

**SOUTHWEST AREA PLAN
VOLUME IV THE PLAN**

COUNTY COMMISSION

Lenton Malry, Chairman
Orlando Vigil, Vice Chairman
Patricia H. Cassidy
Henry Gabaldon
Jacquelyn Schaefer

CITY COUNCIL

Patrick J. Baca, President
Michael C. Wiener, Vice President
Nadyne Bicknell
Richard Chapman
Pete Dinelli
Steve Gallegos
Vincent E. Griego
Herbert Hughes
Hess Yntema

COUNTY PLANNING COMMISSION

Joe Torres, Chairman
Louis Merritt, Vice Chairman
Norman Assed
Aileen Gatterman
Louise Menking
Mary Romero
Morris Burton Snipes

ENVIRONMENTAL PLANNING COMMISSION

Joe Boehning, Chairman
Pauline Gubbels, Vice Chairman
Annette Anaya
Victor Chavez
Judy Chreist
John Davis
Max Findell
Michael Lebeck
Barbara Seward

COUNTY OF BERNALILLO

Alex Abeyta, County Manager

CITY OF ALBUQUERQUE

Ken Schultz, Mayor
Gene Romo, Chief Administrative Officer
Dan Weaks, Deputy Chief Administrative Officer

CITY STAFF

Terence Nighbert, Planning Director
Rex King, City Planner
Cynthia Bruce, Chief, Advance Planning

PROJECT STAFF

Sheran Matson, Project Manager &
Chief, Planning Services
Margaret Gutierrez, Board Secretary
Jesse Garves, Graphics Illustrator

BERNALILLO COUNTY

BOARD OF COUNTY COMMISSIONERS

1 RESOLUTION NO. 102-88

2 ADOPTING THE SOUTHWEST AREA PLAN AS A RANK 2 AREA PLAN AND ADOPTING
3 STANDARDS FOR WELLS AND INDIVIDUAL LIQUID WASTE DISPOSAL SYSTEMS.

4 WHEREAS, the Commission, has the authority to adopt plans for
5 geographic areas within the planning jurisdiction of the County as
6 authorized by New Mexico Statues, and

7 WHEREAS, the Commission recognizes the need for area plans to
8 guide the County, other agencies, property owners and other
9 individuals to ensure orderly development and effective utilization of
10 resources; and

11 WHEREAS, the Southwest Area Plan, a Rank Two Plan, provides the
12 framework within which Rank Three Plans can be developed to further
13 define future development within smaller geographic subareas of the
14 plan area; and

15 WHEREAS, the City of Albuquerque has prepared an area plan
16 under contract to the County of Bernalillo to guide future development
17 by addressing general land use, transportation, drainage and public
18 services; and

19 WHEREAS, the Southwest Area Plan was prepared with the
20 assistance of residents, property owners and others in accordance with
21 their desires and needs as expressed through public meetings; and

22 WHEREAS, the adoption of the Southwest Area Plan will further
23 detail and implement the Albuquerque/Bernalillo County Comprehensive
24 Plan, Long Range Major Street Plan, Facility Plan for Arroyos and the
25 Bikeways Master Plan; and

26 WHEREAS, the County Planning Commission in its advisory role on

Underscored Material - New
Bracketed Material - Deletion

Underscored Material - New
[Bracketed Material] - Deletion

1 all matters related to planning and zoning has approved and
2 recommended the adoption of the Southwest Area Plan at a public
3 hearing.

4 BE IT RESOLVED BY THE COMMISSION, THE GOVERNING BODY OF THE COUNTY OF
5 BERNALILLO, that:

6 Section 1. The Southwest Area Plan attached hereto and made a
7 part hereof, is hereby adopted as a Rank Two area plan to guide and
8 govern all development, both private and public, within the plan area.

9 Section 2. The Proposed Interim Standards for Individual Wells
10 and Individual Liquid Waste Disposal Systems, Map 1 of the attachment,
11 shall guide and direct City zoning until a permanent solution to the
12 groundwater quality problems is identified and a program to implement
13 that solution is developed and begun as called for in Policy 1 and its
14 implementation, page 11 of the Southwest Area Plan.

15 Section 3. In conjunction with Policy 53 of the Southwest Area
16 Plan, the Planning Department, the Environmental Planning Commission,
17 Bernalillo County, and the Middle Rio Grande Council of Governments
18 should especially study land use and transportation planning on the
19 mesa top within the western part of the area plan's boundary.
20 Particular attention should be given to the amount of limited access
21 which is appropriate for roads which are outside the metropolitan area
22 of the Comprehensive Plan in order not to encourage inappropriate
23 fringe-area development. Deletion or shifting of arterial street
24 locations should be evaluated in this context.

25 Section 4. In implementing Policy 54 of the Southwest Area
26 Plan, the concept of Attachment A, a system submitted by some
27 southwest area residents, should be used to the extent it is found
28 workable by the City Planner.

29

30

31

32

33

1 PASSED and ADOPTED this 23rd day of August, 1988.

2

3

4

BOARD OF COUNTY COMMISSIONERS

5

Lenton Malry
Lenton Malry, Chairman

6

Orlando Vigil
Orlando Vigil, Vice Chairman

7

8

Patricia H. Cassidy
Patricia H. Cassidy, Member

9

10

Henry Gabaldon
Henry Gabaldon, Member

11

12

ATTEST:

Gladys Davis
Gladys Davis, County Clerk

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

Underscored Material - New
[Bracketed Material] - Deletion

CITY of ALBUQUERQUE
EIGHTH COUNCIL

COUNCIL BILL NO. R-32 ENACTMENT NO.

SPONSORED BY: Steve D. Gallegos

Underscored Material - New
Bracketed Material - Deletion

1 RESOLUTION

2 ADOPTING THE SOUTHWEST AREA PLAN AS A RANK 2 AREA PLAN AND ADOPTING
3 STANDARDS FOR WELLS AND INDIVIDUAL LIQUID WASTE DISPOSAL SYSTEMS.

4 WHEREAS, the Council has the authority to adopt plans for
5 geographic areas within the planning jurisdiction of the City as
6 authorized by New Mexico Statutes; and

7 WHEREAS, the Council recognizes the need the area plans to guide
8 the City, other agencies, property owners and other individuals to
9 ensure orderly development and effective utilization of resources;
10 and

11 WHEREAS, the Southwest Area Plan, a Rank Two Plan, provides the
12 framework within which Rank Three Plans can be developed to further
13 define future development within smaller geographic subareas of the
14 plan area; and

15 WHEREAS, the City of Albuquerque has prepared an area plan under
16 contract to the County of Bernalillo to guide future development by
17 addressing general land use, transportation, drainage and public
18 services; and

19 WHEREAS, the Southwest Area Plan was prepared with the
20 assistance of residents, property owners and others in accordance
21 with their desires and needs as expressed through public meetings;
22 and

23 WHEREAS, the adoption of the Southwest Area Plan will further
24 detail and implement the Albuquerque/Bernalillo County Comprehensive
25 Plan, Long Range Major Street Plan, Facility Plan for Arroyos and
26 the Bikeways Master Plan; and

Underscored Material - New
[Bracketed Material] - Deletion

1 WHEREAS, the Environmental Planning Commission in its advisory
2 role on all matters related to planning and zoning has approved and
3 recommended the adoption of the Southwest Area Plan at a public
4 hearing.

5 BE IT RESOLVED BY THE COUNCIL, THE GOVERNING BODY OF THE CITY OF
6 ALBUQUERQUE:

7 Section 1. The Southwest Area Plan attached hereto and made a
8 part hereof, is hereby adopted as a Rank Two area plan to guide and
9 govern all development, both private and public, within the plan
10 area.

11 Section 2. The Proposed Interim Standards for Individual Wells
12 and Individual Liquid Waste Disposal Systems, Map 1 of the
13 attachment, shall guide and direct City zoning and subdivision until
14 a permanent solution to the groundwater quality problems is
15 identified and a program to implement that solution is developed and
16 begun as called for in Policy 1 and its Implementation, Volume IV,
17 Southwest Area Plan.

18 Section 3. In conjunction with Policy 53 of the Southwest Area
19 Plan, the Planning Department, the Environmental Planning
20 Commission, Bernalillo County, and the Middle Rio Grande Council of
21 Governments should especially study land use and transportation
22 planning on the mesa top within the western part of the area plans'
23 boundary. Particular attention should be given to the amount of
24 limited access which is appropriate for roads which are outside the
25 metropolitan areas of the Comprehensive Plan in order not to
26 encourage inappropriate fringe-area development. Deletion or
27 shifting of arterial street locations should be evaluated in this
28 context.

29 Section 4. In implementing Policy 54 of the Southwest Area Plan
30 the concept of Attachment A, a system submitted by some Southwest
31 Area residents, should be used to the extent it is found workable by
32 the City Planner.

33

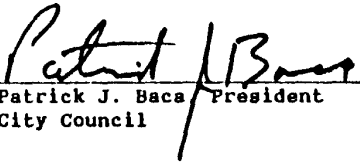
Underscored Material - New
[Bracketed Material] - Deletion

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33

PASSED AND ADOPTED THIS 1st DAY OF AUGUST, 1988.

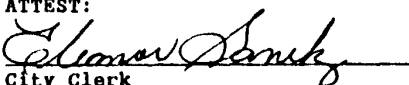
BY A VOTE OF 8 FOR AND 0 AGAINST.

Yes: 8
Excused: Gallegos


Patrick J. Baca, President
City Council

APPROVED THIS 30th DAY OF August, 1988.


Ken Schultz, Mayor
City of Albuquerque

ATTEST:

Eleanor Sanchez
City Clerk

VOLUME IV

THE PLAN

- the power and importance of sun, moon, and stars, the changing seasons, seed time and harvest, clouds, rains and rivers, the oceans and the forests, the creatures and the herbs. They are with us now, co-tenants of the phenomenal universe, participating in that timeless yearning that is evolution, vivid expression of time past, essential partners in survival and with us now involved in the creation of the future.

Ian L. McHarg

What sets worlds in motion is the interplay of differences, their attractions and repulsions. Life is a plurality, death is uniformity. By suppressing differences and peculiarities, by eliminating different civilizations and cultures, progress weakens life and favors death. The ideal of a single civilization for everyone, implicit in the cult of progress and technique, impoverishes and mutilates us. Every view of the world that becomes extinct, every culture that disappears, diminishes a possibility of life.

Octavio Paz

The world moves into the future as a result of decisions, not as a result of plans.

Kenneth E. Boulding

TABLE OF CONTENTS

	Page
<u>GENERAL INTRODUCTION</u>	i
<u>PLAN PROCESS</u>	i
<u>EXECUTIVE SUMMARY</u>	ii
<u>SECTION 1: INTRODUCTION</u>	
What is an Area Plan?.....	1
Purposes of the Southwest Area Plan.....	2
Geographic Subareas.....	2
Geographic Context.....	3
Public Participation in Plan Development.....	5
<u>SECTION 2: PLANNED GROWTH IN A FRAGILE ENVIRONMENT</u>	
Water Quality.....	6
Sensitive Soils.....	8
Policies.....	11
<u>SECTION 3: LAND USE PLAN</u>	
Residential Uses.....	13
Policies.....	16
Commercial & Office Uses.....	17
Policies.....	19
Industrial Uses.....	20
Policies.....	22
Open Space.....	23
Policies.....	30
Parks.....	33
Policies.....	34
Agricultural Uses.....	35
Policies.....	38
Special Areas	
Westgate Urban Center.....	39
Policies.....	40
Village Centers.....	42
Policies.....	47
Historic Structures, Places, Roadways & Acequias	48
Policies.....	49
Archeological Sites.....	50
Policies.....	51
<u>SECTION 4: TRANSPORTATION PLAN</u>	
Roadways.....	53
Policies.....	57
Transit & Ridesharing.....	59
Policies.....	60
Bikeways.....	61
Policies.....	61
Rapid Rail.....	62
Pedestrians.....	62
Equestrians.....	63
Policies.....	63
<u>SECTION 5: DRAINAGE PLAN</u>	
Drainage Management.....	64
New Detention Facilities & Drainage Studies.....	66
Policies.....	68

SECTION 6: PUBLIC SERVICES PLAN

Libraries.....	70
Schools.....	71
Multi-Service Centers.....	72
Senior Centers.....	73
Law Enforcement Centers.....	73
Fire Services.....	74
Policies.....	75

<u>CONCLUSION & PLAN EVALUATION</u>	76
---	----

<u>PLAN MONITORING & IMPLEMENTATION</u>	77
---	----

APPENDICES

Appendix A: Summaries of SWAP Volumes I, II and III	
Appendix B: Existing Plans, Policies and Goals	
Appendix C: Economic & Transportation Network Analyses for the Preferred Alternate	
Appendix D: Environmental Improvement Division, Albuquerque South Valley Ground Water Investigation Final Report	
Appendix E: Agricultural Task Force Recommendations on Agricultural Land Preservation	
Appendix F: Soil Conservation Service, Natural Resource Evaluation for the Southwest Area Plan	

MAPS

After Page

Map 1. Interim Development Standards.....	5
Map 2. Soil Conservation Service Zones.....	8
Map 3. Residential Areas.....	14
Map 4. Eastern Ceja of Southwest Mesa.....	27
Map 5. Open Space Trails.....	29
Map 6. Arterial Roadway Network.....	54

GENERAL INTRODUCTION

The Board of County Commissioners of Bernalillo County has determined that an area plan is necessary for the southwest quadrant of the County to adequately respond to the projected growth rate. Accordingly, the development of an area plan to provide a management framework for growth was contracted to the Planning Division, Planning Department, City of Albuquerque.

The following report is the last of four reports which, upon final adoption by the Board of County Commissioners and the Albuquerque City Council, will constitute the area plan for the area bounded by the Rio Puerco on the west; I-40, Central Avenue, and Woodward Avenue on the north; the Rio Grande (north of Woodward Avenue) and I-25 (south of Woodward Avenue) on the east; and the Isleta Indian Reservation on the south. The other three reports already in print include: Volume I Existing Conditions, Volume II Goals and Issues, and Volume III Alternatives.

The Southwest Area Plan follows the goals and policies of the Albuquerque/Bernalillo County Comprehensive Plan in most instances. The area plan recommends amendments to the Comprehensive Plan where detailed study of the plan area has indicated changes are appropriate. The area plan will become a constituent part of the Albuquerque/Bernalillo County Comprehensive Plan and will provide policy guidance for further planning in the area.

PLAN PROCESS

The planning process is simply a method used to gather, organize and analyze information in a way that facilitates rational decision-making. Individual tasks in the planning process include:

- * gathering of relevant information,
- * identification and analysis of issues,
- * formulation of goals and objectives,
- * development and analysis of alternative courses of action,
- * selection of preferred course of action,
- * implementation of preferred course of action, and
- * monitoring results and making adjustments as necessary.

As the quantity of interrelated information, goals, and issues involved increases, a planning approach capable of identifying and maintaining a view of those interrelationships becomes more important. Accordingly, the process for development of the Southwest Area Plan was designed to maintain sensitivity to the complex interrelationships involved in directing future growth in the area.

Volume IV has built upon the previous three volumes and contains the policies and implementation strategies for the plan area. It is the culmination of three years of planning work to establish a framework for responsible growth responsive to the needs of the public.

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The Southwest Area Plan covers 115 square miles, 15.5 of which are within the Albuquerque municipal limits. The remainder are generally in the southwest quadrant of Bernalillo County. The plan area boundaries are Central Avenue and Interstate 40 to the north, the Rio Puerco on the west, the Isleta Pueblo Boundary on the south and Interstate 25 south of Woodward Road and the Rio Grande north of Woodward Road on the east.

The plan establishes a framework for growth and development between now and when the area's population doubles and the employment triples. Although the Middle Rio Grande Council of Governments has forecast 2010 as the year this will occur, it is possible it will take significantly longer for the plan area's population to reach 115,000 and employment to reach 35,000.

The plan area's existing conditions, the goals and issues identified by a citizens' committee, the applicable goals and policies of the Albuquerque/Bernalillo County Comprehensive Plan, analysis of three land use alternates and comments received at public meetings and a public hearing on the preferred land use alternate assisted in the development of this final volume of the Southwest Area Plan. Most of this information was published in Volumes I, II and III of the Southwest Area Plan. Economic and transportation network analyses of the preferred alternate helped to direct the development of the final plan. Volume IV, which is this volume, includes brief summaries of Volumes I, II and III in Appendix A.

The plan area's present population is generally younger, less educated, more inclined to own a home and stay there longer, bilingual in English and Spanish, somewhat more likely to be unemployed, and if employed, to work outside the plan area than the rest of the population in the metropolitan area. In 1980 seventy percent of the residents were of Spanish origin. The population is largely descendant from farmers and ranchers who worked the land of the South Valley for generations. It is this closeness to the land which attracted many newer residents to the South Valley decades ago and still acts as a magnet to those desiring a more rural lifestyle.

The rural character of the South Valley emerged as one of the prevalent themes throughout the development of the Southwest Area Plan. Residents are beginning to realize the South Valley is changing as new people move into the area. They want this growth planned to maintain the less intense lifestyle and, at the same time, allow economic opportunities for landowners and residents. The Southwest Area Plan is a plan for the people of the area. It is intended to address those goals and issues which residents and landowners articulated in Volume II while providing a positive influence on the metropolitan area as a whole, through planned, phased growth and subsequent wiser investment in public infrastructure, and acknowledgement of physical and cultural resources.

A shallow water table in the South Valley and highly erodible, porous soils on the mesa slopes have played a major role in the development of land use, transportation and drainage policies. Groundwater presently contains contamination from various sources which raises public health and safety

concerns. The erodible, porous soils on the mesa slopes west of Coors Boulevard require special treatment before, during and after development to keep them in place and prevent large amounts of deposition from occurring in the area just west of Coors Boulevard. The plan creates interim development standards in the South Valley and one mile west of Coors until a solution is found and implemented for the water quality problems. If the solution is to provide City water and sewer, alternatives need to be identified which will allow the area to remain at a lower level of development and still allow provision of such services to be cost-effective. The plan also mandates limited, controlled development of the mesa escarpment and slopes west of Coors Boulevard to help stabilize the fragile soils. Soil erosion structures built in harmony with the environment are also important to soil stabilization and protection of the lower lying areas.

Residential densities in the plan include a maximum of one dwelling unit per net acre in the valley generally south of a line drawn westward along existing lot lines from the Los Padillas Drain to Coors Boulevard, east of the Gun Club Lateral, west of Second Street, and north of the Isleta Pueblo; and south of Pajarito Road and west of 118th Street south of Rio Bravo Boulevard on the mesa slopes. A limited, lower density is also proposed for the upper mesa slopes north of Pajarito Road to protect the fragile environment. Densities up to three dwelling units per net acre are proposed for the mesa slopes east of the area just described, north of Rio Bravo Boulevard and south of Central Avenue. Similar densities are proposed south of Bridge Boulevard, east of the Arenal Main Canal and Coors Boulevard, north of a line drawn westward along existing lot lines from the Los Padillas Drain to Coors Boulevard, and west of the Rio Grande. Densities up to six dwelling units per net acre are proposed for the area bounded by Rio Bravo on the north, 118th Street on the west, Pajarito Road on the south and the Gun Club Lateral on the east. Densities up to nine dwelling units per acre are proposed for the area south of Central Avenue, east of 118th Street, north of Rio Bravo Boulevard and west of the Arenal Main Canal. The South Valley north of Bridge Boulevard is also included in this area. In addition, higher densities (up to thirty dwelling units per net acre) are proposed within the Westgate Urban Center boundaries and in specific locations south of Central Avenue in the northern portion of the plan area.

Planned communities which would contain a mix of land uses and initially provide their own infrastructure are proposed within the timeframe of the plan for the Southwest Mesa. The costs of extending municipal services and infrastructure and the desire to maintain orderly, planned growth out from the existing urban service area provide the basis for proposing these semi-self sufficient communities.

Appropriately scaled commercial and office uses are generally encouraged at major intersections north of Pajarito Road where appropriate. Neighborhood commercial and office uses are appropriate in the historic village centers. The Westgate Urban Center would have the highest intensity commercial and office uses. Additional strip commercial and spot zones are discouraged.

A major industrial corridor is planned generally east of Second Street, south of Woodward Road, north and east of Interstate 25. A sector development plan for the area is an important element to realization of the industrial

corridor. Water quality, roadway access, appropriate zoning, open space trails and protection for existing residential uses are issues to be addressed in the sector plan. The industrial corridor is intended to provide a major employment and training center for plan area residents.

Open space is a key element in the Southwest Area Plan. The plan area as it exists today is attractive to residents of the metropolitan area because of the many acres of yet undeveloped land, including farmland. As this property develops, designated public open space will become more and more important. The plan proposes an extensive network of recreational trails linking the mesa top to the river bosque; the village centers to each other, the industrial corridor to the bosque; and the northern, more urban portion of the plan area to the southern, more rural portion. The plan also proposes maintenance of the panoramic views from the eastern edge of the mesa with a permanent public easement for trails and scenic, overlook parks and a prohibition on structures extending above the Ceja Reference Line.

Although farming and ranching have played a major role in supporting South Valley families for generations, large corporate farms and ranches throughout the United States have made locally produced crops non-competitive. Combined with the growing urbanization of the metropolitan area, commercial farming and ranching in the plan area have greatly diminished. A citizen's Agricultural Task Force formulated recommendations on the preservation of agricultural land in the plan area. The task force clearly recognized the present economic situation by recommending only preservation techniques which are voluntary. Thus, agricultural uses will exist only as long as the landowners desire that they do. This creates a further need to identify and preserve public open space in the plan area to assure the continuance of lower levels of development even after the farms are gone.

Parks are proposed throughout the area in the village centers, urban center and adjacent to schools. These include a multi-locational regional park at an undesignated site east of the river and in the Hubbell Oxbow. A thirty-six hole golf course west of Coors Boulevard near Gun Club Road is also included.

The urban center designated for the area south of Westgate Heights would provide employment and shopping opportunities for residents of the plan area and the metropolitan area as well. The plan mandates a sector development plan be developed to designate zoning, land use mixes, access, and infrastructure. The urban center is envisioned to contain more residential uses and be a maximum of one fourth the size of the Winrock/Coronado Center in terms of acreage and square footage of uses.

Village centers are planned to recognize and enhance the rich historic and cultural heritage of the South Valley. The five centers in the plan are located where past and/or present residents settled and socially gathered. The plan proposes that a village center plan be developed by neighborhood planning task forces assisted by City or County planning staff. The centers would include neighborhood scale commercial and office uses, public services, residential uses, a village park or plaza, pedestrian-scale uses, and restored historic buildings. Visual, written and oral histories of the areas would be an integral part of each center.

Other historic and cultural resources throughout the plan area and outside the proposed village centers need to be identified and recognized as well. The plan proposes a joint City/County Landmarks Urban Conservation Commission to identify and provide protection measures for historic buildings. Archaeological resources are abundant throughout the area. As development occurs, these resources should be identified and conserved as appropriate. The plan endorses the Albuquerque/Bernalillo County Archaeological Resources Planning Advisory Committee Report as an important tool to accomplish this task.

The transportation element of the Southwest Area Plan delineates a network of arterial corridors to assure adequate access within the plan area and to other parts of the metropolitan area. The final network was developed after numerous public meetings and technical agency meetings on the plan. The network was also adopted by the Urban Transportation Planning Policy Board of the Middle Rio Grande Council of Governments as an amendment to the Long Range Major Street Plan. The network proposes the study of two additional river crossings, the extension of Unser Boulevard to Interstate 25, the extension of 118th Street to Pajarito Road, the extension of Paseo del Volcan from Interstate 40 to Interstate 25, and the extensions of Gibson and Rio Bravo Boulevards and Pajarito Road to Paseo del Volcan from Interstate 25. Transit and paratransit are discussed as alternative modes of transportation. Bikeways are proposed, some of which would require amendments to the Bikeways Master Plan. Rapid rail, equestrian and pedestrian modes of transportation are also discussed within the context of the plan area.

The drainage element of the plan incorporates existing and proposed Albuquerque Metropolitan Arroyo Flood Control Authority facilities and plans for flood control throughout the area. Drainage management plans for the Southwest Mesa and west to the Rio Puerco are proposed prior to development occurring. A policy in the plan would require all future development to limit the level of water runoff so as not to exceed the capacity of downstream facilities. The maintenance of Middle Rio Grande Conservancy District ditches and drains is important to continued stabilization of the water table and to provide irrigation to the remaining farmers.

The public services element of the plan proposes joint County/City provision of some human services to increase the level and quality of service and avoid duplication of costs in service delivery. Libraries are already becoming a joint City/County effort in some areas. As the population of the plan area increases, more services will be needed.

Specific policies and implementation measures are outlined for each element of the plan and a citizens' task force to monitor plan implementation, is established by policy. This will help assure residents and others who own land that the concepts for planned growth set out in the Southwest Area Plan are realized.

SECTION 1: INTRODUCTION

WHAT IS AN AREA PLAN?

An area plan is a Rank 2 plan and as such must provide policies consistent with the basic concepts contained in the Rank 1 plan, the Albuquerque/Bernalillo County Comprehensive Plan. A Rank 2 plan provides the framework for development within a large, geographic area. Lower level Rank 3 plans, which are sector development and neighborhood plans, are guided by this framework.

Specifically, the City's Development Process Manual, Volume I, provides this definition:

An area plan covers diverse, major geographic parts of the metropolitan area, typically fifteen (15) or more square miles, and specifies important development standards such as the location of major commercial and employment areas, major circulation facilities, drainage systems, open space and major parks, and/or other major public facilities and utilities. It may contain additional requirements and concepts for development within the parameters of the Comprehensive Plan policies for the area.

According to the Middle Rio Grande Council of Governments, the population of the Albuquerque urban area is currently projected to increase 80 percent between 1980 and 2010. Slightly more than half of the growth is projected to occur west of the Rio Grande. The Southwest Area Plan incorporates the Middle Rio Grande Council of Government's 2010 socioeconomic forecast totals for the southwest area reallocated to reflect the plan's proposed land uses. The level of development reflected in the Middle Rio Grande Council of Government's 2010 forecasts for the plan area may not be reached by 2010, but the Southwest Area Plan proposes policies to accommodate that level of development whenever it occurs.

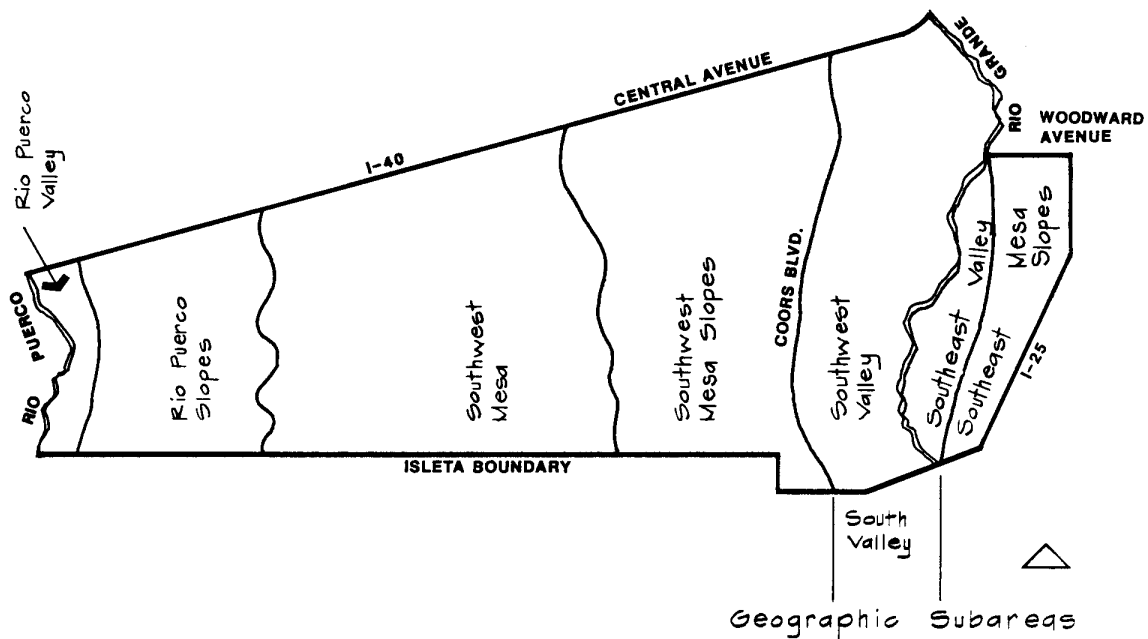
The Southwest Area Plan establishes a framework specifying how growth and development should proceed in the Southwest quadrant of Bernalillo County between now and when this level of development is reached, whether in 2010 or beyond. The plan framework was developed using the existing conditions of the area, the goals and issues identified by plan area residents and business representatives, the reactions to the three land use alternates developed during the course of the planning effort, comments received at many public meetings and at a public hearing on the Preferred Land Use Alternate and the preliminary draft of this volume, Volume IV of the Southwest Area Plan.

PURPOSES OF THE SOUTHWEST AREA PLAN

1. The Southwest Area Plan, as adopted by the Board of Commissioners of Bernalillo County and the City Council of the City of Albuquerque, is the official guide for future development in the southwest quadrant of Bernalillo County.
2. The Plan is an implementation tool for the goals and policies of the Albuquerque/Bernalillo County Comprehensive Plan.
3. The Plan is not an official zoning map nor does it imply any vested right to a particular zoning category for any specific property. Rather, it provides an overall framework of growth and development within which decisions on individual zoning cases can be made and sector development plans and neighborhood plans can be formulated to establish zoning in portions of the plan area as the need arises.
4. The Plan can be used as a tool for area residents, businesses, land owners and decision makers to ensure future development occurs according to the policies approved with its adoption.

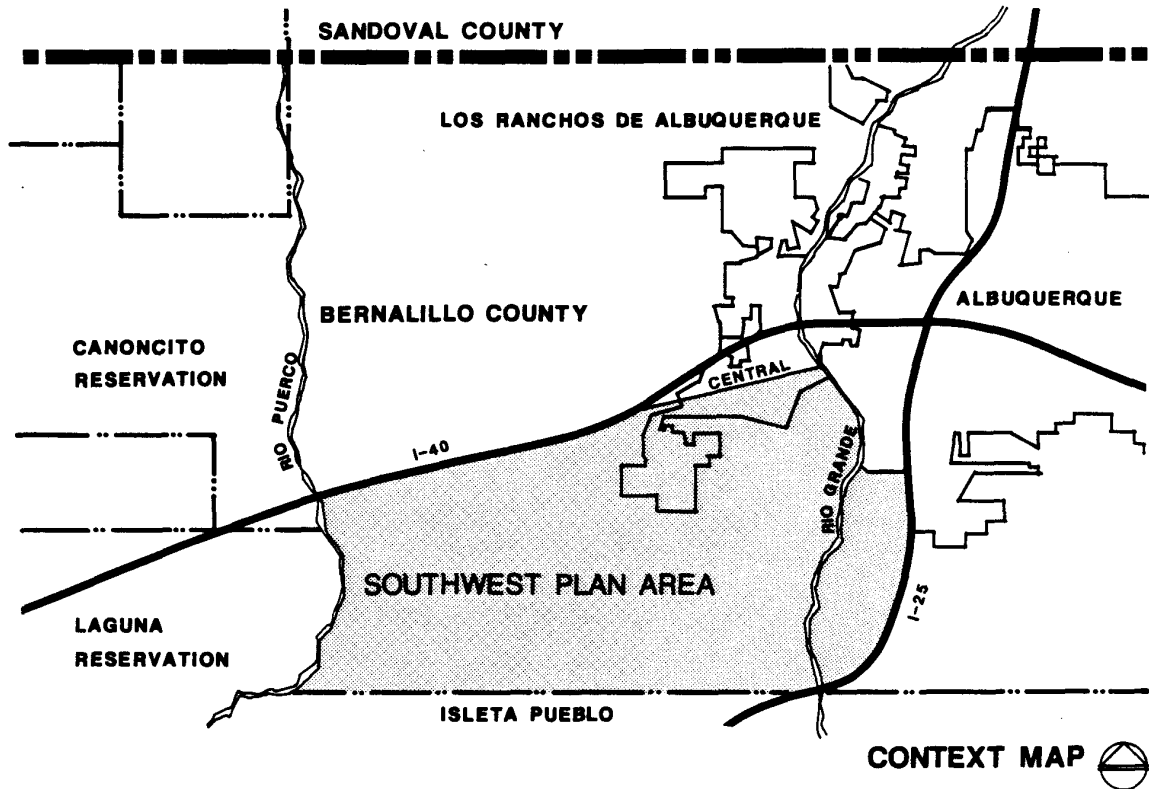
GEOGRAPHIC SUBAREAS

To avoid confusion in identifying geographic subareas within the plan's boundaries, the subareas named and shown on this map will be referred to as such throughout Volume IV of the Southwest Area Plan.



GEOGRAPHIC CONTEXT

The plan area encompasses approximately 115 square miles within Bernalillo County, an area about equal to the City of Albuquerque prior to the 1985 annexations. Only 15.5 square miles are now part of the incorporated City of Albuquerque. A substantial portion of the plan area is undeveloped. Existing development is concentrated on either side of the Rio Grande, generally in the South Valley, along Central Avenue, just west of Coors Boulevard and in the Westgate Heights area.



North of the plan area lies the rapidly developing Northwest Mesa. This portion of the metropolitan area is experiencing significant growth at the present time in commercial, office and residential uses. South of the plan area lies Isleta Pueblo where current land use is generally limited to

individual homes. A pueblo-operated bingo facility is located near Broadway Boulevard and Interstate 25. Laguna Indian Reservation lies to the west of the plan area. The land east and west of the Rio Puerco for several miles is still largely untouched by development.

Beyond the plan area to the east lies several pockets of industrial development, the Albuquerque International Airport, Kirtland Air Force Base and the Tijeras Arroyo, the largest arroyo in Bernalillo County. On top of the mesa which rises to the south of Tijeras Arroyo lies 13,000 acres of land known as Mesa del Sol presently managed for the University of New Mexico by the State of New Mexico. A master plan for development of Mesa del Sol plans for a population of 25,000 and employment for 15,000. If this level of development does occur, the effect on the Southwest area will be greatest on the roadway system.

PUBLIC PARTICIPATION IN PLAN DEVELOPMENT

Citizen participation was a major resource for the development of the Southwest Area Plan. A sixteen member Citizens' Goals Committee formulated the set of goals and issues for the plan area which guided the planning process from the beginning. (See Volume II of the Southwest Area Plan.)

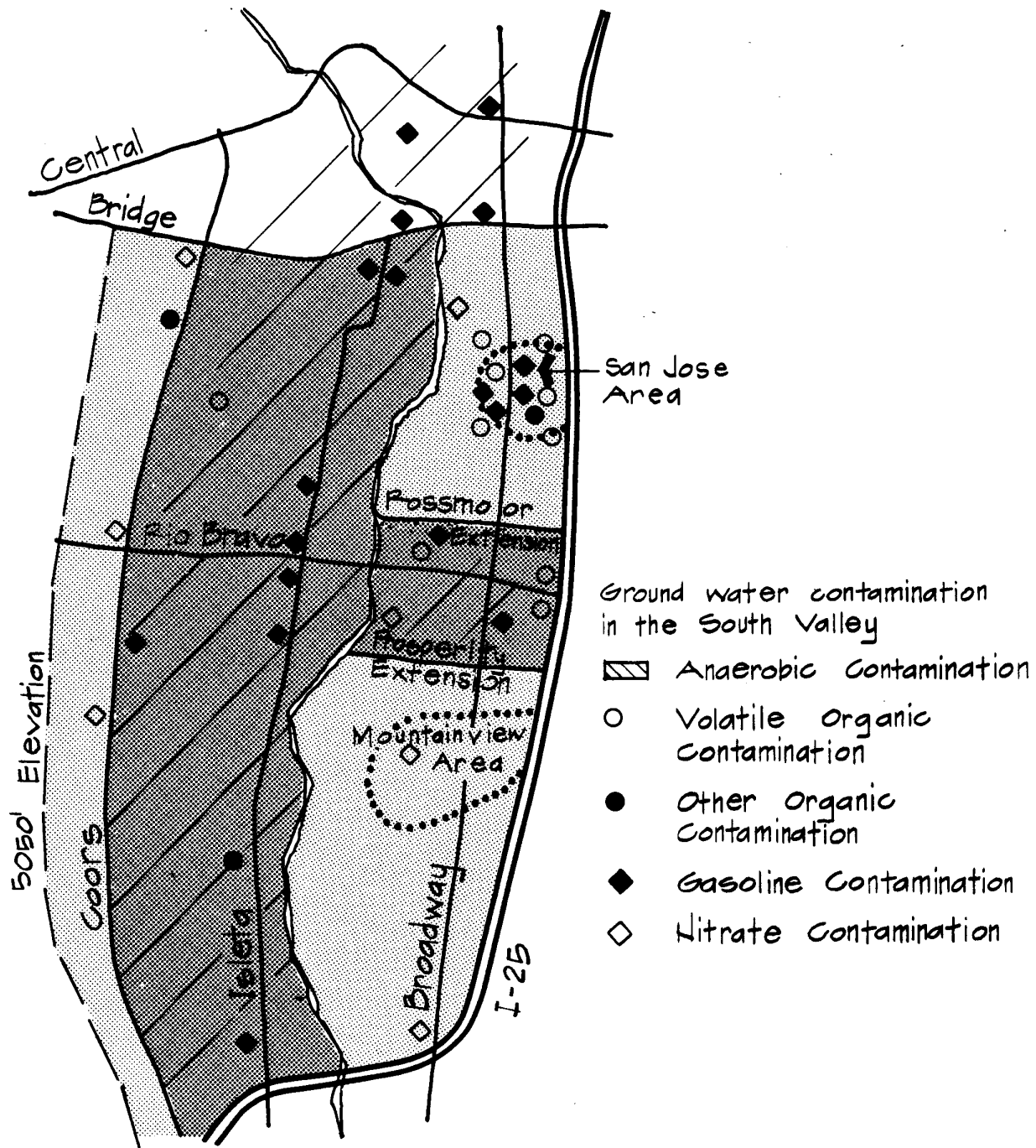


After the three land use alternates were created for Volume III of the Southwest Area Plan, area residents and landowners expressed their likes and dislikes about the land use scenarios at two public meetings held in the South Valley. From these opinions and from City and County agencies' comments, the Preferred Land Use Alternate was derived.

The Preferred Alternate was presented to the citizens of the Southwest area at a public meeting in the Valley and at a City/County Planning Commission public hearing. The public hearing gave the commissioners the opportunity to hear the concerns and comments of the area residents on the Preferred Alternate and provided direction for this last volume of the area plan.

In addition, numerous meetings have been held between technical staff and those who live and/or own land within the plan's boundaries as well as other organized groups. At these meetings, numerous ideas and concerns were discussed. A final public meeting was held in the South Valley prior to the presentation of the plan at a joint City/County Planning Commission.

SECTION 2: PLANNED GROWTH IN A FRAGILE ENVIRONMENT



Proposed Interim Standards for Individual Wells and ILWDS

Map 1

- 1 acre per dwelling unit
- ▨ 1/4 acre per dwelling unit

A large portion of land within the plan area has environmental factors which should be respected in planning for future development. If these factors are ignored, the consequences could be detrimental to the community. If considered, the existing environment can be used to shape the area in a positive way. Water quality and sensitive soils were identified as two issues of utmost importance by the Citizens' Goals Committee. (The work of the Goals Committee is presented in Volume II of the Southwest Area Plan and summarized in Appendix A).

WATER QUALITY

The primary environmental concern to be considered in planning for development is protection of the shallow aquifer. Ground water is the source of domestic water for most households in the South Valley. The aquifer is very susceptible to contamination because the water table is shallow. Depth to the seasonal high water table ranges from ten to thirty-five feet over much of the inner valley. The problem is compounded by the lack of centralized sewage disposal facilities.

The New Mexico Environmental Improvement Division recently completed a water quality study of the South Valley. (See Appendix D.) Serious and widespread contamination problems were identified. Valley-wide taste and odor problems involved elevated levels of iron, manganese, salinity and hardness. Localized problems with potential adverse health implications included contamination by nitrates, petroleum products, organic solvents and pesticides.

Elevated iron and manganese levels were detected in shallow ground water in an area encompassing one-third of the South Valley, especially the inner valley west of the Rio Grande. Iron and manganese do not pose a threat to health at the levels measured by the Environmental Improvement Division, but they are associated with unpleasant taste and smell in water and can cause staining of plumbing fixtures and laundry. Individual liquid waste disposal systems and localized decomposition of naturally occurring organic matter were identified as primary causes of anaerobic (oxygen-deficient) conditions which result in elevated iron and manganese concentrations in ground water.

Extremely high levels of nitrate contamination were identified in the Mountainview/Tijeras Arroyo area. Measured nitrate levels pose a threat to the health of infants in the affected area. The Environmental Improvement Division concluded that domestic liquid waste disposal systems may be a minor contributor to the present problem, but that the contamination resulted primarily from past discharges of nitrate salts to the groundwater, probably in the vicinity of Tijeras Arroyo. The actual source of these salts has not yet been identified.

Serious contamination of ground water has also occurred in a two square mile area of the South Valley near the City's San Jose well field. Aromatic hydrocarbons, chlorinated solvents, and pesticides have been detected in groundwater at the site. A total of six private, industrial and municipal supply wells have been shut down because of the contamination, and other wells are in danger of contamination if the plume spreads. Six known or suspected contaminant sources have been identified. An intensive investigation of the San Jose problem is underway under the auspices of the federal superfund program.

At least twenty incidents of ground water contamination with petroleum products have resulted from spills and leaking underground storage tanks in the South Valley. These contamination problems are generally local in nature and occur primarily along Isleta Boulevard and Bridge Street. Both free-floating products and dissolved organic constituents are typically present. Many contaminants pose a definite threat to human health if ingested. Contamination of soil and ground water by petroleum products poses the added danger of explosion from accumulated gases in nearby dwellings, manholes, sewers and other underground structures.

Additional, relatively isolated cases of ground water contamination have been identified west of Coors Boulevard. Eight percent of 50 wells sampled in this area had nitrate-nitrogen concentrations greater than the recommended health limit of 10 mg/l (milligrams per liter) and 32 percent exceeded 5 mg/l.

To prevent further ground water contamination, it is important to closely review new subdivisions proposed for those areas lacking municipal water and sewer services in areas where the water table is shallow, and where ground water is anaerobic or contains elevated nitrate levels. This is necessary to assure further contamination will not occur as a result of the development, and that each person in the proposed subdivision has safe drinking water.

The Environmental Improvement Division recently recommended that due to the potential for further degradation of the ground water under present conditions, a more restrictive lot size standard for on-site wells and individual liquid waste disposal systems should be implemented. The present lot size standard of one dwelling unit per 3/4 acre for individual wells and liquid waste disposal systems should be changed to a maximum density of one dwelling unit per one acre in the areas generally bounded by (1) Bridge on the north, the river on the west, Rossmoor Rd. on the south and Interstate 25 on the east; and (2) Prosperity Road on the north, the river on the west, and Interstate 25 on the south and east, and (3) Bridge on the north, the Isleta Pueblo Boundary on the south, Coors Road on the east and the 5050' elevation line on the west. For the same reason, the standard for individual on-site wells and liquid waste disposal systems should be changed to a maximum density of one dwelling unit per one and one-quarter acre in the area generally bounded by Bridge Boulevard on the north, Coors Boulevard on the west, Interstate 25 and the Isleta Pueblo on the south, the river to Prosperity Road then east to Interstate 25 and Rossmoor Road west to the river, then north along the river to Bridge Boulevard. These more restrictive density standards will apply until a solution for the ground water contamination problems is identified and implementation is underway. (See Map 1).

The quality of design and installation of individual liquid waste disposal systems and wells has also come under question. Standards for design, installation, operation and maintenance of private and community water and sewer systems would help avoid system failure such as that which occurred in the La Mesa and Barcelona Mobile Home Parks.

Preventing further ground water contamination through revised standards for individual and community water and sewer systems, proper lot sizes for subdivisions without municipal service and proper installation and monitoring of underground petroleum product storage tanks for leaks is much less expensive from an environmental and monetary standpoint than is the environmental cleanup and potential costs to human health resulting from contamination. The installation of a carefully designed and phased-in ground water quality monitoring system would help to identify problems needing attention before they become widespread and difficult to control.

The goal of providing safe drinking water in the southwest area is critical. To continue to allow this area to develop with individual wells and ILWDS will make an already critical public health problem in the South Valley worse. Further, ground water contamination in the South Valley must be eliminated. Thus, good water quality should be of utmost importance.

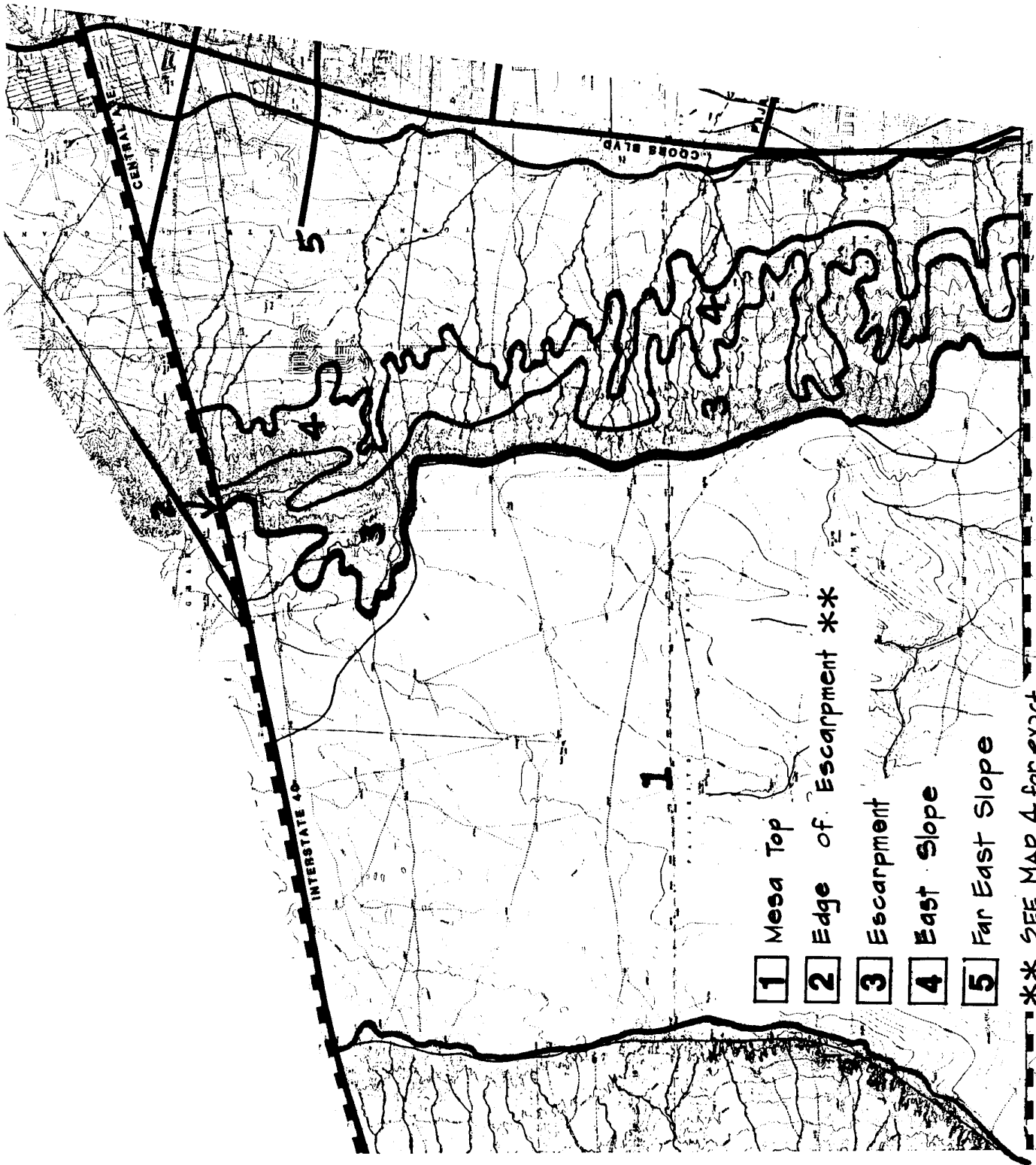
SENSITIVE SOILS

The second environmental concern to be considered in planning for development in the area west of Coors is the very porous, highly erodible soils found on the edges of the Southwest Mesa, its escarpment and lower slopes. The combination of highly erodible soils and steep topography create a very real potential for many tons of soil to erode and travel through the action of wind and water down the escarpment, to be deposited on the lower mesa slopes and in the arroyos and the Albuquerque Metropolitan Arroyo Flood Control Authority facilities west of Coors Boulevard. The same potential for high rates of erosion also exist in the plan area west of the Southwest Mesa. Analysis of the Rio Puerco area is now underway and amendments to this plan may be recommended as a result of that analysis.

The U.S. Soil Conservation Service recently completed a study titled, "Natural Resource Evaluation for the Southwest Area Plan." (See Appendix F.) The Soil Conservation Service identified five zones by soil types within its study area between the Southwest Mesa and just west of Coors Boulevard. (See Map 2.) The Southwest Area Plan has incorporated the Soil Conservation Service findings in the policies of the plan.

The predominant soils in Zone 1, the Southwest Mesa Top, belong to the Madurez-Wink Association. These soils have high wind erosion potential. In fact, the Soil Conservation Service study estimated the present soil loss on the mesa top at between five and ninety tons per acre per year. The allowable loss for these soils according to the Soil Conservation Service standards is three to five tons per year. Of the five zones analyzed, the Soil Conservation Service found Zone 1, from a soils standpoint, to be the most suited for development at varying densities. However, before the area is developed, the Soil Conservation Service and the Southwest Area Plan recommend a drainage plan for the entire mesa top be developed to provide for the increase in water runoff that will occur in the swale that flows into the Isleta Reservation.

The major portion of the Edge (or ceja) of the Southwest Mesa is included in Soil Conservation Service Zone 2. Zone 2 is defined as the geographic area between the eastern ceja (as defined on Map 4) and 500 feet west of that



edge. The Latene Sandy Loam Soils found on the ceja consist of a thin (about eleven inch deep) topsoil covering a pink gravelly loam high in lime content and extremely susceptible to wind erosion. The Soil Conservation Service allowable limit for erosion of this soil is 4 tons per acre per year. The Soil Conservation Service estimates the present calculated soil loss at between five and 90 tons per acre per year. Zone 2 and the area east of Zone 2 in Zones 3 and 4 are presently largely undeveloped and undisturbed by factors other than those in the natural environment. If not done carefully, development could greatly increase the soil erosion loss in these areas. Preserving a portion of this area above the ceja as open space would be less destructive to Zones 3, 4 and 5 which lie below on the mesa escarpment and slopes than if the top of the mesa adjacent to the ceja were developed. The Soil Conservation Service further recommends and the Southwest Area Plan concurs that individual liquid waste disposal systems, unlined sewage lagoons, and stormwater runoff holding ponds not be constructed within 200 feet of the ceja of the Southwest Mesa. Otherwise, there is a great possibility of seepage of the materials contained in these facilities out onto the mesa escarpment through the very porous soils. In addition, care must be taken to direct water runoff away from the ceja to prevent serious damage to the edge and more deposition of soils on the escarpment and slopes of the mesa.

Zone 3, the Southwest Mesa Escarpment, is a sand escarpment with Bluepoint-Kokan Soils. These soils have a generally poor suitability for growing vegetation, high soil erosion potential through the actions of wind and water and are not suited for individual liquid waste disposal systems due to their very poor capacity for holding water. Since the sandy soils won't support much vegetation and are very susceptible to considerable erosion even from foot traffic, the Soil Conservation Service recommends and the plan concurs: (1) limited development be allowed to occur on the ridges and slopes away from runoff areas, (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 or municipal sewage systems are used. Public open space is not a preferred use due to the inability to restrict use by all-terrain vehicles, the lack of vegetation to keep soil in place, the current very high soil erosion rate of 58 to 146 tons per acre per year, and the potential to destroy the fragile environment through overuse of the area by hikers and horseback riders. The presence of development scattered throughout the area will provide some security because the land will be privately owned, probably with restrictive covenants to protect the environment. No consideration is given in the Soil Conservation Service Study and the Southwest Area Plan to higher density development in Zone 3 because complete transformation of the area would be required and the natural resource as it exists today would be destroyed.

* Net Acre generally relates to areas which may be used for the building of structures. Areas occupied by uses such as streets (whether private or public), sidewalks, dedicated areas such as parks, bikeways and floodways are subtracted from the gross acreage to determine net acreage. The area necessary to satisfy open space requirements is included within the net acreage of subdivisions since it may be either private or public and may occur on each building lot at the developer's option.

Zone 4, the upper East Slope, contains 5 to 15% slopes and Bluepoint-Kokan Soils. The Soil Conservation Service states this area is suitable for a wider range of residential densities than the previous zones. However, the Soil Conservation Service recommends erosion and water control measures should be developed throughout the area as soon as possible to retard runoff and limit the amount of soil erosion which impacts Zone 5. The present estimated rate of erosion is 50 to 102 tons per acre per year with little disturbance. Bluepoint-Kokan Soils support little vegetation and hold little water, so native or naturalized landscaping should be used. Limitations and treatments recommended by the Soil Conservation Service and implemented through policies in the Southwest Area Plan for development in Zone 4 include: (1) provisions for controlling runoff should be made from the top downward as soon as possible due to the 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; otherwise, centralized community systems, or municipal sewer systems should be used to prevent surface seepage, (5) native or naturalized landscaping should be planted to reduce the use of water and fertilizer.

The last zone identified by the Soil Conservation Service Zone 5, the Far East Slope, contains Bluepoint-Kokan Soils and extends almost to Coors Boulevard. This is the deposition area for the sediment which erodes from the upslope zones. To fully realize Zone 5's development potential of mixed densities, it is important the recommendations for erosion and water control measures in Zones 3 and 4 are implemented. Once again, the use of contoured roads and limited downslope diversion dams or channels will protect development in this zone from sediment deposition and flooding.

TABLE 1. SUMMARY OF SOIL CONSERVATION SERVICE RECOMMENDATIONS BY ZONE

<u>Zone</u>	<u>Predominant Soils</u>	<u>Critical Factors</u>	<u>Development Suitability</u>
1. SW Mesa Top	Madurez-Wink	<ul style="list-style-type: none"> · high erosion potential (wind & water) · moderate to severe permeability (sewage effluent) · good vegetative suitability · moderate to slight individual liquid waste disposal systems 	<ul style="list-style-type: none"> · varying densities are possible · drainage plan for the entire mesa top before development
2. Edge of Mesa	Latene Sandy Loam	<ul style="list-style-type: none"> · high erosion potential (wind & water) · fair to poor vegetative suitability · severe individual liquid waste disposal system limitations (slope & poor · severe permeability (sewage effluent) 	<ul style="list-style-type: none"> · liquid waste disposal systems and unlined sewage lagoons with seepage potential must be at least 200' from the edge of the mesa to prevent seepage on the escarpment surface · an open space buffer strip is preferred to protect the edge and development on the slopes below · drainage must be directed away from the edge to protect it as well as development on the slopes below
3. SW Mesa	Bluepoint-Kokan	<ul style="list-style-type: none"> · high erosion potential (wind & water) · fair to poor vegetative suitability · severe permeability (sewage effluent) 	<ul style="list-style-type: none"> · limited development should be allowed only on the ridges and slopes away from runoff areas · soil should be held in place during development to avoid severe erosion · water and erosion control measures should be developed throughout the watershed to hold soil in place

(Continued)

<u>Zone</u>	<u>Predominant Soils</u>	<u>Critical Factors</u>	<u>Development Suitability</u>
4. East Slope	Bluepoint-Kokan	<ul style="list-style-type: none">· severe liquid waste disposal system limitation (slope & poor filter)· high erosion potential (wind & water)· fair to poor vegetative capacity· serve permeability (sewage effluent)· severe individual liquid waste disposal system limitation (poor filter)	<ul style="list-style-type: none">· lot size should be a maximum of 1 du/ 2 net acre if individual liquid waste disposal systems are used· public open space is not a preferred use· roads should respect natural terrain contours· low to medium range densities (medium if municipal services are provided)· water and erosion control measures should be developed throughout the area to hold soil in place· native or naturalized landscaping should be used to reduce need for water and fertilizer· roads should respect natural terrain contours
5. Far East Slope	Bluepoint-Kokan	<ul style="list-style-type: none">· deposition area for sediment from upslope zones· high erosion potential (wind and water)· fair vegetative capacity· severe permeability (sewage effluent)· severe individual liquid waste disposal system limitation (poor filter)	<ul style="list-style-type: none">· varying densities are possible here with City or centralized, maintained community services.· roads should respect natural terrain contour· water and erosion controls should be developed throughout Zones 3 and 4 to protect Zone 5

POLICIES & IMPLEMENTATION:

POLICY 1. THE CITY AND COUNTY WILL MAKE EVERY ENDEAVOR, WITHIN THEIR FISCAL AND/OR MONETARY CAPABILITIES, TO HALT FURTHER GROUND WATER CONTAMINATION WITHIN PLAN AREA.

Implementation:

Upon Plan Adoption:

- The County will strictly enforce existing regulations and ordinances which limit densities at levels which protect the groundwater. Variances to existing standards for minimum lot sizes for ILWDS and/or on-site wells will not be granted with the exception of lots of record existing at the time of adoption of the Southwest Area Plan.
- The County will implement the recommended densities in those areas shown on Map 1 until a solution to halt further degradation of the groundwater is found and implementation steps are begun.

In Fiscal Year 1*:

- The City Public Works Department will hire a consultant who is a recognized expert in solving groundwater contamination problems to recommend solutions to the problems identified by the State Environmental Improvement Division in their South Valley groundwater investigation and will recommend legislation based upon the consultant's recommendations. The County should participate with the City in alleviating the groundwater problem.

In Fiscal Year 2:

- The County and City Environmental Health and Public Works Departments will jointly develop and begin to implement uniform standards for the design, installation, operation and maintenance of individual liquid waste disposal systems and wells and community water and sewer systems which will provide adequate protection for the user and the groundwater.

In Fiscal Year 3:

- The County and City Environmental Health Departments will develop and implement (in cooperation with the Environmental Improvement Division which is the designated State regulatory agency) an underground storage tank control program if the State Environmental Improvement Division is unable to serve this area's needs through its statewide program. If the County and City develop and implement the program, the County Commission and City Council should jointly fund the program.

*Fiscal Year 1 refers to the fiscal year in which the plan is adopted. Fiscal Year 2 is the fiscal year after the plan is adopted and so on.

POLICY 2. AS DEVELOPMENT OCCURS IN SOIL CONSERVATION SERVICE ZONES 3 & 4, PROVISIONS SHALL BE MADE TO ENSURE SOIL EROSION IS CONTROLLED DURING AND AFTER CONSTRUCTION.

Implementation:

Upon Plan Adoption:

- The Development Review Board will require that measures to control soil erosion during and after construction, such as Top Soil Disturbance Permits and Dust Control Plans, are incorporated into the development proposals.

POLICY 3. TO CONSERVE THE USE OF WATER, PROTECT THE SOILS AND AVOID FERTILIZER BUILD-UP, NATIVE AND NATURALIZED LANDSCAPING SHALL BE USED IN SOIL CONSERVATION SERVICE ZONES 3 & 4 WHENEVER POSSIBLE.

POLICY 4. ROADS AND DEVELOPMENT IN SOIL CONSERVATION SERVICE ZONES 2, 3, 4 AND 5 SHALL GENERALLY FOLLOW THE NATURAL CONTOURS OF THE TERRAIN, AND ROADS SHALL BE CONSTRUCTED WITH ALL-WEATHER ARROYO CROSSINGS WHERE NEEDED.

Implementation:

Upon Plan Adoption:

- County and City Public Works Departments will develop road alignments accordingly.

POLICY 5. A TWO HUNDRED FOOT WIDE STRIP OF LAND ON TOP OF THE SOUTHWEST MESA FROM CENTRAL AVENUE/INTERSTATE 40 TO THE ISLETA PUEBLO WITH ITS EASTERN BOUNDARY AT THE EASTERN EDGE OF THE SOUTHWEST MESA SHALL BE ESTABLISHED WITHIN WHICH NO INDIVIDUAL LIQUID WASTE DISPOSAL SYSTEMS, SEWAGE LAGOONS OR STORMWATER HOLDING PONDS SHALL BE PLACED. THE EASTERN EDGE SHALL BE AS DEFINED ON MAP 4.

Implementation:

In Fiscal Year 1:

- An engineering survey should be contracted out by the City Planning Department to determine the exact boundaries of the 200 foot wide strip.

SECTION 3: LAND USE PLAN

It is the intent of the Southwest Area Plan to follow the goals and policies of the Comprehensive Plan in encouraging infill and other development within or adjacent to the existing urban water and sewer service area prior to encouraging extensive growth beyond that boundary. However, it is possible and appropriate that planned communities may be proposed for the Southwest Mesa or perhaps even the Rio Puerco area. These communities would initially construct and maintain, at their own cost, independent roadway access and water and sewer services. They would ideally contain employment opportunities as well as retail and service industries to support those who live there.

Throughout the Southwest Area Plan generalized land uses are established for large subareas of the 115 square miles within the plan area. Although not specifically mentioned in each case, it is intended that land uses be transitioned from more intense to less intense uses. For example, in the Westgate Urban Center* area, higher density residential uses should be located adjacent to the commercial and office uses. Then medium density residential uses should be located between the higher density residential and single family residential as in the Westgate Heights Subdivision.

RESIDENTIAL USES

Residential development is now and will continue to be the predominant use of developed land within the plan area. Densities called for in the plan area vary from very low in the southern half of the South Valley and along the Southwest Mesa escarpment to high within the boundaries of the urban center and along Central Avenue behind existing commercial uses. Higher densities adjacent to arterial roads north of Rio Bravo Boulevard may be appropriate if these densities are compatible with surrounding existing land uses, City water and sewer services are provided, and air quality is not adversely impacted.

The Albuquerque International Airport Master Plan completed in 1984 includes noise contours and land use guidance criteria which guide land use within the noise contours. The 65 and 60 Ldn contours extend into the plan boundaries and therefore may effect land use. While most of the land falling within these critical noise contours is in existing development, some undeveloped land remains. A large portion of this undeveloped land is targeted for industrial uses which is allowed within the airport noise contours. The tips of the 65 and 60 Ldn contours extend west of the river. Development within the 60-69 Ldn contours should fall under the following general guidelines. These new land uses should be discouraged within the 65 Ldn noise contour: Single family and multi-family residential including individual mobile homes; recreational parks and playgrounds, and educational facilities. Mobile home parks should be prohibited within this contour. If the above uses are allowed, noise level reduction construction which provides an interior noise level of 45 decibels should be encouraged. It should be understood that standard construction practices reduce the exterior to interior noise level by approximately 15-20 decibels (with all windows and doors closed).

*See Special Areas, Westgate Urban Center.

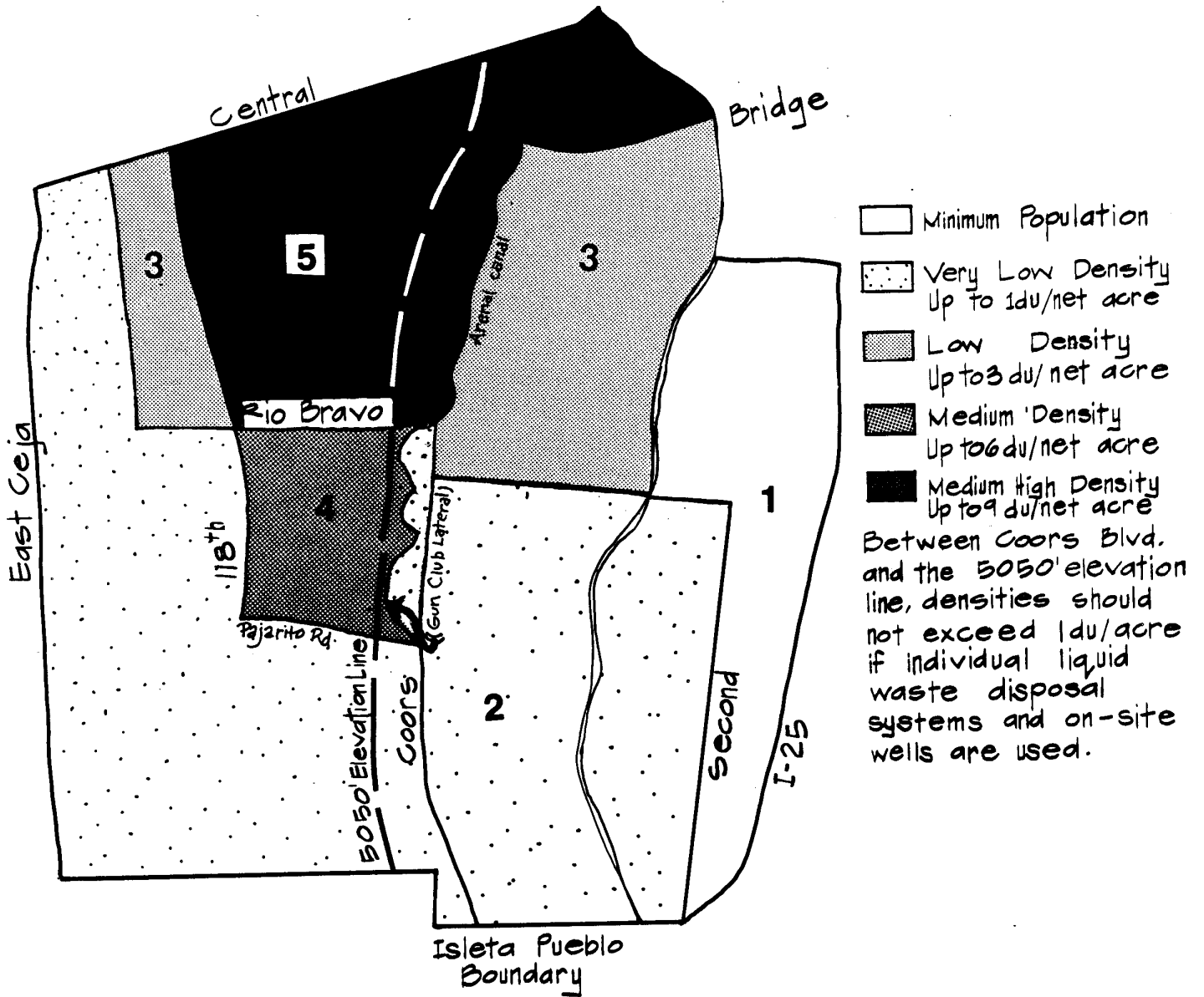
Most of the plan area densities are set at a maximum of six dwelling units per net acre. The densities south of a line drawn straight westward along existing lot lines from Los Padillas Drain to Coors Boulevard in the South Valley are set at a maximum of one dwelling unit per net acre not only in consideration of critical environmental factors, but, also, in response to the belief of people who live within and outside the plan area that this particular portion of the metropolitan area is a special place. It contains many historic and cultural traditions unique to the South Valley and its residents. With the growing realization that the Valley and its many acres of undeveloped land is slowly but steadily changing under the pressures of urbanization, residents have clearly stated they want future growth for the area planned to protect the more rural lifestyle. The lower residential densities in the majority of the plan area will help the southwest portion of the metropolitan area retain its rural character. The Comprehensive Plan also recognizes the special nature of the South Valley by designating the portion of the Valley south of Bridge Boulevard as Semi-Urban and Rural and Open.

The lower densities called for in portions of the mesa escarpment and slopes west of the Gun Club Lateral are a partial departure from Goal 2 of the Citizens' Goals Committee. This goal recommended higher density housing and commercial uses on the slopes west of the Gun Club Lateral. However, at the time the goals were developed, the Soil Conservation Service study had not revealed the extent of the soil erosion problem and the possible consequences of combining the porous nature of those soils with individual liquid waste systems. For this reason, Goal 2 has been only partly realized in the plan. However, another part of Goal 2 called for low-density housing and agriculture in the South Valley. The Southwest Area Plan clearly follows that recommendation.

The Southwest Area Plan is divided into five residential density areas. (See Map 3.)

RESIDENTIAL AREA 1. Minimal additional residential development is recommended within the light industrial corridor east of the river. Additional residential development would be appropriate west of the Barr Canal and east of the river if adequate buffering were required to separate the light industrial corridor east of the Barr Canal, and if densities for ILWDS and on-site wells as outlined on Map 1 are upheld until a solution to the groundwater contamination is found and implemented. Industrial use is in general conformity with the Comprehensive Plan designation of Developing Urban. Ground water in this area contains some contamination, and the desire is to minimize further degradation from uncontrolled industrial discharges or additional individual liquid waste disposal systems on small lots. Since several modes of transporting industrial products exist nearby, (i.e. rail, interstate, airport), and some industry already exists, the area is better suited for additional industrial development provided adequate steps are taken to protect the ground water.

RESIDENTIAL AREA 2 contains the southern half of the South Valley generally south of the Adobe Acres Subdivision area with a depth to ground water of less than thirty-five feet. Area 2 also contains the Southwest Mesa escarpment and a portion of the Southwest Mesa slopes with highly porous and erodible Bluepoint-Kokan soils.



Residential Areas Map 3

Note: See Table 2, following,
for density exceptions

For these reasons, a maximum density of one dwelling unit per net acre is recommended even if maintained, centralized community systems or City water and sewer services are available. The State Environmental Improvement Division suggests no higher than 1 dwelling unit per 1 1/4 acre for individual wells and liquid waste disposal systems for most of the Southwest Valley in Residential Area 2 until a permanent solution to the ground water contamination is identified and implemented.

The portion of Area 2 located within Zone 3 of the Soil Conservation Service Map should have development only on the ridges and slopes to escape the potential for flooding and avoid disrupting the fragile soils. If on-site wells and individual liquid waste disposal systems are used, a maximum density of one dwelling unit per two acres is recommended by the Soil Conservation Service.

Significant portions of Area 2 contain land currently zoned A-1 and used for agricultural uses. It is important that farming and other agricultural uses be allowed and even encouraged to continue as long as the landowner wishes to pursue such uses. The Southwest Area Plan indicates the appropriate uses for land when the agricultural use is no longer viable. Comprehensive Plan densities are generally appropriate for the portion of the South Valley in Area 2.

RESIDENTIAL AREA 3 should have densities up to three dwelling units per net acre, reflecting availability of City water and sewer in this portion of the South Valley. The somewhat higher densities are in conformance with the Comprehensive Plan and acceptable to most area residents. Similar densities in the portion of Area 3 which is west of 118th Street reflect the capability of the soil to support more intense residential use than in Area 2 if the development uses centralized community sewage systems, or municipal sewer systems. If individual liquid waste disposal systems are proposed, large lot sizes (1 dwelling unit per net acre) should be required. Also, water and erosion control measures are needed to limit the amount of sediment deposited from this area on Soil Conservation Service Zones 4 and 5 below.

RESIDENTIAL AREA 4, located west of the Gun Club Lateral, south of the extension of Rio Bravo Boulevard westward, north of Pajarito Road and east of 118th Street, should have densities of up to 6 dwelling units per net acre except in the portion of Area 4 which lies between the Gun Club Lateral and the 5050' elevation line. In this segment, densities should not exceed 1 dwelling unit per net acre due to existing nitrate contamination in ground water unless centralized, maintained community systems or City water and sewer are provided. All of Residential Area 4 lies within the soil deposition area for sediment from Soil Conservation Service Zones 3 and 4.

RESIDENTIAL AREA 5, located south of Central Avenue, east of 118th Street, west of the Rio Grande between Rio Bravo and Bridge, otherwise west of the Arenal Main Canal, and north of Rio Bravo Boulevard, contains the highest proposed densities for the plan area. Up to 9 dwelling units per net acre could be accommodated without significant adverse impact on the environment or existing neighborhoods. However, the portion west of Coors Boulevard lies within the identified soil deposition area for sediment upslope. City water

and sewer are presently available upon application. Individual wells and liquid waste disposal systems should not be allowed between the 5050' elevation line and Coors Boulevard due to their potential to further increase the existing high nitrate concentrations.

The proposed Westgate Urban Center is located in Area 5. The urban center and just south of Central Avenue behind the existing commercial uses are appropriate locations for higher density residential uses-up to 30 dwelling units per net acre-provided adequate access is available, City water and sewer services are provided, adjacent zoning is compatible and the development is not detrimental to air quality.

The remainder of the plan area on top of the Southwest Mesa, within the Rio Puerco slopes and the Rio Puerco Valley lies outside the present urban water and sewer services boundary. The costs of extending services to these areas are very high. However, there are several large, one-owner landholdings which provide the opportunity for developing planned communities with a large degree of self-sufficiency per the goals of the Citizens Goals Committee.

To assure quality development of planned communities, development plans for such communities outlining proposed subdivision and zoning, infrastructure provision, drainage plans and environmental protection should be required of developers and approved by the appropriate jurisdiction.

POLICIES & IMPLEMENTATION

POLICY 6. THE RESIDENTIAL DENSITIES CONTAINED IN TABLE 2 SHALL BE THOSE CONTROLLING ZONING IN THE PLAN AREA.

POLICY 7. PLANNED COMMUNITIES SHALL BE ZONED THROUGH THE SECTOR DEVELOPMENT PLAN PROCESS.

POLICY 8. BETWEEN HIGHER AND LOWER INTENSITY LAND USES AND IN AREAS ADJACENT TO ARTERIALS, THERE SHALL BE LAND USES WHICH ACT AS TRANSITION TO AVOID ADJACENT INCOMPATIBLE LAND USES.

TABLE 2. RESIDENTIAL AREA DENSITIES AND IMPLEMENTATION

RESIDENTIAL AREA	MAXIMUM DENSITIES W/ON-SITE WELLS AND INDIVIDUAL LIQUID WASTE DISPOSAL SYSTEMS	MAXIMUM DENSITIES W/MAINTAINED CENTRALIZED COMMUNITY OR MUNICIPAL WATER AND SEWER SYSTEMS	Implementation Step
RA-2 outside SCS* Zone 3	1 du**/net acre 1 du/1-1/4 net acre (between Rio Bravo Blvd. & Prosperity Rd.) (See Map 1)	1 du/net acre	
RA-2 inside SCS Zone 3	1 du/2 net acres	1 du/2 net acres at least until below is completed	
RA-3	1 du/net acre	3 du/net acre & 20 du/net acre***	
RA-4	1 du/3/4 acre (state standard)	6 du/net acre	
RA-5	1 du/net acre (Coors to 5050' elevation) 1 du/3/4 acre (state standard) 1 du/net acre (Coors to 5050' elevation)	9 du/net acre 30 du/net acre***	

* Soil Conservation Service

** dwelling unit

*** Up to 20 du/net acre where so indicated by the West Route 66 Sector Development Plan, except up to 30 du/net acre in Westgate Urban Center provided adequate roadway access and City water and sewer services are available, and the development is not detrimental to air quality.

IMPLEMENTATION:

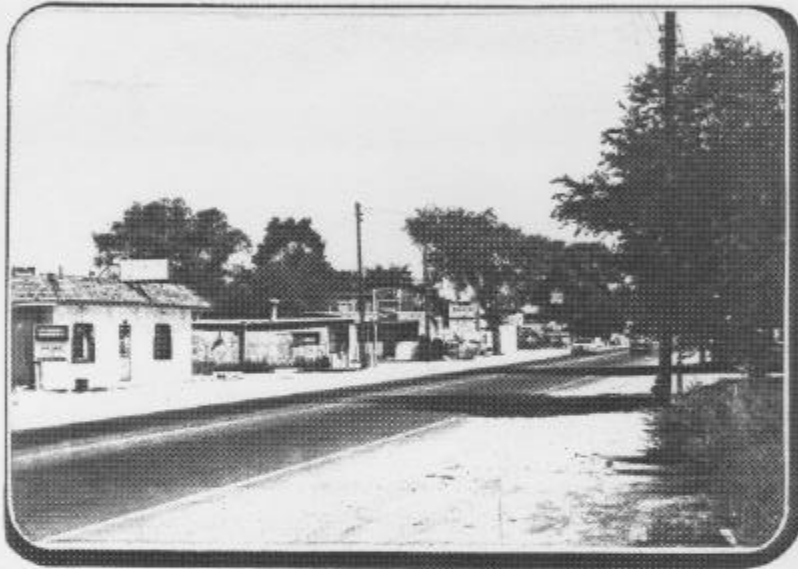
In Fiscal Year 1

The City Planner and County Zoning Administrator will jointly develop the appropriate zoning code text amendments, design overlay zone, grading policy and other measures necessary to implement the proposed limited development on the Southwest Mesa Escarpment within Residential Area 2 and Soil Conservation Service Zone 3.

COMMERCIAL AND OFFICE USES

The Comprehensive Plan policy for commercial development in rural areas states:

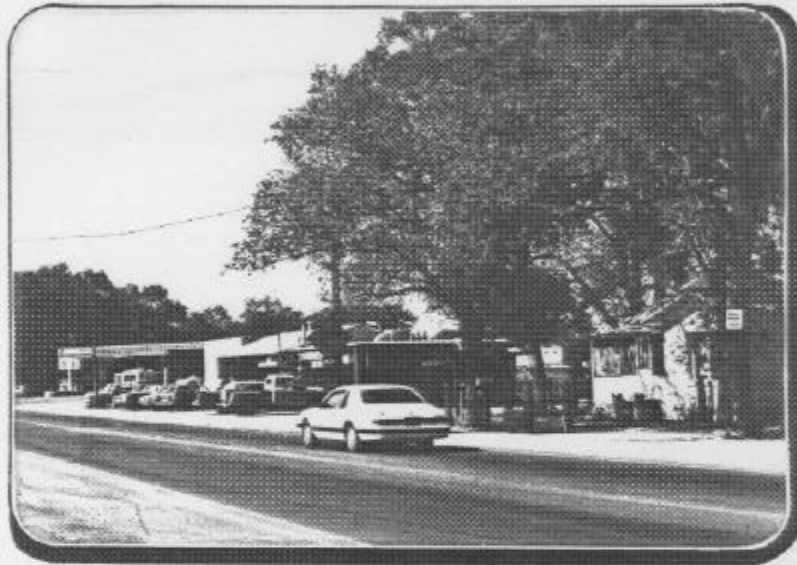
"Neighborhood rather than regional-scale commercial centers are appropriate for rural areas. Strip commercial development should be discouraged. Instead, commercial development should be clustered around major intersections and within designated mountain villages."



Isleta Boulevard Strip Commercial Uses

Several of the existing arterial roadways such as Isleta Boulevard, Coors Boulevard, Bridge Boulevard and Central Avenue have small scale commercial and office uses with unlimited driveway access. These strip commercial land uses create traffic congestion and safety hazards, increase air pollution by slowing down vehicular traffic and sometimes lead to poor economic conditions when the amount of commercial uses exceeds the demand.

The strip commercial uses now found along portions of the major roadways will continue to provide services and products to area residents. However, when the opportunity occurs, driveways serving these individual shops should be combined where possible, especially along those roads meant to function as arterials. Commercial and office centers clustered at some major intersections, as opposed to additional strip commercial uses with unlimited access, should be permitted in the plan area north of Pajarito Road as market demand indicates.



Isleta Boulevard Strip Commercial Uses

Two roadways within the plan area, Bridge and Isleta Boulevards, need detailed study of existing and future land uses, existing and future roadway functions and corresponding design and right of way needs, as well as an examination of economic development opportunities. Corridor plans to examine these issues are important to the revitalization of the adjacent land uses and efficient functioning of the roads. Isleta Boulevard's historic importance as part of El Camino Real should be a primary consideration in that road's corridor plan.

Neighborhood scale commercial and office uses south of Pajarito Road are most appropriately located within the proposed historic Pajarito and Los Padillas Village Centers (See Special Areas, Village Centers.) Neighborhood-scale commercial and office is defined as service-oriented, businesses to meet the day-to-day needs of residents in the immediate area. Specific uses permitted are those included in the City and County C-1 Zones.

The highest intensity commercial and office uses would be contained in the urban center near Westgate Heights to provide employment opportunities and a wider range of shopping for area residents. Vehicle miles traveled would be reduced for those plan area residents seeking a major center for shopping. The stores and offices could also provide much-needed additional economic activity for the area. (See Special Areas: Westgate Urban Center.)

POLICIES & IMPLEMENTATION:

POLICY 9. PLANS AND DESIGNS FOR ALL PROPOSED NEW ARTERIALS AND EXTENSIONS OR RECONSTRUCTION OF EXISTING ARTERIALS SHALL CONSIDER DRIVEWAY CONSOLIDATION OR OTHER ACCESS CONTROL FEATURES APPROPRIATE TO THE PLANNED FUNCTION OF THE ROADWAY.

POLICY 10. WHEN ZONE CHANGE REQUESTS, SPECIAL USE PERMIT REQUESTS OR SITE DEVELOPMENT PLANS FOR COMMERCIAL AND OFFICE USES ARE RECEIVED BY THE COUNTY OR CITY FOR PROPERTY WITHIN THE PLAN AREA INVOLVING ACCESS ON EXISTING OR PROPOSED ARTERIAL ROADWAYS, CONSOLIDATION OF DRIVEWAY ACCESS POINTS WITH ADJACENT PROPERTIES AND ELIMINATION OF UNNECESSARY ACCESS ONTO THE ARTERIAL SHALL BE REQUIRED WHENEVER POSSIBLE.

POLICY 11. COMMERCIAL AND OFFICE DEVELOPMENT SHALL BE ENCOURAGED NORTH OF PAJARITO ROAD IN AREAS WHERE CLUSTERING OF SUCH USES AND COMBINED DRIVEWAY ACCESS IS POSSIBLE. ADDITIONAL STRIP COMMERCIAL ALONG ARTERIALS SHALL BE DISCOURAGED.

POLICY 12. NEIGHBORHOOD SCALE COMMERCIAL AND OFFICE USES SHALL BE LOCATED WITHIN THE VILLAGE CENTERS.

Implementation:

- The village center plans will contain provisions for such uses to be located within the village centers as deemed appropriate.

POLICY 13. ALL PROPOSED COMMERCIAL AND OFFICE USES TO BE LOCATED SOUTH OF PAJARITO ROAD SHALL BE NEIGHBORHOOD-SCALE AND LOCATED WITHIN THE LOS PADILLAS AND PAJARITO VILLAGE CENTERS UNTIL SUCH TIME AS THE VILLAGE CENTER AREAS HAVE SUFFICIENT COMMERCIAL AND OFFICE USES AS PREVIOUSLY DETERMINED BY THE VILLAGE CENTERS PLANS.

Implementation:

- A developer proposing commercial and office uses south of Pajarito Road in addition to the amount proposed for these two village centers will perform a market analysis and submit it to the appropriate jurisdiction for examination and determination of need.

POLICY 14. CORRIDOR PLANS SHALL BE DEVELOPED FOR BRIDGE AND ISLETA BOULEVARDS.

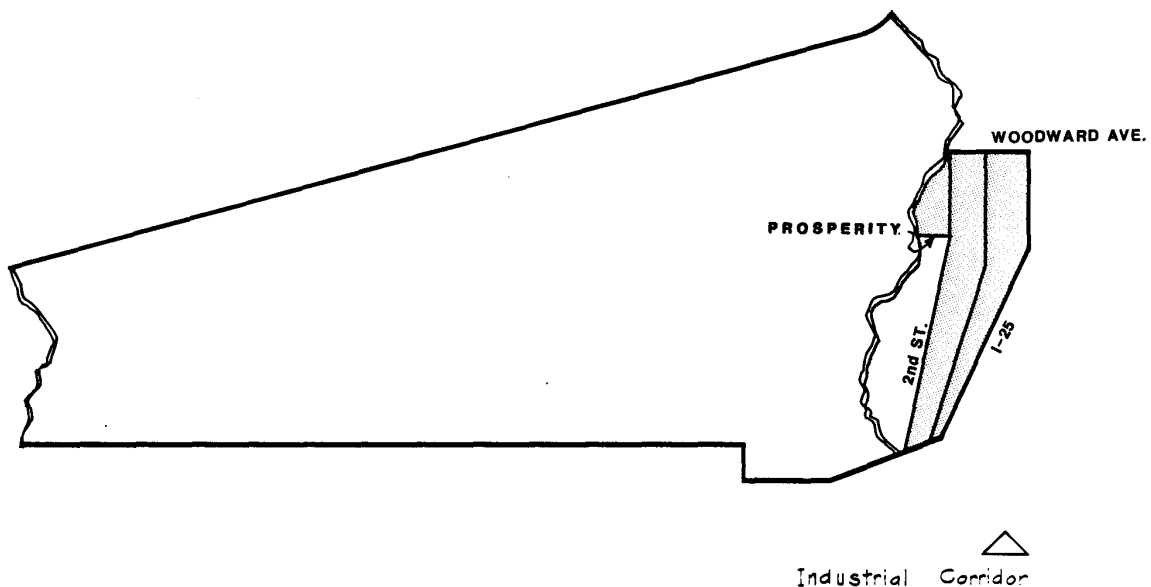
Implementation:

In Fiscal Year 3:

- The City Planning Department and City Public Works Department will program these corridor plans into the City Multi-Year Planning Program.
- The County Public Works Department will actively participate in the corridor plan for Isleta Boulevard.

INDUSTRIAL USES

East of Second Street a partially developed industrial corridor presently exists. A number of industrial and manufacturing uses including a brick manufacturing plant, a lumber yard, a poultry egg producer, an oil company distribution center and a meat packing plant are scattered throughout the area. The area east of the river (north of Prosperity Road), and east of Second Street (south of Prosperity Road) within the plan area should be developed as a light industrial corridor.



Industries which previously existed here as well as some of the present industries began operations many decades ago when the railroad, which still exists next to Second Street, was the prime mover of people and goods. Few regulations existed at that time to protect the environment. In fact, few

people were then aware that they should be concerned about the preservation of clean air and water. In the 1960s, people became aware that clean air and water are essential to maintain human health. Regulations and ordinances to protect the environment came into being.

Although the problems have existed for decades, the full extent of the contamination of the shallow aquifer in the South Valley is now better understood. Decades of indiscriminate use of farm fertilizers, dumping of hazardous wastes and the widespread use of cesspools and septic tank systems in porous soils have seriously affected the groundwater. Even though regulations presently exist which are intended to prevent further contamination, it still continues.

It is believed that certain industrial uses are still a viable land use for this area today. Good access to the railroad, interstate highway and airport as well as the present industrial uses support additional industrial use in the area. However, continuing concern for the quality of ground water and the presence of the shallow water table, which is less than thirty-five feet below the surface in many places in the Valley, have prompted the recommendation that additional land uses within the corridor be restricted to light industrial. Proposed uses which have any potential to produce liquid industrial wastes would not be permitted. Industry which legally existed before adoption of the Southwest Area Plan will be allowed to remain as long as they meet present and future environmental regulations to which, by law, they must conform.

In addition, a water quality plan of action should be developed and implemented as soon as possible. This action plan would identify existing and potential ground water quality problems likely to be increased by industrial uses and outline a plan of action to ensure the ground water will not be affected. Enforcement of all applicable State and local regulations concerning industrial discharges will also be a part of this plan.

Expansion of the existing industrial corridor will provide an economic boost to the area and create additional employment opportunities for residents of the South Valley as well as the entire metropolitan area. The 1980 Census revealed that South Valley residents had a higher unemployment rate (9.7%) than the metropolitan area (6.7%). Job training should also be provided to teach new employees valuable skills to increase their income-earning potential.

Limited industrial uses are also permitted where appropriate elsewhere within the plan area. Then, care must be taken to protect the ground water in those areas which contain porous soils and a shallow water table.

POLICIES AND IMPLEMENTATION

POLICY 15. INDUSTRIAL USES OUTSIDE THE LIGHT INDUSTRIAL CORRIDOR ARE DEFINED AS USES PERMITTED IN THE COUNTY AND CITY M-1 AND M-2 ZONES OR THE CITY IP ZONE. LIGHT INDUSTRIAL USES WITHIN THE LIGHT INDUSTRIAL CORRIDOR SHALL BE DEFINED BY THE WATER QUALITY PLAN AND THE SECTOR DEVELOPMENT PLAN.

POLICY 16. A LIGHT INDUSTRIAL CORRIDOR IS THE PREFERRED USE FOR THE LAND LOCATED SOUTH OF WOODWARD ROAD, EAST OF THE RIVER (NORTH OF PROSPERITY AVENUE) AND EAST OF SECOND STREET (SOUTH OF PROSPERITY AVENUE) AND WEST AND NORTH OF INTERSTATE 25.

Implementation:

In Fiscal Year 1:

- The County Zoning Administrator with the assistance of the City Planning Department will develop an Industrial Park (IP) zone for the County to be presented as a text amendment to the County Planning Commission and County Commission. The County IP zone should restrict permissive and conditional uses to those which will not produce liquid industrial wastes.

In Fiscal Year 2:

- The City and County may develop a sector development plan for the proposed industrial area which specifically examines and establishes appropriate zoning, includes a drainage plan consistent with that developed by the Albuquerque Metropolitan Arroyo Flood Control Authority for the area, protects existing residential uses, makes provisions for implementation of the proposed open space trails, addresses existing and potential pollution problems and incorporates the recommendations of the water quality plan of action in addition to other requirements as specified by the County and City.
- A water quality plan of action for this area may be developed by a consultant at the direction of the City and County Environmental Health Departments with the technical assistance of the City and County Public Works Departments within the designated industrial corridor. Its major components will include: identification of existing problems, identification of potential water quality problems if the area is developed as proposed, a plan of action that ensures water quality would not be affected by the proposed industrial corridor, and requirements for the environmentally safe disposal of all industrial discharges and safe storage of all hazardous material present on-site, and an on-going groundwater monitoring plan. If a landowner within the industrial corridor

wants to develop prior to completion of the SWAP industrial corridor water quality plan of action, the landowner need not wait for the full water quality plan to be completed, but must strictly follow existing requirements of the State's Hazardous Waste Regulations and Ground Water Discharge Plan and the County Liquid Waste Ordinance.

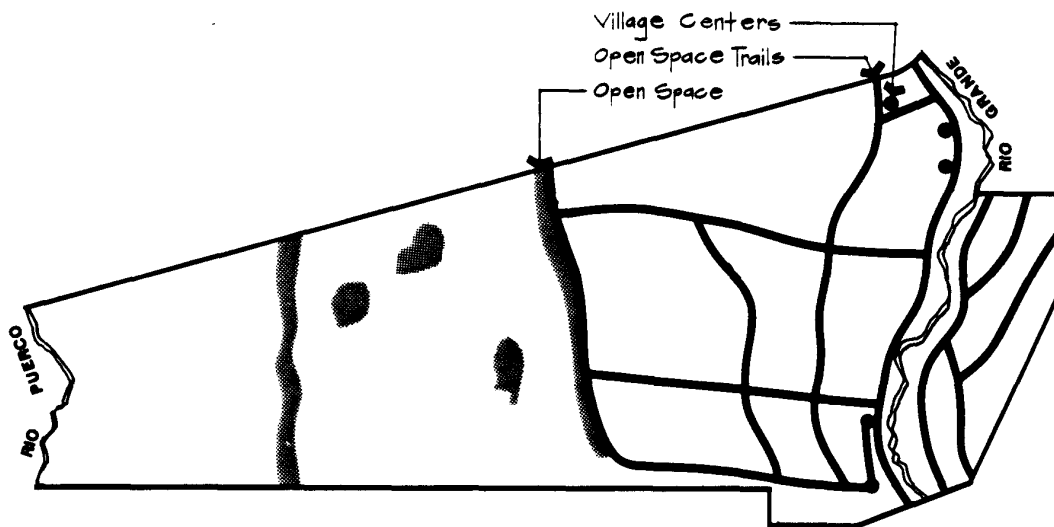
POLICY 17. EXISTING INDUSTRY, WHICH STORES, HANDLES OR DISPOSES OF HAZARDOUS SUBSTANCES SHALL MEET REGULATIONS ESTABLISHED BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY AND STATE ENVIRONMENTAL IMPROVEMENT BOARD TO: (a) PREVENT SPILLS, (b) MONITOR AND ENFORCE PROPER STORAGE, HANDLING AND DISPOSAL AND (c) DEVELOP SPILL CLEAN UP CONTINGENCY PLANS.

Implementation

All applicable regulations governing management of hazardous waste and discharges potentially affecting ground or surface water are enforced by the State Environmental Improvement Division on an on-going basis. The City Environmental Health Department will continue to provide free, non-regulatory technical assistance to generators of hazardous waste to assist them in properly managing their waste streams.

OPEN SPACE

The 1975 Comprehensive Plan provided the framework within which land was designated as major developed parks, major public open space, public easements or rights, private agriculture and private grazing land. The two major Comprehensive Plan goals upon which open space and parks are designated refer to enhancing recreational opportunities, providing visual relief to urbanization and preserving the unique natural features of the metropolitan area by achieving a compatible pattern of development and open space to respect the river land, mesas, mountains, volcanoes and arroyos.



Residents of the plan area and others who have attended the public meetings as the Southwest Area Plan has evolved recognize additional development will occur as the pressures of urbanization increase. There is a deep commitment to conserve enough open space and park land throughout the area to maintain the rural quality of life which many residents maintain is their reason for living within the plan area. The Citizens' Goals Committee ranked recreational opportunities as one of the primary ways to preserve and enhance the area's quality of life. The Southwest Area Plan, therefore, contains a strong parks and open space element to implement the goals and policies of the Comprehensive Plan in a practical manner consistent with the expressed desires of residents and landowners both within the plan area and throughout the metropolitan area.

The Comprehensive Plan defines Major Public Open Space as "any large [public] area of land (or water) which is left primarily undeveloped." It is meant to serve one or more of these functions:

- conservation of natural resources
- protection of the public from flooding or other hazards
- provision of recreational services
- satisfaction of psychological needs for space.

Due to the relatively undeveloped and unplatted nature of a large portion of the land within the southwest area, a unique opportunity exists to conserve important open space features and, at the same time, help preserve some of the feeling of openness and rural lifestyle which is a part of the history and culture of the South Valley.

The 1975 Comprehensive Plan designated these features within the southwest area as Major Public Open Space:

- Don Felipe Oxbow
- Hubbell Oxbow
- Tijeras Arroyo
- a portion of the Arenal Main Canal from north of Central Avenue to Rio Bravo Boulevard, then the Gun Club Lateral to Gun Club Road
- the Snow Vista Channel from Central Avenue to Blake Road
- the Rio Grande bosque
- other water conveyance structures such as the Isleta Drain, Los Padillas Drain and the Arenal Canal

These areas were designated as public easements or rights in the 1975 Comprehensive Plan:

- most of the branches of the major arroyos on the Southwest Mesa eastern slopes,
- the depressions known as playa lakes
- the Southwest Mesa eastern and western cejas and escarpments
- the Rio Puerco

Designated private agricultural land in the 1975 Comprehensive Plan included the Southwest Valley south of Bridge Boulevard, the Southeast Valley south of the Barr Canal, and a portion of the Rio Puerco Valley south of Central Avenue. Designated private grazing lands included the entire Southwest Mesa and Rio Puerco Slopes and Valley excluding the portion designated as private agriculture.

The Southwest Area Plan proposes to retain and find ways to conserve those portions of 1975 Comprehensive Plan-designated open space areas which are still undeveloped and economically feasible to conserve. In addition, some new open space areas are proposed to provide a comprehensive network of open space trails.

Open space areas designated in the 1975 Comprehensive Plan and still viable include:

- Hubbell Oxbow
- playa lake depressions
- Rio Puerco
- a portion of the Southwest Mesa cejas and escarpments
- right-of-way along those arroyos, canals, drains, ditches or portions thereof needed as part of the trail network proposed in the Southwest Area Plan
- the Rio Grande bosque (already a state park)
- most of the South Valley as private agricultural land and all of the Southwest Mesa and Rio Puerco as grazing land ... suitable for public support such as preferential tax assessment and other voluntary means.

Areas designated in the 1975 Plan for Major Public Open Space and considered no longer viable as open space within the plan area include:

- the Don Felipe Oxbow. A residential subdivision occupies the southern half and the northern half is proposed for development, also.
- the entire Southwest Mesa eastern and western cejas and escarpments. A smaller portion of the eastern ceja and escarpment than was designated in the original Comprehensive Plan is proposed for open space. (See Cejas and Escarpments in this section for a complete explanation).

The Hubbell Oxbow

Approximately twenty years ago, Bernalillo County zoned all undeveloped land A-1 which permits agricultural and rural residential activities or development up to one dwelling unit per acre. This zone is referred to as the rural agricultural zone. Part of the land the County zoned A-1 was later designated in the 1975 Comprehensive Plan as Major Public Open Space, Public Easements or Rights, and Private Grazing and Agricultural Land. For example, the southern half of the Don Felipe Oxbow had existing zoning at the time the 1975 Comprehensive Plan designed it proposed Major Public Open Space. The existing A-1 zoning paved the way for residential subdivision. The northern, undeveloped portion of this oxbow also is zoned A-1 which allows development of one dwelling unit per acre. The same situation exists for other Comprehensive Plan-designated Rural and Open Space areas in the County.

A portion of the south half of the Hubbell Oxbow is owned and maintained by the Albuquerque Metropolitan Area Flood Control Authority as part of its Hubbell Lake Facility designed to control flood waters at runoff rates equal to the 100 year storm. This oxbow has been farmed for many years and residents of the South Valley have a strong desire to see it remain in agricultural use, as park land or open space. It is one of the sites of the multi-locational, regional park designated within the plan area. Active recreational uses are proposed near the Coors/Rio Bravo Boulevard intersection and passive picnic and hiking uses, including a County tree nursery, are proposed to the south. The Hubbell Lake Facility presently acts as a bird sanctuary. Passive park uses are proposed adjacent to it to protect the sanctuary.

Playa Lakes

The original Comprehensive Plan designated the depressions commonly called playa lakes as appropriate for Public Easements or Rights. These lowlying areas are intermittently flooded but have no natural drainage outlet. To avoid the cost of constructing outfall structures and providing maintenance for the playas, the Comprehensive Plan and the Far Northwest Drainage Management Plan prepared in March 1986 by Bohannon, Huston, Inc., recommend limiting development densities around the playas and retaining them in an undeveloped state.

The Southwest Area Plan calls for a drainage management plan for the entire Southwest Mesa including the playa lakes and surrounding area. It should address the issue of appropriate development around the playas. The playa lakes should be retained in their natural state or used as park land or open space, both of which are compatible, multi-use combinations within flood-prone areas.

Rio Puerco

Located several miles from the present municipal limits of Albuquerque, the Rio Puerco was designated in the 1975 Comprehensive Plan as an area appropriate for Public Easements or Rights for drainage access and protection of the public from the hazard of flooding. More recently, the Rio Puerco area has gained the attention of archaeologists as an area rich with the evidence of past cultures.

The U.S. Soil Conservation Service is completing a soils analysis for the western half of the Southwest Mesa, the Rio Puerco Slopes and the Rio Puerco Valley, similar to the analysis completed for the eastern half of the Southwest Mesa and the Southwest Mesa Slopes to the Gun Club Lateral. It is anticipated the second study will provide data to use in establishing development guidelines and defining open space areas for the Rio Puerco area. It is, therefore, appropriate that this area remain designated as a potentially valuable open space area until the Soil Conservation Service study is completed, development guidelines can be set up and open space areas defined. Any development proposed within the Rio Puerco Valley or the western slopes of the Southwest Mesa in the interim should be required to propose a Comprehensive Plan amendment if the development would require a zone change from the existing A-1 zoning.

Cejas and Escarpments

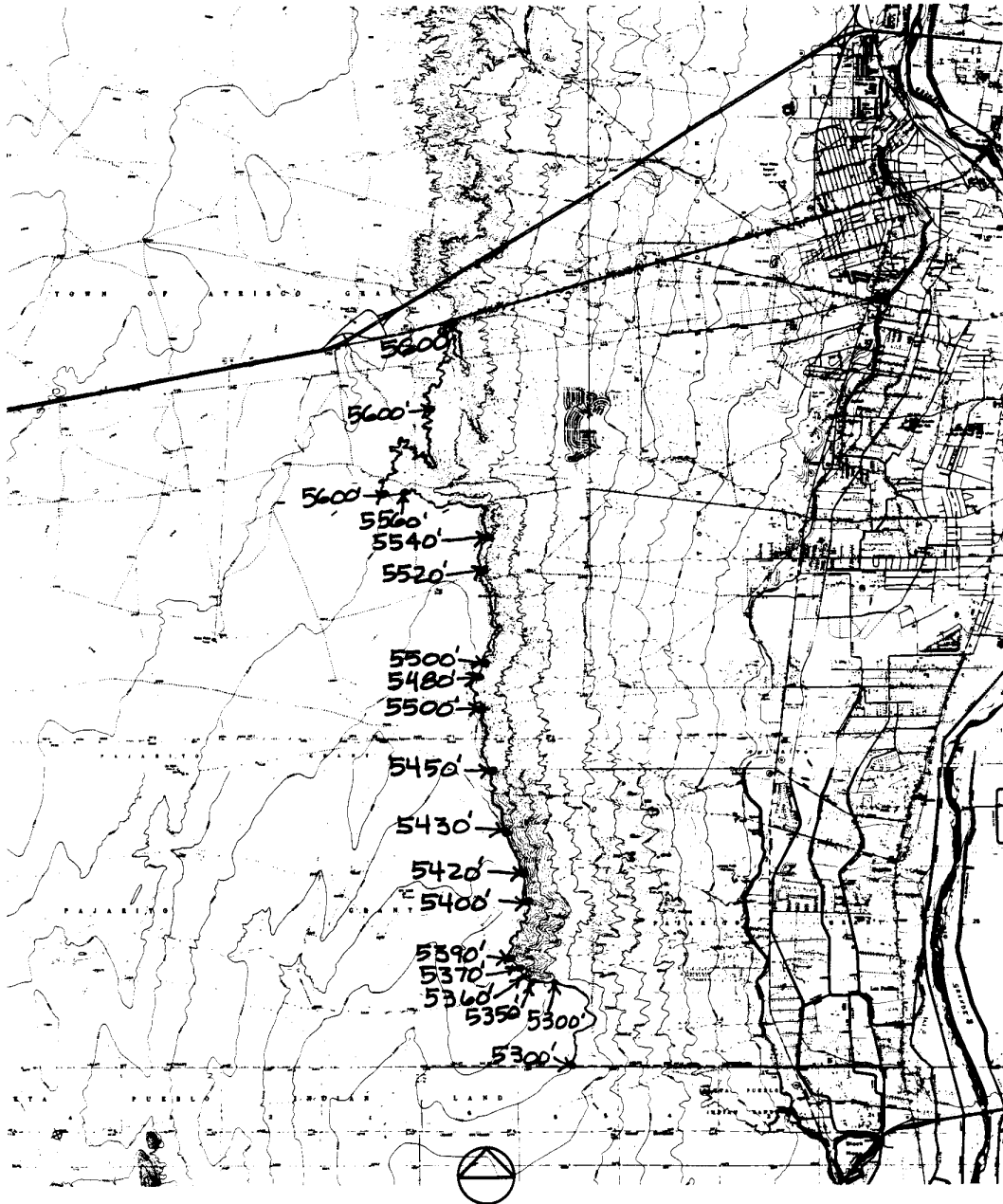
The 1975 Comprehensive Plan's Plan for Major Public Open Space designated 500 to 1000 foot wide strips along the edges (cejas) of the Southwest Mesa to be placed in public ownership for recreational trails, preservation of the scenic edge, and protection of the edge from headward erosion. The Southwest Mesa eastern and western escarpments were also designated in the original Comprehensive Plan as unsuitable for development but appropriate for public easements. The 1975 Comprehensive Plan stated these areas should remain as open space even as the edges of the urban area expand westward.

The Soil Conservation Service study, "Natural Resource Evaluation for the Southwest Area Plan" focused on the types of soils present on the Southwest Mesa and its eastern slopes. One of the purposes of the study was to present the limitations to development of the mesa and its slopes. (See Appendix F.) It was intended that this study would provide guidelines in defining the open space boundaries along the ceja and escarpments of the mesa and in establishing development guidelines for the area just outside the open space. Two of the five zones identified by the Soil Conservation Service in its analysis involve all or portions of the two 1975 Comprehensive Plan proposed open space areas described above. (See Map 2.)

The major portion of Zone 2, the Edge of the (eastern) Escarpment, consists of soil particularly vulnerable to wind and water erosion. The Soil Conservation Service calculates present soil loss in this zone at between 5 and 90 tons per acre per year. The allowable soil loss is 4 tons per acre per year. The area has a surface top soil only about eleven inches thick covering a pink gravelly loam high in lime content. Once the top soil is eroded away by water or foot and vehicular traffic, the very light, limy substratum is highly susceptible to winds.

As a result of Soil Conservation Service recommendations, it is a policy of the Southwest Area Plan to keep a two hundred foot wide strip along the eastern edge of the Southwest Mesa (as defined by Map 4) free of individual liquid waste disposal systems, unlined sewage lagoons and water runoff holding ponds to protect the eastern mesa escarpment and slopes from seepage and erosion due to the very porous, highly erodible soils which are present. Further, a fifty to one hundred fifty foot wide strip on top of the Southwest Mesa as measured westward from the eastern edge (of the mesa) should be kept free of development to preserve the fragile ceja and provide adequate rights-of-way for pedestrian/bicycle and equestrian trails and small nodal, overlook parks set back as far as possible from the very edge of the mesa.

The 1975 Comprehensive Plan's designated 500 to 1000 foot wide strip of major public open space on the edge of the Southwest Mesa is judged to be unobtainable in light of: (1) the limited applicable open space dedication requirements, (2) the many current higher priorities on the limited amount of open space funds available to the City, and (3) the County's financial inability to purchase vast areas of land for open space. In addition, patrolling by law enforcement personnel to prevent severe damage of the fragile environment by uncaring or uninformed intruders would be cost-prohibitive and very difficult to achieve.

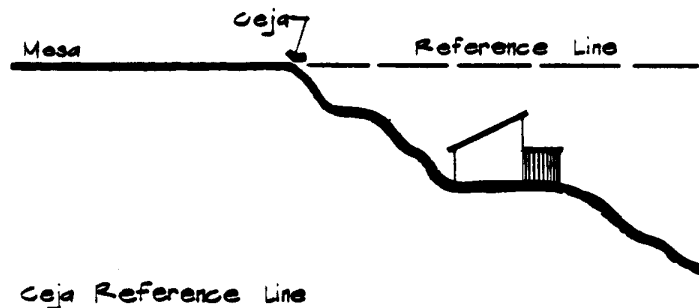


EASTERN EDGE (OR CEJA) OF THE SOUTHWEST MESA
 MAP 4

A fifty to one hundred fifty foot wide strip is easier to protect from vandalism than a five hundred to one thousand foot setback. The strip varies in width to allow nodal parks for scenic overlooks as well as additional trail setbacks from the edge due to soil conditions.

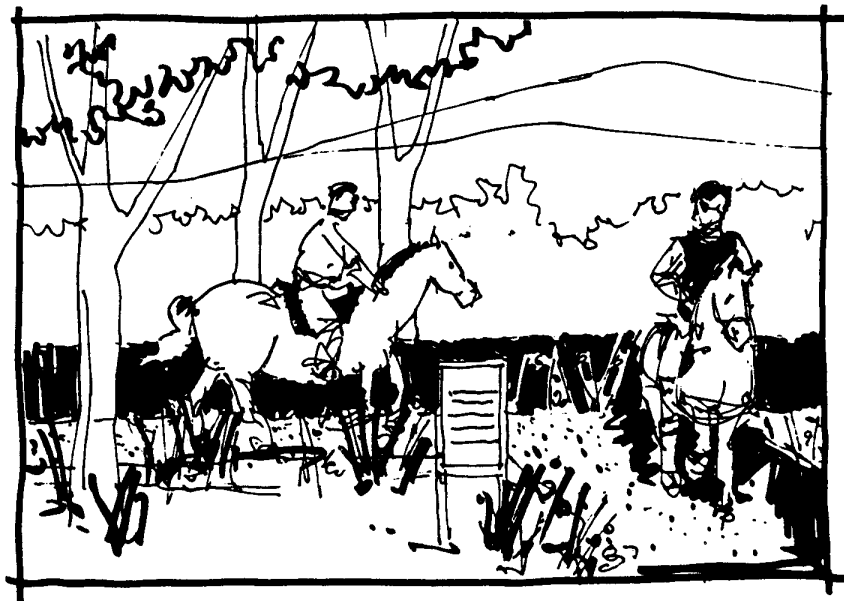
The Southwest Mesa eastern escarpment designated in the 1975 Comprehensive Plan as a Public Easement or Rights area is included in Zone 3 of the Soil Conservation Service study. Soils found within this zone are presently eroding at the rate of 58 to 146 tons per acre per year compared to the Soil Conservation Service allowable limits of 3 to 5 tons per acre per year. With little development and limited activity presently occurring within the area, soils are still eroding far above the normal limits. The soils support little vegetation, further compounding the problem.

These factors, combined with the increasing popularity of the escarpment as a recreational site for all-terrain vehicles and limited law enforcement to prevent such activity, have led to a recommendation that very limited, low density development be allowed on the ridges and knolls of the escarpment. (See Residential Uses, Residential Area 2 for specifics.) Dwellings located on ridges and slopes across the eastern escarpment would be an inexpensive method of protection for the fragile environment. To protect the views from the ceja (edge), it is recommended no buildings be allowed to penetrate above a reference line drawn straight eastward from the eastern ceja. The ceja, or edge, is defined by the elevation lines as shown on Map 4.



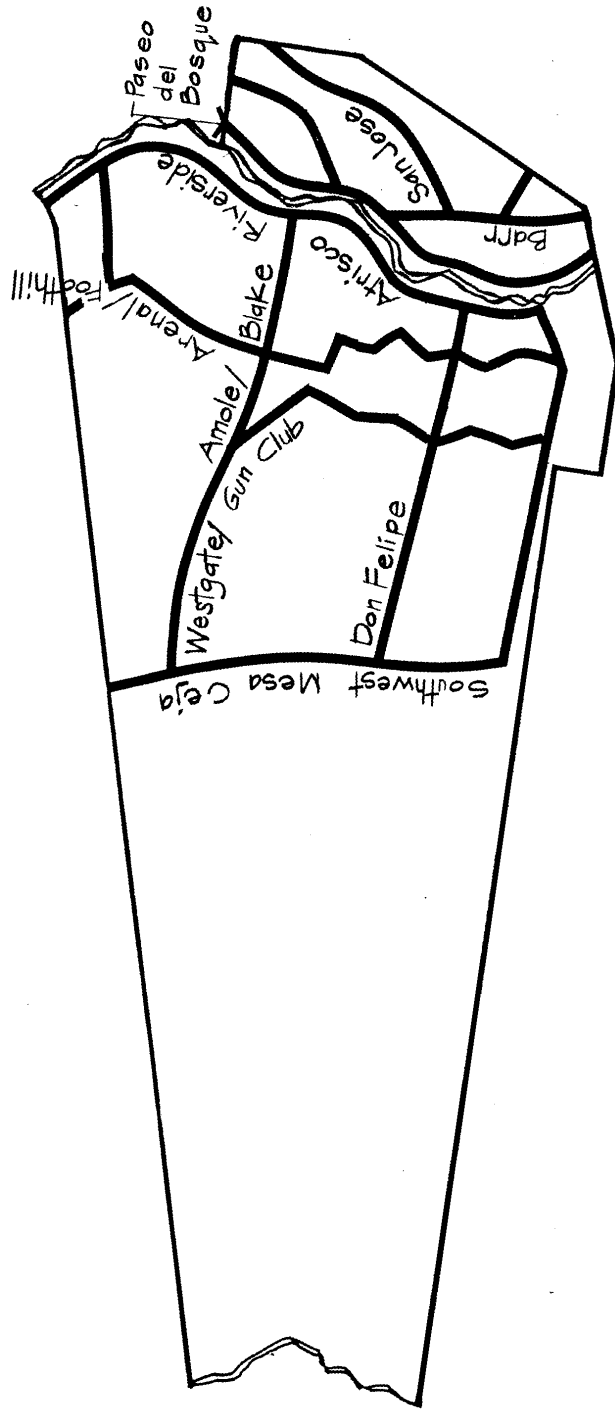
Open Space Trails

A unique opportunity exists within the plan area to establish a comprehensive network of jogging/walking, bicycle and equestrian trails adjacent to several of the arroyos, drains and ditches which traverse the entire area. One of the Citizens' Goals Committee goals states a system of such trails linking the bosque to the west mesa and extending across the river should be established. A network of these multi-use open space trails has been identified for the plan area. The east/west trails will link the Southwest Mesa escarpment and the proposed industrial corridor east of the Rio Grande with the bosque of the Rio Grande Valley State Park. The north/south trails will make it possible to enjoy the beauty of the bosque, the South Valley and the Southwest Mesa from Central Avenue south to Interstate 25. Trail links will also exist between the historic village centers. The trails will play an important role in the permanent preservation of a part of the quality of life South Valley and all Metropolitan area residents enjoy. (See Table 3.)



A joint City/County Trails Task Force should be established to advise and assist with the corridor planning for the trails. Representatives of the metropolitan area, horseback riders, bicyclists, joggers, hikers, South Valley neighborhoods and the Open Space Task Force as well as City and County Planning staff should jointly develop each trail corridor plan.

This network of recreational, open space trails will be the most extensive anywhere in the metropolitan area and provide a unique chance to preserve a portion of the existing open space for extensive recreational opportunities. However, development pressures in the South Valley and on the Southwest Mesa Slopes are mounting, and the time to acquire the necessary right-of-way, easements or street design to implement this trail network is as development proposals and roadway upgrading occur.



Open Space Trails
Map 5

TABLE 3. OPEN SPACE TRAIL LOCATIONS

<u>NAME</u>	<u>PROPOSED LOCATION</u>
Atrisco Riverside Trail	West side of the Rio Grande from Central Avenue to the Rio Bravo State Park, south to the Isleta Indian Acequia, ending at the Los Padillas Center
Paseo del Bosque Trail	An existing trail from Montano Road to Bridge Boulevard to be extended south on the west side of the river through the plan area.
Arenal/Foothill Trail	Follows the Arenal Main Canal, Indian Lateral and Los Padillas Drain from Central Avenue through the Southwest Valley to the Los Padillas Village Center.
Westgate/Gun Club Trail	Begins at the Westgate Detention Dam, follows the Amole Arroyo to the Amole Detention Area and down to the Hubbell Oxbow where it parallels the Gun Club Lateral to the Southwest Mesa Ceja Trail.
Amole/Blake Trail	Begins where the Westgate/Gun Club Trail parallels the northern branch of the Amole Arroyo, travels down Blake Road and crosses Isleta Boulevard, ending at the Atrisco Riverside Trail.
Southwest Mesa Ceja Trails (2)	Begin at Central Avenue and travel near the eastern edge of the Southwest Mesa within the 50 to 150 foot permanent public easement, come down the mesa slopes at the south end and follow Los Padillas Road to the Los Padillas Village Center.
Don Felipe Trails (2)	Travel the northern branch of the Pajarito Arroyo, cross Coors Boulevard, down Don Felipe Road to the Atrisco Riverside Trail.
San Jose & Barr Trails	Develop private or public open space trails through the industrial area using the Barr Canal and Lateral and the San Jose Lateral and Drain wherever feasible.
Village Centers Trail	Begins at the Atrisco Village Center, follows Trujillo Road to the Atrisco Riverside Trail. The Atrisco Trail will go into the Five Points East Village Center. A trail segment from the Atrisco Riverside Trail along Arenal Road will connect the Armijo Village Center. A trail segment along the Isleta Indian Acequia from the Atrisco Riverside Trail will connect the Los Padillas Village Center. The Pajarito Village Center will be reached through a short trail segment from near the proposed extension of Pajarito Road between Isleta Boulevard and the Atrisco Riverside Trail.

The expense of implementing this network can be reasonable if private and public interests work together. Equestrian trails require little in the way of maintenance or construction other than provision of signage and a dirt path spaced far enough from the edge of arroyos, mesas, ditches or drains to prevent degradation of slopes. Slopes should also be stabilized where necessary. These paths also can double as maintenance roads for the adjacent ditch, drain or arroyo where appropriate.

The recreational trails for bicyclists are intended to supplement and not replace those programmed and planned bicycle facilities associated with various roads in the plan area and shown on the Bikeways Master Plan. Bicycle facilities located on or adjacent to roadways are an important commuter element in a transportation plan. The Southwest Area Plan supports the facilities shown on the Bikeways Master Plan in addition to this network of recreational trails.

POLICIES & IMPLEMENTATION:

POLICY 18. THE COUNTY SHALL INVESTIGATE REQUIRING PARK AND OPEN SPACE DEDICATION AT THE TIME OF DEVELOPMENT.

Implementation:

In Fiscal Year 1:

- The County Zoning Administrator, with the assistance of the City Planning Department, will develop text amendments to the Bernalillo County Zoning and Subdivision Ordinances which will establish park and open space dedication requirements and present the proposed amendments to the County Planning Commission and County Commission for adoption.

POLICY 19. ALL PUBLIC AND PRIVATE DEVELOPMENT SHALL BE PROHIBITED WITHIN FIFTY TO ONE HUNDRED FIFTY FEET WEST OF THE EASTERN EDGE OF THE SOUTHWEST MESA (AS DEFINED ON MAP 4) FROM CENTRAL AVENUE/INTERSTATE 40 TO THE ISLETA RESERVATION WITH THE EXCEPTION OF TWO OPEN SPACE RECREATIONAL TRAILS AND SMALL, NODAL, SCENIC OVERLOOK PARKS.

Implementation:

Upon Plan Adoption:

- The County and City will obtain the necessary rights-of-way as permanent easements as development proposals are presented for approval. Possible acquisition methods may include: (1) a condition of platting or subdivision or site plan approval, (2) satisfaction of open space and park dedication requirements, (3) transfer of development rights from the easement to the remainder of the parcel proposed for development.

In Fiscal Year 1:

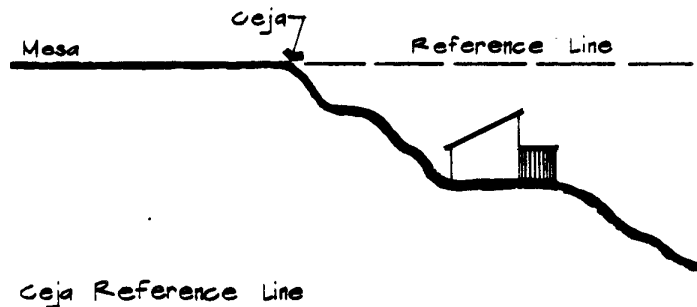
- An engineering survey directed by the City Planning Department will determine the boundaries of this area.
- The Southwest Mesa Ceja Trails Corridor Plan shall require trails and nodal parks to be constructed so drainage runs westward away from the mesa's edge, and be placed as far from the edge as possible within the right-of-way to protect the erodible soils and still provide users a panoramic view from the edge.

POLICY 20. NO STRUCTURE BUILT OR PLACED EAST OF THE EAST CEJA OF THE SOUTHWEST MESA SHALL INTRUDE ABOVE THE REFERENCE LINE DRAWN STRAIGHT OUT IN AN EASTERLY DIRECTION FROM THE CEJA AS DEFINED ON MAP 4.

Implementation:

Upon Plan Adoption:

- When the design overlay zone or hillside ordinance is developed as called for in Policy 6 Implementation, strong consideration will be given to developing criteria for ceja view preservation from the lower mesa slopes and valley east of the Southwest Mesa Ceja.



POLICY 21. EROSION AND WATER CONTROL TREATMENT ON THE SLOPES BELOW THE CEJA SHALL BE DESIGNED TO BLEND INTO THE ENVIRONMENT.

POLICY 22. THE COUNTY AND CITY SHALL JOINTLY DEVELOP THE TRAIL SYSTEM SHOWN ON TABLE 3 THROUGH TRAIL CORRIDOR PLANS.

Implementation:

Beginning in Fiscal Year 1:

- These plans will be developed in cooperation with the City Planning Department, County and City Parks and Recreation Departments, County and City Public Works Departments, Albuquerque Metropolitan Arroyo Flood Control Authority, and the Middle Rio Grande Conservancy District, the latter two of which have property and/or irrigation or drainage facilities proposed as trail segments under their jurisdiction.
- The exact alignment, necessary right-of-way and design for each trail will be established as each trail corridor plan is developed.
- The County Zoning Administrator and City Planner will establish a City/County Trails Task Force to advise and assist with these plans. The Task Force shall include representatives of user groups and South Valley neighborhoods.

POLICY 23. TRAILS PROPOSED ADJACENT TO ROADWAYS AND PROGRAMMED IN THE BIKEWAYS MASTER PLAN SHALL BE INCLUDED AS PART OF THE ROADWAY UPGRADING OR CONSTRUCTION PROJECT AND FUNDED, DESIGNED AND CONSTRUCTED WITH ROADWAY FUNDS.

Implementation:

Upon Plan Adoption:

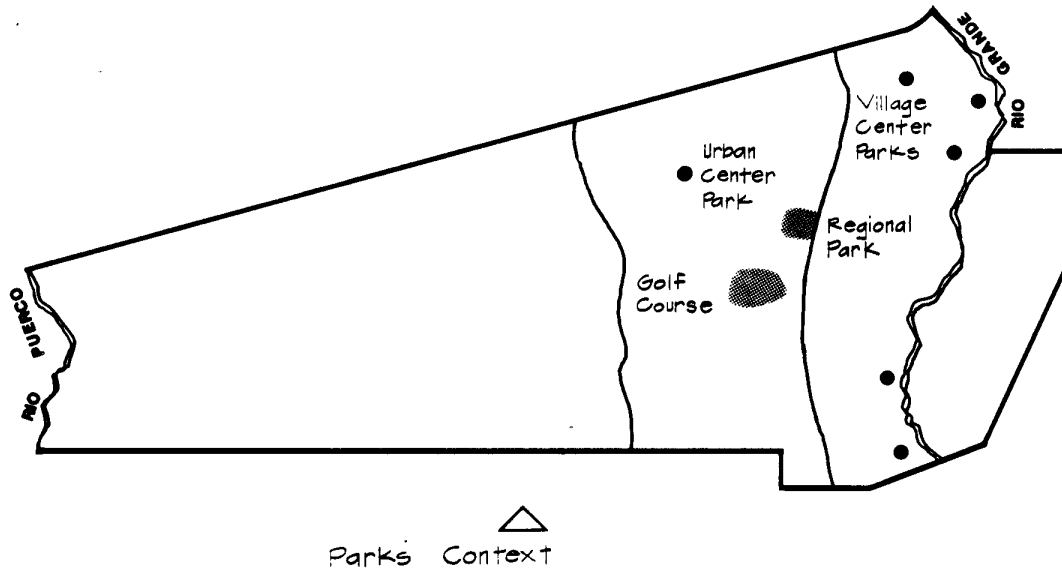
- The County and City Public Works Departments and the New Mexico State Highway Department will implement this policy when planning, designing and constructing roadway upgrading and/or construction of those roads included as part of the Southwest Area Plan trail network or on the Bikeways Master Plan.

POLICY 24. SIGNING AND ACCESS CONTROL NECESSARY TO PREVENT MOTORIZED VEHICLES FROM GAINING ACCESS TO TRAILS AND SENSITIVE AREAS SHALL BE INCLUDED AS PART OF THE DESIGN AND CONSTRUCTION OF TRAILS. ACCESS FOR HANDICAPPED PERSONS SHALL BE INCORPORATED IN THE DESIGN AND CONSTRUCTION OF TRAILS WHENEVER POSSIBLE AND APPROPRIATE. SAFETY MEASURES SHALL BE A PRIME CONSIDERATION IN LOCATION, DESIGN AND CONSTRUCTION OF TRAILS.

PARKS

Additional parks are needed in the area. Although the City does have some park facilities located outside the municipal limits, the majority of park facilities in the plan area are under the jurisdiction of the County.

Considerable right-of-way is owned by the Albuquerque Metropolitan Arroyo Flood Control Authority for detention ponds and drainage channels in the plan area. The County or City, depending on jurisdiction, should take advantage of the Albuquerque Metropolitan Arroyo Flood Control Authority's willingness to allow joint-use recreational opportunities along their right-of-way and negotiate for park and open space uses where appropriate.



A multi-locational regional park to serve the entire metropolitan area is recommended within the Hubbell Oxbow and at a site east of the Rio Grande. Active recreational uses, such as softball, baseball and basketball, and passive uses, such as picnicking, hiking and a County tree nursery would be permitted. The active uses would be closer to the intersection of Coors and Rio Bravo Boulevards while the more passive uses would be closer to the Albuquerque Metropolitan Arroyo Flood Control Authority's Hubbell Lake Facility. This multi-locational park would fill a metropolitan area-wide need and conserve some of the more important South Valley farmland as a park. The oxbow property is presently under single-ownership, and the possibility exists to transfer development rights from the oxbow to the higher land west of the oxbow under the same ownership to negotiate a lower purchase price.

The Westgate Urban Center should have a centrally located urban park in addition to linear parks connecting the various land uses within the center. A five acre park should be located near each elementary school and a ten acre park near each middle school. These parks would have fields and courts for athletics and/or playgrounds. Each village center should have a park or village square. Its size would be determined when each center is planned. Area residents and others interested in park sites should provide input into their location and development.

Small nodal parks adjacent to the Southwest Mesa Ceja Trails are proposed for the public easement area on the edge of the Southwest Mesa. These parks will be planned and designed as part of the Southwest Mesa Ceja Trails Corridor Plan after adoption of the plan.

A thirty-six hole golf course is planned west of Coors Boulevard near Gun Club Road on the Southwest Mesa Slopes. Each of the City's other quadrants contains a public golf course, thus a course should be planned in this quadrant. Most of the other courses are at capacity use, especially on weekends. The property is now under single ownership, making it easier to negotiate terms to acquire the necessary acreage. A golf course could increase the value of the surrounding land, also under the same ownership. Unser Boulevard extended south, Gun Club Road and Coors Boulevard will make the golf course easy to reach.

POLICIES & IMPLEMENTATION:

POLICY 25. THE HUBBELL OXBOW AREA MAY BE ACQUIRED BY THE COUNTY FOR A REGIONAL PARK.

Implementation:

In Fiscal Year 1:

- The County Parks and Recreation Departments will request funding from the County Commission.
- The County Parks and Recreation Department will approach the landowner and begin negotiating the purchase.
- The possibility of transferring development rights from the Oxbow to the property to the west under the same owner will be explored as one method to lower the purchase price.
- If it is not feasible to develop the park immediately after purchase, the possibility of leasing the land for farming until such time as development can occur will be explored by the purchasing public entity or entities.

POLICY 26. THE SECTOR DEVELOPMENT PLAN FOR THE PROPOSED WESTGATE URBAN CENTER SHALL INCLUDE A CENTRALLY LOCATED URBAN PARK WITHIN THE URBAN CENTER.

POLICY 27. THE CITY AND COUNTY SHALL PURSUE AQUISITION AND DEVELOPMENT OF PARK SITES NEAR THE ELEMENTARY AND MIDDLE AND HIGH SCHOOLS IN THE PLAN AREA

Implementation:

- The City and County Parks and Recreation Departments, with the assistance of the Albuquerque Public Schools, will phase in the development of these parks over a period of years as funding permits.

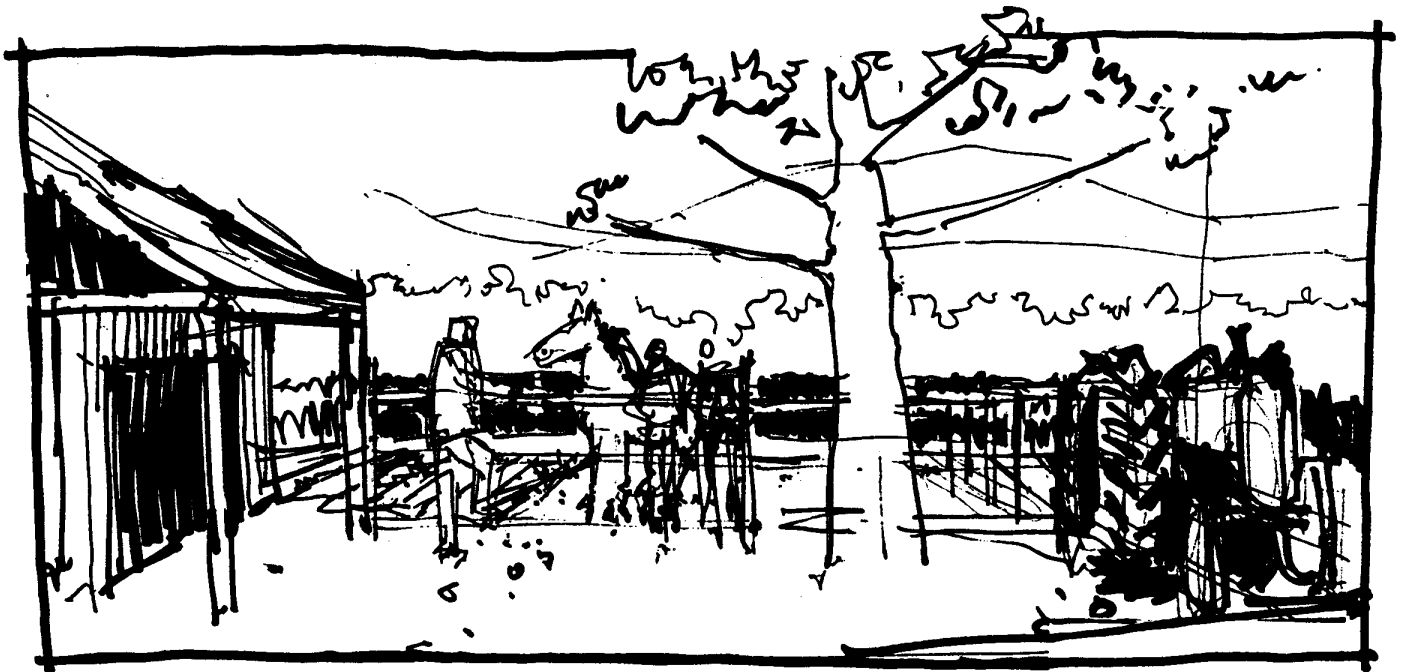
POLICY 28. A 36-HOLE GOLF COURSE SHALL BE DEVELOPED IN THE PLAN AREA.

Implementation:

In Fiscal Year 1

- The City Parks and Recreation Department will begin negotiation with the property owner. Possible techniques include land bank agreement, transfer of development rights, lease purchase or the Capital Implementation Program.

AGRICULTURAL USES



Traditionally, agriculture has provided the economic base for South Valley residents. However, this is no longer true today. Changing technology, low farm income in general and the lure of better income-producing professions outside agriculture have combined with the growing pressures of urbanization to seriously threaten the future of farming in the Valley. Large family farms, comprised of hundreds of acres, are rapidly becoming residential subdivisions and five to ten acre mini-farms. Producing crops on a commercial scale has given way to growing enough fruits and vegetables to feed one family or sell at the local grower's market. Raising livestock usually consists of keeping a horse for recreational riding and a cow or goat for milking.

TABLE 4
 1985 Greenbelt Assessment
 for Wetlands
 in the Southwest Area

<u>Size of Property in Acres</u>	<u>Number of Property Owners</u>	<u>Percent of All Greenbelt Wetland Property Owners</u>	<u>Number of Acres</u>	<u>Percent of All Greenbelt Wetland Acres</u>
0 - 4.99	417	71	1024	20
5.0 - 9.99	89	15	636	13
10.0 - 19.99	39	7	558	11
20.0 - 39.99	24	4	595	12
40.0 and up	19	3	2199	44
Total	588	100	5012	100

Compiled from the 1985 Bernalillo County Assessor's Property list for Greenbelt Properties

Preferential tax assessment currently allows the landowner in Bernalillo County who has at least one acre in agriculture to pay a lower property tax rate. The list of tax payers who currently receive this preferential assessment provides a clear picture of the nature of farming in the South Valley. Table 4 shows the results of an examination of the list of South Valley landowners who received preferential tax assessment in 1986. About 86% of these landowners owned parcels of less than ten acres. Only 3% owned parcels greater than forty acres.

Many residents of the South Valley are concerned about the demise of large farm fields in their area. Agriculture has been a traditional way of life for centuries and present residents appreciate the rural lifestyle. The Southwest Area Plan supports the continued agricultural activities in the area as long as the landowner desires to pursue such activities.



South Valley Grower's Market

Most of the 3% who own forty acres or more are former commercial farmers or dairymen who have been economically forced to quit working the land themselves. Those who lease land from these landowners to farm are also phasing out unless they have another more reliable source of income. In general, these large landowners are selling out so they can retire comfortably and provide an inheritance to their children, who are generally not interested in farming. Thus, in the South Valley, the pressures of urbanization may be arriving earlier than they otherwise would have if large-scale farming would remain a viable way to earn a living.

The dilemma of how to maintain the separate identity of the rural South Valley and preserve agricultural land became a major issue during the process of developing the Southwest Area Plan. A task force comprised of South Valley residents and landowners plus two County at-large members was appointed by the Bernalillo County Commissioner representing the plan area to examine the issue of preserving farmland. The members included owners of large parcels of farmland, active commercial farmers, small "family" farmers, a developer, a representative of the Open Space Advisory Board, attorneys, and other residents of the area. The charge to the Agricultural Task Force by the County Commission included:

- to examine possible techniques to preserve prime agricultural land in the South Valley
- to determine which techniques, if any, are economically feasible from the perspective of landowners and taxpayers
- to set up criteria and use that criteria to designate which portions of the prime farmland should be preserved if viable techniques are identified
- to present a written report on the task force's findings to the County Commission

The final recommendations of the Agricultural Task Force to the Bernalillo County Commission included:

- any techniques implemented to preserve farmland should be voluntary
- preferential assessment should be continued
- specific agricultural preservation techniques recommended to the Bernalillo County Commission were:
 - agricultural districts
 - cluster development
 - private land trusts
 - restrictive agreements
- an in-depth feasibility study of the transfer of development rights (TDR) technique on a County-wide basis should be conducted by a consultant at the direction of Bernalillo County. The Task Force did not recommend transfer of development rights as a feasible preservation technique for the present.

The techniques recommended by the task force may preserve some agricultural land in the Valley while there are farmers who wish to farm and can afford to do so. In the long run, however, the issue will probably redefine itself into one of "maintaining the separate identity of rural areas" through preserving a feeling of openness and less intense land uses. (See Appendix E.)

POLICIES & IMPLEMENTATION:

POLICY 29. FEASIBLE VOLUNTARY WAYS TO PRESERVE AGRICULTURAL LAND SHALL BE IDENTIFIED AND IMPLEMENTED BY THE COUNTY COMMISSION AS APPROPRIATE.

Implementation:

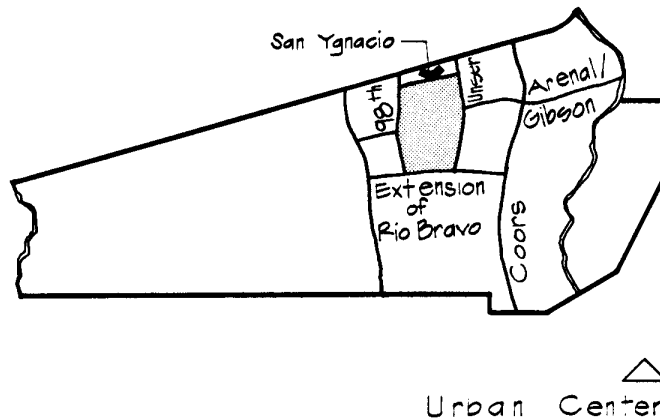
- The County Commission may hire a consultant to: (1) identify what steps should be taken to make agricultural districts, cluster development, private land trusts and restrictive agreements available as voluntary techniques to preserve agricultural land in an economically feasible manner; (2) examine whether or not transfer of development rights is also an economically feasible technique and, if so, identify what steps need to be taken to make the technique available on a voluntary basis.
- The County Commission will implement the techniques identified as economically feasible and possible.

SPECIAL AREAS

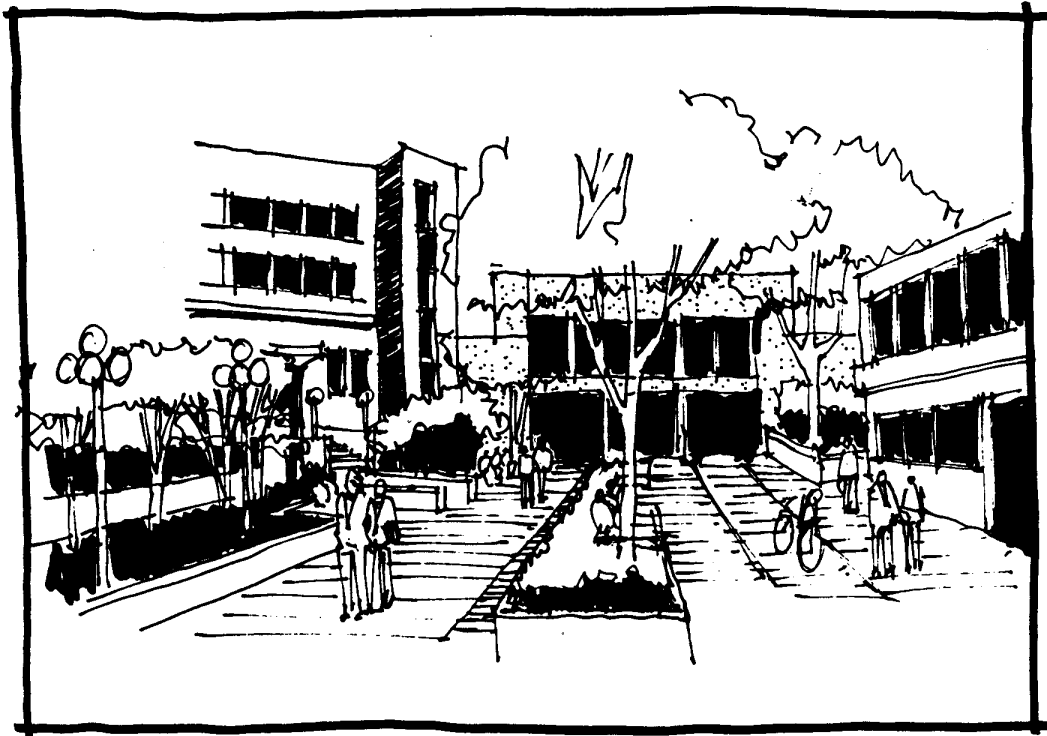
Westgate Urban Center

The 1975 Comprehensive Plan designated an urban center in the general area southeast of the Westgate Heights Subdivision. Although the Westgate Urban Center is still non-existent, increasing developer interest in the southwest area, an approved master plan for the area establishing generalized zoning for such a center, availability of City water and sewer service to this area through appropriate line extensions, in-progress plans for extensions of arterials adjacent to the urban center location, projections of additional population for the area and the need for more shopping and employment opportunities for present and future area residents are major reasons why the urban center should be developed near Westgate Heights.

The urban center should be located within the geographic area generally south of San Ygnacio Drive, east of 98th Street, north of Rio Bravo Boulevard and west of Unser Boulevard. The precise location will be determined by a sector development plan, per the requirements of City SU-3 zoning, the designated urban center zone. The Snow Vista Master Plan established generalized zoning for the area in 1960 which will serve as one basis for determining the urban center location.



The center would contain a minimum of 300,000 square feet of retail commercial, service and office uses when fully developed. Public services such as a law enforcement center, library and multi-service center would also be appropriate in this community scale urban center. Residential uses up to 30 dwelling units per net acre will be a significant land use in the urban center which will be smaller in scale and building height than the Coronado/Winrock Center in Uptown.



Bicycle and pedestrian connections throughout the center linking the residential areas to the commercial/retail and service uses are an important element. A park within the boundaries of the urban center and linked to these bicycle/pedestrian connections could serve as the focus. The Amole/Blake Trail would provide an important open space trail link to the urban center from the South Valley.

Excellent arterial roadway access to and from the center is also necessary as well as transit connections to major population centers. The southern extensions of 98th Street and Unser Boulevard as well as the western extension of Rio Bravo and possibly Gibson Boulevards should provide the added roadway capacity needed to serve the development and protect air quality.

POLICIES & IMPLEMENTATION:

POLICY 30. A SECTOR DEVELOPMENT PLAN SHALL BE DEVELOPED FOR ALL OR A PORTION OF THE GEOGRAPHIC AREA SOUTH OF SAN YGNACIO ROAD, EAST OF 98TH STREET/SNOW VISTA BOULEVARD AND A LINE DRAWN DUE SOUTH FROM THE EXISTING SOUTHERN TERMINUS OF SNOW VISTA BOULEVARD, NORTH OF RIO BRAVO BOULEVARD EXTENDED DUE WEST FROM ITS PRESENT INTERSECTION WITH COORS BOULEVARD, AND WEST OF UNSER BOULEVARD AND A LINE DRAWN DUE SOUTH FROM THE EXISTING SOUTHERN TERMINUS OF UNSER BOULEVARD. THE PLAN SHALL DETERMINE, AT A MINIMUM, THE EXACT BOUNDARIES OF THE URBAN CENTER, APPROPRIATE ZONING, LAND USE DENSITIES, ROADWAY, TRANSIT AND PEDESTRIAN/BICYCLE ACCESS, LOCATION OF THE PARK, AND OTHER ELEMENTS NECESSARY TO DEVELOP THE WESTGATE URBAN CENTER.

Implementation:

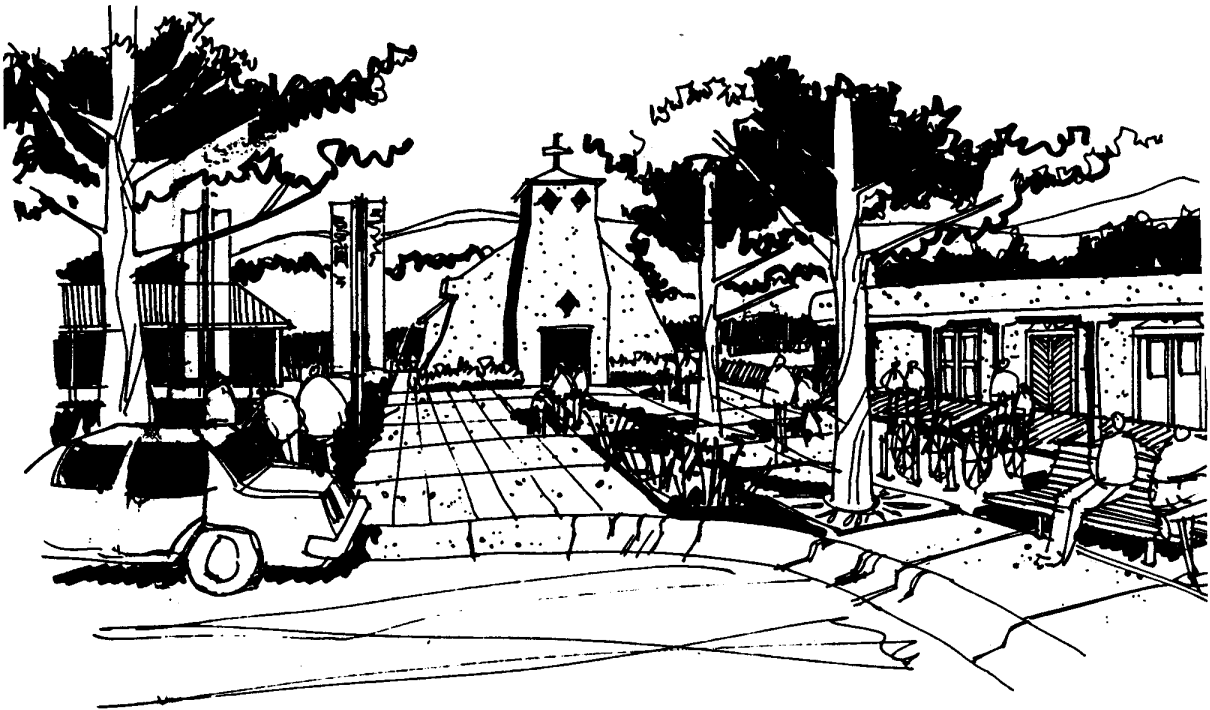
In Fiscal Year 2:

- The sector development plan will be included in the City's Multi-Year Planning Program unless a developer submits a sector development plan for approval by the City for a proposed urban center within the boundaries set forth above.
- In addition to the requirements of the City's Development Process Manual, a market analysis will be performed as part of the sector plan to determine when the urban center should be built; what scale it should be and how it should be phased.
- A traffic impact analysis will be performed as part of the sector plan to determine the appropriate number and scale of roads needed to support the center to protect the air quality and provide efficient traffic movement in and out of the area.
- An air quality impact analysis will be performed as part of the sector plan to determine the effort of the proposed ultimate scale of the urban center on air quality.
- In developing the sector plan, these elements will be incorporated: design compatible with the southwest area, commercial/office and light industrial uses; medium and high-density residential uses; an urban park to integrate the diverse uses within the center; pedestrian-oriented, open space links to the park through the various land uses including the necessary right-of-way along the Amole Arroyo for the Amole/Blake Recreational Trail; provision to integrate several public services such as a library, post office, senior citizen services, design provision for transit services; and a health clinic within the center; adequate provision for vehicle parking and landscaping; adequate arterial roadway access to and from the urban center from all parts of the metropolitan area; and adequate internal circulation patterns for pedestrians and bicyclists as well as motorized vehicles.

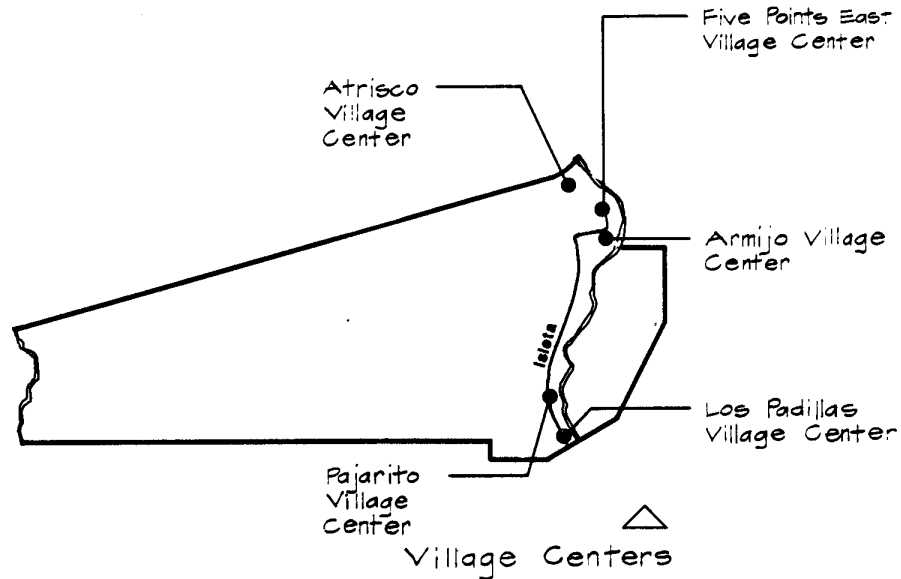
Village Centers

The South Valley is rich in historic and cultural resources. The first known settlements in the valley began many thousands of years ago when nomadic tribes entered the area. In 1598, Juan de Onate traveled north along the Rio Grande with a large group of settlers. The route he traveled later came to be called El Camino Real, the royal highway. Isleta Boulevard now exists along part of the 1600 mile route of this historic trail. The Pueblo Revolt in 1680 destroyed all the settlements established along the royal highway.

The early plazas and ranchos of Atrisco, Pajarito and Los Padillas were the sites of land grants from the King of Spain to encourage resettlement of the area after the Pueblo Revolt. Over the years the arable land in the South Valley was divided among family members into long strips running perpendicular to the acequias. The mesa grazing lands, however, were held jointly and used for cattle and sheep ranching. South Valley historic village centers would recognize and preserve some of this rich history and culture which residents of the South Valley treasure and to which many of their ancestors contributed.



The South Valley village centers will serve as a visible, visual expression of the historic and cultural traditions and values of the people who have lived in the Valley over the past many decades. The centers will seek to reintegrate historic buildings and spaces of local interest into the surrounding neighborhoods. New development proposed for the centers will be compatible in design, scale and character with the existing surroundings.



The five centers would include neighborhood-scale commercial and office uses, public services such as a branch library or local health services, residential uses similar in scale and style to those existing in the area, a village park or plaza with a written history of the area on display, pedestrian-oriented pathways, a bicycle/pedestrian link to each other and restored historic buildings and settlement patterns. Since each village center will be planned separately by a task force of area residents and other property owners assisted by professional planners, the ultimate concept and exact location for each center is yet to be determined. The tentative locations were chosen by the Historic Landmarks Survey staff based on historic records and maps of the South Valley.

The five village centers include:

Los Padillas: This is the farthest south of the village centers. Its suggested location lies on Isleta Boulevard between Malpais Road to just north of Los Padillas Park between the Los Padillas Drain and east of the Isleta Indian Lateral. The old Padillas Church stood less than one half mile north of the Isleta Pueblo boundary, east of Isleta Boulevard at about Marcelino Road. An old store building at 7600 Isleta may be eligible for the historic registers.



7600 Isleta Boulevard

Pajarito: This village center was a linear settlement as can be seen in the alignment of many early twentieth century houses still standing along Isleta Boulevard. The original school site for this village was just northwest of the old church at Pajarito Road. However, the school moved farther north by the 1940's and has been a focal point of this part of Pajarito for fifty years.

The boundaries proposed for this village center are Louise Road on the south and Torres Road on the north, extending roughly a block on either side of Isleta Boulevard. Designation of this larger center will encourage conservation of several historic properties along Isleta Boulevard, which are believed to be part of the turn-of-the-century village of Pajarito. The Hubbell House, built before 1850 and located at 6029 Isleta Boulevard, would also be within this center and thereby be provided a protective buffer from incompatible development.

Armijo: The historic Armijo School is a focal point for this proposed village center. The old Armijo Post Office used to be located less than two blocks south on the other side of Isleta. A well preserved, old motel at 1212 Isleta, stands just south of the former post office location.



Armijo School

Recommended boundaries are the 900 block of Isleta Boulevard on the north and Montrose Place on the south. The intersection of Isleta with Armijo Road is included as is "deadman's curve." Redesign of this dangerous intersection is needed and designation of the village center can be the impetus to do so. Pedestrian connections are needed between the community center at Armijo School and St. Anne's Church on Arenal Road.

Five Points East: The Historic Landmarks Survey Team recommends an area east of the "five points" intersection around the La Familia Market at 134 Isleta Boulevard as the site for this center. The survey team found no historic buildings at the actual five points intersection. However, if residents prefer the village center location at the well-known intersection, they can change the boundaries during the village center planning process. Recommended boundaries at this time are both sides of Isleta Boulevard between the Atrisco Riverside Drain and Lovato Road.

The La Familia Market structure housed the Isleta Movie Theater, an indication that, in the 1940's, this area was a gathering place. It is also the first major intersection west of the historic Barelás Bridge and contains several popular restaurants, creating a general sense of activity.



La Familia Market

Atrisco: An old settlement is shown on several historic maps at the intersection of Atrisco, Sunset Gardens Place, Foothill Road, Don Luis and Felicita Roads. This is the proposed location for the Atrisco Village Center. The old Atrisco Church was here. A number of significant old structures exist in the area at 419-C & 450 Atrisco, 2304, 2335, and 2336 Don Luis and 508 Foothill Road.

There are currently several possible mechanisms for actual implementation of the concepts within each village center's plan. These possibilities need more careful analysis during the village center planning process to judge their applicability. Possible mechanisms include:

protective mechanisms to retain the scale and character of the areas such as the Urban Conservation Overlay Zone (Sections 36C & D of the City Zoning Code). The County Zoning Ordinance would need to be amended to establish this mechanism in the County.

programs to increase awareness of the history and uniqueness of each center such as oral histories, displays in each center of photos and artifacts, pamphlets on each center with information about the

founding, growth, buildings and people. Possible funding sources include the State Historic Preservation Division, the Albuquerque Community Foundation and the New Mexico Humanities Council.

- incentive programs to encourage rehabilitation of buildings could include design assistance, development fee waivers, public parking or reduction in requirements for parking, special street landscaping, development of a low-interest loan program with local banks. Such techniques are being explored in the Albuquerque Nob Hill Neighborhood, and the experience gained there may help in developing techniques for the South Valley village centers.
- recommendations in the draft of the Comprehensive Preservation Plan, yet to be approved by the City and County, could positively affect the realization of the village centers.
- possible funding sources for the incentive programs include:
 - the Design and Planning Assistance Center at the University of New Mexico School of Architecture or a group of designers might volunteer to provide design assistance
 - small matching grants from the Urban Design and Design Arts Program of the National Endowment of the Arts
 - public landscaping is an eligible project for community development funds as are low-interest rehabilitation loan funds
 - street landscaping can also be implemented in conjunction with roadway projects

POLICIES & IMPLEMENTATION:

POLICY 31. EACH VILLAGE CENTER SHALL BE PLANNED BY A TASK FORCE OF AREA RESIDENTS AND CITY/COUNTY PLANNERS.

Implementation:

In Fiscal Year 1:

- The City Planner and the County Manager will develop the terms of the joint powers agreement to provide City/County funding and staff to develop the village centers' plans.
- One village center plan will be developed each fiscal year beginning in Fiscal Year 1.

POLICY 32. EACH VILLAGE CENTER'S PLAN SHALL AT LEAST: (1) HAVE A TASK FORCE OF RESIDENTS, BUSINESS PEOPLE AND OTHER LANDOWNERS IN THE TARGETED AREA TO PLAN AND DESIGN EACH CENTER, (2) CONTAIN PRECISE BOUNDARIES OF THE CENTER, (3) INCLUDE DESIGN GUIDELINES AND ZONING, WHERE APPROPRIATE, DEVELOPED FOR THE UNIQUE FEATURES OF EACH AREA, AND (4) CONTAIN AN IMPLEMENTATION PROGRAM.

Implementation:

City and County planners will ask residents, business people and other landowners in the vicinity of each proposed center to participate in the planning.

The City Historic Preservation Planner will assist each task force in defining boundaries and developing the plan for each center.

Historic Structures, Places, Roadways and Acequias

Specific reference was made in the preceding section to the importance of recognizing and preserving historic areas and buildings through the concept of village centers. Many additional, historically significant features exist within the plan area but outside the proposed village center boundaries. Efforts to locate and preserve them must be made.



Hubbell House

There are provisions in the City Zoning Code for various landmark designations and overlay zones for buildings and areas deemed to be of historic significance. The Southwest Area Plan recommends that the County incorporate historic overlay zones and landmark designations in its zoning code to provide protection for historic features in the South Valley and throughout Bernalillo County.

Steps which should be taken to help in preservation include nominations to the State and National registers for buildings and places in the southwest area, developing awareness programs, creating incentives for rehabilitating designated historic structures, developing better communications between County/City departments regarding historic resources, and initiating a study of the Valley acequia and drainage ditch systems (already in the City Multi-Year Planning Program).

POLICIES & IMPLEMENTATION:

POLICY 33. A COMMISSION TO OVERSEE PROTECTION OF HISTORIC RESOURCES IN THE COUNTY SHALL BE ESTABLISHED.

Implementation:

In Fiscal Year 1:

- The City Historic Preservation Planner and the City Deputy Chief Administrative Officer will work with the County Manager and the County Zoning Administrator to propose legislation for a joint City/County Landmarks Commission.

In Fiscal Year 2:

- When the landmarks commission is set up, it will: (1) evaluate the South Valley historic buildings survey already completed by the Historic Landmarks Survey team and determine if any of the identified buildings are of significance. If so, these buildings should be so designated. (2) Assist in creating incentives for rehabilitating and preserving designated historic features and developing South Valley cultural/historical awareness programs.
- The City Planner and County Zoning Administrator will propose changes to the County zoning code to establish appropriate overlay zones and landmark designations to protect significant historic features in the County.

Archeological Sites

Human occupation of the Bernalillo County area began at least 12,000 years ago. The report of the Albuquerque/Bernalillo County Archeological Resources Planning Advisory Committee (ARPAC Report), presented in February 1986, indicates about 800 archeological sites have been identified in Bernalillo County. In addition to these 800, there are many other sites as yet unidentified and many others already built over or altered by existing development. Some provide the only available source of information on prehistoric civilizations that once lived in Bernalillo County. Other, newer sites could help augment the four hundred year-old written historic record of the area. Some of the sites could provide the basis for museum exhibits and other educational programs as well as a potential attraction for tourism. The South Valley, in particular, has undiscovered sites which could provide further historic detail of past Spanish, Mexican and Native American cultures and settlement patterns. The details discovered could provide more information to be translated into oral and visual histories in the proposed village centers. The potential for tourism greatly increases with the amount of information available at the centers.

Archeological sites vary in importance, depending on the type and amount of information they contain. Even sites judged very significant may require preservation only until the valuable data can be extracted, thus freeing the land for development and other uses. Integrating an archeological survey and site evaluation with the development and planning processes can prevent unnecessary delays in development and losses of important information on past civilizations of Bernalillo County. Costs to developers caused by project delays when testing or excavation is necessary can be reduced if sites are identified prior to the initiation of development.

The ARPAC report recommends the County and City program archeological surveys of the plan area as soon as possible to record all sites requiring mitigation prior to development. The costs of these surveys could be covered with funding or matching grants through the State Historic Preservation Division. These surveys would be a one-time expense and would ensure that important archeological data is recovered and preserved. Areas receiving 100% on-ground archeological surveys would not require additional clearance surveys. The Comprehensive Plan supports the protection of historically and culturally significant archeological and historic sites.

The implementation of the recommendations in the ARPAC report should be carried out as quickly as possible to set the mechanisms in place to protect valuable archeological and historic resources throughout Bernalillo County. However, until that implementation can be accomplished, it is necessary to establish policies which will provide for the identification and management of the irreplaceable information on the settlement history of past cultures contained in the plan area.

POLICIES AND IMPLEMENTATION:

POLICY 34. A PROGRAM TO IDENTIFY, EVALUATE AND MANAGE ARCHAEOLOGICAL SITES SHALL BE INSTITUTED.

Implementation:

In Fiscal Year 1:

- The County, in cooperation with the City and the State Historic Preservation Division, will develop and begin implementation of a program for archaeological surveys of the SWAP area. Locations already under consideration for development should be given top priority for survey and evaluation. Upon discovery of archaeological sites, a determination of their significance shall be made along with a determination of appropriate measures for preservation, management, disposition or the mitigation of development impacts. The determinations shall be made by the surveying archaeologist in conjunction with the City and County, the landowner/developer and the State Historic Preservation Division.
- The program will require that archaeological clearance surveys of areas greater than 10 acres scheduled for development must be performed prior to receiving subdivision approval or starting construction. The cost shall be borne by the developer. The results of the survey shall be included in the application submitted to the City or County for development approval.
- The program shall also provide for archaeological clearance surveys for arterial and collector roadway alignments or other public works projects on undeveloped land to be performed prior to construction. The governmental agency responsible for the construction shall see that the survey is completed.
- The program shall also require that all sector development plans, neighborhood plans and village center plans for the Southwest area shall recognize the historic and archaeological resources within their plan areas and provide strategies to discover, protect or restore significant sites where appropriate.
- The County Zoning Administrator and the City Planner shall prepare any necessary changes in their respective zoning codes to provide for special archaeological overlay zoning or for the use of historical overlay zoning to preserve sites that are determined to have value that warrants preservation.

In Fiscal Year 2:

- The County and the City will identify and develop incentives for private owners to preserve sites and to encourage donation of sites to the County and the City.

-
- The development of incentives to preserve and donate sites should be accompanied by an education program to promote public understanding and appreciation of the area's archaeological past.

In Fiscal Year 3:

- The County and the City may develop a program to acquire significant sites for use as parks, open space, research preserves or public interpretive exhibits .
- The County and the City may establish a repository for records of archaeological sites in Bernalillo County and for artifacts removed from those sites.

SECTION 4: TRANSPORTATION PLAN

ROADWAYS

The primary local carriers of metropolitan as opposed to regional and statewide vehicular traffic are principal and minor arterials. Arterials form the spine for local traffic in a metropolitan area. As such, it is appropriate for an area plan to propose an arterial roadway network for the plan area.



Rio Bravo and Isleta Boulevard Intersections

In developing the southwest arterial network, significant attention was paid to assuring that plan area residents and landowners were served by the existing and proposed roads. Some of the major roads will provide more local service to businesses and neighborhoods than will others. On the other hand, arterials with more access control and less local service will provide higher speed traffic movement with fewer disruptions for through-traffic. This reduces the opportunity for air pollution problems, particularly in the low-lying Valley area.

The arterial network proposed here is the result of:

- the Citizens' Goals Committee goal which states neighborhoods should be preserved while providing for main arterials, including river crossings, and to encourage transit where appropriate.
- refinement of the Preferred Alternate test network after examination of the roadway capacity analysis performed by Bohannon-Huston, Inc., and refinement of the Preferred Alternate's proposed land uses.

- incorporation of most existing elements plus the recently adopted southwest network elements of the Long Range Major Street Plan
- analysis and modifications of the original roadway test network by technical staff from the City and County Public Works Department, Middle Rio Grande Council of Governments, and City Planning Department
- input from the South Urban Area Corridor Study Technical Work Group, Study Team, and Citizen's Advisory Committee
- public comments from several public meetings as well as smaller public interest group meetings with technical staff throughout the planning process

The Arterial Network

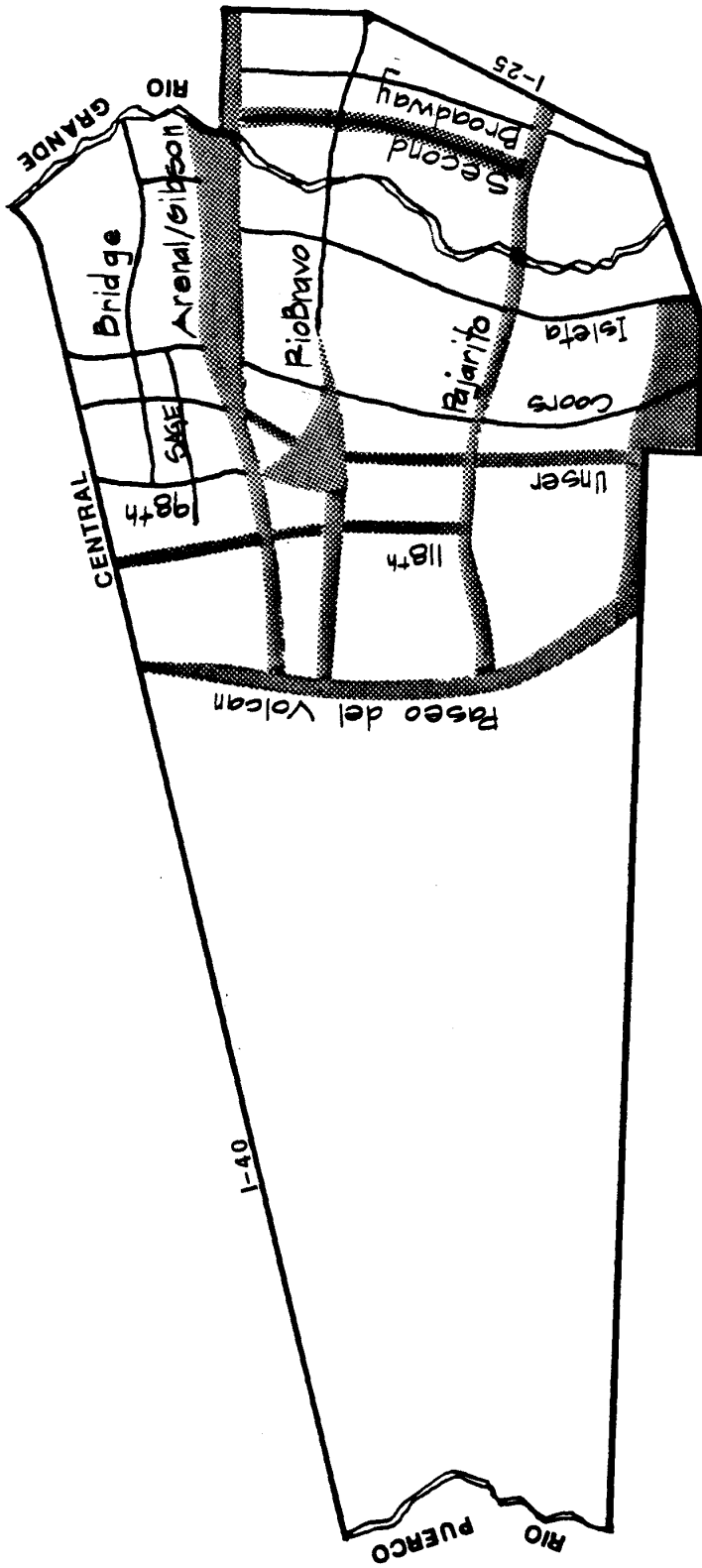
The network of arterial corridors on Map 6 shows existing arterials, some with proposed extensions, as well as proposed new arterials. Those segments not yet constructed or set by defined alignment are shown as grey corridors. All of the existing arterials and arterial corridors shown are included in the Southwest Arterial Network adopted in January, 1987, as amendments to the Long Range Major Street Plan.

The County and City Public Works Departments, and New Mexico State Highway Department, depending upon jurisdiction, typically develop a corridor plan prior to setting an alignment for any roadway extension or new road. This also applies to new river crossings. These roadway corridor plans consider such factors as the need for the road, the amount of traffic projected to use it, ultimate design, existing and proposed land uses, possible environmental impacts, and alternative alignments. Amenities such as bicycle lanes, landscaped medians, and bus bays are also part of corridor plans.

The proposed arrangement of land use in the Southwest Area Plan was developed simultaneously with an arterial system which works within the natural features of the land where possible and allows the type of development suitable for the area. The network, by necessity, is a modified grid for efficient traffic flow to reduce the potential for air and noise pollution and accidents.

Preliminary analysis by Bohannon-Huston, Inc., indicated this network is capable of handling the amount of traffic which would be generated by the doubling of the area's 1980 population and tripling of the number of 1980 jobs. The consultant pointed out a limited number of road segments which may require transportation system management improvements such as double left or right turn lanes to accommodate the level of development proposed in the plan.

The Middle Rio Grande Council of Governments will provide traffic projections for the proposed roadway network after plan adoption. A reallocation of plan area socioeconomic factors based on proposed land uses will be submitted to provide the socioeconomic data base needed for their analysis. Through these efforts, additional amendments to the Long Range Major Street Plan may be proposed. Then, corridor plans will be scheduled and completed where needed to establish alignments. This allows road right-of-way to be acquired before or as development occurs.




 Arterial Roadway Network
 Map 6



As previously stated, the Long Range Major Street Plan (See Appendix A) currently doesn't completely reflect the needs of the plan area according to the land uses and socioeconomic projections. These are the proposed modifications to the Long Range Major Street Plan which will be presented as amendments or additions:

- Malpais Road should be a collector. The level of development proposed in this portion of the Plan area does not justify the need for an arterial at this location.
- Second Street study corridor extends the street as an arterial to Desert Road. Second should then become a collector as it extends south. The proposed light industrial corridor and increased residential uses justify the ultimate upgrading of Second Street to an arterial to Desert Road. Eventually, as the area develops, Second Street could be an arterial throughout the plan area.

Other major development plans in the area, i.e., the Albuquerque International Airport Master Plan and the Mesa del Sol Master Plan, propose two additional interchanges on Interstate 25 which, if constructed, would be very beneficial to the proposed industrial corridor located between Woodward Road, Second Street, the Isleta Pueblo and Interstate 25. Industrial development located here would have excellent additional access to the airport and the interstate. This improved access would be a definite incentive for light industrial development. An interstate access study is currently underway to determine which, if any, additional interchanges will be allowed on Interstates 25 and 40. The results of this study will have an obvious bearing on the proposed airport and Pajarito Road interchanges.

Within the plan area are four existing bridges crossing the Rio Grande. For many years discussion has centered around extending Gibson Boulevard west across the river. The South Urban Area Corridor Study (SUACS), presently underway, is examining the feasibility of extending Gibson Boulevard west to the Southwest Mesa. With the Barelás Bridge carrying more traffic than it was designed to carry, and the Central Bridge becoming busier as the west side of the urban area develops, the Gibson Boulevard West extension is being seriously examined once again. The location of the proposed Westgate Urban Center adds additional impetus for studying the Gibson extension. Several older residential neighborhoods and some industrial development located in the area where Gibson would likely be extended make determining possible alignments difficult. Zoning compatible with that desired for an urban center was generally established in the 1960 Snow Vista Master Plan, which includes the Westgate Heights area. This particular location for the urban center would increase the volume of traffic the westerly extension of Gibson would carry, according to the Middle Rio Grande Council of Government's analysis. The South Urban Area Corridor Study efforts to determine the need for the extension of Gibson Boulevard west of Coors Boulevard are recognized by the plan. Because of anticipated major impacts on neighborhoods, the Gibson extension thru the South Valley should be developed only if a need is conclusively demonstrated.

The proposed Pajarito River Crossing and extension of Pajarito Road east also should be examined in a corridor plan to determine the need. This analysis should use, in part, the Southwest Area Plan's socioeconomic reallocations and the Mesa del Sol area development projections if, at the time of analysis, the Mesa del Sol area is developing. The Pajarito Road extension east to Interstate 25 is logical based on : (1) spacing from the existing Rio Bravo and Interstate 25 crossings, (2) the Rio Grande Valley State Park Management Plan which allows right-of-way only for the Pajarito and Gibson River Crossings, (3) the Mesa del Sol area proposed development which includes employment as well as residential uses, (4) traffic which would use this arterial because it crosses the river and connects with Interstate 25 and Paseo del Volcan, (5) traffic which would move more quickly on an arterial than on local streets, helping maintain air quality.

Additional river crossings besides the proposed Pajarito and Gibson crossings cannot be justified by the level of development called for in the Southwest Area Plan. Additional crossings would have a very negative effect on the bosque and would encourage a much higher level of development in the area than most residents desire.

Other network features include:

- 98th Street, Unser, Gibson and Rio Bravo Boulevards will provide adequate access to the proposed Westgate Urban Center. At least two existing river crossings are within reasonable traveling distance of the center.
- The spacing between arterials is sufficient to allow clustering of land uses designed to complement the topographical features of the area. Future north/south arterials, collectors and local roads should follow the contours of the land to minimize soil and water erosion effects.
- Pajarito Road is proposed to be the only east/west arterial south of Rio Bravo Boulevard. The lower scale development in this portion of the plan area precludes the necessity for more arterials and river crossings. Collectors and local roads will be sufficient for carrying the local traffic.
- Interstate 25 may be the only existing river crossing south of Rio Bravo Boulevard needed unless the Mesa del Sol area is developed significantly or the area is allowed to develop into a more suburban community with much higher densities than is recommended in the Southwest Area Plan.

Pedestrian accessibility along roadways should be included in the planning and designing of all roads in the plan area. Sidewalks should be provided and maintained to allow a safe place for walking. Adequate, safe and conveniently spaced crossings of busy streets are also essential. The excess right-of-way for roads ultimately planned as four or six lane arterials should be enhanced with landscaping or serve as maintained, open space buffers until such time as the roads are constructed with the maximum laneage. Landscaping of roadway medians and the areas adjacent to the roadway is an important amenity for the area.

POLICIES & IMPLEMENTATION:

POLICY 35. ALL ROADS AND ROAD EXTENSIONS PROPOSED FOR THE AREA SHALL BE CAREFULLY DESIGNED TO HANDLE DRAINAGE AND MINIMIZE EROSION.

Implementation:

- The County and City Public Works Departments, New Mexico State Highway Department and private developers, depending upon jurisdiction for the roadway, will design and construct north/south roads to ensure minimum impact on the fragile soils.

POLICY 36. SPECIFIC ACCESS CONTROL FEATURES OF PRINCIPAL AND MINOR ARTERIALS SHALL BE DESIGNED TO BE COMPATIBLE WITH ADJACENT EXISTING AND PLANNED LAND USES.

Implementation:

- The County and City Public Works Departments, and the New Mexico State Highway Department will incorporate into all proposed access control policies an element which examines the effect of such access control on adjacent land uses, both existing and planned.
- All proposed access control policies for roads in the plan area will be presented for comment at one or more public meetings in the plan area prior to adoption of the policy. All property owners of record of land abutting roads proposed for access control will be informed in writing of the proposal and all public meetings/hearings prior to their occurrence and any official action taken on the proposed policy.
- The County Zoning Administrator and City Planning Department will assist in assessing the compatibility of proposed access control features with existing and proposed adjacent land uses.

POLICY 37. TRANSPORTATION CORRIDOR PLANS SHALL BE DEVELOPED BY THE APPROPRIATE JURISDICTION FOR PAJARITO ROAD FROM PASEO DEL VOLCAN TO INTERSTATE 25, UNSER BOULEVARD FROM ARENAL ROAD TO PASEO DEL VOLCAN OR INTERSTATE 25, PASEO DEL VOLCAN FROM CENTRAL AVENUE TO INTERSTATE 25, 118TH STREET FROM CENTRAL AVENUE TO PAJARITO ROAD, AND 98TH STREET FROM THE SNOW VISTA CHANNEL TO RIO BRAVO BOULEVARD. LAND USE IMPACTS SHALL BE AN ELEMENT IN THESE PLANS AS SHALL AN ON-GOING PUBLIC PARTICIPATION PROCESS.

Implementation:

- The County and City Public Works Departments, and New Mexico State Highway Department will incorporate into all arterial corridor plans within the plan area an element which examines the effect of proposed road construction and reconstruction on adjacent existing and planned land uses. The County Zoning Administrator and City Planning Department will assist in these efforts.
- An on-going public participation process will be included in all corridor plans. This process will include public meetings held in the plan area.

POLICY 38. ROADS PLANNED AS ULTIMATE FOUR OR SIX LANE ARTERIALS SHALL HAVE SUFFICIENT RIGHT-OF-WAY ACQUIRED TO ALLOW CONSTRUCTION OF THE ULTIMATE FACILITY, BUT UNTIL ALL LANES ARE NEEDED, SUCH DESIGN ENHANCEMENTS AS WIDER LANDSCAPED MEDIANS AND OPEN SPACE BUFFER STRIPS SHALL SUBSTITUTE WITHIN THE EXCESS RIGHT-OF-WAY.

Implementation:

- The County and City Public Works Departments, New Mexico State Highway Department and private developers will incorporate such design enhancements into the roadway right-of-way in developed or developing areas to provide an attractive interim solution .
- To ensure adequate right-of-way is available for the arterials planned within the portion of the plan area designated as Established Urban, additions to the Long Range Major Street Plan will be proposed by City/County Public Works Department specifying right-of-way widths for those arterials.

POLICY 39. EAST/WEST ROADS SHALL FOLLOW THE DRAINAGE PATTERN OF ADJACENT ARROYOS WHENEVER POSSIBLE TO AVOID UNNECESSARY CROSSINGS AND REALIGNMENTS OF THE ARROYOS.

Implementation:

- The County and City Public Works Departments, New Mexico State Highway Department and private developers will follow this policy whenever possible when extending existing roads or constructing new ones to maintain the existing drainage system and avoid unnecessary construction costs.

POLICY 40. LANDSCAPED ARTERIALS IN THE AREA SHALL INCLUDE BUT NOT BE LIMITED TO GIBSON/ARENAL BOULEVARD, RIO BRAVO BOULEVARD, PAJARITO ROAD, 118TH STREET AND UNSER BOULEVARD. LANDSCAPING OF MEDIANS AND THE AREAS ADJACENT TO THE ROADWAY SHALL ALSO BE INCLUDED IN THE DESIGN AND CONSTRUCTION OF OTHER NEW ROADS WHENEVER POSSIBLE.

Implementation:

- The County and City Public Works Departments, New Mexico State Highway Department and private developers, depending upon responsibility, will incorporate landscaping into roadway design as specified above.

- Appropriate vegetation which requires minimal watering should be used in landscaping roadways whenever possible.

POLICY 41. ANY CHANGES OR ADDITIONS TO THE LONG RANGE MAJOR STREET PLAN WHICH ARE NECESSARY TO REFLECT THE ARTERIAL NETWORK ADOPTED AS PART OF THE SOUTHWEST AREA PLAN SHALL BE RECOMMENDED TO THE TRANSPORTATION COORDINATING COMMITTEE AND THE URBAN TRANSPORTATION POLICY BOARD.

Implementation:

Upon Plan Adoption:

- The process to further amend the Long Range Major Street Plan, if necessary, will be undertaken jointly by the County and City Public Works and City Planning Departments in conjunction with the Middle Rio Grande Council of Governments.

TRANSIT AND RIDESHARING

Virtually all areas of the Albuquerque metropolitan area which have local bus service at present have densities greater than five dwelling units per acre, and many route portions travel through even higher density areas. A majority of the area south of Rio Bravo and on the upper slopes of the Southwest Mesa is proposed to be low density residential in the plan, i.e., less than five dwelling units per acre. At today's level of technology, it would not be cost-effective to provide transit service in these low-density areas. Rather, paratransit options might be more effective.

Paratransit is the family of transportation services which falls between the single occupant automobile and fixed route transit. Conventional fixed route transit service describes transportation services which operate on a fixed route schedule. While conventional transit planning tends to be corridor oriented, paratransit services are typically planned to serve subareas, or even single activity centers. Paratransit services are designed to meet specific market needs by utilizing vehicles and service configurations which are specially tailored to meet the unique characteristics of an area. Alternative paratransit services which continue to grow in popularity are route deviation systems. These systems operate on fixed routes and deviate from their fixed routes to pick up individuals upon request. Guidelines are established that dictate the extent to which a route can be deviated.

This type of paratransit system might be appropriate in low density areas of the South Valley. The fixed portion of each route theoretically would serve at least one area of clustered commercial, office, public service and residential uses such as the village centers and the Westgate Urban Center and feed into regular transit routes operating into Albuquerque. Ideally, all routes should be connected to provide for intra-community travel.

Areas north of Gun Club which are zoned for medium and some high density residential development will probably be viable for fixed transit service once the level of development planned for in the Southwest Area Plan has been reached. Regional transit service is probable by that point in time.

Providing service along the major arterials which serve these high density areas would bring bus service within 1/4 mile of most South Valley residents in this portion of the plan area. Clustering of land uses will allow fewer bus stops and more efficient service. Routes operating along north/south arterials should access downtown via Central Avenue. It should also be feasible to conveniently connect South Valley buses with west Central Avenue routes serving major employment areas on the westside. It is anticipated that a downtown transit center will be in full operation. From the transit center, southwest area residents will be able to transfer within five minutes to most areas of the Albuquerque metropolitan area.

Employees of the industries located in the proposed industrial corridor east of the river should have access to express bus service to and from downtown where they would transfer to and from regular routes. These routes would travel from residential areas throughout the urban area to the downtown transit center as the central transfer point.

In addition, park and ride lots located in the northern portion of the plan area would allow area residents to park their cars and ride transit to their places of employment outside the plan area.

A provision allowing a 10% reduction in parking space requirements for developments of at least five acres along an existing bus route and allowing an additional 5% reduction if a sheltered bus stop can be located at the site should be written into the County Zoning Ordinance.

POLICIES & IMPLEMENTATION

POLICY 42. A REDUCTION IN PARKING SPACE REQUIREMENTS FOR PREMISES OF AT LEAST 5 ACRES IN EXCHANGE FOR TRANSIT AMENITIES SHALL BE IMPLEMENTED TO ENCOURAGE TRANSIT USAGE.

Implementation:

Upon Plan Adoption:

- An amendment to the County Zoning Ordinance will be developed and presented for approval by the County Zoning Administrator.
- The City Parking and Transit Department will determine where the required pulloffs and shelters should be placed.

POLICY 43. A 250 CAR PARK AND RIDE LOT SHALL BE PROVIDED BETWEEN RIO BRAVO BOULEVARD, INTERSTATE 40, COORS BOULEVARD AND THE RIO GRANDE.

Implementation:

- The site will be acquired by the City or County, depending upon jurisdiction, at such time as the opportunity arises or the need occurs, whichever comes first.

- The exact location should be convenient to transit riders as well as car and van-poolers and will be determined by the City Transit and Parking Department.
- The Transit and Parking Department, in conjunction with the City Planning Department and County Zoning Administrator, will study the feasibility of a Transit Dedication Ordinance designed to assist in realizing transit capital improvements such as park and ride lots.

BIKEWAYS

The regional Bikeways Master Plan has bicycle routes programmed or proposed along most of the major streets north of Rio Bravo Boulevard and on Coors Boulevard. [See Appendix B] The Bikeways Plan also proposes trails along both sides of the Rio Grande travelling the length of the plan area and along a few of the canals and drainage ditches. The Southwest Area Plan supports these proposed and programmed facilities, many of which are targeted for the commuter bicycle trips generally destined for work or shopping.

Provision for a separated bicycle path the entire length of Unser Boulevard through the plan area is important and should be incorporated into the planning and design of this principal arterial. This bicycle facility will provide access to the proposed Westgate Urban Center via the existing route on Arenal Road. The programmed route on Rio Bravo Boulevard will provide access across the Rio Grande to the area's largest projected employment center, the light industrial corridor.

In addition, the network of proposed jogging and bicycle trails outlined in the Open Space section of the Southwest Area Plan will provide scenic and relaxing recreational trails. Most of these proposed paths are not on or directly adjacent to roadway right-of-way.

POLICIES & IMPLEMENTATION

POLICY 44. SEPARATED BICYCLE PATHS SHALL BE INCLUDED IN THE DESIGN AND CONSTRUCTION OF PASEO DEL VOLCAN AND UNSER BOULEVARD AND ADDED ADJACENT TO THE NORTH SIDE OF LOS PADILLAS ROAD (TO CONNECT THE PROPOSED SOUTHWEST MESA CEJA OPEN SPACE TRAIL TO THE BOSQUE) WHEN IMPROVEMENTS ARE MADE OR FUNDING IS AVAILABLE.

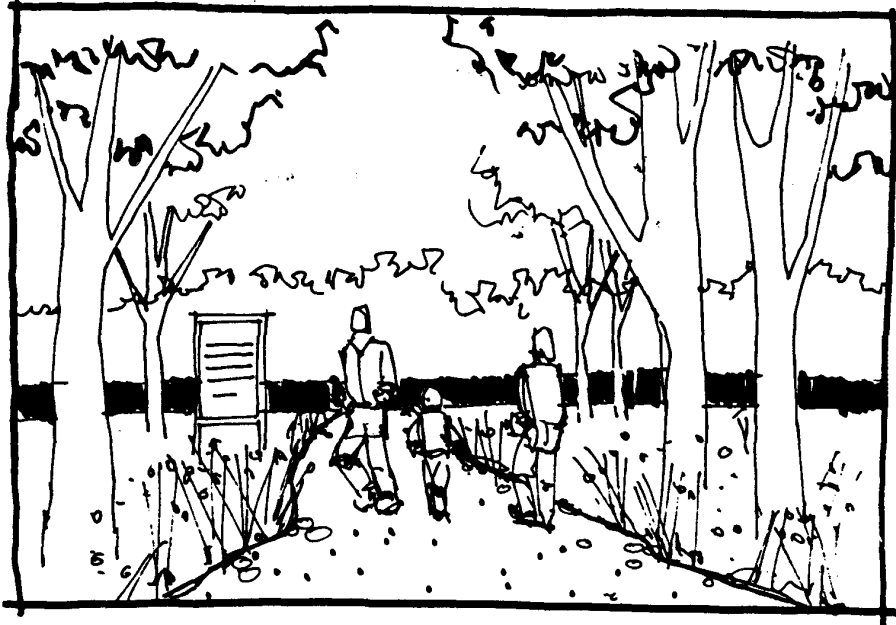
Implementation:

Upon plan adoption:

- The City Planning Department, in cooperation with the Greater Albuquerque Bikeways Advisory Committee, will recommend the necessary amendments to the Transportation Coordinating Committee and the Urban Transportation Planning Policy Board.
- The County and City Public Works Departments, and New Mexico State Highway Department, depending upon jurisdiction will add these paths to the roadways' planning and design.

RAPID RAIL

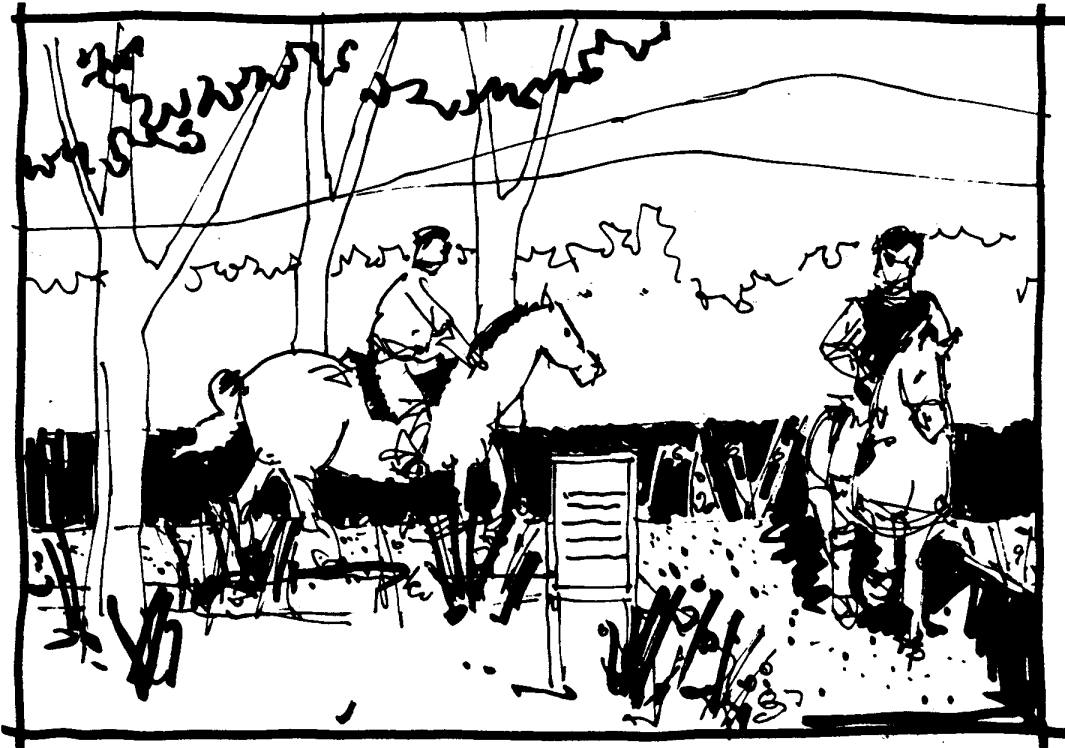
The New Mexico Transportation Department has studied the feasibility of a rapid rail line between Albuquerque and Santa Fe. Brief mention is made of the Rio Grande Corridor Rapid Rail Project since the proposed track alignment for Option 2 is located south of Woodward Road and crosses the South Diversion Channel within the plan area. The main purpose of this rapid rail would be to provide a quicker form of transportation to those who travel between Santa Fe and Albuquerque regularly. It would also provide relief to Interstate 25 between these two cities.



PEDESTRIANS

Pedestrian travel and wheel-chair-accessible facilities are encouraged throughout the plan area in: (1) the clustering of residential developments, commercial and office complexes, and industrial employment areas; (2) planning and designing the village centers around a village plaza and connecting the village centers to each other with a continuous open space trail; (3) including open space links and an urban park in the Westgate Urban Center; (4) providing handicapped-accessible pedestrian paths or sidewalks in the design of open space trails throughout the plan area where possible and (5) requiring roads within the plan area to be planned, designed, constructed and improved with the safety of pedestrians and bicyclists as a primary concern on those roads where people on foot and bicycles are likely to be. (See Open Space and Roadways Sections of the plan.)

EQUESTRIANS



The rural lifestyle of the South Valley has naturally encouraged horseback riding for generations as a means of transportation as well as a recreational pastime. The continuation of horseback riding is provided for here by a network of equestrian trails throughout the South Valley and the Southwest Mesa Slopes. These trails will allow riders to enjoy the views from the Southwest Mesa, ride down the slopes through the South Valley to the bosque and enjoy the view of the Rio Grande. Equestrians will also be able to travel the length of the Rio Grande bosque on the Albuquerque Riverside Trail. (See Open Space Section for open space trails discussion).

POLICIES & IMPLEMENTATION

POLICY 45. ALL ROADWAYS SHALL BE PLANNED, DESIGNED, CONSTRUCTED AND IMPROVED WITH THE SAFETY OF PEDESTRIANS, EQUESTRIANS AND BICYCLISTS IN MIND.

Implementation:

- Sidewalks and safe crossings may be installed and maintained along roadways where people walk.
- Shoulders, adequate outer lane widths or bicycle lanes and safe roadway and river crossings may be provided and maintained where appropriate to provide safety to bicyclists.
- Adequate shoulders and safe roadway and river crossings may be provided and maintained where appropriate for equestrians.

SECTION 5: DRAINAGE PLAN

DRAINAGE MANAGEMENT

Drainage management for the plan area west of the Isleta Drain is being implemented in accordance with the Drainage Management Plan Western Albuquerque Metropolitan Area adopted by the Albuquerque Metropolitan Arroyo Flood Control Authority. In addition, the Albuquerque Metropolitan Arroyo Flood Control Authority has completed a study for a drainage management plan for most of the plan area east of the Rio Grande and south of the Tijeras Arroyo. County and City flood ordinances and the Albuquerque Metropolitan Arroyo Flood Control Authority drainage resolutions govern where applicable.

The primary purpose of the drainage system is to convey runoff to a controlled facility to protect existing development and drainage facilities.

The arroyo system in its existing condition and where discharge does not affect downstream development should be maintained throughout the plan area. The Citizens' Goals Committee supported the preservation of natural arroyos when hydrologically feasible. As development occurs, stabilized channel treatments may be necessary. However, the intent of these treatments should be to retain a naturalistic appearance while stabilizing the channel. The Amole and Pajarito Arroyos are designated for naturalistic channel stabilization treatments as defined in the Facility Plan for Arroyos.



Pajarito Arroyo

Drainage management also consists of several detention facilities west of the Gun Club Lateral sized to match Comprehensive Plan densities. These facilities will temporarily store stormwater runoff carried by the various arroyos located on the mesa slopes. The detention of storm waters will protect the Southwest Valley from sudden, destructive flooding.



Arenal Canal

The detention facilities will outfall to either the Arenal Main Canal or the Isleta Drain. The ability of the Isleta Drain to carry runoff without adversely impacting the Isleta Pueblo to the South is under evaluation. Several Albuquerque Metropolitan Arroyo Flood Control Authority diversion channels are proposed on the Southwest Mesa Slopes to direct runoff to specific drainage systems. These plans are in conformance with one of the Citizens' Goals Committee goals which states drainage and flood control that blends with the environment should be provided in a timely manner.

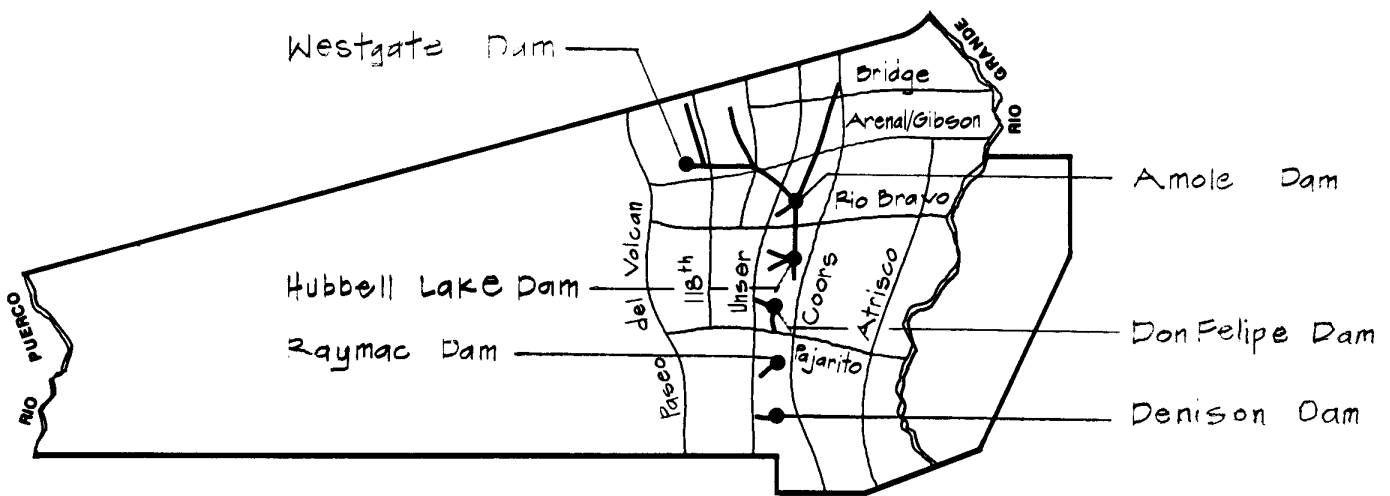
The Isleta Pueblo has expressed concern in the past over the amount of water being introduced into the Isleta Drain and the potential for flooding onto pueblo property. Through the cooperative efforts of the State Highway Department, Bernalillo County and the City of Albuquerque, the Black Mesa Pumping Station is being constructed to divert excess Isleta Drain flows to the river. However, because this is an interim solution with limited capacity, runoff to the drain from additional development should be discouraged in the near future. A more permanent solution to Isleta Drain excess flows is under discussion.

Before development occurs on the Southwest Mesa, a drainage management plan should be completed for the entire mesa. Unless such a plan is developed, the real possibility exists that, as development occurs, the amount of runoff introduced into the swale which flows into the Isleta Pueblo from the mesa will also be increased. A drainage management plan can help prevent this by detailing measures which should be implemented as development occurs on top of the mesa.

Drainage in the Rio Puerco Valley and Slopes should remain in its natural state for several years since limited development is expected to occur in that area in the immediate future. However, it is not too early to begin developing a drainage management plan for this portion of the southwest area, also.

The Middle Rio Grande Conservancy District allows only controlled and retained offsite and onsite flows into its system for minimum impact. In addition, Middle Rio Grande Conservancy District South Valley drains must be preserved to maintain water table levels and to collect and carry surface drainage to the river. The three primary functions of the network of drains, ditches, canals and laterals are to provide irrigation, control subsurface drainage and provide flood control from the Rio Grande.

New Detention Facilities and Drainage Studies



Amole del Norte Diversion Channel. Construction began on the first phase of this channel in the Spring of 1986. This phase of construction extends from the Amole Detention Facility north past Blake Road. Phase 2 is scheduled for construction in the early 1990's and includes the portion of the channel from the completed Phase I section north to Bridge Boulevard. This channel will be concrete-lined and will have a right-of-way width of 85 feet. The Facility Plan for Arroyos classifies the Amole del Norte Channel as a Major Open Space Link.

Amole Watershed Study and Amole Arroyo Corridor Plan. The Amole Watershed Study is complete. The consultant's recommended treatment for the arroyo is tinted concrete lining. A park section channel is recommended for consideration adjacent of the City park. Channel rights-of-way for the concrete section vary from 65 to 85 ft. The park section right-of-way varies from 90 to 115 ft. Within the 85 feet of right-of-way will be the channel, a maintenance road and an open space trail. The study recommendations are also consistent with the Facility Plan for Arroyos which designates the Amole Arroyo as a portion of a Major Open Space Link. Development of the Amole Arroyo Corridor Plan is scheduled to begin soon.

Don Felipe Dam and Detention Basin. This facility stores runoff collected from the Southwest Mesa's eastern slopes by the branches of the Pajarito Arroyo. The detention facility is located west of the Gun Club Lateral and is now completed. It is designed to allow joint use for recreation and open space. The downstream slope is reseeded with native grasses and shrubs. Slope stabilization consists of crimped straw and mulches. The diversion is an earth channel with gabion drop structures. The emergency spillway is concrete tinted to match adjacent soils.

Pajarito Arroyo Corridor Plan. This Major Open Space Link is scheduled to have a corridor plan developed in Fiscal Year 1988. Naturalistic channel treatments within existing alignments are preferred for consistency with the planned open space function. The Don Felipe Trails will travel along the Pajarito Arroyo.

Raymac Detention Facility. Design features are similar to the Don Felipe Facility. However, the capacity is two thirds that of the Don Felipe, reflecting a smaller drainage area and projected lower development for the basin. Future recreational use of the Raymac Facility by a public agency is encouraged by the Albuquerque Metropolitan Arroyo Flood Control Authority. Visual integration features such as reseeding with native grasses have been implemented. Neither this facility nor the Don Felipe will be excavated to full size until additional development occurs in the watershed. Construction was completed in 1986.

Denison Detention Facility. The drainage management plan approved by the Albuquerque Metropolitan Arroyo Flood Control Authority in 1975 proposed a single detention structure with a sedimentation basin and diversion to protect flood-prone lands. The drainage basin is presently being restudied using data and land use figures consistent with the Southwest Area Plan. The new drainage study will make recommendations for drainage management in the Isleta Arroyo watershed to protect existing and future development.

The Soil Conservation Service study recommends a series of water and erosion control measures throughout the Southwest Mesa Slopes beginning at the top of the escarpment and going east toward Coors Boulevard (See Appendix F). As development occurs on the mesa slopes, on-site water and erosion control measures should be required to hold precipitation and soil in place. The soil in this area is highly erodible requiring extra measures to prevent deposition downslope.

POLICIES AND IMPLEMENTATION:

POLICY 46. ALL FUTURE DEVELOPMENT SHALL BE REQUIRED TO LIMIT THE LEVEL OF WATER RUNOFF SO AS NOT TO EXCEED THE CAPACITY OF DOWNSTREAM FACILITIES.

POLICY 47. AS DEVELOPMENT OCCURS AND STABILIZATION OF ARROYO CHANNELS BECOME NECESSARY, THE CHANNEL TREATMENTS USED SHALL BE AS NATURALISTIC IN APPEARANCE AS POSSIBLE, TO BLEND IN WITH THE SURROUNDING ENVIRONMENT, ESPECIALLY IN THE AREA BELOW RIO BRAVO BOULEVARD.

Implementation:

- Agencies such as the Albuquerque Metropolitan Arroyo Flood Control Authority and the City Public Works Department responsible for arroyo channel treatments will include naturalistic alternates in their studies and designs and seriously consider them in selecting the final treatment, especially in the southern half of the plan area.

POLICY 48. THE PROPOSED AMOLE/BLAKE AND WESTGATE/GUN CLUB OPEN SPACE TRAILS WILL PASS ADJACENT TO THE AMOLE ARROYO. PROVISION SHALL BE MADE IN THE AMOLE ARROYO CORRIDOR PLAN FOR THIS SEGMENT OF BOTH TRAILS.

Implementation:

In Fiscal Year 1:

- The City Planning Department, in conjunction with the City Parks and Recreation Department, City Public Works Department and the Albuquerque Metropolitan Arroyo Flood Control Authority, will develop the Amole Arroyo Corridor Plan as per the guidelines set forth in the Facility Plan for Arroyos and make provision for these trails in the plan.

POLICY 49. A DRAINAGE MANAGEMENT PLAN FOR THE SOUTHWEST MESA SHALL BE DEVELOPED.

Implementation:

In Fiscal Year 2:

- The Albuquerque Metropolitan Arroyo Flood Control Authority will be requested by the Mayor to program the plan into its project schedule.

POLICY 50. A DRAINAGE MANAGEMENT PLAN FOR THE RIO PUERCO SLOPES AND VALLEY SHALL BE DEVELOPED.

Implementation:

In Fiscal Year 4:

- The County will be responsible for developing the drainage plan.

SECTION 6: PUBLIC SERVICES PLAN



Volume II, the Existing Conditions Report, of the Southwest Area Plan states:

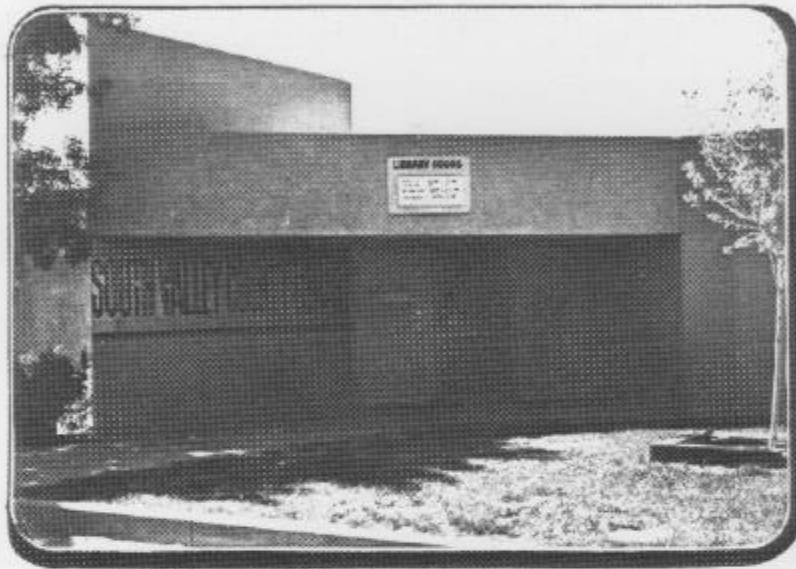
"The mean per capita income in the plan area is about 35 percent below that of the Metropolitan area. The percent of the population below the poverty level varies greatly according to census tract and ranges between 8.1 and 41.7 percent. The overall percentage of the plan population below the poverty level is 19.4 percent, while in the metropolitan area it is 13.2 percent."

The socioeconomic characteristics of the plan area today clearly indicate many social services are needed, but not enough are being provided. Financial and human resources must be made available to secure the needed services and place them in properly located facilities.

Public and social services in the plan area will have to increase when the population doubles to 115,000 residents. Whether the County or City will provide these services depends on where the population lives. Another way to provide public services in the area is to unify their provision under joint County/City management. Library services are working toward such unification within the next two years.

LIBRARIES

Currently, a City branch library at Esperanza and Central Avenue serves the City portion of the plan area. A bookmobile also visits outlying areas such as Westgate Heights. A branch library is planned for Westgate Heights within the next year.

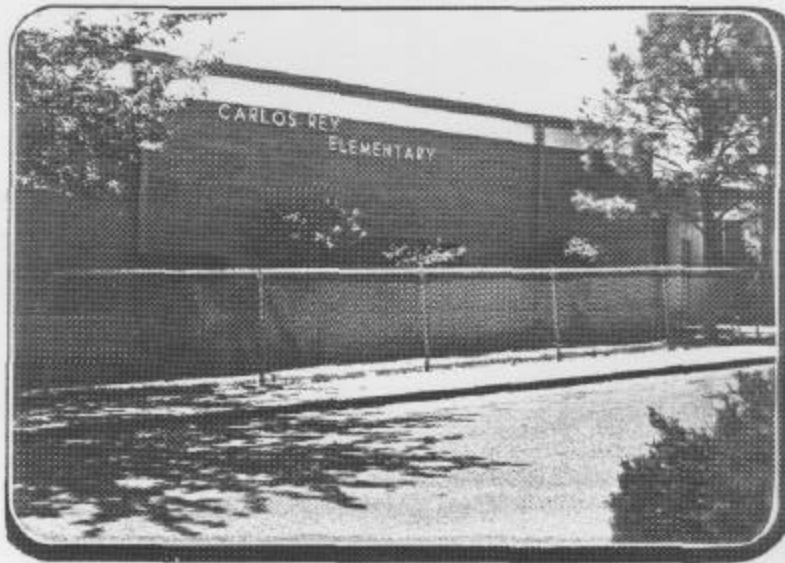


South Valley County Library

The County library next to the Westside Community Center is the only County facility now available in the area. The 1986 County bond issue included \$1 million to expand or relocate this Westside Library. The passage of the bond issue also provided funds to purchase books to be placed in County and City libraries throughout the metropolitan area. This is one of the first steps in County/City unification of libraries.

For each additional 25 to 30,000 people, one branch library is needed to meet national standards. When the area's present population doubles, two additional branch libraries will be needed.

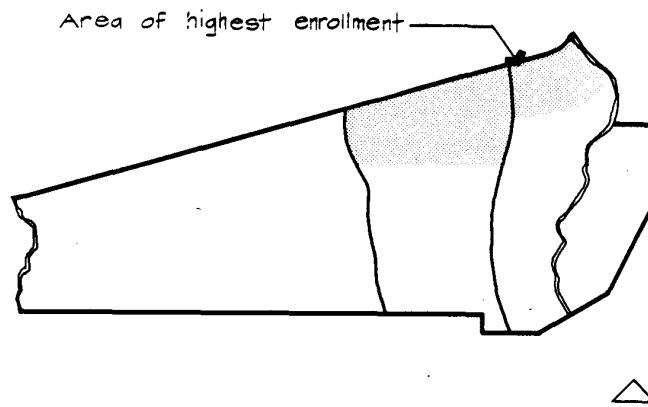
SCHOOLS



Carlos Rey Elementary School

The Albuquerque Public School District serves the entire plan population. The Albuquerque Public Schools long term planning (20-30yrs.) includes site acquisitions for future development or trade for better sites. Short term planning (5-10 yrs.) consists of capital investment planning for existing schools and/or new building construction based on enrollments, population projections, land acquisition, and development trends. Enrollments are tracked yearly to determine how many students are retained and how many have come into the school system. Birth rates are projected to determine kindergarten enrollment. A cohort survival model projects student enrollment each year and for a five-year trend.

The Albuquerque Public Schools presently owns several tracts of land in the southwest, but may not need all of them for school sites or may have to exchange some for more appropriate locations, depending on where additional population locates. Within the next ten years, the southwest portion of the metropolitan area may need additional schools.



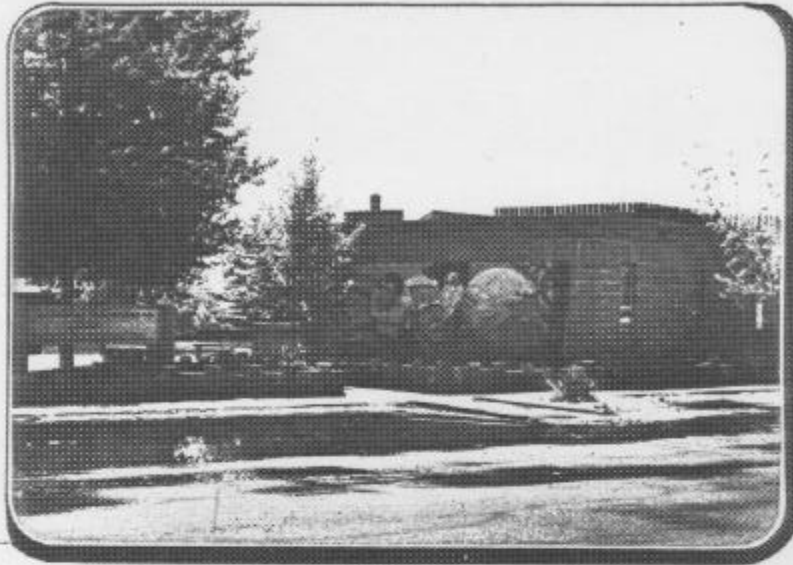
Schools with the highest enrollments currently are located within the identified section shown on the map. Alamosa, Mary Ann Binford, Carlos Rey, Navajo, Adobe Acres, Pajarito and Kit Carson Elementary Schools are heavily enrolled at this time. Truman Middle School and Harrison Middle School are the two middle schools with the highest enrollment in the plan area. Ernie Pyle Middle School is also expected to experience rapid growth within the next three years.

If and when additional schools are built depends on how much and where additional population resides.

MULTI-SERVICE CENTERS

A multi-service center is a facility which offers space to many public services at one central location for the convenience of transportation disadvantaged clients. The three multi-service centers in the City today exist due mainly to the efforts of residents in the areas served by the centers. The residents made the City aware of the need for a centrally located center where public services could be provided. The center was then placed on the Capital Implementation Program list and funding for the center was made available through this process. According to the City Human Services Department, there is no formula currently to determine when such a center is needed.

The southwest plan area is not served by any existing City centers. The one existing multi-service center, the South Valley Multi-Purpose Center, is located on Centro Familiar in the Southwest Valley. Unification of County/City funding resources and staff should occur to provide additional centers as the population increases and prevents duplication of services. The proposed Westgate Urban Center or the village centers are excellent locations for future centers.



South Valley Multi-Purpose Center

SENIOR CENTERS

At the same time the general population of the metropolitan area is increasing, so is the number of persons aged 55 and over. Not only is this age group growing as the population grows, but the proportion of senior citizens to the general population is also increasing.

At least 14% of the projected population of 115,000 probably will be persons over age 55 according to today's averages. This means over 16,000 senior citizens would reside in the plan area.

Presently, there are no senior centers in the plan area, although some services are being provided at the South Valley Multi-Purpose Center. Senior centers are and will continue to be needed as the number of area senior citizens increase. Ideal locations for such facilities would be in the proposed village centers.

LAW ENFORCEMENT SERVICES

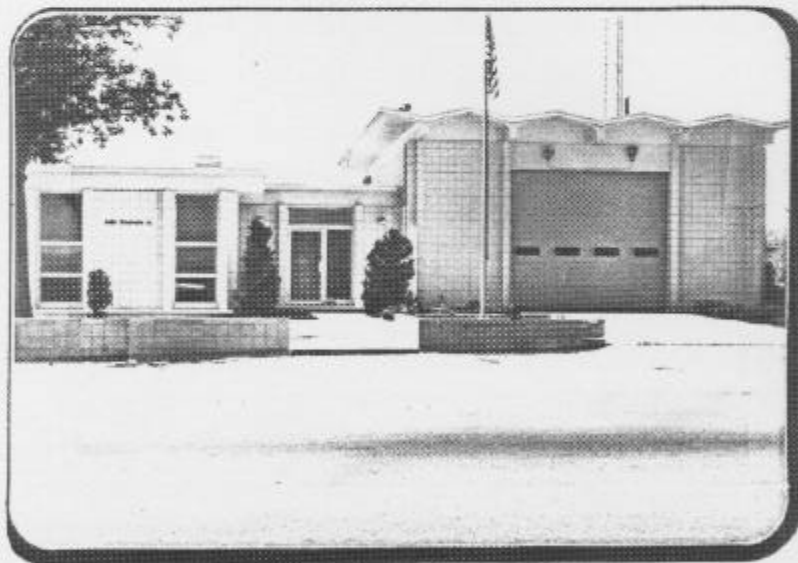
The Valley Substation of the Albuquerque Police Department, located between Central Avenue and I-40 on Los Volcanes Road, recently opened just outside the plan area. This substation serves both the North and South Valley and Southwest Mesa areas, principally within the city limits.

Doubling the plan area population means between 92 and 207 additional officers will be needed to serve the plan area using a ratio of 0.8 officers per 1000 population (Sheriff's Department current formula) or 1.8 law enforcement officers per 1000 population (Police Department's current ratio), depending upon jurisdiction. Two additional substations will also be necessary to provide support for these officers.

FIRE SERVICES

The goal for planning fire substations is based on a response time of four minutes from station to location. This time varies according to the density of development and amount of vehicular traffic. For example, a typical four minute response time in the area of Juan Tabo and Montgomery Boulevards is a distance of two miles or less, while in the area of San Mateo and Menaul Boulevard it is one mile or less.

Based on the land use and traffic projected for the plan area more substations would be needed, particularly in the area north of Rio Bravo Boulevard. However, the County and City Fire Departments are unable to estimate at this time the specific number of substations needed. As additional substations are needed, the village centers should be strongly considered as an ideal location provided adequate roadway access exists and response time is sufficient.



South Valley Fire Station

POLICIES & IMPLEMENTATION:

POLICY 51. THE COUNTY AND CITY SHALL EXPLORE THE FEASIBILITY OF COMBINING THE PROVISION OF PUBLIC SERVICES FOR THE PLAN AREA TO AVOID COSTLY DUPLICATION OF SERVICES.

Implementation:

In Fiscal Year 1:

- The County Manager and City Mayor will appoint a joint City/County task force to study the feasibility of combining public service provision within the plan area.

In Fiscal Year 2:

- The task force should make its recommendations to the County Manager, City Mayor, County Commission and City Council.

POLICY 52. THE CITY AND COUNTY SHALL MAKE THE PLAN AREA A TOP PRIORITY IN DETERMINING NEEDED SERVICES AND PHASING IN THEIR PROVISION.

Implementation:

In Fiscal Year 1:

- The City and County Human Services Departments will conduct in-depth needs assessments of the entire plan area to determine what services are lacking and the best way to provide those services.

In Fiscal Year 2:

- A plan will be developed to determine how to phase-in the needed programs and services as quickly as possible. These efforts will begin separately as City and County efforts if necessary and be combined should joint City/County human service provision occur.

CONCLUSION, EVALUATION, MONITORING AND IMPLEMENTATION

CONCLUSION

Volume IV of the Southwest Area Plan is a comprehensive planning effort for the 115 square miles of land within its geographic boundaries. A land use plan with supporting drainage, transportation and public services plans will provide the basis for development patterns, utility and infrastructure extensions, an arterial and collector street network, an extensive system of open space and parks connected by recreational, multi-use trails and the provision of much-needed public services to be phased in now and continuing as the area develops.

The plan is also protective and respectful of the natural environment through: (1) mechanisms designed to guide development in sensitive areas such as the east ceja of the Southwest Mesa and its escarpment and slopes, (2) preservation of the Southwest Mesa views, (3) the requirement for a water quality plan of action before the light industrial corridor is extensively developed, (4) interim development standards until a solution for the groundwater contamination problems are determined and implemented, (5) the formulation of voluntary ways to preserve agricultural land, and (6) retention of the South Valley irrigation system.

The vast historic, cultural and archeological resources of the area are recognized and preserved through creation of village centers and provisions for the discovery and restoration of the hundreds of years of history and culture of the inhabitants of the Southwest area. This will be accomplished through recognition and restoration of historic buildings and sites and the implementation of recommendations in the Albuquerque/Bernalillo County Archeological Resources Planning Advisory Committee's report.

There are a few important plan area issues which fall outside the scope of this plan. These issues, which deserve in-depth analysis, include economic development, waste recycling and disposal methods, alternative energy sources and phasing of City services.

Once the Southwest Area Plan implementation policies are carried out, the basis for rational, orderly growth and planning in the southwest will be set. Sector plans which follow will have a basis from which to set such essential development criteria as appropriate zoning and detailed land use and design. County Commissioners and City Councillors will have a plan upon which to base many decisions affecting the southwest area.

It was with this intent the Southwest Area Plan was developed.

PLAN EVALUATION

POLICY 53. THE SOUTHWEST AREA PLAN WILL BE EVALUATED BY CITY AND COUNTY PLANNING STAFF IN FISCAL YEAR 2 TO DETERMINE ITS EFFECTIVENESS IN PROVIDING COMPREHENSIVE PLANNING FOR THE SOUTHWEST AREA AND TO DETERMINE WHAT UPDATING OR AMENDING IS NECESSARY.

PLAN MONITORING AND IMPLEMENTATION

- POLICY 54. THE COUNTY COMMISSION AND CITY COUNCIL, WITH THE ASSISTANCE OF COMMUNITY ORGANIZATIONS AND THE CITY PLANNING DEPARTMENT, SHALL APPOINT A JOINT TASK FORCE COMPRISED OF INDIVIDUALS INTERESTED IN THE MONITORING AND IMPLEMENTATION OF THE PLAN. ONE OF THE PRIMARY TASKS OF THE TASK FORCE WILL BE TO MONITOR THE PROGRESS OF PROVIDING SAFE WATER TO THE RESIDENTS OF THE SOUTH VALLEY.
- POLICY 55. NO AMENDMENTS TO VOLUME IV SHALL BE PROPOSED FOR TWELVE MONTHS FROM DATE OF ADOPTION EXCEPT THOSE PROPOSED AND TECHNICALLY JUSTIFIED BY COUNTY OR CITY STAFF.

APPENDICES

APPENDIX A

EXISTING CONDITIONS

(A SUMMARY OF VOLUME I)

The plan area contains three types of major land forms coinciding with natural formations: the flood plains, the mesa slopes and the mesa. The flood plains include the Rio Puerco Flood Plain and the Rio Grande Flood Plain. The mesa slopes lie east of the Rio Puerco Flood Plain and to the east and west of the Rio Grande Flood Plain. The mesa is between the mesa slopes east of the Rio Puerco and west of the Rio Grande.

The land adjacent to the Rio Grande contains wooded areas (bosque) and prime farmland. Sand dunes occur on the mesa and migrate slowly in response to short-term climatic changes. The four major soil associations occurring in the plan area include gila-vinton-brazils, bluepoint-kokan, hantz-gila and madurez-wink.

Two aquifers serve the plan area. One is located in the Rio Grande valley fill from the Quaternary Age. The other is located in the Tertiary Age sand and gravel referred to as the Santa Fe Group. Wells properly constructed in the Santa Fe Group generally yield several hundred gallons of water per minute. Most of the public supply and industrial wells in the area tap water in the Santa Fe Group deposits. Shallow domestic wells which don't tap water in the Santa Fe Group have fluctuating quantity and quality of water.

The depth to the water table under the flood plain of the Rio Grande is maintained generally at a minimum of five to ten feet by a series of drains constructed parallel to the river to lower ground water levels. The water table can be expected to lower further if and when urbanization occurs and as impermeable surfaces such as buildings and streets are constructed and storm sewer lines are installed. The depths to water are greatest beneath the west mesa, approximately 800 to 1000 feet below the land surface.

In recent years, one of the most serious water quality problems throughout the valley has been contamination of shallow wells located in the Quaternary deposits by individual septic tanks and sewage systems. Some instances of well contamination in limited areas have been experienced. Specific concerns include industrial discharge along Isleta Boulevard and excessively high nitrate levels in the Mountainview Subdivision area. A state study of water quality in the South Valley has now been completed. Surface water is generally of good chemical quality. However, the surface water contains objectionable levels of suspended sediment.

Three major natural drainage units are within the plan boundaries: The upper reaches (the Southwest Mesa), the lower reaches (the Southwest and Southeast Mesa slopes) and the Rio Puerco and Rio Grande flood plains within the Rio Puerco and South Valleys. Range depressions dominate the Southwest Mesa. Arroyos on the Southwest, Rio Puerco and Southeast Mesa Slopes carry water toward both rivers. However, existing development, irrigation ditches, drains and levees obstruct the flow of storm waters to the Rio Grande. Occasional flash flooding occurs as a result, causing serious damage and health problems. Drainage in the Rio Grande Flood Plain is controlled largely by man-made structures.

The plan area contains land within the 100 year flood plain. Both Bernalillo County and the City of Albuquerque have flood hazard ordinances which include development controls in these areas. One of the largest 100 year flood areas lies east of the Rio Grande and south of Rio Bravo Boulevard in the Southeast Valley.

Important farmland in Bernalillo County is identified by soil characteristics and the availability of irrigation water. Prime farmland and additional farmland of statewide importance are the U.S. Conservation Service designations of the agricultural lands which cover much of the Rio Grande flood plain.

Air quality, including odors, concern plan area residents. Unpleasant odors influence the decisions of businesses and residents to locate in an area. The sewage treatment plant and various industrial businesses located within the plan area have been sources of complaint in the past.

The major sources of noise are roadway traffic, Seven Flags Raceway, and aircraft from the Albuquerque International Airport and Kirtland Air Force Base. Airport noise contours extend into the area. The land affected is exposed to aircraft noise levels which affect their residential land use suitability.

In 1980, population for the plan area was just under 57,000 persons with 32,240 of these in the 18-64 age group. The school age group, 5-17 totaled 15,237 persons. The area population comprised 16,550 households, 21% of which were headed by females. Seventy percent of the area population was of Spanish ethnicity. Less than 2% were Black or American Indian and less than 1% were Asians in 1980.

The 1980 population appeared stable with 63% maintaining a minimum five year residency in the same house and 76% born in New Mexico. Over half of the population over 18 years of age was bilingual in Spanish and English. Spanish was spoken by 5% of the area's residents as a primary language. Approximately 56% of those over 25 years of age graduated from high school compared to 76.5% for the metropolitan area.

As of the 1980 census, there were 17,674 housing units in the plan area. Twenty-eight percent of the 700 housing units east of the Rio Grande were mobile homes, with 12% of the housing units west of the river mobile homes. Seventy-two percent of all housing units in the plan area were owner-occupied. Almost 3% of the housing units lacked complete plumbing facilities. The number of vacant housing units was a full percent below that in the metropolitan area.

There were approximately 10,371 jobs in the plan area. However, in 1980 the average travel time to work was 22.6 minutes, or four minutes longer than for the metropolitan area, indicating most working residents travelled outside the plan area for employment.

The average plan area household income was just under \$16,000 in 1980. The plan area average per capita income was about 35% below that of the metropolitan area. The percent of the population below the poverty level ranged from 8.1 to 41.7 percent with an average of 19.4%. The comparable figure in the metropolitan area was 13.2%. Six percent of the households in the Southwest had no vehicle.

The Albuquerque metropolitan area contains a vast archaeological record of continuous occupation spanning 12,000 years. The Southwest Mesa is particularly rich in archaeological sites dating from the Paleo-Indian time period. Portions of the Rio Grande and Rio Puerco flood plains and the mesa slopes have been surveyed, but little excavation work has been done. The value of most sites lies not in their preservation but in the information they contain.

There are known areas of eighteenth century Spanish occupation in the plan area. They include the land grants of Atrisco, Pajarito and Los Padillas. While some historic sites in the South Valley have been destroyed by development, it is believed many remain intact below the surface. Much of the Spanish settlement was concentrated near the Camino Real, portions of which followed the existing alignment of Isleta Boulevard.

The Historic Landmarks Survey has identified many buildings in the plan area which have historic value. These buildings vary in condition and date from the middle of the 19th century.

Thirteen elementary schools, four middle schools and one high school serve the plan area.

The City maintains 5 parks, a bicycle trail and a swimming pool. The County maintains 8 parks and 12 mini parks. Together these facilities occupy 80 acres of land. The County also operates and maintains tennis courts and a swimming pool at Rio Grande High School as well as the two community centers and a library in the plan area. Rio Bravo State Park and the Rio Grande Valley State Park are the two state recreational facilities in the area.

The Albuquerque Metropolitan Area Flood Control Authority (AMAFCA) has responsibility for detention areas, dams, diversion channels and arroyos that control flows from the Southwest Mesa's eastern slopes. AMAFCA also has jurisdiction over the Tijeras Arroyo and South Diversion Channel which direct flows from the Sandia Mountains to the Rio Grande. The Middle Rio Grande Conservancy District (MRGCD) controls drainage on the Rio Grande valley floor with an additional network of drains, irrigation channels and a system of levees and permeable jacks. The City and County have major storm sewer facilities in the South Valley along and south of Central Avenue and from Bridge Boulevard into the Isleta and Riverside Drains.

The Gas Company of New Mexico serves most of the South Valley and the subdivisions on the Southwest Mesa Slopes. A large high pressure transmission line is located in the northeastern portion of the plan area.

The plan area is served by the Public Service Company of New Mexico. Four electrical service stations are located in the plan area. Several transmission lines traverse the area.

Sewage treatment includes municipal, community and private systems. The Southside Sewage Treatment Facility, located east of the Rio Grande and south of Rio Bravo Boulevard, provides service to those with City-owned sewer lines, primarily in the City-annexed northern portion of the plan area, between

Central Avenue and Bridge Boulevard. Automated community-based sewage systems are installed by developers, often with no provisions for maintenance. Private and community septic and aerobic systems are used in the sparsely populated southern portion of the area.

All drinking water comes from wells tapping the Middle Rio Grande Aquifer. Municipal water service is provided to the same areas now receiving City sewer service. Water and sewer service is also provided by the City to Mountainview, Adobe Acres and the area west of Rio Grande High School.

Agricultural and residential uses occupy almost an equal amount of land in the South Valley with the majority of the agricultural land in the southern half of the valley below Rio Bravo Boulevard. Industrial uses are located east of the Rio Grande. Strip commercial and office uses predominate along major streets and at major intersections throughout the area.

Development in the area west of Coors Boulevard has been minimal, concentrated in the Westgate Heights Subdivision and on either side of the Gun Club Lateral just west of Coors Boulevard.

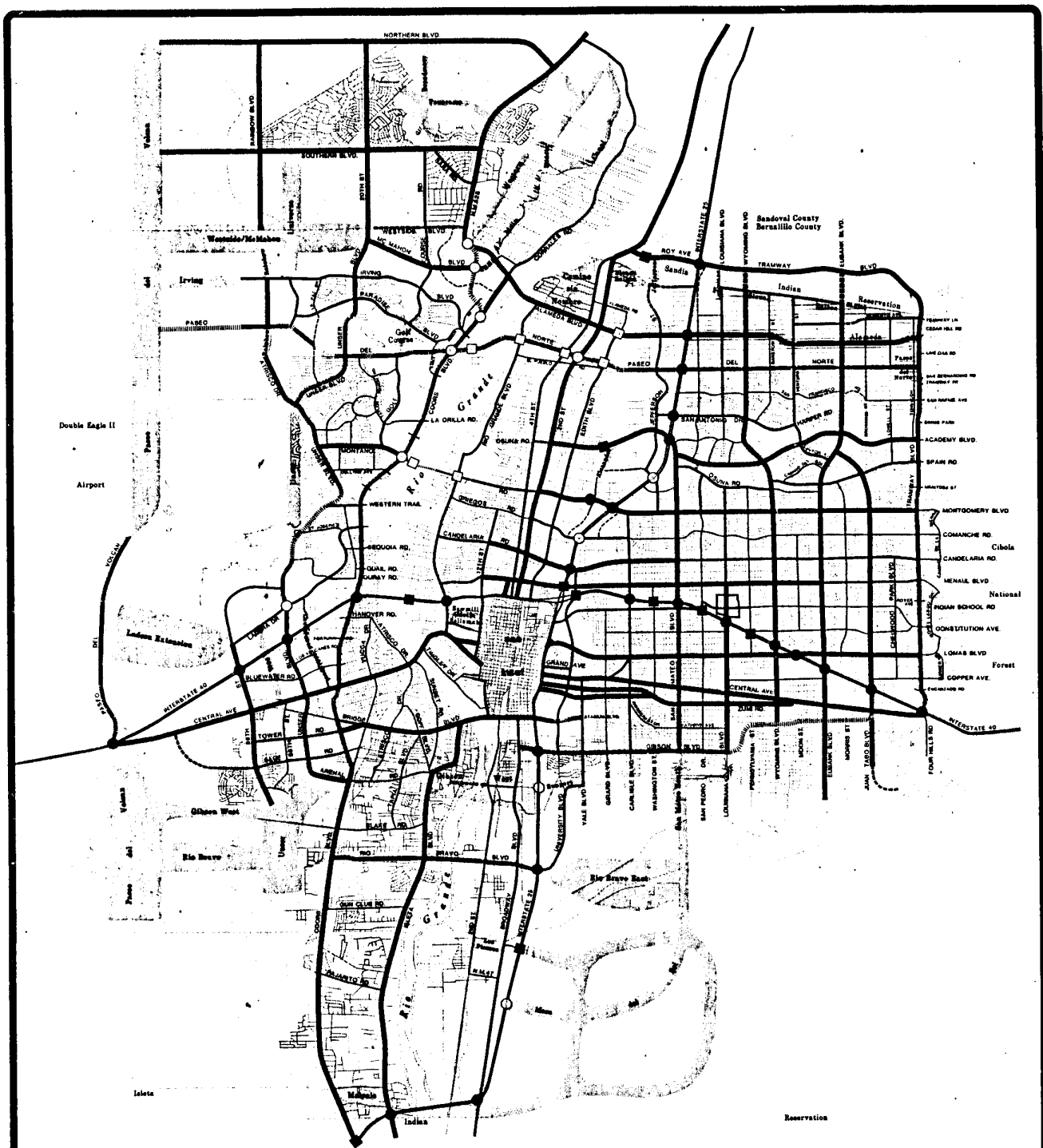
The northern portion of the plan area is zoned predominantly for residential use with strip commercial zoning occurring along Coors, Isleta and Bridge Boulevards. The southern and western portions of the plan area are zoned for agriculture. One exception is the large area south of Central Avenue and east of the Rio Puerco zoned for mobile homes but not yet developed. Mobile home zoning represents a significant percentage of the residentially zoned land in the plan area. Industrial zoning extends from the railroad east to Interstate 25 and from Woodward Avenue south. The intersection of Coors and Bridge Boulevards also has a large area zoned for industrial use.

From 1974 to 1984, 612 acres zoned A-1 for agricultural use or one dwelling unit per acre were rezoned:

- single family residential.....211 acres
- developing area residential (broad range of densities).....122 acres
- mobile home.....103 acres
- residential/agricultural.....71 acres
- commercial.....68 acres
- industrial.....37 acres

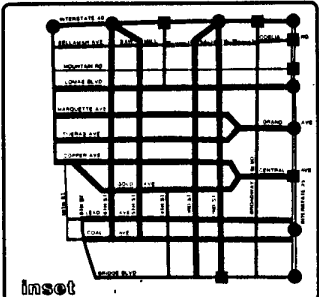
The Albuquerque/Bernalillo County Comprehensive Plan divides the plan area into: established urban (3-9 dwelling units per acre), developing urban (3-6 dwelling units per acre), semi-urban (1-3 dwelling units per acre) and rural and open (1 dwelling unit per acre). An urban center is shown in the Comprehensive Plan located southeast of the Westgate Heights Subdivision. Existing and proposed major public open space and major developed parks are mapped in the Comprehensive Plan for the plan area as are lands to be attained as public easement or rights and agricultural or rangeland.

The Long Range Major Street Plan (LRMSP) provides a framework for transportation planning and classifies arterials and collectors according to their expected functions. (See Figure 2) The plan area has five study corridors shown on the LRMSP: Gibson Boulevard West, 98th Street/De Anza, Rio Bravo Boulevard, Paseo del Volcan and Malpais Road. There is also an overall street network evaluation in progress for the majority of the plan area east of and including the Paseo del Volcan corridor.



EXPLANATION

- | | | | | | | | | | | | | | | | |
|--|------------------|--|-------------|--|---|--|--|--|--------------------|--|----------------|--|-----------|--|---------------------------|
| | EXISTING | | PROPOSED | | Interstate (includes interchange) | | Limited access (no access for commercial traffic) | | Principal arterial | | Minor arterial | | Collector | | Future Potential corridor |
| | Grade separation | | Interchange | | Location study corridor (where proposed alignments have not been established but are under consideration) | | Subarea (where street network evaluation is in progress) | | | | | | | | |
| | Calle Heredia | | | | | | | | | | | | | | |



**Long Range Major Street Plan
for the
Albuquerque Urban Area**

This Plan Map reflects long-range development policies adopted by local elected officials. It provides a framework for the short and medium range planning and development projects established by the Transportation Improvement Program for the Albuquerque Urban Area. Major streets are classified according to their anticipated traffic service functions. Corridors and subareas are identified for the conduct of more intensive systems planning and location studies. Right-of-way standards for all streets classified by this map are contained in the attached addendum.

Reviewed and Recommended by the Transportation Coordinating Committee and Adopted by the Urban Transportation Planning Policy Board of the Middle Rio Grande Council of Governments 28 July, 1986

PREPARED BY
Woods Bagot
Council of Government

R. Wade Hunslett
R. Wade Hunslett, Chairman, MRGCOG/UTPPB

JULY 1986

imsot

GOALS AND ISSUES
(A Summary of Volume II)

Goals reflect existing conditions and community needs, desires, and values. In 1984, the Southwest Area Citizens' Goals Committee established goals for the plan area. The goals address direction of growth for the next thirty years as well as existing needs. Two major goals were formulated plus thirteen additional ones.

The most important goal for the plan area is:

To preserve and further enhance the quality of life for all citizens, including the following factors:

- Environmental (air quality, water quality, quality of the land)
- Cultural (libraries, neighborhoods, historic buildings, archaeological sites, etc.)
- Recreational (parks, recreational facilities, open space, arroyos, etc.)
- Educational (natural studies and academics)
- Medical

The second most important goal is:

To develop planning mechanisms and legislation to permit and encourage the following land uses:

- Low-density housing and agriculture in the South Valley
- Higher-density housing and commercial uses on the slopes west of the Gun Club Lateral
- Open space when environmentally appropriate around the 9% slope and horizon line of the slopes
- Development of satellite communities on the Southwest Mesa
- Natural arroyos when hydrologically feasible

These remaining goals support the aforementioned goals:

- To plan for water, sewer, gas, alternative energy sources and electrical service where needed.
- To encourage trash collection, recycling and disposal, and prevent illegal dumping.
- To provide neighborhood and street lighting.
- To implement and enforce planning and zoning in the plan area.
- To establish commercial and industrial areas that will allow the development of an economic development plan.
- To preserve the rural character of the Valley including farmland and the general feeling of openness.

- To preserve neighborhoods while providing for main arterials, including river crossings, and to encourage mass transit systems where appropriate.
- To develop a system of jogging, biking, hiking, and horse trails linking the bosque to the west mesa area and extending across the river.
- To make irrigation and drainage ditches reasonably safe from flooding and drowning.
- To provide recharge, drainage and flood control, in a timely manner, that blends in with the environment.
- To protect against uncontrolled animals and insect pests.
- To make maximum recreational use of the river and bosque, and improve access to the river and bosque.
- To encourage joint use of parks, schools, fire stations, and sheriff/police stations.

Critical issues for the southwest area became apparent as goals and different ways of accomplishing them were identified. The critical issues listed below are a summary of those identified through a combination of citizen input and input from local, state, and federal technical staff. Many of them concern the varying, yet complex, interrelated needs of the South Valley and the less developed remainder of the southwest area, which is referred to as "outside the Valley" in the statements of issues presented here.

Social/Cultural/Service Issues

- How should the increase of population in the South Valley and the remainder of the Southwest area be handled?
- Will the encouragement of better development in the South Valley cause an influx of population that would displace the present population?
- What is the appropriate level of services for urban and non-urban areas? Should urban-type services (i.e., water, sewer, and garbage removal) be provided throughout rural areas?
- Will the portion of the plan area outside of the South Valley develop as part of the valley or will it have its own identity, its own sense of place?
- How can the historic resources in the area be identified and be protected? How can they be developed as an educational resource?
- How will development in the South Valley or outside it impact on quality of life, community needs and services in the valley?

- The limited amount of development presently outside the South Valley means that a great number of options exist for the development of the land. How can these options be maximized to provide desirable community attributes?
- Should retail services be provided in the South Valley or should they be located outside? What are the needs for future retail services within the plan area outside of the valley?

Environmental Issues

- What is the appropriate kind of development from an environmental standpoint for the portion of the plan area outside of the South Valley? What is the ability of the valley land to support development?
- Are farming and agriculture a viable use of the South Valley lands?
- How can good water quality be maintained outside the South Valley? How can residents in the valley be provided with good quality water?
- What is the best way to protect the unique environmental conditions outside the South Valley?
- What should be the role of the river and surrounding bosque lands in relation to surrounding development?

Most of the goals and issues identified at the inception of the Southwest Area Plan planning process have been directly addressed in the Plan. There are others which are more appropriately dealt within a sector development plan. An example is encouraging trash collection, recycling and disposal.

LAND USE ALTERNATES
(A Summary of Volume III)

Three land use alternates were developed for the Southwest Area Plan. These alternates identified generalized land uses for the year 2010.

Alternate 1: Trend Scenario

This alternate was basically a "no action" scenario. If existing conditions and development patterns continued with minimal change in current policies, the Southwest area would most likely resemble this scenario in the year 2010.

Under this alternate, all prime agricultural land would develop into other more intense land uses; major streets with unlimited access would be lined with adjacent incompatible land uses such as single family homes and fast food restaurants; scattered vacant lots would serve as the area's only open space; written histories would be all that remain of the area's historic villages; and the area's water quality problems would become more serious.

Alternate 2: Comprehensive Plan Scenario.

There are several ways the goals and policies of the Comprehensive Plan could be interpreted to establish development patterns in the southwest plan area. This alternate represented one interpretation.

The Comprehensive Plan Scenario dealt with establishment of systems and the interrelationships of those systems and networks. Parks and open space areas provided recreational opportunities while buffering the residential areas from the commercial/office areas. Higher density housing was built near open space. An effort was made to preserve the prime agricultural land. Major roadways combined landscaping, jogging and bicycle paths with vehicular needs. Closer attention was paid to the limitations and advantageous features of topography and available resources in developing land. The history of the area was emphasized physically.

Alternate 3: Modified Comprehensive Plan Scenario.

Alternate 3 was based upon a modified Comprehensive Plan incorporating ideas from the Goals for Albuquerque and the South Valley: Workbook Toward An Area Plan. It was much the same as Alternate 2 with some modifications to the Comprehensive Plan incorporated.

The land use concept for this scenario placed emphasis on phased and scheduled growth. The scale of development ranged from small neighborhood centers to a larger multi-use urban center. Higher density commercial and residential growth occurred along roadway corridors and on the mesa along Paseo del Volcan. An effort was made to preserve the prime agricultural land and rehabilitate marginal commercial businesses.

A comparison of how well these three alternatives addressed the citizens' goals and issues was made in Volume III of SWAP. Alternatives 2 & 3 addressed these goals and issues much better than did the Trend Alternate, which was therefore eliminated from further consideration.

APPENDIX B

EXISTING PLANS, POLICIES AND GOALS

The Albuquerque/Bernalillo County Comprehensive Plan contains several goals and policies applicable to the Southwest area. Volume II of the Southwest Area Plan delineates those Comprehensive Plan goals and policies applicable to the plan area.

The Long Range Major Street Plan (LRMSP) is the official adopted transportation plan for the metropolitan area. The UTPPB adopted changes to the LRMSP and a resolution affecting arterials in the area in 1987. (See next page).

The 1988 Transportation Improvement Program for the Albuquerque Urban Area (TIP) schedules transportation improvements under annual and five year elements as well as a listing of needed but unprogrammed projects. The TIP is updated annually.

These are the programmed and unprogrammed SWAP projects by category:

	<u>1987-'88 Annual Element</u>	<u>1988-'92 Five Yr. Element</u>
Benavides Rd. crossing Snow Vista Channel	Inactive	Preliminary engineering completed
Bridge/Coors Inter- section construction	Preliminary engineering underway	Construction completed
Coors N/S connection (Central to Arenal)	R/W acquisition com- pleted, construction completed	
Isleta/Arenal Goff Intersection Reconstruction	Construction underway	Construction completed
Isleta Blvd. (Rio Bravo to Bridge)	Preliminary engineering underway	Reconstruction to 4-lane roadway underway

PLANNING
DEPARTMENT
PLANNING DIV.
SEP 29 3 16 PM '87

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22

23
24
25
26

27
28
29
30
31
32

33
34
35
36

37
38
39
40

41
42
43

RESOLUTION
of the
URBAN TRANSPORTATION PLANNING POLICY BOARD
of the
BOARD OF DIRECTORS
of the
MIDDLE RIO GRANDE COUNCIL OF GOVERNMENTS OF NEW MEXICO
(UTPPB R-87-6)

CONCERNING MODIFICATIONS TO THE LONG
RANGE MAJOR STREET PLAN IN THE SOUTH-
WEST PORTION OF THE ALBUQUERQUE URBAN
AREA

WHEREAS, the Urban Transportation Planning Policy Board
adopted Resolution R-87-3, which modified the Long Range
Major Street Plan in the Southwest area, at its January 23,
1987 meeting; and

WHEREAS, THE Urban Transportation Planning Policy Board
requested the South Urban Area Citizens Advisory Committee
(SUACAC) to review the resolution and present the infor-
mation that they had received from area residents in regards
to additional conditions, corridor studies, or arterial
systems in the area; and

WHEREAS, the SUACAC and a subcommittee of the SUACAC
met several times with the public to develop recommendations
brought before the Urban Transportation Planning Policy
Board; and

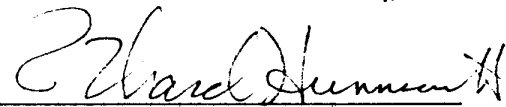
WHEREAS, the Transportation Coordinating Committee, the
technical advisory body to the Urban Transportation Plan-
ning Policy Board, has reviewed the proposed changes and
recommends them; and

WHEREAS, it is the responsibility of the Urban Transpor-
tation Planning Policy Board to effect changes to the Long
Range Major Street Plan.


1 NOW, THEREFORE, BE IT RESOLVED by the Urban Transporta-
2 tion Planning Policy Board of the Board of Directors of the
3 Middle Rio Grande Council of Governments of New Mexico, that
4 the Long Range Major Street Plan be modified as is shown on
5 the graphic which is attached to, and made part of, this
6 resolution and as is described as follows:

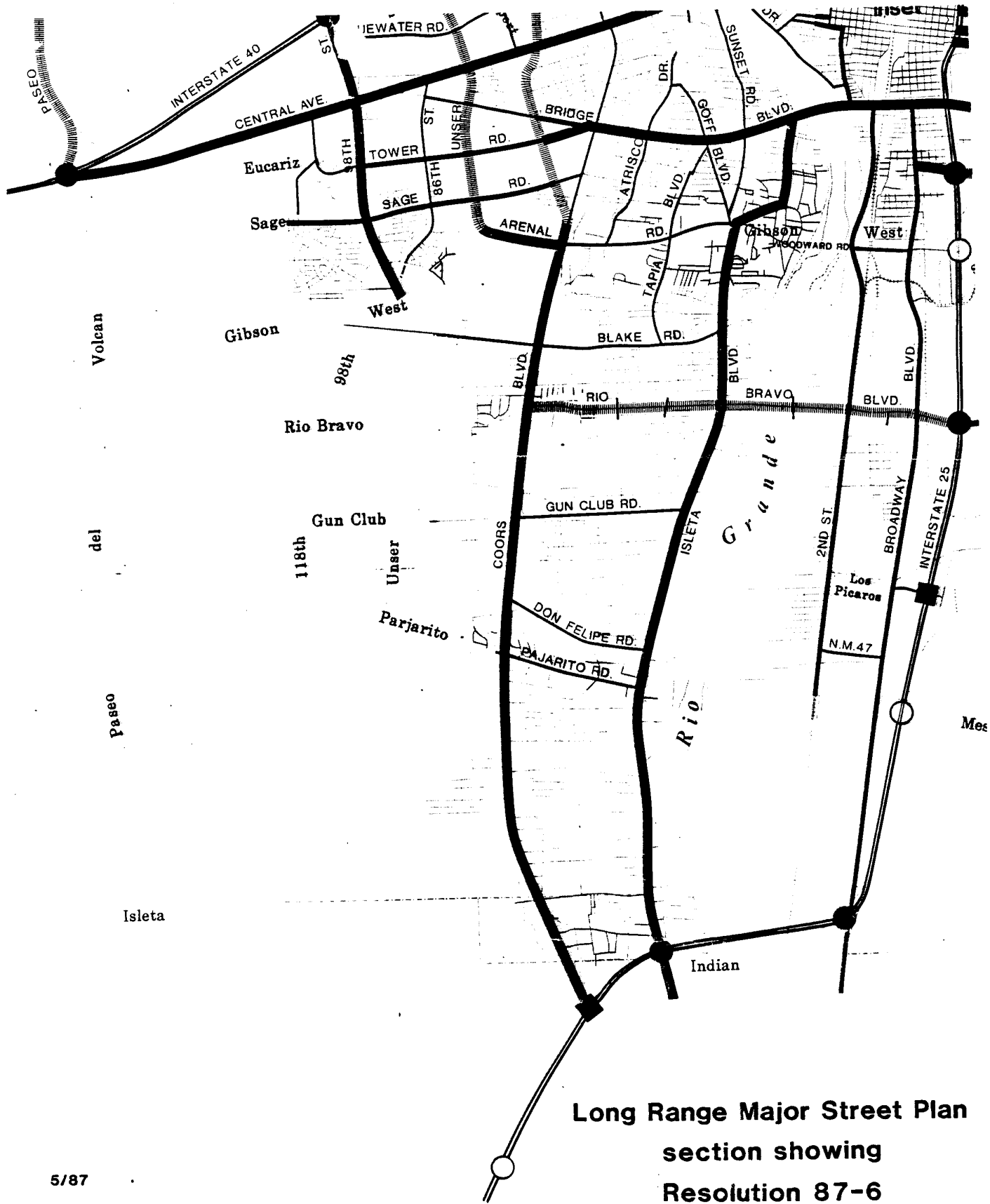
- 7 1. The Malpais Location Study Corridor shall be
8 combined with the extension of the Paseo del
9 Volcan/Unser Boulevard Location Study Corri-
10 dor such that the terminus of the corridor is
11 along I-25 from Isleta Boulevard to the
12 Isleta Reservation interchange, the word
13 Malpais shall be deleted, and no additional
14 access to I-25 shall be shown; and
- 15 2. Second Street shall be designated a Minor
16 Arterial from Bridge Boulevard to the
17 Pajarito Location Study Corridor; and
- 18 3. The Pajarito and 118th Location Study Corri-
19 dors shall remain on the Long Range Major
20 Street Plan; and
- 21 4. Unser Boulevard south of Central Avenue shall
22 have a minimum right-of-way of 156 feet.

23
24 PASSED, ADOPTED AND APPROVED this 22nd day of May,
25 1987, by the Urban Transportation Planning Policy Board of
26 the Board of Directors of the Middle Rio Grande Council of
27 Governments of New Mexico.

28
29
30
31 
32 R. Ward Hunnicutt, Chairman
33 Urban Transportation Planning
34 Policy Board (UTPPB)

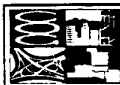
35 ATTEST:

36
37 
38 Albert I. Pierce
39 Executive Director/Secretary



**Long Range Major Street Plan
section showing
Resolution 87-6
modifications**

5/87



**Middle Rio Grande
Council of Governments
of New Mexico**

620 Lomas N.W., Albuquerque, N.M. 87102 (505) 247-1750

98th Street (Blake to Central)	Inactive	Preliminary engineering completed, construction underway (4 lane divided roadway)
Rio Bravo Blvd. access and Corridor Study (I-25 to Paseo del Volcan)	Corridor study complete, preliminary engineering R/W acquisition underway	Preliminary engineering & R/W acquisition complete. Phase I construction underway & implementation of access control policy
Rio Bravo Blvd. (I-25 to Isleta) Landscaping Medians	Construction completed	
Unser Blvd. (Bridge to Central)	R/W acquisition completed	Preliminary engineering completed
Arenal Road (crossing Amole del Norte)	Preliminary engineering completed	Construction of crossing structure completed
Blake Road (Crossing Amole del Norte)	Construction of crossing structure completed	
Sage Road (Crossing Amole del Norte)	Preliminary engineering completed	Construction of crossing structure completed
Tower Road Crossing Amole del Norte	Preliminary engineering completed	Construction of crossing structure completed
Arenal Bikeway (Coors to La Vega route)	Inactive	Signing
Airport Bike Route Bluewater to Coors N/S	Inactive	Signing
Blake Bike Route Coors to Isleta	Inactive	Signing
Blake/La Vega Bike Route	Signing	
Central Bikeway from Palisades to I-40 (Route)	Inactive	Signing
98th Bike Route (Central to Gibson)	Inactive	Signing
Sunset Bike Route	Signing	

Tapia/Goff Bikeway Harper to Blake (Route)	Inactive	Signing
Westgate/Gibson Bike Route	Inactive	Signing
Westgate/86th Bike Route	Inactive	Signing

Unfunded/Short Range

Bridge Blvd. (Coors to Coors N/S connection)	Reconstruction to appropriate standards
98th Street (Blake to Central)	Construction and Reconstruction to appropriate standards
98th Street (Sage to Central)	construction
Paseo del La Vega Bikeway (Barelas Bridge to Adobe Acres)	Construction of Bike Trail
Sage Road (86th to 98th)	Reconstruction to appropriate standards
Tower Road (South Coors to 98th)	Construction of 4 lane roadway
Tower Road (N/S Coors to Old Coors)	Construction
Unser Blvd. (Sage to Central)	Construction
Woodward Rd. (I-25 to Airport)	Construction

Corridor Planning Priorities
In Progress

West Route 66 Corridor Plan
Gibson extensions from Pasel del Volcan to I-40/Juan Tabo
98th SW from Rio Bravo to Gibson
Rio Bravo SW from Coors to Paseo del Volcan
Unser SW from Tower to Central

5-Year Element

Malpais from Isleta to Coors
Pasel del Volcan from I-40 to Rio Bravo
Unser SW from Rio Bravo to Tower

The Facility Plan for Arroyos designates and schedules a limited number of arroyos within the metropolitan area for further study and development as recreational corridors. The Amole Arroyo and the Amole del Norte Diversion Channel and one of the branches of the Pajarito Arroyo are designated as major open space links for the southwest area. Arroyo corridor plans are scheduled in the Facility Plan for the Amole and Pajarito Arroyos to locate recreational trails forming continuous east/west links between the proposed major open space on the west escarpment of the Southwest Mesa. Segments of arroyos in highly developed or developing areas of the metropolitan area are also targeted in the arroyos plan for designation as urban recreational arroyos. These arroyo segments would be used as open space trails or linear park connections between major activity centers and residential areas.

The Facility Plan: Electric Service Transmission and Subtransmission Facilities lists two proposed substation facility upgrades and one new construction project for the southwest area between 1985 and 1995. The Volcano and G.E. Substations will be upgraded from 46 DK tap to 115kv subtransmission tap. A 115 kv line will be constructed between these two substations.

The Snow Vista Master Plan, adopted in 1960, establishes land uses and zoning for approximately 2660 acres to be annexed lying northwest of the intersection of Coors Boulevard and Barcelona Road. The approved zoning includes about 1840 acres of mostly single-family residential and 340 acres of commercial and office uses.

The Rio Grande Valley State Park Management Plan outlines the management and operation for this state park which includes the bosque on both sides of the river within the southwest area. Passive recreational uses will be the main focus of the park with some active uses in designated locations.

The Water Based Recreation Study outlines recreational opportunities revolving around water within the metropolitan area. Five projects are recommended in the study, three of which will entail river bosque, MRGCD ditch right-of-way and the Rio Bravo State Park within the southwest area.

The Capital Improvements Program Six Year Program 1987-1991 lists projects programmed for at least partial funding through general obligation bonds and revenue bonds. The projects for the plan area for 1987-1991 include:

<u>Project</u>	<u>Description</u>	<u>Bond Cycle</u>
98th Street (Central to Blake)	design, right-of-way acquisition and construction of a 4 lane divided roadway along the existing alignment	1991
Alameda Drain Improvements	make improvements to this and the Albuquerque Riverside Drain to safely convey storm water	1987

<u>Project</u>	<u>Description</u>	<u>Bond Cycle</u>
Amole del Norte Diversion Channel	construct open concrete lined channel with inlet south of Bridge Boulevard	1989 & 1991
Isleta Watershed Systems	continue design and construction of structures to reduce flooding	1989 & 1991
Master Plan Water-lines (at 106th St to Westgate Hghts)	add transmission line capacity to existing and pending development in the Westgate Heights area	1987
Fire/Police Training Academy (114th St. and Central Avenue)	design, construct and equip the dual purpose training academy	1987, 89 & 91
Sewage Treatment Plant #2 Renovation	design and renovate digesters, Phase II plant expansion, replace aeration blowers and other equipment, general plant improvements and additional landscaping	1987 & 1989

The Transit Development Program (TDP) for the City of Albuquerque's Transit System, Volume II: Service Recommendations indicates that four current Suntran routes serve the southwest area: Route 15 University of Albuquerque, Route 51 Westgate Heights, Route 53 Highway 85 and Route 54 Atrisco. The TDP lists no planned service expansions within the area to 1988 with the exception of Route 54 which is shown as extending to serve Atrisco north of Bridge and Sunset Road to Gonzales Road. Two TDP objectives which relate to the transit service are: "Resource allocation should be related to ridership levels. Bus service should be provided within one-quarter mile of areas in the City where ridership is sufficient to meet productivity standards."

The 1986 Bikeways Master Plan indicates only three existing facilities for bicycles within the southwest area. One is the southern portion of the Rio Grande Bike Trail which lies within the bosque and now ends at Bridge Boulevard. The second is a designated bike lane on Isleta Boulevard between Blake Road and Gun Club Road. The third is a bike route from Rio Bravo to the Isleta Pueblo Boundary on Coors Boulevard. There are programmed routes along most of the major streets north of Rio Bravo Boulevard. Programmed lanes include Coors from just south of Central Avenue to Arenal Road, Rio Bravo Boulevard from Coors to Interstate 25, Bridge Boulevard from Coors to Sunset Road and Isleta Boulevard from Bridge to Rio Bravo. Proposed trails extend along both sides of the river in the bosque throughout the plan area, along a few of the canals and drainage ditches within the area and along the proposed extension of Gibson/Arenal from Interstate 25 to Isleta and 98th Street to Coors Boulevard. Proposed lanes include 98th Street from Central Avenue to Arenal and along Bridge Boulevard from 98th Street to Isleta Boulevard. There are several proposed routes on streets throughout the plan area.

The City Edges Study, a 1975 study of the Rio Grande Valley sponsored by the National Endowment for the Arts, recommended that the entire floodway of the Rio Grande be designated a nature preserve. An educational nature center was also proposed which now exists outside the plan area. Pond and marsh plant and wildlife restoration sites, an open space system, water impoundments within the riverbed or off-channel were also recommended. A regional park was proposed for the South Valley south of Rio Bravo Boulevard and adjacent to the river. Las Vega County Park and Valley Gardens City Park were proposed within the plan area. Two large areas of open space adjacent to and east of the Rio Grande were proposed.

South Broadway Neighborhoods Sector Development Plan includes only a small portion of the Southwest Area Plan area. This portion is bounded by William Street, City Limits, Arno Street and Woodward Avenue. The principal goals of the plan include neighborhood renewal/conservation and improvement of living conditions of low and moderate income families. Proposed zoning for the portion of the South Broadway plan also in the geographic area of the Southwest Area Plan is heavy manufacturing.

The 1985 Land Absorption Potential Study which surveyed all the vacant land in the Albuquerque metropolitan area, indicated 2920 of the almost 35,000 vacant acres of residentially zoned land, 105 of the 2340 vacant acres of commercially zoned land and 1,210 of the 4500 vacant acres of industrially zoned land are within the Southwest Area Plan boundaries. According to this information, almost 4700 new dwelling units could be built on the 2920 acres of vacant residentially zoned land.

The important conclusion of this study as far as the southwest area is concerned is that of the 9300 vacant residentially zoned lots, there are 3900 west of the river within the Established Urban area and the City water/sewer service areas which represent an implied commitment for water and sewer service.

The Drainage Management Plan for Western Albuquerque Metropolitan Area delineates the major structural components needed to control flooding problems which occur or are expected to occur with future development. The plan also includes recommendations for management of tributary arroyos. The Denison Park, Raymac, Don Felipe, Hubbell Lake, Westgate Detention Facilities and associated arroyos are included in this plan. This drainage plan was subsequently amended to relocate the first three facilities listed above to the west of the Gun Club Lateral rather than east.

The Goals for Albuquerque 1983-1984 report focused on community goals to direct future growth and protect the quality of life for everyone in Albuquerque. These are the major goals listed in this report applicable to the plan area:

- "Physical Growth. The fundamental goal is to establish regional planning and ensure adequate supplies of clean air and water, energy, open space and other natural resources."
- "Transportation. Develop long-range transportation plans to reduce hazardous pollutants caused by vehicular traffic and provide adequate facilities for the City's growing aviation sector."

-
- "Infrastructure. Develop accurate inventories, project schedules and required funding sources for the maintenance, replacement and expansion of Albuquerque's water, sewer and other infrastructure systems."
 - "Economic Development. The fundamental goal is to secure a balanced, diversified industrial base for the Albuquerque Metropolitan area."
 - "Human Services Delivery Systems. Resolve the conflict between declining funding sources and increasing social needs through innovative approaches to anticipate need, generate cost savings where possible and more equitably match needs with community resources."
 - "Culture and Recreation. Acknowledge the City's role in providing a proper environment to foster expansion of cultural and recreational opportunities for all age groups."
 - "Environment and City Beautification. Marshal public and private effort to protect the environment and enhance the natural beauty of the City."

APPENDIX C

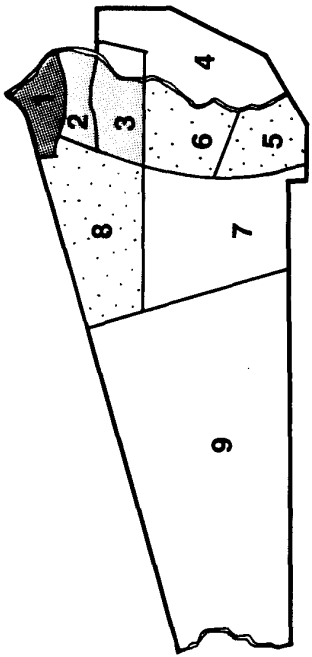
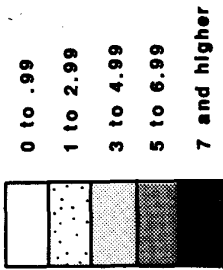
Economic Analysis

Dr. Alfred Parker, Chairman of the University of New Mexico Economics Department, performed an economic analysis of the proposed land uses in the Preferred Alternate. The Trend Alternate, (which reflects the way the southwest area would probably look in the year 2010 from a land use perspective if policies and conditions remain the way they are today), was used as a comparison. This analysis was performed to determine if the land uses as defined and distributed in the Preferred Alternate would result in a positive economic impact on the southwest area. The results of that analysis, An Economic Analysis of the Southwest Area Plan, were:

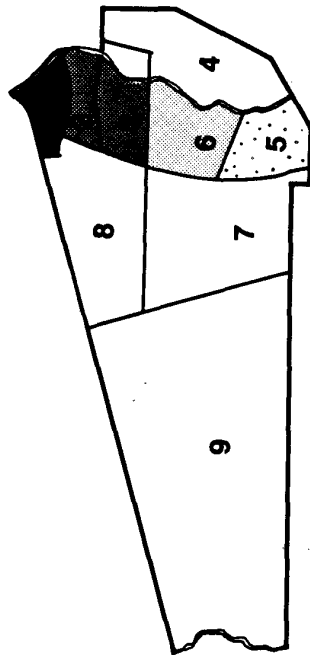
- The plan area may be described today as a classic example of urban sprawl. Urban sprawl and the significant costs associated with it will continue unless intervening factors such as the Preferred Alternate in the Southwest Area Plan and sector development plans are adopted and implemented.
- The southwest area is an economically depressed area as these figures show:

	<u>Southwest Area</u>	<u>Albuquerque Metro Area</u>
per capital income	\$ 4688	\$7136
labor force participation rate	.41	.64
% of persons w/incomes below poverty level	18.6	13.0
% of households with incomes below poverty level	16.0	10.0
unemployment rates	9.7	6.7

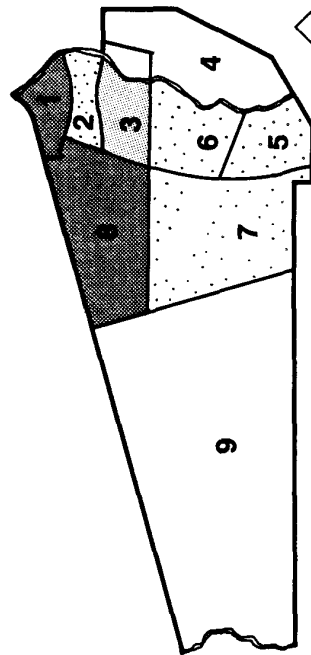
- The Preferred Alternate has the potential to increase the City/County tax base and revenue by 7 to 10 percent more than the Trend Alternate
- The Preferred Alternate would result in lower capital outlays and lower operating costs due to a reduction in the number of miles of roads, sewer and water lines made possible by emphasis on clustering of residential uses, employment and shopping areas.
- In the Preferred Alternate, the Southwest Area Plan population per acre showed densities which reflect more closely the stated desires of area residents that additional development should occur north of Rio Bravo Boulevard and on the Southwest Mesa Slopes.
- The net deficit from the increase in public costs exceeding the increase in public revenues which results from development would be smaller under the Preferred Alternate.



△ 1980
Population Per Acre



△ Trend Alternate
Population Per Acre



△ Preferred Alternate
Population Per Acre

- The number of employment opportunities will increase significantly under both alternates. However, employment will be concentrated in major centers under the Preferred Alternate reducing the total miles traveled within the area and allowing more opportunities for transit and ridepooling ... a plus for the transportation disadvantaged population in the Southwest. The amount of air and noise pollution would also be less.
- Because employment opportunities will increase significantly, per capita income and the labor force participation rate could also increase substantially within the plan area.
- The development of an urban center will have a significant effect on area residents including: creation of an employment center, higher quality and lower cost shopping and another incentive for transit service.

The final conclusion of the economic analysis states: "The introduction of well-planned, phased development in the plan area (as shown in the Preferred Alternate) will promote and sustain long-term economic development ensuring that the quality of life of area residents improves as does that of other City/County residents."

This analysis indicated the proposed land uses in the Preferred Alternate provided positive direction for the plan area. The refinements to the Preferred Alternate which are reflected in the final plan further define the appropriate distribution of land uses for the southwest area.

Transportation Network Analysis for the Preferred Alternate

The consulting firm of Bohannon-Huston, Incorporated, performed an analysis titled Southwest Area Plan Transportation Network Analysis. The purpose was to compare the effect of the land use distribution in the Preferred and Trend Alternates on the capacity of a roadway network developed for the Preferred Alternate.

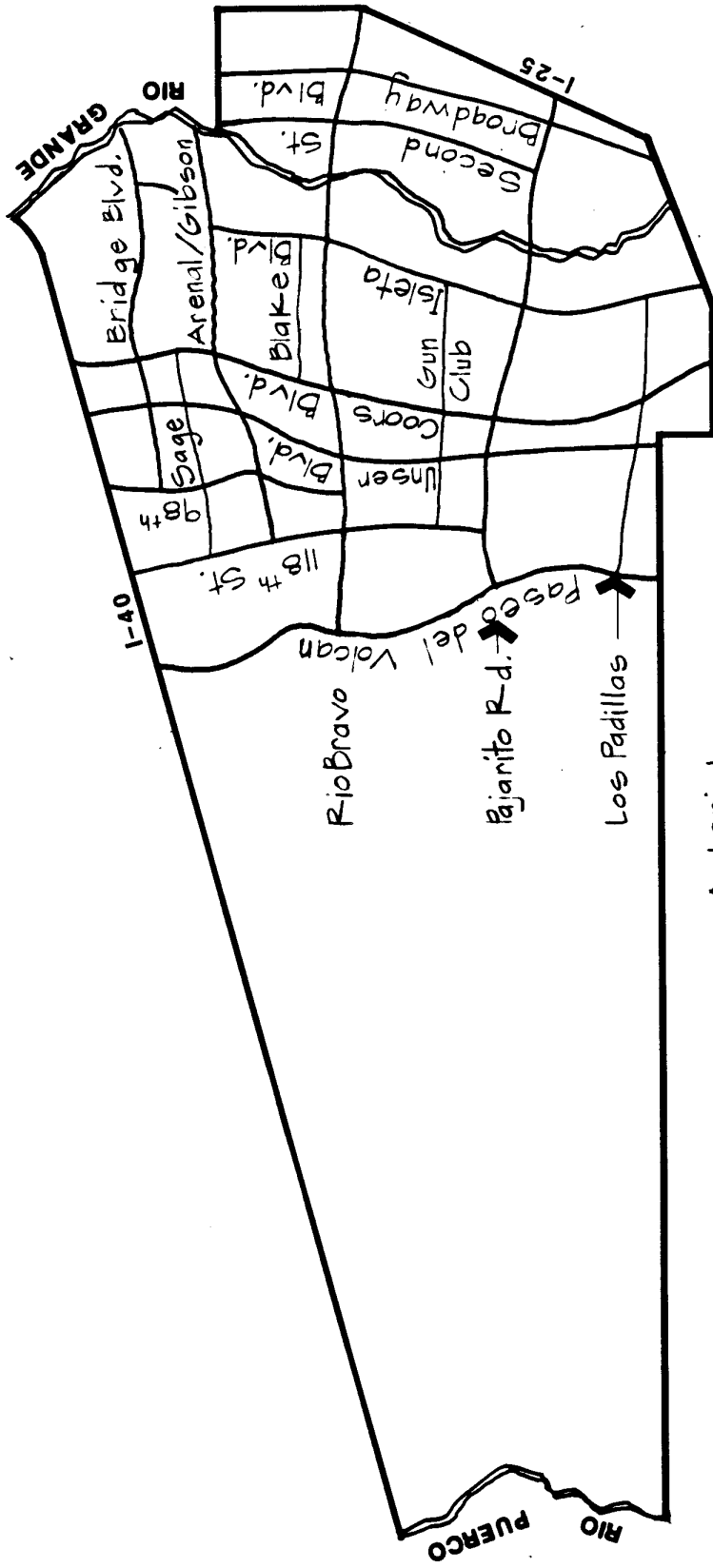
The same system of arterials and collectors was used to test both alternates so that the level and distribution of development would be the only variable. The roadway network was suitable to adequately test the Trend Alternate, also, given the type of development proposed in Trend.

The network of arterials and collectors was derived from the Long Range Major Street Plan (LRMSP), the adopted long range transportation plan for the Albuquerque Metropolitan area the test network used to project traffic volumes for the South Urban Area Corridor Study and the proposed land uses in the Preferred Alternate.

The roadways in the test network presented here serves as reference points for locating land uses in the Land Use Plan which follows.

The findings of the Bohannon-Huston analysis included:

- Both alternates had similar traffic patterns and volumes. However, the Preferred Alternate produced smaller volumes due to clustering of land uses except near the urban center where patterns and volumes were similar.
- The average trip length within the plan area was reduced under the Preferred Alternate due to reduction in urban sprawl with services, employment and commercial/office uses concentrated together in centers and residential uses more clustered.
- Under both alternates traffic on some segments of Rio Bravo and Bridge Boulevards travelled at less than the posted speed limits at rush hour which the consultant felt could be alleviated with turning lanes, access control and other minor improvements.
- The Mesa del Sol development, if realized, would increase traffic volumes within the plan area under both alternates. Again, transportation system management (TSM) improvements such as turn lanes could accomodate the additional traffic.



- Arterial
- Collector

△ Roadway Test Network

APPENDIX D

EID/GWH/-87/1

**GROUND-WATER QUALITY AND PUBLIC HEALTH
ALBUQUERQUE SOUTH VALLEY**

**Prepared for the New Mexico State Legislature,
pursuant to House Bill 145
1984 Legislature**

Prepared by

**Bruce M. Gallaher, M.S. and Dennis M. McQuillan
Environmental Improvement Division**

and

**Liza D. Chavez, M.P.H., Harry F. Hull, M.D., and Millicent Eidson, D.V.M.
Office of Epidemiology**

**Health and Environment Department
State of New Mexico**

**Larry Gordon, M.S., M.P.H.
Secretary
Health and Environment Department**

**Michael J. Burkhardt, M.P.H.
Director
Environmental Improvement Division**

May 1987

1.0 FINDINGS AND RECOMMENDATIONS

Pursuant to a special appropriation by the 1984 Legislature (House Bill 145 introduced by Representative Al Valdez), the N.M. Health and Environment Department conducted a two-year investigation of ground-water quality in Albuquerque's South Valley. The investigation consisted of two phases:

- Phase 1: valley wide water testing; and
- Phase 2: detailed investigations of the nature and causes of ground-water contamination, the occurrence and risk factors associated with diarrheal illness, and occurrence of birth defects and cancer.

Progress reports were submitted to the 1985 and 1986 Legislatures. This is a summary of the final results and recommendations.

FINDINGS

General

- For most South Valley residents, there is little health risk associated with drinking private well water. Due to increased industrialization and population growth, however, the extent of health-threatening contamination cases will inevitably increase in the next decade. Development and aggressive enforcement of land-use-based ground-water protection measures by local governments would greatly minimize this potential risk.
- All known cases of ground-water contamination in the South Valley are shown on Figure 1.1. Severe taste and odor problems are widespread in the areas of anaerobic contamination. Some of these problems have existed since 1927. Potential health hazards caused by nitrate, gasoline and volatile organics (VOC) are generally restricted to discrete areas. The nitrate and VOC contamination that has occurred can be insidious, however, in that noticeable tastes and odors usually are not present until the degree of contamination greatly exceeds health standards.
- Historically, ground-water contamination in the South Valley has typically been limited to depths of 100 feet or less. It appears, however, that contaminants in the shallow zones are being drawn to greater depths by the pumping of deep wells. At one location, hazardous substances have been found in ground water at a depth of approximately 220 feet below the ground surface. This vertical migration presents a long-term threat to all deep wells including those used by the City of Albuquerque.
- Industrial development is occurring in several valley areas where the city may locate future water supply wells.

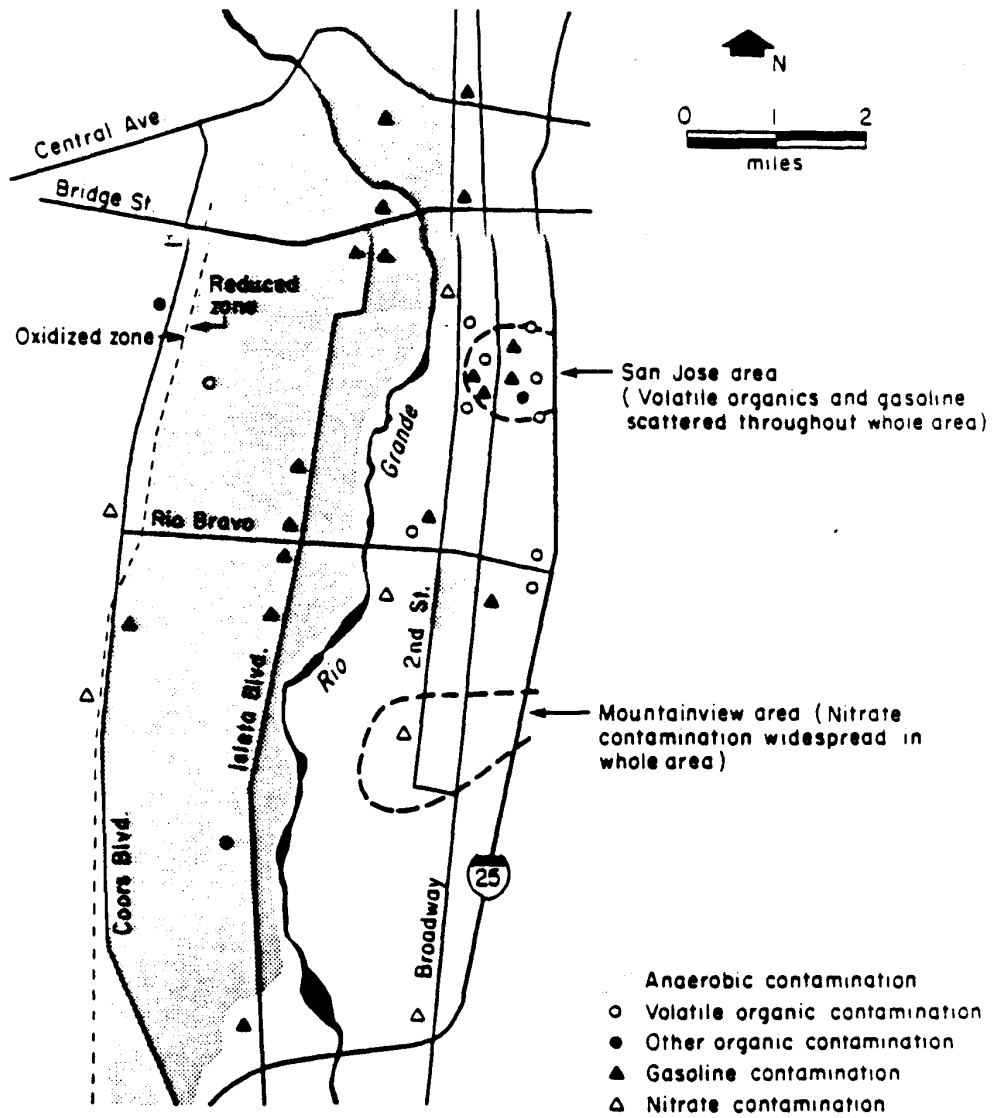


FIGURE 1.1 GROUND WATER CONTAMINATION IN THE ALBUQUERQUE SOUTH VALLEY

Specific Contamination Problems

- The chemistry of the Mountainview contamination plume suggests that discharges of nitrate salts may be at least partly responsible for the problem of excessive nitrate levels in ground water. The specific source for the nitrate contamination has yet to be determined. However, a preliminary round of sampling of nitrate-contaminated wells indicates the presence of two potentially hazardous organic compounds in the ground water, and the source for these compounds may also be responsible for the nitrate contamination. There are many commercial applications of one of the compounds, but the only use that is known to be common to both compounds is as ingredients in explosives, munitions, or pyrotechniques for commercial or military use. For the past 25 years, the plume has been migrating southward from the immediate vicinity of Second St. and Tijeras Arroyo. The EID found excessive nitrate levels near Broadway Boulevard and Tijeras Arroyo which supports the hypothesis that contaminants have been carried into the area via the Arroyo.
- Septic tanks and cesspools are major contributors to widespread taste and odor problems. The iron and manganese causing these problems are not associated with any known health hazards. Even if the area were sewerred immediately, it may take decades for natural purification processes to eliminate the contamination caused thus far.
- Septic tanks also are responsible for doubling and tripling nitrate levels in two areas west of Coors Boulevard since 1977. Unlike areas with anaerobic contamination, severe taste and odor problems are not present in this area.
- Petroleum products have contaminated ground water in at least 20 sites in the South Valley. In addition to the contamination of water wells, lost petroleum products can cause explosive hazards in basements, manholes, crawlspaces, culverts, etc.
- Regarding underground storage tanks, a soil gas survey along Isleta Boulevard showed evidence of gasoline contamination at 6 of 17 (35%) facilities examined. These data are consistent with nationwide statistics (i.e. 20 to 30 percent of the underground steel storage tanks in the nation are suspected of having leaked).

Health

- Preliminary analyses indicate the presence of potentially hazardous levels of two organic compounds in private wells located within Mountainview and alongside Tijeras Arroyo. Health studies indicate that the levels of the compounds nitrobenzene and dinitrotoluene may result in negative health effects from drinking or showering with the water. These effects could include: cyanosis in adults and children, and effects on major circulatory and reproductive systems. In animals, ingestion of dinitrotoluene has resulted in development of various cancers.

- An active surveillance system was implemented from May to September 1985 in health facilities within Albuquerque to identify new cases of diarrheal illness. Forty cases of laboratory-confirmed diarrheal illness were identified among South Valley residents. The distribution of diarrheal illness by etiology for this time period among South Valley and New Mexico residents was:

DIARRHEAL ILLNESS	NUMBER OF CASES (%)			
	SOUTH VALLEY		NEW MEXICO	
Amebiasis	1	(2.5)	3	(0.4)
Campylobacteriosis	18	(45.0)	188	(21.9)
Cryptosporidiosis	2	(5.0)	25	(2.9)
Giardiasis	4	(10.0)	81	(9.4)
Salmonellosis	9	(22.5)	300	(34.9)
Shigellosis	6	(15.0)	262	(30.5)
TOTAL	40	(100.0)	859	(100.0)

Four cases of giardiasis (10%) were detected during the study period, providing no evidence of an epidemic of giardiasis.

The diarrheal disease rates for the South Valley community was 74 per 100,000 people as compared to the statewide disease rate of 66 per 100,000 people. While the South Valley had a higher rate, there was no evidence of an epidemic or outbreak of diarrheal illness. The higher incidence rate in the South Valley is most likely due to the more intense surveillance activities in the South Valley as compared to the entire state of New Mexico.

The five risk factors identified for diarrheal illness among South Valley residents were: in-state travel; eating at a restaurant/banquet/party; consumption of raw milk (campylobacteriosis); consumption of raw meat/poultry; and swimming in a river/ditch/lake. Drinking private well water was not identified as a risk factor for diarrheal illness.

Results of this health study provide convincing evidence of the lack of an epidemic of diarrheal illness in the Albuquerque South Valley due to drinking private well water.

- Five cases of relatively recent birth-related problems in the South Valley were identified by concerned citizens and a school nurse. The group is diverse in organ systems involved and in possible causes. This diverse group, therefore, is unlikely to be related to a single environmental cause, such as drinking private well water. The number of birth-related problems is not unusual for a neighborhood, but incidence rates cannot be calculated or evaluated because there is no centralized registry for birth defects.
- Twenty-two individuals with suspected cancer of 14 various types were reported. The diversity of types of cancers is common in any typical neighborhood. In addition, the number of reported cancers is substantially less than the expected number based on the population of the South Valley and on statewide rates.

- Eleven cases of childhood leukemia have been registered with the New Mexico Tumor Registry over the 16 year time period from 1969 to 1984. Comparison of annual incidence rates indicates that South Valley rates are not significantly different than countywide or statewide rates. In addition, the cases do not cluster in time or neighborhood.
- Coliform bacteria were detected in a small number of private wells sampled. This occurrence appears to be related to local unsanitary conditions rather than to regional ground-water contamination. Toxic levels of heavy metals were not confirmed in any of the private well waters tested.
- The City of Albuquerque purveys water of excellent quality to consumers. Unlike water from private wells, city water is routinely tested for a large number of contaminants pursuant to the federal Safe Drinking Water Act.

Prevention/Remedy

- The most effective means for protecting ground water is to properly site and monitor the potential sources of contamination. The following examples of typical cleanup costs illustrate the cost-effectiveness of prevention:

<u>REMEDY</u>	<u>COST</u>
Mitigation of gasoline contamination of soil and ground water at one retail outlet	\$50,000 to \$1,000,000
Replacement of water-supply capacity lost by the shutdown of Albuquerque's San Jose Well #6	\$775,000 minimum
Superfund Actions - average national permanent cleanup costs	\$24 million (without ground water cleanup) \$60 million (with ground water cleanup)

- Numerous ground-water contamination sites are in need of remedial action but are exempt from the federal "Superfund" program. If cleanup can not be obtained from the parties responsible for the contamination, the state Emergency Hazardous Waste Fund may be used. The balance of the state fund (approximately \$400,000) may be inadequate, however, to clean up even one serious gasoline contamination case.
- For long-term protection of public health, public water and sewerage facilities should be extended throughout the South Valley, in accordance with technical and economical limitations.
- In areas with community water and sewer utilities available, an average of 60 to 70% of the residences have hooked up to the utilities. Of the residences surveyed that are not utilizing these utilities, 70% appear to have constructed/located their well and septic tank in compliance with accepted contamination prevention criteria.

- Despite the recent extension of city water lines into the Mountainview Community, contaminated private wells are still being used for domestic purposes. The levels of nitrate, nitrobenzene, and dinitrotoluene are high enough to present potential health hazards. Presently, approximately 30% of the households in the area are still dependent on private wells for water supply.
- Commercially available water treatment units may provide temporary remedy of specific limited ground-water contamination problems. Water treatment units remove contaminants typically found in South Valley private well water with varying degrees of efficiency. Utilization of a small-scale water treatment system represents a viable option to a well owner attempting to provide only low volumes of high quality water to a household for drinking and cooking needs. There is not currently, however, a comprehensive state program which evaluates various home water treatment units for sale on the market; the National Sanitation Foundation does evaluate units submitted to it by the manufacturer. One of the problems with home treatment units is without expensive analysis of the water dispensed through the unit, it is not possible to tell whether the unit is working correctly. The unit should be selected carefully upon consideration of the type of contaminants present, purchase costs, volume of treated water required, operation and maintenance costs, and dealer reputation.

RECOMMENDATIONS

Cleanup

The feasibility of establishing a comprehensive state or local cleanup program should be explored. Options include the following:

- a. A broadly applicable New Mexico state "Superfund" with accompanying statutory authority allowing for recovery of government funds expended during cleanup operations;
- b. Substantially increased funding of the existing New Mexico Hazardous Waste Emergency Fund;
- c. Expansion of state or local legal and technical staff whose duty would be to identify and mandate cleanup from the parties responsible for the contamination; and
- d. Use of local municipal bonding revenues or other funds for cleanup.

Well Fields

- Ground-water monitoring networks should be established throughout Bernalillo County to protect private, County, or City of Albuquerque well fields.
- The location and design of future city wells in the valley area should be selected after careful evaluation of existing ground water quality conditions, and of the location of current and projected industrial activity.

Planning, Zoning and Regulation

- Public water and sewer systems should be extended throughout the South Valley, where technically and economically feasible. Bernalillo County should aggressively evaluate all internal funding or taxing approaches to accomplish this long-term goal.
- The State of New Mexico should re-evaluate the effectiveness of all current state liquid waste disposal regulations in preventing ground-water contamination.
- Local governments should carefully evaluate zoning rules regarding future industrial development, particularly in areas near existing or potential municipal well fields. In light of the demonstrated vulnerability of aquifers to contamination, such development may conflict with the goal of protecting municipal water supplies. High risk activities should be located, when possible, in areas outside of the valley where the depth to ground water is greater than 300 feet.
- Local governments should assume responsibility for planning the density of development in rural residential areas prior to making decisions regarding municipal utilities. If the decision is made to develop an area with private wells

and septic tanks, a zoning density that adequately provides ground-water protection should be established. In addition, an evaluation of existing ground-water quality conditions should be conducted before residential areas are developed with shallow private wells. Such development should not, for example, be allowed to occur in the area south and possibly east of Mountainview until such time that contaminants in Mountainview pose no threat to the private wells.

Utility Hook Up

- County and city governments should increase their efforts, including the use of ordinances, to encourage residents to utilize community utilities, if available.

Miscellaneous

- Local governments should continue and perhaps strengthen their efforts to control inappropriate discharges of household toxic waste, especially used motor oil.
- The New Mexico Attorney General's Office should consider investigating representations made by salespersons of domestic water treatment units.

APPENDIX E

**PRESERVATION OF AGRICULTURAL LAND
IN THE
SOUTHWEST AREA**



**RECOMMENDATIONS OF THE SOUTHWEST AREA PLAN
AGRICULTURAL TASK FORCE TO THE
BERNALILLO COUNTY COMMISSION**

DECEMBER 1986

The Southwest Area Plan
Agricultural Task Force

Members

David Duhigg, Chairman
Clara Nanninga, Vice Chairman
Ernestine Dean
Jeanne House
William Kraemer
David Lujan
Gene Martinez
Charles Metheny
Eris Wenk

Alternates

Clifford Anderson
Tony Chavez
Ira Liberman
Paul Lusk
Robert Nanninga
Leo Sanchez
Julia Stephens

Staff

Ruth Lambert, Planning Consultant
Sheran Matson, Land Use Design Unit Manager, City Planning Department
Margaret Gutierrez, Administrative Secretary, City Planning Department
Kris Sage, Graphics Illustrator, City Planning Department

Table of Contents

	<u>Page</u>
Executive Summary	1
Glossary of Terms	2
Introduction	3
Formation and Proceedings of the Task Force	4
Proceedings	6
Discussion and Voting	7
Incentive Techniques	
Preferential Assessment	7
Deferred Taxation	9
Restrictive Agreement	9
Agricultural Districts	10
Land Use Control Techniques	
Agricultural Zoning	12
Purchase of Development Rights	13
Transfer of Development Rights	14
Land Banks	15
Land Trusts	16
Other Techniques	
Cluster Development	17
Open Space Dedication	17
Recommendations	19

EXECUTIVE SUMMARY

A citizens' Agricultural Task Force was formed at the request of Bernalillo County Commissioner Orlando Vigil, to provide public input concerning preservation of agricultural land in the Southwest area. These are the findings of this Task Force:

1. The Agricultural Task Force recommends preferential assessment be continued and further recommends restrictive agreements, agricultural districts, private land trusts, and cluster development as voluntary preservation techniques that are viable and economically feasible for the landowners and the general taxpayers.
2. The Task Force does not recommend transfer of development rights (TDR) but does recommend a technical feasibility study of the TDR concept. The technique appears to have merit and seems to justify further investigation and careful evaluation by a competent consultant. The Task Force recommends the study of TDRs be done on a County-wide basis.
3. To conserve and encourage the economic viability of agricultural land and activities, the Agricultural Task Force asks the County Commission to encourage the Middle Rio Grande Conservancy District to consider the recommended preservation techniques noted in this report in their assessment of preferential and equitable water rates.
4. The Agricultural Task Force recommends that all agricultural land in the Southwest area be considered eligible for the application of the techniques listed in Recommendation One above, and also in a TDR program if one is implemented in the future.
5. The Task Force believes the primary criteria for participation in a preservation technique should be the land's agricultural productivity or potential productivity, not a size stipulation or a geographical distinction.

This report contains a brief review of the preservation techniques examined by the Agricultural Task Force and their subsequent recommendations. The techniques researched by the Task Force include incentive techniques such as preferential assessment, deferred taxation, restrictive agreements, and agricultural districting. In addition, these types of land use controls were also reviewed: agricultural zoning, purchase of development rights, transfer of development rights, land banks, and land trusts. Also, cluster development and open space dedication by subdivision developers were examined.

GLOSSARY OF TERMS

Agricultural Districting - Agricultural priority area that has been established at the request of the local landowner(s). In return for the establishment and maintenance of the district, certain benefits are available to the participants such as exclusion from special assessment districts for improvements not benefitting farming.

Agricultural Zoning - A type of land use control that regulates activities on the land. There are two major types of agricultural zones: non-exclusive and exclusive. Non-exclusive zones permit non-farm uses, exclusive zones do not.

Cluster Development - A type of development that permits the grouping or "clustering" of constructed units. Although overall density is not increased the clustering of units results in a combination of dense and open areas.

Deferred Taxation - Techniques to deter conversion of agricultural land to non-farm uses by means of assessing conversion penalty taxes.

Development Rights - One of the "bundle of rights" that is part of land ownership. This is specifically the right to develop the land to the extent of the existing zoning.

Land Banks - Entities that purchase parcels of land or the development rights to land in order to restrict and control the use of the land. Land banks include publically funded land banks as well as privately funded land trusts that usually manage and acquire land in the public interest.

Preferential Assessment - A type of differential assessment that assesses property on its farm use value rather than its market value. It is often called a "Greenbelt Tax".

Purchase of Development Rights - A program where a landowner sells his/her development rights to a government entity. This entity then retires the newly acquired development right and the parcel of land is not developed.

Restrictive Agreement - An agreement between landowners and a government entity to restrict the use of the land for agricultural purposes, for a specified time period.

Transfer of Development Rights - A program where a landowner sells his/her development rights on a parcel of land to a developer. The developer then exercises the development rights in specific areas designated for higher development.

Wet Farmlands - Farmlands that are irrigated by water diverted from the Rio Grande or its tributaries.

INTRODUCTION

The Agricultural Task Force has investigated a number of preservation techniques to assess if they may be useful in the Southwest Area.

One major consideration has been the feasibility of the techniques for the area, considering the economic difficulties of farming for commercial and smaller scale farmers. Of equal concern has been consideration of the appropriateness of the techniques given the strong tradition of agriculture and the unique cultural expressions of that tradition. Rural scale has also been an aspect of concern as the majority of the South Valley farmers work small parcels of less than five acres. Most of these individuals work full-time in non-agricultural jobs and maintain their ties to the land and tradition by farming small parcels on a part-time basis.

The Agricultural Task Force has also recognized the importance of economic development and growth for the Southwest Area from the inception of their work as a group. Economic development and its positive realities permeated many discussions.

The Task Force has diligently attempted to address the development interest and the rural character interest in melding final recommendations that are responsive to both of these interests. Issues of the preservation of traditionally agricultural land, both small and large parcels, needed economic developments and strong personal independence have resulted in recommendations that are voluntary, appropriate to land parcels of all sizes, and techniques that encourage and manage growth rather than exclude and restrict it.

It is the sincere desire of the Agricultural Task Force that these efforts are useful and contribute to larger on-going efforts to assure quality of life for area residents.

FORMATION AND PROCEEDINGS
OF
THE TASK FORCE

At the present time, the Southwest quadrant of the greater Albuquerque area is undergoing considerable change and development pressure. The recognition of these forces has prompted Bernalillo County to contract with the City of Albuquerque Planning Department to formulate an area plan for this quadrant. This contractual agreement has resulted in the on-going process to draft the Southwest Area Plan (SWAP).

Throughout the SWAP planning process numerous issues have emerged. One of these issues has been the preservation of agricultural land in the Southwest area. At public meetings, many residents expressed concern over the loss of agricultural lands to development and other types of changing land uses. The present rural nature of the area is the result of over 600 years of continuous agriculture. To many residents the essence of the Southwest area is its rural agricultural tradition and the loss of this tradition is painful.

Southwest area agricultural land has been a concern for several years. The following brief history summarizes some attempts to address this issue.

The importance of agricultural land near the urban area was first recognized in the Policies Plan of the 1977 Albuquerque/Bernalillo County Comprehensive Plan. The Comprehensive Plan goal for rural areas states: "The goal is to maintain the separate identity of rural areas as alternatives to urbanization, by guiding development compatible with their open character, natural resources, and traditional settlement patterns." Specific to agriculture, Policy d. reads: "Land which has soil, drainage and water conditions suitable for agriculture shall be maintained to the extent feasible in agricultural production and discouraged from non-agricultural development."

In 1981, the Bernalillo County Commission specifically requested South Valley citizen input on a variety of issues and concerns. South Valley residents attended public meetings and formed small study groups to address specific issues. In January 1982, the South Valley Study Group, an ad hoc volunteer group, presented a summary of the recommendations of the study groups.

The first community goal recommended to the Bernalillo County Commission in the Report of the Land Use Committee was to maintain South Valley farmlands. In May 1982, the South Valley Area Council, an elected body representing the Eight Economic Opportunity Board (EOB) districts in the general South Valley area, adopted this and three other community recommendations.

Following this process of citizen input, the Bernalillo County Commission appointed a sixteen person Citizens Goals Committee to discuss issues and establish direction for the Southwest Plan area. This committee established a three-tiered set of goals. The paramount goal is to preserve and enhance the quality of life for citizens in environmental, cultural, recreational, educational, and medical areas.

The second most important goal is to develop planning mechanisms and legislation to permit and encourage certain land uses. Agriculture was one of the first land uses specified.

These goals, recommendations, and a description of the process are detailed in Southwest Area Plan, Volume II - Goals and Issues.

Because of this concern for agricultural land, the Bernalillo County Commissioner Vigil requested the City to staff an Agricultural Task Force he appointed to investigate the issue of preservation of agricultural land in the Southwest area. This task force was to provide recommendations to the Bernalillo County Commission within the framework of the SWAP.

The Agricultural Task Force is a citizen's advisory group composed of South Valley residents and other individuals with expertise in agriculture, land use, law, and open space concerns. The broad range of experience and talent is believed to be representative of the diverse viewpoints and interests of the South Valley residents.

Agricultural Task Force meetings began on April 3, 1986 and continued until October 16, 1986. Initially meetings were held on a bi-weekly basis. During the last two months, weekly meetings were held to complete the charge in a timely manner. Agricultural Task Force members and several alternates consistently and conscientiously rearranged work and family schedules to devote time and effort to the Agricultural Task Force over this six month period. Their combined efforts, concerns, and talent have resulted in this document.

PROCEEDINGS

The initial Charge to the Agricultural Task Force was discussed and accepted.

Southwest Area Plan Charge to the Agricultural Task Force

The charge of this Task Force shall include:

- A) to research and examine possible techniques for preserving prime agricultural land (as designated by the U.S. Soil Conservation Service) and Additional Farmlands of Statewide Importance within the geographic boundaries of SWAP
- B) to determine which techniques, if any, are economically feasible from the perspective of the affected landowners and the general taxpayers
- C) if economically feasible techniques are found, to set up criteria for determining which portions of the agricultural land should be targeted for preservation
- D) if economically feasible techniques are found, to determine which portions of the agricultural land should be targeted for preservation
- E) to prepare a written report to be submitted on or before October 15, 1986, to the Bernalillo County Commission containing the Task Force's recommendations on the subject contained in this charge

In order to fulfill the first and second orders of the Charge, the Agricultural Task Force investigated possible preservation techniques. Materials were mailed to Agricultural Task Force members and alternates before each meeting. Consequently, members and alternates had read materials prior to meetings and were prepared to discuss the preservation techniques.

One or two techniques were discussed at each meeting. Each technique was discussed in terms of the economic, social, and ideological impacts. Other considerations included: 1) the existing conditions, 2) possible outcome or changes if a technique were adopted, and 3) the implementation needs. At the close of the discussion, a preliminary vote was taken. Voting individuals included Agricultural Task Force members or the selected alternate, if a member was absent.

The purpose of the preliminary vote was to make an initial assessment of the individual techniques. Most of the techniques were approved for further study by the majority of the Agricultural Task Force. A few techniques were initially voted down by the majority as they seemed inappropriate and/or not feasible.

Once all techniques had been researched and discussed, a second vote was taken on the techniques to eliminate those not felt feasible for the plan area. After this second round of voting, techniques were evaluated for final recommendations. Critical discussion focused on the appropriateness and feasibility of the techniques in the SWAP area. After discussion, a final vote was taken.

DISCUSSION AND VOTING

Most of the techniques examined by the Agricultural Task Force can be classified as incentive or land use control techniques. Incentive techniques are based on the premise that if an incentive (or combination thereof) is provided, property owners may be persuaded to keep their land in agriculture. Land use control techniques rely on regulation, primarily zoning, to maintain land in agriculture.

Each of the investigated techniques is briefly described below. In addition, the initial and final responses of the Agricultural Task Force are also included.

INCENTIVE TECHNIQUES

Preferential Assessment

Preferential assessment is a type of differential assessment that is based on the present use value of a property rather than its potential developable, or market value. Properties that are preferentially assessed are subject to property taxes calculated on the present use value rather than market value. Because use value is generally lower than market value, preferentially assessed properties have a reduced tax liability.

In New Mexico, three types of land may qualify for preferential, or "Greenbelt Tax" assessment. These land include irrigable farmlands or "wet lands", dry farm lands and grazing land. Assessment varies with the type of land, but all are assessed below developed property values. Wet farm lands are assessed at \$500 per acre. Dry farm lands at \$25 per acre, and grazing land at \$3.60 per acre.

Property owners must apply annually to receive preferential assessment. In addition, certain conditions must be met including: 1) demonstration of primary agricultural use for the year preceding that in which application is being made, 2) minimum parcel size in agriculture of 1 acre, 3) and minimum income averaging \$100 per year over the last 2 years. Information from the 1985 Greenbelt Assessment Property List indicates that approximately 5025 acres of wet and dry farmland are located in the South Valley area. Table 1 details information for Greenbelt assessed wetlands in the Southwest Area.

Although preferential assessment is available in all but 2 states, it is often considered to be a relatively weak measure to prevent agricultural land conversion. This is because preferential assessment can be used as a land holding/speculating measure unless it is accompanied by monitoring techniques.

After discussion, most Agricultural Task Force members expressed the belief that preferential assessment was important and valuable to farmers. Although tax relief was not seen as sufficient to alleviate present economic farm problems, this technique is considered helpful and should be retained.

In the final discussion and voting, the Agricultural Task Force voted unanimously to recommend the continuation of this policy because it provides an important incentive for farmers to continue their agricultural activities.

TABLE 1

1985 Greenbelt Assessment
for Wetlands
in the Southwest Area

Size of Property in Acres	Number of <u>Property Owners</u>	Percent of All		Number of <u>Acres</u>	Percent of All Greenbelt Wetland <u>Acres</u>
		Greenbelt Wetland <u>Property Owners</u>	Greenbelt Wetland <u>Acres</u>		
0 - 4.99	417	71	1024	20	
5.0 - 9.99	89	15	636	13	
10.0 - 19.99	39	7	558	11	
20.0 - 39.99	24	4	595	12	
40.0 and up	19	3	2199	44	
Total	588	100	5012	100	

Compiled from the 1985 Bernalillo County Assessor's Property List for Greenbelt Properties.

Deferred Taxation

Deferred Taxation is a technique that is used in some other states in tandem with preferential assessment to deter the conversion of agricultural land to non-farm uses. Deferred taxation involves repayments of portions of taxes deferred by preferential assessment programs and various conversion penalties. This technique is based on the notion that through participation in a Greenbelt Tax program, farmers are excused from paying taxes at a higher rate and, when land is converted to another use, the taxes, or a portion, must be repaid. The amount due under deferred taxation programs varies by state. Repayment is often based on a rollback period (2-10 years) plus interest on the reduced taxes for those years. Six of the 28 states with deferred taxation programs assess a land use change tax. This tax is based on the price of the land when it is sold for non-farm use.

Deferred taxation is often considered as a measure that strengthens tax incentives to keep land in agriculture and reduces speculation on agricultural land. However, there are limitations with this technique. The primary limitation is the inability to slow development if the pressure to develop is great. Tax penalties are often passed along to the new buyer by increasing the selling price of the land.

At present, there are no deferred taxation techniques in New Mexico. A few years ago, two attempts to initiate deferred taxation failed.

The Agricultural Task Force was opposed to the concept of deferred taxation. Most of the members felt that farming was difficult enough and this measure would further penalize the farmer. In addition, some members felt that if such a program was anticipated, farmers, presently undecided about their land and farming activities, might hasten to sell their land before the program became effective.

In the final discussion and voting, the Agricultural Task Force continued to oppose this technique for the above reasons.

Restrictive Agreements

Restrictive agreement programs are a type of tax incentive technique employed to help deter the conversion of agricultural land to non-agricultural uses. In this program a land owner voluntarily agrees to contract with the government to restrict the use of the land for a specified length of time. Most of the programs currently in effect (California, New Hampshire, Hawaii) specify ten year periods for contract restrictions.

In return for this agreement, the landowner's property taxes are assessed on the use value rather than the market value of the land. This links the benefit of preferential assessment to participation in the program.

Information from existing programs suggest that fewer individuals may participate in restrictive agreement programs than preferential assessment programs. This is primarily due to the increase in restrictions to enter and exit the program. Potential participants must be willing to commit their land to agricultural uses for a specified length of time. In areas rapidly undergoing urbanization or subject to general urban pressures, land owners

might be reluctant to commit their land to agriculture for reduced taxes. In areas where there is no or very little development pressure, the agricultural land use value would approximate the development value and there would be little incentive for participation because taxes would not be reduced.

If a restrictive agreement program were instituted in New Mexico, property owners currently enrolled in the preferential assessment program would be potential participants. If the program were similar to other states' programs, landowners would voluntarily contract with the County to restrict the use of their land for a set length of time. In return for the restrictions on their land, property owners would be entitled to preferential assessment of the property. Participants might be from localized geographical areas or they could be scattered throughout agricultural areas.

Because preferential assessment is presently available to farmers in New Mexico, some type of additional incentives would need to be available to participants for the restrictive agreement program to be attractive. Examples of possible incentives might include additional property tax reduction and/or some type of agricultural priority recognition.

At present, there is no restrictive agreement program in effect in New Mexico. To establish this program would require state enabling legislation.

In both the initial and final voting, the majority of the Agricultural Task Force endorsed the concept of voluntary restrictive agreements as a supplement to the existing preferential assessment. The Task Force felt that if a land owner would make a commitment to retain the land in agricultural use, some type of benefit, in addition to the existing preferential assessment, would be essential.

Agricultural Districts

Agricultural districts are geographical areas where farmers have voluntarily united to establish an agricultural priority district. The purpose of the district is to provide measures that enhance agricultural practices for participants. Agricultural districting programs attempt to address factors that hinder farming or make it less profitable.

Some of the problems that existing programs attempt to address are encroaching development, complaints about common farming practices (such as fertilizers, dust, spraying, burning etc.), infrastructure development and subsequent costs, and municipal annexation. Techniques for dealing with these problems vary but often include measures such as tax incentives, right-to-farm legislation, limitations on infrastructure development within the district, and limitations on special assessments to agricultural districts for unneeded developments (such as major roads, bridges, etc.).

Agricultural districts are formed by farmers who voluntarily agree to restrict the use of their land for a set length of time using a restrictive agreement technique. In exchange for their participation, farmers are legally entitled to certain benefits that enhance agricultural practices.

There are many potential advantages of an agricultural district. Information from other programs indicates that farmers feel they have more power as a group rather than individuals "going it alone". Districts appear to provide farmers with a more united voice (as well as legal recognition) and thus more influence. In the Southwest area, the voluntary nature of districts would seem appealing. Because districts are geographical in nature, districts could be formed near the cultural and historical village centers proposed in the Southwest Area Plan. This may reinforce traditional roots and enhance pride in identification with a specific place within the area.

State legislation would be necessary to establish agricultural districts. In addition, some type of "right-to-farm" measures would need to be articulated within the legislation. Formal and popular support could be obtained if the legislation were formulated to emphasize: 1) the voluntary nature of the program, 2) the relative low costs of the program, and 3) the continuation of the tradition of agriculture within New Mexico.

The majority of Agricultural Task Force members responded favorably to the concept of an agricultural district. Some of their comments included the need to involve several property owners in the surrounding area in order to amass enough land for a district. Other members commented favorably on the voluntary nature of the district, the recognition of local direction and control, the legal recognition, and the generally empowering characteristic of agricultural districts. A minority of Agricultural Task Force members believed that farmers would not be interested in participating because of the minimal potential benefits compared to the economic costs of farming today.

After final discussion and voting, the Agricultural Task Force expressed strong support and recommended this technique because it is considered to be a positive incentive for farmers.

LAND USE CONTROL TECHNIQUES

Agricultural Zoning

Agricultural zoning is non-voluntary land use control. An agricultural zone is a discrete, geographical area with specific land use restrictions. The purposes of agricultural zones are to: 1) protect farmland from conversion to other uses, 2) protect farming operations, 3) reduce the amount of public infrastructure development, 4) protect the agricultural economic base, and 5) save environmentally-sensitive land.

There are two types of agricultural zoning ordinances: non-exclusive and exclusive. Non-exclusive zones allow non-farm uses; exclusive zones do not permit non-farm uses although there may be rare exceptions.

There are four types of non-exclusive zones. These are: 1) large lot, 2) fixed acre allocation, 3) sliding scale allocation, and 4) conditional use ordinances.

Large lot ordinances specify a minimum lot size for parcels within the agricultural zone. The lot size is approximately equal to the acreage needs for a local farm. This zone specifies viable farm-sized parcels under the assumption that development will be discouraged. However, the only requirement for compliance is parcel size, not the actual type of land use.

Fixed area and sliding scale allocation ordinances specify the degree of density per unit of land. For example, in fixed area ordinances, farmers may develop one dwelling unit (DU) per 160 acres. As units of land increase, DUs can be added. Sliding scale allocations also permit development on units of land but the amount of development varies with the acreage so that larger parcels are relatively less dense.

All of these types of agricultural zones are formulated to control land use on relatively large tracts of land. Intensive study of many agricultural zoning programs revealed that many dealt with land parcels of 10 to 640 acres with the most common size being 40 acres.

Conditional use zones do not rely on large lot sizes or density-to-acreage relationships to restrict development within the zone. Instead, these ordinances permit non-farm uses on conditional approval based on multiple standards or criteria. Unlike the other types of non-exclusive zones, minimum lot size may be small, and non-farm uses are subject to approval rather than permitted as a right. Examples of criteria or standards for evaluation include: 1) compatibility of the proposed use with agricultural practices, 2) impact of the proposed use on the general stability of the area, and 3) the agricultural potential of the land proposed for non-farm use.

Exclusive agricultural zoning ordinances do not permit non-farm uses with the exception of some uses that serve the agricultural community. Examples include schools, churches, parks, etc. Generally, non-farm uses are rigorously reviewed on a case-by-case basis.

In initial and final discussions and voting, all of the Task Force members were opposed to this concept of the agricultural zone primarily because it is not voluntary. In addition, most agricultural zoning programs are tailored for large-sized parcels averaging about 140 to 640 acres. Information from the County Assessor's 1985 Greenbelt Property List for wet and dry farmlands for the Southwest area indicates that 70% of these property owners own parcels of 5 acres or less. (See Table 1) For this reason, most agricultural zoning programs would seem inappropriate for the majority of South Valley farmers.

Purchase of Development Rights

Purchase of development rights (PDR) programs are land use control techniques that are based on less-than-full fee interest or partial ownership of selected land parcels.

Full ownership is usually defined as a bundle of interests or rights. These include the right to sell the land, the right to keep others off the land, the right to use the land in accordance with the zoning laws, and the right to sell portions or components of the land. These components include the air rights, surface rights, water rights, mineral rights, and the development rights. Development rights are technically the right to develop the parcel of land up to the present level of zoning.

PDR programs usually involve the sale of the development rights of a parcel of land to a government entity that retains and retires the rights. Once the development rights of a land parcel have been sold from the bundle of ownership rights, the land cannot be developed further. Subsequently, the removal of the development rights is noted on the deed, and this is binding on all future owners.

Purchase of the development rights of a land parcel is an effective technique to direct development away from productive agricultural land. In addition, a major justification for PDR programs is compensation for farmers who give up the right to develop their land. With the development right severed from the land, the new land value will be lower. The value of the development right is calculated to compensate for that loss.

The primary limitation of this technique is funding. Most PDR programs use public funding so that government entities can acquire and retire the development rights. Consequently, appropriating funds for public purchase of development rights can be difficult if there is no generally perceived justifiable reason for so doing.

At the present time, public funding for County purchase of development rights in the Southwest area seems doubtful. Recent increases in County property taxes and other needs, perceived by many as more immediate than preserving apparently abundant farmland, suggest that securing public approval for funding would be difficult. Also, state enabling legislation is necessary for the County to acquire agricultural land or interest in land.

The Agricultural Task Force generally expressed interest in this technique but recognized the difficulties in securing public funding at this time. Consequently, the Agricultural Task Force informally agreed to initially defer voting on this technique. The rationale for this decision stemmed from a general desire for additional research to see if it could be combined with another technique to make it more economically feasible.

However in final discussions, the Agricultural Task Force eliminated this technique because of lack of economic feasibility and because public land banking activities by the County are not currently premissable under law.

Transfer of Development Rights

Transfer of development rights (TDR) programs are somewhat similar to PDR programs. In a TDR program, the development rights can be sold from the bundle of rights associated with a particular land parcel thus limiting the potential for development on that parcel. As with PDR programs, the severance of the development right is recorded on the deed and it is binding on all future owners.

However, TDR programs shift the responsibility of purchasing development rights from government entities to private developers. These programs seek to preserve agricultural or open space land by instituting a combination of land use controls and compensatory techniques. The general strategy is to transfer the development rights of a piece of property to another location where it can be exercised. The property owner who allows the development rights to be severed from the property and exercised elsewhere is monetarily compensated. Because TDR programs attempt to preserve specific land, the development rights are removed or "sent" from the preservation areas. These are the sending areas.

In contract, targeted areas are designated "to receive" development rights. These are areas where development is encouraged, usually by allowing increased densities. These are receiving areas and development rights are "transferred" to these areas.

As mentioned, TDR programs do not require public funding or state enabling legislation. A TDR program operates on the assumption that developers will purchase development rights from sending area landowners and use these development rights in the receiving area because it is to their benefit. Incentives for developers to purchase and transfer development rights are usually increased densities, permitting them to increase their profits. In addition, infrastructure for more dense receiving areas can be phased and planned so that it is more cost efficient. The resulting reduction in infrastructure costs benefits both developers and the taxpayers.

Concomitant with the designation of preservation and development areas, appropriate zoning must be established. Zoning controls provide the regulatory basis for the enforcement of the prescribed densities. Without supportive zoning, it would be impossible to specify preservation areas where development is not allowed. Zoning regulations are also necessary to specify the limits of development for the receiving area.

The Agricultural Task Force discussed many aspects of TDR programs. Some of the issues discussed included: 1) TDR as a privately funded technique, 2) the need for an in-depth economic feasibility study, 3) a Southwest receiving area to stimulate economic development, and 4) the enforcement of existing zoning regulations.

Additional issues raised by the Agricultural Task Force included: 1) the program should be voluntary, 2) the program should be County-wide, and 3) concerns that development might ultimately be encouraged to locate outside Southwestern Bernalillo County if the TDR program weren't County-wide. Hypothetical study models were formulated by Agricultural Task Force members and staff to gain a greater understanding of the issues.

After initial discussion, the majority of the Agricultural Task Force believed that the TDR technique could be a feasible vehicle for the preservation of agricultural land so long as 1) there is strict enforcement of the existing zoning laws within the City and County areas to create a market for TDRs, and 2) there is a detailed feasibility study of potential receiving areas.

However, additional discussions followed with continued questions about feasibility of this technique for the Southwest area. Ultimately, the Task Force concluded it could not recommend the concept of TDR because additional information, beyond the scope of this group, was needed. Consequently, in final discussion and voting, the Agricultural Task Force recommended that a technical feasibility study be done by a competent consultant because this technique appears to have merit and seems to justify further investigation and careful evaluation.

Land Banks

Land banks are entities that either purchase full ownership in a parcel of land or purchase the development rights to specific parcels of land. Land that is purchased by a land bank can be leased back to the original owners or to other tenants to farm. In some instances, land that is prime agricultural land could be preserved but other land owned by the land bank that has less value for agricultural productivity could be sold for development to finance future purchases.

Development rights for specific land parcels can also be purchased by a land bank. In some instances, it may be possible to acquire development rights either by donation or at a reduced price. The donation of all or part of the development rights can often function as a tax deduction.

Land banks can be either public or private entities. Those that operate as private entities are usually called land trusts.

Governmental land banks operate with public funds to secure land or interest in land for the public benefit. Land is purchased outright or the development rights are purchased using a PDR program. Information from other programs indicates that city, county, and state governmental entities use land banks to manage growth.

At the present time, the County does not have the power to purchase agricultural land for agricultural use now or in the future. Any changes in County powers to include agricultural land acquisition would require state enabling legislation.

The Agricultural Task Force expressed an interest in the concept of a land bank but also recognized the difficulties of securing public funding at this time. Additional comments centered on the utility of this concept to maintain and encourage agricultural land, the use of City/County partnerships to implement the technique, and various funding possibilities.

Consequently, the majority of the Agricultural Task Force encouraged the County to strive to make the necessary state enabling legislative changes to permit land banks and use a portion of a reinstated 1/4¢ sales tax, general obligation bonds, and other public funds to preserve agricultural land.

After final discussion and voting, public land banks were eliminated from further consideration by the Agricultural Task Force because of apparent lack of public funding and problems with maintenance on County-owned, unused land.

Land Trusts

Land trusts are usually community-based non-profit organizations that acquire property or rights in property on behalf of the public for the purposes of conservation.

Land trusts succeed in acquiring property because of the tax advantages to private owners associated with their non-profit, tax-exempt status. Donations of property and below-market value sales (bargain sales) of property can provide the landowner with a tax incentive. Currently, the difference between an appraised market value and the sale price to the land trust constitutes the value of the charitable donation.

Land trusts also attempt to acquire property rights or conservation easements. Conservation easements are similar to development rights, but they can also specify other rights. Generally, these easements are tailored to fit specific land parcels. Landowners can donate easements and receive a charitable donation for the value of the easements made in perpetuity. The donation of easements (usually the development value) reduces the value of the property and the subsequent tax liability.

Numerous creative packages have been constructed to preserve specific land parcels. Other strategies for land preservation include acquisition with partial development and 'pass through sales'. Partial development strategies generally include the purchase of a land parcel, placing an easement over all the land, and then selling a few selected developable lots to finance the land acquisition. 'Pass through sales' are transactions where the land trust acts as a real estate broker to find a conservation buyer for an appropriate land parcel. The seller sells the land to the trust for a below-market value to receive a tax benefit. The property is simultaneously resold to the conservation buyer for the reduced price.

The recently enacted federal tax changes reduce overall tax liabilities, but still provide tax incentives for charitable donations.

After initial and final discussion and voting, the majority of the Agricultural Task Force favored and recommended this concept, encouraging the development of a land trust directed and formulated as a private non-profit organization to acquire agricultural land in the public interest.

OTHER TECHNIQUES

Cluster Development

Cluster development was investigated as a technique to provide available open space for agricultural activities while permitting development within the area.

Clustering allows development up to the existing zoning density; however, the development is grouped, or clustered, in one portion of the land parcel. The advantages to clustering are: 1) the undeveloped portions of the land can remain as open areas that could be used for agricultural activities, and 2) water, sewer, and roads can be consolidated in specific areas in a more cost-efficient manner. In addition, cluster development can be arranged around potentially productive agricultural land, so that development can occur while maintaining agricultural land.

The Agricultural Task Force discussed a number of aspects of cluster developments. Many comments addressed the need for adequate sewer and water facilities for cluster development. Specific comments addressed the issues of appropriately-scaled, cluster systems for the size of the development, the need for performance monitoring for cluster systems, appropriate utility designs, and on-site waste system requirements related to lot size. Other issues discussed included the need for developer incentives to encourage cluster developments and the maintenance of common open areas.

In addition, it was noted that clustering can apply to small, single-owner parcels. On these parcels, the owner could be encouraged to build all structures in a cluster to permit the maximum amount of open area for agricultural activities.

Initially, a majority of the Agricultural Task Force members did not support the concept of voluntary cluster development because of uncertainties over adequate utilities and minimum lot size, and maintenance of the common open area.

Although the cluster development concept was not approved at the initial stage of the Agricultural Task Force discussions, there was general interest for more research on this technique.

Following additional discussions, the Agricultural Task Force expressed strong support for the technique and included it in the final recommendations.

Open Space Dedication

A final technique for Agricultural Task Force consideration was the practice of land dedication for open space following the guidelines of the existing subdivision ordinance. Although usually used for open space, the Agricultural Task Force considered this technique because it could potentially provide open areas that could be used for agricultural activities as well.

At present, the Bernalillo County Subdivision Ordinance encourages the dedication of land for recreational and other public purposes. Present guidelines for the amount of land dedication are abstracted from City guidelines. However, in contrast to City policy, the County dedicated open space must remain a part of the developed parcel.

The Agricultural Task Force expressed interest in this technique as applied to agricultural land. With new open space guidelines presently being developed in the Southwest Area Plan, this concept was deferred to that plan.

RECOMMENDATIONS OF THE AGRICULTURAL TASK FORCE
TO THE BERNALILLO COUNTY COMMISSION

1. The Agricultural Task Force recommends preferential assessment be continued, and further recommends restrictive agreements, agricultural districts, private land trusts, and cluster development as voluntary preservation techniques that are viable and economically feasible for the landowners and the general taxpayers. The Task Force recognizes these techniques will require further study before implementation.

There are three primary reasons for this particular recommendation. First, the five techniques are voluntary. Landowners may select to participate in these programs, and they are not penalized if they choose not to participate. Secondly, these techniques appear to be economically feasible and fulfill the first and second portions of their charge. Lastly, this recommendation is consistent with the general goals of the Albuquerque/Bernalillo County Comprehensive Plan for rural areas and the goals established by the South Valley Study Group and the Citizens Goals Committee of the Southwest Area Plan. This recommendation is viewed as one technique to implement these goals.

In addition to this recommendation, the Agricultural Task Force suggests that serious consideration be given to formulating additional incentives for farmers to encourage continued agricultural activities. These incentives could include: 1) simplifying regulations over common farming practices, and 2) adding some economic incentives, such as the assurance of affordable water, the continuance of gross receipts tax exemption for farm products, and deferral of unneeded utility assessments until farmland is converted to other uses.

2. The Task Force does not recommend transfer of development rights (TDR) but does recommend a technical feasibility study of the TDR concept. The technique appears to have merit and seems to justify further investigation and careful evaluation by a competent consultant. The Task Force recommends the study of TDRs be done on a County-wide basis.

Agricultural Task Force members recommend an in-depth study of this technique because 1) the results of their evaluation indicated TDR's may be able to provide a mechanism that could help preserve agricultural land in the South Valley while also allowing more intense development to occur elsewhere in the Southwest or in the rest of the County, and 2) analysis beyond the scope of the charge of the Task Force is needed to determine if an economically feasible TDR program could be implemented in Bernalillo County.

3. To conserve and encourage the economic viability of agricultural lands and activities, the Agricultural Task Force asks the County Commission to encourage the Middle Rio Grande Conservancy District to consider the recommended preservation techniques noted in this report in their assessment of preferential and equitable water rates.

The Task Force strongly encourages and supports cooperative and consistent efforts between the County government and the Middle Rio Grande Conservancy District. Lack of cooperation could lead to counter-measures that could effectively reduce agricultural activities in the Southwest area. One example of counter-productive measures would be effectively eliminating the property tax savings of preferential assessment by increases in water charges to wetland farmers, thereby creating an economic incentive to leave farming.

4. The Agricultural Task Force recommends that all agricultural land in the Southwest area be considered eligible for the application of the techniques listed in Recommendation One above, and also in a TDR program if one is implemented in the future.

Further, although the techniques recommended in this report are voluntary, the Agricultural Task Force encourages farmers to participate in one or more of these techniques so that agricultural land can be preserved and the unique rural character of the Southwest area can be maintained.

5. The Task Force believes the primary criteria for participation in a preservation technique should be the land's agricultural productivity or potential productivity, not a size stipulation or a geographical distinction.

APPENDIX F

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

NATURAL RESOURCE EVALUATION

for

THE SOUTHWEST AREA PLAN

(SOUTHWEST MESA SLOPES)

Prepared for Bernalillo County, New Mexico

by

Soil Conservation Service
Albuquerque Field Office
3520 Pan American Freeway
Albuquerque, NM 87107

In Cooperation With

CENTRAL RIO GRANDE SOIL AND WATER CONSERVATION DISTRICT

Contents

Natural Resource Consideration by Zones

Supporting Data:

Soil Interpretation Record

General Geology and Erosion Capability

Vegetative Consideration and Range

Condition Worksheet

Conservation Practices - Structural

Limitations and treatments that should be addressed:

1. When this area is developed consideration must be given to the increase in runoff water that will occur in the swale that flows into the Isleta Indian Reservation.
2. A runoff water control plan for the entire zone should be developed before development occurs.
3. The use of contour (on grade) street system or development layout should be considered.
4. Slopes on this zone are 1 to 7 percent.

SOIL INTERPRETATIONS RECORD

MWA MADUREZ-WINK ASSOCIATION, GENTLY SLOPING
WINK PART

THE WINK SERIES CONSISTS OF MODERATELY DEEP, WELL DRAINED NEARLY LEVEL TO SLOPING SOILS OF UPLANDS. THE SOIL FORMED IN CALCAREOUS LOAMY MATERIALS. IN A REPRESENTATIVE PROFILE, THE SURFACE LAYER IS PALE BROWN FINE SANDY LOAM ABOUT 6 INCHES THICK. THE SUBSOIL IS LIGHT YELLOWISH BROWN FINE SANDY LOAM ABOUT 18 INCHES THICK. THE UNDERLYING MATERIALS EXTEND BELOW 80 INCHES AND HAVE PROMINENT ACCUMULATIONS OF CALCIUM CARBONATE BETWEEN DEPTHS OF 24 AND 73 INCHES.

ESTIMATED SOIL PROPERTIES														
DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO.				LIQUID LIMIT (CLAY INDEX)	PLASTICITY INDEX					
				(PCT)	4	10	40	200						
0-4	FSL	SM, SM-SC	A-2-4, A-4	0-5	190-100	90-100	80-100	25-45	17-25	3-7				
4-60	FSL, L, SL	SM, SM-SC	A-2-4, A-4	0-5	190-100	90-100	80-100	25-45	17-25	3-7				
DEPTH (IN.)	CLAY (PCT)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINKAGE POTENTIAL (K)	EROSION FACTORS (T GROUP)	WIND EROSION (PCT)	ORGANIC MATTER	CORROSIVITY	STEEL	CONCRETE	
0-4	8-18	1.35-1.55	2.0-6.0	0.10-0.14	7.9-8.4	<2	LOW	1.20	3	3	<.5	HIGH	LOW	
4-60	8-18	1.35-1.55	2.0-6.0	0.10-0.15	7.9-8.4	<2	LOW	1.20						
FLOODING		HIGH WATER TABLE		CEMENTED PAN	BEDROCK	SUBSIDENCE		POTENTIAL						
		DEPTH	KIND	MONTHS	DEPTH	HARDNESS	DEPTH	HARDNESS	INITIAL	TOTAL	GROUP	FROST	ACTION	
NONE			>6.0			-		>60		-		B		

SANITARY FACILITIES				CONSTRUCTION MATERIAL			
	SLIGHT				GOOD		
SEPTIC TANK							
ABSORPTION FIELDS					ROADFILL		
	SEVERE-SEEPAGE				IMPROBABLE-EXCESS FINES		
SEWAGE LAGOON AREAS					SAND		
	SLIGHT				IMPROBABLE-EXCESS FINES		
SANITARY LANDFILL (TRENCH)					GRAVEL		
	SLIGHT				FAIR-SMALL STONES		
SANITARY LANDFILL (AREA)					TOPSOIL		
	GOOD						
DAILY COVER FOR LANDFILL							
					WATER MANAGEMENT		
					SEVERE-SEEPAGE		
					POND		

		]] RESERVOIR]]
		]] AREA]]
	BUILDING SITE DEVELOPMENT]]]]
]	] SLIGHT	]] ] MODERATE-THIN LAYER]
]	] SHALLOW ]	]]EMBANKMENTS]]
]	] EXCAVATIONS ]	]] DIKES AND]]
]	] ]	]] LEVEES]]
]]]]]]]
]	] SLIGHT	]] ] SEVERE-NO WATER]
]	] DWELLINGS ]	]] EXCAVATED]]
]	] WITHOUT ]	]] PONDS]]
]	] BASEMENTS ]	]]AQUIFER FED]]
]]]]]]]
]	] SLIGHT	]] ] DEEP TO WATER]
]	] DWELLINGS]]]]]
]	] WITH ]	]] DRAINAGE]]
]	] BASEMENTS]]]]]
]]]]]]]
]	] MODERATE-SLOPE	]] ] DROUGHTY,SOIL BLOWING]
]	] SMALL]]]]]
]	] COMMERCIAL ]	]] IRRIGATION]]
]	] BUILDINGS]]]]]
]]]]]]]
]	] SLIGHT	]] ] SOIL BLOWING]
]	] LOCAL ]	]] TERRACES]]
]	] ROADS AND ]	]] AND]]
]	] STREETS ]	]] DIVERSIONS]]
]]]]]]]
]	] LAWNS,] MODERATE-DROUGHTY	]] ] DROUGHTY]
]	] LANDSCAPING ]	]] GRASSED]]
]	] AND GOLF ]	]] WATERWAYS]]
]	] FAIRWAYS]]]]]
]]]]]]]

]	SEED	LEGUME	HERB.	TREES	PLANTS	PLANTS	WATER	WILDLF	WILDLF	WILDLF	WILDLF
]	IV. POOR	IV. POOR	IV. POOR	IV. POOR	IV. POOR	IV. POOR	IV. POOR	IV. POOR	IV. POOR	IV. POOR	IV. POOR
]]]]]]]]]]]]
]]]]]]]]]]]]
]]]]]]]]]]]]
]]]]]]]]]]]]
]]]]]]]]]]]]

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT	PERCENTAGE COMPOSITION (DRY WEIGHT)									
	SYMBOL										
	(NLSFN)]]]]]]]]]]
SPIKE DROPSEED	SPC04	]	5]]]]]]]]
MESA DROPSEED	SPFL2	]	5]]]]]]]]
SAND DROPSEED	SPCR	]	5]]]]]]]]
PLAINS BRISTLEGRASS	SEMA5	]	5]]]]]]]]
ARIZONA COTTONTOP	DICA8	]	5]]]]]]]]
BUSH MUHLY	MUPO2	]	20]]]]]]]]
BLACK GRAMA	BOER4	]	25]]]]]]]]
OTHER PERENNIAL GRASSES	PPGG	]	10]]]]]]]]
OTHER PERENNIAL FORBS	PPFF	]	10]]]]]]]]
OTHER SHRUBS	SSSS	]	10]]]]]]]]
]]]]]]]]]
]]]]]]]]]
]]]]]]]]]
]]]]]]]]]
]]]]]]]]]
]]]]]]]]]
POTENTIAL PRODUCTION (LBS./AC. DRY WT):											
	FAVORABLE YEARS	]	650]]]]]]]]
	NORMAL YEARS	]	550]]]]]]]]
	UNFAVORABLE YEARS	]	450]]]]]]]]

RANGE SITE -- 042A052N LOAMY

FOOTNOTES

SOIL INTERPRETATIONS RECORD

MaB MADUREZ LOAMY FINE SAND, 1 TO 5 PERCENT SLOPES

THE MADUREZ SERIES CONSISTS OF DEEP, WELL DRAINED SOILS FORMED IN ALLUVIUM MODIFIED BY WIND ON FANS AND PIEDMONTS. ELEVATION IS 4900 TO 6000 FEET. MAP IS 8 TO 10 INCHES. MAAT IS 57 TO 60 F. FFS IS 170 TO 210 DAYS. TYPICALLY, THE SURFACE LAYER IS LIGHT BROWN LOAMY FINE SAND 10 INCHES THICK. THE SUBSOIL IS BROWN SANDY CLAY LOAM AND FINE SANDY LOAM 12 INCHES THICK. THE SUBSTRATUM IS PINK LOAM AND SANDY LOAM TO A DEPTH OF 60 INCHES OR MORE.

ESTIMATED SOIL PROPERTIES														
DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACTURE >3 IN	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO.				LIQUID LIMIT (PCT)	PLASTICITY INDEX				
					4	10	40	200						
0-4	LFSL	ISM	JA-2	0	100	100	75-85	20-35	-	NP				
4-21	JSCL, FSL	ISM-SC	JA-4	0	100	100	50-65	35-50	25-30	5-10				
21-60	JSCL, SL	ISM-SC, CL-ML	JA-4	0	100	100	55-70	40-55	25-30	5-10				
DEPTH (IN.)	CLAY (PCT)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINKAGE POTENTIAL (K)	EROSION GROUP (PCT)	WIND DAMAGE (PCT)	ORGANIC MATTER	CORROSIVITY STEEL	CORROSIVITY CONCRETE		
0-4	5-10	1.40-1.50	6.0-20	0.09-0.10	7.9-8.4	-	LOW	1.20	5	2	4-7	HIGH	LOW	
4-21	118-25	1.20-1.30	0.6-2.0	0.14-0.16	7.9-8.4	-	MODERATE	1.32						
21-60	118-25	1.45-1.55	0.6-2.0	0.14-0.16	7.9-9.0	<2	LOW	1.32						
FLOODING														
HIGH WATER TABLE														
CEMENTED PAVEMENT														
BEDROCK														
SUBSIDENCE														
HYDROLYZABLE NITROGEN														
FREQUENCY	DURATION	MONTHS	DEPTH (FT)	KIND	MONTHS	DEPTH (IN)	HARDNESS	DEPTH (IN)	HARDNESS	INITIAL	TOTAL	GROUP	FROST ACTION	
NONE			>6.0			-	>60			-		B	LOW	

SANITARY FACILITIES				CONSTRUCTION MATERIAL			
	SEPTIC TANK	MODERATE-FERCS SLOWLY				GOOD	
	ABSORPTION FIELDS				ROADFILL		
	SEWAGE LAGOON AREAS	MODERATE-SEEPAGE, SLOPE			SAND	IMPROBABLE-EXCESS FINES	
	SANITARY LANDFILL (TRENCH)	SLIGHT			GRAVEL	IMPROBABLE-EXCESS FINES	
	SANITARY LANDFILL (AREA)	SLIGHT			TOPSOIL	FAIR-TOO SANDY	
	DAILY COVER FOR LANDFILL	GOOD			POND		
WATER MANAGEMENT							
						MODERATE-SEEPAGE, SLOPE	

]	]	]] RESERVOIR]]
		]] AREA]]
	BUILDING SITE DEVELOPMENT]]]]
]	] SLIGHT	]] ] SEVERE-PIPING]
] SHALLOW ]		]]EMBANKMENTS]]
]EXCAVATIONS ]		]] DIKES AND]]
] ]		]] LEVEES]]
]]]]]]
]	] SLIGHT	]] ] SEVERE-NO WATER]
] DWELLINGS ]		]] EXCAVATED]]
] WITHOUT ]		]] PONDS]]
] BASEMENTS ]		]]AQUIFER FED]]
]]]]]]
]	] SLIGHT	]] ] DEEP TO WATER]
] DWELLINGS]]]]]
] WITH ]		]] DRAINAGE]]
] BASEMENTS]]]]]
]]]]]]
]	] SLIGHT	]] ] FAST INTAKE, SOIL BLOWING, SLOPE]
] SMALL]]]]]
] COMMERCIAL ]		]] IRRIGATION]]
] BUILDINGS]]]]]
]]]]]]
]	] SLIGHT	]] ] SOIL BLOWING]
] LOCAL ]		]] TERRACES]]
] ROADS AND ]		]] AND]]
] STREETS ]		]] DIVERSIONS]]
]]]]]]
]	] SLIGHT	]] ] FAVORABLE]
] LAWNS, ]		]] GRASSED]]
]LANDSCAPING ]		]] WATERWAYS]]
] AND GOLF]]]]]
] FAIRWAYS]]]]]
]]]]]]

RECREATIONAL DEVELOPMENT

]	]	SLIGHT	]]	]	MODERATE-SLOPE]
]]]]]]
]	]	CAMP AREAS	]]	]	PLAYGROUNDS]
]]]]]]
]]]]]]
]	]	SLIGHT	]]	]	SLIGHT]
]	]		]]	]	PATHS]
]	]	PICNIC AREAS	]]	]	AND]
]	]		]]	]	TRAILS]
]]]]]]

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

]	]	CAPA-]]]]]]]]]]]]]
]	]	BILITY]]]]]]]]]]]]]
]]]]]]]]]]]]]]]
]	]	JNIRR	JIRR.	JNIRR	JIRR.	JNIRR	JIRR.	JNIRR	JIRR.	JNIRR	JIRR.	JNIRR	JIRR.	JNIRR	JIRR.
]	]	7E]]]]]]]]]]]]]
]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]

WOODLAND SUITABILITY

]	]	JORD	]	]	MANAGEMENT PROBLEMS	]	]	]	POTENTIAL PRODUCTIVITY]								
]	]	JSYM	JEROS	]	JNEQUIP.	JSEEDL.	JWINDTH	JPLANT	]	COMMON TREES	]	]	]	JSITE	JPROD	]	]	TREES TO PLANT
]	]	JHAZARD	JLIMIT	]	JMORT	JYHAZARD	JCOMPET	]	]	]	]	]	]	JINDEX	JCLAS]]]
]	]			]				]	]	NONE]]]]]]
]]]]]]]]]]]
]]]]]]]]]]]
]]]]]]]]]]]
]]]]]]]]]]]
]]]]]]]]]]]
]]]]]]]]]]]
]]]]]]]]]]]
]]]]]]]]]]]
]]]]]]]]]]]
]]]]]]]]]]]
]]]]]]]]]]]

WINDBREAKS

]	]	SPECIES	]	]	SPECIES	]	]	SPECIES	]	]	SPECIES]]
]]]]]]]]]]
]]]]]]]]]]
]]]]]]]]]]
]]]]]]]]]]
]]]]]]]]]]
]]]]]]]]]]

WILDLIFE HABITAT SUITABILITY

]]	POTENTIAL FOR HABITAT ELEMENTS]]	POTENTIAL AS HABITAT FOR:]					
]]	JGRAIN & JGRASS & J WILD	JHARDWD	JCONIFER	JSHRUBS	JWETLAND	JSHALLOW	JOPENLD	JWOODLD	JWETLAND	JRANGELD

	SEED	LEGUME	HERB.	TREES	PLANTS	PLANTS	WATER	WILDLF	WILDLF	WILDLF	WILDLF	
	IV. POOR	IV. POOR	POOR	-	-	FAIR	POOR	IV. POOR	IV. POOR	-	IV. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT	PERCENTAGE COMPOSITION (DRY WEIGHT)										
	SYMBOL											
	(NLSFN)											
BLACK GRAMA	BOER4	40										
OTHER PERENNIAL FORBS	PFFF	10										
DROPSEED	SPORO	15										
INDIAN RICEGRASS	QRHY	10										
SAND SAGEBRUSH	ARF12	5										
OTHER PERENNIAL GRASSES	PPGG	5										
POTENTIAL PRODUCTION (LBS./AC. DRY WT):												
FAVORABLE YEARS		900										
NORMAL YEARS		700										
UNFAVORABLE YEARS		400										

RANGE SITE -- 042A051N SANDY

FOOTNOTES

NOTE: THE FIELD SOIL INTERPRETATION RECORD FOR
WINK FINE SANDY LOAM IS AVAILABLE FOR EXAMINATION
IN THE CITY PLANNING DEPARTMENT'S LIBRARY. A
READABLE REPRODUCTION OF THE COMPUTER PRINTOUT
FOR INCLUSION HERE WAS NOT AVAILABLE.

ZONE 2

EDGE OF ESCARPMENT

(L+B)

NATURAL RESOURCE CONSIDERATIONS IN DETERMINATION OF LAND USE:

Zone	Erosion Potential	Allowable Soil Loss (Tons/ac./yr.)	Present Calculated Soil Loss (Tons/Ac.)	Suitability of Top Soil For Veg. Growth	Permeability (Inches/Hr.)	Water Holding Capacity (In./ft.)	Slope	Corrosivity Untreated Steel	Concrete	Septic Field Limitation	Topo-graphy	Potential for Lateral Movement	Seepage Lagoon	Cutbank Stability
Zone 2 L+B Latene St	3/ High (Water)	4 Tons	5-90	Poor (Small stones & limy substratum)	.6" -2"	1.4"	1-5%	High	Low	4/ Severe	Gently Sloping	4/ Great	4/ Severe	5/ Must have Retaining Wall

3/ If limy substratum is exposed, wind erosion must be considered.

4/ This soil would have moderate limitation if not for the likelihood of effluent surfacing on escarpment slope (Should be lined)

5/ Excavation walls are unstable during construction.

OPEN SPACE:

Of the three land uses Open Space for Zone 2 will be the least offensive to Zones 3, 4, and 5. This is primarily because it will not increase runoff and will not create a hazard with septic field or lagoon seepage. The strip along the edge should be a minimum of 200 feet.

To protect the Historical Horizon is an objective of the Master Plan. To retain Zone 2 as open space would be in keeping with that objective.

Even if left as open space there are some limitations and treatments that should be addressed:

1. The value of this site as open space is not in the vegetation or wildlife it will produce, but rather the horizon itself. This designation would allow the esthetic value to be used by many rather than a few.
2. Developments along this site for transportation or other public use (e.g., parking areas) must be installed (constructed) to direct water away from the edge.
3. This site has a thin top soil with a limy substratum. If this lime layer is exposed, the site will become very dusty with no more agitation than foot traffic.

4. If septic filter or unlined sewage lagoons are used for developments west of this zone, they should generally be no closer than 200 feet of the edge of the escarpment. The low water holding capacity of the soil substratum and stratified geologic material may promote lateral movement of effluent. This lateral movement may allow surfacing of effluent on the escarpment slope.

Excessive watering of lawns or water (runoff) holding ponds on or near this site will have the same resurfacing tendencies as septic filter fields.

LOW DENSITY DEVELOPMENT:

It is obvious that low density development would be the second least offensive use of this site.

The integrity of the horizon would be compromised. The chances for increased volume of runoff and septic seepage surfacing are likely.

Limitations and treatments that should be addressed::

1. Care must be taken to direct the runoff from streets, roofs, drives, etc., away from the escarpment edge.
2. Septic fields or unlined lagoons must be installed at least 200 feet from the edge in order to decrease the possibility of seepage surfacing along the escarpment slope. Community sewage system or holding tanks would be the preferred method for this site.
3. The shallow layer of top soil limits landscaping. It also creates a problem during development when the extremely erodible limy substratum is exposed.
4. Fill material should be imported rather than cut into the limy subsoil.
5. If retaining walls or earth structures are used to retain water on the site, provision should be made to ensure that the water does not undercut the barrier through seepage.
6. Slopes on this zone are 1 to 5 percent.

MEDIUM DENSITY DEVELOPMENT:

This use for Zone 2 would disregard the Master Plan's goal to protect the escarpment horizon. It will also intensify the limitation and treatments listed for low density developments.

Special limitations and treatments that must be considered:

1. The septic system design is critical on this site for medium density development. A community system must be the first consideration.
2. Precautions must be taken to prevent increase in water and wind erosion during development.

SOIL INTERPRETATIONS RECORD

LtB LATENE SANDY LOAM, 1 TO 5 PERCENT SLOPES

THE LATENE SERIES CONSISTS OF DEEP, WELL DRAINED SOILS. THEY FORMED IN MIXED OLD CALCAREOUS ALLUVIUM ON ALLUVIAL FANS. ELEVATIONS RANGE FROM 3900 TO 6000 FEET. MEAN ANNUAL PRECIPITATION IS 7 TO 10 INCHES. THE MEAN ANNUAL AIR TEMPERATURE IS 57 TO 61 F, AND THE FROST FREE SEASON IS 170 TO 210 DAYS. TYPICALLY THE SURFACE LAYER IS A LIGHT BROWN LOAM ABOUT 11 INCHES THICK, THE NEXT LAYER IS A PINK GRAVELLY LOAM HIGH IN LIME CONTENT ABOUT 26 INCHES THICK, AND THE SUBSTRATUM IS A PINK GRAVELLY SANDY LOAM.

ESTIMATED SOIL PROPERTIES																								
DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO.	LIQUID LIMIT (PCT)	PLASTICITY INDEX	CLAY (PCT)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINKAGE POTENTIAL (%)	EROSION RESISTANCE GROUP (PCT)	ORGANIC MATTER (PCT)	CORROSIVITY STEEL CONCRETE								
0-15	SL	SM	JA-2, A-4	0-100	185-100	80-100	60-70	30-45	20-25	10-15	7.9-8.4	<2	LOW	4	3	<.8	HIGH	LOW						
15-60	GR-L, GR-SL	GM, SM	JA-2, A-4, A-1	0-100	155-80	50-65	40-60	20-40	20-25	0.07-0.12	7.9-9.0	2-4	LOW	1	1									
FLOODING														DEPTH	KIND	MONTHS	DEPTH	HARDNESS	DEPTH	HARDNESS	INITIAL	TOTAL	GROUP	FROST
FREQUENCY														DURATION	MONTHS	(FT)	(IN)	(IN)	(IN)	(IN)	(IN)	(IN)		ACTION
NONE																>6.0			>60				B	

SANITARY FACILITIES						CONSTRUCTION MATERIAL					
MODERATE-PERCS SLOWLY						GOOD					
SEPTIC TANK											
ABSORPTION FIELDS			ROADFILL								
MODERATE-SEEPAGE, SLOPE						IMPROBABLE-EXCESS FINES					
SEWAGE LAGOON AREAS			SAND								
SLIGHT						IMPROBABLE-EXCESS FINES					
SANITARY LANDFILL (TRENCH)			GRAVEL								
SLIGHT						POOR-SMALL STONES					
SANITARY LANDFILL (AREA)			TOPSOIL								
FAIR-SMALL STONES											
DAILY COVER FOR LANDFILL						WATER MANAGEMENT					
						MODERATE-SEEPAGE, SLOPE					
						POND					

]	]	]] RESERVOIR]]
]	]	]] AREA]]
]	]	]] BUILDING SITE DEVELOPMENT]]
]	]	]] SLIGHT ]	]] MODERATE-SEEPAGE, PIPING]
]	]	]] SHALLOW ]	]] EMBANKMENTS]
]	]	]] EXCAVATIONS ]	]] DIKES AND]
]	]	]] ]	]] LEVEES]
]]]]]]]]
]	]	]] SLIGHT ]	]] SEVERE-NO WATER]
]	]	]] DWELLINGS ]	]] EXCAVATED]
]	]	]] WITHOUT ]	]] PONDS]
]	]	]] BASEMENTS ]	]] AQUIFER FED]
]]]]]]]]
]	]	]] SLIGHT ]	]] DEEP TO WATER]
]	]	]] DWELLINGS]]]]
]	]	]] WITH ]	]] DRAINAGE]
]	]	]] BASEMENTS]]]]
]]]]]]]]
]	]	]] SLIGHT ]	]] DROUGHTY, SLOPE]
]	]	]] SMALL]]]]
]	]	]] COMMERCIAL ]	]] IRRIGATION]
]	]	]] BUILDINGS]]]]
]]]]]]]]
]	]	]] SLIGHT ]	]] FAVORABLE]
]	]	]] LOCAL ]	]] TERRACES]
]	]	]] ROADS AND ]	]] AND]
]	]	]] STREETS ]	]] DIVERSIONS]
]]]]]]]]
]	]	]] LAWNS,] MODERATE-DROUGHTY ]	]] DROUGHTY]
]	]	]] LANDSCAPING ]	]] GRASSED]
]	]	]] AND GOLF ]	]] WATERWAYS]
]	]	]] FAIRWAYS]]]]
]]]]]]]]

RECREATIONAL DEVELOPMENT

] SLIGHT		]] MODERATE-SLOPE, SMALL STONES	
CAMP AREAS	]] PLAYGROUNDS		
]]]]		
]]]]		
]]]]		
]] SLIGHT	]] SLIGHT		
PICNIC AREAS	]] PATHS AND TRAILS		
]]]]		

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]

WOODLAND SUITABILITY

]ORD] MANAGEMENT PROBLEMS] POTENTIAL PRODUCTIVITY]							
]]]]]]]]
]]]]]]]]
]]]]]]]]
]]]]]]]]
]]]]]]]]
]]]]]]]]
]]]]]]]]
]]]]]]]]
]]]]]]]]
]]]]]]]]
]]]]]]]]
]]]]]]]]
]]]]]]]]
]]]]]]]]
]]]]]]]]
]]]]]]]]
]]]]]]]]
]]]]]]]]
]]]]]]]]
]]]]]]]]
]]]]]]]]
]]]]]]]]
]]]]]]]]
]]]]]]]]

WINDBREAKS

]	SPECIES	]HT]	SPECIES	]HT]	SPECIES	]HT]	SPECIES	]HT]
]]]]]]]]]
]]]]]]]]]
]]]]]]]]]
]]]]]]]]]
]]]]]]]]]
]]]]]]]]]
]]]]]]]]]
]]]]]]]]]
]]]]]]]]]

WILDLIFE HABITAT SUITABILITY

]	POTENTIAL FOR HABITAT ELEMENTS	] POTENTIAL AS HABITAT FOR:
]	]GRAIN &]GRASS &] WILD]HARDWD]CONIFER]SHRUBS]WETLAND]SHALLOW]OPENLD]WOOLDL]WETLAND]RANGELD]]

	SEED	LEGUME	HERB.	TREES	PLANTS	PLANTS	WATER	WILDLF	WILDLF	WILDLF	WILDLF	
	IV. POOR	IV. POOR	IV. POOR	-	-	FAIR	POOR	IV. POOR	IV. POOR	-	IV. POOR	FAIR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT	PERCENTAGE COMPOSITION (DRY WEIGHT)										
	SYMBOL											
	(NLSFN)											
BLACK GRAMA	BOER4	40										
DROPSEED	SPOR0	15										
WINTERFAT	EULA5	5										
BURROGRASS	SCBR2	10										
INDIAN RICEGRASS	ORHY	10										
SAND SAGEBRUSH	ARFI2	5										
POTENTIAL PRODUCTION (LBS./AC. DRY WT):												
FAVORABLE YEARS		600										
NORMAL YEARS		350										
UNFAVORABLE YEARS		150										

RANGE SITE -- 042A052N LOAMY

FOOTNOTES

ZONE 3

ESCARPMENT

(BKD)

NATURAL RESOURCE CONSIDERATIONS IN DETERMINATION LAND USE:

ZONE #	REQ	Erosion Potential	Allowable Soil Loss (T./Ac./Yr.)	Present Calculated Soil Loss (T./Ac.)	Suitability of Top Soil For Veg. Growth	Permeability (Inches/Hr.)	Water Holding Capacity (In./Ft.)	Slope	Corrosivity Untreated Steel	Concrete	Sootic Field Limitation	Topo-graphy	Potential for Lateral Movement of Water	Sewage Lagoon	Cultural Stability	
Blueprint	10%	High (Wind & Water)	5 Tons 3 Tons	58-146	Fair (sandy) Poor (sandy)	6"-20" 20"	.7" .5"	15-40%	15-40%		Low Low	Severe (Poor filter) (Slope) Severe (Poor filter) (Slope)	Hilly Steep (Because of slope)	Great Great (Because of slope)	Severe Severe	5/ Unstable

5/ Excavation walls are unstable during construction.

OPEN SPACE:

Of the three land uses considered, the limitations of this site will effect open space the least.

Roads, utilities, runoff control, site preparation and other development necessities will be very expensive to those developing the property and the governmental entity responsible for the area because of slope, unstable erosive soil.

Even if left as open space there are some limitations and treatments that should be addressed:

1. The site does not have the potential for more than approximately 300 lbs. of bio-mass. This is not a great deal of ground cover and would require strict control of foot traffic in order to protect the existing ecosystem.
2. Presently the site is in an erosive condition. Erosion and water control structures would be necessary; starting with structures being built from the top of the small watershed downward to the bottom. The objective would be to hold as much of the precipitation where it falls.
3. A limitation of this site is that it has little potential for a wide range of grasses, herbs or trees, and a very limited habitat for wildlife species that are most enjoyed by the public.
4. The slopes of this site are excessive to the normal Blueprint and Katon soil. Therefore development cost will be high. The slopes range from 15 to 40 percent.

LOW DENSITY DEVELOPMENT:

All of the resource limitations that apply to high density development will apply to low density development, only to a lesser degree. Increased runoff, steep slopes, broken topography, and very porous soils can create conditions that will require very expensive remedies.

If low density development is selected as the land use, some of the limitations and treatments that should be addressed are:

1. With the irregular topography development sites should be on the ridges and hilltops. Without extensive land shaping, other sites would be subjected to flooding.
2. The soil is a poor filter for septic field effluent. Therefore, the lot sizes would need to be increased significantly to allow for septic filter fields. (Suggest a maximum of one house per two acres.) Otherwise, a community sewage system or septic holding tanks would be necessary.
3. The erosion (wind and water) problem that exists presently would be increased with the development of houses, drives, and roads. The same type of treatment planned for open space would be applied.
4. Having scattered dwellings across the escarpment area could be an inexpensive method of security for the fragile environment.
5. Because of the porous and extremely infertile soil, native plants and natural landscaping would be the least costly.
6. During development extreme care should be taken to hold soil in place because this soil is subject to severe blowing and movement by water when disturbed.
7. Consideration should be given to protecting the natural and historical horizon of the escarpment. Housing should not be allowed to invade the line if protection is a goal.

MEDIUM DENSITY DEVELOPMENT:

No consideration is being given to medium density development as it would result in a complete transformation of the site. The natural resource as it presently exists would be destroyed.

Items to be considered for reinforcement:

1. Retaining walls - because the instability of soil for cut bank.
2. Large amounts of soil would have to be moved for development with increased wind and water erosion as a result.
3. Cuts and fills of soil for development would leave completely different characteristics in the soil as far as nutrients and fertility are concerned. Soil amendments would have to be added.

ZONE 4

EAST SLOPE 5-15% Slopes (B&D)

NATURAL RESOURCE CONSIDERATIONS IN DETERMINATION OF LAND USE:

	Erosion Potential	Allowable Soil Loss (T./Ac./Yr.)	Present Calculated Soil Loss (T./Ac.)	Suitability of Top Soil for Vege. Growth	Permeability (in./hr.)	Water Holding Capacity (in./ft.)	Slope	Corrosivity Untreated Steel	Concrete	Septic Field Limitation	Topography	Potential for Lateral Movement of Water	Sewage Lagoon	Cutbank Stability
ZONE #4 B&D														
Bluepoint SOI Kalam 401 Association	High (Wind & Water)	5 Tons 3 Tons	50-102	Fair (sandy) Poor (Sandy & small stones)	6"-20" +20"	.7" .5"	3-8% 8-12%	High High	Low Low	Severe (Poor filter) -----	Mod. Sloping Strongly Sloping	Slight Great (Because of slope)	Severe	S/ Unstable Severe (Should be lined)

S/ Excavation wells are unstable during construction.

OPEN SPACE:

This site has as much potential for open space as any of the sites. However, it is also suited for both medium or low density development. The treatments listed below can also be used as an interim program before development.

Limitations and treatments that should be addressed are:

1. Erosion and water control structures should be applied throughout this zone.
2. The area should be fenced in order to keep off-road vehicles from destroying existing vegetation and topsoil. Livestock should also be excluded from Zone 4.
3. The soils in Zone 4 have a limited capacity for vegetative production of approximately 300 lbs. The current bio-mass was measured at 270 lbs. This 270 lbs. was primarily shrubs. An increase in grass species would provide additional soil protection.

HIGH DENSITY DEVELOPMENT AND LOW DENSITY DEVELOPMENT:

The two land uses are considered together as the limitations that effect one will also effect the other one in different degrees.

Limitations and treatments that should be addressed:

1. Flood control provisions for runoff must be made before development. This site is relatively steep with broken topography. As a result, there will be areas that will flood. The size of these areas will depend on the quality of the runoff system.
2. Consideration should be given to locating the roads or streets on the natural contour of the terrain, with raised gully crossings. By careful location of the street systems the number of downstream carrier diversions can be held to a minimum.
3. This site has soils that serve as a poor filter for septic field effluent. This would indicate the use of holding tanks or community septic system.
4. Special landscaping problems exist with the infertile and porous soils. These soils will require frequent watering and considerable soil amendments if vegetative landscaping is done rather than native.
5. Slopes range from 3 to 12 percent.

ZONE 5

FAR EAST SLOPE

(BkD-BcC)

NATURAL RESOURCE CONSIDERATION IN DETERMINATION OF LAND USE

	Erosion Potential	Allowable Soil Loss (T./Ac./Yr.)	Present Calculated Soil Loss (T./Ac.)	Suitability for Reg. Growth	Top Soil Permeability (In./Hr.)	Water Holding Capacity (In./Ft.)	Corrosivity Untreated Slope	Steel	Concrete	Septic Field Limitation	Potential For Lateral Movement of Topography	Water	Sewage Lagoon	Cutbank Stability
ZONE #5 BCC														
Bluepoint 1/5	High (Wind & Water)	5 Tons	5-14	Fair (sandy)	6"- 20"	.7"	1-RE	High	Low	Severe (Poor filter)	Mod. sloping	Slight	Severe	Unstable

5/Excavation walls are unstable during construction
Areas of this zone are deposition areas for sediment moving from upslopes.

Zone 5 has the same potential as Zone 4. The limitations are the same with one major difference. That difference is that Zone 5 is presently a deposition area for the sediment yield from the upslope sites.

1. Treatment for this should include the necessary treatment upslope to control runoff and reduce sediment.
2. The use of contoured roads and limited downslope diversion dams or channels will protect development in this site from sediment deposition and flooding.

SOIL INTERPRETATIONS RECORD

BKD BLUEPOINT-KOKAN ASSOCIATION, HILLY
KOKAN PART

THE KOKAN SERIES CONSISTS OF DEEP, EXCESSIVELY DRAINED SOILS FORMED IN MIXED ALLUVIUM ON RIDGESIDES AND FACES OF PIEDMONTS. ELEVATION IS ABOUT 5000 FEET. A.A.P. IS ABOUT 8 INCHES. A.A.A.T. IS ABOUT 60 F. F.F.S. IS ABOUT 190 DAYS. TYPICALLY, THE SURFACE LAYER IS VERY PALE BROWN VERY GRAVELLY SAND 4 INCHES THICK. THE SUBSTRATUM IS STRATIFIED VERY GRAVELLY SAND AND VERY GRAVELLY LOAMY COARSE SAND TO A DEPTH OF 60 INCHES OR MORE.

ESTIMATED SOIL PROPERTIES														
DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACTURE	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO.				LIQUID LIMIT	PLASTICITY INDEX				
				(PCT)	4	10	40	200						
0-4	JGR-S	JSM	JA-1	0-16	165-80	60-75	35-45	10-20	-	-	NP			
4-60	JSR-GRV-S-GRX-LCOS	JSM, GM, SP-SM, GP-GM	JA-1	0-25	130-60	20-50	10-25	5-15	-	-	NP			
DEPTH (IN.)	CLAY (PCT)	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINKAGE POTENTIAL (K)	EROSION FACTOR (GROUP)	ORGANIC MATTER (PCT)	CORROSIVITY	STEEL	CONCRETE		
0-4	5-10	1.40-1.50	>20	0.04-0.06	7.4-9.0	<2	LOW	1.05	3	2	1.5-9	HIGH	LOW	
4-60	2-10	1.40-1.50	>20	0.03-0.05	7.4-9.0	<2	LOW	1.05						
FLOODING		HIGH WATER TABLE	CEMENTED PAN	BEDROCK	SUBSIDENCE	POTENTIAL								
FREQUENCY	DURATION	MONTHS	(FT)	(IN)	(IN)	(IN)	(IN)	(IN)	(IN)	(IN)	(IN)	(IN)	ACTION	
NONE			>6.0			-		>60		-			A	LOW

SANITARY FACILITIES				CONSTRUCTION MATERIAL			
	SEVERE-POOR FILTER, SLOPE					POOR-SLOPE	
SEPTIC TANK							
ABSORPTION FIELDS					ROADFILL		
	SEVERE-SEEPAGE, SLOPE					PROBABLE	
SEWAGE LAGOON AREAS					SAND		
	SEVERE-SLOPE, TOO SANDY					PROBABLE	
SANITARY LANDFILL (TRENCH)					GRAVEL		
	SEVERE-SLOPE					POOR-TOO SANDY, SMALL STONES, AREA RECLAIM	
SANITARY LANDFILL (AREA)					TOPSOIL		
	POOR-SEEPAGE, TOO SANDY, SMALL STONES						
DAILY COVER FOR LANDFILL						WATER MANAGEMENT	
						SEVERE-SEEPAGE, SLOPE	
					POND		

		]] RESERVOIR]	
		]] AREA]	
	BUILDING SITE DEVELOPMENT]]]	
]	]	]] SEVERE-CUTBANKS CAVE, SLOPE	]] SEVERE-SEEPAGE
]	]	]] SHALLOW ]	]] EMBANKMENTS]
]	]	]] EXCAVATIONS ]	]] DIKES AND]
]	]	]] ]	]] LEVEES]
]]]]]]]]
]	]	]] SEVERE-SLOPE	]] SEVERE-NO WATER
]	]	]] DWELLINGS ]	]] EXCAVATED]
]	]	]] WITHOUT ]	]] PONDS]
]	]	]] BASEMENTS ]	]] AQUIFER FED]
]]]]]]]]
]	]	]] SEVERE-SLOPE	]] DEEP TO WATER
]	]	]] DWELLINGS]]]]
]	]	]] WITH ]	]] DRAINAGE]
]	]	]] BASEMENTS]]]]
]]]]]]]]
]	]	]] SEVERE-SLOPE	]] DROUGHTY, FAST INTAKE, SOIL BLOWING
]	]	]] SMALL]]]]
]	]	]] COMMERCIAL ]	]] IRRIGATION]
]	]	]] BUILDINGS]]]]
]]]]]]]]
]	]	]] SEVERE-SLOPE	]] SLOPE, LARGE STONES, TOO SANDY
]	]	]] LOCAL ]	]] TERRACES]
]	]	]] ROADS AND ]	]] AND]
]	]	]] STREETS ]	]] DIVERSIONS]
]]]]]]]]
]	]	]] SEVERE-DROUGHTY, SLOPE	]] LARGE STONES, SLOPE, DROUGHTY
]	]	]] LAWNS,]]]]
]	]	]] LANDSCAPING ]	]] GRASSED]
]	]	]] AND GOLF ]	]] WATERWAYS]
]	]	]] FAIRWAYS]]]]
]]]]]]]]

	SEED	LEGUME	HERB.	TREES	PLANTS	PLANTS	WATER	WILDLF	WILDLF	WILDLF	WILDLF	
	IV. POOR	IV. POOR	POOR	-	-	POOR	IV. POOR	IV. POOR	IV. POOR	-	POOR	IV. POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT	PERCENTAGE COMPOSITION (DRY WEIGHT)										
	SYMBOL											
	(NLSFN)											
BLACK GRAMA	BOER4	30										
NEEDLEGRASS	STIPA	10										
GALLETA	HIJA	10										
OTHER PERENNIAL GRASSES	PPGG	20										
OTHER SHRUBS	SSSS	10										
BUSH MUHLY	MUPO2	15										
OTHER PERENNIAL FORBS	PPFF	5										
BUSH MUHLY	MUPO2	5										
OTHER PERENNIAL FORBS	PPFF	3										
POTENTIAL PRODUCTION (LBS./AC. DRY WT):												
	FAVORABLE YEARS	600										
	NORMAL YEARS	400										
	UNFAVORABLE YEARS	300										

RANGE SITE -- 042A056N GRAVELLY SAND

FOOTNOTES

NOTE: THE FIELD SOIL INTERPRETATION RECORD FOR BLUEPOINT-KOKAN ASSOCIATION, HILLY BLUEPOINT PART IS AVAILABLE FOR EXAMINATION IN THE CITY PLANNING DEPARTMENT'S LIBRARY. A READABLE COMPUTER PRINTOUT FOR INCLUSION HERE WAS NOT AVAILABLE.

SOIL INTERPRETATIONS RECORD

PAC PAJARITO LOAMY FINE SAND, 1 TO 9 PERCENT SLOPES

THE PAJARITO SERIES CONSISTS OF DEEP WELL DRAINED SOILS. THEY FORMED IN ALLUVIAL SEDIMENTS ON ALLUVIAL FANS AND UPLAND PLAINS. ELEVATION IS ABOUT 5000 FEET. MEAN ANNUAL PRECIPITATION IS ABOUT 9 INCHES, MEAN ANNUAL AIR TEMPERATURE IS ABOUT 65F., AND THE FROST FREE SEASON IS ABOUT 200 DAYS. TYPICALLY, THE SURFACE LAYER IS A YELLOWISH RED LOAMY FINE SAND ABOUT 5 INCHES THICK, THE SUBSOIL IS A YELLOWISH RED FINE SANDY LOAM ABOUT 13 INCHES THICK, AND THE SUBSTRATUM IS A YELLOWISH RED AND REDDISH YELLOW FINE SANDY LOAM.

ESTIMATED SOIL PROPERTIES														
DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO.				LIQUID LIMIT (%)	PLASTICITY INDEX					
				4	10	40	200							
0-3	LFs	SM	A-2	0	100	100	85-100	25-35	-	NP				
3-42	FSL, SL	SM	A-2, A-4	0	190-100	85-100	60-100	25-45	15-20	NP-5				
42-60	FSL, SL, L	SM, ML	A-4, A-2	0	190-100	85-100	60-95	20-55	20-30	NP-5				
DEPTH (IN.)	CLAY (%)	MOIST BULK DENSITY (G/CM ³)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SHRINK- SWELL POTENTIAL (K)	EROSION FACTORS (GROUP)	WIND ORGANIC (PCT)	CORROSIVITY STEEL CONCRETE				
0-3	5-12	1.40-1.50	2.0-6.0	0.09-0.11	7.4-8.4	-	LOW 1.17	5	2	4-7	HIGH LOW			
3-42	15-20	1.45-1.55	2.0-6.0	0.13-0.15	7.9-8.4	-	LOW 1.24							
42-60	15-24	1.45-1.55	2.0-6.0	0.13-0.15	7.9-8.4	<2	LOW 1.24							
FLOODING		HIGH WATER TABLE	CEMENTED PAN	BEDROCK	SUBSIDENCE	POTENTIAL								
FREQUENCY	DURATION	MONTHS	DEPTH (FT)	KIND	MONTHS	DEPTH (IN)	HARDNESS (IN)	DEPTH (IN)	HARDNESS (IN)	INITIAL	TOTAL	GRP	FROST	ACTION
NONE			>6.0			-	>60		-					LOW

SANITARY FACILITIES				CONSTRUCTION MATERIAL			
	SLIGHT				GOOD		
SEPTIC TANK							
ABSORPTION FIELDS				ROADFILL			
	SEVERE-SEEPAGE				IMPROBABLE-EXCESS FINES		
SEWAGE LAGOON AREAS				SAND			
	SLIGHT				IMPROBABLE-EXCESS FINES		
SANITARY LANDFILL (TRENCH)				GRAVEL			
	SLIGHT				FAIR-TOO SANDY, SMALL STONES		
SANITARY LANDFILL (AREA)				TOPSOIL			
	GOOD						
DAILY COVER FOR LANDFILL					WATER MANAGEMENT		
					SEVERE-SEEPAGE		
				POND			

		]] RESERVOIR]	
		]] AREA]	
	BUILDING SITE DEVELOPMENT]]]	
] SHALLOW ]	] SLIGHT ]	]] ]	] SEVERE-PIPING]
] EXCAVATIONS ]		]] EMBANKMENTS]	
] ]		]] DIKES AND]	
] ]		]] LEVEES]	
]]]]]	
] DWELLINGS ]	] SLIGHT ]	]] ]	] SEVERE-NO WATER]
] WITHOUT ]		]] EXCAVATED]	
] BASEMENTS ]		]] PONDS]	
] ]		]] AQUIFER FED]	
]]]]]	
] DWELLINGS ]	] SLIGHT ]	]] ]	] DEEP TO WATER]
] WITH]]]]	
] BASEMENTS ]		]] DRAINAGE]	
]]]]]	
]]]]]	
] SMALL ]	] MODERATE-SLOPE ]	]] ]	] FAST INTAKE, SOIL BLOWING, SLOPE]
] COMMERCIAL]]]]	
] BUILDINGS ]		]] IRRIGATION]	
]]]]]	
]]]]]	
] LOCAL ]	] SLIGHT ]	]] ]	] SOIL BLOWING]
] ROADS AND ]		]] TERRACES]	
] STREETS ]		]] AND]	
] ]		]] DIVERSIONS]	
]]]]]	
] LAWNS, ]	] SLIGHT ]	]] ]	] FAVORABLE]
] LANDSCAPING ]		]] GRASSED]	
] AND GOLF ]		]] WATERWAYS]	
] FAIRWAYS]]]]	
]]]]]	

RECREATIONAL DEVELOPMENT

]	]	SLIGHT	]]	]	MODERATE-SLOPE]
]]]]]]
]	CAMP AREAS	]	]]PLAYGROUNDS]]
]]]]]]]
]]]]]]]

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)															
]	]	CAPA-	]	COTTON	]	ALFALFA	]	PEPPERS,	]	CORN	]	GRAIN	]	PASTURE]
]	]	BILITY	]	LINT	]	HAY	]	FRESH CHILI	]	SILAGE	]	SORGHUM]]
]	]		]	(LBS)	]	(TONS)	]	(TONS)	]	(TONS)	]	(BU)	]	(AUM)]
]	]	JNIRR	]	JIRR	]	JIRR	]	JIRR	]	JIRR	]	JIRR	]	JIRR]
]	]	7E	]	3E]	-]	-]]]]]]]
]]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]]

WOODLAND SUITABILITY

]	JORD	]	MANAGEMENT PROBLEMS	]	POTENTIAL PRODUCTIVITY]
]	]	]	SYM]	]	EROS'N]]
]	]	]	EQUIP.]	]	SEEDL.]]
]	]	]	WINDY]	]	PLANT]]
]	]	]	HAZARD]	]	LIMIT]]
]	]	]	MORT'Y]	]	HAZARD]]
]	]	]	COMPET]]]]
]	]	]	]	]	NONE]
]]]]]]]
]]]]]]]
]]]]]]]
]]]]]]]
]]]]]]]
]]]]]]]
]]]]]]]
]]]]]]]
]]]]]]]
]]]]]]]
]]]]]]]
]]]]]]]
]]]]]]]
]]]]]]]
]]]]]]]

WINDBREAKS

]	]	SPECIES	]	HT]	]	SPECIES	]	HT]	]	SPECIES	]	HT]	]	SPECIES	]	HT]
]]]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]]]
]]]]]]]]]]]]]]]]]

WILDLIFE HABITAT SUITABILITY

]	]	POTENTIAL FOR HABITAT ELEMENTS	]	POTENTIAL AS HABITAT FOR:]
]	]	GRAIN & GRASS & WILD	]	HARDWD] CONIFER] SHRUBS]
]	]	WETLAND] SHALLOW] OPENLD	]	WOODLD] WETLAND] RANGELD]

	SEED	LEGUME	HERB.	TREES	PLANTS	PLANTS	WATER	WILDLF	WILDLF	WILDLF	WILDLF	
	JV. POOR	JV. POOR	POOR	-	-	POOR	POOR	JV. POOR	POOR	-	JV. POOR	POOR

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT)
BLACK GRAMA	BOER4	35
BUSH MUHLY	MUPO2	5
DROPSEED	SPOR0	15
OTHER PERENNIAL GRASSES	PPGG	30
OTHER SHRUBS	SSSS	5
OTHER PERENNIAL FORBS	PPFF	10
POTENTIAL PRODUCTION (LBS./AC. DRY WT):		
FAVORABLE YEARS	900	
NORMAL YEARS	-	
UNFAVORABLE YEARS	400	

RANGE SITE -- 042A051N SANDY

FOOTNOTES

R1111



United States
Department of
Agriculture

Soil
Conservation
Service

517 Gold Avenue, SW
Room 3301
Albuquerque, NM 87102-3157

Subject: ENG - Geology - Pajarito Arroyos Watershed, Date: November 7, 1986
General Geology and Erosion Capability

To: John Werner
District Conservationist
Soil Conservation Service
Albuquerque, New Mexico

File code: 210-16

The Pajarito Arroyos Watershed is a tributary of the Rio Grande. It is bounded on the east by the west bank of the Rio Grande. The northern boundary is created by a drainage divide which trends east to west, and is about 1 to 2 miles north of Interstate Highway 40. The west boundary extends to the south from about section 32 of T. 11 N., R. 1 E. along the west edge of T. 10 N. to about section 20 of T. 11 N., R. 1 E. At this point, it turns southeastward and encounters the Isleta Indian Reservation boundary in section 31 of T. 9 N., R. 2 E. The southern boundary is formed by the Isleta Reservation border between this point and the west bank of the Rio Grande. These boundaries surround an area of about 51,000 acres.

The Pajarito watershed is located in the Albuquerque Basin. This basin is a portion of the Mexican Highlands section of the Basin and Range province of the Intermontane Plateaus physiographic region of New Mexico. This region is characterized by the occurrence of isolated ranges of dissected black mountains separated by aggraded desertic plains.

The Albuquerque Basin is among the largest of several north to south trending basins which form the Rio Grande depression. The Rio Grande depression is part of a rift valley system which extends from central Colorado southward across New Mexico into Texas and Mexico.

The rift valley system is the result of massive block faulting beneath the valley floor, and uplifted mountains on both sides. The Colorado Plateau and the Nacimiento uplift form the west side of the Albuquerque Basin, and the Sandia, Manzano, and Los Pinos Mountains are uplifted along the east side.

After the original rift occurred in Miocene time (about 24,000,000 years ago), the valley was filled with sediment. This material was derived from the mountains which existed on the east, west, and north sides of the rift. The accumulation of sediment is believed to have exceeded by about 500 feet the elevation of the uplands which exist between the Rio Grande and the Rio Puerco at the present time.



The Soil Conservation Service
is an agency of the
United States Department of Agriculture



★ U.S. Government Printing Office: 1985-529-568/30577

Subsequent erosional processes, combined with other geologic phenomena have produced the existing topographic condition in the Albuquerque Basin.

Rocks exposed in the Pajarito watershed are of upper Tertiary age and are portions of the Santa Fe formation. They range from blocky, fine-grained mudstone and claystone to fine-grained silty or clayey sandstones to gravelly and cobbly fanglomerates and conglomerates. Cementation varies from none to moderately cemented, and often changes laterally as well as vertically. The Santa Fe age rock outcrops are usually in the form of eastward-facing escarpments. These escarpments are either surface expressions of fault planes, dissected slopes of resistant Santa Fe age rocks, or exposed edges of Tertiary age lava flows.

The total thickness of sediment in the Rio Grande depression can be as much as about 10,000 feet, and as much as 3,000 feet is quite common.

Soils in the Pajarito watershed are basically very sandy on the surface. The floodplain area is mostly the Gila-Vinton-Brazito association of well-drained loamy soils. The slopes that extend to the west from the floodplain to the base of the mesa slopes are primarily the Bluepoint-Kokan association soils of fine sandy loams. The soil on the mesa top is the Madurez-Wink association of fine sandy loams.

The floodplain soils are very flat and relatively erosion resistant. They are estimated (by the "Soil Erosion Rates in New Mexico" map published by New Mexico Natural Resources Department, Soil and Water Conservation Division, 1978) to be capable of eroding at the rate of 0.0 to 0.2 acre-feet per square mile per year. (This estimate includes sheet, rill, gully, and streambank erosion by water, but does not include wind erosion).

The same publication rates that Bluepoint-Kokan association and the Madurez-Wink association at from 0.2 to 0.5 acre-feet per square mile per year.

These estimated rates appear to be relatively low when compared to the actual quantity of sediment damage sustained by various interests along the west edge of the floodplain in the historical past. It is quite possible that there is some direct connection between the high wind erosion potential of these upland soils and the sediment yield of the watershed. The Rio Puerco Basin is directly west and southwest of Pajarito, and wind-blown sediment could accumulate in arroyos, etc., and then be flushed out by relatively minor runoff events.

It is very apparent that the upland soils in this watershed are highly susceptible to damage from vehicular traffic, construction activity, etc., and that activity of this nature will concentrate runoff and probably increase erosion potential and sediment yield on each affected arroyo.

Both of these upland soil associations are well drained to excessively well drained. In areas in which these soils overlie shallow stratified

materials adjacent to the eastward facing escarpments common to this watershed, polluted waste domestic waters (sewage, excessive lawn watering, etc.) could resurface on the escarpment faces. There are some bentonitic claystones within the Santa Fe formation rocks in this watershed. These rocks are susceptible to high shrink-swell ratios when wetted and dried, and readily create permeability barriers and unstable foundations.

It appears that on the map (see attachment) which delineated the boundaries of the Pajarito watershed as described in the Application for Planning Assistance Under the Watershed Protection and Flood Prevention Act, submitted in 1972 as an amendment to the original application, there was some land included which drains onto the Isleta Reservation and not into the Rio Grande. This land, in the southwest corner of the delineated area, consists of the following sections in T. 9 N., R. 1 E.:

14 through 17
20 through 29 and
32 through 36

A total of 19 mi² = 12,160 acres



Rufus D. Meadows
State Geologist

Attachments

cc w/att:
Gordon Odell, SCE, NMSO
Ken Leiting, AC, Rio Rancho AO

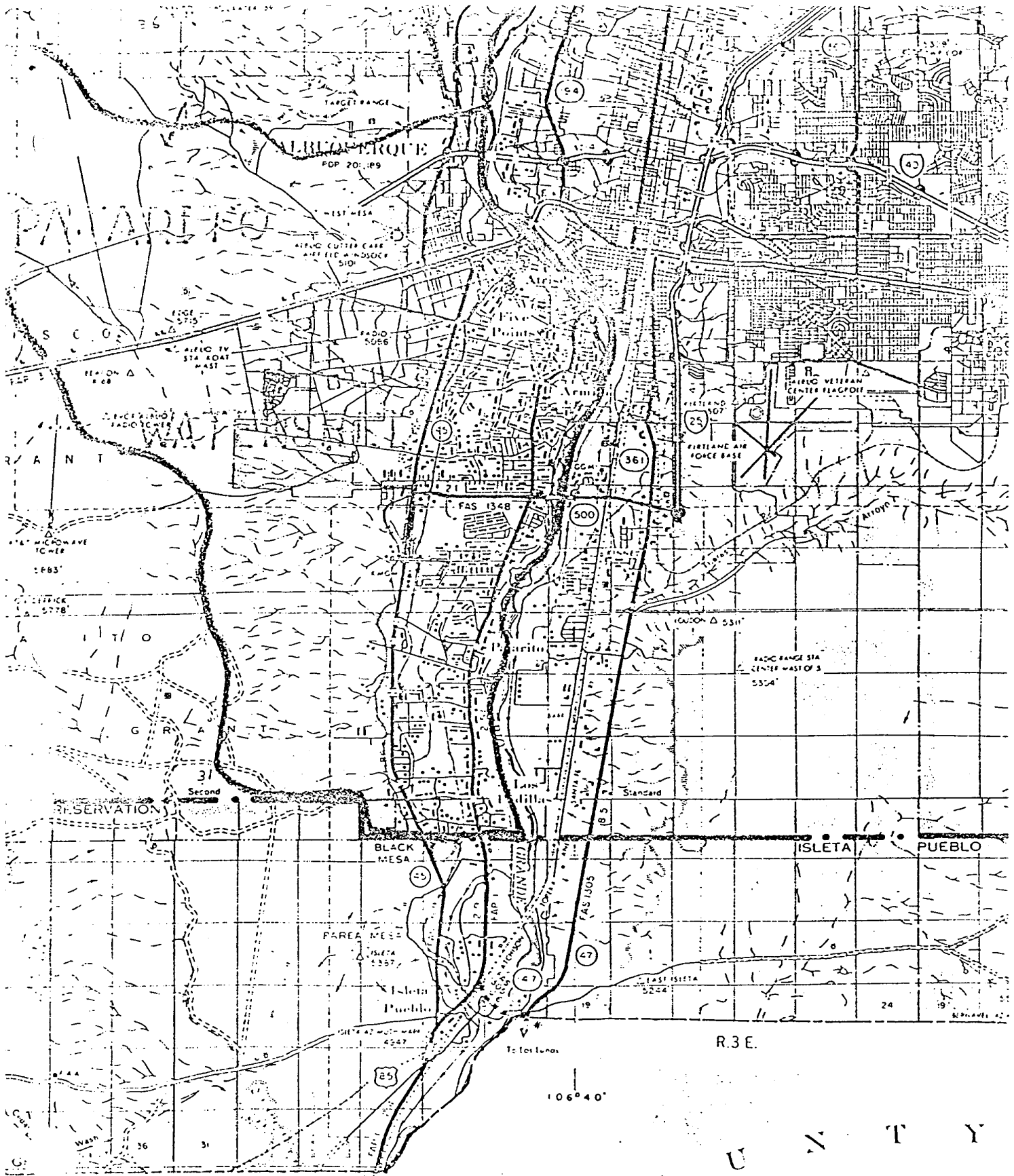
USDA:SCS:RDMEADOWS:cj 11/7/86

Because climatic conditions in this area are very harsh with low total rainfall, flash flooding, high winds, and hot temperatures during the growing season, the plant community is subject to considerable changes with little outside disturbance. Because the environment is so brittle, negative impacts on the plant community will take many years to improve; especially if not properly managed.

Because of abnormal influences exerted on the plant communities in the past such as excessive animal use, soil blowing, water erosion, off-road traffic and fire, and because of the brittle environment, the plant community for the most part is in a deteriorated condition.

In order to improve the condition of these sites and reduce soil erosion, the following treatment will need to be implemented in the interim until development is started:

1. Grazing Control and Management.
 - a. Control trespass of livestock and off-road traffic.
 - b. If grazed by livestock, area should be deferred and grazed under a planned grazing system with proper grazing use.



R2E To Las Lunas

R3E

106°40'

C O U N T Y

E N C I A

VEGETATIVE CONSIDERATIONS

Ecologically the condition of the present plant community ranges from low good condition to low poor condition. Most of the area consists of deep sand and gravelly sand range sites in fair and poor condition which are dominated by broom snakeweed (*Gutierrezia sarothrae*) and sand sagebrush (*Artemisia filifolia*). However, on those sites in higher ecological condition of low good and high fair condition, the plant community is dominated by Indian ricegrass (*Oryzopsis hymenoides*) and black grama (*Bouteloua eriopoda*).

Present production on these sites in a favorable year ranges from over 600 lbs./ac./year to as low as 30 lbs./ac./year. As indicated earlier, most of the area is in fair and poor condition.

Based on inventory data, a majority of the area averages about 270 lbs./ac./year total production. In excellent conditions in favorable years these sites would average about 300 lbs./ac./year. Even though there does not seem to be a significant difference in total production between present poor and fair condition and the potential for the site, it should be pointed out that the greatest difference is in species composition. Total bio mass has not changed significantly except in poor condition; however, species composition has changed significantly. This change in species composition or from a grassland dominated plant community to a brush dominated plant community has a great effect on the amount of ground cover, bare ground, type of canopy and unsheltered distance.

This change in species composition has had a great negative affect on the rate of erosion on these sites. These sites are highly erosive if not adequately protected. By going from a grassland plant community with less bare ground, high ground cover and shorter unsheltered distance to a brush dominated community with more bare ground, less ground cover and longer unsheltered distances, these sites are being exposed to high rates of wind erosion. Presently calculated erosion rates on these sites range from 14T/ac./yr. to a high of about 146T/ac./yr. The tolerable erosion rate for these sites is 5T/ac./yr.

Soil Symbol	Soil Name	Range Site	Potential Annual Vegetative Production		
			Favorable	Normal	Unfavorable
MaB	Martinez	sandy	900	700	400
BCC	Bluepoint 1-9%	deep sand	300	150	50
BkD	Bluepoint 5-15% Kokan 15-40%	gravelly sand	300	150	50

PRESENT DATA - OCTOBER 1986

	Percent Condition	1986 Lbs./Ac. Production	Average For A Majority Of The Area	
			Percent	Lbs./Ac./Yr.
Sands	15	91	Poor 15 - 91 Fair 31 - 119 Fair 32 - 602 Average 270 lbs. per Ac. per Yr.	
	31	119		
	32	602		
	41	630		
	65	684		
Gravelly sand	5	30	Average 50 Lbs./Ac./Yr.	
	20	58		
	48	63		
Sands	48	108		

Wind and water erosion on eight sites
 Averaged 90 T/Ac./Yr.
 Low of 14 T/Ac./Yr. to 146 T/Ac./Yr. high

The Southwest Area Plan was developed by the City of Albuquerque under contract to Bernalillo County. Many people have contributed information and time to the effort from the County, the City, other public agencies and the citizenry. This volume represents a synthesis of the work and the suggestions of many.

SPECIAL ACKNOWLEDGEMENTS

Agricultural Task Force Members
Open Space Advisory Board Members
Andres Aragon-Viamonte, Bohannon-Huston, Inc.
Bill Bennett, City Environmental Health
Gene Clements, County Environmental Health Department
Mary Davis, City Historic Preservation Planner
Doug Earp, City Environmental Health
Jay Eberle, Main Street Program
Rex Funk, City Parks & Recreation Department
Mary Lou Haywood-Spells, Office of Neighborhood Coordination
Carol Hodges, City Environmental Health*
Leora Jaeger, City Transit & Parking Department*
Rex King, City Planning Department
Ruth Lambert, Agricultural Task Force
Rick Marshment, Middle Rio Grande Council of Governments*
Dr. Al Parker, UNM Economics Department
Richard Perkins, State Environmental Improvement Division
Janet Saiers, City Parks & Recreation Department
Dwayne Shephard, City Public Works Department
Tom Shoemaker, City Public Works Department
John Taschek, County Roads Department
John Werner & Staff, U.S. Soil Conservation Service
Bob White, City Legal Department
Jerry Widdison, City Public Works Department
Jean Witherspoon, City Public Works Department

*Former City & COG employees