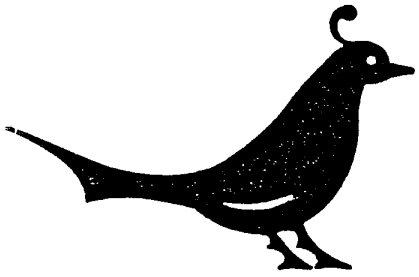
pajarito arroyo corridor plan



City of Albuquerque, New Mexico

1990

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Consultant

Resource Technology, Incorporated
Campbell, Okuma, Perkins, and Associates, Incorporated

PAJARITO ARROYO CORRIDOR PLAN

Adopted by the
Board of Bernalillo County Commissioners
on April 24, 1990

Adopted by the
Albuquerque City Council
on August 20, 1990

Endorsed by the
Albuquerque Metropolitan Flood Control Authority
on September 27, 1990

City of Albuquerque
Planning Department
Advance Planning Section, Planning Division
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I. PAJARITO ARROYO CORRIDOR PLAN POLICIES

The Pajarito Arroyo is located in Bernalillo County's South Valley, running from the eastern ceja (edge) of the Southwest Mesa to the Don Felipe Detention Facility. Pursuant to the Facility Plan for Arroyos, this Rank Three plan outlines development of a trail system linking open space areas, while establishing a process for development of drainage policy. Due to the largely undeveloped nature of the corridor, the opportunity exists to implement a trail system as development occurs.

The Plan was developed through citizen involvement and technical team effort. Key goals cited, in summary form, are:

- Design a trail corridor which recognizes the primary drainage function of the arroyo.
- Channel treatment, where required, should be as natural in appearance as possible.
- The trail should link housing with designated facilities, including open space, parks and schools.
- Trails should have adequate width to accommodate multiple users.
- Access to the trail and safe crossings of roadways should be provided.
- Native plant materials should be used in the design of the trail corridor.
- Adjacent development should be screened from the trail in some visually pleasing manner.

Plan policies guide government activities and approvals and establish the basis for regulations and design guidelines. The regulations which relate to design issues form a Design Overlay Zone, called for in the Facility Plan for Arroyos. Preceding the policies in each subject area is a brief discussion of the reasoning and analysis behind the policies. An expanded discussion of the existing conditions, issues, goals, alternatives considered, analysis and appendix material can be found in the full text document, adopted in conjunction with this Plan. The map on the other side of this Plan, hereafter the "Map", can be used as a reference for many of the policies.

The study area is in Bernalillo County, outside the municipal limits of the City of Albuquerque, but within the City's planning and platting jurisdiction. Both entities have adopted this Plan. All references to the County shall refer to the City in the event the City has jurisdiction at the time actions affected by this Plan occur.

DRAINAGE AND ARROYO TREATMENT

Introduction

Drainage management is essential for controlling development of the arroyo. A drainage management plan should address the transition of soft treatments into hardlined treatments. This will avoid maintenance and improvements required where upstream developers hard line the arroyo and the developed flows pass through undeveloped or softer sections downstream. Substantial public monies are required in these situtations for maintenance, clean-up and the costs of hardlining or otherwise handling the developed flows.

Recommendations for arroyo treatment are made in this Plan, but these are only recommendations until determined to be feasible and incorporated into the adopted drainage management plan. The "prudent line" drainage approach is recommended for a portion of the arroyo. This means designating a "limited

development" boundary adjacent to the arroyo within which structures are not allowed to be built because they would be susceptible to damage from erosion. The arroyo is left in a natural condition using only such channel treatment and bank stabilization as needed to control the meander of the arroyo within established limits..

For several reasons, the prudent line is recommended for the western portion of the Pajarito. First, the Southwest Area Plan (SWAP) established planned development densities in this area of one dwelling unit per net acre. Channel modifications may not be required because the less intensive development may not substantially increase the run-off. Second, the prudent line approach would require lower capital investment for development and allow for more percolation of run-off. Third, preservation of the arroyo in its natural condition will provide a more aesthetically pleasing trail environment than is possible with a narrow drainage right-of-way and a concrete lined channel.

If channel treatments are required east of 118th Street due to established planned higher densities in SWAP, a soft arroyo floor is preferred if feasible in order to allow for percolation, aesthetic appeal, preservation of some of the natural characteristics of the area, and to accommodate equestrian travel.

The drainage treatments recommended here are reasonable from the public and private sector points of view. The value of the property required for the prudent line will be offset by the reduced capital cost for construction of an arroyo channel. Further, in the design overlay zone, property owners are given a density bonus if they follow the prudent line approach.

Development of this watershed is not anticipated for some time given the distance it lies from the existing urban area, therefore, the drainage management plan is not expected to be undertaken immediately. The prudent line may ultimately be considered viable for the entire length. For this reason, development which occurs prior to development of a drainage management plan will be required to conform to the prudent line dedication requirements.

POLICY 1: ESTABLISHMENT OF DRAINAGE MANAGEMENT PLAN

Upon completion of agreements with the City, County and/or private landowners for participation in planning and funding a study, AMAFCA will establish a drainage management plan for the Pajarito watershed. This will include an analysis of whether a prudent line approach is feasible and, if so, establishment of the prudent line. AMAFCA will obtain comments from interested agencies.

The drainage management plan will consider drainage needs, the recommendations of this Plan, the policies, land uses or densities planned in other adopted plans, and the interests of adjacent property owners. A range of treatment types shall be considered, including but not limited to a prudent line approach, gabions, rip rap, soil cement and earth tone tinted concrete. Textured concrete shall be explored and evaluated for safety and aesthetic attributes. Cost shall not be the sole determinant in establishing the appropriate drainage approach.

After adoption of a drainage management plan, AMAFCA will thereafter require compliance with the drainage requirements specified in the drainage management plan.

POLICY 2: DRAINAGE RECOMMENDATIONS

West of 118th Street:

The "prudent line" drainage management approach is recommended for the Pajarito Arroyo west of 118th Street and, if adopted, development shall be restricted to areas outside of the prudent line. If any bank stabilization is required, it shall be consistent with downstream capacity and recreational trail usage and constructed of one of the treatment types described in Policy 1, above.

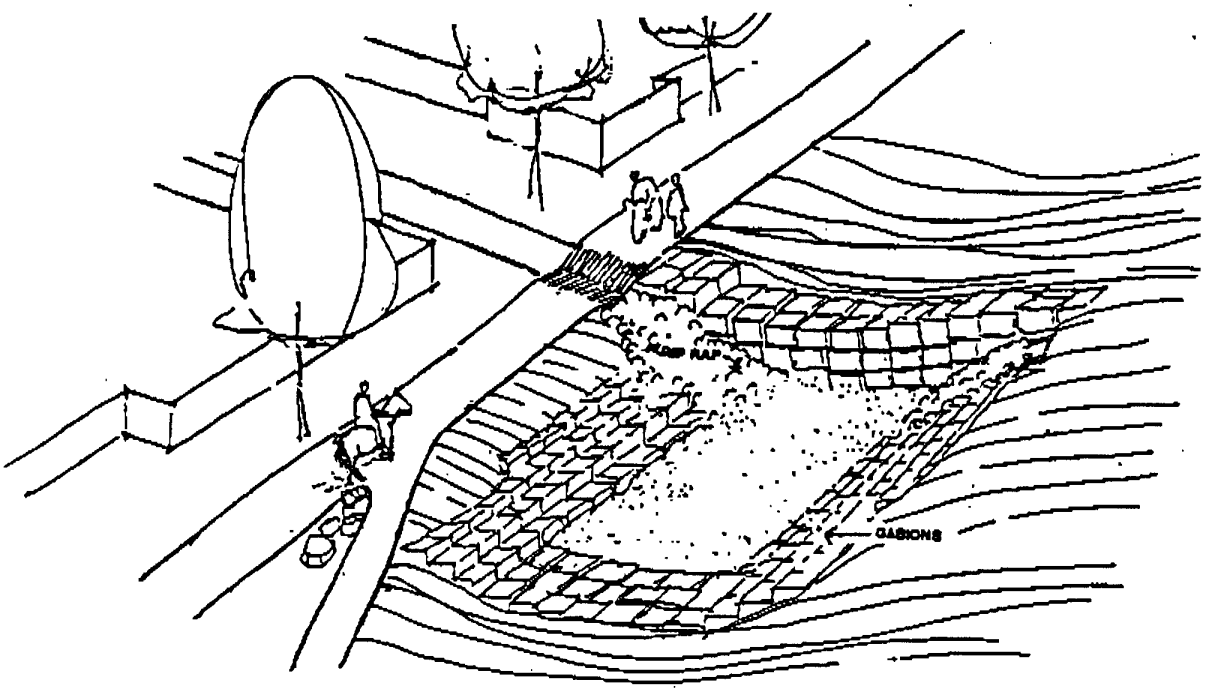
East of 118th Street:

If channel treatment is required, it shall consist of one of the treatment alternatives described in Policy 1, above. A soft arroyo floor is recommended if feasible.

Introduction of Run-off from Adjacent Development:

Discharge of run-off from adjacent development shall be directed into stilling basin outfall structures or other solutions designed to minimize erosion and promote growth of native vegetation to assist in bank stabilization. Design should be consistent with the open space character of the arroyo, using one of the treatment types described in Policy 1, above. Layout of adjacent street systems shall be such that these drainage outfall structures are kept to the minimum needed to maintain a naturalistic arroyo treatment. Stilling basin outfall structures shall coincide with roadway crossing structures where possible. Local run-off shall be used on-site to enhance the growth of native and adaptive vegetation, thereby providing natural bank stabilization. (Figure A illustrates a conceptual stilling basin design.)

Figure A



POLICY 3: WATERSHED BOUNDARIES

Development outside of the natural watershed boundary of the Pajarito Arroyo will not be allowed to discharge storm water run-off into the Pajarito, unless an engineering analysis can demonstrate that discharge from the additional watershed area will have minimal impact on the treatment called for in the drainage management plan described in Policy 1 and on the Don Felipe Detention Facility. The drainage management plan will consider whether flows from outside the watershed boundary are appropriately diverted to the arroyo.

POLICY 4: REVISION OF DRAINAGE POLICIES IF SUBSTANTIAL LAND USE POLICY CHANGES OCCUR

Land use changes shall not occur unless consistent with the policies of this plan. Should substantial land use policy changes in the watershed occur, however, which in the opinion of AMAFCA, render the adopted drainage management plan unworkable, AMAFCA may revise the drainage management plan. Prior to its approval of any revision, AMAFCA will request the City Planning Department review the Pajarito Arroyo Corridor Plan for possible revision.

POLICY 5: INTERIM DEVELOPMENT

Any development within the corridor prior to completion of the drainage management plan by AMAFCA will require an engineering study delineating the prudent line for the developing parcel, approved by AMAFCA. Where a private or public landowner within the corridor wishes to construct an improved and lined channel facility, such alternative channel treatment will be approved only upon the completion of an engineering analysis acceptable to AMAFCA that such treatment will not damage those areas which would remain in a natural or naturalistic condition. Such analysis shall evaluate short and long term sedimentation and erosion effects and smaller more frequent storms in addition to analysis for the 100-year storm.

TRAIL DESIGN

Introduction

The trail corridor is to serve the recreational needs of the area and provide linkage for non-vehicular traffic. The Southwest Area Plan and Facility Plan for Arroyos establish broad policy with regard to the trail network and recreational uses in the area. The trail policies of the Pajarito Arroyo Corridor Plan implement those policies in more detail. The map indicates the routes trails will follow and the types of trails recommended for various areas.

The citizens advisory group found that equestrians would best be served by access along the unimproved arroyo bottom which provides a soft earthen trail and that pedestrians and bicyclists can share the same facility if sufficient right-of-way is provided. If EPA regulations preclude equestrian use of the arroyo in the future, equestrians could use the maintenance road. Motorized vehicle access must be restricted to ensure the safety of trail users and to prevent vandalism and illegal refuse disposal. Access control will also help protect the arroyo from erosion caused by vehicular traffic, will slow cyclists and warn of upcoming intersections.

Slope, soils and erosion concerns dictate special policies in areas with 9% or greater slope. For aesthetic reasons, the Gun Club Lateral is recommended to be left as an untreated lateral. The dirt maintenance roads may be used as trails to connect to the Hubbell Oxbow. If improvements must be made for bank stability or stormwater discharge, however, design criteria are specified in this section.

Signage for the Pajarito trail should consist of easily recognizable symbols for regulation of trail use which warn users of hazards and identify trail access, amenities and interesting features. Usage and appreciation of the arroyo trail system are enhanced by understanding its natural characteristics and the forces which formed and continue to shape it. Signage should be unique to the Pajarito Arroyo to establish a sense of area identity and trail continuity.

POLICY 6: TRAIL TYPES, LOCATION, STANDARDS

The County Parks and Recreation Department will develop trails as indicated on the attached Map according to the Trail Standards included in the Appendix and according to the following policies:

A. Arroyo Trail

1) Paved trails from the proposed Don Felipe Detention Facility Park to the nodal park in the vicinity of 118th Street and Gun Club Road shall provide handicap access consistent with the Trail Standards.

2) If a roadway is contiguous to a paved trail, the trail can serve as a substitute for required sidewalks on the side adjacent to the arroyo so long as it meets the requirements of any applicable sidewalk regulations and the Trail Standards.

3) Where the prudent line approach is utilized, trails shall be located primarily within the prudent line right-of-way as shown on the Map. Any paved trails will optimally be located outside the one hundred (100) year floodplain but location outside the ten (10) year floodplain is acceptable if necessary for trail continuity.

4) If the channel is treated, the combined bicycle/pedestrian trail shall be located in the trail easement area.

5) Equestrian traffic shall be on the arroyo floor, maintenance road, or within the trail easement area. Stabilization of the embankment and signage are needed in locations appropriate for horse and rider to enter and exit the arroyo.

6) A paved trail is needed on one side of the Gun Club lateral to the south to connect bicycles to Pajarito Road. Sufficient right-of-way is available adjacent to the lateral to accommodate both MRGCD maintenance needs and a bicycle path.

B. Connection to Ceja

1) A paved bicycle/pedestrian trail is not recommended above the 9% slope along the arroyo and the paved trail will leave the arroyo corridor at 118th Street and join either the proposed Amole Arroyo Trail or a bicycle facility along the future Rio Bravo Boulevard extension to reach the proposed Ceja trail. Both Rio Bravo and 118th Street are included on the Bikeways Master Plan as study corridors and will therefore have bicycle facilities included in their design.

2) A compacted earthen trail can continue up to the Ceja along the Pajarito to allow pedestrians, equestrians, and persons walking their bikes to reach the proposed Ceja trail.

3) 118th Street is recommended to have an equestrian trail in addition to a bike trail in order to create an equestrian loop from the Ceja trail down the Amole Arroyo Trail to 118th Street and back over to the Pajarito Trail.

4) All plans for trail development on the east escarpment face in Zone 3 soils, as defined in the Southwest Area Plan, must be reviewed by the Central Rio Grande Soil and Water Conservation District for slope, alignment, and use of erosion control techniques.

C. Gun Club Lateral Connection to Hubbell

1) The trail along the Gun Club lateral between Pajarito Road and the Hubbell Lake Facility will be an unimproved equestrian and pedestrian trail using the existing MRGCD service roads. Grading to reduce side slope should be undertaken as feasible. Mountain bikes may also be accommodated, but bikes should be separated from horses as feasible using appropriate signage.

2) The Hubbell Lake Facility is to remain a limited access stormwater detention facility which also functions as a bird habitat and no improved trails or other improvements will traverse it. The Gun Club Lateral trail will connect with the Amole system and to the passive recreational uses in the oxbow adjacent to the Hubbell Lake Facility as described in the Southwest Area Plan.

3) If the MRGCD and AMAFCA agree to treat the Gun Club Lateral, the lining shall be either rip-rap, soil cement or earth-tone tinted concrete. A mowing strip or native landscaping shall separate the trail from the channel.

4) The Gun Club will be considered as an alternate north/south bike trail if portions of the Isleta Drain right-of-way are impractical for trail development.

D. Connection to the Bosque

1) Platting of the north half of the Don Felipe Oxbow shall provide for a trail connection through the Oxbow to Coors, connecting with Don Felipe Road. An equestrian trail could be aligned along the AMAFCA right-of-way and the bike route could follow residential streets for the short distance to Coors.

2) The trail for both bikes and equestrians can cross Coors at either Don Felipe Road or Pajarito Road and continue down Don Felipe to the Los Padillas Drain, then head south via Julie Ave. to Hubbell Circle and on to Isleta Blvd. Bikes may prefer to use Pajarito Road.

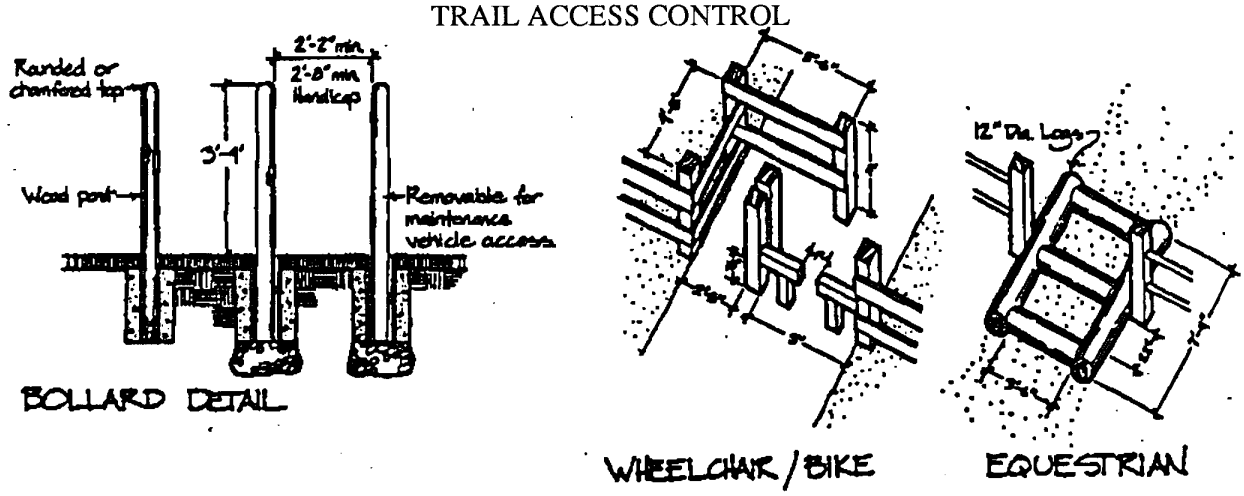
3) A dirt road (Louise Court) south of Pajarito Rd. provides access to the Rio Grande Valley State Park from Isleta Blvd. for equestrians and walkers. Louise Court connects to the Los Padillas Ditch road which runs to the Riverside Drain. An access bridge to the State Park should be provided across the Drain at this location for horses. Cyclists could be provided with an access point to the State Park from Pajarito Road, if it is extended east of Isleta.

POLICY 7: TRAIL ACCESS CONTROL

Motorized vehicles except maintenance and emergency vehicles shall be excluded from the trail system by means of signage and access control devices. Bollards or other access control devices shall be placed across the trail at all access points to prevent motor vehicle access while permitting passage of pedestrians, wheelchairs, bicycles, and horses.

Figure B

TRAIL ACCESS CONTROL



POLICY 8: SIGNAGE

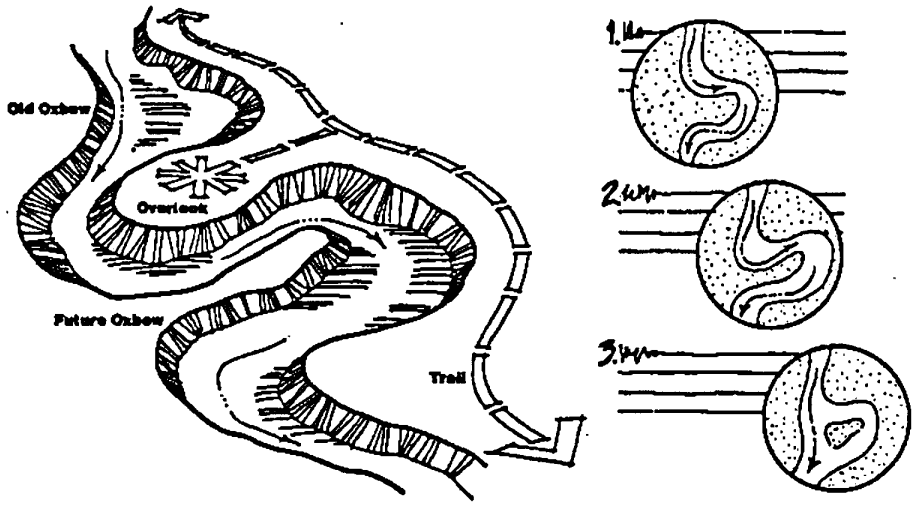
Signage along the trail system shall be provided by the County to regulate trail use and access, identify access points, direct users, warn of unexpected conditions such as road crossings and flooding potential, and provide interpretive descriptions of significant natural features. A common signage design, which complements the trail environment, should be used and include a recognizable symbol for the Pajarito Trail, such as a "little bird" (pajarito), similar to the image shown on the map.

In selected areas signage shall be provided identifying significant plant specimens, geologic and geomorphic features and cultural resources which may be encountered along the trail system. Appropriate interpretive areas include the oxbow meander, illustrated below in Figure 3 and any archaeological sites which might be appropriate for public access.

All interpretive signs shall be in both English and Spanish.

Figure C

OXBOW EDUCATIONAL AREA



ROAD CROSSING DESIGN

Introduction

Roads crossing the arroyo should be kept to a minimum in order to preserve the continuity of the trail and the open space character of the arroyo. The type of road crossing structures will have considerable impact on continuity and safety of trails. Safe road crossings are essential to the successful implementation of this arroyo plan.

Existing topography favors below grade trail crossings at the proposed locations for Unser Boulevard and, to a lesser degree, 118th Street. The channel at Unser is approximately 10-feet below-grade, making a bridge the most desirable crossing option. While the channel is substantially shallower at 118th, high points north and south of the channel may necessitate raising the roadway to grades suitable for a bridge crossing. This is consistent with the Southwest Area Plan which mandates that roads shall be constructed with all-weather arroyo crossings where needed (SWAP Policy 4).

POLICY 9: GENERAL CROSSING CRITERIA

Requests for local residential road crossings must clearly demonstrate that other transportation alternatives to crossing the arroyo have been explored and the requested crossing is essential. The road crossing structure must not result in the need for substantial additional bank stabilization downstream or substantial additional structures in the arroyo; the continuity of the trail must be maintained. Subdivision design should minimize the need for additional crossings.

POLICY 10: CROSSING DESIGN

Trail crossings shall be provided at all roadways. Above-grade, below-grade and at-grade trail crossings shall comply with the Trail Standards included in the Appendix.

The Unser Boulevard and 118th Street arroyo crossings shall provide for below-grade trail crossings in order to insure trail continuity and safe trail use, unless an at-grade crossing at 118th Street can be constructed as described in the following paragraph. Depression of the channel in order to accommodate a more level roadway should be considered.

An at-grade crossing at 118th Street is acceptable if sufficient right-of-way is available to flare the roadway to allow a user to cross two lanes at once and wait in a wide holding area before crossing the other two lanes. This crossing solution is only acceptable if speeds are relatively low and traffic volumes light.

PARK FACILITIES, OPEN SPACE AND RESOURCE MANAGEMENT

Introduction

Southwest Area Plan policy mandates that Bernalillo County investigate requiring park and open space dedication at the time of development. Such a mechanism, or similar one, would be helpful for promotion of some of the policies in this Plan. In addition to its drainage function, the prudent line area serves an open space function by providing room for recreational trails and visual relief to urbanization.

Preservation of the existing vegetation is the most effective means of landscaping, therefore, interim measures are needed to protect the arroyo trail corridor prior to trail development. Re-establishment of disturbed areas will aid in soil stabilization on the mesa slopes. Where additional landscaping is desired, native or naturalized plants should be utilized. "Native or naturalized" is intended to mean plants native to the Southwest having water conservation properties and requiring low maintenance.

A developed park facility in the Don Felipe Detention Basin will provide South Valley communities with needed recreational facilities and serve as both a point of departure and destination for the trail. Recommended park uses are those suggested by the citizens advisory group and the technical team.

In accordance with Southwest Area Plan policy, the Hubbell Oxbow is to be purchased by the County. Although the Southwest Area Plan proposes active recreational uses for the Hubbell Oxbow near the intersection of Coors and Rio Bravo, the Don Felipe Facility may be more suitable for development as a recreational park because its land is graded and without vegetation. The Hubbell Oxbow is adjacent to the AMAFCA detention facility at Hubbell Lake which contains lush vegetation, mature cottonwoods and is home to various species of wildlife. For that reason, the Oxbow may be more appropriate for passive uses. In the event the Oxbow is not purchased, the southern portion, at a minimum, should retain its current function as a wildlife forage area to serve the bird sanctuary at Hubbell Lake.

The area in the vicinity of 118th Street and Gun Club Road provides an excellent opportunity to create an intermediate point of departure as well as a destination point. The public amenities recommended were suggested by the citizens advisory committee and the technical team to serve trail users.

The proposed private open space land is within the greater than 9% slope segment shown on the Map and is bisected by numerous gullies and highly erodible soils. This sensitive and fragile environment is not suitable for development and should be protected to prevent further degradation and erosion. In addition, restricting development from this area provides trail users with a view of the escarpment, South Valley, and mountains from the Ceja, unobstructed by development.

References to County Parks responsibility does not necessarily preclude future participation by the City Parks and Recreation Department in the development or operation of the trail or related park facilities. The City does develop and operate facilities outside the municipal limits. Parts of the trail and facility development proposed in the Plan could be sponsored cooperatively by the City and County.

POLICY 11: DON FELIPE PARK

A recreational park at the Don Felipe Detention Facility shall be developed after public input and review of a site development plan and a funding plan. Recommended uses for the park include softball, football, soccer, tennis, playground, bicycle storage, as well as drinking fountains, restrooms, and a parking lot with provision for horse trailers. The park landscaping should use stormwater run-off to the fullest extent possible, subject to any applicable EPA regulation of stormwater quality. Park design must take into account the ponding and sediment characteristics of the site.

POLICY 12: AMAFCA HUBBELL LAKE FACILITY AND THE HUBBELL OXBOW

Any development which occurs in the Hubbell Oxbow north of the AMAFCA facility, even recreational use, should be located in the northern portion of the Oxbow and comply with the floodplain restrictions which exist on its use. It is recommended the southern portion remain in agriculture to provide forage for the Hubbell Lake wildlife.

The AMAFCA Hubbell Lake Facility is a stormwater detention facility which shall also be preserved as a bosque and wildlife sanctuary. It should be a destination for storm drainage maintenance and limited foot traffic only. No park facilities such as picnic tables, barbeque pits, volley ball or other sports areas shall be allowed in the Hubbell Lake Facility.

POLICY 13: NODAL PARK

A nodal park, approximately one-half acre in size, shall be provided near the intersection of 118th Street and Gun Club Road as illustrated on the Map. The nodal park will provide the community with passive and active recreation uses as well as rest facilities for trail users. Facilities for horse-trailer parking are recommended, in order to facilitate use of the upper Pajarito and Ceja Trails.

POLICY 14: OPEN SPACE

Development should be set back from the approximate 60 acre area east of the Southwest Mesa ceja, as shown on the Map, hereafter called "open area." It could remain in private ownership, but a designation on the plat would indicate that no buildings or structures are allowed within it. Pending County adoption of a Design Overlay Zone for the open area, which is in the fragile Soil Conservation Service Zone 3, a special use permit should be used to shift densities from this area to adjacent property under common ownership but outside of Zone 3. As a condition of special use permit approval, the property owner would either be required to restrict access to the open area or grant the County an easement to fence it. Should the property owner choose to dedicate the open area to the County for open space, such dedication shall be accepted.

POLICY 15: LANDSCAPE TREATMENT AND MAINTENANCE

The undeveloped land within the public right-of-way shall be maintained in a generally natural condition: Grading for trail construction shall be minimized and revegetation done with native and/or naturalized plantings if required. The existing vegetative cover shall be enhanced by landscaping with additional trees, shrubs, and wildflowers, to provide shade, wildlife habitat, visual interest and seasonal color. Landscaping shall be provided by the County Parks and Recreation Department. Trees should be massed in areas where public open areas adjoin the right-of-way. Clustering trees will soften the linearity of the drainage system. The Appendix provides a list of recommended plant materials.

Maintenance of the trail right-of-way, including trash removal, shall be performed by the County.

POLICY 16: INTERIM ACCESS CONTROL

Prior to development of the trail and park network, off-the-road vehicle use and trash dumping shall be prohibited through the construction of barriers and signs at critical points of access by the Bernalillo County Parks and Recreation Department.

DESIGN OVERLAY ZONE

Introduction

A Design Overlay Zone is authorized by the Bernalillo County Comprehensive Zoning Ordinance and by the City of Albuquerque Comprehensive Zoning Ordinance for areas containing at least 320 acres or of any size specified by a controlling Rank III Sector or Neighborhood Development Plan which meet at least two of the following three conditions:

> 1) contain highly scenic natural features or views; 2) have development potential which is likely to require unusually complex coordination of flood control, transportation, open space and urban land uses; and 3) have a strong role in the development of the form of the metropolitan area, such as arterial street corridors or critical areas near urban centers or historic zones.

The Pajarito Arroyo Corridor meets all three conditions for establishment of a Design Overlay Zone. The Design Overlay Zone regulations are mandatory. Guidelines shall be incorporated into development proposals unless they are clearly unworkable. Rationale for some of the design elements covered by the zone follows.

Continuous perimeter walls form a physical, visual and psychological barrier between the arroyo and adjacent development. This condition is detrimental to visibility and access and fosters an unsafe and under-used public environment. Walls which are of limited height will help diminish these effects, especially if their aesthetic quality is enhanced by the type of materials used. Solid walls are allowed in residential areas for privacy. Parking and service areas must be visually screened from the arroyo corridor to ensure that they do not detract from the open space character of the recreational trail system. Planting will aid in softening the appearance of the screening device. Accessory buildings are limited in height, because the effectiveness of the wall height limitation would be negated if they were higher than the walls adjacent to the arroyo.

Whether or not the Pajarito Arroyo works as a neighborhood amenity depends to a large extent upon the orientation of development toward the arroyo, which will provide visibility and incentive for making the arroyo an attractive place. Access from adjacent development will encourage use of the trail. Since the land within the study area has been designated as "Developing Urban" or "Rural and Open", a substantial mix of land uses will probably occur. Within this mix, public facilities are particularly appropriate for location along the arroyo corridor in order to take advantage of pedestrian and bicycle trail access, thereby offering an alternative to increased vehicular traffic. Orientation of entries and landscaped open areas toward the arroyo in new developments will provide a public visual amenity and an extension of the public open space system.

Staggered lot lines will encourage staggered fencing, thereby diminishing the closed corridor effect of continuous perimeter walls. Staggering will also make a more interesting landscaping treatment possible because the required insets are of sufficient size to allow the establishment of several varieties of native trees and shrubs. Where the prudent line approach is utilized, the wider drainage right-of-way negates the need for staggering lot lines.

Access to the trail must be provided at convenient intervals in order for the trail to get maximum use and serve as a link between neighborhoods, schools, parks, libraries, community centers and open space. Access is also needed for emergency vehicular access. Use of drainage easements for such access furthers multiple use goals. Platting should maintain the continuity of the trail. A continuous trail with limited interference from motorized traffic is one of the key features of a safe trail system.

Finally, a density bonus is provided to encourage alternative drainage treatments and offset the land requirement for the recreational trail.

POLICY 17: DESIGN OVERLAY ZONE ESTABLISHED; PROCEDURES FOR COMPLIANCE

A Design Overlay Zone is established which covers the Pajarito Arroyo and all property abutting the arroyo or trail right-of-way as shown on the Map and as listed below. If any property subject to the Design Overlay Zone is annexed to the City of Albuquerque, all policies, regulations and guidelines shall be reviewed, revised if necessary and approved, and thereafter be enforced by the City. All references to the County contained herein shall thereafter refer to the City. The Design Overlay Zone affects the following properties.

An unplatted tract of land adjacent to the north branch of the Pajarito Arroyo in Section 18, Township 9 North, Range 2 East, and adjacent to the South Boundary of the Atrisco Grant;

An unplatted tract of land adjacent to the north branch of the Pajarito Arroyo in the North 1/2 North 1/2 South 1/2, Section 17, Township 9 North, Range 2 East;

Tracts 22 through 34, Row 2 South; Lots 33 and 34, Row 1 South;

The southerly 181.5 feet of the South 1/2 Southwest 1/4 Northwest 1/4 Southeast 1/4 Section 16, Township 9 North, Range 2 East;

The South 1/2 South 1/2 Southeast 1/4 Northwest 1/4 South 1/2, Section 16, Township 9 North, Range 2 East;
The Northeast 1/4 Southwest 1/4 Southeast 1/4, Section 16, Township 9 North, Range 2 East;
The Northwest 1/4 Southeast 1/4 Southeast 1/4, Section 16, Township 9 North, Range 2 East ;
The West 2.0 acres of the South 1/2 South 1/2 Southwest 1/4, Section 16, Township 9 North, Range 2 East;
The east .76 acres of the South 1/2 South 1/2 Southwest 1/4, Section 16, Township 9 North, Range 2 East.

Regulations

17.a. All development within the Design Overlay Zone shall comply with the design regulations of this section.

17.b. The County Planner may approve minor variances to this Plan on a site-by-site basis if consistent with the use, general scale and intensity as set forth in this Plan, and if the approving official finds that neither the County, City, AMAFCA nor any other person will be substantially aggrieved by the change. The City Planner and AMAFCA should be notified in advance of any proposed change.

POLICY 18: PRESERVING TOPSOIL AND EXISTING VEGETATION

The existing topsoil and vegetative cover within the prudent line shall be preserved to the greatest extent feasible.

Regulations

18.a. Unless substantial grading is necessary to accommodate trails, prior to beginning construction on private land, the property owner shall construct a temporary barricade at the site boundary adjacent to the public right-of-way to protect it from heavy equipment and to preserve the groundcover. Site development plans shall indicate all measures which will be undertaken during construction to comply with this provision. The property owner shall mitigate any damage that does occur by reseeding. The property owner shall maintain the revegetated area for two years according to a maintenance plan approved by the County Parks and Recreation Department.

18.b. Grading plans for sites adjacent to the arroyo right-of-way shall demonstrate that cut and fill has been kept to a minimum, unless borrow is required for on-going prudent line maintenance.

POLICY 19: WALLS AND FENCES

Walls are generally discouraged within or adjacent to the arroyo right-of-way, however, where walls or fencing are required for privacy, security, or safety reasons, the following regulations shall apply:

Regulations

19.a. The maximum height for solid walls and fences is six feet and for see-through fences, eight feet.

19.b. Solid walls and fences are allowed in residentially zoned areas only, except as provided in 19.e. below and in Policy 20 (Parking and Service Areas).

19.c. Solid walls and fences shall consist of stucco over concrete block, stained concrete block, brick, stone, split-faced or fluted block, adobe, wood or see-through fencing (including chainlink) planted with vegetation sufficient to act as a natural screen.

19.d. See-through fences shall consist of wood, vinyl-coated chainlink, painted or coated pipe, wrought iron, or smooth wire pasture fence material.

19.e. Low solid walls, not to exceed three feet in height, combined with one of the see-through treatments described in 19.d. above, are allowed in non-residential areas. The total height cannot exceed eight feet.

Guidelines

19.f. Access gates for pedestrians, equestrians and cyclists are encouraged between adjacent development and the arroyo, particularly for townhouse, multifamily, office development and other public facilities.

19.g. Landscaping on the private side of see-through fencing should be provided. Recommended plant materials are provided in the Appendix.

19.h. Curvilinear walls are desirable adjacent to the arroyo right-of-way.

POLICY 20: PARKING AND SERVICE AREAS

Parking lots, service areas and open storage located adjacent to the arroyo shall be screened from view according to the following regulations. Figure D illustrates parking lot screening.

Regulations

20. When a parking lot, service area or open storage is located adjacent to the arroyo right-of-way, screening shall be required with either:

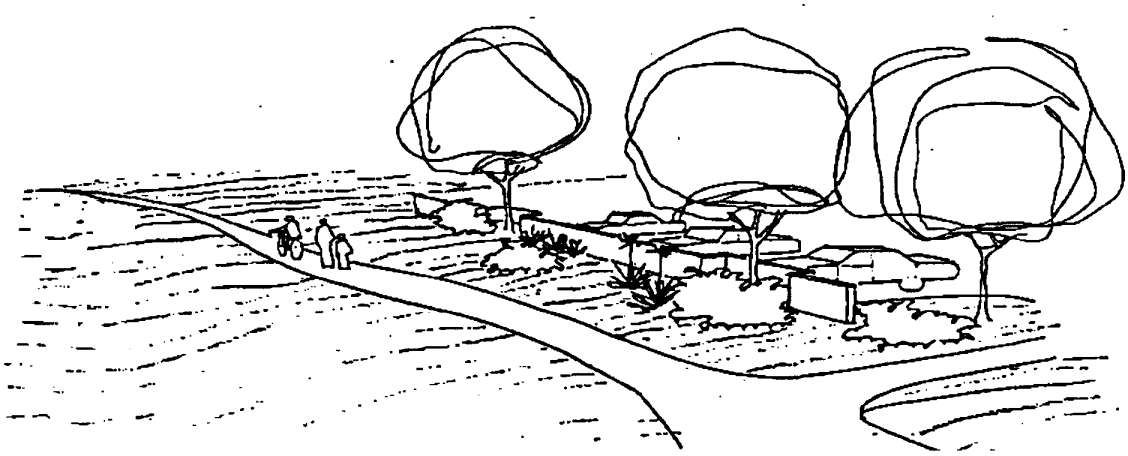
    a. Solid walls or fencing a minimum of 6' in height constructed of materials that comply with Regulations 19.c. and 19.d., above, except that see-through fencing will require additional landscaping, such as shrubs or vines, to form a reasonably opaque screen;

    b. Shrubs, vines or trees sufficient to act as a screen of at least 6' in height; or

    c. Earth berms a minimum of 4' above the elevation of the parking, service area, or open storage to block the view of the parking, service area, or open storage from the trail.

Figure D

PARKING LOT SCREENING



POLICY 21: ACCESSORY BUILDING SETBACK REQUIREMENT

The following accessory building setback is established to comply with the height limitation for walls:

Regulations

21. For lots abutting the arroyo right-of-way, buildings shall be set back from the lot line two (2) feet for each foot of building height in excess of six (6) feet, i.e. (building height - 6) X 2 = setback. For example, an eight foot accessory building would require a four foot setback from the lot line.

POLICY 22: HEIGHT LIMITATIONS

The Southwest Area Plan places a height limitation on structures located east of the Ceja. That policy is incorporated into this Design Overlay Zone.

Regulations

22. No structures 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 in Map 4, Southwest Area Plan, Policy 20.

POLICY 23: ADJACENT LAND USES

When development occurs, every effort shall be made to locate public facilities such as schools, parks, libraries, and community centers near the arroyo trail system.

POLICY 24: OPEN AREAS AND BUILDING ORIENTATION

Site plans for multi-family residential and non-residential developments are encouraged to provide landscaped open areas directly adjacent to the arroyo right-of-way and orient recreational facilities associated with their development towards the arroyo.

Guidelines

24.a. Access between the open areas and the arroyo right-of-way should be provided for pedestrians and cyclists as appropriate.

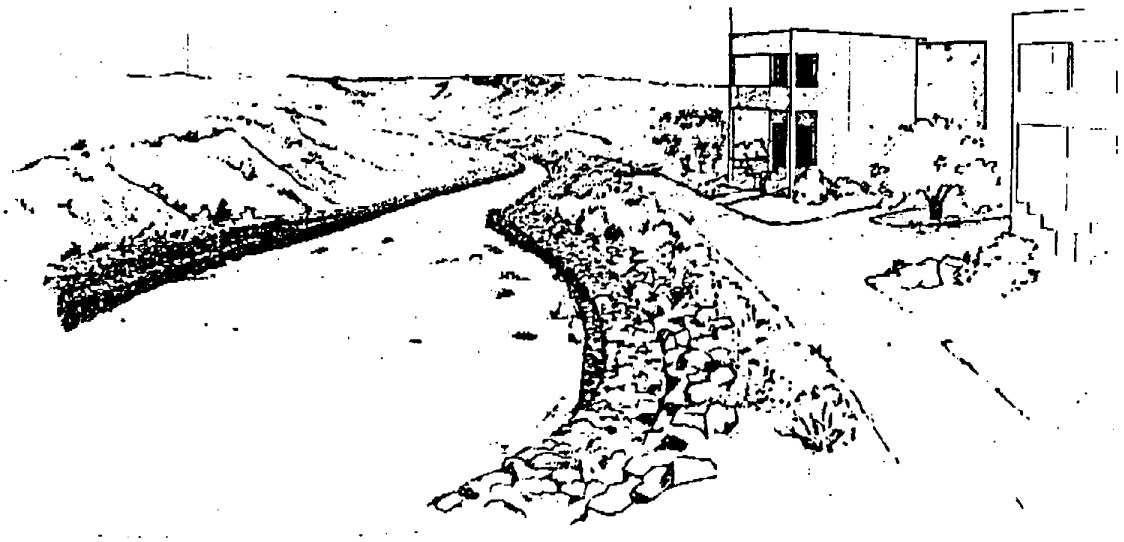
24.b. Open areas adjacent to the arroyo right-of-way should be landscaped with appropriate plant materials including native and naturalized trees and shrubs (included in the Appendix) to integrate the open areas with the arroyo right-of-way.

24.c. All multi-family and non-residential developments should be designed with windows facing onto the arroyo.

24.d. Multi-family and non-residential developments adjacent to the arroyo should orient entries toward, and place landscaped public open areas adjacent to the arroyo right-of-way. These entries may necessarily constitute minor or secondary entries with the main entry oriented towards the street. Figure E illustrates a multifamily development with entries and open areas oriented towards the arroyo.

Figure E

OPEN AREAS ADJACENT TO THE ARROYO



POLICY 25: DENSITY BONUS

For parcels zoned County A-1, which lie partially within the design overlay zone, a density bonus is available as follows:

When a property owner dedicates land for recreational use, open space or drainage (in excess of that required to concrete channel the 100 year flood and provide one 15' maintenance road) the number of lots which may be platted will be calculated by taking the gross acreage less required infrastructure dedications divided by 43,560, so long as each lot will be usable, meet the minimum setback requirements of the County A-1 zone, and comply with environmental regulations. Figure F illustrates the density bonus calculation.

POLICY 26: REQUIRED TRAIL RIGHT-OF-WAY

Granting of easements or dedication for drainage purposes shall be required in accordance with AMAFCA policy. Right- of-way for trail purposes shall be required by the County at the time of platting, replatting, change of zoning, special use permit, zoning variance, site or sector development plan approval. The following regulations address the trail right-of-way required under various drainage scenarios.

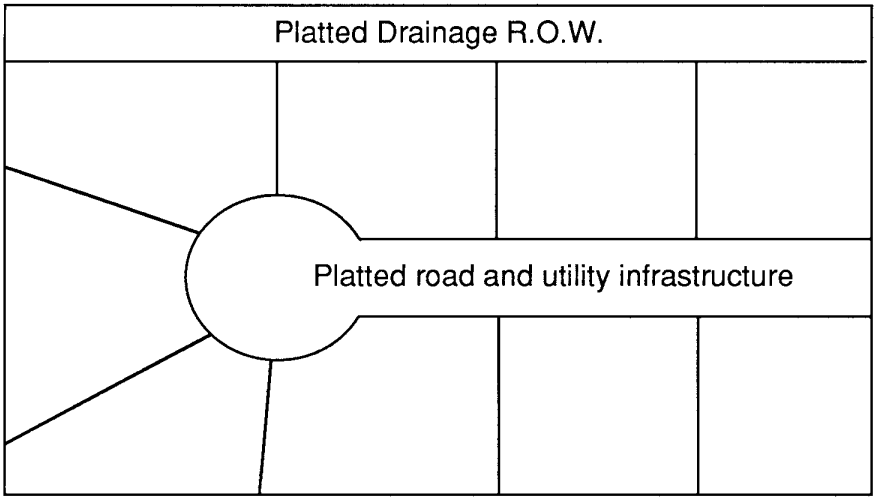
Regulations

Prudent Line Approach:

26.a. Right of way sufficient for trail development pursuant to the Trail Standards, included in the Appendix, shall be platted within the prudent line or adjacent to the prudent line if trail development within the prudent line is not feasible.

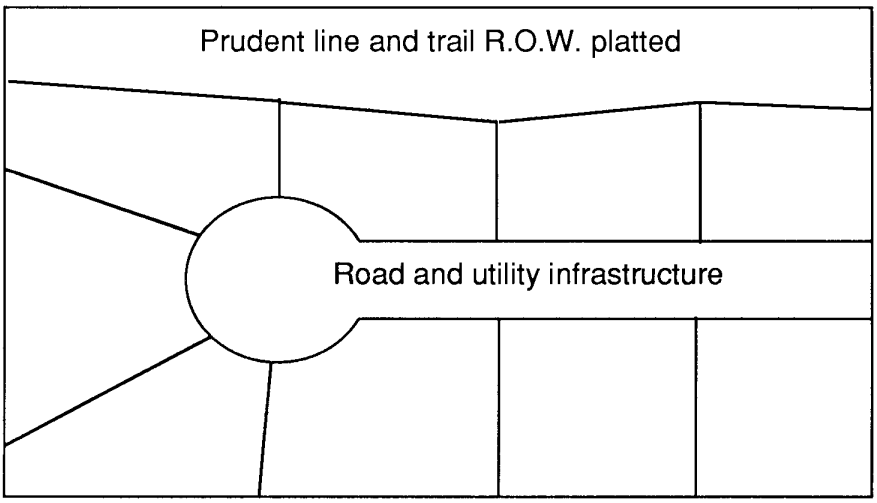
Figure F

Illustration of Policy 25: Density Bonus



10 acres platted with one acre minimum lot sizes.

Results in 9 lots after required infrastructure is dedicated.



10 acre platted reserving prudent line and dedicated trail.

Results in reduced sized lots after required infrastructure is dedicated

Channeled Arroyo:

26.b. Right-of-way for a trail and landscaping adjacent to the arroyo channel shall be platted in a width averaging 20 feet. The dedicated trail area may vary in accordance with the Trail Map, Trail Standards and the other policies of the Plan, so long as it averages 20 feet in width.

General regulations:

26.c. Public access to the trail system shall be provided at all roadway intersections and adjacent public facilities, including parks, libraries, community centers and open space.

26.d. In areas where residential or commercial development is adjacent to the arroyo right-of-way, access to the trail system shall be provided at intervals of approximately one-fourth mile.

26.e. When land adjacent to barriers across the arroyo, such as dams, roads and culverts, is platted, space for a trail around the barrier to provide for a continuous trail system consistent with the Trail Standards shall be platted.

26.f. Open space and/or park dedication credit, if required, shall be allowed for trail right-of-way dedicated.

Guidelines:

26.g. Where possible, trail system access shall occur within or adjacent to drainage easements for rundowns, so long as these access points meet the requirements of the Trail Standards.

POLICY 27: STAGGERED LOT LINES

The subdivision and platting of land abutting the arroyo right-of-way shall provide staggered lot lines in accordance with the following regulations:

Regulations

27.a. Jogs or insets shall be provided in the subdivision or lot's perimeter alignment, the minimum depth of which shall be four (4) feet, and which when multiplied by the width measured along the perimeter equals a minimum twenty-four (24) square feet.

27.b. Jogs or insets as above shall be provided at the rate of at least one per every two lots. In no case shall the distance between insets or jogs exceed one hundred and twenty (120) feet. Figure G provides some examples of staggered lot lines with perimeter fencing.

27.c. Platting of staggered lot lines shall not result in the net inclusion of more property in the public right-of-way than is required in Policy 26b. of this plan. See Figure H for illustration of several examples.

27.d. Where the prudent line approach is followed, no staggering of lot lines shall be required.

Figure G

STAGGERED LOT LINES

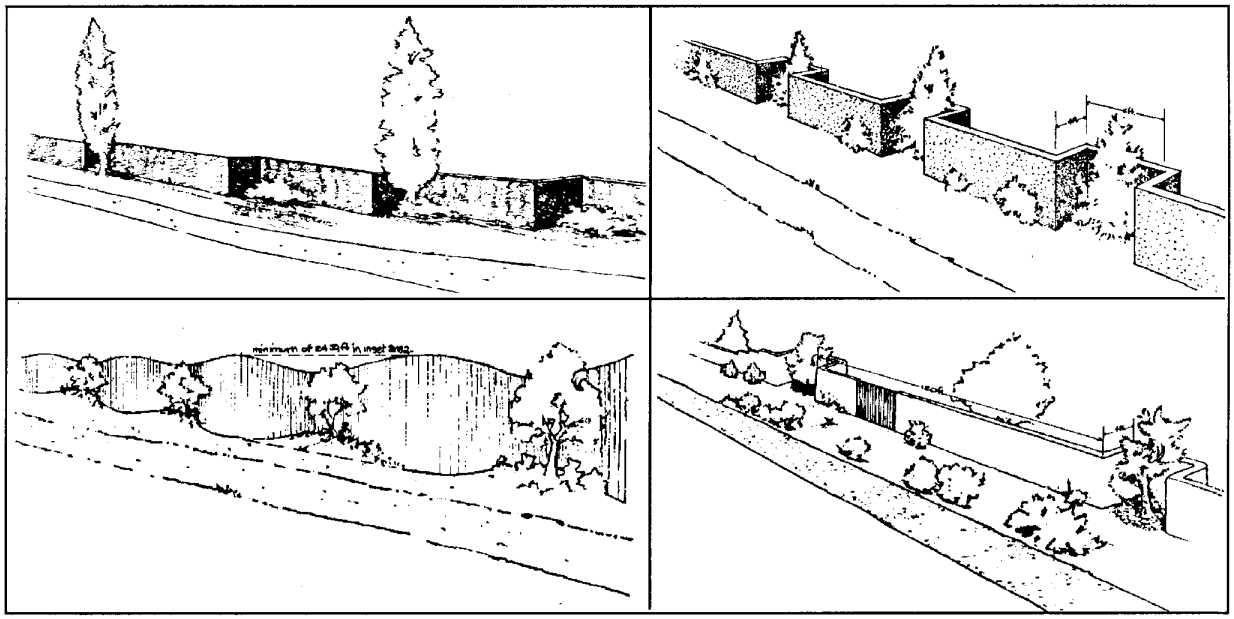
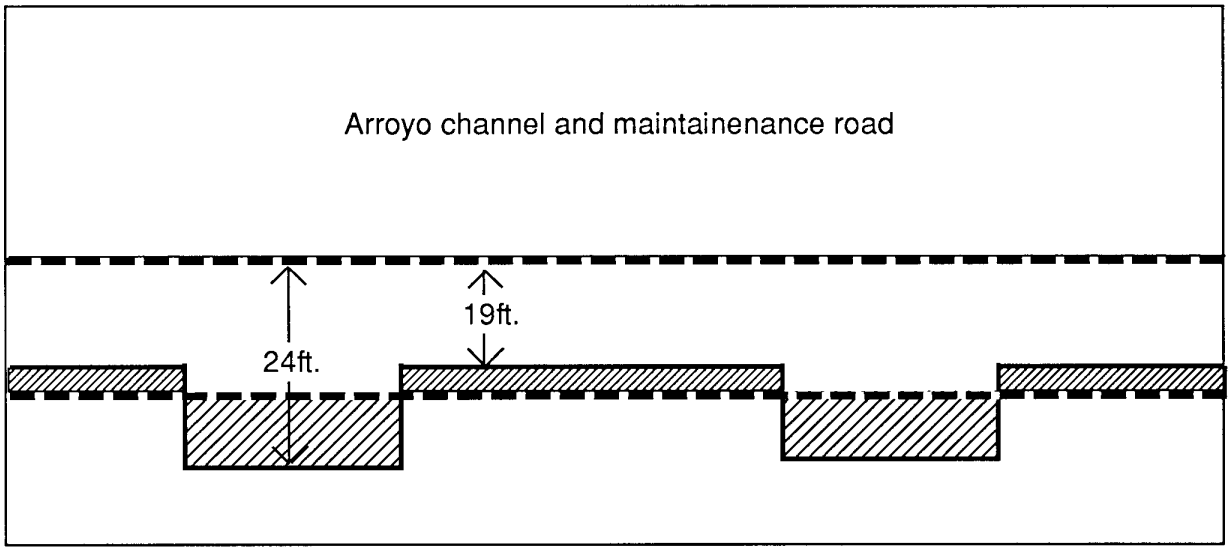
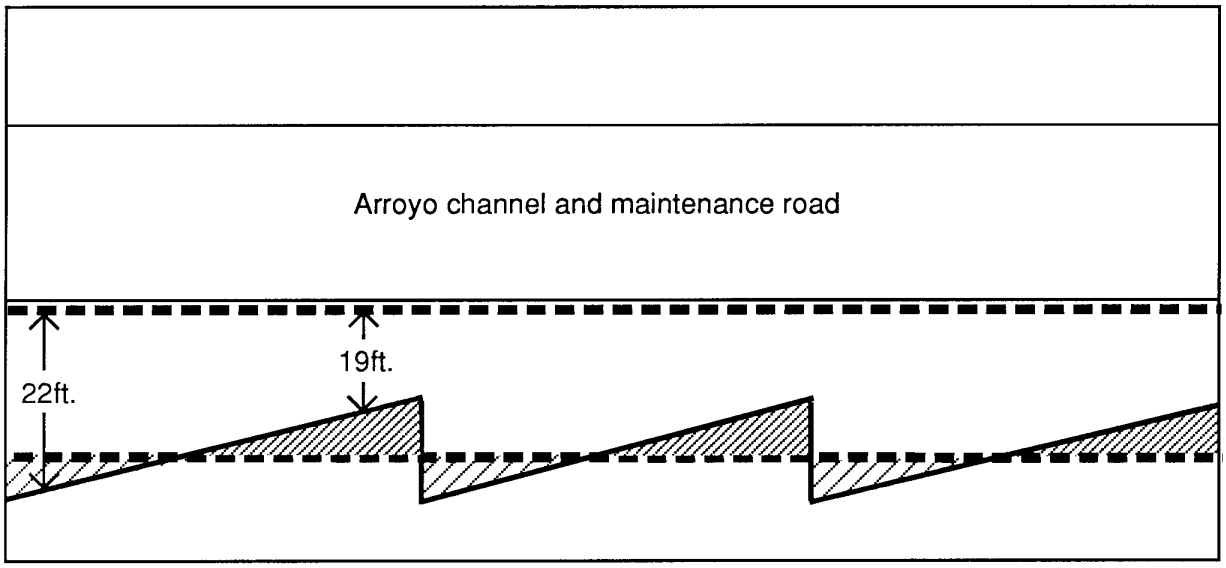


Figure H

Several examples of possible configurations under Policy 27.C: Staggered lot lines





Legend:

20ft. trail R.O.W. requirement

platted lot lines

areas which should equal each other

II. IMPLEMENTATION

General

The purpose of the implementation program is to identify specific actions that will be required in order to establish the Pajarito Arroyo trail system in accordance with the guidelines presented herein. The major tasks that must be accomplished are briefly discussed as follows:

- Adoption of a Bernalillo County Parks and Open Space Dedication Policy or impact fee system.
- Negotiation of a joint-use and maintenance agreement with the MRGCD for use of the existing MRGCD right-of-way for recreational trails.
- Establish the prudent line through an engineering analysis.
- Develop drainage management plan for the Pajarito following the procedure outlined in this Plan.
- Amend Development Process Manual to require compliance with adopted drainage management plan and develop specifications needed for any treatment alternatives described herein which are not currently included in the Development Process Manual.
- Amend Development Process Manual to include Trail Standards.
- Conduct archaeological survey for area contained within prudent line.
- Coordination of the crossing structure designs at Unser Boulevard and 118th Street with City and County Public Works Departments.
- Enforce the plan dedication policies at the time of sector plan approval, replatting or zoning change request.
- Review of drainage plans for adjacent development to ensure consistency with plan policies governing introduction of run-off into the arroyo.
- Development of a Park Master Plan for the Don Felipe Detention Facility.
- Acquisition of funding for the design and construction of the recreational facility at the Don Felipe Detention Facility.
- Amend Bernalillo County Subdivision Ordinance to provide for the dedication of a trail when required by adopted plans and policies.
- Acquisition of funding for the design and construction of the Pajarito Arroyo and Gun Club Lateral trail systems.
- Review of sector and subdivision plans for consistency with Design Overlay Zone guidelines.
- Review of site plans and building permit applications for single, multi-family and commercial buildings adjacent to the multi-purpose right-of-way for consistency with Design Overlay Zone guidelines and requirements presented herein.

- Proceed with Design Overlay Zone for Zone 3 soils as mapped by the Soil Conservation Service.

- Maintenance of trail and landscaping within the public right-of-way and along the Gun Club Lateral.

- Continue the flood safety education program currently being administered by the Ditch Safety Task Force. As the trail is developed, target area schools for safety presentations and information distribution.

- Monitor erosion within the prudent line and remove sediments from road crossing structures as required for safe Phasing Schedule trail use.

- Negotiation of multiple use easements with the Public Service Company of New Mexico.

Implementation Schedule

Since implementation of the Pajarito Arroyo Corridor Plan is contingent upon development within the study area and there are no current plans for development by Westland Development Co., Inc., the major landowner, no time schedule for implementation of this plan can be provided, with the exception of the Phase I work, which should proceed immediately. The following sequence for implementation is suggested.

Phase I - Adopt a Bernalillo County Parks and Open Space Dedication Policy and/or system of imposing impact fees. This should be undertaken immediately in order to bring the County park system up to desired community standards and avoid the loss of needed open space. The County should take the lead in developing the necessary ordinances, or contract with the City Planning Department to do so.

Phase II - The following items can be undertaken at the present level of development in the watershed.

1) Conduct a quantitative sediment transport analysis, or such other study as deemed necessary by AMAFCA, to define the prudent line prior to approval of further development. If AMAFCA has not undertaken such a study prior to development within the study area, it must be done by the developer and approved by AMAFCA.

2) The County Parks and Recreation Department will request funding from the County Commission to acquire the Hubbell Oxbow.

3) AMAFCA should develop drainage policy for the Pajarito and require that adjacent development comply with its requirements in handling runoff.

4) City/County Planning should conduct an archaeological survey for area contained within the prudent line.

5) Require dedications for drainage and/or trail purposes.

6) Coordinate crossing structure designs and bicycle trail designs for Unser Boulevard and 118th Street with City and County Public Works Departments.

7) Integrate proposed trail alignments into future trail planning in areas.

8) Negotiate a license with PNM and Plains Electric to use the power line easements for trail development.

9) Prepare a City/County design overlay zone for zone 3 soils area pursuant to SWAP mandate.

10) Amend DPM to include trail standards.

Phase III - The following items should be implemented when twenty-five percent (25%) of the watershed is developed.

1) The County should prepare a Park Master Plan for the Don Felipe Detention Facility.

2) Negotiate a joint-use/maintenance agreement with MRGCD for use of right-of-way for recreational trails.

Phase IV - The following item should be implemented when fifty percent (50%) of the watershed is developed.

1) Reserve land in the vicinity of 118th Street and Gun Club Road for the nodal park through development process or acquisition.

2) The County should acquire funding and administer the design and construction of the recreational complex at the Don Felipe Detention Facility. Construction could be phased as funding becomes available.

3) The County should acquire funding and administer the design and construction of the trail and landscaping improvements from Hubbell Lake to Unser Boulevard.

Phase V - The following items should be implemented when seventy five percent (75%) of the watershed is developed.

1) Fund, design and construct the nodal park in the vicinity of 118th and Gun Club Road

2) Acquire proposed open space land along the Southwest Mesa ceja. If this area is proposed for development prior to this time, preserve as part of the site development, by shifting densities to adjacent property under common ownership, or acquire through dedication as part of an annexation or sector development plan.

3) Acquire the funding and administer the design and construction of the trail and landscaping improvements along the Pajarito Arroyo from Unser Boulevard to the Southwest Mesa ceja.

Tables Aand B provide a summary of the proposed trail system improvements and the proposed public facilities, respectively. Itemized cost estimates based upon 1988 construction costs for the alternatives are provided in Appendix B. Table C identifies agencies that will be responsible for implementing the plan policies.

TABLE A - PAJARITO ARROYO FACILITY PLAN - TRAIL IMPROVEMENTS

Segment	Right of Way	Design Flows (100 Year)	Proposed Channel Treatment	Existing Land Uses	Proposed Land Uses	Proposed Improve-ments	Cost 1988 ($)	Source of Funds
Hubbell Lake to Unser Boulevard	Portion owned by MRGCD, Acquire right-of-way within prudent line as development occurs	453 cfs.	Earthen channel with stilling basin outfall structures	Irrigation and undeveloped	Same	Trail construction landscaping, access control.	350,000	GOB
Unser Boulevard west to Southwest Mesa Ceja	Acquire right-of-way within prudent line as development occurs, Require dedication of trail right-of-way	453 cfs.	Gabion sides with earthen bottom	Undeveloped	Proposed Developing Urban west to 118th and rural and open west to Southwest Mesa Ceja	Trail construction landscaping and access control	350,000	GOB

TABLE B - PAJARITO ARROYO FACILITY PLAN-PUBLIC FACILITIES IMPROVEMENTS

Facility	Existing Ownership	Existing Land-Use	Method of Acquisition	Proposed Improvements	Cost 1987	Source of Funds
Don Feliipe Park	AMAFCA	Flood Control	NA	Parking lighted Softball Football Soccer Tennis Restrooms Landscaping Play area Picnic Tables Drinking Fountain Bicycle storage	$1,500,000	GOB
118th Street Gun Club Road Nodal Park	Westland Development Co., Inc.	Vacant	Park dedication requirement for development	Parking Basketball Tennis Play area Picnic Tables Drinking Fountain Landscaping		GOB

GOB - General Obligation Bond

TABLE C - POLICY IMPLEMENTATION RESPONSIBIITIES AND PHASING

TASK	RESPON-SIBLE PARTY	IMPLEMENTATION PERIOD				
		PHASE I	PHASE II	PHASE III	PHASE IV	PHASE V
Adopt Bernalillo County Parks and Open Space Dedication Policy	City/County Planning *BC-Legal BC-*P&R					
Negotiate Joint-Use Agreement with MRGCD	BC-P&R BC-Legal					
Establish prudent line boundaries	AMAFCA					
Develop drainage management plan	AMAFCA					
Conduct archaeological survey	City/County Planning					
Enforce dedication/ drainage policy as development occurs	City/County Planning *DRB AMAFCA					
Prepare Park Master Plan for Don Felipe	BC-P&R					
Coordinate Unser Boulevard and 118th Street Crossing Structure Designs	BC-P&R AMAFCA					
Acquire funding for trail segment from Hubbell Lake to Unser Boulevard	BC-P&R					
Construct Don Felipe Recreational Facility	BC-P&R AMAFCA					

* BC - Bernalillo County
* P&R - Parks & Recreation
* DRB - Development Review Board
* PWD - Public Works Department

TABLE C- POLICY IMPLEMENTATION RESPONSIBIITIES AND PHASING (CONT.)

TASK	RESPONSIBLE PARTY	IMPLEMENTATION PERIOD				
		PHASE I	PHASE II	PHASE III	PHASE IV	PHASE V
Construct trail segment from Hubbell Lake to Unser Boulevard	BC-P&R City/County Planning					
Acquire land for Nodal Park	City/County Planning BC-P&R					
Acquire funding for trail segment from Unser Boulevard to Southwest Mesa	BC-P&R					
Construct trail segment from Unser Boulevard to Southwest Mesa	BC-P&R					
Acquire funding for construction of Nodal Park	BC-P&R					
Construct Nodal Park	BC-P&R					
Acquire Open Space along Southwest Mesa Ceja	City/County Planning BC-P&R					
Review site development plans, sector plans, and building permits for consistancy with plan policies	BC-P&R					
Monitor erosion within prudent line and maintain arroyo	AMAFCA City/County Planning					
Maintain trail and landscaping within public right-of-way	BC-PP&R Private Developers					

* BC - Bernalillo County
* P&R - Parks & Recreation
* DRB - Development Review Board
* PWD - Public Works Department

APPENDIX A
PLANT LIST

KEY

WATER USE	COLOR		BLOOM SEASON	SHADE
L = LOW	B = BLUE	PP = PURPLE	SP = SPRING	ltd = LIMITED
M = MODERATE	MX = MIXED	R = RED	SU = SUMMER	
H = HEAVY	O = ORANGE	W = WHITE	AU = AUTUMN	
	P = PINK	Y = YELLOW		

*** TOLERATES OR PREFERS SHADE**

**** CAN BE AN ALLERGEN**

RECOMMENDED TREES	SHADE	SCREEN-WINDBREAK	ACCENT-EMPHASIS	FORM	FLOWER	EVER-GREEN	WATER USE
FALSE INDIGO/LEADPLANT Amorpha fruticosa		X	X		X		M
CURLLEAF MOUNTAIN MAHOGANY Cercocarpus ledifolius		X	X	X		X	L-M
MONTANE MOUNTAIN MAHOGANY Cercocarpus montanus		X	X	X			L-M
DESERT WILLOW Chilopsis linearis	ltd	X	X	X	X		L
*DESERT OLIVE Forestiera neomexicana	ltd	X	X	X			L
ASH (NATIVE SPECIES AND CULTIVARS INCLUDING "RIO GRANDE" AND "RAYWOOD") Fraxinus	X						M-H
CHINESE PISTACHE Pistacia chinensis	X						L-M
VALLEY COTTONWOOD Populus fremontii **	X						H
IDAHO LOCUST Robinia idahoensis	X		X		X		M
ROSE LOCUST Robinia neomexicana	X	X	X		X		M
BLACK LOCUST Robinia pseudoacacia	X	X			X		M
GAMBEL'S OAK Quercus gambelii		X	X	X			M
SILVER BUFFALOBERRY Shepherdia argentia		X	X				M
JUJUBE Zizyphus jujuba	ltd	X	X	X			L-M
INCENSE CEDAR Calocedrus decurrens		X	X	X		X	M
LEYLAND CYPRESS Cupressocyparis leylandii		X				X	M
ARIZONA CYPRESS Cupressus arizonica		X				X	L-M
JUNIPER (NATIVE SPECIES AND CULTIVARS) **		X	X	X		X	L-M
PINYON Pinus edulis **		X	X	X		X	L-M

RECOMMENDED SHRUBS	SCREEN-WINDBREAK	ACCENT-EMPHASIS	MASS PLANTING	FLOWER	FOL-IAGE	EVER-GREEN	WATER USE
THREADLEAF SAGE Artemisia filifolia **			X		X		L
BIG LEAF SAGE Artemisia tridentata **		X	X		X	X	L
SALTBUSH Atriplex canescens **	X		X				L
DWARF COYOTEBUSH Baccharis pilularis			X		X	X	L
BIRD OF PARADISE Caesalpinia gilliesii	X	X	X	X	X		L
BLUE MIST Caryopteris clandonensis		X	X	X			L-M
WINTERFAT Ceratoides lanata **			X		X		L
FERNBUSH Chamaebatiaria millefolium		X	X	X	X		L
RABBITBUSH CHAMISA Chrysothamnus sp. **	X	X	X	X	X		L
COTONEASTER (SEVERAL WELL-ADAPTED SPECIES INCLUDING PARNEY'S, GRAYLEAF, "CORAL BEAUTY")	X	X	X	X	X		L
CLIFFROSE Cowania mexicana	X	X	X	X	X	X	M
BROOM DALEA Dalea scoparia			X	X			L
APACHE PLUME Fallugia paradoxa	X	X	X	X	X	X	L
*CLIFF FENDLERBUSH Fendlera rupicola	X	X	X	X			L-M
RED YUCCA Hesperaloe parviflora		X	X	X	X	X	L
JUNIPER (MANY VARIATIONS IN SIZE, FORM, COLOR)**	X	X	X		X	X	L-M
CREOSOTEBUSH Larrea tridentata	X	X	X		X	X	L
BEARGRASS Nolina microcarpa		X	X	X	X	X	L
PRICKLY PEAR/CHOLLA Opuntia species		X		X		X	L
*LITTLELEAF MOCKORANGE Philadelphus microphyllus	X	X	X	X			L-M
MEXICAN OREGANO Poliomentha incana		X	X	X	X	X	L
*SHRUBBY CINQUEFOIL Potentilla fruticosa			X	X			M
WESTERN SANDCHERRY Prunus besseyi		X	X	X	X		M
DWARF SMOOTH SUMAC Rhus glabra cismontana	X	X	X		X		M
THREELEAF SUMAC Rhus trilobata	X		X		X		L

RECOMMENDED SHRUBS (Continued)	SCREEN-WINDBREAK	ACCENT-EMPHASIS	MASS PLANTING	FLOWER	FOLIAGE	EVER-GREEN	WATER USE
PROSTRATE THREELEAF SUMAC Rhus trilobata prostrata			X		X		L
*GOLDEN CURRANT Ribes aureum	X		X	X	X		M
LADY BANK'S ROSE Rosa banksia lutea		X	X	X	X	X	M
AUSTRIAN COPPER ROSE Rosa foetida bicolor	X	X	X	X			M
PERSIAN YELLOW ROSE Rosa foetida Lutea	X	X	X	X			M
WOOD'S ROSE Rosa woodsii	X		X	X			L
DESERT SAGE Salvia dorrii		X	X	X	X	X	L
CHERRY/AUTUMN SAGE Salvia greggii		X	X	X			L
SANTOLINA S. chamaecyparissus and virens		X	X	X	X	X	L
SPANISH BROOM Spartium junceum	X	X	X	X		X	L-M
CHASTE TREE Vitex agnus castus	X	X	X	X	X		L-M
YUCCA/SPANISH DAGGER/DATIL Yucca species		X		X	X	X	L

FLOWERS/ANNUAL AND BIENNIAL	COLOR	BLOOM SEASON	HEIGHT	SPREAD	EVER-GREEN	WATER USE
DESERT MARIGOLD Baileya multiradiata	Y	SP-AU	18"	12"		L
CALIFORNIA POPPY Eschscholzia californica	O	SP-AU	12"	12"		L
GAZANIA Gazania rigens	OY	SU-AU	12"	12"		L
PHLOX HELIOTROPE Heliotropum convolvulaceum	W	SU-AU	10"	24"		L
PURPLE ASTER Machaeranthera bigelovii	PP	AU	36"	36"		L
TAHOKA DAISY Machaeranthera tanacetifolia	PP	AU-AU	18"	18"		L
MOSSROSE Portulaca hybrids	MX	SU-AU	6"	10"		L
SAND VERBENA Tripterocalyx wootonii	P	SP-AU	18"	36"		L
FLOWERS/PERENNIAL						
YARROW Achillea millefolium et al	WPY	SU	18"	24"	X	M-H
*GIANT HYSSOP Agastache cana	P	SU-AU	36"	36"		L-M
PUSSYTOES Antennaria parvifolia	WP	SP	10"	18"	X	L
FRINGE SAGE Artemisia frigida		SU	18"	24"	X	L
PRAIRIE SAGE ARtemisia ludovichiana		SU	24"	24"		L
BUTTERFLYWEED Asclepias tuberosa	O	SU	18"	12"		L-M
CHOCOLATE FLOWER Berlandiera lyrata	Y	SP-AU	18"	18"		L
SNOW IN SUMMER Cerastium tomentosum	W	SU	10"	12"	X	L
PURPLE ICEPLANT Delosperma cooperii	PP	SU	6"	24"		L
YELLOW ICEPLANT Delosperma nubigenum	Y	SU	3"	24"	X	L
WILD MARIGOLD Dyssodia papposa	Y	SP-AU	12"	12"	X	L
PURPLE CONEFLOWER Echinacea purpurea	P	SU	24"	12"		M
BLANKETFLOWER Gaillardia aristata hybrids	RY	SP-AU	24"	24"		L-M
BABIESBREATH Gypsophila paniculata	W	SU	24"	24"		L-M
CREEPING BABIES BREATH Gypsophila repens	WP	SP-SU	4"	18"		L
SUNROSE Helianthemum nummularium	WPY	SP-SU	12"	18"	X	L-M
BUSH MORNINGGLORY Ipomoea leptophylla	P	SU	36"	36"		L
TORCH LILY Kniphofia uvaria	YR	SU	36"	24"		L
GAYFEATHER Liatris punctata	PP	AU	18"	24"		L
BLUE FLAX Linum lewisii	B	SP	18"	18"		M
BLACKFOOT DAISY Melampodium leucanthemum	W	SP-AU	12"	12"		L
GIANT FOUR O'CLOCK Mirabilis multiflora	P	SP-AU	18"	36"		L-M
MEXICAN EVENING PRIMROSE Oenothera speciosa	P	SP	12"	24"		L
TUFTED EVENING PRIMROSE Oenothera caespitosa	W	SP-AU	12"	18"		L
BUSH PENSTEMON Penstemon ambiguus	P	SP-SU	24"	24"		L
FIRECRACKER PENSTEMON P. barbatus	R	SU	24"	12"		L-M
PINELEAF PENSTEMON P. pinifolius	R	SP-SU	10"	18"	X	L-M
DESERT PENSTEMON P. pseudospectabilis	P	SP	36"	36"	X	L
ROCKY MOUNTAIN PENSTEMON P. strictus	B	SU	18"	18"	X	L
PURPLE PRAIRIE CLOVER Petalostemon purpureum	P	SU	18"	24"		L
PAPERFLOWER Psilostrphe cooperii	Y	SP-AU	12"	18"		L
CONEFLOWER Ratibida columnaris	RY	SP-AU	18"	18"		L-M
BLACK EYED SUSAN Rudbeckia fulgida	Y	SU	24"	24"		M
PITCHER'S SAGE Salvia azurea grandiflora	B	SU-AU	36"	24"		L-M
SOAPWORT Saponaria ocymoides	P	SP	12"	24"		L-M
STONECROP Sedum telephium	RP	AU	12"	18"		L-M
SCARLET GLOBEMALLOW Sphaeralcea coccinea	R	SP-AU	12"	18"		L
SCARLET MINT Stachys coccinea	R	SU	18"	24"		M-H
LAMB'S EARS Stachys lanata	PP	SP	18"	18"		m
FLAME FLOWER Talinum species	P	SU	12"	12"		L
GERMANDER Teucrium chamaedrys	P	SU	12"	18"	X	M
VERBENA V. bipinnatafida and rigida	PP	SP-AU	12"	18"		L
DESERT ZINNIA Zinnia grandiflora	Y	SU-AU	4"	10"		L

NOTE: SIZES AND BLOOM TIMES ARE GREATLY EFFECTED BY AVAILABLE MOISTURE, SUNLIGHT AND EXPOSURE.

GRASSES **

WESTERN WHEAT Agropyron smithii
BLUE AVENA Avena sempervirens
SIDEOATS Bouteloua Curtipendula
BLUE GRAMA Bouteloua gracilis
BUFFALOGRASS Buchloe dactyloides
BLUE SHEEP FESCUE Festuca ovina glauca
GALLETA Hilaria jamesii
INDIAN RICEGRASS Oryzopsis hymenoides
LITTLE BLUESTEM Schizachyrium scoparium
ALKALI SACATON Sporobolis airoides

Plant list courtesy of Judith Phillips, author of Southwestern Lanscaping with Native Plants, Museum of New Mexico Press.

Tamarisk, though not recommended on this plant list, is a potential accent plant for the area east of Golf Course Road and outside of the Rio Grande Bosque State Park, for the purposes of this plan.

APPENDIX B

Albuquerque Planning Department/Planning Division

TRAIL DESIGN STANDARDS AND OBJECTIVES

PURPOSE

The purpose of these standards is to identify ideal right-of-way conditions and establish design consistency for off-road recreational trails. The guidelines were developed by the Albuquerque Planning Department/Planning Division based on interviews with other cities and advice from local citizen groups and technical staff.

OBJECTIVES

The trail standards represent a range of acceptable design solutions. Objectives are included here to aid in determining the appropriate standard to apply.

I. Landscaping/Buffers

Landscaped buffers along trail corridors address the following objectives:

1. To prevent accidental falls into an arroyo or drainageway by establishing adequate spatial separation as a more aesthetic alternative to constructing a barrier adjacent to the channel.
2. To provide spatial separation from traffic lanes.
3. To limit potential user conflicts by providing adequate spatial separation between trails.
4. To limit trail maintenance by:
   a. generally relying on revegetation with native or naturalized plant species that do not require irrigation to maintain.
   b. concentrating intensive (irrigated and/or mowed) landscaping in a limited number of nodal parks .
5. To provide shaded rest areas, seasonal color and visual diversity.
6. To soften the visual impact of hard surfaces — such as paved trails, drainage channels, walls and buildings.
7. To soften the linear character of the corridor by providing clusters of trees and shrubs.
8. To provide screening for parking and service areas.
9. To provide privacy screening for adjacent residential development.
10. To prevent erosion.
11. To provide wildlife habitat.

II. Trails in Urban Areas

Trail segments through urban areas will meet the following general objectives:

1. To provide an off-road, recreational trail system incorporating native landscaping, small parks and trail-related amenities along drainage rights-of-way, linking urban areas with peripheral open space.

2. To provide an alternative to use of the private automobile within the urban area by linking activity centers (such as retail, employment and institutional uses) with residential development.

3. To accommodate a variety of user groups — including the commuter cyclist — and a heavy volume of trail traffic.

4. To provide accessible outdoor recreation to a variety of user groups, including the very young, the elderly and the handicapped.

5. To complement adjacent urban development through the use of color, materials and landscaping.

6. To provide a sense of enclosure, safety, and human scale in the urban area through landscaping and architectural elements.

III. Trails in Open Space and Rural Areas

Trail segments in open space and rural areas will meet the following general objectives:

1. To provide controlled, limited access to rural areas and to nature and open space preserves.

2. To accommodate primarily recreational users, including equestrians, where desirable.

3. To incorporate educational/interpretive elements and identify cultural and natural features found along the trail.

4. To prevent adverse environmental impacts and maximize the contrast with urban development by minimizing trail widths, paved surfaces, and initial disturbance to topsoil and vegetation.

5. To preserve a sense of openness through selection of landscaping and architectural elements that blend visually with surrounding open space.

Summary

Trails located in urban areas will choose from the higher end of the ranges proposed regarding trail width and surface durability due to the anticipated number and diversity of users. In contrast, trail design in open space areas will draw from the lower range of trail width, minimize paved surfaces, and accomodate equestrian users where deemed appropriate.

Trails for commuter bicycle traffic will generally provide hard, durable surfaces, straighter alignments, wider trails and fewer rest stops. Trails designed to accomodate recreational users will provide for slower speeds, a greater number of educational/interpretive elements, shade, rest areas and landscaping to add visual interest and variety.

Landscape maintenance will be limited through the design of nodal parks and use of native and naturalized plants.

TRAIL DESIGN GUIDELINES

PEDESTRIAN ONLY

1.	Trail Width	1.	3'-6'
2.	Ideal Grade	2.	≤ 5%
3.	Maximum Sustained Grade	3.	8-10%
4.	Maximum Grade, Short Distance	4.	≤ 15%
5.	Vertical Clearance	5.	8-9'
6.	Horizontal Clearance	6.	0'
7.	Surface Requirements	7.	dirt, compacted surfaces, paved surfaces optional
8.	Separation from other trails	8.	optional
9.	Separation from bank edge*	9.	≥ 10' preferred — varies with edge conditions, use of railings.
10.	Separation from walls and buildings	10.	10'-15' recommended for privacy and landscaping
11.	Separation from streets**	11 .a.	6'-12' preferred, or
		.b.	raised curb and sidewalk
12.	Location in relation to floodplain	12.	Where the prudent line arroyo treatment is used, the trail maybe located within the prudent line, but outside of the 100 year floodplain, except at road crossings. See The Road Crossings section of these Trail Standards.

KEY

≤ "less than, or equal to"

≥ "greater than, or equal to"

* Source: A 10' safety buffer has been used in the design of Wildflower Park to prevent accidental falls into the drainage channel. 10' accommodates a typical landscaping equipment. Trails could meander within the standard right-of-way, if so desired.

** The Development Process Manual recommends a 12' buffer between curb and sidewalk on major arterials. 6' is adequate on less heavily traveled streets. A raised curb and sidewalk provides minimal separation where limited right-of-way is available.

JOGGING TRAILS*

1.a.	Trail Width	1.a. 9'-12' (9' allows 3 pedestrian lanes, i.e. - jogging in pairs with ability to pass)
b.	cross-pitch	b. 2-3% preferred, 4% maximum
2.	Ideal Grade	2. ≤ 5%
3.	Maximum Sustained Grade	3. 8-10%
4.	Maximum Grade, Short Distance	4. ≤ 15%
5.	Vertical clearance	5. 8-9'
6.	Horizontal clearance	6. 0'
7.	Surface Requirements	7. unpaved: ground bark or wood chips over crushed rock base
8.	Separation from bank edge, walls, streets, buildings and floodplain	8. See Pedestrian Standards
9.	Other	9.a. Must be well drained, side ditches recommended
		b. Provide signed and measured distances. Recommend: 1500 meters, 440 yards, 1/2 mile, 1 mile
		c. avoid cross traffic, especially bicycles and cars
		d. provide stretching stations at beginning points, i.e. a wood rail (4"x 4" x 8" orig.) set horizontally at 30" above grade

* Source: City of Eugene, Oregon, Parks and Recreation Planning Development Division, 210 Cheshire Street, Eugene, Oregon 9740.

BIKE ONLY

1. Trail Width (two-way traffic)	1.a. 8'-10' paved width b. 1'-1.5' shoulders
2. Ideal Grade	2. $\leq$ 3%
3. Maximum Sustained Grade	3. 6-10%
4. Maximum grade for less than 50 yds.	4. $\leq$ 15%
5. Vertical Clearance	5. 8'-12'
6. Horizontal Clearance	6. 1.5'-3'
7. Surface Requirements	7. porous asphalt* and soil cement, compacted surfaces
8. Separation from other trails	8. 3' buffer with minimum 3'6" high railing, or 6' landscaping, or use opposite sides of a channel
a. equestrians b. pedestrians/handicapped	a. separate trails required b. separation preferred on high-speed bike trails
9. Recommended Turning Radius (to reduce speeds to 10 mph for joint- use sections)	9. 15'-20'
10. Separation from bank edge, walls, buildings, streets and floodplain.	10. See Pedestrian Standards

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* Porous pavement is specifically listed here in order to avoid drainage and erosion problems associated with paved surfaces. The issue is especially pertinent to drainage corridors. The New Mexico State Highway Department routinely installs porous pavement in new construction. See US Environmental Protection Agency report #600-2-80-135, "Porous Pavement Phase One, Design and Operational Criteria", by Elvidio Dineez. Contact the EPA, Municipal Environmental Research Laboratory, Cincinnati, Ohio, for copies of the report.

MOUNTAIN BIKES

1.	Trail Width	1. 3'-4'
2.	Ideal Grade	2. $\leq$ 10%
3.	Maximum Sustained Grade	3. 20-30%
4.	Maximum Grade for Less than 50 Yds.	4.a. $\leq$ 45%
5.	Vertical Clearance	5. $\geq$ 7'
6.	Horizontal Clearance	6. $\geq$ 3'
7.	Surface Requirements	7. unpaved
8.	Separation from Other Trails	8. not required
9.	Separation from bank edge, walls, streets, buildings and floodplain	9. See Pedestrian Standards

HANDICAPPED ACCESSIBLE DESIGN*

1. Trail Width	1.a. One-way -- 3' minimum b. Two-way -- 5'4" - 6' minimum c. 1' - 1.5' shoulders d. level passing bay/landing every 200' (5'x5') e. level landing needed at the top of curb ramp
2. Ideal Grade	2. 0-2%
3. Maximum Sustained Grade Distance	3. $\leq 5\%$
4. Cross grade	4. $\leq 2\%$
5. Ramps (Grades, short distance)	5. $\leq 8\%$ for maximum rise of 30"
6. Vertical Clearance	6. $\geq 9'$ preferred, 6'8" minimum
7. Horizontal Clearance	7. $\geq 3'$
8. Surface Requirements	8. Stable, firm and nonslip in all weather (concrete asphalt, etc) free of any openings larger than 1/2"
9. Separation from other trails	
a. pedestrians b. bikes/equestrians	9.a. none b. preferred - see Bike and Equestrian Standards
10. Separation from bank edge, walls, streets, buildings and floodplain	10. See Pedestrian Standards

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* These standards were compiled from the American National Standards Institute, Inc., (ANSI-A117.1-1986) with advice from the Governor's Committee on Concerns of the Handicapped. Some people with physical disabilities may be able to use trails with less ideal conditions if they are forewarned about the level of difficulty they may encounter. Additional recommendations can be found on pages B-19 and B-20.

EQUESTRIAN *

1.	Trail Width	1. 5'-8' (18"-30" tread width in the center of a 5' clear trail)
2.	Ideal Grade	2. ≤ 5%
3.	Maximum Sustained Grade	3. 8-10%
4.	Maximum Grade, short distance	4. ≤ 15%
5.	Vertical Clearance	5. 10'-12'
6.	Horizontal Clearance	6. see item 1 above
7.	Surface Requirements	7. dirt, crushed aggregate, bark, gravel, oil coat
8.	Separation from other trails	
	a. Pedestrian:	8.a. optional
	b. Bike and handicapped	b. 3' buffer with minimum 3'6" high fencing, 6' landscaping, or opposite sides of a channel
	c. All:	c. Trails may converge for distances up to 1/4 mile where inadequate right-of-way exists for separation
9.	Separation from parallel street*	
	a. Local street	9.a. 4' from driving lane
	b. Collector	b. Without barrier - min. 9' from shoulder
	c. Arterials	c. Without barrier - min. 15' from shoulder
	d. 6-8 lane expressways	d. Without barrier - 25' from shoulder
	e. All	e. Where multiple trails are parallel to the roadway, equestrians should be farthest from traffic

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* Recommended by Horseways, Inc., a local equestrian organization, based on interviews with other cities. For more detailed design of trails and structures see A Trail Manual for the East Bay Regional Park District. Prepared by Jana Olson and Hanson Hom. October 5, 1976; and Bikeways and Horse Trails, Section 8, Design Procedures and Criteria, City of Scottsdale, Arizona, Revised July 1985, City of Scottsdale Community Development Department. Loan copies available from the Planning library.

EQUESTRIAN (Continued)

10.	Suggested Fencing/Barriers	
	a. Other trails	10.a. minimum 3'6"high post and rail fence
	b. Streets	b. minimum 3'6"high post and rail fence or concrete "jersey" barrier
	c. All	c. no barbed wire or sharp edges on guard rails
11.	Terrace Steps Up Slopes	11. Railroad ties w/ 3'-4' minimum tread width, 3' minimum depth, 16" maximum height
12.	Separation from bank edge, walls and buildings	12. $\geq$ 10' preferred
13.	Separation from floodplain.	13. See Pedestrian Standards.

LANDSCAPING

1. Native Grasses Buffer Strip	1. ≥ 10' width typical, 20' optimum for establishing plant community
2. Width of Area for Tree Planting:	2.a. 15' for individual trees or a row of trees; provides for adequate crown space for native species. b. 30'-40' for tree clusters. c. maintain ≥ 4' distance from trails, walls — for root space
3. Width of Area for Screening Hedge	3. 10'-20'
4. Nodal Parks	4.a. Prefer 3 acre minimum if turfed b. In parks < 3 acres in size, use irrigated groundcovers (other than turf and native

landscaping) that do not require mowing

SHARED TRAILS

BICYCLE/PEDESTRIAN SHARED

1.	Trail Width	1.a. 10'-12' paved b. 1'-1.5' shoulders
2.	Ideal Grade	2. ≤ 5%
3.	Maximum Sustained Grade	3. 8-10%
4.	Maximum grade for less than 50 yds	4. ≤ 15%
5.	Vertical Clearance	5. 8'-12'
6.	Horizontal Clearance	6. 1.5'-3'
7.	Surface Requirements	7. asphalt, soil cement, concrete, compacted surfaces
8.	Design Speed for bikes	8. 10-15 mph maximum
9.	Recommended Turning Radius (To limit speeds to 10mph design speed)	9. 15'-20'
10.	Other	10. may stripe at curves, use rough paving to slow down bikes. Signage should indicate faster traffic passes on the left and yields to slower traffic
11.	Separation from bank edge, walls, streets buildings and floodplain	11. ≥ 10' preferred. See Pedestrian Standards

OTHER SHARED TRAILS

1. BICYCLE/HANDICAPPED SHARED

   Design to Handicapped Standards, with at least 12' pavement width and signage to indicate bikes must yield to slower traffic and pass on the left.

2. PEDESTRIAN/HANDICAPPED SHARED

   Design to Handicapped Standards.

3. BICYCLE/EQUESTRIAN SHARED

   Except for short distances, these users should not share the same trail.

4. EQUESTRIAN/PEDESTRIAN SHARED

   These users may share the same trail designed to Equestrian Standards.

5. EQUESTRIAN/HANDICAPPED SHARED

   Except for short distances, these users should not share the same trail.

ROAD CROSSINGS

Pedestrians, bikes, and equestrians may converge at road crossings. All trail crossings should offer an unobstructed view of oncoming vehicular and trail traffic.

Trail users will be of all ages and physical abilities. Therefore, a major objective is to provide safe, convenient road crossings that will minimize the trail user's exposure to vehicular traffic. Grade-separated or signalized crossings are preferred for arterial streets. Mid-block at-grade crossings are adequate for collector streets, although signalized crossings are preferred. Unsignalized crossings are more appropriate for local streets which are planned to carry considerably less traffic at slower speeds.

I. ARTERIALS

A. AT GRADE CROSSINGS are most feasible when a signalized intersection is located within 300'* of the trail, or when a signalized, mid-block crossing can be provided. Unsignalized mid-block crossings are the least desirable option for recreational trails.

1.	Minimum Crossing Width	1. 12'-15' (if shared with equestrians) with curb ramps, tactile warnings
2.	Surface Treatment	2. textured pavement or other non-slip surfacing for equestrians
3.	Waiting Bay for equestrians	3. 20' x 10' with 10' setback from road
4.	Hand Activated Signals	4. 6' for equestrians, 4' for handicapped
5.	Separation of Uses	5. all trail uses may be combined at crossing
6.	Median Holding Zone	6. $\geq$ 10'; 20' median width preferred, with curb ramps and tactile warnings. Note that "holding" equestrians in median is undesirable from a safety standpoint

* 300' is based on walking distance and is the length of a typical City block in the downtown area. Up to 600' is considered reasonable by the State of Wisconsin/Highway Department.

I. ARTERIALS (Continued)

B. BELOW GRADE CROSSINGS: are the preferred crossing for convenience and safety reasons, where there is a sufficient clearance. Bridges are preferable to culverts, since they provide greater visibility and aesthetic quality.

1.	Trail Width	1. 9'-14'
2.	Surface	2. Trail Standards. For equestrians, consider dirt, pea gravel, wood, roughened concrete — in order of priority
3.	Grade	3. Trail Standards
4.	Trail Location (re-floodway)	4. Paved trails should be located outside the 10 year floodway; locating all trails outside of the 100 year floodway is optimum; however, if necessary, paved trails may be loca- ted up to the 2 year floodway
5.	Culverts or Tunnels	
	a. Optimum clearance/max. length*	a. ≥ 9'4"w x 13'3"h /156' length with median opening for daylight (height provides clearance for equestrians, length is suitable for 4 lane road)
		b. 8'w x 8'h/156' (height is suitable for bikes, pedestrians and handicapped uses), with median opening for daylight
6.	Bridges	6. Use vertical clearance standards based on trail use. Length should be minimized, ≤ 250' preferred.

* Culvert size recommended by the Open Space Task Force to accommodate equestrians. Compares favorably with the standard (10'hx12'w) from the City of Scottsdale, Arizona. The 8'x8' culvert dimension is based on field inspection by the Planning Division, and is also recommended by the State of Wisconsin/Highway Department. Median openings should be used to provide daylight to culverts in excess of 156' in height.

I. ARTERIALS (Continued)

C. ABOVE-GRADE CROSSINGS

Past experience in Albuquerque indicates that above-grade structures tend to be used less than at-grade crossings, unless traffic volumes exceed 20,000 vehicles per day with speeds of 35 mph or greater.

CROSSING STRUCTURES

1.	Trail Width	1. $\geq$ 10'
2.	Grade	2. See applicable Trail Standards
3.	Surface	3. Textured concrete or wood, non-slip surfacing
4.	Side Treatment	4. For equestrians: solid-sided barrier along bottom 3', chain link or similar fencing up to 6'-8' total height
5.	Separation of Uses	5. See River Crossings, below, however not recommended for handicapped or equestrian uses if other crossings can be provided
6.	Structure Width	6. 20' is typical
7.	Roadway Clearance	7. 17'-22'
8.	Intersection Clearance	8. Locate outside of "clearsight triangle" as defined by Zoning Code

RIVER CROSSINGS

Totally separate bridges for non-motorized traffic are preferred per the Development Process Manual.

1.	Trail Width	1. 10'-12' (with equestrians)
2.	Grade	2. trail standards
3.	Surface	3. textured concrete or other non- slip surfacing
4.	Side Treatment	4. For equestrians: solid-sided barrier along bottom 3', chain link or similar fencing up to 6'-8' total height
5.	Separation of Uses	5. Post YIELD TO SLOWER TRAFFIC signs for trail users. Separate equestrians from bikes with railings or fences $\geq$ 3'-6" high. Separate trails from vehicular traffic with similar railings

II. LOCAL AND COLLECTOR STREETS

At-Grade crossings are feasible either at mid-block or at intersections. Signalized crossings are preferred for Collector Streets.

At Grade

1.	Minimum Crossing Width	1.	12'-15' (with equestrians)
2.	Surface Treatment	2.	Textured pavement or other non-slip surfacing for equestrians
3.	Waiting Bay	3.	Flared trail width at street
4.	Hand Activated Signals	4.	6' for equestrians, 4' for handicapped
5.	Separation of Uses	5.	Use YIELD TO SLOWER TRAFFIC signage
6.	Median Holding Zone	6.	$\geq$10', with 20' median width preferred, and curb ramps with tactile warnings for handicap accessibility

ADDITIONAL HANDICAPPED STANDARDS

1.	Shelter and Seating:	Every 1/8 mile
2.	Accessibility:	Using standards on page 9, ensure access to and from adjacent parking lots, streets and sidewalks, and public facilities such as restrooms and drinking fountains.
3.	Parking Areas:	Refer to Albuquerque Comprehensive Zoning Code. Section 40.A for more detail
	Lot Cross Slope:	2% or 1:50 maximum
	Handicap Accessible Spaces:	One space for every 25 total spaces (preferably one van and one car space per every 25 spaces or less). - 12'6" wide or 8'6" wide with a 5' aisle, 24' long Place sign and ground graphics at each accessible space.
4.	Restrooms, Drinking Fountains and Park Furniture:	Refer to ANSI handicap accessibil ity standards.
5.	Vegetation:	Avoid thorny plants next to trail. Select plants with a variety of textures and fragrances.
6.	Signage:	Braille and incised sign surfaces with simple, bold typefaces and symbols. Sharp color contrast. Texture trail surface to indicate the presence of a sign. Either shade braille signs or spray with swimming pool decking surface to keep cool. (Refer to ANSI standards for more detail)
7.	Railings:	30 - 34" above ground level with a

	second lower rail 24" above ground level for children - must be continuous, nonabrasive, and stable. - Ramps 6' long that rise 6" or more (1:10 slope) should have 2 handrails. - Handrails should extend 12" beyond the top and bottom of ramps.
8. Curb Ramps:	36" wide, $\leq$ 1:12 or 8% grade, tactile warnings (see item 10)
9. Visual Cues	Change color and texture of path at changes in slope
10. Tactile Warnings (for the visually impaired)	Insert raised strips or grooves and change of color on the trail surface 48" before change in grade or other hazards.

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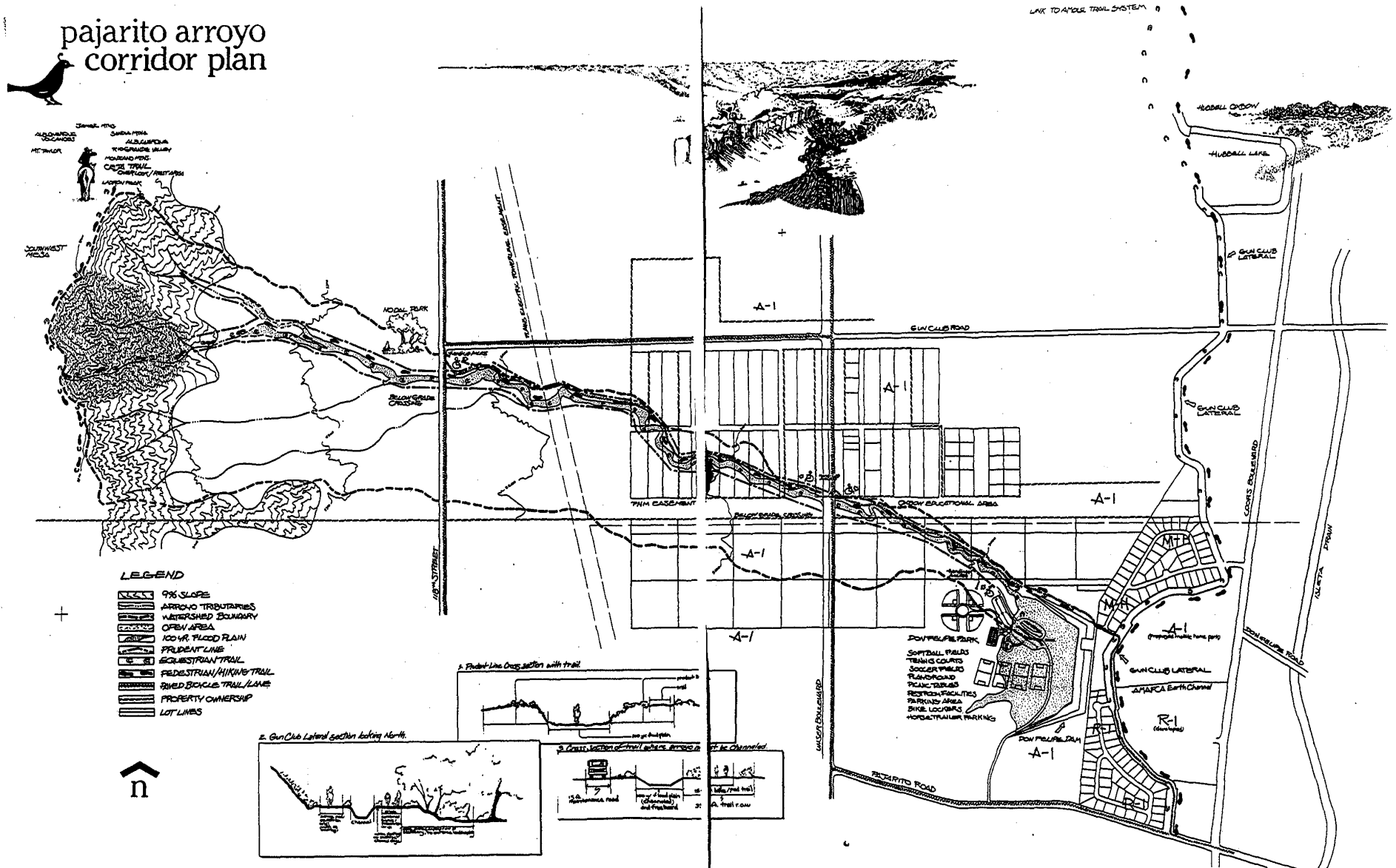
The Planning Division gathered information from the following cities and states to establish a common range of trail widths, grades, clearances, road crossing and landscaping requirements.

Scottsdale, Arizona
Tucson, Arizona
Davis, California
Monterey, California
San Diego, California
Boulder, Colorado
Fort Collins, Colorado
Minneapolis, Minnesota
Santa Fe, New Mexico
Eugene, Oregon
State of California, Bay Area Rapid Transit System
State of California, East Bay Regional Park District
State of Oregon, Highway Department
State of Wisconsin, Governor's Office of Highway Safety

pajarito arroyo corridor plan



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