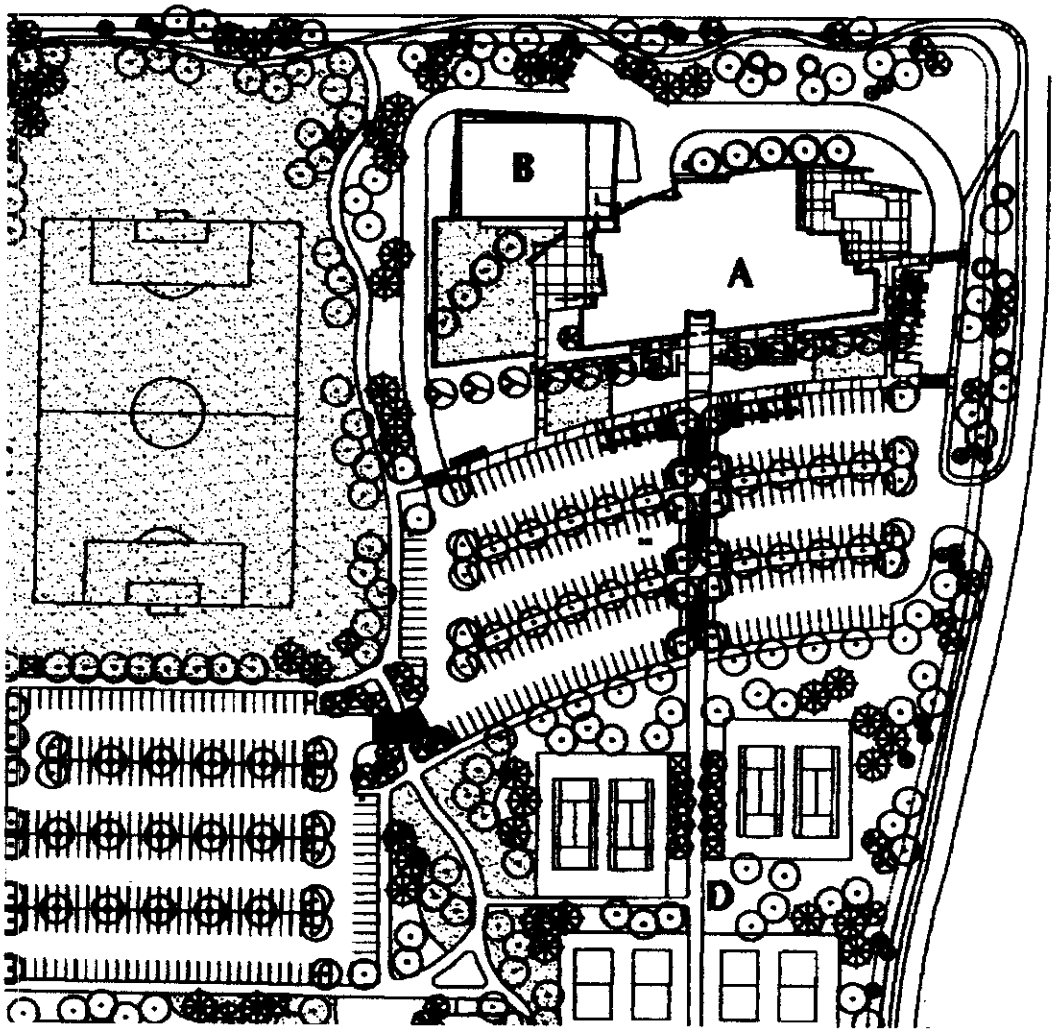
MANZANO MESA PARK
AMENDED MASTER DEVELOPMENT PLAN
Albuquerque, New Mexico



Consensus Planning, Inc.
Landscape Architects and Planners

Smith Engineering Company
Engineers

May 31, 2001

This Amended Master Development Plan is in accordance with the Environmental Planning Commission's decision of _____, and the conditions of approval have been satisfied.

Case No. _____

_____

Planning Department Date

_____

City Engineer Date

_____

Transportation Development Division Date

_____

Utilities Development Division Date

_____

Parks and Recreation Department Date

ADMINISTRATIVE

DEVELOPMENT PLAN AMENDMENT

FILE NO. Z-96-94 AA-97-81

Text Change (p.19) Regarding fields within detention facility

Bob Paula — PLANNING DIRECTOR

11-18-97 — DATE

This Master Development Plan is in accordance with the Environmental Planning Commission's decision of August 15, 1996, and the conditions of approval, as stated below, have been satisfied.

Case No. Z-96-94

Planning Department — Date: 2.3.97

Transportation Development — Date: 12.17.96

City Engineer — Date: 1-22-97

Utility Development — Date: 12-17-96

Parks and General Services — Date: 12-17-96

Conditions 1-4 of the Environmental Planning Commission's approval of this Master Development Plan are:

1. The replat required by Z-96-9 must be completed as specified by the zoning code.

2. The Multi-Generation Center will require site development plan approval by the Environmental Planning Commission.

3. Incorporation of the 10-acre parcel at the southeast corner of the Stephen Moody Street and Southern Boulevard into Manzano Mesa Park will require the parcel to be rezoned and the Master Development Plan amended.

4. A direct vehicular/pedestrian connection through the park between Elizabeth Street and Stephen Moody Street is required and is subject to approval by the Traffic Engineer.

ACKNOWLEDGEMENTS

Martin J. Chavez, Mayor
Lawrence Rael, Chief Administrative Officer
Jay Czar, Deputy Chief Administrative Officer
Vickie Fisher, Deputy Chief Administrative Officer

City Council
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Vincent Griego, District 2
Steve Gallegos, District 3
Sam Bregman, District 4
Angela Robbins, District 5
Ruth Adams, District 6
Vicki Perea, District 7
Tim Cummins, District 8
Michael Brasher, District 9*

* Manzano Mesa Park is located in District 9

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Adele Hundley, Vice-Chair
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Neighborhood Associations
Four Hills Mobile Home Park
Singing Arrow Neighborhood Association
Willow Wood Homeowner's Association

Citizen's Steering Committee
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Smith Engineering Company
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Tom Dalton, Engineer

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Note: New text or changed text is underlined for clarity and constitutes the extent of the amendment to this document.

INTRODUCTION

Manzano Mesa Park is designed primarily as an active recreation facility. The size of the park (48.4 acres) allows for a great variety of activities to serve the interests of the greater community as well as the local neighborhoods. The focus of the park will be a multi-generational center which combines a senior center, senior day care, and community center for youth activities. Facilities provided for organized sports include baseball/softball fields and soccer fields. Tennis, basketball, and sand volleyball courts are also included. In addition, neighborhood needs are satisfied through the provision of children's play areas, biking/strolling paths, exercise course, and picnic facilities.

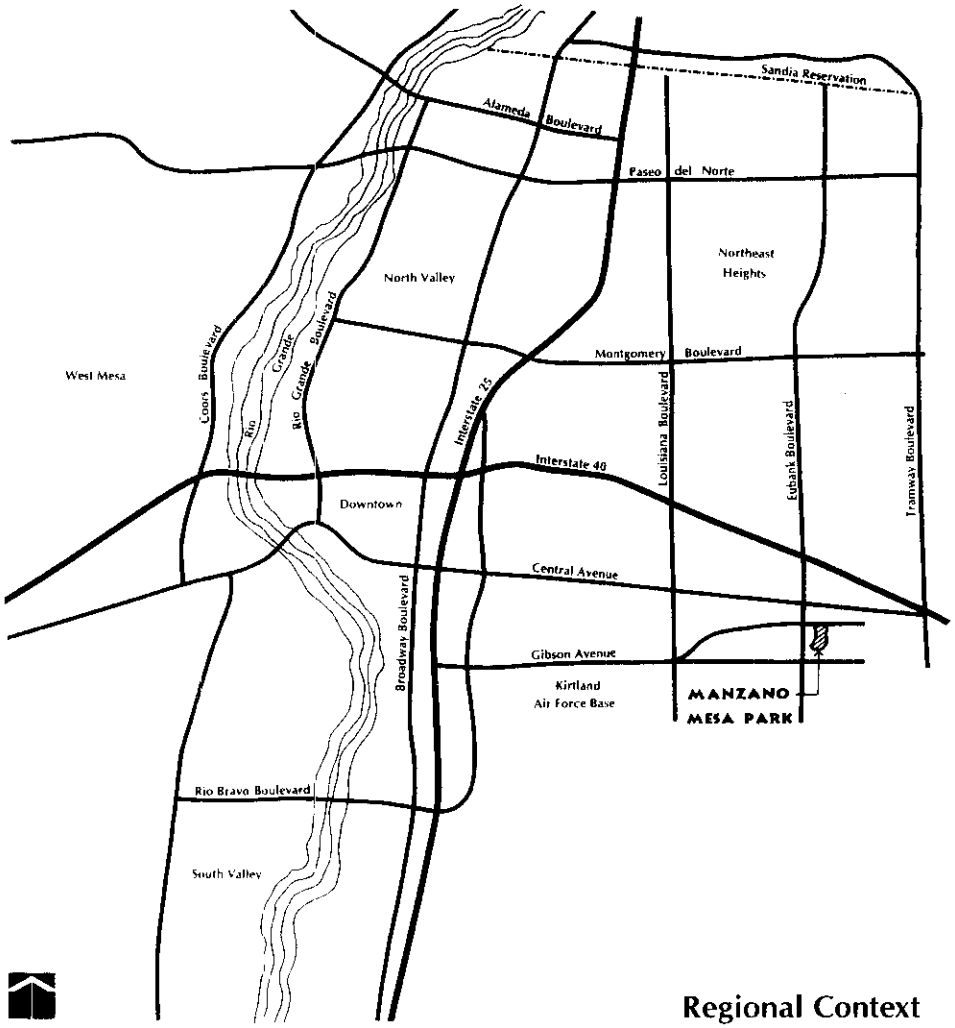
The focus of the park will be a multi-generational center which combines a senior center, senior day care, and community center for youth activities.

The history of the project, the project's goals, existing site conditions information, and the facility program are presented in this document. These elements combined have shaped the layout of the park in terms of access, facility location, and programming. The facility program is described in detail and sketches are provided to communicate the visual and aesthetic qualities of the park elements.

Due to the size of Manzano Mesa Park, implementation of improvements will require a phasing strategy. This document will provide the framework for the phased development of Manzano Mesa Park. The Master Development Plan allows for a flexible response as future recreational needs are realized and funding becomes available.

PROJECT HISTORY

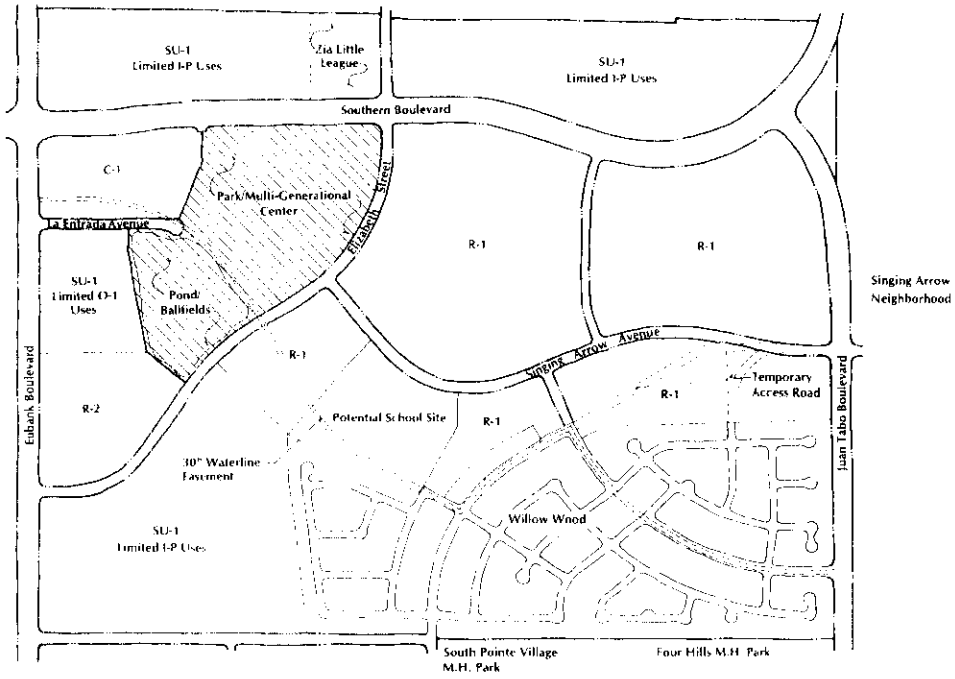
The 432-acre Manzano Mesa property, owned primarily by Albuquerque Public Schools (APS), is located between Eubank and Juan Tabo approximately ¼-mile south of Central. Two 5-acre public park and recreation areas within the site were dedicated to the City of Albuquerque in the 1960's. One of these parks, Manzano Mesa Park North or Zia Little League, was developed in 1969. The City owns this property, however, two of the fields have overlapped onto APS property. The other park area, Manzano Mesa South or Babe Ruth Field, was previously used for baseball fields and subsequently as a small motorized track area. This facility has not been utilized for many years.



Regional Context

The Manzano Mesa Master Plan, prepared for APS in 1989, identified the need for the Zia Little League complex to be relocated and combined with an additional 5-acre tract to create a larger 10-acre complex central to the Manzano Mesa site. In 1992, Morrow and Company prepared a study to explore the benefits and constraints of developing a multi-generational center and park on this site. In recent years, this area of Albuquerque has been identified by the Draft Park System Facility Plan as the location for a larger community-scale park facility. Two other issues affect the timing and development of the park: 1) APS is interested in marketing the property which Zia Little League encroaches upon, and would like the fields moved by 1997, and 2) the need for a stormwater detention pond in the area was identified in the South Eubank Storm Drainage Analysis prepared by Smith Engineering Company. The City's Parks and General Services and Public Works Departments have collaborated on locating the recreational and drainage functions in one facility.

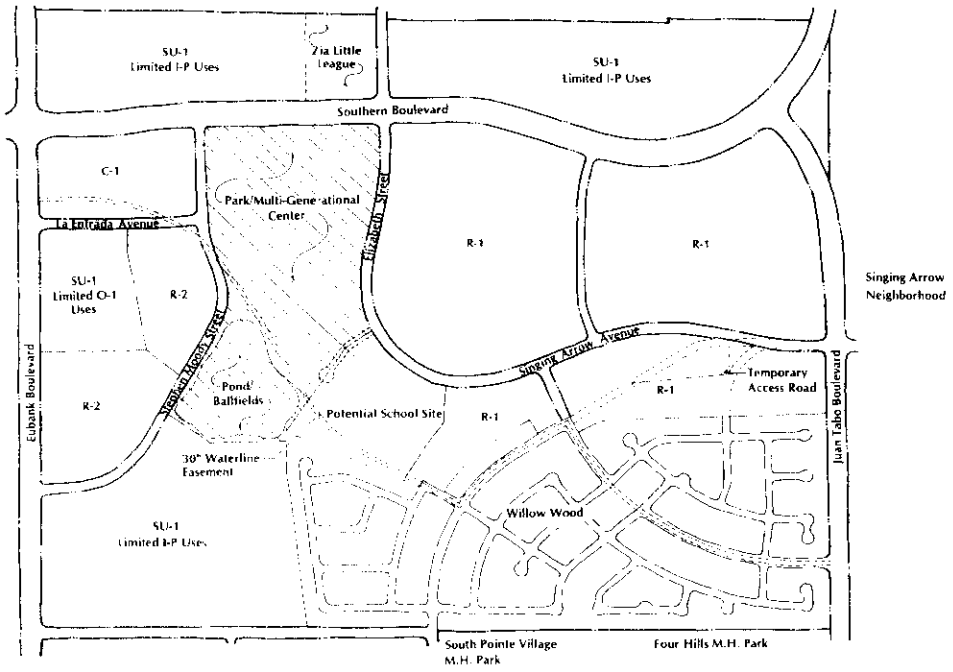
In October 1994, the project team of Consensus Planning and Smith Engineering Company was selected by the City to prepare a Master Development Plan for Manzano Mesa Park. At that time, the park site being considered by the City was a 36-acre tract west of Elizabeth Street.



Original Park Site

Public meetings were held to present information on existing conditions, and to survey the public on preferred park amenities. At subsequent focus group meetings, the neighborhoods raised a serious concern over the street alignment and the separation of the park from a proposed APS school site. The neighborhoods preferred to have the park located directly adjacent to the school site to avoid having school children cross the street to get to the park. Several alternatives were prepared to accomplish this goal. The selected alternative was based on cutting off Elizabeth Street and realigning it to curve to the east to connect to Juan Tabo along a Singing Arrow alignment. Elizabeth

Street alignments were shifted in order to locate the park directly adjacent to the potential school site.



Alternative Park Site

Street's connection to Eubank Boulevard was realigned to the north to connect to Southern Boulevard at the ¼-mile point and creates the park's western boundary. This street will now be named Stephen Moody Street. The City is currently negotiating with APS to trade land for the relocation of Zia Little League and also to acquire additional acreage to create a ± 47.9-acre park facility. On February 15, 1996, a zone change was approved by the Environmental Planning Commission (EPC Case #Z-96-9) which established SU-1 for Community Park and Related Uses zoning for a 36.6-acre tract (Tract G-2). The City will seek funding for

future land acquisition to purchase the remaining 11.85 acres (Tract G-1, rezoned SU-1 for R-2 uses) necessary to complete the park site. The Master Development Plan for Manzano Mesa Park was designed to function with or without Tract G-1.

On March 27, 1996, a public meeting was held to gather comments on two specific facility concepts. Both concepts were generally well-received by the public, but several specific issues needed to be fine-tuned. A steering committee was established to work these issues out prior to the preparation of a final master plan. The Master Development Plan was submitted to the Environmental Planning Commission (EPC) in June, 1996, and approved on August 15, 1996. A Site Plan for Building Permit for a 26.5-acre portion of the park, which included the primary active recreation components, was approved by the Development Review Board (DRB) on October 7, 1997. A Site Plan for Building Permit for the Multi-Generational Center was approved by the EPC on September 16, 1999, and construction on the Center began in April, 2001.

On April 24, 2001, the City finalized the purchase of Tract G-1 from APS. An application to the City to amend the zoning of Tract G-1 to SU-1 for Community Park and Related Uses, along with an amendment to this Master Development Plan and an overall Site Plan for Building Permit, was made on May 31, 2001. This application fulfills an original condition of approval to amend the zoning and Master Development Plan upon the purchase of Tract G-1 by the City.

PARK GOALS

1. Provide activities which serve the needs of both the neighborhood area and the community-at-large.

2. Address the recreational needs of all age groups and the entire user population.

3. Provide for the integration of the future multi-generational center into the overall park design relative to pedestrian and vehicular circulation.

4. Promote the multi-use of the proposed drainage pond to provide additional recreational opportunities.

5. Design the park to serve as a focal point and activity hub for the surrounding community.

6. Develop park access patterns which provide for safe and efficient separation of vehicles, pedestrians, and bicycles.

7. Preserve the City's natural resources through innovative design approaches which respond to water conservation and solar exposure.

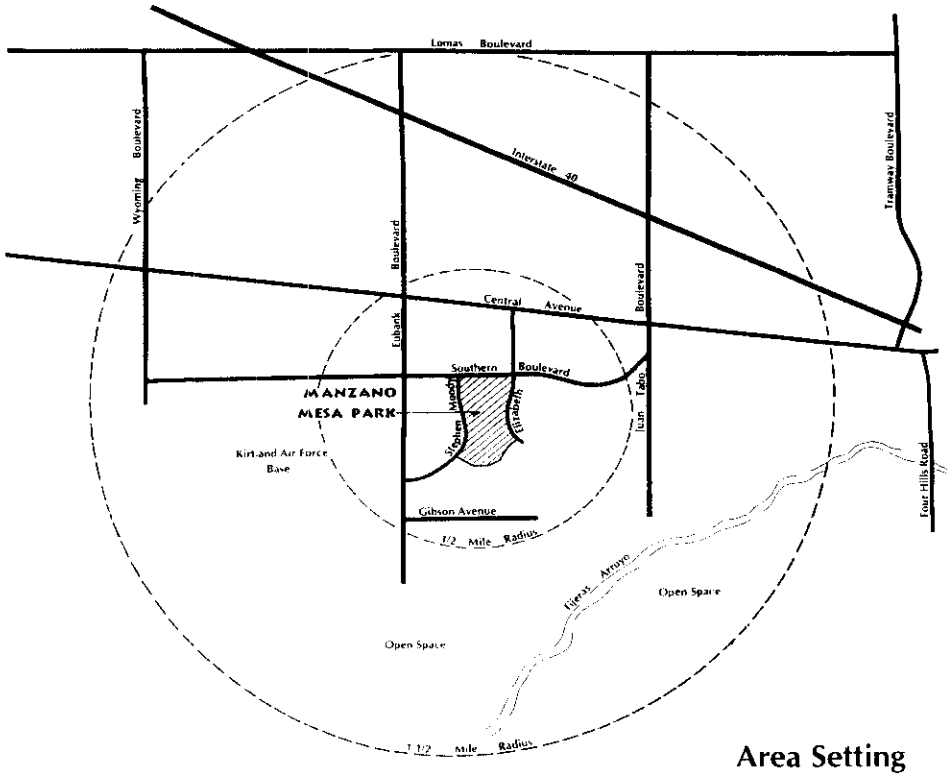
8. Develop design standards which promote a vision of quality for all site improvements.

9. Design the park for ease of maintenance and with vandal-proof materials so that the park remains attractive over time.

10. Develop a phasing strategy which best represents current and future funding sources, infrastructure needs, and community preferences.

AREA SETTING

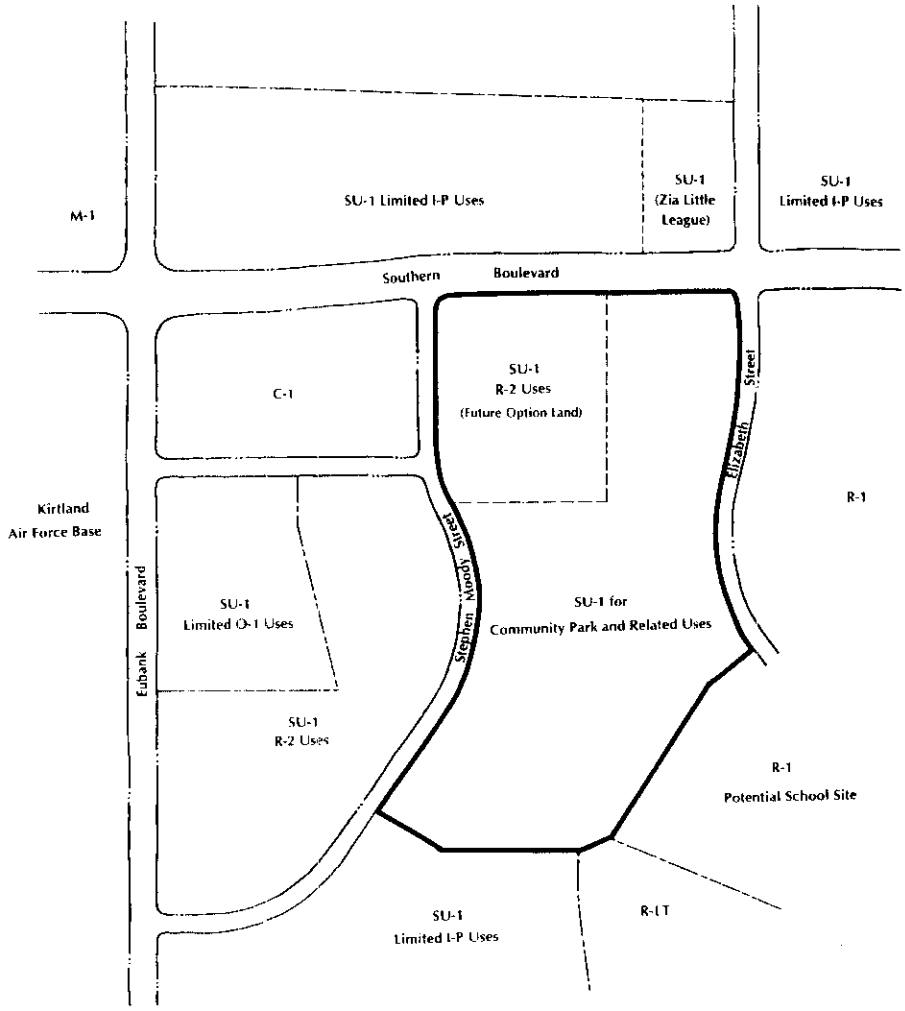
Manzano Mesa Park is located in the southeast area of Albuquerque, approximately ¼-mile south of Central Avenue and east of Eubank Boulevard. Centrally located within the 432-acre Manzano Mesa property, the site offers convenient accessibility to local neighborhoods as well as the surrounding community. The area directly adjacent to the park



Area Setting

site is predominantly vacant, with the exception of the Willow Wood subdivision to the southeast. Current zoning for the surrounding properties (see Surrounding Land Use and Zoning map on page 8) includes: employment uses (SU-1 for IP) to the south and north across Southern Boulevard; multi-family (SU-1 for R-2), office (SU-1 for O-1), and commercial uses (C-1) to the west; and single-family residential uses (R-1 and R-LT) to the east. As previously mentioned, a potential school site has been identified by APS at the southeast corner of the park.

Eubank Boulevard serves as a major access route to Kirtland Air Force

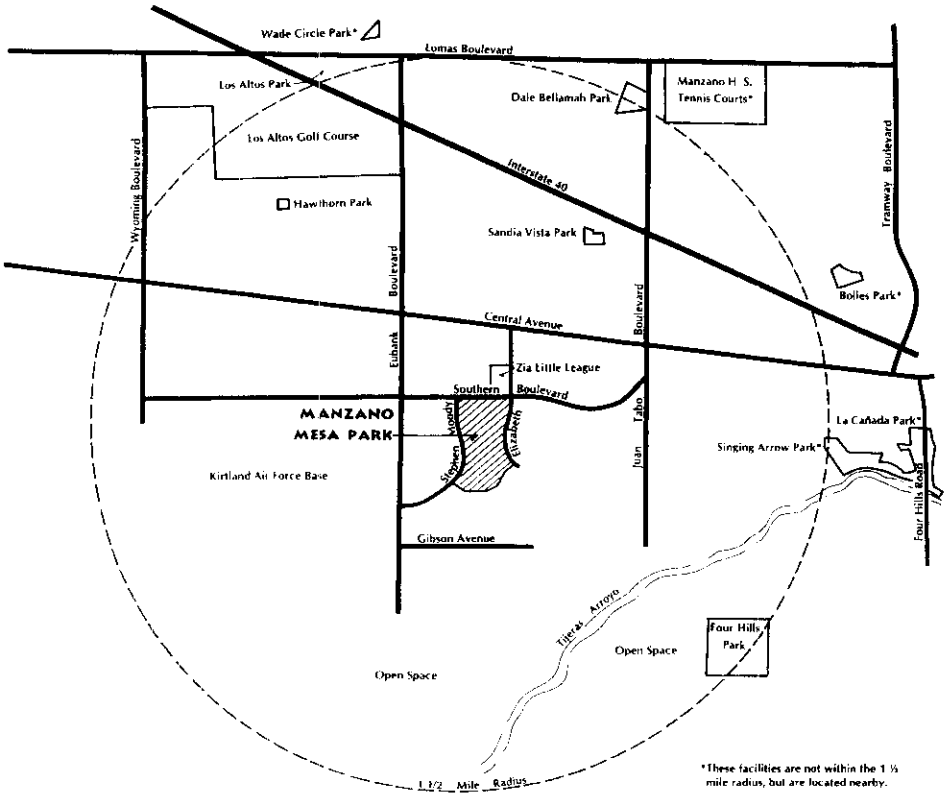


Surrounding Land Use and Zoning

Base and Sandia National Laboratories. Southern Boulevard is a limited access roadway with full intersections at Eubank/Southern, Elizabeth/Southern, and Juan Tabo/Southern; and right in/right out intersections at the ¼-mile points.

Several other City community park facilities lie within a 1½-mile radius of Manzano Mesa Park (see Recreational Facilities map on page 9) including Los Altos Park and Los Altos Golf Course. Community facilities nearest to Manzano Mesa Park include Trumbull Community Center located at Trumbull and Pennsylvania, Highland Senior Center at

Central and Monroe, and the East Central Multi-Service Center.

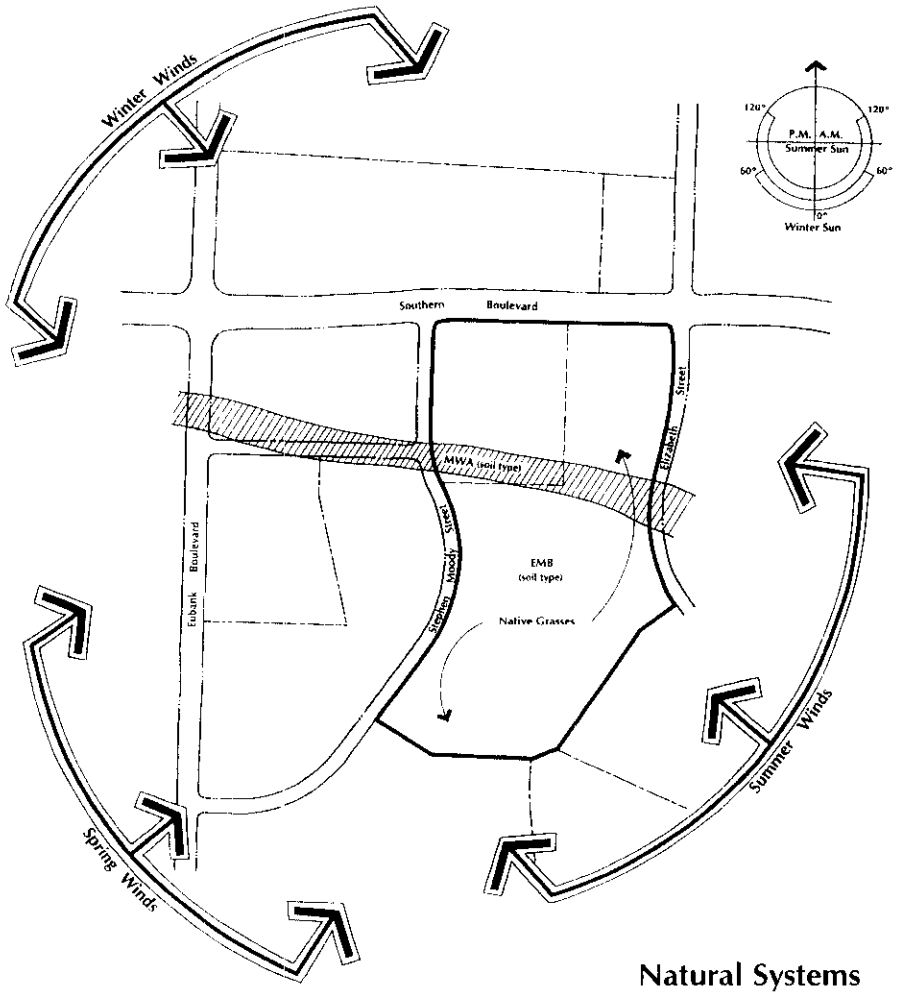


Recreational Facilities within 1 1/2 Mile Radius

SITE CONDITIONS

Climate

The average annual precipitation typical for this part of Albuquerque is approximately 8.1 inches. Temperatures average from 70EF to near 100EF in the summer, and 30-40EF range during the winter months. Nighttime winter temperatures dip into the teens and near 0EF on occasion. Prevailing summer winds come from the southeast, while winter winds blow from the northwest, and spring winds are generally from the southwest. The topography of the land surrounding the Manzano Mesa Park site offers no protection from the elements. Appropriate design considerations will help to buffer the facilities from the generally windy conditions, and provide shade from the sun for park users.



Natural Systems

Soils
Two soil types are found on the site:

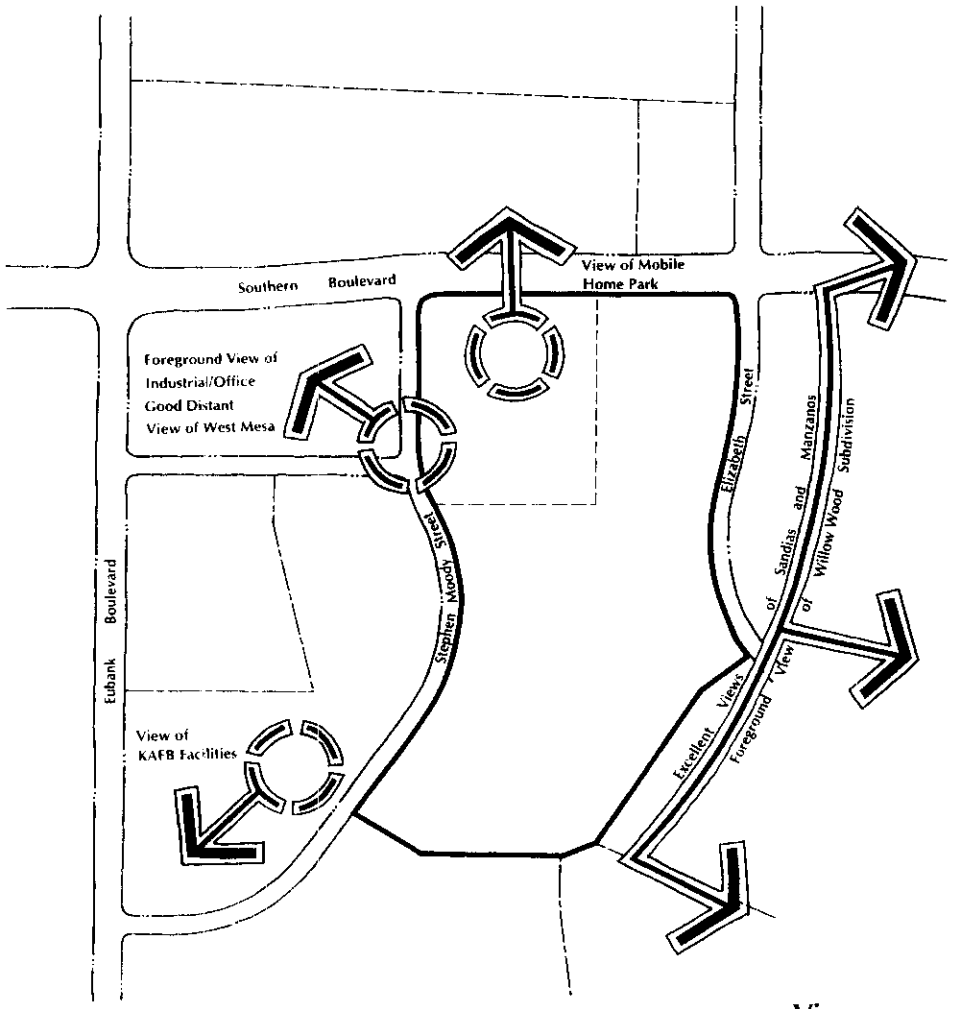
1. Embudo gravelly fine sandy loam, 0-5% slope - The surface layer of this soil type at Manzano Mesa is thick and slightly darker than is typical, and the substratum is limey and cobbly. Runoff is medium, and the hazard of water erosion is moderate. This soil is subject to periodic flooding and control of moisture is needed for proper compaction.

2. Madurez-Wink association, gently sloping - Madurez fine sandy loam of 1 to 5 percent slopes makes up about 55 percent of this soil type. Twenty-five percent consists of a Wink fine sandy loam that has 1 to 7 percent slopes. Runoff is slow, and the hazard of soil blowing is moderate to severe.

Neither of the soil types detailed above is expected to create any major constraints in the design and development of Manzano Mesa Park.

Geography and Existing Vegetation
The site has a very gentle slope from east to west, typically less than 2 percent. The soil types listed above both fall within Native Plan Community No. 4, which consists mainly of grasses mixed with some shrubs and annual plants. Black Grama is the dominant grass with Sand Dropseed, Mesa Dropseed, Galleta, Three-awn, Blue Grama, Alkali Sacaton, Bush Muhly, Indian Ricegrass, and Fluffgrass being less abundant. Annual plants generally include Tandymustard, Indian Paintbrush, Woolly Indian-wheat, Lambsquarters, Russian-thistle, and Bladderpod. Apache Plume is the dominant shrub and generally occurs in the drainage-ways.

Views
The Manzano Mesa Park site offers fantastic background views of the Sandia and Manzano Mountains to the east (see Views map on page 12). Distant views to the west reveal the Rio Grande Valley and the volcanoes and escarpment of the West Mesa. Generally, the foreground views are positive and offer a pleasant viewshed surrounding the site.



Views

Manzano Mesa Park offers excellent views to the Sandia and Manzano Mountains.

Water

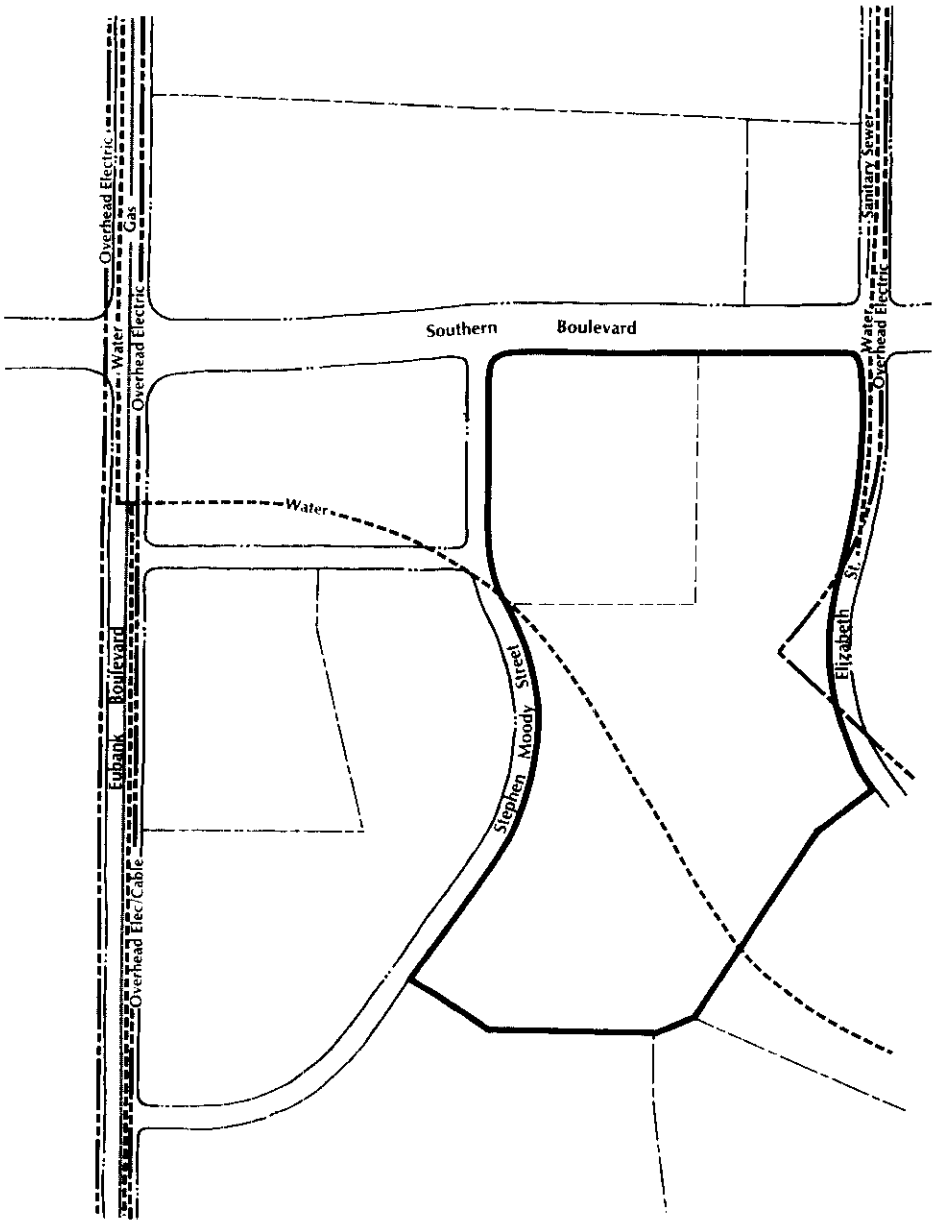
Several waterlines exist in close proximity to serve Manzano Mesa Park, including: a 30-inch waterline which bisects the site in a southeast to northwest orientation, and a 10-inch line in Elizabeth Street at Southern Boulevard.

Natural Gas

An existing 12-inch very high pressure (VHP) gas line is located on the north side of Southern Boulevard. A connection, requiring placement of a new gas line across Southern Boulevard to this main, can be made to service the multi-generational center.

Electrical

There are two existing overhead electric (OHE) lines in the vicinity. One is located on the east side of Elizabeth Street which abuts the site and the second OHE line is located on the east side of Eubank Boulevard within the existing right-of-way. Service for the multi-generational center could come from either of these lines, and it is anticipated that this service would be underground.



Existing Utilities

All utilities necessary for the development of Manzano Mesa Park currently exist in close proximity to the park.

Sanitary Sewer
The recommended sanitary sewer outfall for the site is an existing 18-inch sanitary sewer line located in Gibson Avenue to the southwest of the site. The ground slopes slightly to the south which would allow for a tie-in to the 18-inch system. This would require construction of a sewer line across the park to Stephen Moody Drive, down Stephen Moody to Eubank Boulevard, then south on Eubank to the tie-in at Gibson and Eubank.

Telephone
Telephone service is available from the overhead lines on the east side of Eubank Boulevard. The service to the multi-generational center would likely be underground and would require an easement for installation.

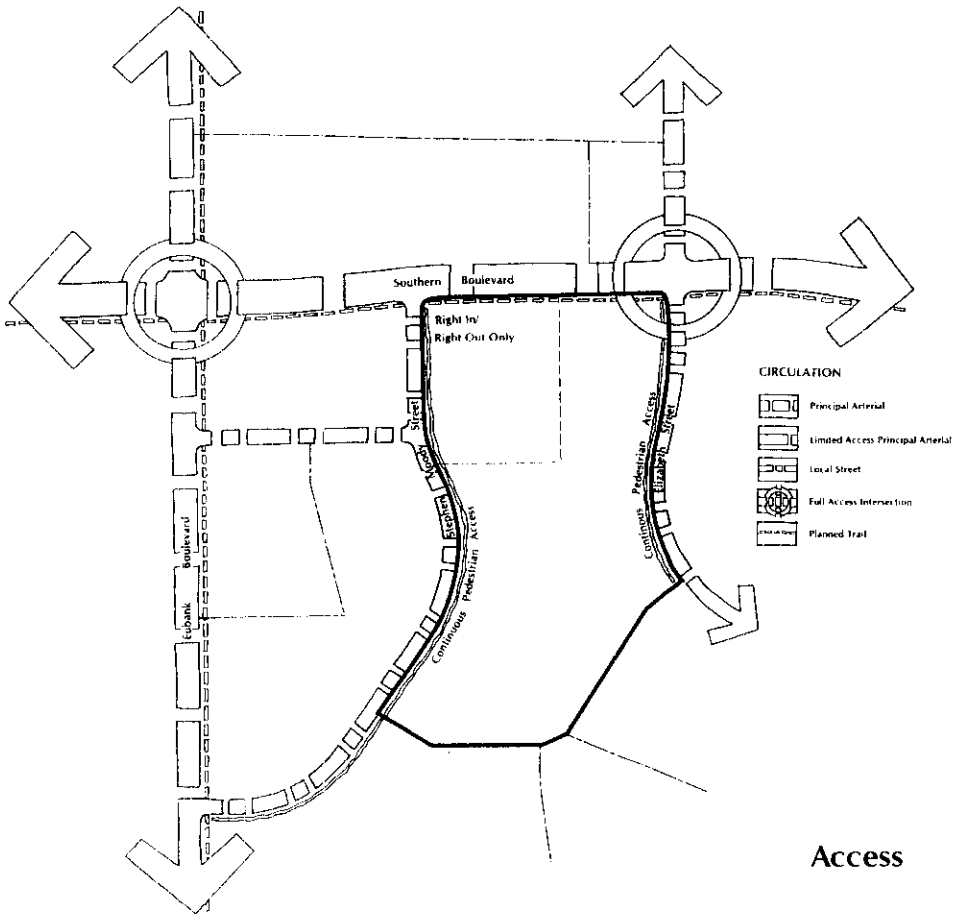
Cable Television
Overhead cable television lines are located on the east side of Eubank Boulevard, just west of the site on the power poles. The facility should be able to be serviced from these lines, however, a private utility easement would have to be dedicated along the route for this cable. The exact location of the easement should be determined during the design phase of the park.

Stormwater Drainage
Smith Engineering Company (SEC) produced the South Eubank Area Storm Drainage Analysis, a storm drain plan which encompasses an area bounded by Interstate 40 to the north, Tramway to the east, Eubank Boulevard to the west, and the Tijeras Arroyo to the south. The Drainage Plan calls for improvements to the area which will mitigate flooding and allow for the elimination of floodplains which now cross the park site and adjacent properties. Proposed improvements include a flood control detention facility to be located within Manzano Mesa Park.

The detention basin will be a joint-use facility for the City of Albuquerque Hydrology Division and the Parks and General Services Department. The basin will be designed to contain the 100-year storm runoff and also allow for recreational playing fields. The storm drain will be designed so that low flows from small storm events will bypass the detention basin, therefore, the basin will pond runoff only during the larger storm events. The playing fields will be at a slightly higher elevation than the lowest point in the basin so smaller flows which drain into the basin will not necessarily pond on the fields.

Access

Eubank Boulevard, Southern Boulevard, and Juan Tabo Boulevard will be the primary streets which provide regional access to Manzano Mesa Park (see Access map). Southern Boulevard is in the alignment of Gibson Boulevard Corridor and will be classified as a limited access principal arterial. Fully signalized intersections will be located at Eubank and Southern, Elizabeth and Southern, and Juan Tabo and Southern; and right in/right out intersections will be located at the ¼-mile points. All direct access to the park will be from Elizabeth Street and Stephen Moody Street. The Trails & Bikeways Facility Plan calls for trails along Eubank, Southern, and Juan Tabo. The Sandia Bicycle Commuter Group has also asked for a direct bicycle connection through the park that will serve bicycle commuters working at Sandia National Laboratories.



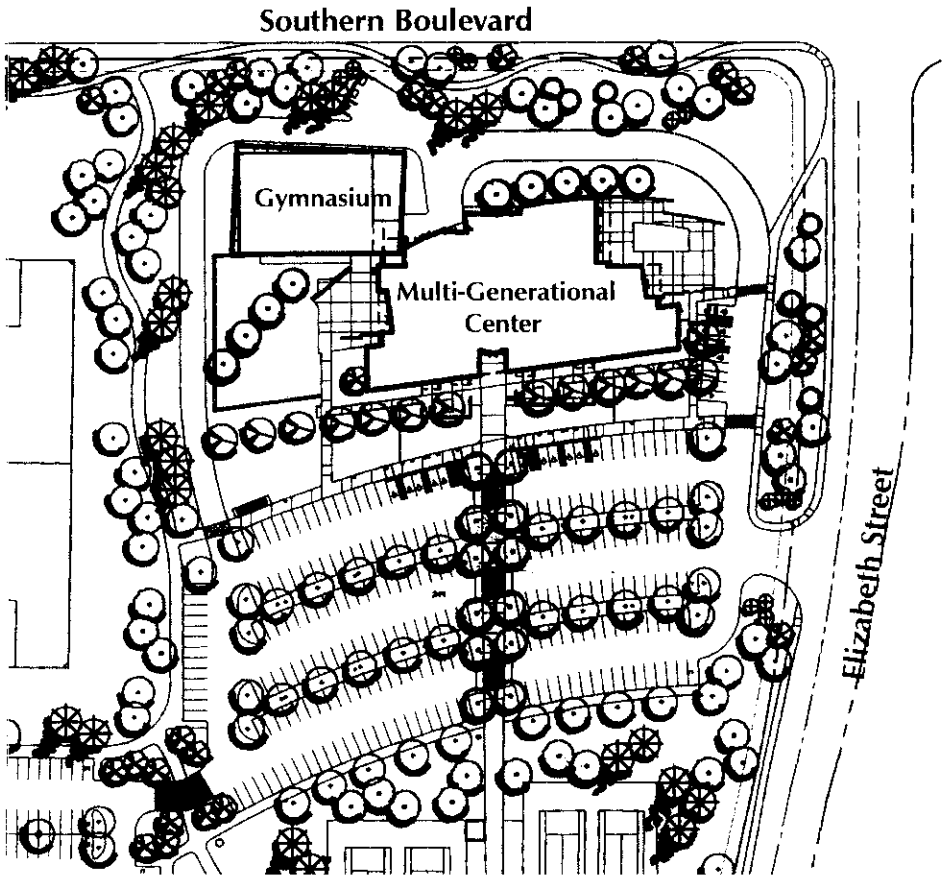
Access

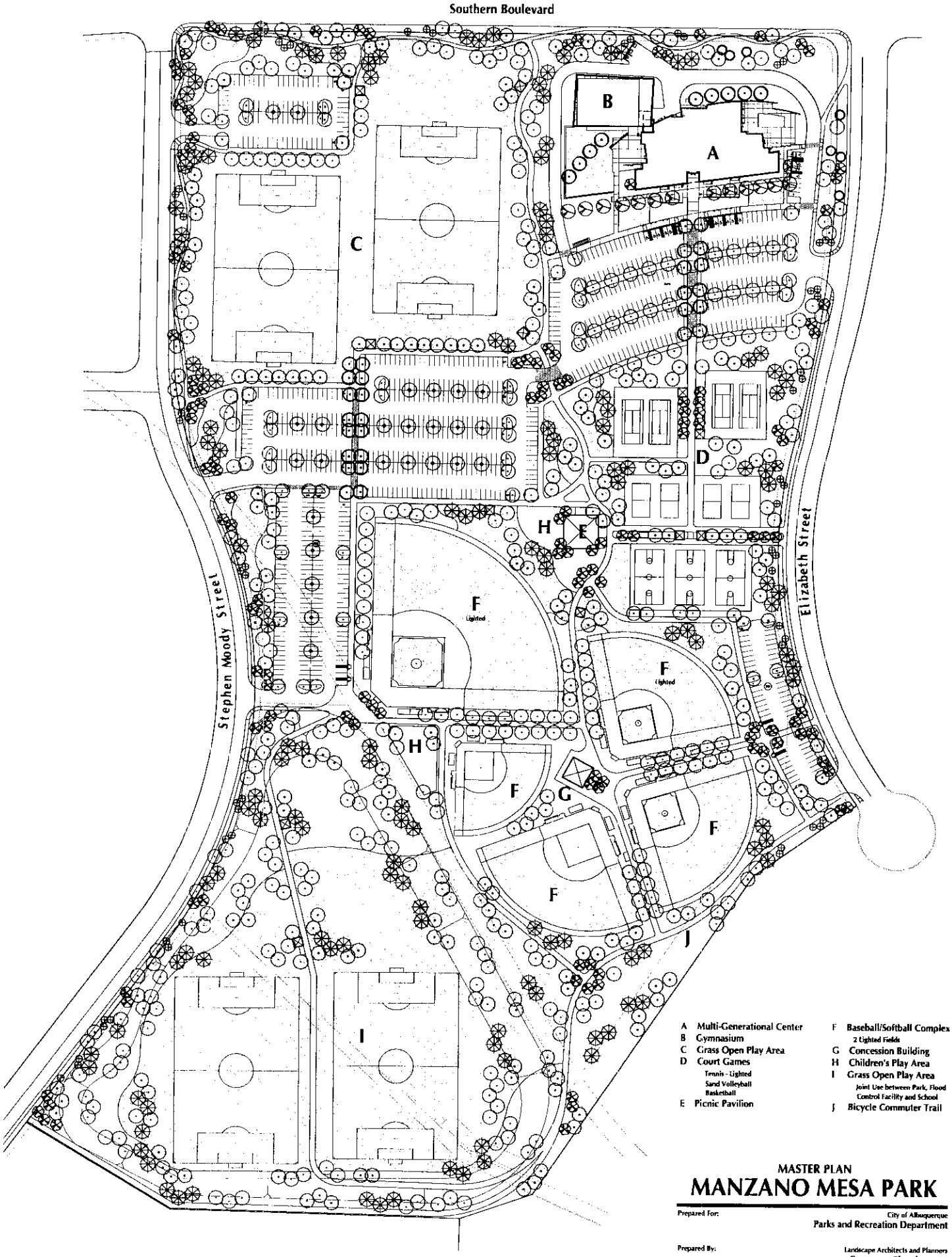
FACILITIES PROGRAM

The facilities program for Manzano Mesa Park includes elements that are typically found in community-scale parks. Both active and passive forms of recreation are included to satisfy a broader range of potential park users. The facilities program was refined based on public input received at a public meeting held on June 6, 1995. The following text describes those activities intended for the park. Due to the flexibility of the Master Development Plan, activities may be added or deleted based on the community's future needs, preferences, and available funding. Significant changes to the Master Development Plan will require approval by the Environmental Planning Commission.

Multi-Generational Center

Approximately 28,000 S.F. in size, this facility will combine the function of a community center and a senior center, along with a gymnasium. The Center is currently under construction and includes the following facilities: social hall/meeting space, kitchen, exercise room, showers/toilets, game room, computer classroom, two general classrooms, arts and crafts room, ceramic room with kilns, sitting room/lounge, and administrative areas. The gymnasium will be high-school sized (12,000 square feet) and include storage and support facilities. Meeting space, storage areas, and restrooms for Zia Little League will also be included in the programming for the center. The concept for this facility is that each group would have designated separate facilities and other areas of the building will be for shared use. Outdoor





A Multi-Generational Center
B Gymnasium
C Grass Open Play Area
D Court Games
Tennis - Lighted
Sand Volleyball
Basketball
E Picnic Pavilion
F Baseball/Softball Complex
2 Lighted Fields
G Concession Building
H Children's Play Area
I Grass Open Play Area
Joint Use between Park, Flood Control Facility and School
J Bicycle Commuter Trail

30 0 60 120
Scale 1" = 100'

north

MASTER PLAN
MANZANO MESA PARK

Prepared For:
City of Albuquerque
Parks and Recreation Department

Prepared By:
Landscape Architects and Planners
Consensus Planning, Inc.

Engineers
Smith Engineering Company

May 31, 2001

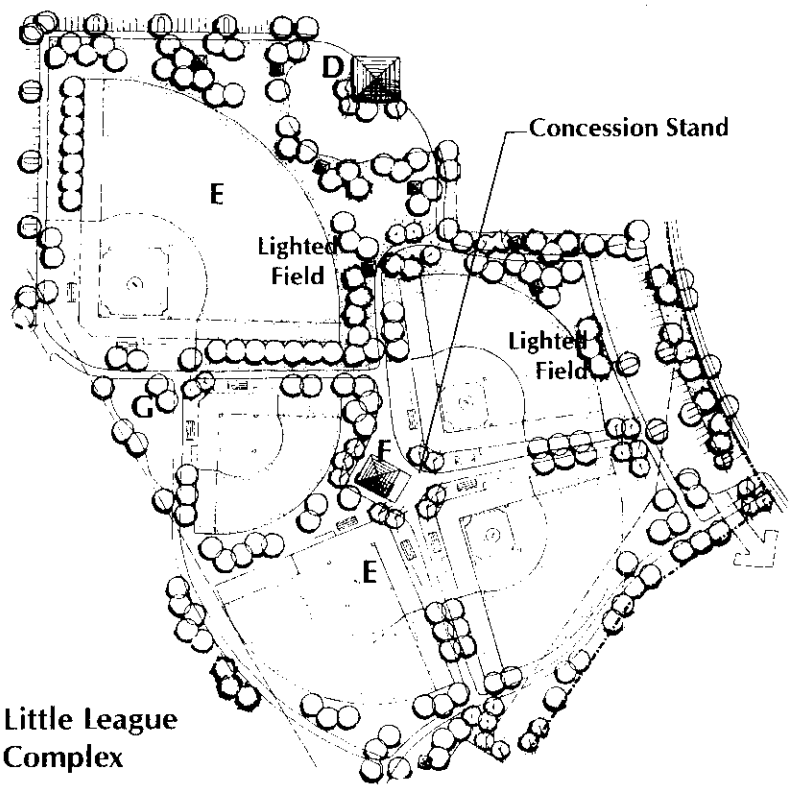
activities to be associated with the center include picnic facilities, basketball courts, volleyball courts, tennis courts, baseball/softball fields, and soccer fields. Site planning issues important for the development of this facility include taking advantage of the views to the Sandia and Manzano Mountains; integration into the park; adequate parking; close proximity to public transportation; and adequate delivery/service areas.

Flood Control Detention Facility

The flood control detention facility will include recreational facilities, and will function as a surge basin. This means that only during major rainstorms will water back up into the pond and inundate the fields. Minor rainstorms will be contained within a stormdrain pipe and bypass the pond. Also, the fields will be terraced to sequentially flood. The layout of the pond will allow some flexibility in determining the side slopes of the pond. The side slopes will be undulated and somewhat organically shaped to create an area that is more visually appealing.

Activity Fields

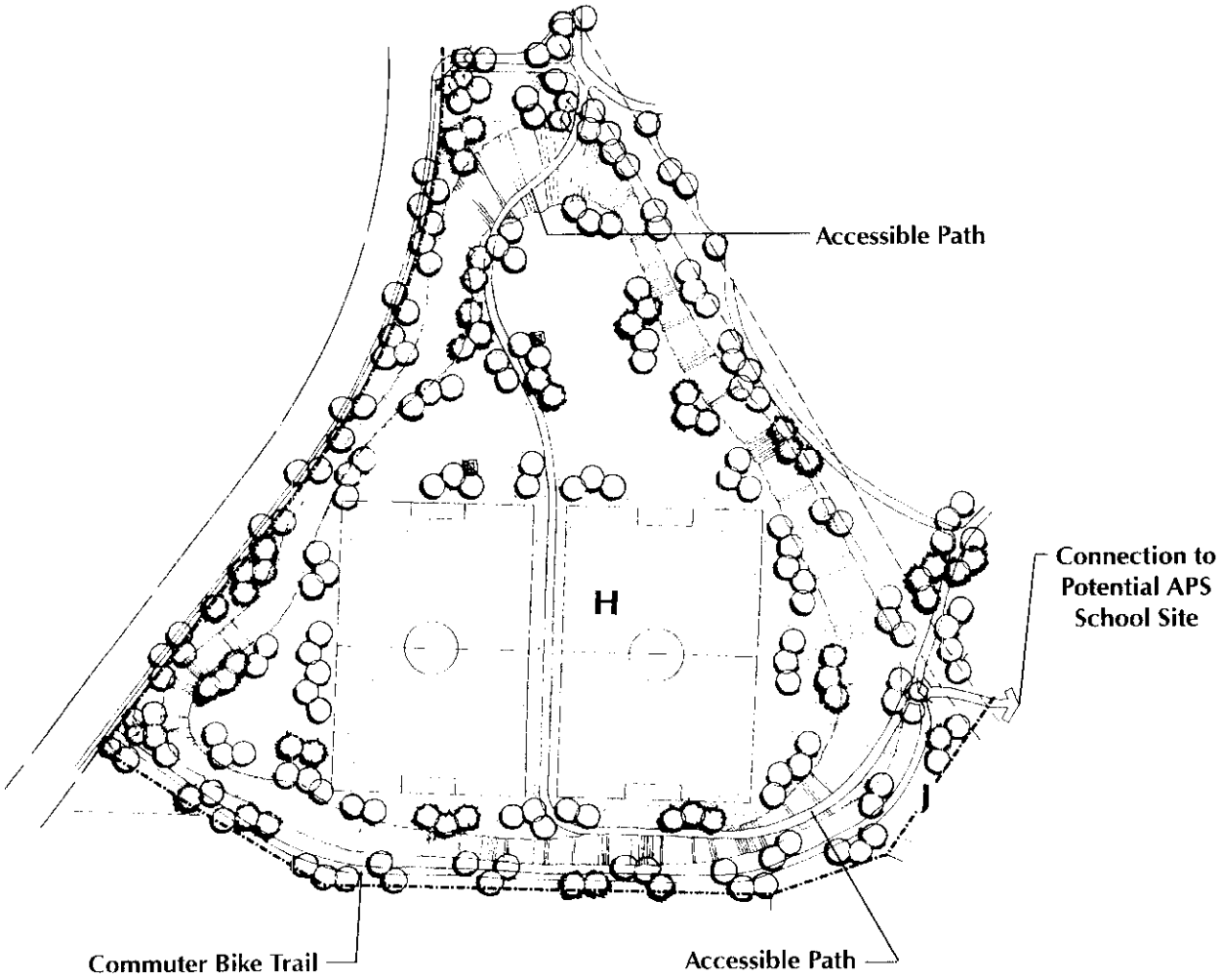
Areas for organized sports are a primary focus of Manzano Mesa Park. The Zia Little League complex will be centrally located within the park and consist of five fields (one 300' field, three 200' fields, and one 150' field). Sports lighting for nighttime play will be provided on the 300' field and one of the 200' fields. The 300' field and two 200' fields will be developed with raised mounds and electrical service will be provided to all fields. Electrical service will also be provided to the scorer' s booth, scoreboards, and concession stand. Quick couplers shall be provided at all fields for dust control and field maintenance.



Zia Little League Complex

A concession stand will be located close to the baseball complex, but is intended to be jointly used by the Little League, soccer, and other sports organizations. Other typical amenities associated with the sports fields include drinking fountains, trash receptacles, benches and picnic tables, ramadas, spectator seating, shade, bike racks, restrooms, and parking.

Two large, open turf areas will accommodate four full-size soccer fields. These turf areas are sized to provide flexibility for moving fields or rotating field orientation for maintenance purposes. One open turf play area is located within the flood control detention facility and will have convenient access to/from the potential APS school site, to allow for joint-use by the school. The two fields within the detention facility will terrace up from east to west, with a sloped grass area between the fields to allow for spectator seating. The detention facility will be designed to sequentially flood, with the eastern fields being inundated

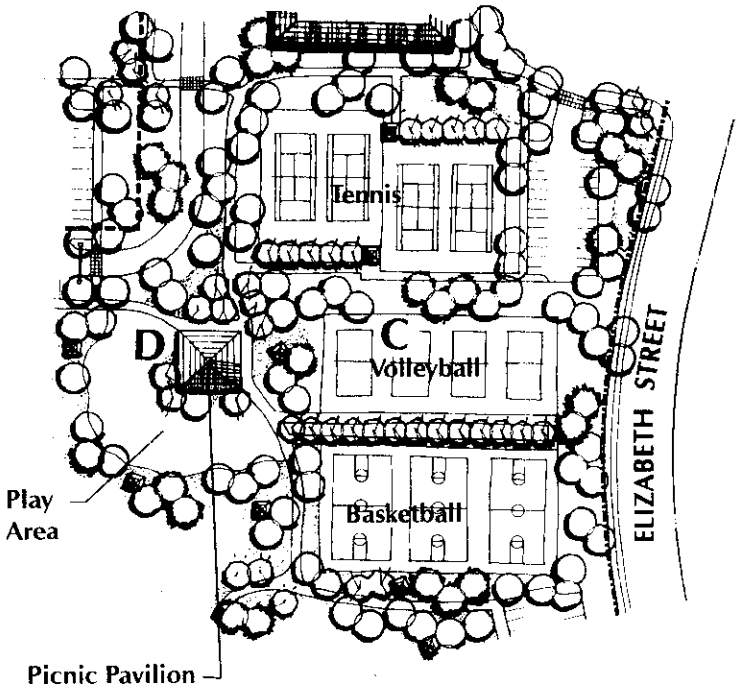


during a 5-year storm event and the western field being inundated during a heavier year storm event.

Court Games

Centrally located within the park are four tennis courts, three basketball courts, and four sand volleyball courts. Additional paved areas for children's games will be located here, as well as adjacent to the plazas and children's play areas.

All courts shall be oriented in a north-south direction for optimum solar consideration. Lighting will be provided for the tennis courts to allow for evening play. Typical elements to be associated with these facilities include drinking fountains, trash receptacles, benches and picnic tables, ramadas, spectator seating, shade, restrooms, and parking.



Typical court dimensions shall be as follows:

Play Area Total		
Tennis	36' x 78'	60' x 120'
Basketball	50' x 94'	62' x 114'
Volleyball	30' x 60'	50' x 90'

Children's Play Areas

Three separate children's play areas are illustrated within Manzano Mesa Park. The largest play area is centrally located and adjacent to the large picnic pavilion. The second play area is located adjacent to the baseball/soccer fields to serve children attending organized sports activities. The third play area is located near the southeast corner of the park and adjacent to the potential school site. It will also serve as a joint use play area for the school. All of the play areas shall be designed in accordance with the 1990 Americans with Disabilities Act (ADA), and be accessible to children with varying abilities. The play

Americans with Disabilities Act guidelines require that playgrounds be designed to provide like experiences for people of all abilities.

areas shall be designed to grow with the children and offer the chance to progress through a series of activities that challenge them physically, mentally, and socially. The play areas shall be designed with appropriate age separation of activites to minimize conflicts between older and younger children. Also, natural forms and materials such as earthen mounding, boulders and/or wooden elements should be considered to encourage play activities which challenge the children's creativity and imagination.

Additional elements which contribute to the success of the playground design include adequate shade, benches and picnic tables, drinking fountains, trash receptacles, restrooms, and bicycle racks.

Elements of the park are to be designed for optimum pedestrian accessibility.

Picnic/Shade Facilities

A large picnic pavilion (4,000 S.F.) to serve community-size events is centrally located within the park, adjacent to the court game facilities. Approximately sixteen small picnic shelters (250 S.F.) are randomly located throughout the park to provide for family-size picnic gatherings. All picnic facilities whould be equipped with picnic tables, barbeque grills, and trash receptacles, and also be in close proximity to drinking fountains and restrooms.

Restrooms and Drinking Fountains

Restrooms will be provided at the multi-generational center, adjacent to the court game facilities, and adjacent to the Zia Little League complex. Typically, restroom facilities will consist of portable facilities which are handicap accessible, and designed to be vandal-resistant. These restroom pods shall be screened with vegetation and/or a simple fence structure. Drinking fountains will be located throughout the park, typically adjacent to the active recreation areas and play areas.

Pedestrian/Bicycle Path

Pedestrian and bicycle paths are provided throughout the park to link activities and provide access through the park. For safety reasons, bicycle and pedestrian paths shall be separated. A direct bicycle connection will be made at the south end of the park which serves commuter bicycle traffic in the area. Appropriate amenities related to the path system include shade, benches/seatwalls, picnic tables, drinking fountains, trash receptacles, and bicycle racks.

Exercise Course

Exercise clusters will be located adjacent to the pedestrian/bicycle paths to create a circuit around the entire park.

Parking

Parking of the desired quantity for the multi-generational center and sports fields will be broken up into small clusters and distributed throughout the park. Parking spaces are provided as follows: 50 spaces for each playing field; and 10 spaces for each game court. Also, approximately 320 parking spaces are provided for the multi-generational center and gymnasium, for a total of 860 parking spaces, including 20 handicap parking spaces. The City of Albuquerque Zoning Code shall be followed with regard to stall sizes, handicap parking, and bicycle parking.

The City Transportation Division has required vehicular access across the site to connect Elizabeth Street with Stephen Moody Street. This connection is to be very circuitous to discourage cut-through traffic, and may be accommodated through a series of connected parking areas. The connection also may be gated during periods of heavy park use and opened during normal park hours.

APPENDIX A - DESIGN GUIDELINES

Architecture

The following guidelines are intended to provide design flexibility while creating a festive atmosphere at Manzano Mesa Park. It is important to maintain design consistency for all architectural elements throughout the park. The future design of the multi-generation center will require review by the Environmental Planning Commission.

- Buildings and structures erected within the site shall comply with all applicable City of Albuquerque zoning and building code requirements as well as other local applicable codes.

- Appropriate building design shall ensure articulation of all building faces, rather than placing all emphasis on the front elevation of the structure and neglecting or downgrading the aesthetic appeal of the side and rear elevations. Finished building materials must be applied to all exterior sides of buildings and structures. Any accessory buildings and enclosures, whether attached or detached from the main building, shall be of similar compatible design and materials.

- Buildings should employ variety in structural forms to create visual character and interest. Avoid long, unarticulated facades. Facades should have varied front setbacks, with wall planes not running in one continuous direction for more than 50 feet without a change in architectural treatment (i.e. 3' minimum offset, fenestration, material change, etc.).

- Entries to structures should portray a quality appearance while being architecturally tied into the overall mass and building composition.

- Windows and doors are key elements of any structure's form and should relate to the scale of the elevation on which they appear. The use of recessed openings helps to provide depth and contrast on elevation planes.

- Sensitive alteration of colors and materials can produce diversity and enhance architectural forms.

- The staggering of planes along an exterior wall elevation creates pockets of light and shadow, providing relief from monotonous expanses of facade.

- Highly reflective surfaces; exposed, untreated, precision block walls; and materials with high maintenance requirements are undesirable and should be avoided.

- Wall materials should be chosen that can be easily repaired, and will withstand abuse by vandals or accidental damage by machinery.

- Berming in conjunction with landscaping can be used at the building edge to reduce structure mass and height along facades.

- The roofline at the top of the structure shall incorporate offsets to prevent a continuous plane from occurring.

- All rooftop equipment shall be screened from the public view by materials of the same nature as the building's basic materials.

Setbacks

The use of building and parking area setbacks is required to provide space for the creation of visually attractive streetscapes surrounding Manzano Mesa Park. Required within these setbacks will be pedestrian walkways, screening devices, and landscape improvements.

Buildings shall be located according to the following minimum setback dimensions:

- 50' from the R.O.W. line of Southern Boulevard

- 35' from the R.O.W. line of Elizabeth Street and Stephen Moody Street

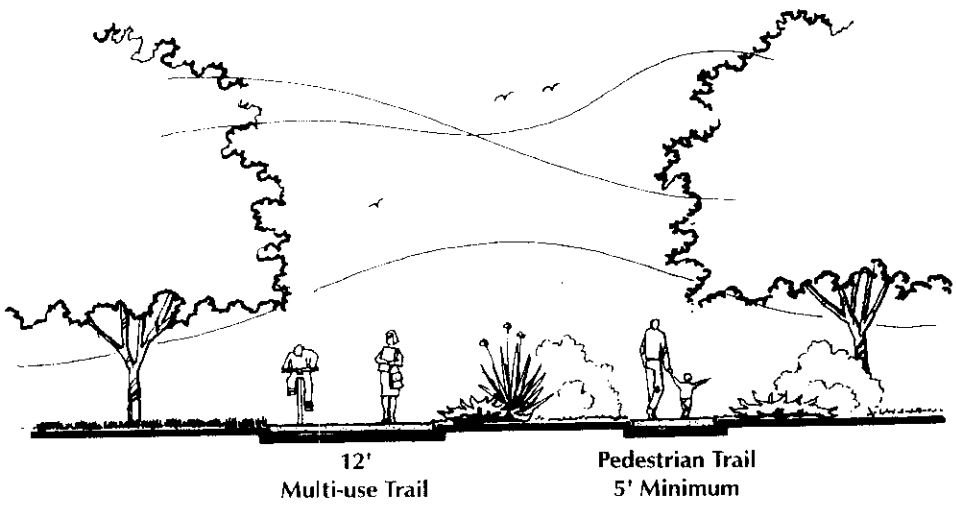
- 60' from the property line of residential zones

Parking areas shall be setback as follows:

- 30' from the R.O.W. line of Southern Boulevard
- 15' from the R.O.W. line of Elizabeth and Stephen Moody Streets

Pedestrian and Bicycle Paths

Pedestrian paths in heavy use areas shall be constructed of asphalt or concrete, while paths in informal areas may be constructed of stabilized crusher fines with a concrete border. All bicycle paths shall be constructed of asphalt or concrete and designated for bicycles only. All bicycle and pedestrian paths shall be designed to meet the standards recommended by the American Association of State Highway and Transportation Officials (AASHTO). Where bicycles and pedestrians are to share the same path, the path shall be a minimum of 12' wide and may have a striped bicycle lane. Pedestrian-only paths shall be a minimum



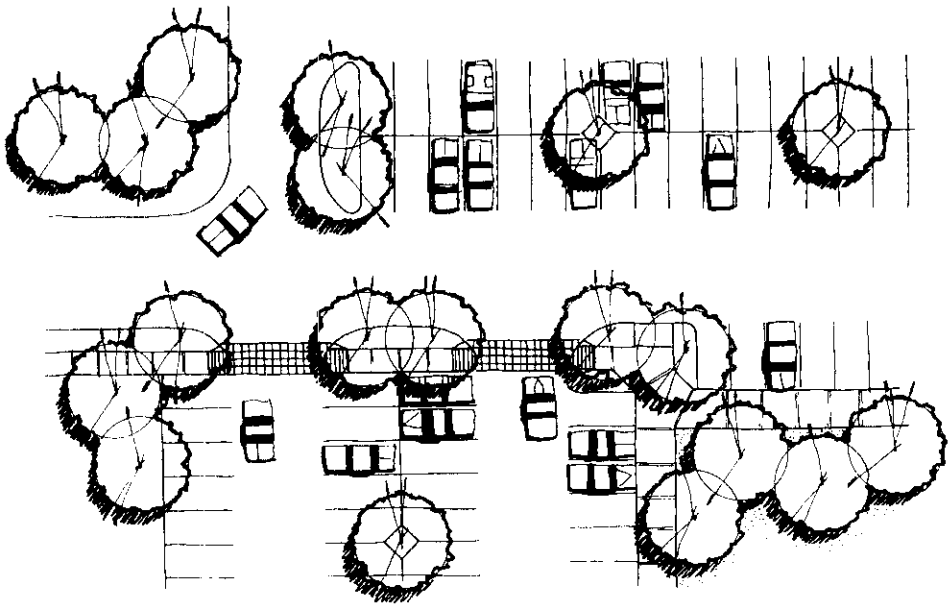
Typical Trail Sections

of 5' in width. Where paths cross roadways or parking areas, designated crosswalks shall be highlighted with contrasting paving materials and signage.

Parking Areas and Roads

Special care should be given to the design of the large parking areas in order to minimize their visual impact. Parking areas should be divided into smaller areas and visually separated by planted islands. To shade

the parking areas, one large canopy tree shall be planted for every eight parking spaces, with no parking space being more than 68 feet from a tree trunk. Earthen berming, low walls, and/or trees and shrubs shall be used to define and screen parking areas from surrounding streets



Typical Parking Area

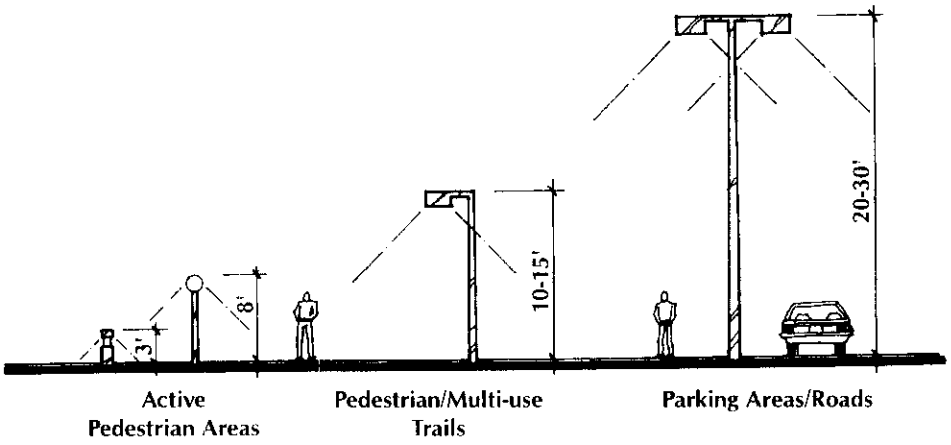
and park activities. Specific design of parking areas and access roads shall be in accordance with the City's Development Process Manual (DPM).

Lighting

For safety and security, exterior lighting will be provided for all park areas which will be used at night. Those areas include the multi-generational center, parking areas, the large picnic pavilion, and portions of the pedestrian/bicycle paths. To ensure a quality development, it is important to consider the daytime appearance of lighting fixtures. The lighting element is another site feature which contributes to the park's overall character. As previously mentioned, sports lighting will be provided on two of the Zia Little League ballfields and at the tennis courts.

The following general guidelines should be considered in the design of the lighting system:

- Placement of fixtures and standards shall conform to state and local safety and illumination requirements.
- Individual site lighting standards should blend with the architectural character of the building and other site fixtures.
- A design objective of the site lighting system must be to maximize public safety while not affecting adjacent properties, buildings, or roadways with unnecessary glare or reflection.
- Area lighting should be used to highlight public spaces and walkways. The use of walkway level lighting, such as bollard lights or wall pocket lights, is encouraged to accent pedestrian zones.



Lighting Standards

Standards for light fixtures shall be as follows:

- Baseball Fields — 70' maximum height
- Tennis Courts — 30' maximum height
- Parking areas and roads — 20' - 30' height

- Pedestrian/bicycle paths — 10' - 15' height
- Buildings — building-mounted
- Active pedestrian areas — 3' bollards or 8' poles

Signage

A signage program shall be developed as detailed design for the park is undertaken. Signage serves three important functions: to ***direct*** park users to various facilities, to ***inform*** park users regarding community events or educational aspects of the park, and to ***identify*** specific buildings or facilities.

The following signage standards were developed as reasonable criteria to regulate the size, location, type, and quality of sign elements within Manzano Mesa Park. All signs shall be in accordance with the City of Albuquerque Zoning Code.

Park Entrance Signs

One (1) freestanding monument-type sign of no greater than twenty-four (24) square feet per face is allowed at each of the five vehicular access points. One of these signs shall include identification of the Zia Little League ballfields. One (1) freestanding monument-type sign of no greater than fifty (50) square feet is allowed along Southern Boulevard. Freestanding signs shall not be higher than 4 feet above adjacent grade.

Building Signs

The multi-generation center is allowed one facade-mounted sign whose area shall not exceed 10% of the area of the facade to which it is applied.

Screening/Walls and Fences

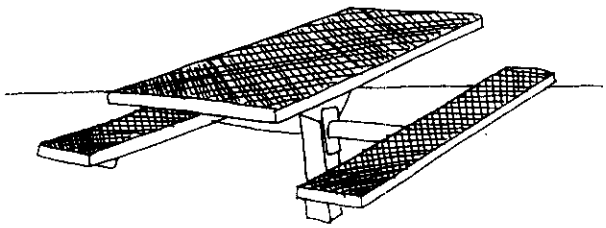
The effective use of screening devices for parking lots, loading areas, refuse collection, and delivery/storage areas is essential to limit their adverse visual impact on the park and surrounding developments. The guidelines established in the landscape and setback sections will provide the main element to screening objectionable views and activities.

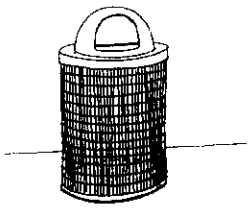
The following are standards to ensure effective screening of negative elements:

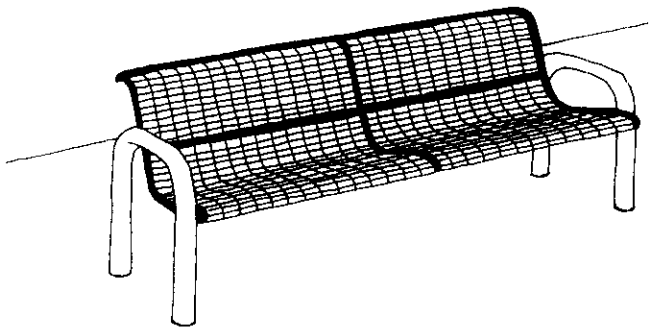
- Parking areas shall be screened from adjacent streets with a combination of plant materials, walls, and earthen berming. Such screening shall have a minimum height of 3 feet.
- All outdoor refuse containers shall meet City specifications and be screened within a minimum 6-foot-tall masonry enclosure.
- The design and materials for refuse collection enclosures shall be compatible with the architectural theme of the site.
- No refuse collection areas shall be allowed between any street and building front.
- Barbed wire or concertina wire shall not be allowed in Manzano Mesa Park.

Site Furniture

The use of a consistent design for all types of site furniture will serve to unify different areas of the park. Site furniture is typically located in areas of more active recreation or pedestrian movement and consists of the following: benches, picnic tables, trash receptacles, drinking fountains, bicycle racks, bollards, tree grates, and information kiosks. Selection of fixtures should be based on design compatibility, durability/maintenance needs, vandal-resistance, cost, comfort, and handicap accessibility.







Typical Site Furniture

Landscape

The adoption of the City's Water Conservation Landscaping and Water Waste Ordinance places specific water use limitations on the City's parks. Manzano Mesa Park will be allowed up to 35 inches of water per landscaped acre per year. The emphasis for utilization of this water will be the development of the necessary turfed recreational fields. Turf areas and shrub plantings at the park perimeter, within parking areas, and other non-recreational areas will be limited to low water use varieties. The landscape concept for the entire park will be to demonstrate the aesthetic qualities of native or naturalized plant materials. Requirements of the City's Street Tree Ordinance shall be followed for the streets around the park.

Specific plant materials will be used for a variety of purposes, including the following:

- buffer/screen - plant materials will be used to buffer certain facilities from noise and winds, and screen views to/from objectionable elements;

- shade/climate control - shade trees will be used extensively around the perimeter of the ballfields and activity areas to provide a welcome retreat for players and spectators;

- define uses or activities - trees and shrubs will be used to define specific areas of the park;

- highlight specific features - trees and shrubs will be used to frame elements, provide foreground and background interest, etc.

- sensory stimulation - fragrant and flowering trees and shrubs are used to stimulate the senses of sight, smell, and touch; and

- education - areas of the park will be planted to serve as an educational tool to teach people about the native landscape.

Plant material specifications shall include:

- Trees - 2" caliper minimum
- Shrubs - 5 gallon minimum
- Groundcovers - 1 gallon minimum

Plant materials for Manzano Mesa Park shall be selected from the Plant Pallette provided in Appendix B.

Irrigation

A fully automated irrigation system with centralized computer control shall be used for Manzano Mesa Park. Satellite controllers shall be linked to the main controller by radio which will be tied to the Parks Maintenance computer monitoring system. Mainline piping shall be provided according to standard City specifications, and will typically be looped for pressure efficiency. Gate valves will be located at strategic points along the mainline piping system to allow for isolation of sections for maintenance reasons. Sprinklers for the sports fields shall be state-of-the-art for maximum efficiency in water distribution. Temporary irrigation shall be provided for all areas receiving native seed mixes until established. Shrub and groundcover areas shall utilize drip irrigation technology. All irrigation components shall be readily available for maintenance and/or replacement.

Assuming that all irrigation will take place within a 10-hour period each day, the peak day water flow requirement will be approximately 750 gallons per minute. This flow can be accommodated using six 2" turbine meters, which provides for a more efficient and less expensive system. Manzano Mesa Park falls within the water zone boundary which is defined by elevations 5480 (100 psi) and 5595 (50 psi). The park has a median elevation of 5490, which equates to a water pressure of approximately 95 psi.

Utilities

To mitigate the negative visual image presented by some utility equipment and to ensure the overall aesthetic quality of Manzano Mesa Park:

- All electric distribution lines within the park shall be placed underground.

- Transformers, utility pads, backflow prevention enclosures, and telephone boxes shall be appropriately screened with walls and/or vegetation when viewed from the public right-of-way.

APPENDIX B - GENERAL PLANT PALETTE

Large Deciduous Trees

Scientific Name	Common Name
Fraxinus oxycarpa spp.	Ash spp.
Fraxinus pennsylvanica spp.	Ash spp.
Fraxinus velutina spp.	Ash spp.
Gleditsia triacanthos inermis	Honey Locust
Pistachia chinensis	Chinese Pistache
Platanus wrightii	Arizona Sycamore
Populus acuminata	Lanceleaf Cottonwood
Populus fremontii	Cottonwood
Robinia x ambigua	Idaho Locust
Robinia pseudoacacia	Black Locust
Tilia cordata	Littleleaf Linden

Fraxinus velutina

Small Deciduous Trees

Scientific Name	Common Name
Cercis occidentalis	Western Redbud
Chilopsis linearis	Desert Willow
Crataegus crusgalli 'Inermis'	Hawthorn
Forestiera neomexicana	New Mexico Olive
Koelreuteria paniculata	Golden Raintree
Malus spp.	Crabapple
Prosopis glandulosa	Honey Mesquite
Prosopis pubescens	Screwbean Mesquite
Prunus cerasifera	Purpleleaf Plum
Prunus virginiana	Chokecherry
Pyrus calleryana	Ornamental Pear
Robinia neomexicana	Rose Locust
Sophora japonica	Pagoda Tree
Vitex agnus-castus	Chaste Tree

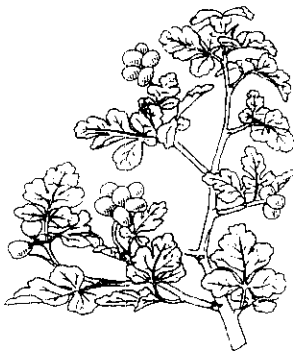
Evergreen Trees

Scientific Name	Common Name
Cupressus arizonica	Arizona Cypress
Cupressocyparis leylandii	Leyland Cypress
Juniperus chinensis spp.	Juniper
Picea pungens	Blue Spruce

Scientific Name	Common Name
Pinus edulis	Pinon Pine
Pinus flexilis	Limber Pine
Pinus nigra	Austrian Pine
Pinus sylvestris	Scotch Pine
Thuja spp.	Arborvitae
Yucca elata	Soaptree Yucca

Deciduous Shrubs

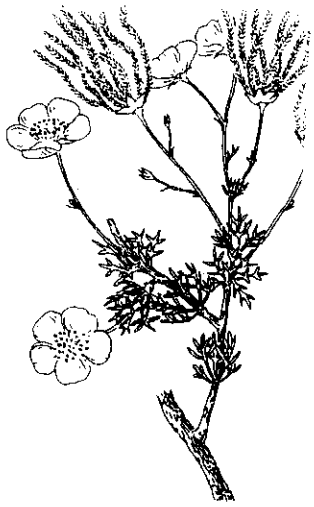
Scientific Name	Common Name
Amorpha fruticosa	False Indigo
Berberis thunbergii	Barberry
Buddleia davidii nanhoensis	Butterflybush
Caesalpinia gilliesii	Bird of Paradise
Caryopteris clandonensis	Blue Mist Spirea
Chamaebatiaria millefolium	Fernbush
Chaenomeles japonica	Flowering Quince
Chrysothamnus nauseosus	Chamisa
Cornus alba	Dogwood
Cornus stolonifera	Redtwig Dogwood
Cotoneaster spp.	Cotoneaster
Euonymus alata 'Compacta'	Burning Bush
Genista tinctoria	Summer Broom
Hibiscus syriacus	Rose of Sharon
Ilex cornuta	'Burford' Holly
Ilex wilsonii	Wilson Holly
Lagerstroemia indica	Crape Myrtle
Potentilla fruticosa	Shrubby Cinquefoil
Prunus besseyi	Western Sand Cherry
Prunus x cistena	Dwarf Plum
Psorothanmus scoparia	Broom Dalea
Punica granatum	Pomegranite
Rhus spp.	Sumac
Ribes aureum	Golden Currant
Rosa rugosa	Rugosa Rose
Rosa woodsii	Woods Rose
Salvia greggii	Cherry Sage
Spiraea spp.	Spirea
Syringa vulgaris	Common Lilac
Weigela florida	Weigela



Rhus trilobata

Evergreen Shrubs

Scientific Name	Common Name
Abelia grandiflora	Glossy Abelia
Arctostaphylos uva-ursi	Kinnikinnick
Artemisia spp.	Sage
Artiplex canescens	Fourwing Saltbush
Baccharis salicina	Desert Broom
Berberis spp.	Barberry
Ceratoides lanata	Winterfat
Cotoneaster spp.	Cotoneaster
Cowania mexicana	Cliffrose
Cytisus scoparius	Scotch Broom
Dasylirion wheeleri	Sotol
Elaeagnus pungens	Silverberry
Ephedra viridis	Mormon Tea
Ericameria laricifolia	Turpentine Bush
Euonymus spp.	Euonymus
Fallugia paradoxa	Apache Plume
Genista hispanica	Spanish Broom
Hesperaloe parviflora	Red Yucca
Juniperus spp.	Juniper
Ligustrum japonicum	Waxleaf Privet
Mahonia aquifolium 'Compacta'	Oregon Grape
Mahonia repens	Creeping Oregon Grape
Nandina domestica	Nandina
Nolina microcarpa	Beargrass
Nolina texana	Beargrass
Opuntia spp.	Cholla
Photinia fraseri	Photinia
Prunus caroliniana	Carolina Cherry
Pyracantha lelandii	Firethorn
Raphiolepis indica	India Hawthorn
Rosmarinus officinalis	Rosemary
Salvia dorrii	Desert Sage
Santolina chamaecyparissus	Lavender Cotton
Spartium junceum	Spanish Broom
Vauquelinia californica	Arizona Rosewood
Viburnum x burkwoodii	Viburnum
Yucca baccata	Datil
Yucca glauca	Soapweed



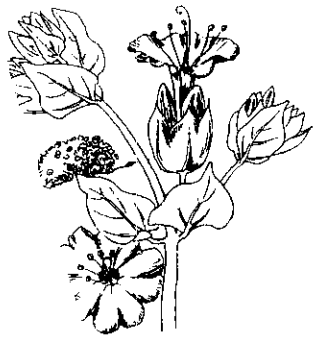
Fallugia paradoxa

Herbaceous Perennials and Annuals

Scientific Name	Common Name
Abronia sp.	Sand Verbena
Achillea millefolium	Yarrow
Agave parryi	Century Plant
Agastache cana	Giant Hyssop
Antennaria rosea	Pussytoes
Argemone squarrosa	Prickly Poppy
Artemisia frigida	Fringed Sage
Artemisia ludoviciana	Prairie Sage
Asclepias tuberosa	Butterflyweed
Aster bigelovii	Purple Aster
Baileya multradiata	Desert Marigold
Berlandiera lyrata	Chocolate Flower
Callirhoe involucrata	Poppy Mallow
Calylophus sp.	Sundrops
Castilleja sp.	Indian Paintbrush
Centaurea cyanus	Cornflower
Centaurea cineraria	Dusty Miller
Cerastium tomentosum	Snow in Summer
Ceratostigma plumbaginoides	Dwarf Plumbago
Chrysanthemum maximum	Shasta Daisy
Coreopsis spp.	Coreopsis
Cosmos bipinnatus	Cosmos
Delosperma cooperi	Purple Iceplant
Delosperma nubigenum	Yellow Iceplant
Dianthus barbatus	Sweet William
Dianthus deltoides	Maiden Pink
Dyssodia acerosa	Wild Marigold
Echinacea purpurea	Purple Coneflower
Eschscholzia californica	California Poppy
Gaillardia x grandiflora	Gallardia
Gilia tricolor	Bird's Eyes
Helianthus annuus	Sunflower
Helianthus maximilliaia	Maximillian Sunflower
Hemerocallis hybrids	Daylilies
Iris hybrids	Bearded Iris
Kniphofia uvaria	Red Hot Poker
Liatris punctata	Gayfeather
Linum perenne	Blue Flax
Lobelia cardinalis	Cardinal Flower

Berlandiera lyrata

Scientific Name	Common Name
Lupinus spp.	Lupine
Mirabilis multiflora	Four O'Clock
Papaver nuducale	Iceland Poppy
Penstemon spp.	Penstemon
Petalostemon purpureum	Prairieclover
Perovskia atriplicifolia	Russian Sage
Phlox paniculata	Summer Phlox
Phlox subulata	Creeping Phlox
Psilostrophe tagetina	Paperflower
Ratibida columnifera	Coneflower
Rudbeckia hirta	Black-eyed Susan
Salvia azurea grandiflora	Blue Sage
Salvia greggii	Autumn Sage
Senecio longiflora	Silver Groundsel
Solidago hybrids	Goldenrod
Sphaeralcea coccinea	Scarlet Globemallow
Tagetes erecta	African Marigold
Tagetes patula	French Marigold
Talinum calycinum	Flame Flower
Thymus serphyllum	Creeping Thyme
Verbena bipinnatifida	Fern Verbena
Verbena rigida	Purple Verbena
Vinca minor	Periwinkle
Zauschneria californica	Hummingbird Plant
Zinnia grandiflora	Desert Zinnia



Mirabilis multiflora

Ground Covers

Scientific Name	Common Name
Artemisia frigida	Fringed Sage
Baccharis pilularis	Coyotebush
Cerastium tomentosum	Snow-in-Summer
Clematis ligusticifolia	Western Virginsbower
Cotoneaster dammeri spp.	Cotoneaster
Delosperma nubigenum	Ice Plant
Euonymus fortunei	Wintercreeper
Juniperus horizontalis spp.	Juniper
Mahonia repens	Creeping Mahonia
Melampodium leucanthum	Blackfoot Daisy
Oenothera sp.	Evening Primrose
Penstemon caespitosus	Mat Penstemon

Scientific Name	Common Name
Phlox subulata	Moss Phlox
Santolina chamaecyparissus	Lavender Cotton
Thymus spp.	Common Thyme
Verbena peruviana	Verbena
Vinca minor	Periwinkle
Zinnia grandiflora	Rocky Mt. Zinnia

Zinnia grandiflora

Vines

Scientific Name	Common Name
Campsis radicans	Trumpet Vine
Clematis ligusticifolia	Western Virginsbower
Euonymus fortunei	Wintercreeper
Hedera helix	English Ivy
Lonicera japonica 'Halliana'	Hall's Honeysuckle
Parthenocissus inserta	Woodbine
Parthenocissus quinquefolia	Virginia Creeper
Parthenocissus tricuspidata	Boston Ivy
Rosa banksiae	Lady Bank's Rose
Wisteria sinensis	Wisteria

Grasses

Scientific Name	Common Name
Agropyron smithii	Western Wheatgrass
Bouteloua curtipendula	Sideoats Grama
Bouteloua gracilis	Blue Grama
Buchloe dactyloides	Buffalograss
Festuca ovina	Sheep's Fescue
Festuca ovina glauca	Blue Festuca
Festuca elatior	Turf Tall Fescue
Helictotrichon sempervirens	Blue Avena
Hilaria jamesii	Galleta
Oryzopsis hymenoides	Indian Ricegrass
Poa pratensis	Kentucky Bluegrass
Schizachyrium scoparium	Little Bluestem
Sporobolus cryptandrus	Sand Dropseed
Sporobolus wrightii	Giant Sacaton

APPENDIX C - COST ESTIMATE/PHASING PLAN

The following cost estimate reflects the full buildout of Manzano Mesa Park, and provides costs for specific recreational features to aid in the development prioritization for future funding. This estimate is for construction of the total 47.9-acre park site, but does not include current or future land acquisition costs.

ITEM	UNIT	QUANTITY	UNIT COST	TOTAL
Site Preparation				
Clearing & Grubbing	AC	29.5	1,000.00	29,500.00
Grading	C.Y.	12,500	2.50	31,250.00
Subtotal				$60,750.00
Infrastructure				
Roads (off-site)	S.Y.	23,000	21.00	483,000.00
Roads/Parking (on-site)	S.Y.	24,500	7.35	180,075.00
Water Line	L.F.	6,400	30.50	195,200.00
Water UEC (Center - 4" meter)	EA	1	72,500.00	72,500.00
Irrigation UEC (6 - 2" meters)	EA	6	12,000.00	72,000.00
Sewer Line	L.F.	3,500	68.00	238,000.00
Drainage Improvements	L.S.	1	50,000.00	50,000.00
Electrical	L.S.	1	70,000.00	70,000.00
Subtotal				$1,360,775.00
Structures				
Multigenerational Center	S.F.	36,000	165.00	5,940,000.00
Concession Stand	S.F.	1,000	110.00	110,000.00
Large Pavillion	EA	1	200,000.00	200,000.00
Picnic Shelters	EA	20	10,000.00	200,000.00
Subtotal				$6,450,000.00
Recreational Elements				
Baseball/Softball Fields	EA	5	65,000.00	325,000.00
Sport Lighting (Baseball)	EA	2	38,000.00	76,000.00
Soccer Fields	EA	4	88,000.00	352,000.00
Tennis Courts	EA	4	35,000.00	140,000.00
Sport Lighting (Tennis)	EA	4	10,500.00	42,000.00
Basketball Courts	EA	4	21,000.00	84,000.00
Sand Volleyball Courts	EA	4	6,000.00	24,000.00
Site Lighting	L.S.	1	75,000.00	75,000.00
Exercise Course	EA	1	28,000.00	28,000.00
Sidewalks/Trails	S.F.	136,000	2.25	306,000.00
Children's Play Areas	EA	3	125,000.00	375,000.00
Miscellaneous Site Furnishings	L.S.	1	50,000.00	50,000.00
Subtotal				$1,877,000.00
Landscaping				
Turf, Trees and Shrubs	L.S.	1	900,000.00	900,000.00
Irrigation	L.S.	1	375,000.00	375,000.00
Subtotal				$1,275,000.00
Total Construction				$11,023,525.00
10% Contingency				1,102,353.00
Subtotal				$12,125,878.00
8% City Overhead				970,070.00
Subtotal				$13,095,948.00
8% Design Fees				1,047,676.00
Grand Total				$14,143,624.00

Construction costs may vary depending on specific future design decisions.
Construction costs are based on 1996 unit prices.
Partial infrastructure costs will be recovered by pro-rata share reimbursement.

Construction of Phase 1 improvements will begin in early Fall of 1996 in coordination with the construction of the flood control detention pond. Improvements in Phase 1 will include the development of three baseball fields, representing the relocation of a portion of the Zia Little League Complex. Development of these fields will consist of dirt fields with minimal irrigation for dust control, backstops/fencing, bleachers, gravel parking lot, temporary and permanent paving of Stephen Moody Street out to Eubank Boulevard.

The Manzano Mesa Park Steering Committee established priorities for the near-future phasing improvements as follows:

1) Complete development of the Zia Little League Complex.

2) Develop the soccer fields at the south end of the park.

3) Develop the children's play area central to the Little League fields and south soccer fields.

Included in the development of these improvements will be the associated infrastructure needs, landscaping, paths, parking, and site furniture.

APPENDIX D - DRAINAGE PLAN SUMMARY

The Manzano Mesa development consists of approximately 450 acres. The Willow Wood subdivision, approximately 100 acres in size, is currently being developed as single family residential. The remaining area will be a combination of residential, commercial, industrial, office, and park uses. The area is currently divided by Elizabeth Street, however, the final plat for the area will have three roads crossing the site. The road configurations for Elizabeth, La Entrada, and Stephen Moody Street are shown on the project layout.

Basin Characteristics

The site slopes from east to west at approximately a 1.5 percent grade. Soil types are EmB (Embudo gravely fine loam), MWA (Madurez-Wink Association), and TgB (Tijeras gravely fine sandy loam). Runoff rates and erosion from these soil types are moderate. The Unified Soils Classification for these soils is SM and SC, silty sands and silty sands with trace clay.

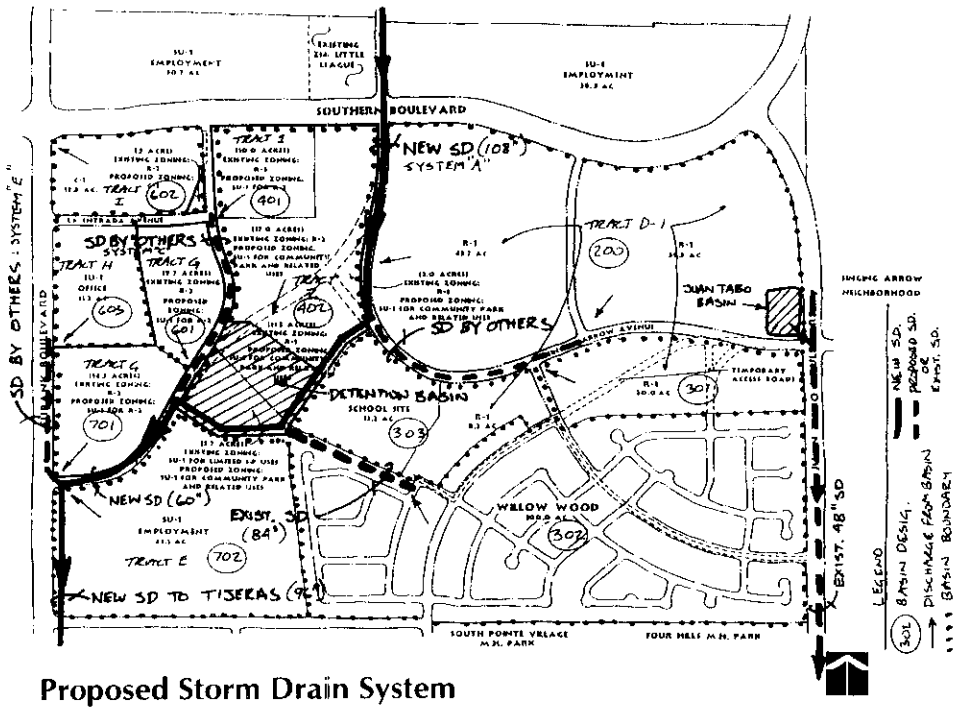
Hydrology

The City of Albuquerque Development Process Manual (DPM) was used to calculate the runoff generated by the development. The land uses were determined from the proposed zoning of the tracts. The AHYMO194 hydrology program was used to calculate the runoff values. All information required for the AHYMO program (time-to-peak, rainfall depths, land treatments, etc.) were taken from Section 22.2 of the DPM. Residential areas were assumed to consist of single family dwellings of five units-per-acre. Employment, office, and commercial zoning were assumed to be 90% impermeable and 10% permeable. The runoff rate from the existing Willow Wood subdivision was assumed to be 372 cubic feet per second (cfs) as determined in the drainage analysis produced by AVID Engineering. The basins are shown in Figure 1 and the descriptions are provided below.

Basin Descriptions

Basin 200: Basin 200 is part of Tract D-1 and is zoned R-1, residential. Basin 200 will discharge to the west side of the basin directly into System A. The peak flow rate from this basin is 221 cfs.

Basin 301: Basin 301 of part of Tract D-1 and is zoned R-1, residential. This basin will drain to System B, a future storm drain. This drain is preliminarily sized to be a 42-inch RCP at a slope of approximately



Proposed Storm Drain System

0.005 ft/ft. This system will connect to System A as shown. The peak flow rate from Basin 301 is 62 cfs.

Basin 302: This basin is the Willow Wood subdivision and currently drains to the existing retention basin located in future Tract 2. The existing storm drain outfall from this development consists of an 84-inch RCP. This system will remain to drain the subdivision into system A and ultimately into the detantion basin. The peak runoff rate from Basin 302 is 372 cfs.

Basin 303: Basin 303 is part of Tract D-1 and is zoned R-1, residential. This basin will drain to the existing 84-inch RCP from Basin 302. The peak runoff rate generated in this basin is 58 cfs.

Basin 401: Basin 401 is in the newly created Tract 1 and is zoned SU-1 for R-s. The peak runoff rate from this basin is 52 cfs and will drain to a future System C. System C will connect to the 60-inch RCP drain in System A. System C is preliminarily sized as a 42-inch RCP at a slope of 0.0025 ft/ft.

Basin 402: This basin will be the new park and multi-generation center. Development of this area will consist of a new 36,000 square

foot building, parking, baseball/softball fields, soccer fields, tennis courts, sand volleyball courts, and basketball courts. This basin will drain directly into System A through a series of overland concrete and grassed swales, and RCP storm drain systems. The peak flow from Basin 402 will be 69 cfs.

Basin 601: This basin is part of Tract G along with Basin 701 and is zoned SU-1 for R-2. Tract G has been split into two drainage basins because the logical discharge point for the north part of Tract G is at the south end of Basin 601. This basin will discharge 37 cfs directly to System D which will consist of a 54-inch RCP at a slope of 0.0025 ft/ft.

Basin 602: Basin 602 comprises Tract I and is zoned C-1, commerical. The peak runoff rate from this basin is 55 cfs. This basin will drain into the Gibson Corridor storm drain to be constructed in the future.

Basin 603: Basin 603 is Tract H and is zoned SU-1 for Office Uses. The peak runoff rate is 42 cfs and will drain to System E which will need to be constructed in Eubank Boulevard at a future date. This system will connect to System A at the intersection of Eubank and Stephen Moody Street. System E is sized as a 36-inch RCP at a slope of 0.005 ft/ft.

Basin 701: This basin is the other half of Tract G and is zoned SU-1 for R-2. It will drain to the southwest corner of the basin with a peak runoff of 58 cfs. A small system will need to be connected from Basin 701 to System A.

Basin 702: Basin 702 is Tract E and is zoned SU-1 for Industrial Uses. The peak runoff rate from this basin is 167 cfs and will drin directly to System A.

Table 1 provides the runoff rates from the basins in tabular form:

Proposed Improvements

The COA Hydrology Department is planning on constructing a new storm drain and detention basin with the Manzano Mesa property. The drain will connect to an existing system at Central Avenue and will extend to the south through the development, connect to a detention basin, and will continue south to the Tijeras Arroyo. The layout of this system is shown on Figure 1. The storm drain will consist of RCP vary-

ing in size from 60-inch to 108-inch and is sized to convey the 6-Hour, 100-Year storm event. Each of the basins will drain directly into the drain or into the detention basin. The detention basin will be approximately 10 acres in area and will contain about 45 acre-feet of runoff during the design event. The depth of water in the basin will be about 5 feet during the design storm event. Additional storm drainage infrastructure will have to be constructed as the area is developed. Preliminary locations of these drains are shown on Figure 1. Exact sizes and locations will need to be determined by the developer of each of the tracts and will vary depending on the layout and the use of the basins.

The proposed park area will drain into the detention basin through a series of underground drains and overland swales (either concrete or grassed). The detention basin will be developed as a joint use area with baseball fields in the bottom. The storm drain will be designed to by-pass the basin during smaller storm events, however, during larger events, the drain will surcharge into the detention basin.

A second detention basin will be constructed at Juan Tabo Boulevard and Singing Arrow. This basin will collect storm runoff generated on the east side of Juan Tabo. Currently, this runoff moves west across the Manzano Mesa property resulting in shallow flooding of the area. The Juan Tabo basin will mitigate this flooding.