing Conditions describes current environmental and socio-economic conditions in the study area, reviews current land use and environmental policy, and identifies development constraints and opportunities.

3.0 Land Use and Access Alternatives describes alternatives for development in Pajarito Mesa, estimates development costs to the County and to private landowners, analyzes each according to six criteria, and selects a preferred alternative.

4.0 Recommendations, Implementation and Phasing presents study recommendations of strategies to address both the immediate health safety, and welfare needs of existing residents and strategies to control future development and guide it toward a more desirable pattern.

2. Existing Conditions: Development Constraints and Opportunities

2.1. Regional Context

Pajarito Mesa encompasses approximately 18,000 acres in southwestern Bernalillo County. The study area is bounded by Coors Boulevard on the east, the Atrisco Land Grant boundary on the north, Isleta Reservation on the south, and the top of the Rio Puerco Escarpment on the west. It stretches across eight miles on the Mesa top, covering approximately 13,200 acres. In addition, it covers approximately 4,800 acres on the eastern slope (Figure 1).

The Mesa top is a largely flat plain varying in elevation from 5,400 feet to 5,700 feet above sea level. The eastern slope gradually rises about 500 feet from the Rio Grande Valley floor to the eastern edge of the Mesa. The edge of the eastern slope is referred to as the Ceja or "eyebrow." The western slope, referred to as the Rio Puerco Escarpment, falls off much more steeply from an elevation of about 5,700 feet above sea level to the Rio Puerco Valley below. Useful landmarks are a powerline and companion dirt road that run north-south from Paseo del Volcan across the Mesa top.

2.2. Environmental Conditions and Policy

2.2.1. Geology

The Pajarito Mesa is a portion of Albuquerque's West Mesa or Ceja Mesa, a volcanic escarpment. Pajarito Mesa is an uplifted, non-volcanic extension consisting of a generally level, undulating, sandy plain that is defined by the Rio Puerco Escarpment on the west and the Rio Grande Valley to the east. Its wind-created, sandy surface mantle is dissected by numerous small southeast flowing arroyos with sandy ridges formed between the drainage. (Kelly 1977). The eastern edge of the Mesa that forms the western horizon of the South Valley is referred to as the Ceja or "brow of the ridge." The upper eastern slope beneath the Ceja ranging from 15 to 40 percent is considered the escarpment (Figure 2).

Active sand dunes occur on the middle and lower slopes of the eastern escarpment, mainly in the arroyo divides, and along the top of the western escarpment. Most have some grasses and shrubs and range in thickness from 2 to 60 feet. Many of the sand dunes grade downwind into thin sheets of slightly active, vegetated sand. Their disturbance speeds up wind erosion and leads to severe problems of blowing sand (Bernalillo County 1988).

Environmental Sensitivity: In some instances, escarpment areas may be environmentally sensitive. Areas with steep slopes may present limitations for construction. In some locations, the escarpments may have a scenic value and importance for cultural resources. While the sand dunes cover very little of the study area, their fragile nature should be considered before planning land uses in their location.

Existing Policy: The 1988 Southwest Area Plan recommends that a 50 to 150-foot wide strip on the eastern edge of the Mesa be kept free from development to preserve the fragile Ceja and provide adequate rights-of-way for trails and parks. In addition, very limited, low density development could be allowed on the escarpment ridges and slopes to provide an inexpensive method of protection for the slopes.

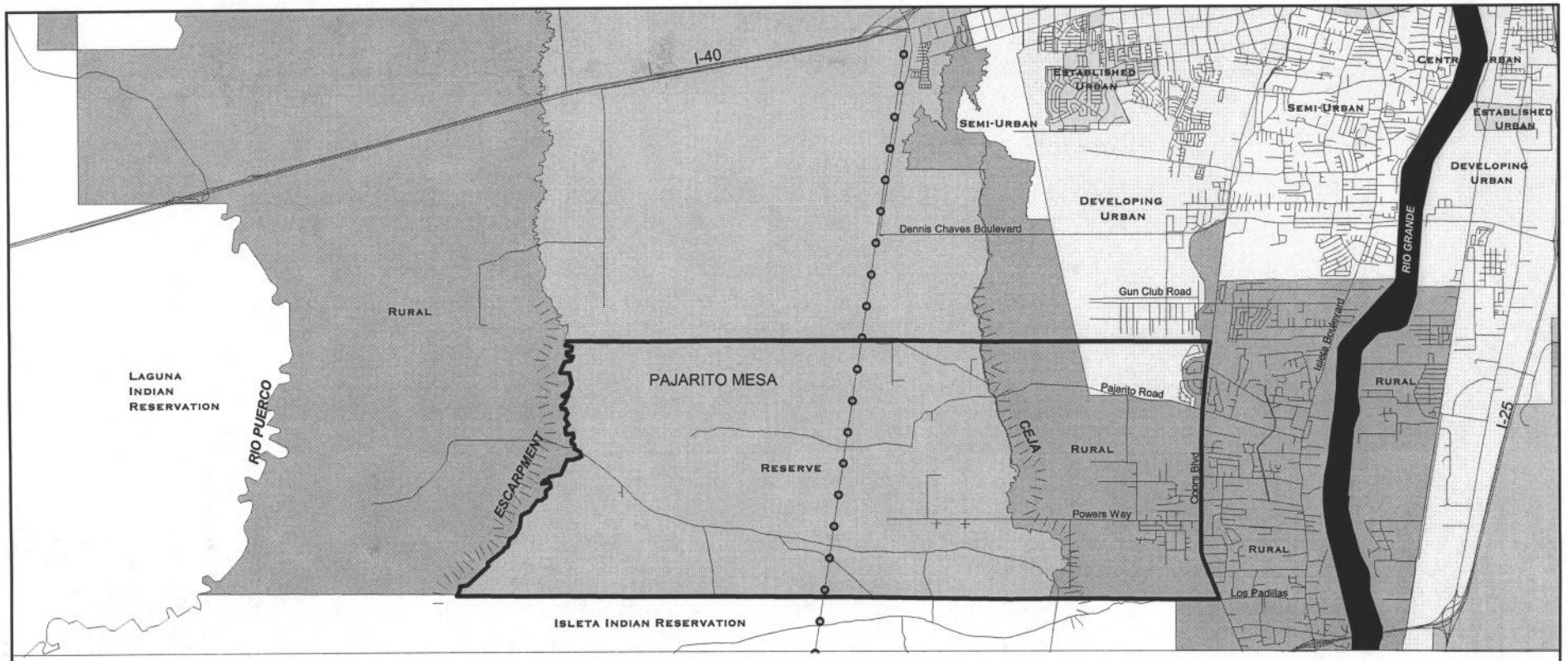


Figure 1

Pajarito Mesa Land Use and Access Study

Regional Context

- Study Area
- County Legal Roads
- Utility Easement
- Escarpments

Comprehensive Plan Types

- Established Urban
- Central Urban
- Developing Urban
- Semi-Urban
- Rural
- Reserve
- Rio Grande

0 1 2 3 4 5 6 7 8 9 Miles

March 2001

sites southwest

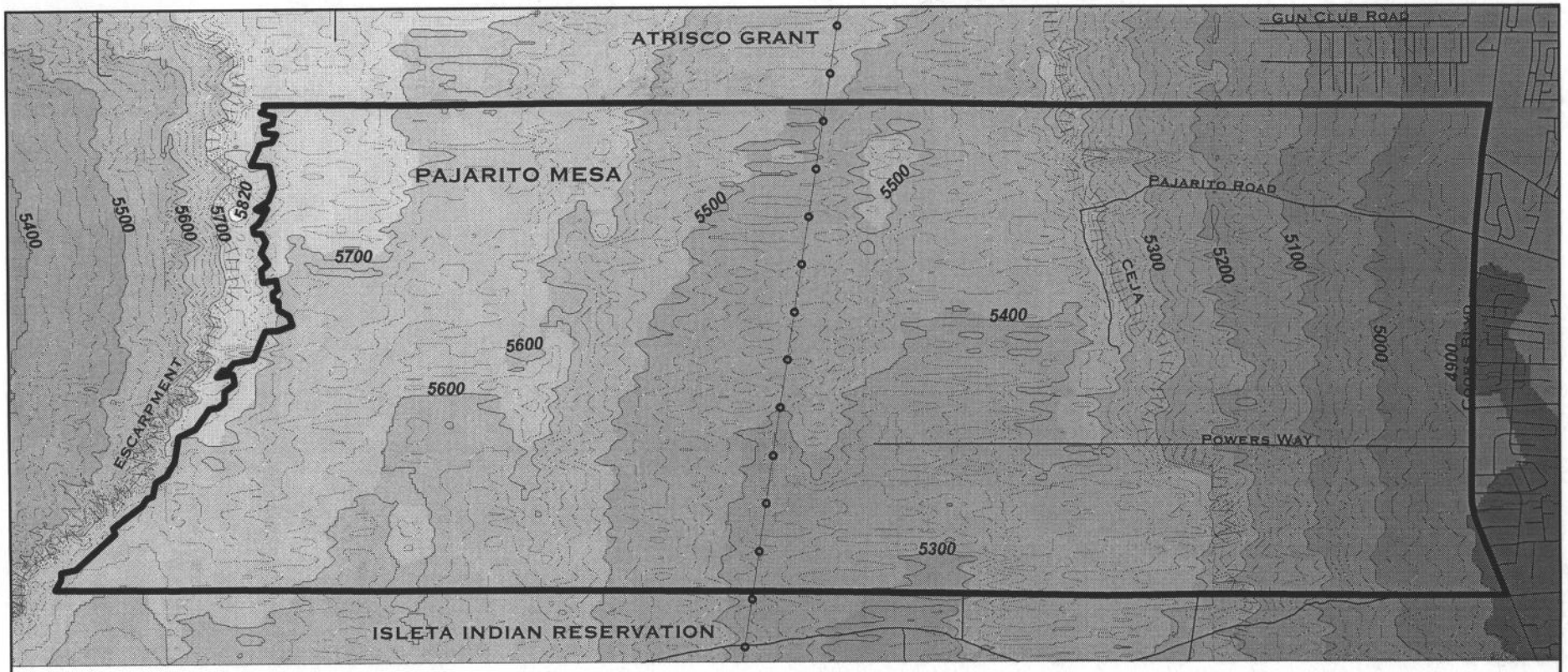


FIGURE 2

PAJARITO MESA LAND USE AND ACCESS STUDY

ELEVATION AND CONTOURS

STUDY AREA
COUNTY LEGAL ROADS
UTILITY EASEMENT
ESCARPMENT
CONTOURS

0 1 2 3 4 5 MILES

MARCH 2001

sites southwest

At least 500 acres (a strip an average width of 500 feet) and potentially more of the Ceja as well as 340 acres of the Southern Sand Dunes near the Mesa's western edge were recommended for eventual purchase as part of Bernalillo County's Capital Improvement Projects list in 2000. Ceja preservation would prevent development in highly visible and erodable areas, preserve views, and help with drainage management. The dunes are considered a significant geologic landform which contains important wildlife habitat and archaeological sites. These areas were also identified by the City of Albuquerque as part of the 1997 quarter-cent tax for parks and open space but failed to be acquired due to lack of funding.

2.2.2. Hydrology and Drainage

The few wells that exist in or near the study area indicate that the depth to groundwater is about 844 feet in the northwest corner of the Mesa top and rises to 500-600 feet near the eastern slope (Shomaker 2000). Depth to groundwater then decreases markedly eastward due to the relatively steep slope of the land surface and lies only a few tens of feet under the surface along Coors Boulevard.

Well production may be substandard in wells on the Mesa top. The nearby well recently drilled for the new County Metropolitan Detention Center (MDC) produced 365 gallons per minute. Typical city wells produce from 2,500 to 3,000 gallons per minute. In contrast, however, the silts and clays that compose the aquifer under the Mesa produce relatively low-yield wells.

Regarding water quality in the western part of the study area, the water from the MDC well meets federal drinking water standards. The arsenic content (0.048 mg/l), however, is very close to the current limit and will exceed the proposed limit of 0.005 mg/l. Sodium content of 290 mg/l is also higher than desired. Water quality at depth in the valley area is probably similar to water in the deeper part of the aquifer tapped by municipal wells in the valley of Albuquerque (Shomaker 2000). Much of the shallow groundwater in the valley, however, is contaminated by some combination of septic tank leachate, irrigation return flow, and a variety of point-source pollutants.

Surface water features are limited on Pajarito Mesa. No continuously flowing streams, or permanent, naturally-formed water bodies occur on the Mesa. Several intermittent streams, or arroyos, traverse the Mesa and empty into the Rio Puerco basin to the west, or the Rio Grande basin to the east. The major 100-year floodplain starts about one-quarter of the way from the northwest corner of the Mesa top and drains southeast into Isleta Reservation.

In addition there are several playas—low-lying areas that are intermittently flooded but that have no natural drainage outlet mostly to the north of the study area (Figure 3).

Wetlands that meet the U.S. Army Corps of Engineers (1987) criteria for wetlands vegetation, soils and hydrology are virtually absent from the Pajarito Mesa area. Wetlands can develop near some of the livestock ponds that are scattered across the Mesa.

Environmental Sensitivity: Arroyos are considered Waters of the United States under the Clean Water Act. Any construction activity or disturbance within arroyos requires the approval of the U.S. Army Corps of Engineers and the Surface Water Quality Bureau of the New Mexico Environment Department. Any disturbance to wetlands located on the Pajarito Mesa also will require federal and state approvals. Stormwater management and erosion will be a critical issue on the Mesa. Many of the soils are eroded easily and increase the sediment load of runoff. Under the Clean Water Act, Stormwater Pollution Prevention Plans and associated permits are required for construction activity with greater than one acre of disturbance.

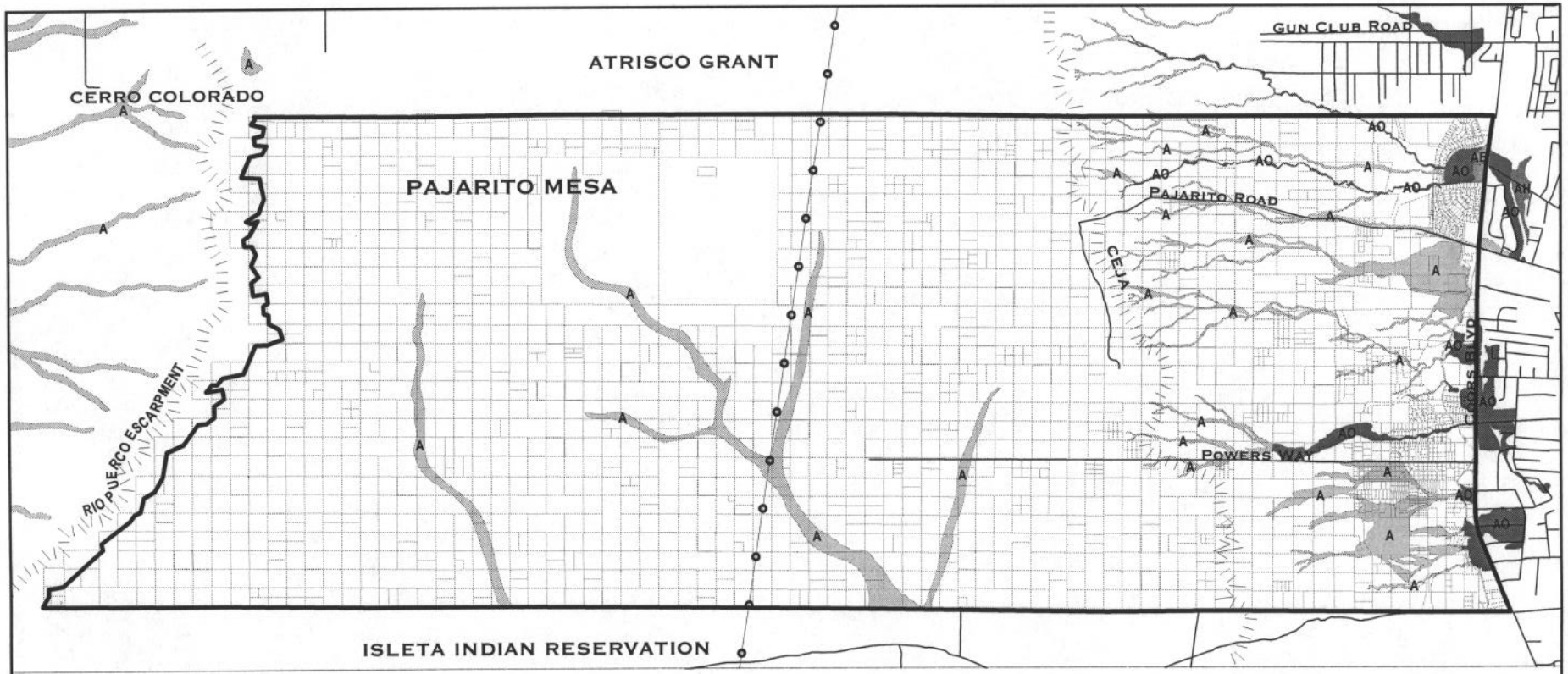


FIGURE 3

PAJARITO MESA LAND USE AND ACCESS STUDY

DRAINAGEWAYS AND 100-YEAR FLOODPLAINS

- STUDY AREA
- COUNTY ASSESSOR OWNERSHIP BOUNDARIES
- COUNTY LEGAL ROADS
- ESCARPMENTS
- UTILITY EASEMENT
- FLOODPLAINS FROM 1983 SURVEY
  - ZONE AO
  - ZONE AH
  - ZONE AE
  - ZONE A

0 1 2 3 4 5 MILES

MARCH 2001

sites southwest

Existing Policy: To avoid the cost of constructing outfall structures and providing maintenance, the Albuquerque/Bernalillo County Comprehensive Plan and the Far Northwest Drainage Management Plan recommended limiting development densities around the playas and retaining them in an undeveloped state. The Southwest Area Plan (SWAP) concurred and also suggested the areas be used as park land or open space. The SWAP also called for a drainage study of the Mesa top.

2.2.3. Soils

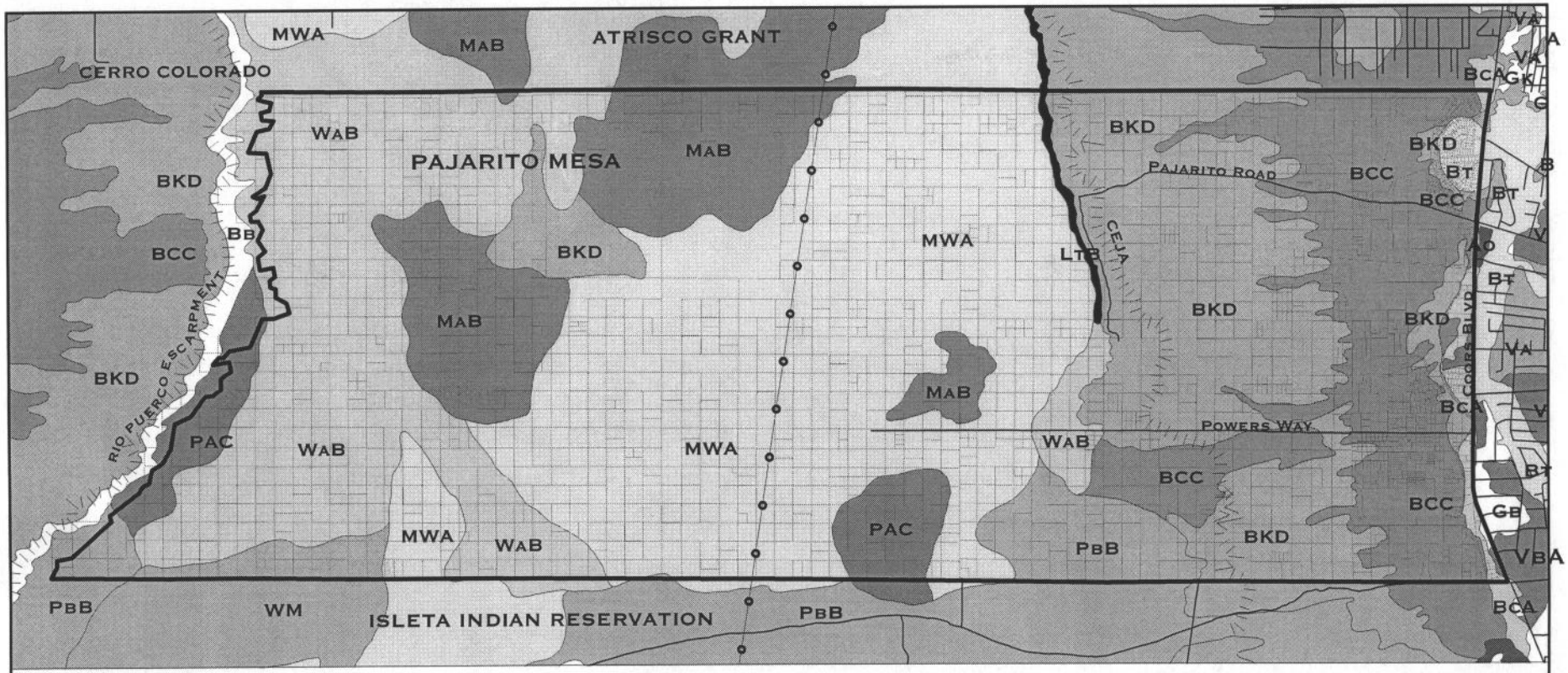
Investigations of soils on Pajarito Mesa (U.S. Soil Conservation Service 1977) found that they drain water quickly and support little vegetation so their use is typically restricted to pasture or range, woodland, wildlife habitat, and community development. Even their potential for providing wildlife habitat, with intensive improvements, is considered to be difficult, expensive, and not worth the effort in most cases. An exception might be along floodplains, which would have more access to water and could provide a wildlife corridor stretching from the Rio Puerco to the Rio Grande and in the southwestern sand dunes (Figure 4).

The Mesa and slopes are composed of six predominant soil types:

1) Bluepoint (BCC): loamy, fine sand on 1-9 percent slopes, subject to severe wind erosion and slow run-off.
2) Bluepoint-Kokan Association (BKD): deep, excessively drained on 5-40 percent slopes, subject to moderate to severe wind erosion and slow run-off.
3) Madurez (MaB): loamy, fine sand on 1 to 5 percent slopes, subject to severe wind erosion and slow run-off.
4) Wink (WaB): fine, sandy loam on 0 to 5 percent slopes, subject to slight to moderate erosion, medium run-off, poor for vegetation.
5) Madurez-Wink Association (MWA): Sandy loam on gentle slope, subject to moderate to severe wind erosion, slow run-off.
6) Latene (LtB): Sandy soil on 1 to 5 percent slopes, subject to moderate wind and water erosion, medium runoff.

Environmental Sensitivity: Wind and water erosion are the chief concern during community development. The exact amount of soil loss depends on the slope, erodability of the soil types, the amount of vegetative cover, and the exposure to wind and rain. Most of the soils on Pajarito Mesa are highly erodable and covered only sparsely by vegetation, leaving them vulnerable to activities such as overgrazing, scraping and grading land for home construction and building roads. Disturbance of vegetation reduces the soils' ability to slow water run-off, resulting in loss of habitat, decreased recharge of ground water, and more flooding in the valley below. An increase of impervious, hard surfaces, such as paved roads and roof tops, can also increase water run-off and lead to higher erosion. The potential for recreational development--camp and picnic areas, playgrounds, paths and trails—varies. Some of the soils prove to be too dusty and sandy for this use.

There are few other limitations for urban development. Most of the soils are porous and only a few pose severe problems for septic systems due to the steep slope of the land. The chief example consists of a ribbon of Latene sandy soil (LtB) that stretches along the top of the eastern Mesa slope, or the Ceja, at a width of about 500 feet and slope of 1 to 9 percent and is very susceptible to wind erosion. The Soil Conservation Service (SCS) estimated the soil loss at between 5 and 90 tons per acre per year, compared with an allowed limit of 4 tons. Run-off is medium and the soil percolates slowly, posing moderate problems for septic tank leach fields as well as for sewage lagoons and shallow excavations. The SCS noted that preserving an area above the Ceja as open space would be less destructive to zones below. It also recommended that individual liquid waste disposal systems, unlined sewage lagoons, and stormwater run-off holding ponds not be constructed within 200 feet of the Ceja to prevent the possibility of seepage into the escarpment. (See appendix for more detailed soils description.)



- Study Area
- County Assessor Ownership Boundaries
- County Legal Roads
- Escarpments
- Utility Easement

Soil Types

- AO-Anapra silty clay loam
- BCC-Bluepoint loamy fine sand, 1 to 9 percent slopes
- BKD-Bluepoint-Kokan association, hilly
- BcA-Bluepoint loamy fine sand, 1 to 3 percent slopes
- BT-Brazito complex
- KR-Kokan-Rock outcrop association
- LTB-Latene sandy laom, 1 to 5 percent slopes
- MWA-Madurez-Wink association, gently sloping
- MWB-Madurez-Wink association, undulating
- MAB-Madurez loamy fine sand, 1 to 5 percent slopes
- PAC-Pajarito loamy fine sand, 1 to 9 percent slopes
- PBB-Pajarito fine sandy loam, 1 to 5 percent slopes
- VA-Vinton loamy sand
- VBA-Vinton sandy loam, 0 to 1 percent slopes
- WM-Wink-Madurez associaiton
- WAB-Wink fine sandy loam, 0 to 5 percent slopes

0 1 2 3 4 5 Miles

Figure 4

Pajarito Mesa Land Use and Access Study

Soil Classifications from USDA Soil Survey

March 2001

sites southwest

Existing Policy: The 1988 Southwest Area Plan echoed the prohibition on individual septic systems, sewage lagoons, and stormwater holding ponds within the 200-foot strip of land above the Ceja. It also called for a drainage plan for the entire Mesa top to address potential increases in water run-off due to development. In addition, it recommended a) limited development on ridges and slopes away from run-off areas to avoid flooding, b) extreme care to hold soil in place during development, c) lot sizes on the slopes no smaller than one net acre per dwelling unit, d) naturalistic erosion and water control measures, e) roads on the slopes that follow the natural contours of the terrain with all-weather arroyo crossings, and f) native or naturalized landscaping.

2.2.4. VEGETATION

The primary plant community along the pipeline route is shortgrass steppe. This community type is dominated by galleta (*Hilaria jamesii*), sand dropseed (*Sporobolus cryptandrus*), snakeweed (*Gutierrezia sarothrae*), and fourwing saltbush (*Atriplex canescens*). It occurs in flat, mid-elevation areas. In higher elevation upland areas, juniper savanna is present. This community type is dominated by shortgrass steppe plants with occasional juniper (*Juniperus monosperma*) trees interspersed (Dick-Peddie 1993).

Environmental Sensitivity: Since the vegetation is somewhat uniform across the Pajarito Mesa, none of the areas would be considered environmentally sensitive. Nevertheless, planning activities may want to consider leaving undisturbed areas to ensure the protection of a portion of the natural plant communities.

2.2.5. WILDLIFE

Common widespread mammal species associated with the Mesa include coyote (*Canis latrans*), mule deer (*Odocoileus hemionus*), deermice (*Peromyscus maniculatus*), cottontail rabbit (*Sylvilagus* spp.) and black-tailed jackrabbit (*Lepus californicus*). Other species that may be present in the shortgrass steppe include desert cottontail (*Sylvilagus auduboni*), spotted ground squirrel (*Spermophilus spilosoma*), white-tailed antelope squirrel (*Ammospermophilus leucurus*), and kangaroo rats (*Dipodomys* spp.) (Findley et al. 1975).

Many bird species are common on the Mesa. In the shortgrass steppe and juniper savanna areas, mourning dove (*Zenaida macroura*), western meadow lark (*Sturnella neglecta*), horned lark (*Eremophila alpestris*), common raven (*Corvus corax*), red-tailed hawks (*Buteo jamaicensis*), turkey vultures (*Cathartes aura*), and chipping sparrows (*Spizella passerina*) may be seen (Zimmerman, et al. 1992). Other shortgrass steppe species may include greater roadrunner (*Geococcyx californianus*), curve-billed thrashers (*Toxostoma curvirostre*), and sage sparrows (*Amphispiza belli*) (National Geographic Society 1987).

The U.S. Fish and Wildlife Service lists eight species that are protected under the Endangered Species Act as potentially occurring in Bernalillo County (U.S. Fish and Wildlife Service 1998). Of these species, the mountain plover (*Charadrius montanus*) is the only federally protected species potentially occurring in the Pajarito Mesa area. The mountain plover is a proposed threatened species. It is semi-migratory and present in the western United States all year except January to early March. Mountain plover occurs on open plains, Mesas, or ridges, in shortgrass vegetation that has been disturbed by grazing ungulates and burrowing mammals.

Environmental Sensitivity: Planning activities should consider leaving areas of open undisturbed, grassland vegetation. Establishment of grassland wildlife corridors between the Rio Puerco and Rio Grande basins will allow for the movement of wildlife across the Pajarito Mesa. In addition, areas of grassland habitat would benefit the mountain plover and other grassland species.

2.2.6. Cultural Resources

The Archeological Records Management Section of the New Mexico Office of Cultural Affairs has records for 23 historic sites in the Pajarito Mesa area. Most of the Mesa has not been surveyed, and more sites may be present. Sites tend to occur along the edges of the escarpments. Paleo-Indian sites are also likely to be associated with playas. Four known sites are considered eligible for nomination to the National Register of Historic Places. Two of the eligible sites are Ancestral Puebloan pithouses, and one site consists of an artifact scatter with features. The remaining eligible site is an irrigation ditch.

Environmental Sensitivity: The escarpment areas and the four sites eligible to the National Register of Historic Places are environmentally sensitive areas for cultural resources. Any federally or state funded projects in the Pajarito Mesa area would require additional surveys for cultural resources. Additional sites may be located that will require protection or mitigation.

2.2.7. Air Quality

Bernalillo County is in attainment for National Ambient Air Quality Standards (NAAQS) set by the U.S. Environmental Protection Agency (EPA 2000). Visibility degradation is common on the West Mesa due to dusty roads and woodburning activities. In the Albuquerque basin, temperature inversions are common due to topography and weather. Air pollution is trapped in the bottom layer of the inversion. The Albuquerque metro area experienced violations of carbon monoxide standards set by the EPA under NAAQS prior to 1992 (Eager 1996). There have been no violations under NAAQS since 1992. Albuquerque was designated by the EPA as in attainment of air quality standards, under a maintenance plan that protects standards, since 1996 (Glen Dennis, Manager Vehicle Pollution Management Division, City of Albuquerque, Personal Communication, April 12, 2000).

Environmental Sensitivity: During construction, disturbed areas can be subject to wind erosion creating local dust storms and increasing particulate matter levels in the Bernalillo County region. Dust control measures will be needed at construction sites.

2.3. Man-Made Conditions and Policy

At roughly 18,000 acres, Pajarito Mesa is a vast, largely vacant area, covering an amount of land that would stretch across Albuquerque's Northeast Heights from Downtown to Tramway Boulevard and from Lomas Boulevard to a quarter mile beyond Montgomery Boulevard (Figure 5).

2.3.1. Platting, Ownership, and Land Use

Pajarito Mesa was divided into 10-acre square parcels in 1929 by Norins Realty of California in partnership with Albuquerque National Bank and sold to investors for oil exploration. Currently many landowners live in New Mexico, with the rest scattered throughout the U.S. The top ten landholders control a significant percentage of the total land area, although individual holdings are scattered. Two landowners in particular own two contiguous approximately 500-acre parcels in the north central part of the Mesa top (Figure 6).

The Mesa top consists of 13,188 acres grouped into 1,444 ownership parcels. Parcels range in size from 0.014 acres to 499 acres with an average size of 9.1 acres. The eastern slope covers 4,380 acres (after subtracting formal subdivision developments) grouped into 679 parcels. The minimum acres per parcel here is 0.04 and the maximum 85.7, with an average parcel being 6.5 acres.

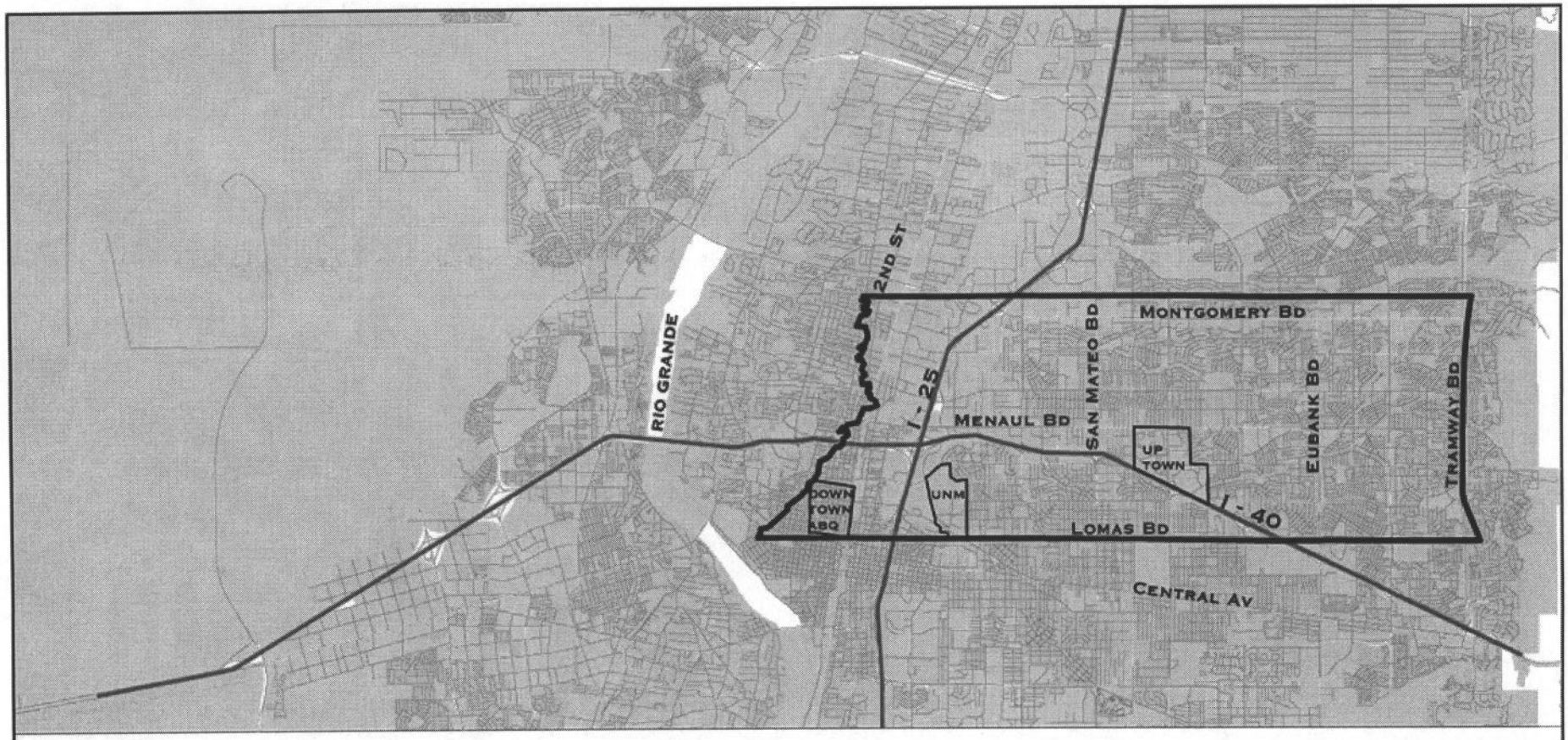


FIGURE 5

PAJARITO MESA LAND USE AND ACCESS STUDY

STUDY AREA SIZE COMPARISON

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0 1 2 3 4 5 6 7 8 9 MILES

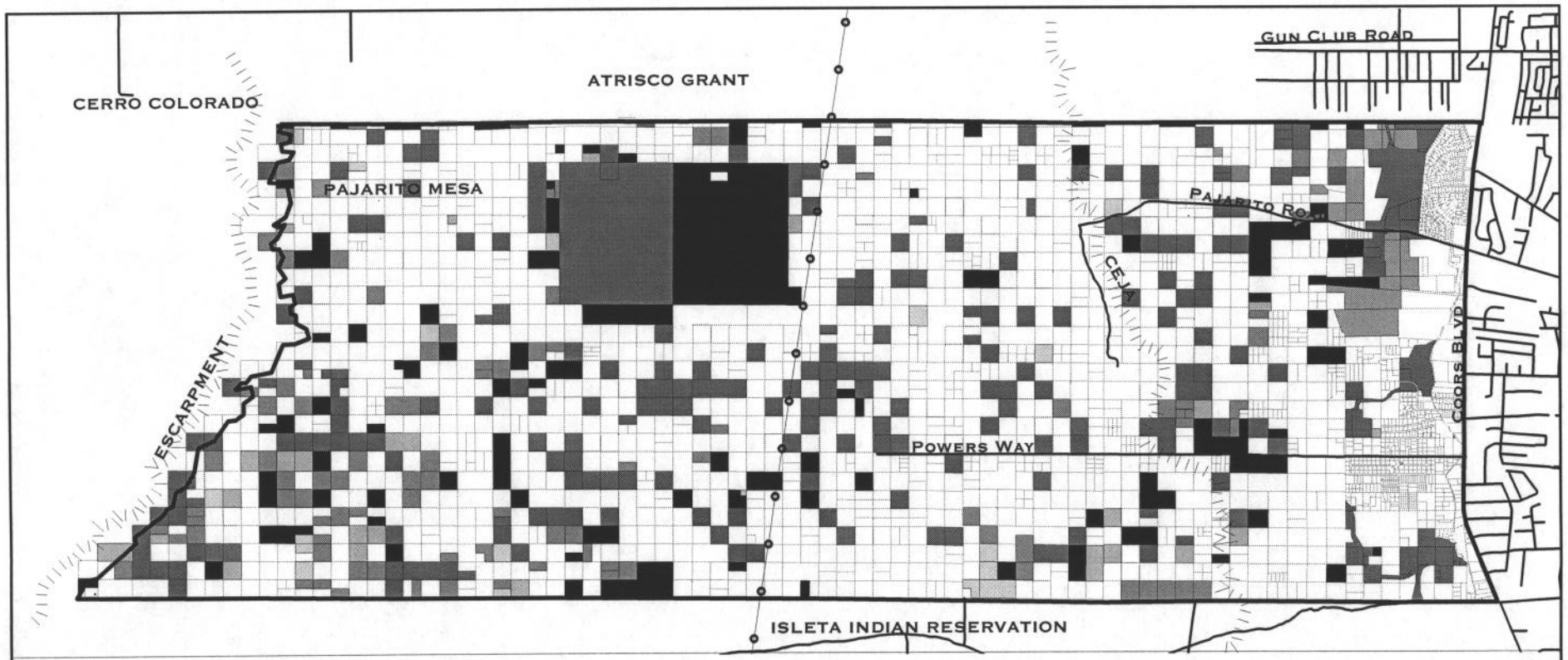

FIGURE 6

PAJARITO MESA LAND USE AND ACCESS STUDY

MAJOR LANDHOLDERS

- STUDY AREA
- UTILITY EASEMENT
- COUNTY LEGAL ROADS
- ESCARPMENT

10 LARGEST LANDHOLDERS (BY ACREAGE)

- NORINS REALTY
- GREVEY LIBERMAN
- LEPORE FAMILY
- ALPINE LAND CO
- WILKES FAMILY
- STIMSON JANICE
- SOLID GOLD CLASSIC
- AMAFCA
- PICKARD ANNE
- GALLEY FAMILY

0 1 2 3 4 5 MILES

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ALBUQUERQUE, NM 87109
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E-MAIL: mail@sites-sw.com
WEB: www.sites-sw.com

Both the Mesa top and slope are zoned A-1, which is a rural agriculture zone that allows one dwelling unit per acre. Most of the land uses are residential, although a few are used for industrial purposes through special use permits. These include the Southwest Landfill, a sand and gravel operation, and a dairy, all on the eastern slope (Figure 7).

2.3.2. Socio-Economic Factors

Judging from a 1999 aerial map, approximately 100 families live on the Mesa top. This has grown from the 30 families the County estimated to be there in 1992. On the Mesa top, most are scattered among the eastern third, which is defined by the Ceja to the east and a north-south power line to the west. Development tends to congregate along or near the east-west dirt extensions of Powers Way and Pajarito Road. Perhaps 15 or more homes are scattered between the power line and to the Rio Puerco Escarpment.

Living conditions are challenging as the residents have no running water, or even standard access to a clean water source. Except for the eastern slope, they have no electricity except what they can generate themselves, and no telephone lines, sewers, paved or even legal roads. Many live in mobile homes, which they heat with wood and butane. They read by the light of kerosene lamps.

Much of the land has been sold through real estate contracts. Some residents were aware that it would be difficult, if not impossible, to obtain county services but chose to live "off the grid" in relative isolation. Others were promised County services by the sellers within a few years of when they purchased land.

An example is a group of 15 families residing on the eastern slope that purchased land from Virgil Haverstick, a South Valley pig farmer. Haverstick bought and sold the unimproved land on real estate contracts in the early 1990s, allegedly promising to plat the land and build roads and telling his customers that electricity and water would soon be available. When no improvements were made, the residents took him to court in 1998, requesting they be allowed to pay only for Haverstick's costs in buying the land and to invest the remainder of their monthly payments in infrastructure. District Court Judge Teresa Baca did not agree to reduce the residents' payments, but did allow them to funnel payments into a trust account from which the original landowners could be paid. She left the issue of the disposal of Haverstick's profits to federal bankruptcy court (Santillanes, May 18, Nov. 3, 1998,).

2.3.3. Business and Economic Development

The lack of any land improvements, with the exception of Pajarito Road's paved completion to the Southwest Landfill, presents a nearly insurmountable barrier to any economic development in the area. The exceptions are the landfill, and a sand and gravel operation and a dairy on the eastern slope. There may also be some home-based businesses.

2.3.4. Access

Other than Pajarito Road, which goes to the landfill, no legal roads exist within Pajarito Mesa. There are no easements for power or telephone, and no legal access for emergency vehicles. Land sales predated the County subdivision laws, and parcels were originally sold with no access easements that would have allowed legal roads or utilities to cross each landowner's property. Despite this, dirt roads criss-cross the top of the Mesa and are used by the few residents who live there to reach their property. In recent years, the County has stepped in to try to remedy this situation in the few areas where access was deemed necessary or desirable. The County condemned and took possession of the right-of way needed to complete Pajarito Road from the valley out to the Southwest landfill. In addition, in a 1992 court action decreed that 25-foot easements existed over certain properties along Powers Way.

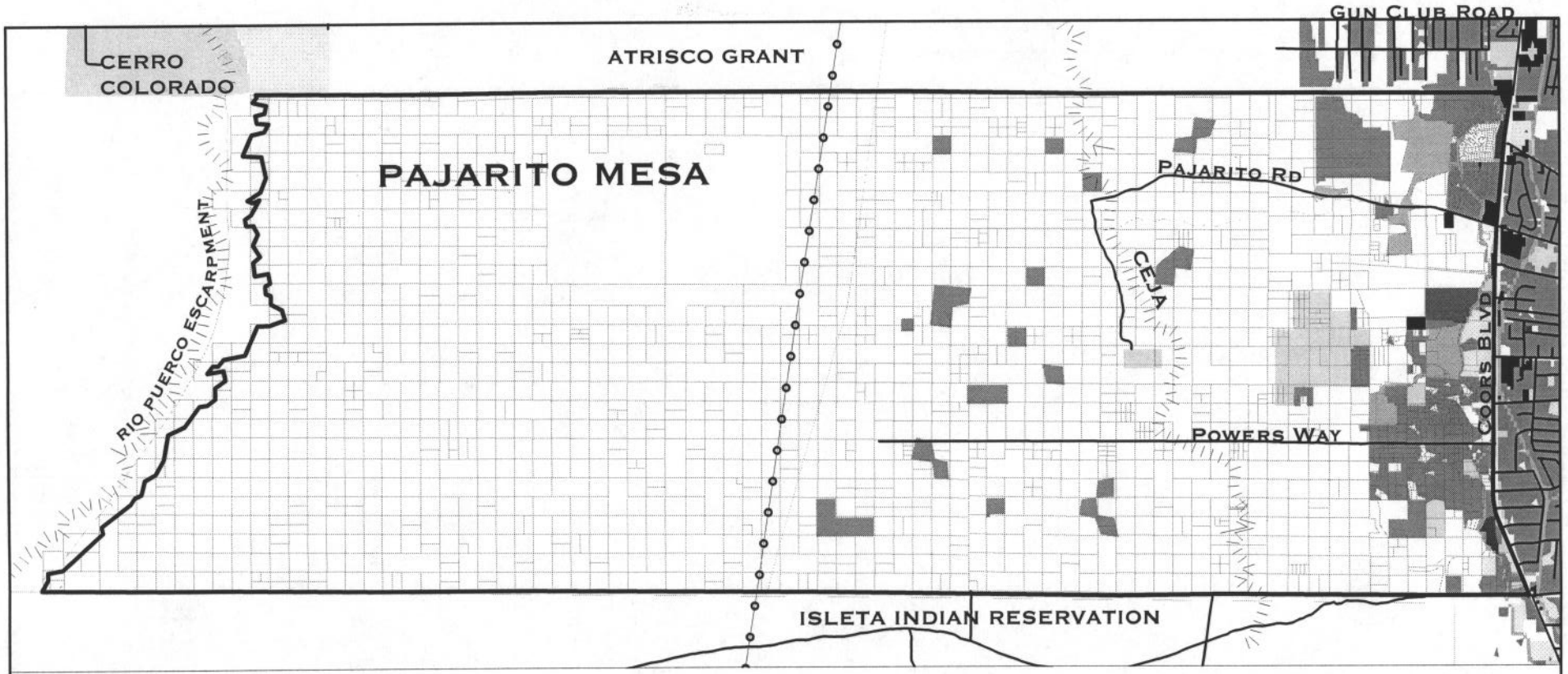

FIGURE 7

PAJARITO MESA LAND USE AND ACCESS STUDY

LAND USE CATEGORIES

- STUDY AREA
- COUNTY ASSESSOR OWNERSHIP BOUNDARIES
- COUNTY LEGAL ROADS
- UTILITY EASEMENT
- ESCARPMENTS

GENERAL LAND USE

- RESIDENTIAL - SINGLE FAMILY
- RESIDENTIAL - MULTIPLE FAMILY
- COMMERCIAL
- INDUSTRIAL / WHOLESALE
- PUBLIC / INSTITUTIONAL
- AGRICULTURE, IRRIGATED
- RANGELAND/DRY AGRICULTURE
- MAJOR PUBLIC OPEN SPACE / PARKS / RECREATION
- LANDFILLS / SEWAGE TREATMENT PLANTS
- DRAINAGEWAYS

0 1 2 3 4 MILES

MARCH 2001

sites southwest

The Bernalillo County Public Works Division has collected and filed 171 documents that grant access easements in various forms. Most were obtained during inspections. They are grouped into the following classifications and displayed graphically in Figure 8:

1) Documented Easements
   a. Documents granting easements in some form but not recorded with the County Clerk.
   b. Easements granted through a real estate contract. Some are recorded, some not.
   c. Documents granting easements that have a case number indicating they underwent some form of County processing, such as a plat that was not fully approved.
2) Surveyed or Recorded Easements
   a. Documents that included a survey showing the easement. They may not be fully approved or filed with the County Clerk.
   b. Documents granting easements that were notarized and filed with the County Clerk.
   c. Easements that appear as right-of-way in the County Assessor data and appear on the zone map.
3) County roads

All of these documents, except the County roads, are considered private easements because the County has not accepted them and because they are not built to County standards. Many could probably be condemned and converted to public easements. Most of the easements, however, are isolated and do not connect to public rights-of-way.

County land use, subdivision, and other development ordinances prohibit development of lots that lack legal access. Individual owners have dedicated easements by plat or other documents that may or may not be legally recorded. This has created isolated development without legal access or the possibility of utility (power and telephone) extensions.

Existing Policy: The latest version of the Metropolitan Transportation Plan for the Albuquerque area (2020), which is developed by the Middle Rio Grande Council of Governments to guide the short-term programming of major roads, envisions no roadways extending into Pajarito Mesa over the next 20 years. The closest new roads would be a new four-lane extension of Unser from Arenal to Rio Bravo, and a new two-lane extension of 98th Street from Sage to Rio Bravo. In addition, Coors Boulevard from Pajarito Road to Central Avenue would be widened from two to four lanes (Figure 9).

The Long Range Roadway Map, which reflects 50 years of transportation system policies adopted by local elected officials, indicates a wide corridor for the Southwest Transportation Corridor. This could eventually be a limited access, six-lane road extending from Rio Bravo/Paseo del Volcan to the vicinity of I-25 and Coors. In addition, potential corridors are outlined for extending Unser south from Rio Bravo to the Southwest Corridor, Pajarito Road from I-25 west to the Southwest Corridor, and 98th Street south from Rio Bravo (Sen. Dennis Chavez) to Pajarito Road.

The 1988 Southwest Area Plan agreed that Pajarito Road should be the only east/west arterial south of Rio Bravo Boulevard, as lower scale development in this portion of the plan area would preclude the necessity for more arterials and river crossings. Arterials form the spine for local traffic. It noted that Interstate 25 may be the only existing river crossing needed south of Rio Bravo Boulevard.

2.3.5. Policy Analysis

A number of plans and policies pertain to development on Pajarito Mesa. Short summaries are presented here.

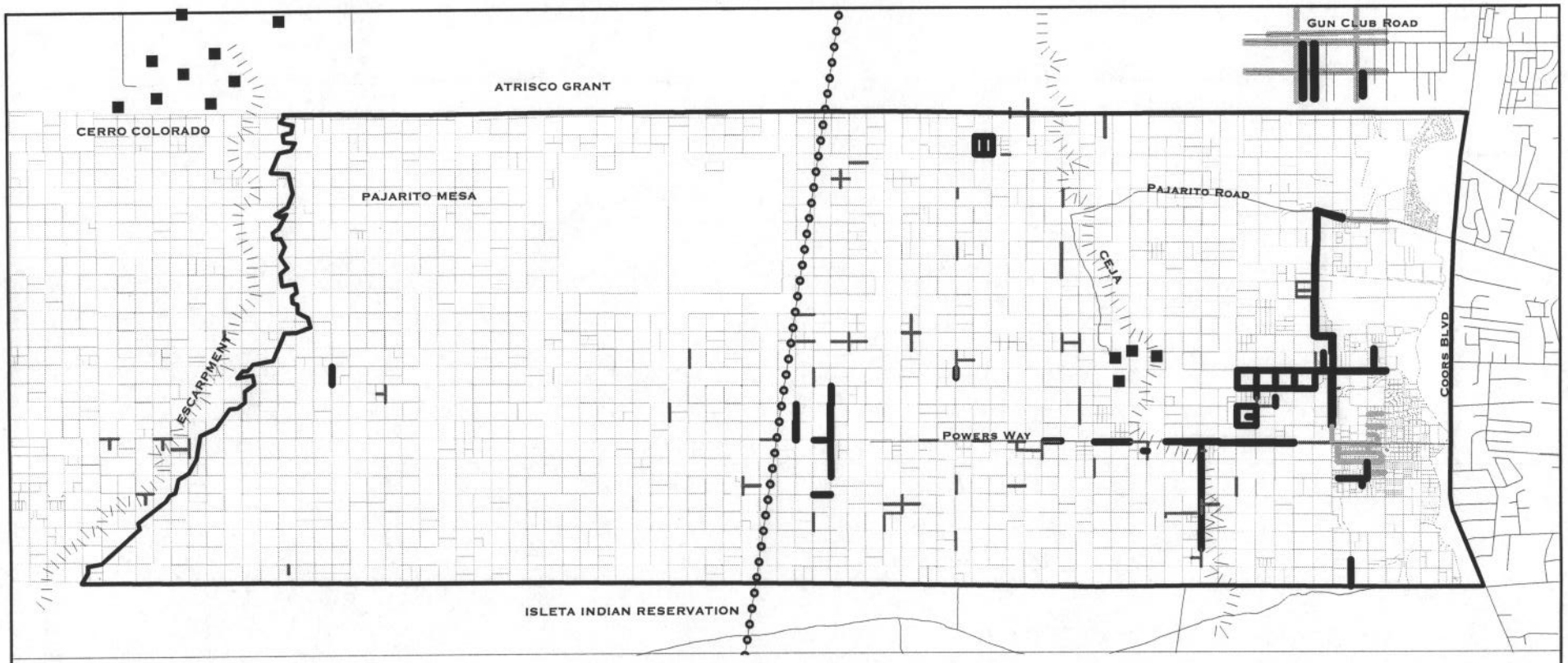

FIGURE 8

PAJARITO MESA LAND USE AND ACCESS STUDY

KNOWN EASEMENTS AND ROW

STUDY AREA
ROADS
ESCARPMENT
UTILITY EASEMENT
LANDFILLS
EASEMENTS
SURVEYED OR RECORDED EASEMENTS
DOCUMENTED EASEMENTS
COUNTY ROADWAYS
COUNTY ASSESSOR OWNERSHIP PARCELS

0 1 2 3 4 5 MILES

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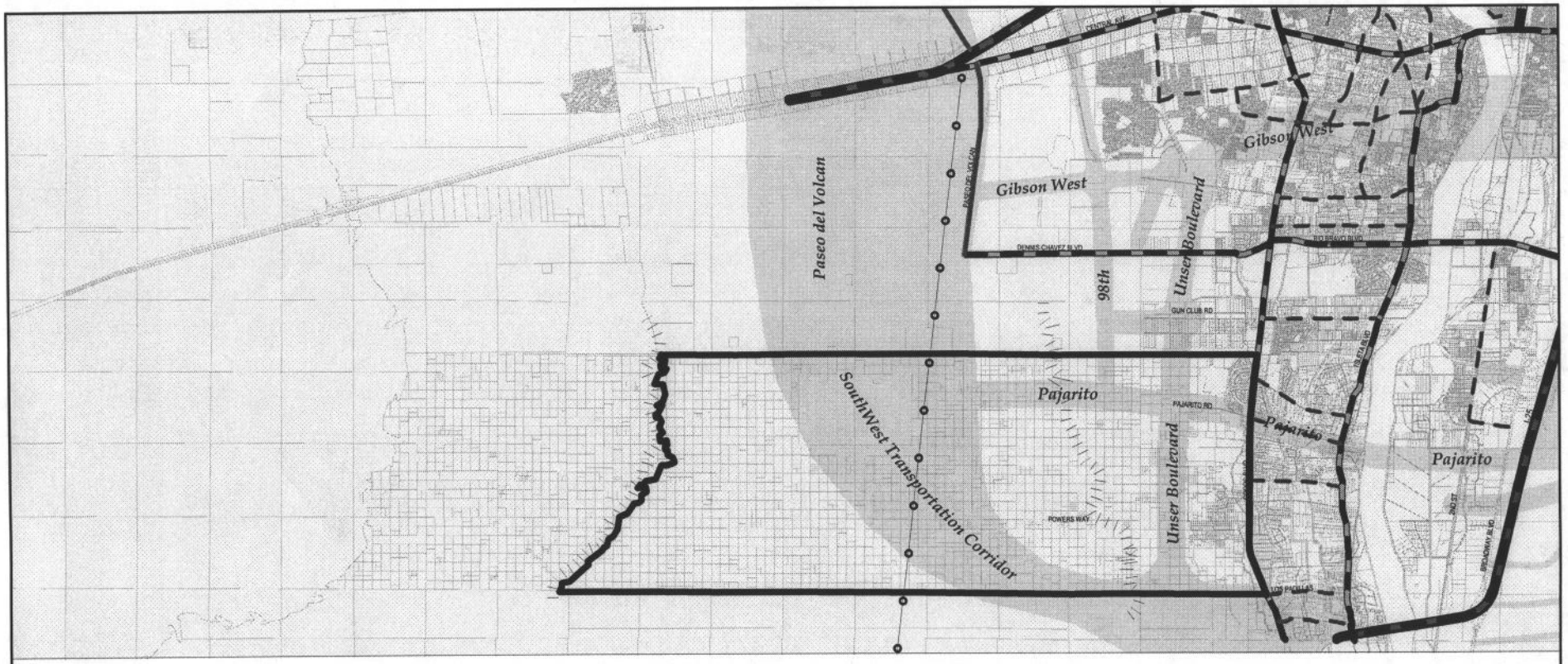

FIGURE 9

PAJARITO MESA LAND USE AND ACCESS STUDY

TRANSPORTATION CORRIDORS AND LONG RANGE ROADWAY MAP

- STUDY AREA
- ESCARPMENT
- LONG RANGE ROADWAY MASTER PLAN
  - URBAN - INTERSTATE
  - URBAN - PRINCIPAL ARTERIAL
  - URBAN - OTHER FREEWAY
  - URBAN - COLLECTOR
- COUNTY ASSESSOR PARCELS
- TRANSPORTATION CORRIDORS
  - CORRIDOR LOCATIONS

0 1 2 3 4 5 6 7 8 9 10 MILES

MARCH 2001

sites southwest

Rank I Plans

Albuquerque/Bernalillo County Comprehensive Plan (1988)

This plan maps the areas suitable for development at various levels of rural and urban services. It designates the Pajarito Mesa slopes (the eastern slope and the Rio Puerco Escarpment) as rural. This category is applied to areas that have either severe soil or water limitations or agricultural or recreational potential important enough to limit developments to an overall density of one dwelling unit per acre. Environmental conditions should guide development; clustering of homes is appropriate. The goal is to create development that maintains the separate identity of rural areas as alternatives to urban density and is compatible with natural resources capacities (Figure 10).

The Mesa top is designated as "reserve." This category reserves land for future development of high quality, mixed-use, largely self-sufficient planned communities. It establishes an overall density cap of three dwelling units per acre and mandates clustering of homes be used to achieve that while ensuring an open space network within and around the development.

Rank II Plans

West Side Strategic Plan (1997)

This plan, along with the Southwest Area Plan, establishes a regional context for development on Pajarito Mesa. While the Mesa is only sparsely developed, it lies just south of what the Westside Strategic Plan (WSSP) designates as the Rio Bravo and Gun Club communities. The Gun Club community is anticipated to be an expansion area for South Valley residents who choose a more rural lifestyle. Its 4,085 acres could accommodate 4,300 dwelling units— or a little more than one home per acre— and a population of 12,700. Just west of this, the Westside Plan envisions the 4,163-acre Rio Bravo Planned Community to be developed under jurisdiction of Bernalillo County. Bounded by the Westland South Planned Community to the north (3,507 acres, 7,400 housing units, 21,700 population), the Rio Bravo Planned Community is anticipated to develop at a lower density than its northern counterpart but similar to its eastern cousin. Estimates are that 4,400 housing units could eventually result in a population of 12,900 and an average density of 1.06 units per acre. The Paseo del Volcan and Rio Bravo intersection is expected to develop as a core area of the community to accommodate community services, as well as mixed-use commercial, employment, and high-density residential uses.

Southwest Area Plan (1988)

To the east of Pajarito Mesa boundaries, the Southwest Valley lies between Coors Boulevard and the Rio Grande. The Southwest Area Plan mandates limited, controlled development (up to one dwelling unit per acre) on the Mesa escarpment and slopes west of Coors Boulevard to help stabilize fragile soils. It proposes a limited, low density development pattern (up to three dwelling units per acre) for the upper Mesa slopes north of Pajarito Road. It favors development of village centers with neighborhood-scale mixed land uses, ranging from commercial and office to residential. Also recommended is a network of recreational trails to link the Mesa top to the river bosque.

City of Albuquerque Major Open Space Facility Plan (1997)

The major public open space on Albuquerque's west side defines the western edge of the existing urban area. Proposed open space in the Pajarito Mesa area includes the Cerro Colorado Volcano, the Rio Puerco Escarpment, the Southwest Mesa Ceja, and the Southwest Sand Dunes (Figure 12).

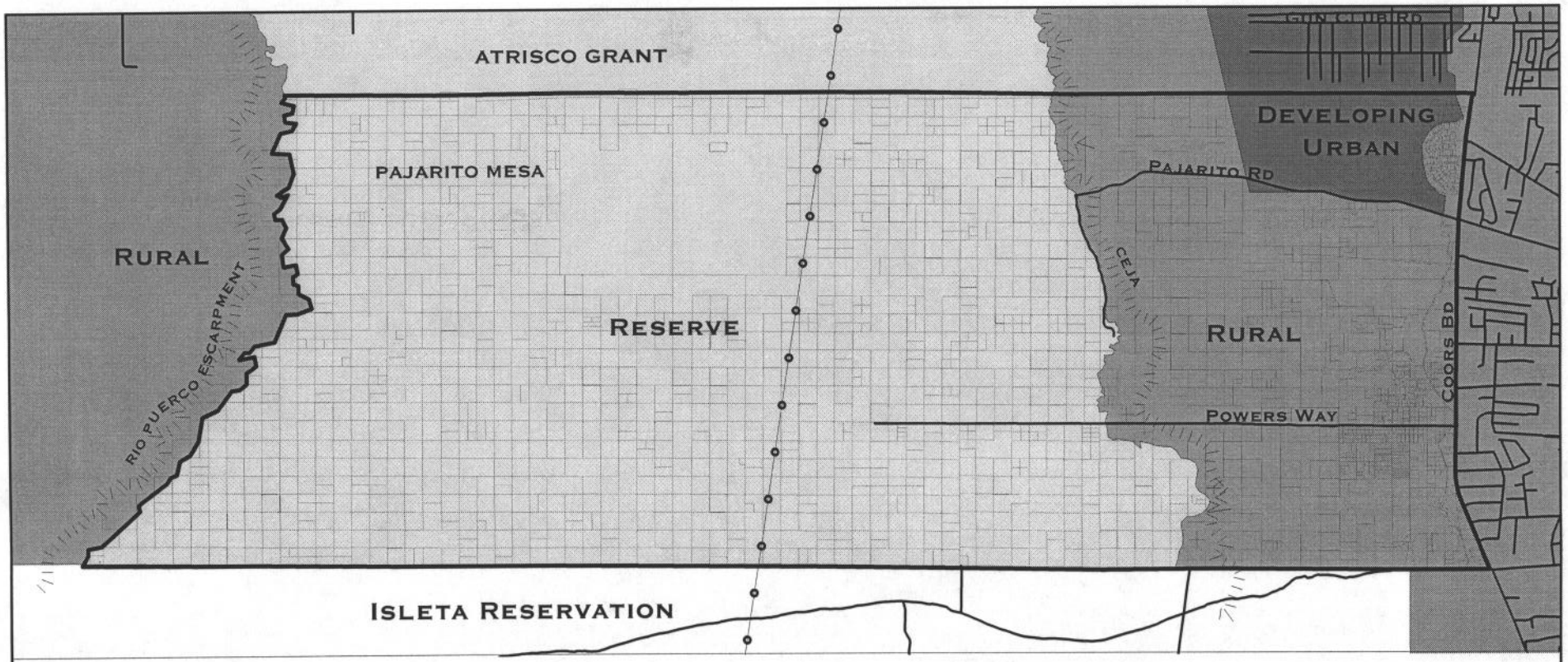

FIGURE 10

PAJARITO MESA LAND USE AND ACCESS STUDY

COMPREHENSIVE PLAN DESIGNATIONS

- STUDY AREA
- COUNTY ASSESSOR OWNERSHIP PARCELS
- ROADS
- ESCARPMENT
- UTILITY EASEMENT

0 1 2 3 4 5 MILES

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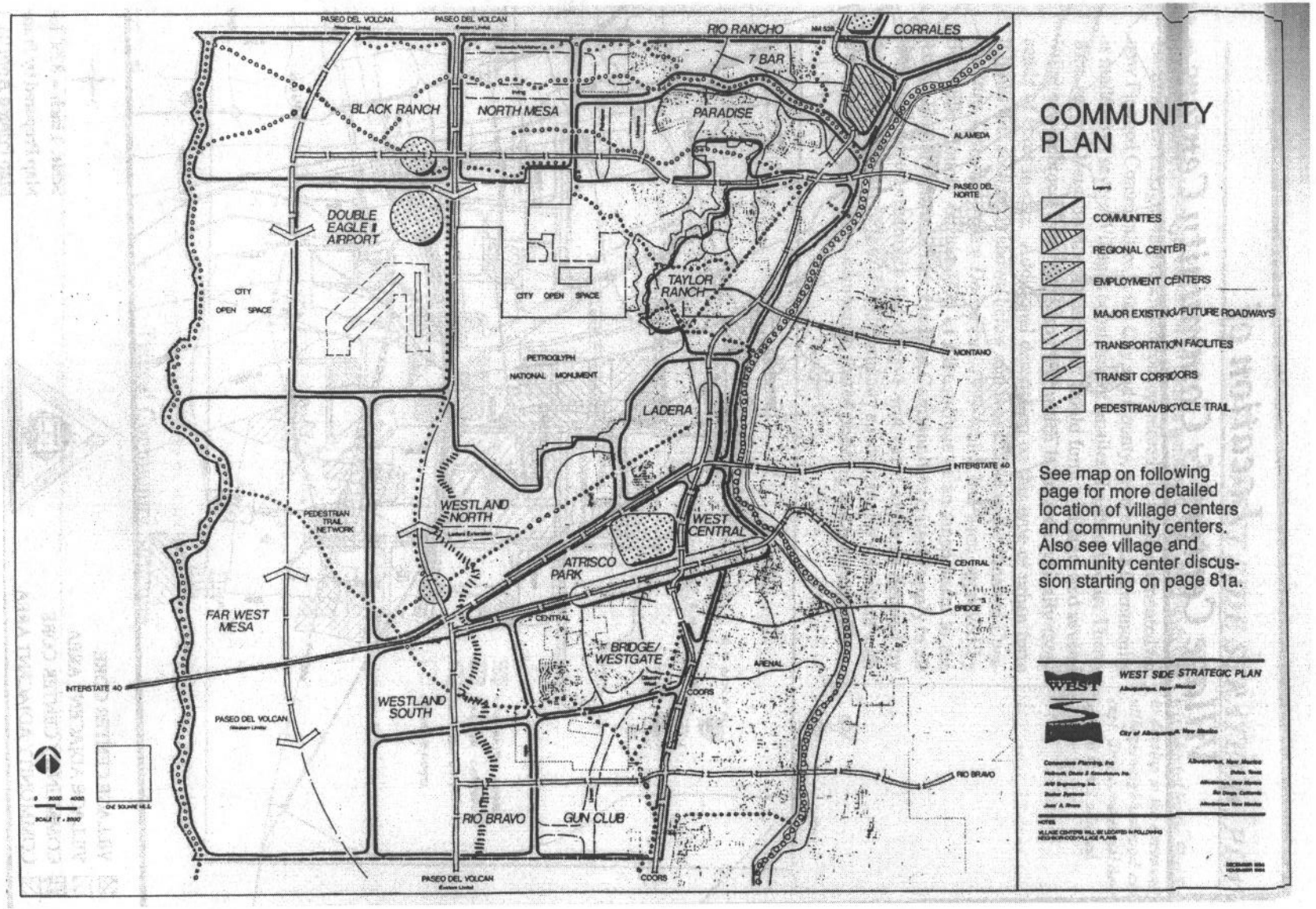
FIGURE 11. CONTEXT MAP FROM WSSP



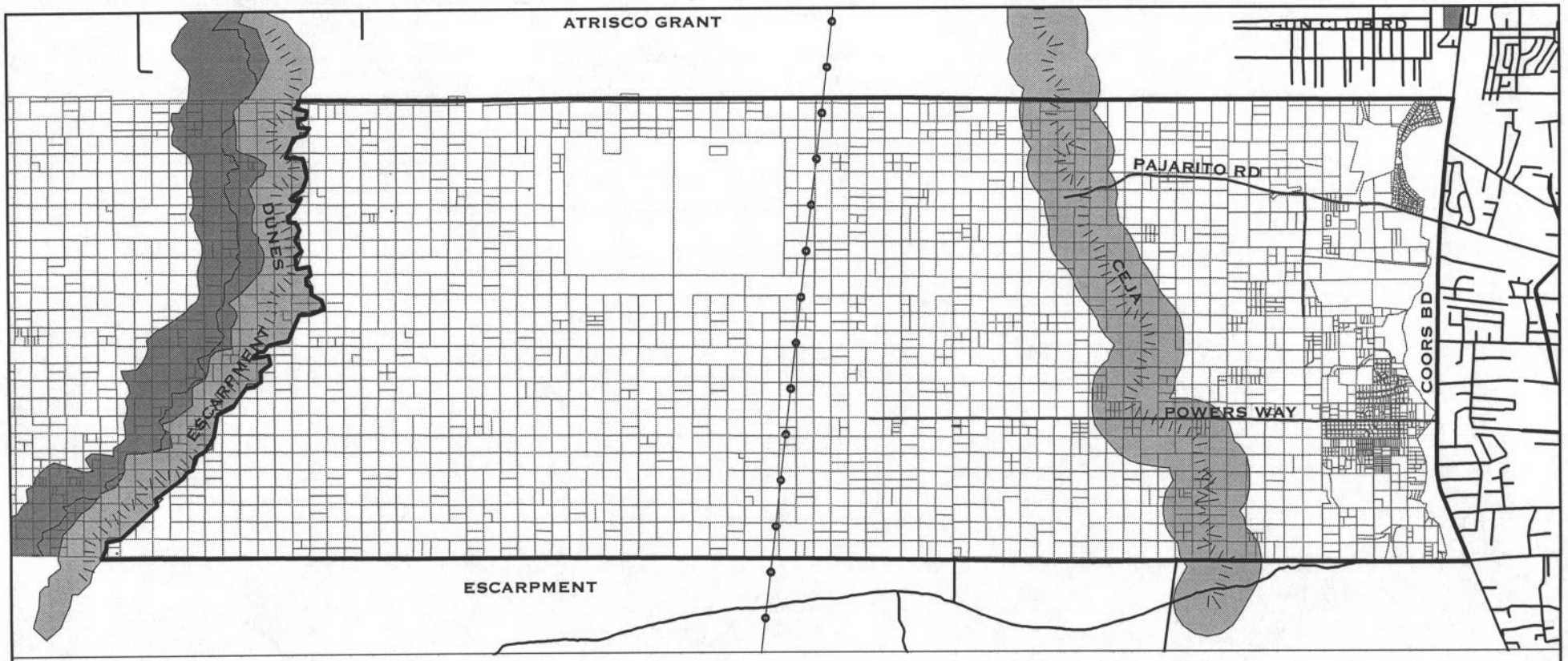


FIGURE 12

PAJARITO MESA LAND USE AND ACCESS STUDY

PROPOSED OPEN SPACE FROM COMPREHENSIVE PLAN

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- STUDY AREA
- COUNTY ASSESSOR OWNERSHIP PARCELS
- UTILITY EASEMENT
- COUNTY LEGAL ROADS
- ESCARPMENT
- SOUTHWEST SAND DUNES
- CEJA AREA
- PROPOSED OPEN SPACE

0 1 2 3 4 MILES

sites southwest

Trails and Bikeways Facility Plan (1993)

This plan created a map of a proposed network of trails and bikeways throughout the County. It split trail types into primary trails, whose most important function is to serve as part of the regional transportation network, and secondary trails, which supplement the primary system. Secondary trails may be constructed with a hard or soft surface and may separate recreational and commuter cyclists if sufficient right-of-way exists. It categorizes the proposed Pajarito Arroyo trail as a secondary trail.

Facility Plan for Arroyos (1986)

This plan promotes a highly visible and extensively used network of recreational trails next to arroyos. It mandated arroyo corridor plans to be developed for Major Open Space Arroyos and Links to establish a Design Overlay Zone for each corridor. The overlay zones would apply to all sites that abut the 100-year floodplain or drainage right-of-way. It highlights the potential for the Pajarito Arroyo (flowing from the Ceja to the Don Felipe Detention Facility) to link several proposed major open space areas: the Ceja, the former oxbox west of Coors Boulevard, and the Rio Grande Bosque.

Other Plans

Pajarito Arroyo Corridor Plan (1990)

This plan outlines development of a trail system to link open space areas while establishing a process for development of drainage policy. It recommends leaving the arroyo in a natural condition using only channel treatment and bank stabilization necessary to control the meander within established limits. It would prohibit structures within a "limited development boundary" adjacent to the arroyo due to potential damage from erosion. This approach would lower the capital investment, allow more percolation of run-off water, and be more aesthetically appealing. A soft arroyo floor is preferred if channel treatments are required east of 118th Street due to planned higher densities in the SWAP. It discourages a paved bicycle/pedestrian trail above the 9 percent slope along the arroyo. Instead, the paved trail should leave the arroyo corridor at 118th Street and join either the proposed Amole Trail or a bike facility along Rio Bravo. A compact earthen trail could continue up to the Ceja along the Pajarito Arroyo to allow walkers to reach the proposed Ceja trail.

Student Reports

In addition to the above adopted plans, architecture and planning students at the University of New Mexico under Professor Paul Lusk produced three innovative project reports that address development on Pajarito Mesa. These include Pajarito West Mesa: Proposed Ecological Development (1990), East Pajarito Grant Study: Living with Nature (May 1995), and Beyond the Grid: Vision for a Sustainable Pajarito Mesa (December 1997). These are summarized in the appendix.

2.3.6. Drainage Systems

Flashfloods occur in the Southwest Valley area west of the Rio Grande and east of the drainage divide during brief but intense summer thunderstorms. Run-off collects in the arroyos, discharges into low-lying portions of the valley, and causes extensive property damage and health problems. Run-off from the Mesa slopes collects in major ponding areas, which are naturally formed depressions located at the base of the slopes and west of Coors Road. These areas typically are oxbows formed long ago by the Rio Grande which have had no outlet to the river (Bernalillo County 1988).

To address these problems, AMAFCA (Albuquerque Metropolitan Area Flood Control Authority) adopted a plan in 1975 to locate a series of detention areas with multiple-use potential in the natural ponding sites west of Coors Road (Matotan and Associates 1975).

These would protect low-lying portions of the valley from the floodwaters cascading down the Mesa slopes. A number of these are in operation, including the Hubbell Lake Detention Area, the Westgate Detention Dam, and the Powerline Diversion. The Isleta Pueblo and the Bureau of Indian Affairs have consistently opposed any further use of the Isleta Drain for the discharge of storm waters through pueblo lands.

2.3.7. Solid Waste Management

The County does not provide trash pick-up services on the Pajarito Mesa and there are few transfer stations in the area. The two principal landfills are the Cerro Colorado on the northwestern end and Southwest Landfill on the eastern slope. Other landfills to the north of the Pajarito Mesa include Seay Brothers Landfill, Riverside Landfill, and W.W. Cox Landfill. Illegal dumping has occurred in other areas of the Mesa. The status of illegal dumping and its effect on the environment are unknown.

Environmental Sensitivity: Locations within 0.5 mile of an operating or closed landfill are considered environmentally sensitive areas. Additional environmental investigations will be needed before any development can occur in these areas.

2.3.8. Liquid Waste Management

Bernalillo County's new Wastewater Ordinance went into effect December 18, 2000. The new ordinance was designed to improve the quality of wastewater treatment on small lots. It bases the requirements for a wastewater system on lot size and performance standards. It sets a minimum lot size of 1.25 acres for a conventional septic system and drain field. It also includes provisions for graywater systems. Residents on Pajarito Mesa will have to meet the stricter of these requirements or those of the County's 88-1 ordinance.

2.3.9. Water Service

The joint Albuquerque Metropolitan Area Water and Wastewater Board approved a resolution that provides water service—and concomitantly would require sanitary sewer service--for two zones within the Pajarito study area. These are Pajarito Zone 0W (essentially the valley floor up to 4,975 feet elevation) and Zone 1W (between 4,975 feet and 5,063 feet elevation). The exact level of service is still under discussion and ranges from potable water primarily for indoor uses to full urban service with fire protection for major corridors. There is some possibility that service may extend to Zone 2WR in the future. The top elevation here is 5,255 feet. In other words, service will extend to all the valley floor and to some point up the eastern escarpment in the reasonably near future. There is no plan in any planning horizon to make service available to the Mesa top (Figure 13).

2.4. Conclusions and Recommendations

2.4.1. Environmental Conditions

The biggest environmental constraint to development on the Mesa is the water supply. The well recently drilled nearby at the proposed Metropolitan Detention Center illustrates what the typical quantity and quality would be like on the Mesa top. In general, water quality is poor. It barely meets current federal drinking water standards for arsenic, and sodium content also is high. Regarding quantity, the MDC well in tests produced only 15 percent of the flow of typical city wells, despite comparable construction costs.

While single domestic wells are entitled to 3.0 acre feet of water a year, the costs of drilling to depths of 600-900 feet deep are high. Moreover, power would be required to pump the water up from these depths. There are no existing water rights for community wells, so offset water rights would have to be purchased on the open market.

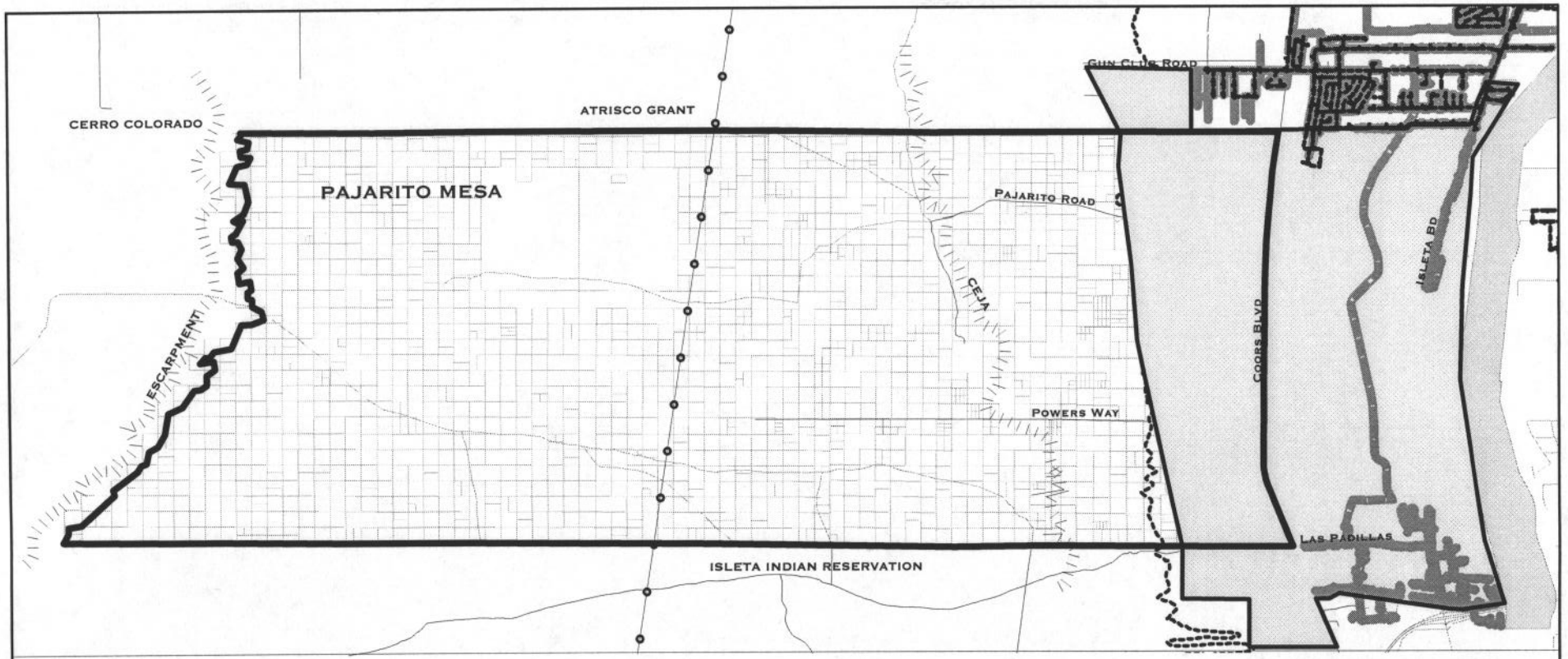

FIGURE 13

PAJARITO MESA LAND USE AND ACCESS STUDY

EXISTING AND PLANNED UTILITIES

- STUDY AREA
- UTILITY EASEMENT
- ESCARPMENT
- PLANNED WATER SERVICE AREA
- WATER LINES
- SEWER LINES
- PLANNED WATER SERVICE AREA
- COUNTY LEGAL ROADS

PLANNED WATER SERVICE BOUNDARY

- 5060 FEET ELEVATION
- COUNTY ASSESSOR OWNERSHIP PARCELS

RIVERS

- RIO GRANDE

0 1 2 3 4 MILES

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sites southwest

There are few other environmental constraints to development on Pajarito Mesa and its slopes. The surface on the Mesa top is largely flat. Most of the soils are porous and only a few pose problems for septic systems due to steep slopes (Figure 14). For example, septic systems, sewage lagoons, and stormwater run-off ponds should be prohibited within a 200-foot strip along the Ceja to prevent seepage into the escarpment. The County might also wish to restrict development in the floodplain

The southwestern sand dunes, which are fragile and home to various wildlife and plant species, and the strip of land along and above the Ceja on the eastern slope are unsuitable for development. Acquisition as public open space would help preserve these fragile soils as well as views to the east and provide space for parks and trails. To save on engineering costs, various plans recommend limiting development around the playas and retaining them in their natural drainage state.

It could be useful to preserve a wildlife corridor between the Rio Puerco and the Rio Grande. As the vegetation is uniform across the Mesa, however, no one area—with the possible exception of the floodplain— stands out as an obvious route. If this is desirable, the location for a potential corridor should be studied. In addition, the Pajarito Arroyo trail should be created as planned.

Development should be limited on the Mesa slopes—gross densities of one dwelling per three to ten acres—to avoid increasing run-off and erosion. Dust control measures should be taken to preserve the air quality.

2.4.2. Land Use and Socio-Economic Conditions

Development on Pajarito Mesa does not meet the County's development standards. Most residents have no legal access to their homes, and many lack permits for mobile homes and septic tanks. They have to haul water. The lack of legal access prevents emergency providers and school buses from providing needed services. Lack of legal easements also poses obstacles for residents trying to obtain such ordinary utilities as telephone service and power. While some residents, especially those living in the far west end of the Mesa, expected to live with such inconvenience when they bought land, others were promised full services within a few years of purchase.

Comprehensive Plan policies provide the opportunity for planned communities or village clusters on the Mesa top and lower density rural development on the slopes. The typical 10-acre parcel sizes offer the potential for rural development or four-lot clusters sharing one domestic well. The fact that the top ten landholders control a significant, albeit scattered, percentage of the total land area presents the possibility of consolidating lots to create village clusters or planned communities.

There are a number of actions, detailed in the next sections of this report that the County can take to prevent the illegal subdivision and sale of land on the Mesa. Beyond that, County actions can either help to facilitate a more desirable type of development on the Mesa or miss the chance to establish any alternatives beyond the current trend. The current lack of roads and sparse development offers the opportunity to plan alternative development patterns for the area and time construction of roads and other infrastructure to achieve that plan. It also opens the door to land consolidation and rezoning. But short-term action, such as extending particular roads, and even inaction that preserves the status quo, could enable continued scattered development and preclude land consolidation and rezoning.

The following chapters describe and analyze four long-term alternatives for development of the Pajarito Mesa and select a preferred alternative. An alternative other than the trend calls upon the County to take specific actions now to achieve the more desirable development pattern in the future. The last chapter makes recommendations and lists action steps necessary to achieve the preferred alternative.

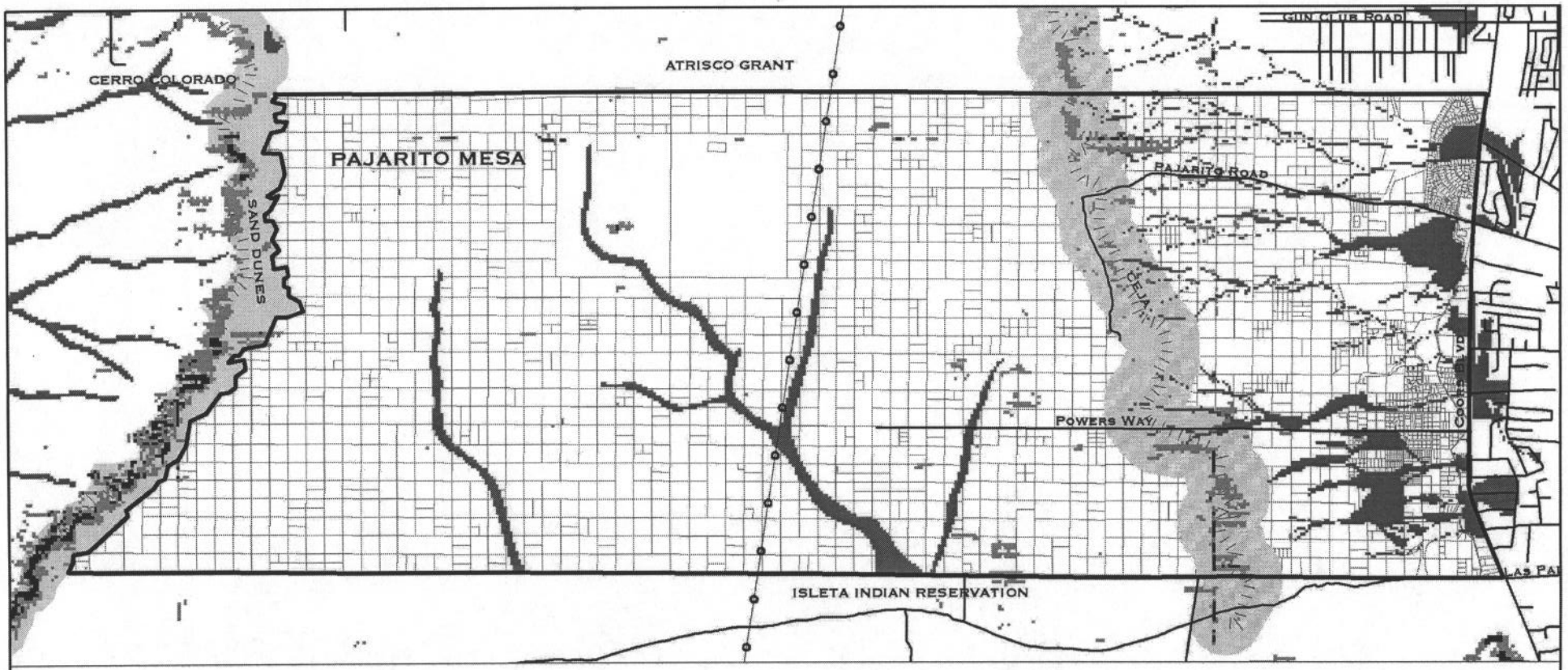

FIGURE 14

PAJARITO MESA LAND USE AND ACCESS STUDY

CONSTRAINTS

DEVELOPMENT CONSTRAINTS OF EXCESSIVE SLOPE, UNSUITABLE SOIL, AND FLOODPLAINS

- STUDY AREA
- UTILITY EASEMENT
- SLOPE 13% TO <25% (7.87 - 14.049 DEGREES)
- SLOPE 25% OR MORE (14.05 - 40 DEGREES)
- FLOODPLAINS
- ESCARPMENT
- CEJA BUFFER (1/4 MILE EACH SIDE)
- SOUTHERN SAND DUNES

0 1 2 3 4 5 MILES

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3. Land Use and Access Alternatives

This section of the study presents several longer-term land use alternatives for the Pajarito Mesa. The Comprehensive Plan designates the Mesa top as a "reserve" area and the eastern slope as a "rural" area, so these two parts of the study area are treated separately in the analysis. The study describes the land use pattern, road network and utilities resulting from each alternative and estimated costs of providing the necessary roads and utilities.

The four alternatives for the Mesa top consist of the following: 1) Trend Alternative, 2) Rural Alternative, 3) Planned Communities Alternative, and 4) Village Clusters Alternative.

The two alternatives for the eastern slope consist of the following: 1) Trend Alternative, and 2) Rural Alternative.

The Pajarito Mesa is an enormous area. Each of the alternatives described in this report would take many years to complete, perhaps as long as 50 years. In addition, public investments in such a large area would have to be spent in a rational way, serving a portion at a time.

The County also has many areas with existing or eminent development, and residents of these areas are demanding infrastructure and services. Moreover, the County recently approved two large planned communities on the West side, Westland and Quail (formerly Black) Ranch.

Because of its location, distance from infrastructure, and lack of legal access, the Pajarito Mesa is not an areas where the County currently encourages development. Therefore, these alternatives are not intended to indicate a commitment to short-term development. Rather, they are intended to guide the County in making decisions necessary to address the health, safety and welfare of the small population that now resides on the Mesa and demonstrate how certain choices would preclude or help bring about future options for development.

Each of the alternatives is described in terms of the assumptions used (see Appendix E), the resulting development pattern, and estimated costs. Private costs were estimated based on requirements of the County subdivision ordinance and other relevant County regulations. Master plan infrastructure costs are based on system facility plans, such as the Long Range Roadway System map. These costs, except for electricity, telephone, and natural gas, are typically borne by the public. Finally, each alternative is evaluated according to six criteria: consistency with public policy, access, utility service, environmental impact, ease of implementation and infrastructure cost to the County.

MESA TOP ALTERNATIVES

The Mesa top is designated "reserve" in the Comprehensive Plan and is envisioned by the Comprehensive Plan to be planned communities. Four alternatives ranging from the current pattern of 10-acre lots to urban planned communities were evaluated.

3.1. TREND ALTERNATIVE

The trend alternative assumes that the current situation would continue essentially unchanged. The Mesa would develop as a predominantly semi-rural residential area with homes built on lots ranging in size from 1.0 acre to 10 or more acres, depending upon subdivisions and assembly of existing lots into larger parcels.

Bernalillo County would enforce existing land use/development regulations and address the most urgent access and public health issues. In addition, the County would begin to require that land sales be recorded and that buyers be made aware of the unique problems that affect development in this area. The County would not take an active role in changing the type of development that is taking place, nor would it pay for improvements that are the responsibility of landowners under existing ordinances. It could work with residents to find solutions to the development problems on the Mesa and help find other sources of funding for these solutions.

Figure 15 illustrates the anticipated development pattern under the Trend Alternative.

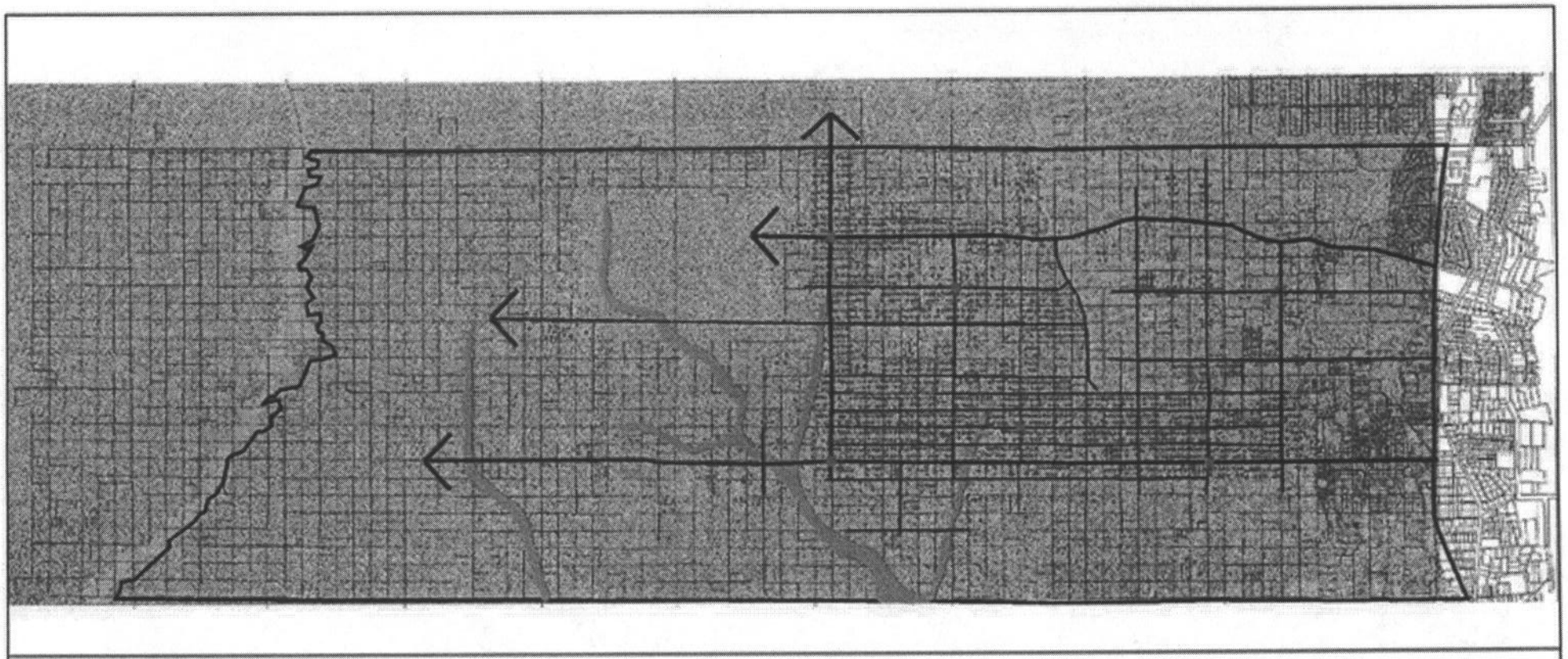

FIGURE 15

PAJARITO MESA LAND USE AND ACCESS STUDY

TREND CONCEPT

Legend

- Major Street
- Residential Street
- Commercial Center
- Building/House
- Arroyo/ Drainage Areas

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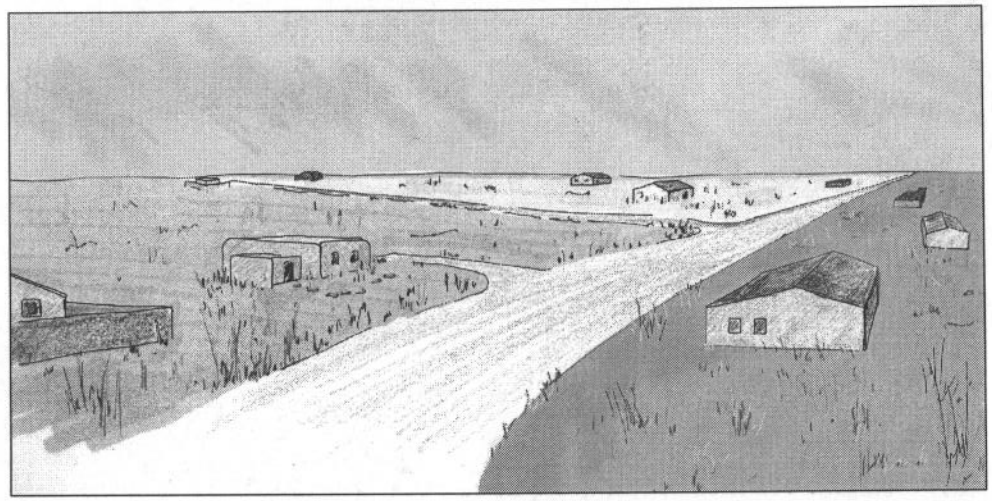
TREND ALTERNATIVE SUMMARY - MESA TOP	
Size:	13,600 acres
Zoning:	One dwelling unit per parcel/parcel sizes of one to 10 acres
Gross Density:	0.33 cu/ac
Total Dwelling Units:	4,326
Population:	Approximately 11,000
Land Use Mix:	Residential 13,000 ac. (includes 100 ac. parks) Non-Residential: 225 ac. Parks 100
Roads:	Grid pattern would follow lot lines.
Water:	Individual wells
Wastewater:	Individual septic systems
Power, Phone:	Residents would obtain individually or as a group from private utility companies once legal easements were in place.



3.1.1. RESULTING DEVELOPMENT PATTERN

The trend alternative would have the following characteristics:

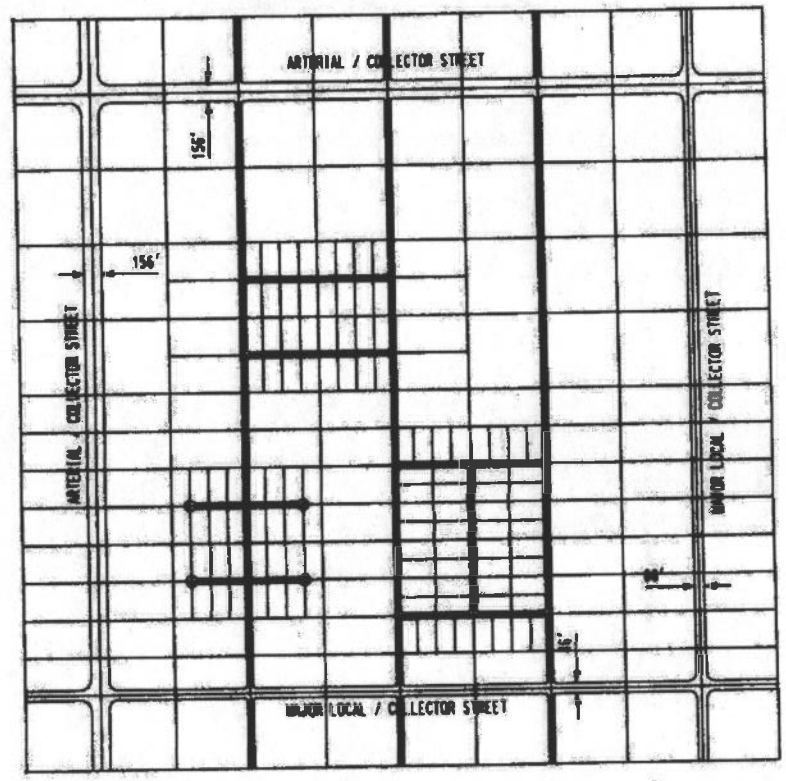
- A semi-rural area with lot sizes ranging from one to 10 acres or more. There would be a few larger lots if owners consolidated property and purchased more than one 10-acre lot.
- Roads would probably follow a grid pattern, with streets located along property lines.
- The maximum population when all lots are developed would be approximately 11,000 people (assuming a gross density of 0.33 du/acre).
- This population could eventually support a moderate amount of commercial, office, and civic uses to serve the daily needs of residents. Commercial uses could include a grocery store, drugstore, gas station, and some restaurants. Civic uses could include schools, a library, post office, police and fire, churches, and a community center.
- Commercial and other non-residential uses would tend to develop in a strip pattern along arterial and collector streets. The County could encourage commercial nodes by rezoning for commercial uses around intersections.
- It would be many years, however, before the maximum population would be reached. In the foreseeable future, residents would have to purchase goods and services available in more established areas along Coors Road and Isleta Boulevard.

3.1.2. Development Cost Estimate

The following assumptions were used to prepare the development cost estimates for this alternative:

- Residents would obtain power and telephone service through overhead lines along road rights-of-way.
- Residents would obtain water through individual domestic wells. Shared domestic wells would also be possible and could reduce the cost to individual owners.
- New subdivisions would be required to provide fire protection as specified in the subdivision ordinance.
- Liquid waste disposal would be through individual septic systems.
- Some grading and drainage improvements would be required as part of subdivision approval. On larger lots, such improvements would be minimal and related to home construction.
- A grid roadway system based on the existing ownership would include major streets and collectors on a one-mile grid, with local north-south streets every quarter mile. The illustration to the right shows an example of a typical one-mile section.
- Estimated development costs per acre and the costs per residential lot are shown in the table below.

Typical one-mile roadway section



Estimated Development Cost per Acre and Per Residential Lot – Trend Mesa

	In-Tract Infrastructure (Private Cost)		Master Plan Infrastructure (Public Cost)	
Item	**Cost/Lot**	**Cost/Acre**	**Cost/Lot**	**Cost/Acre**
Roads	$3,044	$1,005	$4,010	$1,323
Water	$13,420	$4,429	$0	$0
Wastewater	$3,500	$1,155	$0	$0
Dry Utilities*	$3,250	$1,073	$791	$261
Grading & Drainage	$11,499	$3,795	$0	$0
Total w/soft costs and contingencies	$52,070	$17,183	$6,015	$1,985

* Electricity, telephone and natural gas

3.1.3. Analysis

Consistency with Public Policy. The land use pattern in this alternative is contrary to adopted policy. The Comprehensive Plan designates this area as "Reserve," anticipating future planned communities. These planned communities are intended to be urban, with a mix of uses that encourages self-sufficiency within the community. Infrastructure is to be developed at no net expense to local government, and master plan infrastructure is to be extended in a logical sequence. This alternative encourages a different development pattern – rural residential development on lots that can be as small as one acre.

Access. Properties would be developed individually, with access obtained from each owner. The easiest approach is to obtain rights-of-way as properties are developed. However, some public effort to secure rights-of-way will probably be necessary to complete roads.

Utility Service. Rural residential development is typically served by on-site systems. Both wells and septic systems are problematic under this alternative. The quantity and quality of water is questionable for individual wells. Individual septic systems at densities anticipated in this alternative may have environmental consequences as the area builds out (see Environmental Impacts).

Environmental Impact. In other areas of the County, septic systems on individual lots at a density of one or 1.25 units per acre have generated concern about eventual degradation of the region's groundwater. The cumulative changes to the natural drainage system by many small subdivisions may also be a concern.

Ease of Implementation. The most difficult aspect of implementation is securing access to all properties. Some County assistance will likely be required to complete rights-of-way through the area for major streets. Enforcement of County regulations is extremely important to make sure that new development meets County standards.

Infrastructure Cost to the County. The primary cost to the County in this alternative is major streets. No master plan water or wastewater infrastructure would be required unless the County determines that public systems are needed because of environmental concerns. The cost of master plan infrastructure to serve low-density development is high relative to the number of households that will be served. The high cost per household is exacerbated if the County builds roads in advance to support widely scattered development.

3.2. Rural Alternative

The rural alternative would preserve the current low-density, rural character of the area by preserving the existing platting pattern and limiting the creation of smaller lots.

In this alternative, the County would rezone the area to make the zoning for the Mesa Top consistent with the existing subdivision parcels (one dwelling unit per 10-acre parcel) and to prevent further subdivision of parcels into small lots. The County would enforce existing ordinances related to land subdivision, access, water quality, liquid waste disposal, solid waste disposal and storm drainage. Beyond these steps, the County would not take an active role in changing the type of development that is taking place, nor would it pay for improvements that are the responsibility of landowners under existing ordinances. The County could work with residents to find solutions to the most serious health and safety problems and help find other sources of funding for these solutions.

Figure 16 illustrates the anticipated land use pattern under the rural alternative.

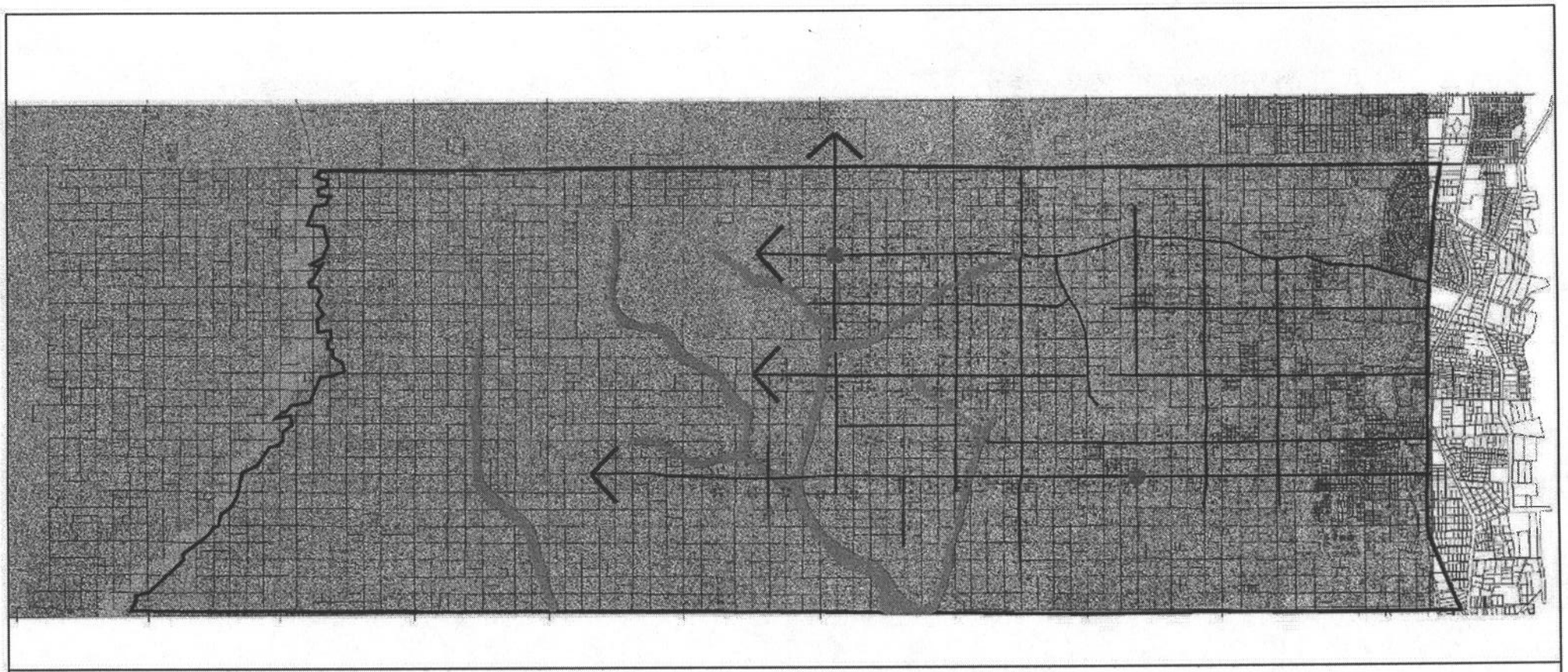


Figure 16

Pajarito Mesa Land Use and Access Study

Rural Community Concept

Legend

- Major Street
- Residential Street
- Commercial Center
- Building/House
- Open Space/ Drainage

0 1 2 3 4 5 Miles

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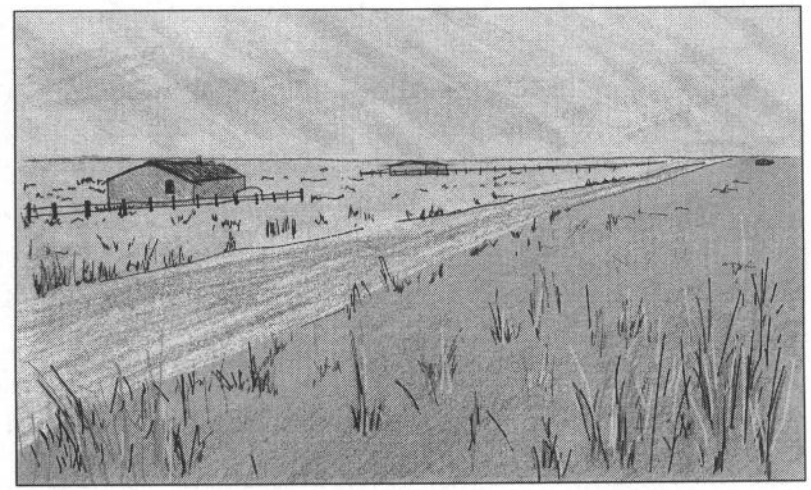
sites southwest

RURAL MESA	
Size:	13,600 acres
Zoning:	One dwelling unit per parcel; minimum lot size of ten acres
Gross Density:	0.10 du/acre
Total Dwelling Units:	1,350 units
Population:	Approximately 3,400 people
Land Use Mix:	Residential 13,500 acres Non-residential 70 acres Parks 30
Roads:	Grid pattern would follow lot lines.
Water:	Individual wells
Wastewater:	Individual septic systems
Power, Phone:	Residents would obtain individually or as a group from private utility companies once legal easements were in place.

3.2.1. Resulting Development Pattern

- In this alternative, the zoning would prevent most subdivision activity. The area would be rural with widely scattered houses on 10-acre lots. The few existing lots smaller than 10 acres would be allowed to remain, but no further subdivision would be allowed.
- Roads would follow a grid pattern along property lines.
- The maximum population when all lots are developed would be approximately 3,400 people.
- The population would support very few retail and service businesses. Residents would have to do most of their shopping along Coors Boulevard or in the valley.
- Any commercial and other non-residential uses would tend to locate at major intersections.

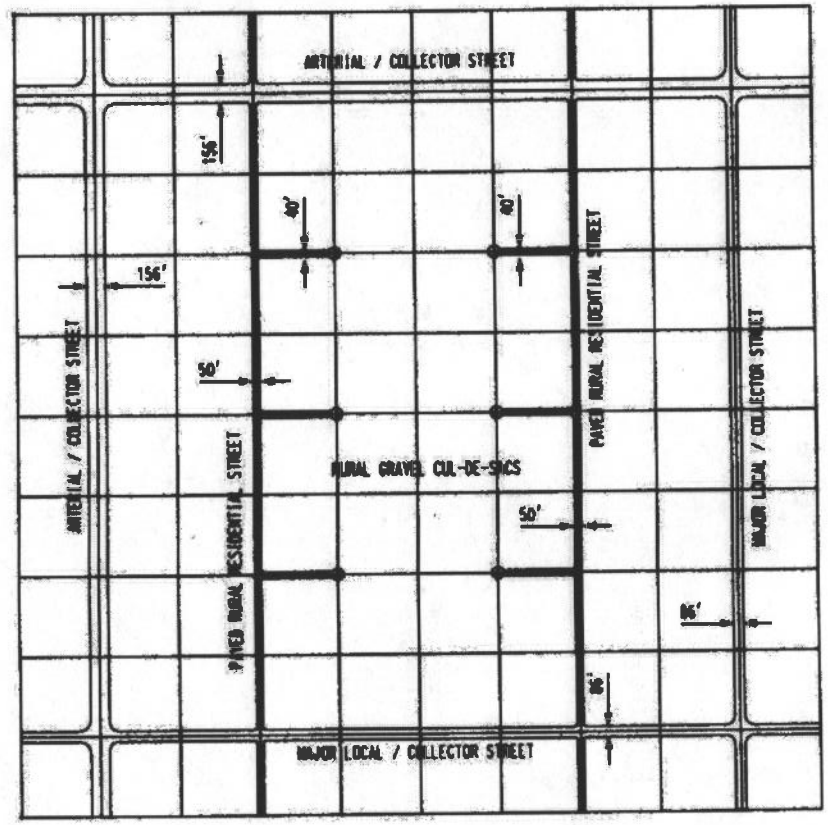


3.2.2. Development Cost Estimate

The following assumptions were used to prepare the development cost estimates for this alternative:

- Residents would obtain power and telephone service through overhead lines along road rights-of-way.
- Residents would obtain water through individual domestic wells. Shared domestic wells would also be possible and could reduce the cost to individual owners.
- Liquid waste disposal would be through individual septic systems.
- A grid roadway system based on the existing ownership would include major streets and collectors on a one-mile grid, with local north-south streets every 1/2 mile. The illustration to the right shows an example of a typical one-mile section.
- Estimated development costs per acre and the costs per residential lot are shown in the table below. This option is the highest cost for privately financed infrastructure.

Typical one-mile section



Estimated Development Cost per Acre and Per Residential Lot – Rural Mesa

	In-Tract Infrastructure (Private Cost)		Master Plan Infrastructure	
Item	Cost/Lot	Cost/Acre	Cost/Lot	Cost/Acre
Roads	$6,484	$648	$12,851	$1,285
Water	$13,420	$1,342	$0	$0
Wastewater	$3,500	$350	$0	$0
Dry Utilities*	$4,286	$429	$2,533	$253
Grading & Drainage	$10,180	$1,018	$0	$0
Total w/soft costs and contingencies	$59,055	$5,906	$23,076	$2,308

* Electricity, telephone and natural gas

3.2.3. Analysis

Consistency with Public Policy. The land use pattern in this alternative is contrary to adopted policy. The Comprehensive Plan designates this area as "Reserve," anticipating future planned communities. These planned communities are intended to be urban, with a mix of uses that encourages self-sufficiency within the community. Infrastructure is to be developed at no net expense to local government, and master plan infrastructure is to be extended in a logical sequence. This alternative encourages a different development pattern – rural residential development on large lots, predominantly 10 acres in size.

Access. This alternative requires the least public right-of-way to serve all properties. Properties would be developed individually, with access obtained from each owner. In this alternative, the County would have to secure rights-of-way from landowners as building permits are issued. Public effort to secure rights-of-way will probably be necessary to complete roads. The public cost of roads per lot is the highest of the Mesa top alternatives. The high cost of roads per household is exacerbated if the County builds roads in advance to support widely scattered development.

Utility Service. Residential densities are very low and would be served by on-site systems. Wells are problematic under this alternative because of concerns about quantity and quality. Individual septic systems at the low densities anticipated in this alternative are probably not a problem over the long term.

Environmental Impact. This alternative is less likely to degrade groundwater quality than the trend alternative. Development of individual homes on very large lots is less likely to alter natural drainage patterns.

Ease of Implementation. The most difficult aspect of implementation is securing access to all properties. Some County assistance will likely be required to complete rights-of-way through the area for major streets. Enforcement of County regulations is extremely important to make sure that new development meets County standards.

Infrastructure Cost to the County. The primary cost to the County in this alternative is major streets. No master plan for water or wastewater infrastructure would be required. The cost of roads to serve low-density development is high relative to the number of households that will be served. Other costs would be borne by landowners.

3.3. Planned Communities

The Albuquerque/Bernalillo County Comprehensive Plan designates the area of the Pajarito Mesa that is on the Mesa as a "Reserve Area" suitable for future planned communities. In this alternative, the County would encourage the development of planned communities on the Mesa top and discourage most other types of development.

Figure 17 illustrates development of one planned community.

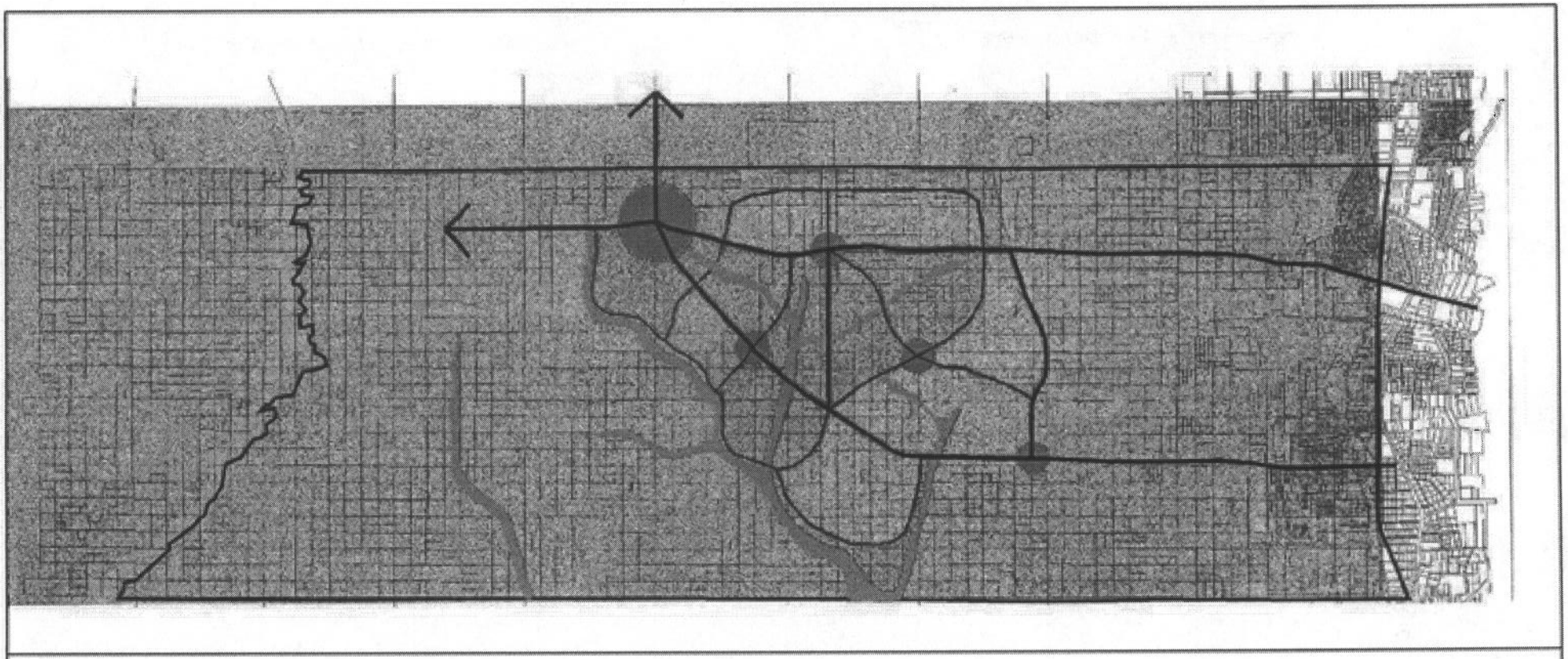


FIGURE 17

PAJARITO MESA LAND USE AND ACCESS STUDY

PLANNED COMMUNITY CONCEPT

Legend

- Major Street
- Residential Street
- Commercial Center
- Open Space/ Drainage Areas
- High Density
- Medium Density
- Low Density
- Institutional

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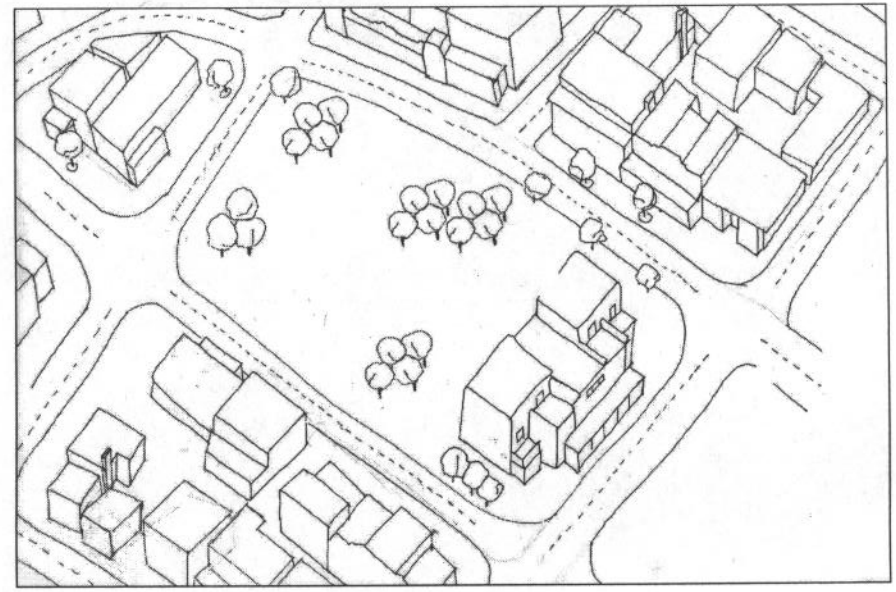
Planned communities, as the name suggests, are developments whose character, size, and location are determined through detailed planning. A planned community would include a mix of uses, including housing, shopping, work places, public/institutional uses such as libraries, community centers, places of worship, and parks and open space. According to the Planned Communities Criteria adopted by the City and County, a planned community typically would consist of four to eight villages encompassing 5,000 to 10,000 acres with a population of 40,000 or more people. The part of Pajarito Mesa that is designated "reserve" by the Comprehensive Plan - the Mesa top - encompasses about 13,200 acres. This area could accommodate two to three planned communities. The Comprehensive Plan states that planned communities would be physically separate from each other, with public open space in between them. Natural features such as arroyos could separate the planned communities.

Planned communities would build out over a very long period of time, up to 50 years. It would be very important for the County to stop new development that would make it difficult to develop planned communities in the future. Therefore, the County would place a much greater emphasis on strategies that prohibit premature development in this alternative.

	PLANNED COMMUNITIES
Size:	13,600 acres
Zoning:	Zoning to accommodate mixed uses and various residential densities
Gross Density:	3.0 du/acre
Total Dwelling Units:	40,800 units
Population:	Approximately 100,000 people
Land Use Mix:	Residential 6,800 acres Non-residential 4,000 acres Open Space 2,700 acres
Roads:	Provided as part of planned communities. County would acquire easements for major streets from landowners, with streets built as resources become available.
Water:	Private community systems provided by private developers
Wastewater:	Private community systems provided by private developers
Power, Phone:	Private developers would grant easements to PNM and US West for electric and phone service.

Resulting Development Pattern

- Two or three planned communities with a mix of housing types, densities, and non-residential development. Planned communities would be more urban than the rural and semi-rural trend and rural alternatives.
- The larger population of planned communities would support a substantial amount of commercial activity and other non-residential uses like offices, schools, libraries and community centers.
- Roads would be realigned as properties are assembled to fit the desired system for planned communities.
- Parks and open space would be included in the planned communities.
- The maximum population at build out would be approximately 100,000 people.
- There are currently three large planned communities being developed in Bernalillo County. These areas comprise approximately 24,000 acres – an area larger than the Pajarito Mesa. It will be many years before these planned communities are fully built out, so new planned communities would not develop on the Pajarito Mesa for a long time.



3.3.1. Development Cost Assumptions

The following assumptions were used to prepare the development cost estimates for this alternative:

- Private developers would provide adequate roads and utilities as part of the planned communities.
- The County would acquire rights-of-way for major streets from private developers, with the streets to be provided as resources become available.
- Water and sewer service would be provided by means of private community systems or through an eventual connection to the metropolitan utilities.
- Development outside of the planned communities would be discouraged.
- Estimated development costs per acre and the costs per residential lot are shown in the table below.

3.3.2. Analysis

Consistency with Public Policy. This alternative is consistent with adopted policy for "Reserve" areas. The planned communities would be urban, with a mix of uses that encourages self-sufficiency within the community. Infrastructure is to be developed at no net expense to local government, and master plan infrastructure is to be extended in a logical sequence.

Access. In this alternative, land would be assembled and replatted prior to development. Land owners would provide access in accordance with County development regulations.

Utility Service. Water and wastewater utilities could be either expansions of the existing metropolitan systems or independent systems. For independent systems, and in the future, water rights may be a condition of municipal service extensions for large developments.

Estimated Development Cost per Acre and Per Residential Lot – Planned Communities

	In-Tract Infrastructure (Private Cost)		Master Plan Infrastructure	
Item	Cost/Lot	Cost/Acre	Cost/Lot	Cost/Acre
Roads	$1,873	$12,397	$525	$3,151
Water	$906	$5,912	$4,531	$27,188
Wastewater	$1,132	$6,379	$1,362	$13,747
Dry Utilities*	$7,880	$12,124	$1,066	$1,640
Grading & Drainage	$1,907	$9,953	$500	$3,000
Total w/soft costs and contingencies	$11,700	$70,100	$10,400	$73,100

* Electricity, telephone and natural gas

Environmental Impact. Developed planned communities would be urban, with the impacts associated with urban development. Approximately 35% of the total land area would be public open space, which could help alleviate these impacts.

Ease of Implementation. Local governments have had very little success encouraging or actively accomplishing large-scale land assembly in prematurely platted subdivisions in Bernalillo and Sandoval counties. The Pajarito Mesa is such a large area that it would take many years to build out. Advanced purchase of land would entail high acquisition and holding costs for either a private or government entity. If land were assembled on an as-needed basis, costs for land acquisition would be high at the time of purchase. Bernalillo County does not currently have the authority under state law to redevelop the Pajarito Mesa. The lack of access benefits phased development because development in remote parts of the Mesa will not be possible without legal access.

Infrastructure Cost to the County. The Comprehensive Plan states that planned communities should develop at "no net expense" to local governments. Per acre master plan infrastructure costs are the highest in this alternative, but proper sequencing should ensure that costs are incurred as new development begins to generate revenues.

3.4. Village Clusters Alternative

This alternative draws from the policies of the Comprehensive Plan but does not anticipate that all of the Mesa properties would be assembled for planned communities. The Mesa instead would be developed into smaller "villages," where owners are able to assemble land, surrounded by low-density residential development as in the rural alternative.

In this alternative, two or three areas on the Mesa top would be developed at the scale of a "village" described in the Planned Communities Criteria Policy Element of the Comprehensive Plan. A village is an area of several neighborhoods encompassing 650 to 1,200 acres. Each village would have a village center with a core area of 20 to 35 acres that included businesses and public facilities for the residents of the village. Surrounding the core area would be higher density housing, schools, and parks. The population of each village could range from 5,000 to 10,000 people, depending on its size.

Outside of the villages, most development on the Mesa would take place within the existing lot pattern, with lot sizes of 10 or more acres. Cluster subdivisions as allowed under a special use permit for a planned development area, could also be developed where owners assemble five or more 10-acre lots. The developers of open space subdivisions would be encouraged to cluster housing and provide open space on the site. The gross density for an open space subdivision could be 0.5 dwelling units per acre.

Figure 18 illustrates the Village Clusters alternative.

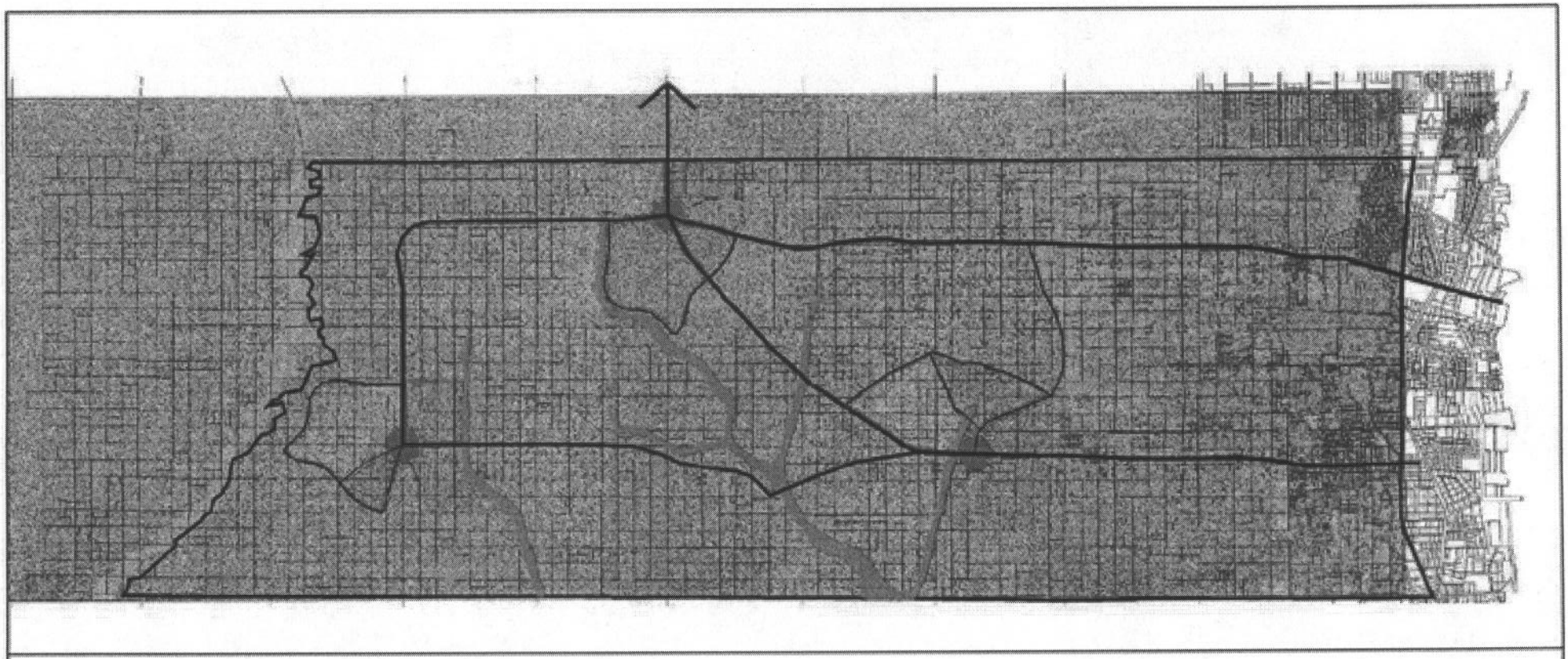


FIGURE 18

PAJARITO MESA LAND USE AND ACCESS STUDY

VILLAGE CLUSTERS CONCEPT

MARCH 2001

Legend

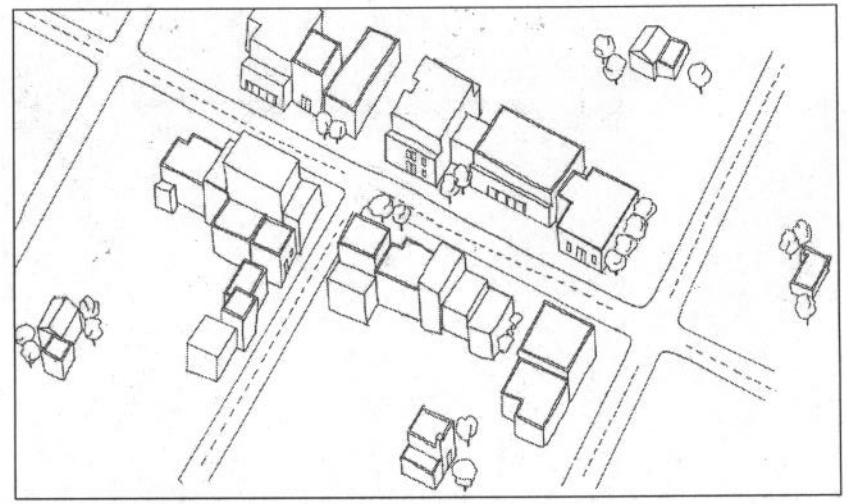
- Major Street
- Residential Street
- Commercial Center
- Open Spaces/ Drainages
- High Density Residential
- Medium Density Residential
- Low Density Residential
- Institutional

sites southwest

VILLAGE CLUSTERS	
Size:	13,600 acres
Zoning:	Zoning to accommodate mixed uses and various residential densities
Gross Density:	3.0 du/acre in villages; 0.10 du/acre elsewhere
Total Dwelling Units:	7,000 units
Population:	Approximately 17,600 people
Land Use Mix:	Residential 12,800 acres Non-residential 350 acres Open Space 400 acres
Roads:	Provided as part of villages. County would acquire easements for major streets from landowners, with streets built as resources become available.
Water:	Private community systems provided by private developers or future connection to metropolitan utility.
Wastewater:	Private community systems provided by private developers or future connection to metropolitan utility.
Power, Phone:	Private developers would grant easements to PNM and US West for electric and phone service.

3.4.1. RESULTING DEVELOPMENT PATTERN

- A mixed density area of three Village Centers surrounded by lower-density residential development.
- Predominantly residential uses with a limited mix of non-residential uses, such as some small-scale businesses, a school, community center, and places of worship.



- Roads would follow a grid pattern in the rural portions of the Mesa, and in the villages roads would be realigned as part of the overall village development.
- Parks would be included within the village centers.
- The maximum population at build-out would be approximately 17,600 people.

3.4.2. DEVELOPMENT COST ASSUMPTIONS

The following assumptions were used to prepare the development cost estimate for this alternative:

- Private developers would provide adequate roads and utilities as part of the village communities.
- The County would acquire rights-of-way for major streets from private developers, with the streets to be provided as resources become available.
- Water and sewer service in the Villages would be provided by means of private community systems or through an eventual connection to the metropolitan utilities.

- Residents outside of the Villages would obtain power and telephone service through overhead lines along road rights-of-way.
- Residents outside of the Villages would obtain water through individual domestic wells. Shared domestic wells would also be possible and could reduce the cost to individual owners.
- Residents outside of the Villages would have liquid waste disposal through individual septic systems.
- Outside of the Villages, a grid roadway system based on the existing ownership would include major streets and collectors on a one-mile grid, with local north-south streets every 1/2 mile. Area outside villages change zoning to 1 du per 10-acre parcel.
- Estimated development costs per acre and the costs per residential lot are shown in the table below.

3.4.3. Analysis

Consistency with Public Policy. The land use pattern in this alternative comes closer to the Comprehensive Plan policies for "Reserve" areas. The areas with a relatively high concentration of ownership by the Mesa's major landowners could potentially be assembled for future urban communities. Though smaller than the planned communities envisioned by the Comprehensive Plan, they do introduce urban features and a mix of uses. This allows for a measure of self-sufficiency within the community by providing both jobs and housing. The areas with the best potential for land assembly are not ideally located for rational sequencing of development. Development could occur similar to satellite subdivisions in Rio Rancho, where a cluster of urban density development is separated from the next development by one to two miles.

Access. Within the Villages, access would be provided through the normal planning and platting process. Outside of the villages, properties would be developed individually, with access obtained from each owner. In the rural portions of this alternative, the County would have to secure rights-of-way from landowners as building permits are issued. Public effort to secure rights-of-way will be necessary to complete roads.

Utility Service. In the Village Clusters, urban services would be required. Providing urban services in such small discrete areas separated by rural development requires community systems. The organizational structure for managing these systems would have to be determined. Water and wastewater utilities could be either expansions of the existing metropolitan systems or independent systems. For independent systems, and in the future, water rights may be a condition of municipal service extensions for large developments.

Estimated Development Cost per Acre and Per Residential Lot – Village Clusters

	In-Tract Infrastructure (Private Cost)		Residual Land Infrastructure (Private Cost)		Master Plan Infrastructure	
Item	**Cost/Lot**	**Cost/Acre**	**Cost/Lot**	**Cost/Acre**	**Cost/Lot**	**Cost/Acre**
Roads	$2,186	$11,337	$4,785	$479	$1,800	$2,048
Water	$1,082	$5,463	$3,355	$336	$1,061	$955
Wastewater	$1,351	$6,005	$3,500	$350	$1,632	$36,269
Dry Utilities*	$2,206	$10,182	$1,290	$1,612	$1,579	$5,922
Grading & Drainage	$2,174	$6,523	$8,153	$815	$800	$3,000
Total w/soft costs and contingencies	$13,500	$59,300	$31,600	$5,400	$10,300	$72,300

* Electricity, telephone and natural gas

Environmental Impact. This alternative is less likely to degrade groundwater quality than the rural or trend alternative because dense areas have centralized wastewater collection and treatment and rural areas are very low density. Storm runoff from villages could not exceed historic flows, so some type of retention or detention system would be required for each urban cluster. In rural areas, development of individual homes on very large lots is less likely to alter natural drainage patterns.

Ease of Implementation. The most difficult aspects of implementation are accomplishing the desired scale of land assembly and securing access to rural properties. Some County assistance will likely be required to complete rights-of-way through the area for major streets. Enforcement of County regulations is extremely important to make sure that new development in rural areas meets County standards.

Infrastructure Cost to the County. The primary costs to the County in this alternative are major streets and utility and drainage master plan infrastructure. The cost of roads to serve low-density development is high relative to the number of households that will be served. Other costs would be borne by landowners.

EASTERN SLOPE ALTERNATIVES

The eastern slope of the plan area is designated "Rural" in the Comprehensive Plan.

3.5. TREND – EASTERN SLOPE

In this alternative, the eastern slope would continue to develop as a predominantly rural residential area, with homes built on lots ranging in size from one acre to 10 or more acres, depending upon subdivisions and assembly of existing lots into larger parcels. The relatively rough topography and frequent drainage ways will also influence the density of development and the potential for new subdivisions.

TREND EASTERN SLOPE	
Size:	4,280 acres
Zoning:	One dwelling unit per parcel/parcel sizes of 1.0 to 10 acres
Gross Density:	0.33 du/acre
Total Dwelling Units:	1,373 units
Population:	Approximately 3,400 people
Land Use Mix:	Residential 4,120 acres Non-residential 70 acres Parks 30
Roads:	Grid pattern would follow lot lines.
Water:	Individual wells
Wastewater:	Individual septic systems
Power, Phone:	Residents would obtain individually or as a group from private utility companies once legal easements were in place.

Bernalillo County would enforce existing land use/development regulations and address the most urgent access and public health issues. In addition, the County would begin to require that land sales be recorded and that buyers be made aware of the unique constraints to development in this area. The County would not take an active role in changing the type of development that is taking place, although it could work with residents to find solutions to development problems. Landowners would be responsible for infrastructure costs that are typically a private responsibility.

3.5.1. RESULTING DEVELOPMENT PATTERN

The trend alternative would have the following characteristics:

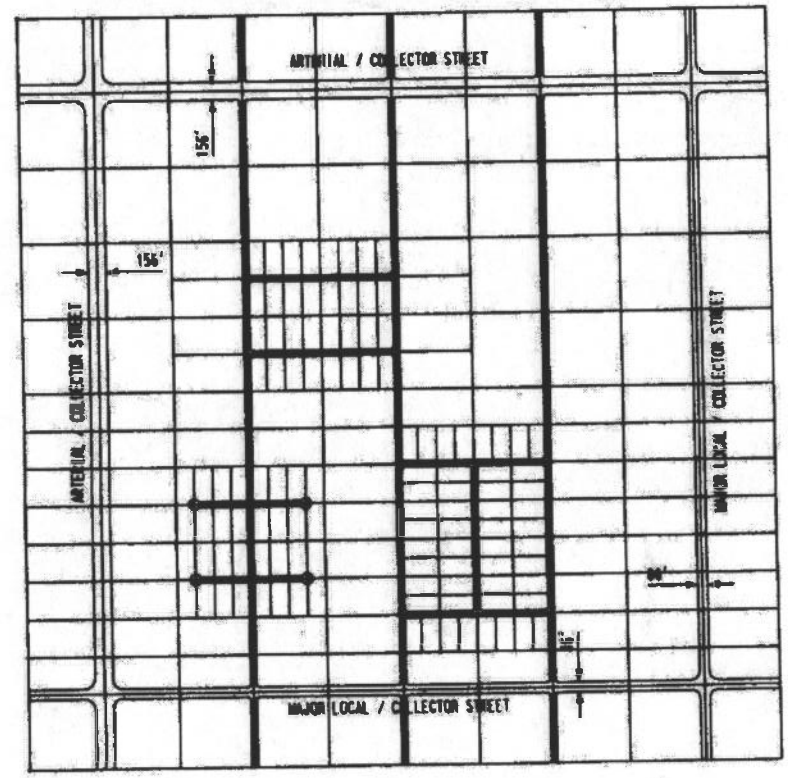
- A semi-rural area with lot sizes ranging from one to 10 acres or more. There would be a few larger lots if owners consolidate property and purchase more than one 10-acre lot.
- Roads would probably follow a grid pattern, with streets located along property lines.
- The maximum population when all lots are developed would be approximately 3,500 people assuming a gross density of 0.33 du/acre).
- Very little commercial development would be likely under this alternative because of the proximity to Coors Boulevard and future commercial development on the Mesa top. The County could encourage small-scale commercial nodes through rezoning for commercial around intersections.
- Non-residential uses could include schools, churches, and small retail and office development. Home-based businesses may also be desirable.
- If the Mesa top were to develop according to either the Planned Communities or Village Clusters alternatives, the commercial centers in these communities would tend to draw non-residential uses away from the escarpment.

3.5.2. Development Cost Estimate

The following assumptions were used to prepare the development cost estimated for this land use alternative:

- Residents would obtain power and telephone service through overhead lines along road rights-of-way.
- Residents would obtain water through individual domestic wells. Shared domestic wells would also be possible and could reduce the cost to individual owners.
- New subdivisions would be required to provide fire protection as specified in the subdivision ordinance.
- Liquid waste disposal would be through individual septic systems.
- Some grading and drainage improvements would be required as part of subdivision approval. On larger lots, such improvements would be minimal and related to home construction.
- A grid roadway system based on the existing ownership would include major streets and collectors on a one-mile grid, with local north-south streets every ¼ mile. The illustration to the right shows an example of a typical one-mile section.
- Estimated development costs per acre and the costs per residential lot are shown in the table below.

Typical one-mile roadway section



Estimated Development Cost per Acre and Per Residential Lot – Trend Eastern Slope

	In-Tract Infrastructure (Private Cost)		Master Plan Infrastructure	
Item	Cost/Lot	Cost/Acre	Cost/Lot	Cost/Acre
Roads	$1,594	$531	$6,001	$2,000
Water	$4,930	$1,643	$0	$0
Wastewater	$3,500	$1,167	$0	$0
Dry Utilities*	$2,771	$924	$1,848	$616
Grading & Drainage	$3,477	$1,159	$0	$0
Total w/soft costs and contingencies	$24,408	$8,136	$1,774	$3,925

* Electricity, telephone and natural gas

3.5.3. Analysis

Consistency with Public Policy. The land use pattern in this alternative is consistent with adopted policy for areas designated in the Comprehensive Plan as "Rural". Rural areas are anticipated to consist of ranches, farms, and single family homes on lots of one acre or larger.

Access. Properties would be developed individually, with access obtained from each owner. The easiest approach is to obtain rights-of-way as properties are developed. However, some public effort to secure rights-of-way will probably be necessary to complete roads.

Utility Service. Rural residential development is typically served by on-site systems. Both wells and septic systems are problematic under this alternative. Wells in this area cost less than on the Mesa top, and quality and quantity are likely to be better. Individual septic systems at densities anticipated in this alternative may have environmental consequences as the area builds out (see Environmental Impacts).

Environmental Impact. In other areas of the County, septic systems on individual lots at a density of one or 1.25 units per acre have generated concern about eventual degradation of the region's groundwater. Depth to groundwater decreases as the land slopes to the east, increasing the potential for groundwater degradation. Slopes and frequent drainageways through this area make it likely that subdivisions of ten acre lots will alter the natural drainage system. Planning for proper grading and drainage is important.

Ease of Implementation. The most difficult aspect of implementation is securing access to all properties. Some County assistance will likely be required to complete rights-of-way through the area for major streets. Enforcement of County regulations is extremely important to make sure that new development meets County standards.

Infrastructure Cost to the County. The primary cost to the County in this alternative is major streets. No master plan water or wastewater infrastructure would be required unless the County determines that public systems are needed because of environmental concerns. The cost of master plan infrastructure to serve low-density development is high relative to the number of households that would be served. The high cost per household would be exacerbated if the County builds roads in advance to support widely scattered development.

3.6. Rural – Eastern Slope

The rural alternative would preserve the current low-density, rural character of the area by preserving the existing platting pattern and limiting the creation of smaller lots.

In this alternative, the County would rezone the area to make the zoning for the eastern slope consistent with the predominant lot size (one dwelling unit per 10 acres). The County would enforce existing ordinances related to land subdivision, access, water quality, liquid waste disposal, solid waste disposal and storm drainage. Otherwise, the County would not take an active role in changing the type of development that is taking place, nor would it pay for improvements that are the responsibility of landowners under existing ordinances. The County could work with residents to find solutions to the most serious health and safety problems and could help find other sources of funding for these solutions.

3.6.1. Resulting Development Pattern

- In this alternative, the revised zoning would prevent most subdivision activity. The area would be rural with widely-scattered houses on 10-acre lots. The few existing lots smaller than 10 acres would be allowed to remain, but no further subdivision would be allowed.
- Roads would follow a grid pattern along property lines.
- Existing drainage patterns would remain. Landowners would build only in areas that are not prone to flooding. New construction could not alter established drainage patterns.
- The maximum population when all lots are developed would be approximately 1,100 people (assuming a gross density of 0.1 du/acre).

Rural Eastern Slope

Size:	4,280 acres		
Zoning:	One dwelling unit per parcel; minimum lot size of ten acres		
Gross Density:	0.10 du/acre		
Total Dwelling Units:	425 units		
Population:	Approximately 1,100 people		
Land Use Mix:	Residential	4,250 acres	
	Non-residential	20 acres	Parks 10
Roads:	Grid pattern would follow lot lines.		
Water:	Individual wells		
Wastewater:	Individual septic systems		
Power, Phone:	Residents would obtain individually or as a group from private utility companies once legal easements were in place.		

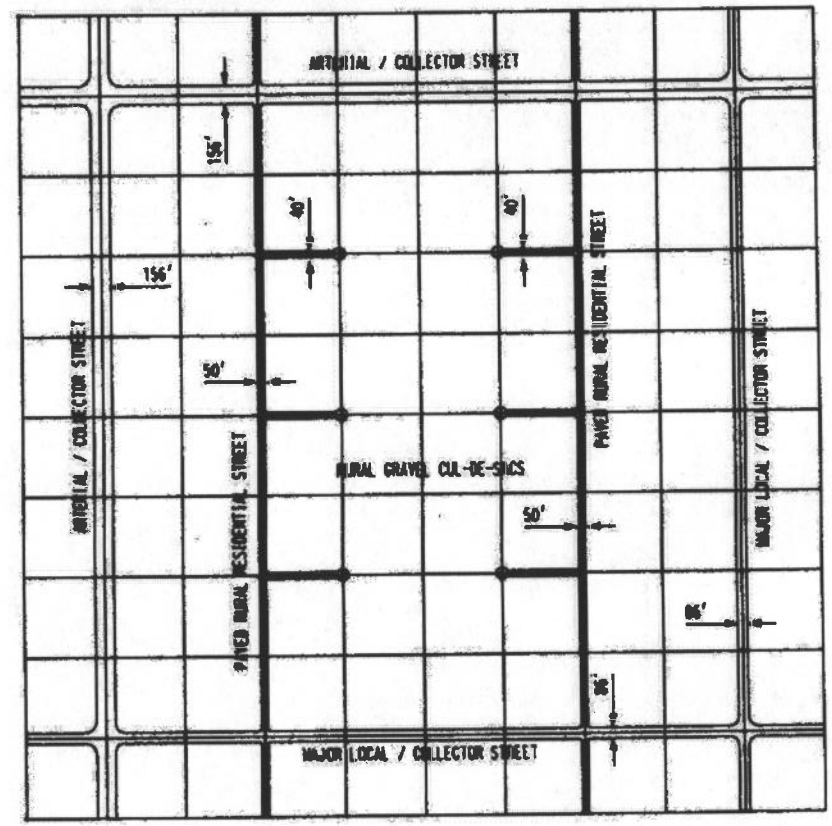
- The population would support very few retail and service businesses. Residents would have to do most of their shopping along Coors Boulevard or in the valley.

3.6.2. Development Cost Estimate

The following assumptions were used to prepare the development cost estimated for this land use alternative:

- Residents would obtain power and telephone service through overhead lines along road rights-of-way.
- Residents would obtain water through individual domestic wells. Shared domestic wells would also be possible and could reduce the cost to individual owners.
- Liquid waste disposal would be through individual septic systems.
- A grid roadway system based on the existing ownership would include major streets and collectors on a one-mile grid, with local north-south streets every 1/2 mile. The illustration to the right shows an example of a typical one-mile section.
- Estimated development costs per acre and the costs per residential lot are shown in the table below. This option is the highest cost for privately financed infrastructure.

Typical One-Mile Section



Estimated Development Cost per Acre and Per Residential Lot – Rural Eastern Slope

	In-Tract Infrastructure		Master Plan Infrastructure	
Item	Cost/Lot	Cost/Acre	Cost/Lot	Cost/Acre
Roads	$4,819	$482	$19,393	$1,939
Water	$4,930	$493	$0	$0
Wastewater	$3,500	350	$0	$0
Dry Utilities*	$4,285	$428	$3,529	$353
Grading & Drainage	$3,477	$348	$3,021	$302
Total w/soft costs and contingencies	$31,515	$3,152	$38,915	$3,891

* Electricity, telephone and natural gas

3.6.3. Analysis

Consistency with Public Policy. The land use pattern in this alternative is consistent with adopted policy for areas designated in the Comprehensive Plan as "Rural". Rural areas are anticipated to consist of ranches, farms, and single family homes on lots of one acre or larger. Larger lots are proposed in this alternative.

Access. This alternative requires the least public right-of-way to serve all properties. Properties would be developed individually, with access obtained from each owner. In this alternative, the County would have to secure rights-of-way from landowners as building permits are issued. Public effort to secure rights-of-way will probably be necessary to complete roads. The public cost of roads per lot is the highest in this alternative. The high cost of roads per household is exacerbated if the County builds roads in advance to support widely scattered development.

Utility Service. Residential densities are very low and would be served by on-site systems. Wells are problematic under this alternative because of concerns about quantity and quality. Individual septic systems at the low densities anticipated in this alternative are probably not a problem over the long term.

Environmental Impact. This alternative is less likely to degrade groundwater quality than the trend alternative. Development of individual homes on very large lots is less likely to alter natural drainage patterns on the rough topography of the slopes than subdivisions of 1.25 acre lots.

Ease of Implementation. The most difficult aspect of implementation is securing access to all properties. Some County assistance will likely be required to complete rights-of-way through the area for major streets. Enforcement of County regulations is extremely important to make sure that new development meets County standards.

Infrastructure Cost to the County. The primary cost to the County in this alternative is major streets. No master plan water or wastewater infrastructure would be required. The cost of roads to serve low-density development is high relative to the number of households that will be served. Other costs would be borne by landowners.

3.7. Conclusions

Based on the previous analyses, the study team chose the Village Clusters option as the best alternative development pattern for the Pajarito Mesa top and the trend alternative for the eastern slope. These options are consistent with policies in the Comprehensive Plan and contain features of the more dense urban development of planned communities while retaining some of the character of less dense rural development now present on the Mesa top.

3.7.1. Mesa Top

The Village Clusters alternative recommended for the Mesa Top would promote the development of several villages ranging from 650 to 1,200 acres each. The center of each would contain a core area of 20 to 35 acres to provide space for businesses and public facilities. Surrounding the core area would be higher density housing, schools, and parks. The population of each could range from 5,000 to 10,000 persons depending on size.

This alternative would eventually serve more residents than either the trend or the rural development alternatives, spreading out the cost of roads and other infrastructure among the population and benefiting more people for the cost. With substantially fewer residents than the projected build-out for the planned communities alternative, however, the Village Clusters options would place less stress on the environmental resources of the Mesa, except perhaps groundwater quality.

Moreover, given the scattered pattern of land ownership and the failure of previous attempts by local governments to assemble land, the team thought it more feasible to try to consolidate the smaller number of acres necessary for each Village than the 5,000 to 10,000 acres required for a Planned Community. The Villages would house more people than the 100-acre rural villages described in the Comprehensive Plan. They would also present a greater opportunity to encourage creation of jobs and community services on the Mesa, to give residents an alternative to commuting to Albuquerque for employment and services.

The projected costs and population for this scenario are based on three villages with a gross density of 3.0 per acre surrounded by rural densities of one dwelling unit per 10 acres. If the zoning remains the same (one dwelling unit per 1 acre) or changes to one per two acres or even one per 10 acres, the area could serve more people and costs would be somewhat different.

Comparison of Total Development Costs per Acre and per Residential Lot

Mesa Top Alternatives	In-Tract	Infrastructure	Residual Infrastructure	Land	Master Plan	Infrastructure
	Cost/Lot	Cost/Acre	Cost/Lot	Cost/Acre	Cost/Lot	Cost/Acre
	(Private Costs)					
Trend	$52,070	$17,183			$7,201	$2,376
Rural	$59,055	$5,906			$23,076	$2,308
Planned Community	$11,700	$70,100			$10,400	$73,100
Village Clusters	$13,500	$59,300	$31,600	$5,400	$10,300	$72,300

ACCESS DECISIONS

Another way of looking at these issues is to start with road access as the point of departure. The County's decisions regarding the provision of legal road access to Pajarito Mesa will largely determine how the area will develop over the long term. The following table shows the close relationship between land use and access options for Pajarito Mesa. For each access option, the corresponding land use option is listed to the right.

The chart indicates that by choosing an access option, the County will be making a defacto choice about development patterns on the mesa. Choosing full access, for example, will preclude the possibility of developing Planned Communities or Village Clusters, as roadways and resident expectations would interfere with land assembly. Extending only Powers Way, as in the "limited access" option, however, would still allow the land assembly necessary for Village Clusters.

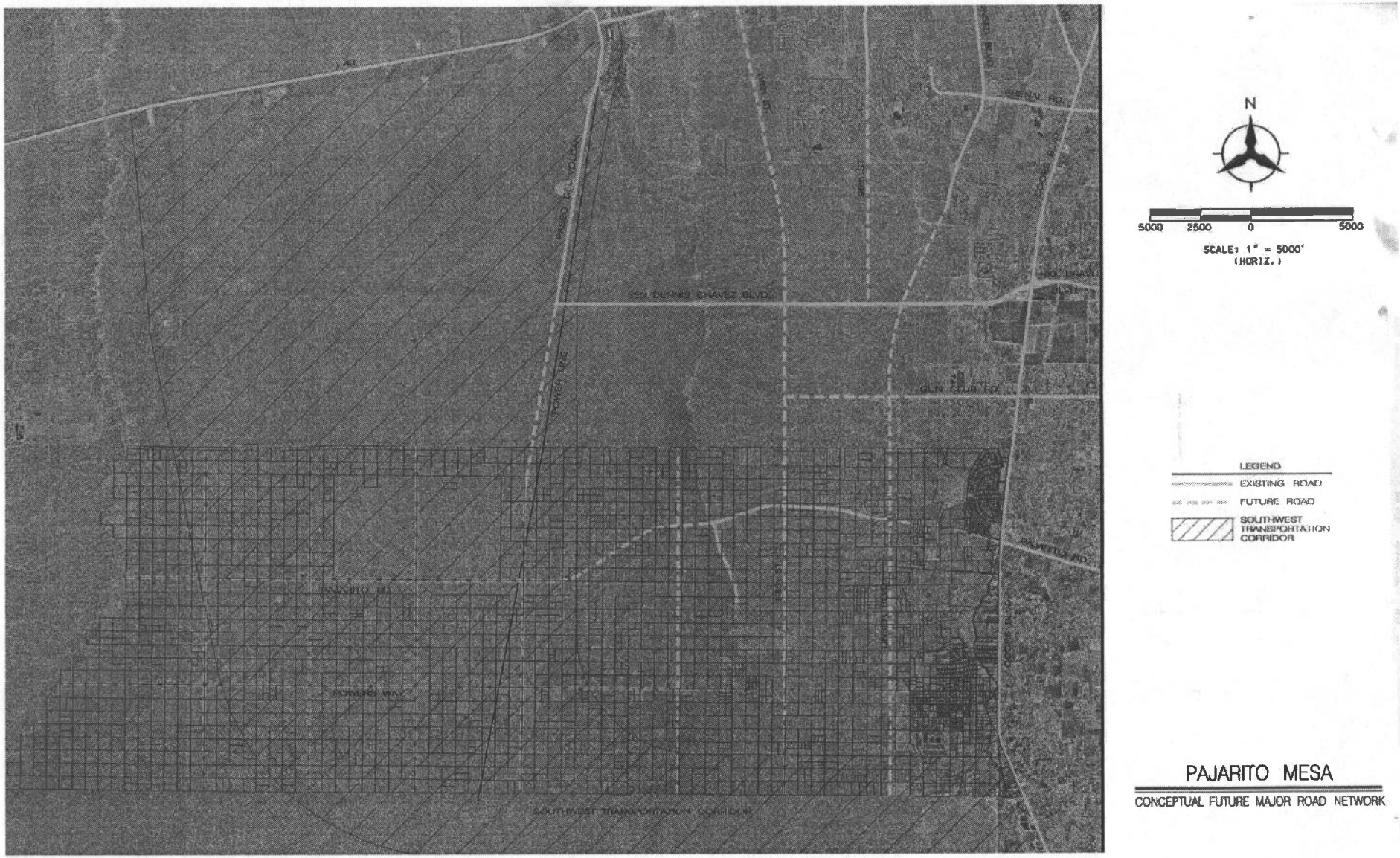
The options in reality are not necessarily this clear cut and other development combinations might be created. Limited access, for example, could perhaps still allow for Village Clusters as well as one Planned Community or some other hybrid. Nevertheless, in presenting such distinct options, the chart is useful for helping clarify decisions that need to be made.

It should be emphasized that the financial responsibility for roads, water and sewer systems, drainage improvements and other infrastructure is defined in the County's subdivision ordinance. Most of cost is the responsibility of the property owners. This study does not recommend a change in this policy.

TABLE 1. RELATIONSHIP BETWEEN LAND USE AND ACCESS

ACCESS OPTIONS	LAND USE OPTIONS
No Access ◆ Extend roads only for Planned Communities	***Planned Communities*** ◆ Encourage land assembly ◆ Do not issue building permits for individual lots or approve plats for subdivisions ◆ Require recording and disclosure on land transactions ◆ Strictly enforce regulations for new development ◆ Current residents must comply with regulations
Limited Access ◆ Extend Powers Way ◆ Private landowners must dedicate right-of-way to tie to Powers Way ◆ Extend additional roads only for Villages or where residents have acquired necessary easements and right-of-ways	***Village Clusters*** ◆ Encourage land assembly in areas with fewest owners ◆ Require recording and disclosure on land transactions ◆ Strictly enforce regulations for new development ◆ Current residents must comply with regulations
Full Access ◆ Extend Powers Way ◆ Designate additional road corridors based on land ownership; major streets per LRRP as shown in Figure 19. ◆ Require ROW dedication w/plats, building permits ◆ Assist with acquisition of easements and ROWs in vicinity of existing road network to serve new development	***Trend & Rural*** ◆ Issue building permits and plat approvals for projects that meet all regulations ◆ Require recording and disclosure on land transactions ◆ Strictly enforce regulations for new development ◆ Current residents must comply with regulations

FIGURE 19. CONCEPTUAL FUTURE ROAD NETWORK



3.7.2. The Eastern Slope

The eastern slope of the Mesa is expected to continue to develop in parcels of one to ten or more acres. Because this area is closest to existing roads and infrastructure, it is the area that will be served first. A sector plan is the appropriate next step for more detailed planning, especially in the area included in the eastern portion of the service area.

4. Recommendations, Implementation and Phasing

The goal of the Pajarito Mesa study as distilled from comments by the public and the County staff and officials is:

To provide for the public health, safety, and welfare of current residents within the County financial constraints while bringing existing development up to County standards and preventing new development that does not meet County standards.

The following section presents recommended actions phased over time to achieve this goal based on the following findings:

4.1. Findings

- The County needs to take initial steps to meet the most urgent health and safety needs of the residents on the Pajarito Mesa.
- The County recognizes that infrastructure investments may induce further development. Because the County does not have the financial resources to serve Pajarito Mesa at this time, it is very important to limit assistance to immediate public health and welfare needs—roads and a clean source of water.
- Given the significant infrastructure needs of the South Valley and the substantial amount of land available for logical urban development in southwest Bernalillo County over the next 20 years, extensive County infrastructure investment in Pajarito Mesa at this time is premature.
- The Albuquerque/Bernalillo County Comprehensive Plan designates the area as "Reserve". Land uses consistent with this designation range from rural to urban, with urban development in the form of planned communities.
- The fragmented land ownership pattern in Pajarito Mesa will make it difficult to assemble land for future planned communities.
- The current A-1 zoning is not well suited as a holding zone for future planned communities. Over time it would allow the area to build out to a density of one dwelling unit per acre, which would eventually make it all but impossible to assemble sufficient tracts of land for a planned community or village.
- Financial responsibility for infrastructure improvements will follow County regulations. As is typical of all development, the primary responsibility for providing roads (except state highways) and utilities lies with either individual landowners (in the case of single-lot development) or developers (in the case of subdivisions).
- County investment is anticipated to be consistent with the adopted Capital Improvements Plan, with publicly funded infrastructure to be built as scheduled in the CIP.
- Because the County has not programmed money to build roads and utilities on Pajarito Mesa, it will be necessary to use alternative funding sources to avoid impacts on established County priorities.
- All development, existing and future, must meet County standards.
- Most development on the Mesa consists of mobile homes, which are not allowed by the zoning. Mobile homes are not a desirable land use type over the long term for such a large area.
- Other than the difficulty of obtaining potable water, the Pajarito Mesa poses no unusual environmental constraints to development.

4.2. General Recommendations

To solve the problems on the Pajarito Mesa, the County needs to move on several fronts to address the issues of existing and future development. The study makes four general recommendations that would apply County-wide and then proceeds to recommend more specific actions for the two broad categories of existing and future development.

The report recommends that:

1) **Bernalillo County establish a task force of staff representative—some bilingual— from Planning, Building and Zoning; the Legal Department; Environmental Health; and Public Works to designate staff responsible for issues on Pajarito Mesa.**

   These staff members will become familiar with the area and provide consistent assistance and follow-through to the residents on Pajarito Mesa. The Task Force will be responsible for making Spanish language versions of all County development process applications and instructions available to Pajario Mesa residents as well.

2) **Bernalillo County provide Spanish language versions of all County development process applications and instructions.**

   As many of the residents on Pajarito Mesa are Spanish-speaking, this action would help alleviate their confusion over County requirements. Spanish versions of applications and instructions would benefit all Spanish speaking county residents

3) **Bernalillo County adopt County rural road standards that will reduce the expense of roads in very sparsely populated areas, while providing an acceptable level of service.**

   Current local road standards require 28 to 32 feet of paving with curbs and gutters. This type of road is not necessary for the small number of cars that would travel on Pajarito Mesa initially. A rural road of 24 feet wide and no curb or gutter would be designed to carry less traffic than the current standards and would be less expensive to build and maintain.

4) **Bernalillo County consider adding a large-lot holding zone to the Zoning Code.**

   As stated in the findings, the current A-1 zoning is not well suited as a holding zone for future planned communities. Over time it allows build out of one dwelling unit per acre, which severely hampers any efforts to assemble large enough tracts of land to create planned communities or villages. This is true for the Pajarito Mesa, although the current A-1 zoning may make it easier for the County to obtain public easements from the current owners as owners subdivide their ten-acre parcels.

   While changing the zoning to A-2 would make mobile homes a permissive use, the study team did not feel this would be a desirable land use for the entire Mesa. It may be appropriate for certain areas. Requiring a temporary special use permit for mobile home installation is a better solution for existing mobile homes than permanent zone changes.

   Changing the zoning to a new holding zone such as A-10 (ten acre minimum lot size) to be consistent with the parcel

could make it easier to assemble and hold land in reserve for more dense development. It could also diminish the opportunity to obtain public easements. A new zone would require a change in the zoning code. Such a change might be appropriate for parts of the Mesa that the County hopes to assemble and hold in reserve and could prove suitable for other rural parts of the county.

4.3. Recommendations for Meeting Existing Public Health, Safety and Welfare Needs

The next set of recommendations are designed to meet health, safety and welfare needs of existing residents. They call on Bernalillo County to

5) **Identify all code violations and work with residents and local non-profit organizations to bring all existing development into compliance with current codes within five years.**

   Bernalillo County code enforcement staff will conduct inspections of all developed properties and provide each resident with a list of any code violations. Residents will be given five years to bring property into compliance with all applicable County codes and ordinances, including access, zoning, liquid waste, building code and other requirements that will be identified through the site inspection (See Appendix C). One way to accomplish this is to use a development agreement detailing the code violations, the remedies, and the timetable which the owner and County can sign.

   Residents will be principally responsible for obtaining agreements from landowners to dedicate the right-of-way required to provide legal access to their properties. The County will assist by identifying owners of record. The landowner will be responsible for performing title searches on each parcel involved in the acquisition of right-of-way to ensure that all persons with an interest in the property are included in the conveyance documents. The County will also provide landowners with information about the land dedication process through replatting and the appropriate forms.

6) **Require residents who have not brought their properties into compliance by the end of this period to relocate.**

   County Housing Authority staff will assist renters who must relocate in finding a new home. Several programs are available for families within eligible income limits such as Section 8 vouchers. Pajarito Mesa renters who must move will be given priority for rental assistance.

   At this time the County does not have a program to assist homeowners. Therefore, the preference is to assist homeowners in meeting County codes.

7) **Assist landowners in completing roadway improvements where landowners have secured rights-of-way and agreed to fund the improvements.**

   Where landowners have legally dedicated at least 75 percent of the contiguous right-of-way required to provide for a road extending for at least one mile from an existing legal road, the County will initiate a County Improvement District (CID) that will assess all abutting owners of record for the cost of road construction. The County will acquire

the remaining rights-of-way through condemnation. Funds for property acquisition can be obtained from bonds issued against proceeds from the assessment district. The County will administer the funds to design and build a road that meets County standards. Generally, local streets require 40 feet of right-of-way. Roads shown in the Long-Range Roadway System map as major streets will require right-of-way dedication commensurate with their classification. Costs could be minimized if the County adopts new rural road standards as specified in Recommendation 3.

To address the most immediate health and safety needs on the Pajarito Mesa, the study recommends that the County work with landowners to establish a legal road to allow emergency access where there is a concentration of current residents as well as school busses. The most densely settled areas are along Powers Way and in the Haverstick subdivisions. The County would evaluate what it would take to complete the right-of-way for Powers Way from Coors Road west to serve most existing residents. The County could assist owners in securing rights-of-way, but landowners would have financial responsibility for roadway improvements.

The consulting team discourages further road extensions at this time. Additional roads would encourage more low-density development that could preclude development of Village Clusters, which is the preferred development alternative.

8) **Support efforts by the County Environmental Health Department to assist residents in developing safe water hauling practices.**

The County should develop procedures to ensure residents are hauling water from a safe source in clean containers.

9) **Provide assistance with regulatory compliance to residents and landowners.**

To help residents and landowners in Pajarito Mesa comply with development regulations, Bernalillo County will provide assistance in the following areas:

- Assistance with code compliance
- Assistance with contract obligations among the parties with an interest in the property.
- Title searches and clearing of title if relevant.
- Assistance with replatting. Dedications should be platted. If there are illegal subdivisions that could be corrected as part of the entire dedication/road process, they should be properly platted.
- Assistance with consolidation of land.

4.4. Recommendations for Future Development

To ensure that future development on the Pajarito Mesa complies with all County codes and ordinances and to encourage development of the Village Clusters land use alternative, the study makes the following recommendations:

10) **Aggressively enforce codes and ordinances to stop further illegal subdivision and development.**

a) **The County should pass an ordinance requiring disclosures on all land sales, leases, or conveyances.**

(MSA 1978 Section 4-6-17 (1995) requires subdividers prior to selling, leasing, or otherwise conveying land in

a subdivision "shall disclose in writing such information as the Board of County Commissioners requires, by regulation, to permit the perspective purchaser, lessee, or other person acquiring an interest in subdivided land to make a informed decision about the purchase, lease or other conveyance of the land." Moreover 4-6-17-B of the New Mexico Subdivision Act requires disclosure of availability and cost of public utilities, water quantity, water quality, means of liquid waste and solid waste disposal, and a description of access to the subdivision. A further division of the already platted 10-acre lots, whether for immediate of future sale, is subject to the act.

The County, pursuant to its general police power authority, NMSA Section 4-378-1 (1975), could also require the desired disclosures on all documentation relating to transfer of all property in the County.

b) **The County should require all land conveyances to be recorded.**
c) **The County should cite code violations and follow through with legal actions as necessary.**

Future development will only be allowed where all County codes and ordinances can be met, including access, water supply, solid and liquid waste disposal, drainage, and zoning. This applies to subdivisions and new construction. This means no subdivision will be approved and no building zoning or mobile home permit will be issued for a lot without proof of legal access. Landowners cannot sell pieces of an existing parcel without a plat. Statements to this effect should be inserted in the Bernalillo County Building Permit Requirements fact sheet.

To prevent illegal development, the County should post notices and signs on Pajarito Mesa stating that development is prohibited until there is legal road access. These signs should be replaced as necessary. The County should also notify realtors active in the area, the Board of Realtors, and mobile home dealers of development limitations on the Mesa.

To make sure prospective buyers are aware of the development limitations, disclosure statements should be attached to every land transaction. The County should also require that all land transactions—including real estate contracts-- be recorded. This will help the County to monitor compliance with this requirement.

Despite these efforts, there may be attempts to illegally install a mobile home or building on Pajarito Mesa without legal access or proper permits. The County must be vigilant about citing code violations immediately and follow through with legal action if necessary.

11) **Prepare a Sector Development Plan for the part of the Pajarito Mesa designated "Rural" (the eastern slope) in the Comprehensive Plan.**

The eastern slope of the Pajarito Mesa is closest to existing right-of-way and is most likely to develop first. In addition, portions of the eastern slope are within the proposed area to eventually receive water and sewer services. A Sector Development Plan is the appropriate mechanism for detailed review of land use, zoning, and infrastructure uses in this area.

12) **Adopt the Village Clusters development pattern as the preferred land use alternative .**

This alternative calls for up to three urban "Villages" of 600 to 1,200 acres with a gross density of three dwelling units per acre surrounded by rural development with a gross density of one unit per acre. These Villages fit within the parameters of the villages detailed in the Planned Communities Criteria.

This alternative strikes a balance between the planned communities and rural villages recommended by the Bernallillo County Comprehensive Plan. Based on historical trends, it would be difficult for the County to assemble sufficient land to create a planned community without purchasing or condemning much of the Mesa top. Yet, 100-acre rural villages, which would be easier to assemble, might not result in the most desirable land use pattern for an area so close to Albuquerque and would offer little potential for job creation. The ownership of at least two 500-acre parcels is concentrated in the hands of two landowners, and other areas of up to 1,000 acres have a concentration of large-scale investor-owners. Several Village Clusters in these areas would seem feasible. Smaller rural villages could potentially be established on other parts of the Mesa, as small-scale land assembly allows.

13) Work with major landowners to assemble land into large parcels suitable for "Village Clusters".

Land assembly and urban development is preferable to rural development in areas where a high concentration of properties owned by the Mesa's major landowners makes this feasible. As a long-term strategy, assembly and replatting could also be of financial benefit to these landowners. Three areas, as shown in Figure __, have the best potential for assembly and replatting. Urban development is not anticipated for many years in this area, however, nor has the County programmed CIP funds to pay for the necessary infrastructure, so land assembly could take place over the next 20 years or so. In fact, unless a landowner intends to develop at no net cost to Bernalillo County, immediate assembly is not desirable because of the long-term costs of holding land for future development.

There are a number of actions the County could take to facilitate this:

- Sponsor creation of an Area Plan for the entire Mesa to further define locations for Urban, rural, and mobile home development and to address potential zoning changes.
- Sponsor the development of Sector Development Plans for each Village Cluster.
- Develop a handbook describing development limitations under current conditions, the sector development plan process, and the advantages of cooperative planning and land assembly. These could be distributed to major landowners, realtors, and applicants who cannot meet access requirements.

More aggressive action steps would include:

- Help obtain easements and rights-of-way for roads to serve villages. Owners of individual lots and subdivisions would have to obtain these on their own. Landowners would have financial responsibility for roadway improvements.
- Enact a moratorium on development—subdivisions and new construction--until the area plan or plans for one or more Village Clusters is complete.
- Mandate land assembly through powers of eminent domain. The County would set a minimum size for a Village and mandate that land be assembled or that landowners jointly plan for an area of the appropriate size. The County, even with urban county status, does

not currently have the authority to condemn land for redevelopment, although it could purchase land from willing sellers. It would take a change in State law to enable the County to use its powers of eminent domain for redevelopment.

- Establish a program to allow transfer of development rights. Other communities have used this technique that allows people who own land in an area that is not suitable for development to transfer their development right to a parcel of land that is in an area that is suitable for development. The owner receives economic value for the development right.
- Buy out landowners. The County could purchase property at fair market value from landowners who want to own a piece of property that has services. This option could also include relocation assistance.

APPENDICES

APPENDIX A
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APPENDIX B
SOIL CHART

Pajarito Mesa Soils

The Mesa and slopes are composed of six predominant soil types: Bluepoint, Bluepoint-Kokan Association, Madurez, Wink, and Madurez-Wink Association, and Latene. These occur in five different zones in Pajarito Mesa as defined by the U.S. Soil Conservation Service.

Mesa Top(Zone 1)

The fine sandy loam of the Madurez (MaB) and Wink (WaB) soils dominate the top of the Mesa. Run-off is slow, but the potential hazard of blowing soil is severe on Madurez soils. For Wink soils, run-off is medium and wind erosion moderate. The major soils in the Madurez-Wink association are level to gently sloping and well-drained. Wink occurs on the sides of low ridges, while Madurez is found on piedmont fans. Run-off is slow on this soil association, but wind erosion is moderate to severe. Of these soils, only Wink presents problems for sewage lagoons and landfills due to seepage. The recreational potential of both Wink and Madurez may be moderately limited because of dust or sand. A Soil Conservation Service evaluation (cite198?) found these soils to be most suited for development at varying densities, but recommended a drainage plan be completed first.

Existing Policy: The Southwest Area Plan recommends a drainage plan for the entire Mesa top be developed to address the increase in water runoff in the swale flowing into Isleta Reservoir that would result from development on the Mesa top.

The Mesa's eastern slope is divided into three zones based primarily on elevation and slope.

The Ceja or escarpment edge (Zone 2) consists of a ribbon of Latene sandy soil (LtB) that stretches along the top of the eastern Mesa slope or Ceja at a width of about 500 feet and slope of 1 to 9 percent. Latene soils consist of a thin layer of topsoil covering a pink gravelly loam high in lime content that is very susceptible to wind erosion. The Soil Conservation Service estimated the soil loss at between 5 and 90 tons per acre per year, compared with an allowed limit of 4 tons. Runoff is medium and the soil percolates slowly, so it poses moderate problems for septic tank leach fields, as well as for sewage lagoons and shallow excavations. SCS noted that preserving an area above the Ceja as open space would be less destructive to zones below. It also recommended that individual liquid waste disposal systems, unlined sewage lagoons, and stormwater runoff holding ponds not be constructed within 200 feet of the Ceja to prevent the possibility of seepage into onto the escarpment.

***Existing Policy*:** SWAP policy mandates that no individual liquid waste disposal systems, sewage lagoons, or stormwater holding ponds be placed within a 200-foot wide strip of land on top of the Southwest Mesa running from Central Avenue/I-40 to the Isleta Pueblo with its eastern boundary at the eastern edge of the Southwest Mesa.

The **Escarpment (Zone 3)** is composed of the Bluepoint-Kokan soil association on slopes of from 15 to 40 percent. Bluepoint soil lies on fans between the ridges of gravelly Kokan soil.

Formed in old alluvial sand and gravel, it is a major source of those products in Bernalillo County. Run-off is slow here, but the hazard of water erosion is moderate to severe. It is a poor filter for septic tank effluent and the Soil Conservation Service report recommended a maximum of one dwelling unit per two acres if the area is developed. The porosity and infertility of the soils in addition to erosion limit the area's potential for supporting wildlife habitat or recreation. The SCS suggested that scattered dwellings

might be an inexpensive way to insure protection of its fragile environment.

Existing Policy: Based on SCS recommendations, the SWAP agreed that 1) limited development be allowed to occur on the ridges and slopes away from runoff areas to avoid flooding, 2) extreme care be taken to hold soil in place during development to avoid severe blowing and soil erosion, 3) naturalistic erosion and water control measures be taken in the area from the top of the small watershed downward to hold precipitation in place, 4) lot sizes be no smaller than one net acre per dwelling unit unless centralized community sewage systems are used.

The **Upper East Slope (Zone 4)** also contains Bluepoint-Kokan soils, but on a more moderate slope of from 5 to 15 percent. The slope still poses moderate problems for septic tanks, and the SCS recommended holding tanks or community septic systems be used rather than individual septic systems if it is developed. The Service, however, considered this zone suitable for both low or medium development, so long as flood and erosion control measures are used, off-road vehicles and livestock are prohibited, and native landscaping is planted or retained.

Existing Policy: SWAP policies include that 1) provisions for controlling runoff should be made from the top downward as soon as possible due to relatively steep slopes and broken topography, 2) roads and development should respect the natural contour of the terrain, 3) roads should use all-weather crossings of arroyos where necessary, 4) larger lot sizes should be required if individual liquid waste disposal systems are to be used, 5) native or naturalized landscaping should be planted.

The **Lower East Slope (Zone 5)** consists of primarily Bluepoint soils (BCC), deep, loamy, fine sand that is also very porous. Water run-off is slow, but the danger of wind erosion is severe. The SCS determined it to have the same development potential as Zone 4. It is hampered, however, by being the deposition area for sediment that erodes from the upslope zones. The SCS noted that controlling the upslope erosion would reduce the sediment.

Existing Policy: SWAP Policy 2 mandates that provisions be made to control soil erosion during and after construction in SCS zones 3 and 4 (escarpment and upper slope). Policy 3 requires native and naturalized landscaping to be used in SCS zones 3 and 4 whenever possible to protect the soils and avoid fertilizer buildup. Policy 4 mandates roads and development in zones 2,3,4, and 5 (entire slope, including the Ceja) generally follow the natural contours of the terrain and that roads be constructed with all-weather arroyo crossings where needed. A number of other soil associations occur on Pajarito Mesa in smaller quantities. These have profiles similar to the soils described above. Of these, only the silty, clay loam of the Brazito complex (Bt) profile notes that seepage from septic tank leach fields can contaminate nearby water supplies where this is used for community development.

TABLE A- 1. MAJOR SOIL TYPES

Map Symbol	Soil Type	Slope	Vegetation/Habitat	Environmental Conditions	Limitations for Development
BCC	Bluepoint loamy fine sand (silty, clay loam)	1 to 9%	Grass-shrub mix covers 15% of soil surface. Poor for other vegetation, rangeland, wetlands.	Severe wind erosion; slow run-off.	Severe limitations for sewage lagoons, shallow excavations, recreation, cultivation. Septic limitations over 8% slope.
BKD	Bluepoint-Kokan association (deep, excessively drained)	Hilly, 5% to 40%	Grass-shrub mix covers 10-15 % soil surface. Poor for other vegetation, rangeland, wetlands.	Wind erosion moderate to severe; slow run-off.	Major source of sand, gravel. Severe limitations for sewage lagoons, shallow excavations, recreation, cultivation. Septic limitations over 10% slope.
LtB	Latens sandy soil ?	1% to 5%	Grass mixed with shrubs and annuals. Poor for other vegetation, open land, wetlands, rangelands	Medium run-off; moderate wind and water erosion.	Poor for cultivation. No other limitations.
MaB	Madurez loamy fine sand	1% to 5%	Mainly grasses. Poor for other vegetation, open land, wetlands, rangelands	Severe wind erosion; slow run-off	Poor for cultivation. No other limitations.
MWA	Madurez-Wink association	Gentle slope	Grasses mixed with shrubs, annuals. Poor for vegetation, habitat, wetlands, rangeland.	Moderate to severe wind erosion, run-off slow	Erosion risk limits cultivation. No other limitations.
WaB	Wink fine sandy loam	0% to 5%	Poor for vegetation, open land (habitat), wetlands and rangelands	Medium run-off; slight to moderate erosion	Severe limitations on sewage lagoons and landfills

Sources: Soil Conservation Service, Bernalillo County, TRC Mariah Associates.

APPENDIX C
BERNALILLO COUNTY DEVELOPMENT REQUIREMENTS

Bernalillo County Development Requirements

The following section presents Bernalillo County development requirements that current residents would have to comply with in order to remain on Pajarito Mesa. It also estimates possible costs of compliance with these requirements.

1) Bernalillo County Zoning, Building, and Planning Department Requirements

a. **Site Built Home**. Obtain **Building Permit**. Submit plans and specifications.

Cost for Preparation of Plans and Specifications:
$500-$1,000 (prepared by draftsman)
$2,000-$5,000 (prepared by architect; for $100,000-$200,000 house)

Fee for Building Permit:
(examples of approximate costs)

1,500 sq. ft. heated	$400
2,500 sq. ft.	$550

When the building permit application is approved, the County issues a red card to be posted on the site, which indicates that the permit has been issued and describes the nature of the work to be done. The subcontractors then can apply for electrical, plumbing, and mechanical permits. Once these systems have been inspected and approved, the County issues copies of the approved permits (green tags), which are also to be posted on the site. When construction is completed, the County performs a final inspection, including verifying that all of the necessary green tags have been issued, before issuing a certificate of occupancy.

b. **Mobile or Manufactured Home**. Obtain Zoning Permit.

Submittal Requirements:

- Legal description and uniform property code number of the property (must be a legal lot of record)
- Plot plan showing boundaries of property and all existing and proposed
- improvements (5 copies)
- Property address as issued by Bernalillo County Zoning Office

Fees:

Mobile Home (500-1,200 sf):	$65.00; $2.00 for each additional 500 sf
HUD manufactured home:	$70.00

Cost for Preparation of Engineered Drawings of Foundation: ~$250-$500 for drawing

Cost for Construction of Foundation: ~$2,500-$12,000

Fees: $45 each for the installation and foundation permits.
$65-$70 for electrical permit
$65-70 for water hookup
$45-$50 for sewer hookup

The homeowner must first obtain a zoning permit from the Zoning, Building and Planning Department. The homeowner also requires an installation permit. Typically this permit is issued by the dealer when a manufactured home is purchased. It also can be purchased directly from the New Mexico Manufactured Housing Authority (MHA). If a permanent foundation is required by the manufacturer

or desired by the homeowner, the homeowner must submit a set of engineered drawings of the foundation to MHA and obtain a foundation permit. A certified installer must place the home on the site.

The Zoning, Building and Planning Department issues permits for electrical, plumbing, and sewer hook-ups and performs inspections of the work. The permit and approval process for liquid waste disposal systems and wells is the same as for site-built homes. MHA performs a final inspection to confirm that the home has been placed on the site and hooked up to utilities by licensed and registered contractors. MHA then issues a final approval for the home.

Homeowners should note that in the R-1 zone, a mobile home is a conditional use for a maximum of three years, with approval through a public hearing. In the A-1 zone, a mobile home is classified as a permanent home that can be installed after obtaining a special use permit. There is no time limit

2) Environmental Health Department Requirements

a. Obtain **Liquid Waste Disposal Permit.**

Submittal Requirements:

- Wastewater System Application
- Plans and Specifications
- Site Plan (2 copies), including a Site Evaluation
- Management Plan
- Supporting Data and Information

Cost to Design and Install Liquid Waste Disposal System:
$3,500-$4,000

Fees:
Permit application fee for system designed for 2,000 gallons/day or less: $100.00

When EHD approves a wastewater permit, the applicant receives a permit tag for posting on the site, along with a copy of the permit. The installation must be done by a certified installer. EHD performs a final inspection before the system is covered up and issues a final approval tag to the installer.

b. Obtain **Individual Water Supply System Permit** (required if installing well)

Submittal Requirements:

- State Engineer's Permit
- Individual Well Application
- Site Plan

Fees: $5 for state engineer's permit; $25 for BCEHD individual water supply system permit

The installation of the well must be done by a licensed driller.

System Cost:

Drilling cost:	$10.80/linear foot, up to 700' $11.80/linear foot thereafter
Cost to equip well:	~$2,000, up to 250' ~$3-4,000 for 7-800' well

When EHD approves the permit, the property owner receives a copy of the permit for posting on the site.

3) Public Works Department Requirements

a. Obtain **Access Permit** (for accessing County-maintained road)

Fee: $102 (per driveway)

b. Obtain **Paving Permit** (if paving exceeds 1,000 sf)

Fee: $84 (per driveway)

b. **Grading and Drainage Plan approval** (generally not necessary unless improvements are greater than 15 % of lot area, or if drainage flows would be diverted onto neighboring properties)

Fee: $20

Cost for Preparation of Grading and Drainage Plan: ~$2,000-$3,000

When the permits are approved, the property owner receives permit tags for posting on the site.

4) Floodplain Requirements (for properties within FEMA-mapped 100-year floodplain)

a. Submit **Grading and Drainage Plan** (3 copies) to Public Works Department

Fee: $20 (to Public Works)

Cost for Preparation of Grading and Drainage Plan: ~$2,000-$3,000

Cost for Grading and Drainage Work: ~$2,000 - $20,000

b. Meet minimum finish floor elevations (as determined by Bernalillo County Floodplain Administrator)

Fee: None

Cost for Survey Work: ~$200-$300

5) **Impact Fees**

(for homes with a value in excess of $100,000; fees will vary based on square footage. Impact fees could be deferred for homes and properties with a combined value of less than $100,000.)

a. New home or HUD manufactured home:

500-1,499 sf:	$3,214.20
1,500-2,499 sf:	$3,436.20
2,500-3,499 sf:	$3,658.20

b. Mobile home (single-wide):

500-1,999 sf:	$2,356.95

c. Residential additions, garage, shop, and detached structures greater than 500 sf the drainage impact fee is charged.

* The fee amounts estimated are based on the current 75% collection of the assessment. The current affordable housing unit definition cost is $100,000. The collection percentages and a affordable housing unit definitions may change.

Table A- 2. Cost of Lot Development by Individual Owner, Including On-Site Development Costs, Permits and Fees

Development Costs			
Prep of Plans and Specs, site-built home			
Draftsman			$500-$1,000
Architect			$2,000-$5,000
Design and Installation of Septic System	$ 3,500	$ 4,000	
Well Installation, Mesa Top(~900 feet)		$ 13,500	
Well Installation, East Slope	$ 4,900		
Prep of Grading and Drainage Plan			$2,000-$3,000
Drainage Improvements			
Prep of Engineered Drawings for Manuf Home Foundation	$ 250	$ 500	
Construction of Manufactured/Mobile Home Foundation	$ 2,500	$ 12,000	
Road			
Dedication of 25' ROW			
Paved 24' Road, 660' frontage		$ 7,920	
Paved 24' Road, 165' frontage		$ 1,980	
Gravel 24' Road, 660' frontage	$ 5,280		
Gravel 24' Road, 165' frontage	$ 1,320		
Survey Work	$ 200	$ 300	
Permit Fees			
Building Permit (applies to site-built homes)	$ 400	$ 700	
Liquid Waste Disposal Permit	$ 100	$ 100	
State Engineer's Permit	$ 5	$ 5	
Individual Water Supply Permit	$ 25	$ 25	
Access Permit	$ 102	$ 102	
Paving Permit	$ 84	$ 84	
Impact Fee (applies only to homes and land valued above $100,000)			
Conventional or HUD		$3,500 *	
Mobile Home		$2,400 *	
Manufactured/Mobile Home Fees			
Zoning Permit		$65	
Installation Permit Fee		$45	
Foundation Permit Fee		$45	
Electrical Permit Fee		$65	
Water Hookup Fee		$65	
Sewer Hookup Fee		$45	
Total, including fees, manufactured home on 10-acre lot	$ 17,276	$ 38,866	
Total, including fees, manufactured home on 1.25-acre lot	$ 13,316	$ 32,926	

* Estimate rounded up for certain square footage

APPENDIX D
STUDENT PROJECTS

Planning studio classes at the University of New Mexico Department of Architecture and Planning have reviewed Pajarito Mesa and recommended ways to serve residents. Three classes, Spring 1990, Spring 1995 and Fall 1997 produced studies for the area. Both studies focused on alternatives to the existing grid pattern and alternative approaches to services.

Pajarito West Mesa: Proposed Ecological Development (Spring 1990)

This graduate student report studied potential ways to develop the 5.5 square miles on the eastern slope of Pajarito Mesa bounded by the Ceja on the west, the Gun Club lateral on the east, Pajarito Road on the south and Gun Club to the north. The students looked to the history and culture of the area to try to design a community where residents could both live and work. Elements of their plan included:

- Design with cluster units, gardens, neighborhoods with shared open space.
- Use constructed wetlands for sewage.
- Incorporate trails and a light rail system along Unser.
- Restrict run-off from development to the current amount.
- Retain natural or naturalized arroyos; use and re-use natural drainage.
- Use master planning to create a hierarchy of centers (villages/neighborhoods) with activity centers.

Strive for self-sufficiency in energy use, through maximum use of water. resources, solar resources, wind resources, and wastewater resources.

East Pajarito Grant Study: Living with Nature (May 1995)

This study looked at 4,450 acres of the Pajarito Mesa land grant west of S. Coors Road, east of the Pajarito Mesa rim, north of Isleta Pueblo and south of the Atrisco Grant Boundary. It noted a number of problems with development in the area and recommended solutions:

- The current development pattern is single family homes on 1.0 to 10-acre lots with little regard for social, agricultural, environmental, archeological or cultural conditions.
- The lack of roads or utility easements results in residents using both legal and illegal roads to gain access to their property.
- The majority of the area is inaccessible by County services.
- Continuing the current development pattern would overtax the physical environment in the area. For example, sufficient roads to serve the existing parcels would fill the existing flood control systems with silt, forcing the county to build expensive structures to channelize the major 100-year floodways to avert potential floods below the dams.

Recommendations

- Replat the 10-acre parcel pattern into developable areas. This approach would protect the existing environment, such as the current drainage pattern, and cut down on infrastructure costs. It would use landform and topography to guide placement and form of building sites, road systems, and infrastructure costs.
- Use a transfer of development rights approach to allow greater development densities within the buildable areas while preserving the unbuildable areas as public open space. This could be done on an incremental basis.
- Realign Unser Blvd. to more closely fit the contour of the land across the undulating slopes of the Pajarito study site.
- Preserve areas within 9-15% slope as open space.

- Locate collector roads and trails between floodway and prudent lines to provide floodway stabilization.
- Develop with a hierarchy of villages, village centers, and neighborhoods.

Beyond the Grid: Vision for a Sustainable Pajarito Mesa (December 1997)

The initial analysis notes that Pajarito Mesa was originally platted in a grid pattern of 10-acre square lots to facilitate an exploration for oil on the property. Platting was done without regard to topography or drainage, and individual parcels marketed to land investors. Oil was never found. As a result, many lots are located on sites unsuitable for development, such as within flood plains or areas of steep slope. Other problems it cites: few easements for roads or utilities, scarcity of water, distance from existing infrastructure and utilities. Most families live in mobile homes as these are affordable and permitted on unplatted land.

Recommends creating a sustainable community on the Mesa, which would use natural resources only as fast as they can be replenished. To accomplish this, the plan would:

- Identify conservation areas to protect significant geological areas and landforms, archaeological sites, fragile soils, unstable slopes, and natural drainage patterns of the Mesa. These would be preserved as open space.
- Use the non-conservation areas for clustered development; compact development around a common plaza. Compact design would reduce the cost for streets, utilities, and also preserve open areas.
- Using solar design in homes for heating, plants and vines for shade.
- Balance water use and natural replenishment. Examples, harvest rainwater and reuse greywater, control storm water run-off and soil erosion through swales and open space, purify wastewater with wetlands, and slow flood water velocity and volume by arroyo infiltration. In addition, install groundwater recharge wells for direct recharge into the aquifer.
- Allow owners to reassemble and replat their lots. All the owners would convey their titles to an instrument wholly owned by them, such as a corporation or title-holding trust. They would receive shares of stock in or corporation or title to an undivided interest in the entire parcel in exchange.
- Use transfer of development rights to shift development from preservation areas to areas more appropriate for development.

APPENDIX E
ASSUMPTIONS FOR PAJARITO MESA DEVELOPMENT ALTERNATIVES

Assumptions for Pajarito Mesa Development Alternatives

Estimated total undeveloped acreage:	17,880 acres
Mesa Top:	13,600 acres
Escarpment:	4,280 acres

General Assumptions

Average household size: 2.5 people
Commercial/office/industrial land per person: 0.02 acres
(derived from planned communities alternative: 3,000 acres/75,000 people, or 0.04 acres per person; reduced for lower density alternatives)

Park Standards (source: Recreation, Park, and Open Space Standards and Guidelines, National Recreation and Parks Association, 1983)
Mini-parks: 0.50 acres/1000 people
Neighborhood Parks: 2 acres/1000 people
Community Parks: 6.5 acres/1000 people

Trend Alternative - Mesa Top

Mesa Top - 13,600 acres
Gross density: 0.33-0.50 DU/acre
225-340 acres commercial/office/industrial
100-150 acres open space/parks

Rural Alternative - Mesa Top

Mesa Top - 13,600 acres total
Gross density: 0.10 DU/acre
70 acres commercial/office/industrial
30 acres open space/parks

Planned Communities Alternative

3 planned communities
4,533 acres each
Gross density: 3 DU/acre

Land use mix:
- 50% residential
- 30% commercial/office/industrial
- 20% open space

Residential mix:
- 8.3% - 3 DU/acre
- 80% - 5 DU acre
- 11.7% - 15 DU/acre

Village Cluster Alternative

Mesa Top - 3 villages
650 acres each
Gross density: 3 DU/acre

Land use mix:
- 65% residential
- 15% commercial/office/industrial
- 20% open space

Residential mix
- 24.6% 3 DU/acre
- 70% 5 DU/acre
- 5.4% 7 DU/acre

Remaining Land on Mesa Top - 11,650 acres
Gross density: 0.10 DU/acre
60 acres commercial/office/industrial
26 acres parks/open space

Trend Alternative - Eastern Slope

Escarpment - 4,280 acres
Gross density: 0.33-0.50 DU/acre
70-110 acres commercial/office/industrial
30-50 acres open space/parks

Rural Alternative - Eastern Slope

Escarpment - 4,280 acres
Gross density: 0.10 DU/acre
20 acres commercial/office/industrial
10 acres open space/parks