

**SANTA CRUZ RIVERPARK  
MASTERPLAN UPDATE**  
CITY of TUCSON, ARIZONA

The original Santa Cruz Riverpark Masterplan published in 1976 was prepared by Guy S. Greene & Associates.

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# INTRODUCTION

The Masterplan for the Santa Cruz Riverpark in the City of Tucson was published in 1976. The plan provided an inspiration for transforming a neglected 13-mile river channel into a visual and recreational amenity. It was a plan of vision, setting forth broad land use proposals for lands adjacent to the park and exploring the potential water resources necessary for providing a greenpark in the desert. In 1978, the City Council adopted a set of Santa Cruz Riverpark policies to guide future park development.

In 1978, Tucson and Pima County published *Parks, Recreation and Open Space: A Conceptual Plan*, citing the Santa Cruz Riverpark as a major element of the Open Space program. Acquisition and development of the park was given #1 priority in the capital improvement program budget for special facilities through 1985.

In the six years since the original plan, many changes have occurred. While the City of Tucson has acquired much of the land for the Riverpark, some of the adjacent residential, commercial and industrial uses proposed in 1976 have developed differently. Most significantly, greater amounts of industrial land have been developed adjacent to the Riverpark. River channel stabilization has occurred and public attitude in favor of water conservation has emerged.

Two projects within the Riverpark have been designed and implemented. Phase I and Phase II development took place in 1978 and

1979 respectively. A third area of Riverpark, associated with the Rio Nuevo Redevelopment Project, was constructed during the preparation of this Masterplan Update.

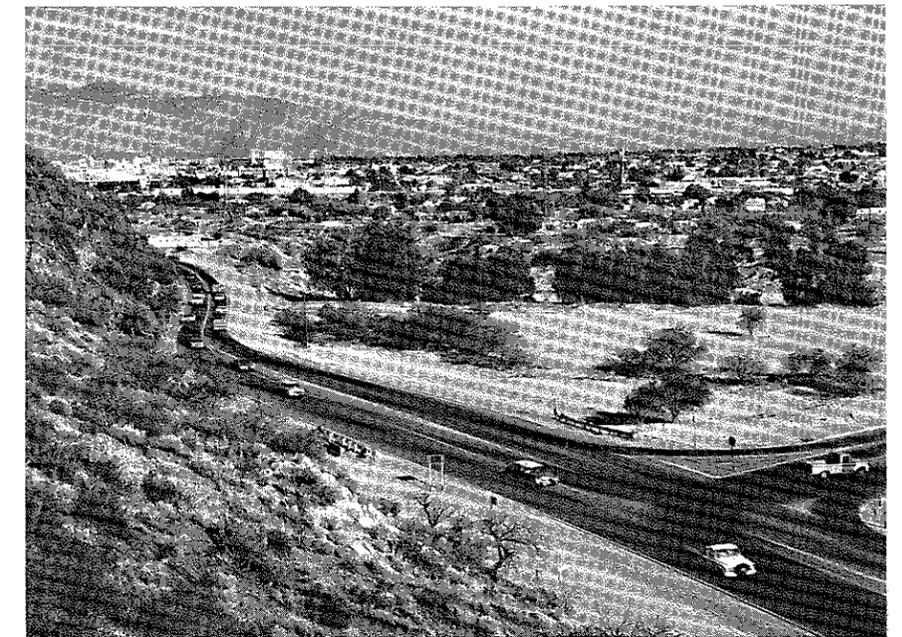
This Masterplan Update reaffirms the concept of the Riverpark and leads the planning efforts to a more detailed program level for further action and implementation. The update delineates the changes which have taken place since 1976 and addresses their implications on the park. Established Riverpark boundaries, a definitive and multi-modal circulation system, a water resource program, site-specific park program elements, and design guidelines for repetitive park features are major products of this update. Specific recommendations necessary to direct and achieve park goals are another feature of this update.

The plan update is consistent with expressed community recreational needs as delineated in the 1978 *Parks, Recreation and Open Space* plan. Specifically the park program and park development are related to existing and proposed adjacent land uses.

The purpose of the Santa Cruz Riverpark Masterplan Update is to define and recommend site-specific opportunities for the Santa Cruz Riverpark to the degree of detail that can be achieved in a masterplanning process. The generation of public interest and support is essential to the ultimate success of the Riverpark, and the ideas, concepts and program elements contained in this plan can serve to focus enthusiasm for the plan.



1904: Confluence of West Branch and the Santa Cruz River; lush vegetation.



1981: Mission Road and 22nd Street; sparse vegetation and encroaching development.

Views of the Santa Cruz River Valley from same site, looking northeast from Sentinel Peak mountain.

## Santa Cruz Riverpark Goals

The overall goal of the Santa Cruz Riverpark is to return integrity to the Santa Cruz River. The transformation of the river into a recreational and cultural amenity will be coordinated with other programs to renew confidence in the Central Business District and will serve as a strong impetus for private investment both within and adjacent to the park boundaries. The Riverpark will have a profound impact on its immediate area, serving as a prime recreational resource for nearby residents and workers. Amenities provided by the park will include attractions to serve and entertain the highway traveler and Tucson visitor.

The Riverpark will respond to its historic roots, incorporating and emphasizing the role of the river in the historic continuum of Tucson's development. Cultural diversities of the community will be reflected within the Riverpark and the park will relate to adjoining residential neighborhoods.

The Riverpark will be a visual attraction, preserving open space and providing green oasis areas. Physical and psychological comfort will be achieved through grassy fields, ponds with vegetated edges and an overhead green canopy. The park will serve as a model for wildlife

habitat enhancement without tapping groundwater supplies. Design and development of facilities and natural habitats in the Riverpark will reflect sound ecological principles, providing for human needs in equilibrium with nature and technology.

The Riverpark will be an identity element for Tucson, a park in the heart of the community, strongly tied to the Central Business District. It will have a regional context due to its proximity to interstate highways. It will create an interconnected system of major nodes and destination points which provide a diversity of recreational experiences. Most of all, it will offer a 13-mile linear park experience for the pedestrian, the bicyclist and the horseback rider.

The Masterplan Update is based on the following specific assumptions, constraints and limitations:

- The Masterplan is conceived as a continuous process, subject to adjustment and revision, review and re-evaluation. Neither the process nor the products of the plan are finite, and changes will be necessary and advisable as new inputs, opportunities and data change.
- The plan assumes that basic demand, especially regarding program-oriented facilities, can be determined only on a current basis. Predictions for future popular recreation activities necessitat-

ing specific facilities must be reviewed and established at the time of implementation.

- Park boundaries have been determined largely by the Parks and Recreation Department and the City of Tucson Real Estate Division. With few exceptions, they have been assumed as finite.
- The entire Santa Cruz River channel will be stabilized for flood protection and erosion control.
- Population growth in Pima County will continue at approximately the current rate.
- Rio Nuevo, Phases I and II, and Silverbell Regional Park have been planned in separate consultant studies.
- Plans have been based on available flood control and channel engineering information. Detailed engineering studies as well as funding, implementation strategy and citizen participation will occur in future site-specific design development.
- Certain visual constraints, such as Tucson Electric Power transmission poles and lines, billboards, and landfill exist throughout the park and will have to be dealt with during site-specific design.
- Site-specific detailed inventories, design, and habitat re-creation studies for Riverpark planning units will follow and be guided by the recommendations of this Masterplan.
- The problems of Riverpark security and vandalism already exist and appropriate measures as recommended in this Masterplan Update should be adopted at the earliest convenient time.



# LAND USE

The 1976 park plan focused on broad proposals for use and development of land adjacent to the Santa Cruz River channel. At that time, park boundaries were not yet established, and much of the land was uncommitted for designated development.

The setting has changed dramatically in the 6-year interim. The Riverpark boundaries have been largely determined by City acquisition of Riverpark land and by the development or rezoning of land adjacent to the park. Many of these present land uses represent changes from the proposals of the early plan. More extensive areas of industrial development have replaced significant portions of land designated for open space and recreation in 1976.

## Major Land Changes

1. **Santa Cruz Business Park: Land Use Change — Residential to Industrial.** The 1976 plan map designated low-density residential land use on the channel's east side from Valencia Road to Drexel Road. Since then, the area has been zoned industrial and partially developed as part of the Santa Cruz Business Park. This will result in different recreational requirements of adjacent users.
2. **Midvale Park Residential Community.** The 1976 plan designated the west bank area between Valencia Road and Irvington Road as unclassified. Since then, the Estes Corporation has developed a plan and received approval for a large 1300-acre mixed density residential community with a future population of up to 20,000 residents. The Riverpark will be a significant adjacent recreation resource.



*Santa Cruz Business Park, a new industrial park development between Interstate 19 and the Santa Cruz.*

3. **Well Field Site.** The 1976 plan designated the City-owned land north of Irvington Road for water-oriented recreation. While the need to preserve this open space area still remains, this site today provides a good location for a southern terminus to the Riverpark Equestrian System.
4. **Commercial Rezoning at Ajo Way and West Bank of the Santa Cruz.** Adjacent to the channel on the west bank, south of Ajo Way, a large site has been rezoned from residential to commercial and may provide an opportunity for Riverpark-related parking.
5. **New Golf Course North of Ajo Way.** The 1976 plan called for a new golf course to replace El Rio Golf Course, which was designated as housing. Changes in water attitudes as well as significant private and public golf course development since 1976 have made this original recommendation obsolete today. The large tract of open space can contribute to other more needed recreation components.
6. **Industrial Zoning South of Silverlake Road.** South of Silverlake Road at 34th Street a large tract of land has been rezoned for industrial uses, and may provide for an access road into the proposed Amphitheatre Greenpark.
7. **Mission Road — Mission Lane Park Site.** The 1976 Masterplan, and a subsequent site plan prepared in 1980, proposed recreation and open space development for this area southwest of Mission Road and Mission Lane. There is a greater opportunity today to develop this site with a stronger historic orientation, including a staging area for the annual Rodeo Parade.
8. **Rio Nuevo Development.** Since 1976, the large area of urban infill housing proposed on the west bank of the channel, north and south of Congress Street, has developed as the Rio Nuevo Rede-



*Channelization, Riverpark trails and construction for the Rio Nuevo Redevelopment Project, south of Drexel Road, near St Mary's Road.*

velopment Project. In 1982 the Rio Nuevo plan was refined and approved and is presently being implemented, including a one-mile stretch of the Riverpark.

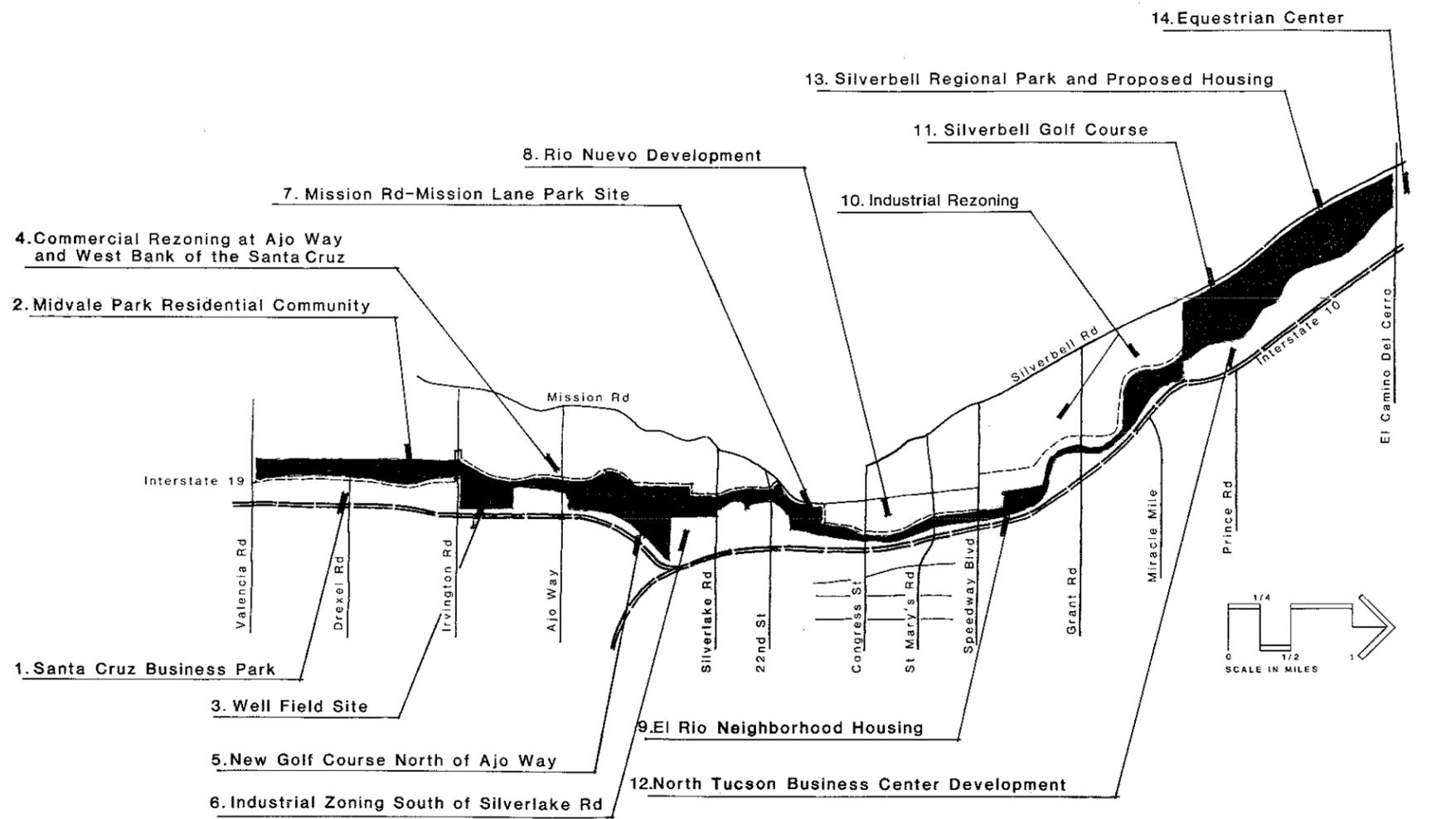
9. **El Rio Neighborhood Housing.** The 1976 plan indicated housing development on the west bank site north of Speedway, which has since been developed for recreation as Phase II of the Riverpark.
10. **Industrial Rezoning Adjacent to Silverbell Road.** Two large land parcels west of the Riverpark have been rezoned from housing, as designated in the 1976 plan, to industrial use. The rezoning of these parcels, one south of Grant Road and the other south of the Police Academy, although not adjacent to the Riverpark boundary, will result in a different potential user of the park facilities.
11. **Silverbell Golf Course.** Since 1976, the proposed Silverbell Golf Course has been completed on the west side of the channel, but only to 18 of the projected 36 holes.

12. **North Tucson Business Center Development.** A substantial area of proposed Riverpark open space on the east side of the channel, north of Prince Road across from Silverbell Golf Course, has now become an industrial park. This affects Riverpark development in terms of a loss of open space and a change in adjacent user requirements.
13. **Silverbell Regional Park and Proposed Housing.** The 1976 plan proposed housing on almost one-half of the 350-acre site presently being planned as Silverbell Regional Park. With the loss of large areas of open space since 1976, there is a current commitment to retain the site for recreation.
14. **Equestrian Center.** A large site has been designated for a major equestrian center development north of Camino del Cerro, providing an equestrian magnet at the northern terminus of the Riverpark.

The land use objectives in the Riverpark Masterplan Update respond to the current specific park boundaries, present natural and historic resources of the park site, and to the mix of adjacent land uses, existing and proposed. For example, where the adjacent land anticipates a large residential population, a regional recreation program is planned; when the park separates potentially conflicting land uses, such as residential and industrial, the park becomes a buffer. Easy highway access to a Riverpark unit creates potential for a large-scale public attraction. Equestrian facilities fit into park areas with access to regional equestrian trails. A farmer's marketplace is recommended as a future development on the existing University of Arizona Farm. In all cases, a suitable park plan and recreation program are a direct response to the existing land resources or land uses. The Santa Cruz Riverpark will become a 12-mile cohesive linear series of experiences related to the internal and adjacent land use context.

## Recommendations

- Reserve land adjacent to existing and proposed housing for park use.
- Interface proposed park land use with neighborhood plans, transportation plans and other inner-city revitalization projects.
- Prevent further channel encroachment by requiring a 30' to 60' park dedication contingency when zoning changes, development plans or building permits are granted for private development which abuts the channel.
- Reflect surrounding land uses in park program and facilities, providing recreational amenities for adjacent residents and workers.
- Respond to natural and historic land use opportunities and to existing circulation systems.
- Develop park land in conjunction with adjacent land development.
- Design and locate park facilities in compliance with State regulations and statutes regarding flood plains and 100-year frequency storms.
- Finalize the Riverpark boundaries through acquisition and use agreements.



**LAND USE CHANGES SINCE 1976**

# CIRCULATION

The circulation system of the Santa Cruz Riverpark will provide access to the park and its attractions, with separate internal pathways for recreational enjoyment and connections to Riverpark elements. The central spine of the park is the Riverpark Trail which will run its entire length and be used for walking, hiking, jogging and horseback riding.

The 1976 Riverpark Masterplan included a conceptual trail layout with linkages to other parks and points of interest. Riverpark Drive was planned traversing the length of the Riverpark. More specifically, the 1976 Plan advocated linkages to the Central Business District with design solutions to mitigate the barrier effect of the freeway. The Congress Street bridge was viewed as a primary gateway, widened to accommodate pedestrian, bicycle and vehicular access to the Riverpark.

Several changes have occurred since 1976 affecting circulation aspects of the Riverpark Drive, access into the Riverpark, parking and pedestrian links:

- **Riverpark Drive.** Drexel Road Extension to Irvington Road. The 1976 Plan designated a Riverpark Drive connection from Drexel Road extension to Irvington Road. With the proposal for the Midvale Park residential community and the decision not to extend Drexel Road across the river, the Riverpark Drive may be located more appropriately on the east side of the river channel separating the industrial development from the Riverpark.
- **Irvington Road Bridge.** Construction of the Irvington Road Bridge has been completed, providing an opportunity for major vehicular access to the Riverpark and to the Riverpark Drive.
- **22nd Street Extension.** Since 1976, 22nd Street has been extended across the river allowing a major arterial connection to the Riverpark.
- **Community Center Parking and Development along Congress Street.** An extensive parking area has been developed west of the Community Center allowing multiple use parking for Riverpark users and pedestrian access through the old Butterfield Underpass.
- **Pedestrian Link to Rio Nuevo.** A pedestrian link is planned from the Rio Nuevo development to the Public Health Center which serves this neighborhood. This pedestrian pathway will also provide a link to existing neighborhoods.

The general circulation proposals of the 1976 Plan are valid today. The current Riverpark objectives maintain the circulation system as the core facility of the park design, with vehicular, bicycle, pedestrian and equestrian pathways offering the pleasure of separated, continuous routes throughout the Riverpark.

The 1977 *Tucson/Pima County Recreation Survey* stresses the need for bicycle and equestrian trails, with 60% of those participating expressing the feeling that existing trails are too few, too short, and inadequate. The Riverpark Trail assumes major emphasis in the circulation plan, adding significant mileage for bicycle and equestrian recreation, and linking to existing community trails for continuity.

In this Masterplan Update, each circulation route has been specifically

located, with details of design and linkages throughout each system clearly delineated to enhance the overall objectives of the Santa Cruz Riverpark. The circulation modes of the park are **vehicular, pedestrian/bicycle** and **equestrian**. For each mode, access to the park, circulation within the park, and linkages to other trail systems and community attractions are significant components.

## Vehicular Circulation

The vehicular circulation pattern will encompass an external system of access to the park for city-wide visitors and interstate travelers, and provide for internal circulation on Riverpark Drive.

### Major and Minor Access

**Major Access Points** occur where primary east-west arterial streets servicing the greater Tucson community intersect the Riverpark at activity nodes. They designate the most direct entry/exit points for large numbers of visitors using the park and attending park events. They provide parking areas for 250 to 500 cars.

**Minor Access Points** occur where local east-west streets intersect the Riverpark and primarily serve the nearby community. Parking facilities for up to 100 cars are provided at these points wherever feasible.

### Interstate Connections

**Interstate 19:** Park visitors can access the park by exiting at Ajo Way or Valencia Road. Another I-19 interchange has been proposed at Irvington Road.

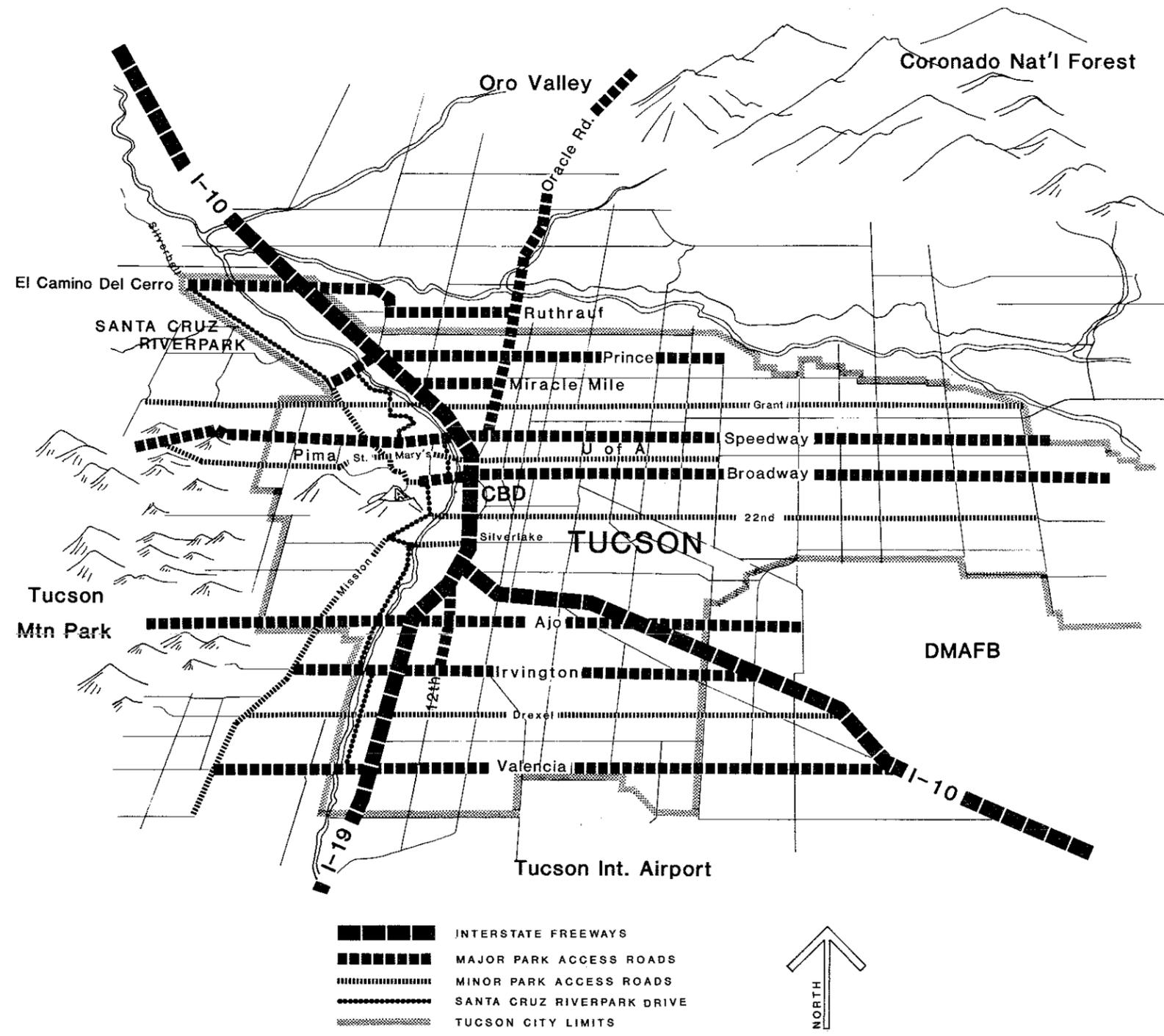
**Interstate 10:** Exits from I-10 which connect to the park and activity nodes occur at 22nd Street, Congress Street, St. Mary's Road, Speedway Boulevard, Miracle Mile, Prince Road and Ruthrauff Road (El Camino Del Cerro). A connection at Grant Road provides less direct access to the park at a greater distance from activity nodes.

### Mass Transit

All features of Riverpark should be accessible and convenient to visitors arriving by mass transportation. The Suntran bus system should be promoted as a convenient and desirable way to arrive at the Riverpark. Many bus stops are within walking distance of park attractions, and city buses could be equipped with bike racks such as those on San Diego buses, to facilitate transport of bicycles to the Riverpark.

### Riverpark Drive

The Masterplan Update designates a Riverpark Drive to optimize the experience of driving alongside the river channel while connecting points of interest within the Riverpark. The Riverpark Drive will be consistently and clearly signed with secondary signage. Santa Cruz Riverpark Drive will be developed through the use of existing streets with a few additional road segments constructed to complete the in-



**MAJOR AND MINOR ACCESS POINTS TO THE RIVERPARK**

**MAJOR ACCESS POINTS**

- Valencia Road
- Irvington Road
- Ajo Way
- 12th Street
- Congress Street (Broadway)
- Speedway Boulevard
- Miracle Mile
- Prince Road (proposed extension)
- El Camino Del Cerro (Ruthrauff Road)

**MINOR ACCESS POINTS**

- Drexel Road
- Silverlake Road
- 22nd Street
- Mission Lane
- St. Mary's Road
- Grant Road

**PARK FEATURES**

- Hohokam Archaeological site
- Indian Cultural Center
- Midvale Greenpark
- Riverpark Drive
- Midvale Greenpark
- Santa Cruz Equestrian Park
- Riverpark Drive
- Ajo Amphitheatre Greenpark via 12th Street (egress only)
- Riverpark Drive
- Link to Kennedy Park
- Amphitheatre Greenpark
- Garden of Gethsemane
- Riverpark Drive
- Downtown link to Rio Nuevo
- Tucson Riverpark Plaza (including Phase II)
- Riverpark Drive
- Link to University of Arizona
- Santa Cruz Gardenpark
- Silverbell Golf Course
- Santa Cruz Gardenpark
- Riverpark Drive
- Silverbell Park
- Riverpark Drive
- Silverbell Equestrian Center

**PARK FEATURES**

- Hohokam Archaeological site
- Midvale Greenpark
- Recreation Center
- Riverpark Drive
- Link to Mission Park
- Amphitheatre Greenpark
- Link to San Juan Park
- Santa Cruz Historic Park
- Santa Cruz Historic Park
- Riverpark Drive
- Parade Route to Central Business District
- Entry to Rio Nuevo
- Riverpark Drive (via Riverside Dr.)
- Link to Pima Community College
- Riverpark Drive (via Riverside Dr.)

ternal circulation system. The majority of Riverpark Drive will be in close proximity to the river channel. However, due to land ownership and land use restrictions, an occasional segment of the Drive will follow arterial and local streets at some distance from the river.

Riverpark Drive will begin on the east bank at Valencia Road to Irvington Road via Calle Santa Cruz; bridge crossing to west bank at Irvington Road to Silverlake Road via Cottonwood Lane; Silverlake Road to Congress Street via Mission Road/Grande; Congress Street to St. Mary's Road via completed Bonita Avenue; St. Mary's Road to Speedway Boulevard via Riverside Drive; Speedway Boulevard to Grant Road via Riverview Boulevard and Dragoon Avenue; Grant Road to Prince Road Realignment via proposed Riverpark Drive; Prince Road to El Camino Del Cerro via Silverbell Road.

Construction of several road segments is necessary to provide Riverpark Drive:

- **Calle Santa Cruz:** this road is currently planned for construction.
- **Cottonwood Lane:** one short link of this road remains incomplete between Ajo Way and Silverlake Road, and construction is planned.
- **Bonita:** one section of this road within the Rio Nuevo project is incomplete.
- **Prince Road connection:** a road segment is needed on the west side of the river between Grant and the Prince Road Realignment.

### Parking

Parking will occur at major and minor access points with additional parking in pull-off areas along the Riverpark Drive. All parking areas should be planted with shade trees enhancing the park setting.

### Service Roads

No special road system is seen as necessary for service needs within the Riverpark. Service vehicles will use the existing road system, proposed new sections of the Riverpark Drive, and the Riverpark Trail scheduling service during non-peak use hours.

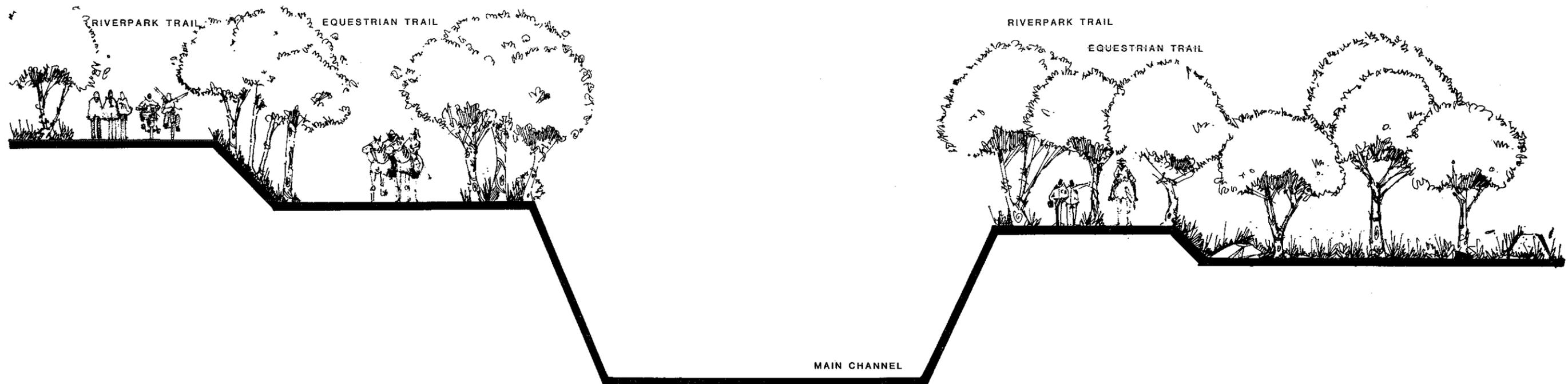
### Riverpark Trail

The Riverpark Trail is a primary feature of the Santa Cruz Riverpark Masterplan Update, providing an overall unification element for the park. The trail accommodates both bicycle and pedestrian movements, and will wind through open fields, shade groves, desert and riparian landscape while it parallels the river channel and the edges of ponds for a variety of trail experiences. At the same time, the Riverpark Trail is a functional park element, linking Riverpark activities and connecting the park to the greater Tucson community, and providing roadways for service and security vehicles. For pedestrians, the Riverpark Trail will be utilized for leisurely walks with rest stops at regular intervals, and for jogging, with exercise stations in offsets adjacent to the trail.

Changes since 1976 have increased the importance of the bicycling element of the park plan:

- **Extensive industrial development on land adjacent to the park.** By providing an adequate bicycle path system to and within the park, many employees may wish to commute to their place of work by bicycle.
- **Escalation of fuel prices,** making bicycle use more attractive as a transportation alternative.
- **Proposed residential development adjoining the Riverpark.** Park bicycle trails will be a strong recreational attraction for these new households.
- **Increased public recognition of exercise as essential for health and well-being.**

In addition, the Pima Association of Governments has mapped an extensive bicycle path system for the Tucson area. According to the level of safety and convenience, these paths are designated as (BP) Bikepaths — separate from the roadway; (BL) Bikelanes — signs and pavement stripping; (BR) Bike routes — signs only; and (BS) Bikeable streets — paved streets. Riverpark bicycle access routes have been defined which tie into the existing PAG Bikeway Routes. These routes should be signed from identified starting points to the Santa Cruz Riverpark. All bicycle access routes should be upgraded to a minimum BL status for safety and recreational enjoyment.



*Typical Santa Cruz Riverpark Trail Cross-Section*

# RIVERPARK BICYCLE ACCESS ROUTES

**ROUTE** **PAG BIKEWAY STATUS**

**1. Blacklidge**  
 From Blacklidge and Mountain:  
 West on Blacklidge to Fairview, North to Prince, West to Santa Cruz Riverpark

BR  
 BS  
 BS

**Recommendation:** When Prince Road construction link to Silverbell Road takes place, provide a bikepath (BP) to connect with Santa Cruz Riverpark Trail. Upgrade Fairview and Prince from BS to BL.

**2. University**  
 From University and Park:  
 West on University to 9th Avenue, South to 5th Street, West to St. Mary's, West to Santa Cruz Riverpark

BL  
 BR  
 BR  
 BR

**Recommendation:** Resolve railroad crossing on 5th. Upgrade 9th, 5th and St. Mary's to BL.

**3. Pima College**  
 From Pima Community College at Greasewood and West Anklam:  
 South on Greasewood to 22nd Street, East to Camino Santiago, South to San Marcos, East to San Antonio, South to San Juan Trail, East to Mission, North to Silverlake, East to Santa Cruz Riverpark

BP  
 BR  
 BR  
 BR  
 BS  
 BS  
 —  
 —

**Recommendation:** Add a bike lane to Mission Road; add a bike path to Silverlake Road. Upgrade 22nd Street, Camino Santiago, and San Marcos Boulevard from BR to BL; upgrade San Antonio Drive and San Juan Trail from BS to BL.

**Pima College Loop**  
 From Santa Cruz Riverpark at St. Mary's:  
 West on St. Mary's to Anklam, West to Pima Community College

BL and BR  
 BL

**Recommendation:** Upgrade St. Mary's Road from Grande Avenue to Santa Cruz Riverpark from BR to BL.

**4. Sentinel Peak (proposed)**  
**Rationale:** This major landmark, which provides a view of the Santa Cruz Riverpark should be accessible and signed for bicyclists. The route would also facilitate linkages to Himmel Park and Randolph Park.

From Santa Cruz Riverpark at Congress:  
 West on Congress to Sentinel Peak Road to Sentinel Peak overlook

BS  
 —

**Recommendation:** Add a bike lane to Sentinel Peak Road. Upgrade Congress Street from BS to BL.

**5. Central Business District**  
 From Cushing and Stone:  
 West on Cushing to Granada, North to Congress, West to Santa Cruz Riverpark

BR  
 BS  
 BS and —

**Recommendation:** Add a bike lane on Congress Street west of Main Street. Upgrade Cushing, Main and remainder of Congress streets from BS and BR to BL.

**6. South Tucson**  
 From 8th Avenue and Silverlake Road:  
 South on 8th Avenue to 38th Street, West to 10th Avenue, South to 44th Street, East to Liberty, South to Michigan, West to 15th Avenue, South to Irvington, West to Santa Cruz Riverpark

BR  
 BR  
 BR  
 BS  
 BR  
 BS  
 BS  
 BS

**Recommendation:** Upgrade 8th Avenue, 38th Street, 10th Avenue, and Liberty Street from BR to BL. Upgrade 44th Street, Michigan Drive, 15th Avenue and Irvington Road from BS to BL.

**South Tucson Loop**  
 From Santa Cruz Riverpark at Silverlake Road:  
 East on Silverlake to 8th Avenue

BS

**Recommendation:** Upgrade Silverlake Road from BS to BL.

**7. Kennedy Park**  
 From La Cholla and Ajo Way:  
 North on La Cholla to San Juan Trail, East to Mission, North to Silverlake, East to Santa Cruz Riverpark

BS  
 BS  
 BS  
 —

**Recommendation:** Add a BL to Silverlake Road. Upgrade La Cholla Boulevard, San Juan Trail and Mission Road from BS to BL.

**Kennedy Park Loop**  
 From Santa Cruz Riverpark at Ajo Way:  
 East on Ajo to Kennedy Park

—

**Recommendation:** Add a BL on Ajo Way and create a loop between Santa Cruz Riverpark to Kennedy Park.

**8. Rodeo Park (and South Side YMCA)**  
 From Irvington and 6th Avenue:  
 West on Irvington to Santa Cruz Riverpark

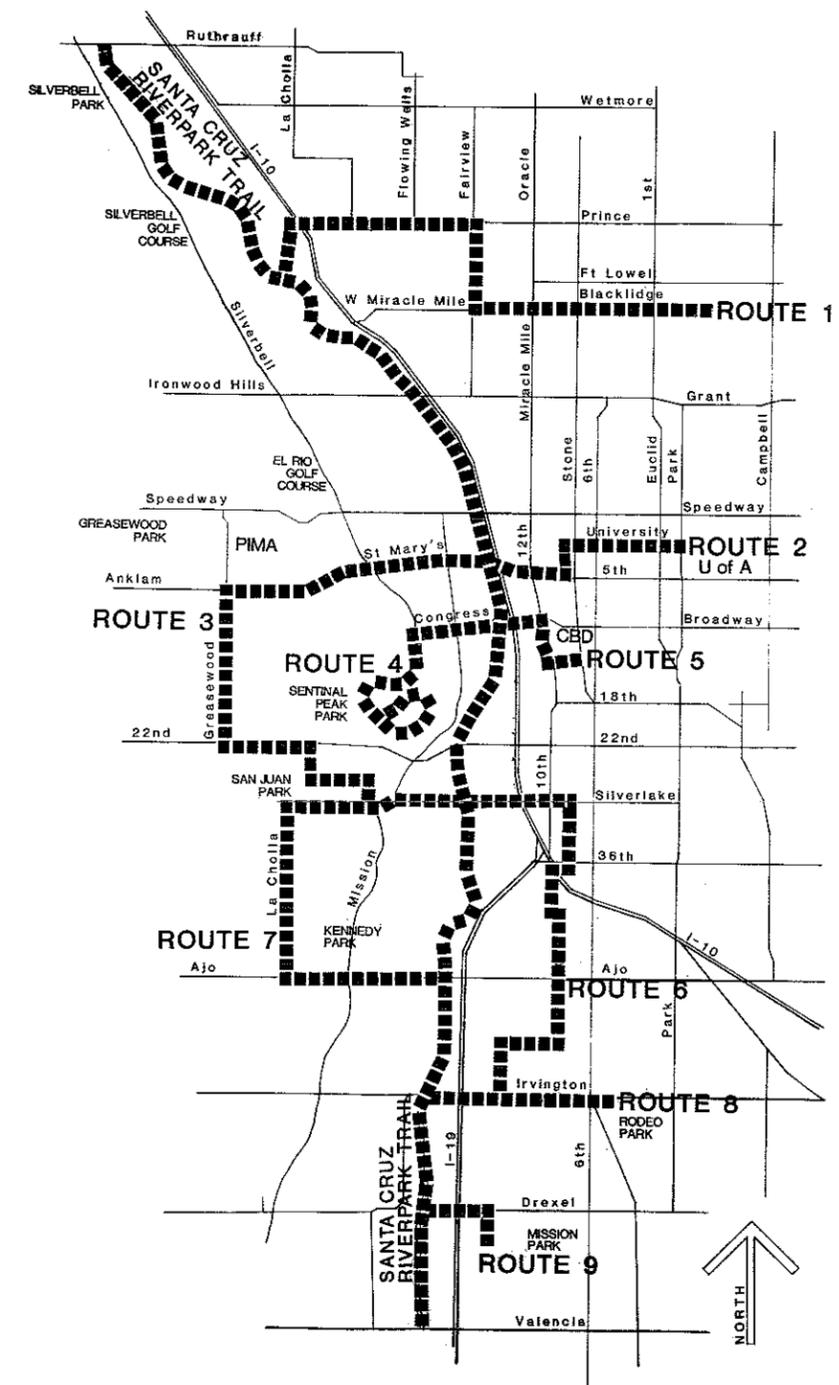
BS

**Recommendation:** Upgrade Irvington from 6th Avenue to Annapolis and from 15th Avenue to Santa Cruz Riverpark from BS to BL. Add a BL on Irvington Road between Annapolis and 15th Avenue.

**9. Mission Park**  
 From Santa Clara and Ramona:  
 North on Santa Clara to Drexel, west to Santa Cruz Riverpark

BS  
 —

**Recommendation:** Upgrade Santa Clara from BS to BL. Add a bike lane to Drexel Road from Santa Clara to Santa Cruz Riverpark.



## Equestrian Trails

With approximately 40,000 horses in Pima County, equestrian recreation is important to a large portion of the population. Dissatisfaction with existing horse facilities and trails was expressed by the majority of participants surveyed in the 1977 *Tucson/Pima County Recreation Survey*, with 100% and 75% dissatisfaction expressed by residents of Southwest Tucson and the University area respectively.

The primary objective of the Riverpark Equestrian Trails is to provide a riding experience in the Riverpark through a variety of trails and trail loops with linkages to other equestrian trail systems in Pima County. In addition, staging areas and facilities for equestrian events will be provided within the park.

Riverpark equestrian facilities will be concentrated at Santa Cruz Equestrian Park, Santa Cruz Historic Park, and Silverbell Regional Park. The Historic Park will offer a staging area for the annual Rodeo Parade with access to the parade start via the Butterfield Underpass. The use of washes for equestrian trails is currently being studied by the Pima County Parks and Recreation Department. The recommended linkages that are defined in this plan should be coordinated with the Equestrian Trails Plan when it is published by the County.

The Santa Cruz Riverpark Equestrian Trail is continuous throughout the Riverpark. Four equestrian trail conditions occur: trail adjacent to bicycle trail; trail terraced from and parallel to bicycle trail; trail in channel bottom; and completely separated equestrian trails which usually connect to equestrian facilities.

### Equestrian patrol

The Santa Cruz Riverpark would be an excellent location to implement security patrol on horseback. Given the proposed stable facilities at each end of the park, mounted police would be an effective deterrent to potential vandalism while adding a unique character to the Riverpark.

### Horse-drawn Vehicles

The concept of horse-drawn vehicles within the Santa Cruz Riverpark was introduced in the 1976 plan, and is further endorsed and recommended in this update. Facilities for harness practice and a concession for providing carriage rides will be located in the Santa Cruz Historic Park. Three designated carriage routes will offer a buggy-ride experience and a glimpse of Tucson's history. These routes can also be used for carriage parades on special occasions.

## RIVERPARK EQUESTRIAN TRAIL AND FACILITIES

### SANTA CRUZ EQUESTRIAN TRAIL ROUTE

- Southern Riverpark Equestrian Trail entry on east bank of river channel at Midvale Greenpark; trail is adjacent to bike path through park unit.
- Branching of trail occurs at Irvington Road; one branch drops into river channel bottom and continues north; other branch crosses to east bank looping throughout Santa Cruz Equestrian Park.
- River channel trail continues to Amphitheatre Greenpark; both branches come out of channel onto east and west banks, with loop through park unit on east bank.
- Trail branches return to channel bottom at Silverlake Road and continue to Santa Cruz Historic Park where trail comes out of channel bottom on west bank.
- Return of trail to channel bottom at Mission Road, continuing to Speedway Boulevard, where it comes out of the channel on west bank to parallel bike path through Phase II.
- Trail crosses channel at grade to east bank at Broadbent Interstate Center; trail follows east bank through Santa Cruz Gardenpark.
- Grade crossing of trail from east to west bank at Prince Road; terraced trail through Silverbell Park to northern Riverpark Equestrian Trail terminus.

### EQUESTRIAN STAGING AREAS AND TRAIL ENTRIES

- **Santa Cruz Equestrian Park**  
Staging and trailer parking  
Rental stables and tack room  
Boarding stables and small dressage or other arena
- **Santa Cruz Historic Park**  
Staging and trailer parking  
Rental stables and tack room  
Rodeo Parade staging area  
Corral  
Buggy ride through downtown Tucson
- **Santa Cruz Gardenpark**  
Staging and trailer parking
- **Silverbell Equestrian Center**  
Staging and trailer parking  
Rental stables and tack room  
Boarding stables  
Show and performance arenas  
Equestrian information center and equestrian trail headquarters

### PROPOSED TRAIL LINKAGES

- **To Rodeo Parade Route**  
From staging area in Santa Cruz Historic Park:  
Mission Road to Frontage Road to Butterfield Underpass to parade start.
- **To Catalina Mountains**  
From northern terminus Santa Cruz Riverpark Equestrian Trail in Silverbell Park:  
North up Santa Cruz River channel to connect into County trail system.
- **To Saguaro National Monument West**  
From Equestrian Center in Silverbell Park:  
Sweetwater Wash enters park near El Camino Del Cerro, connecting with west unit of Saguaro National Monument.
- **To Tucson Mountain Park**  
From Silverbell Riverpark Trail:  
Camino de Oeste Wash enters Silverbell Golf Course. Route is needed around golf course to connect Silverbell Equestrian Center and Riverpark trails with wash. Possible route: Silverbell Road from wash to Silverbell Park equestrian trail.  
From Santa Cruz Gardenpark:  
Anklam Wash enters Santa Cruz channel.  
From Santa Cruz Historic Park:  
Enchanted Hills Wash enters Santa Cruz River via West Branch of Santa Cruz south of 22nd Street bridge.
- **To West Branch Santa Cruz River Equestrian Loop and Kennedy Park**  
From Santa Cruz Equestrian Park:  
Channelized west branch of Santa Cruz to natural wash; north back to main river channel to Santa Cruz Historic Park and staging area.



## Circulation Signage

A signage system is mandatory for each circulation mode. It should include signs leading to major Riverpark access points, signs within the park designating the vehicular, bicycle/pedestrian and equestrian pathways, and directional signs leading to park features and equestrian staging areas.

Signs should be installed to designate the following:

- **Santa Cruz Riverpark Trail:**  
Non-vehicular trails within boundaries of the Riverpark
- **Santa Cruz Riverpark Trail System:**  
Non-vehicular trails outside of the Riverpark boundaries which direct visitors to the park, extending fingers into the adjacent community.
- **Santa Cruz Riverpark Drive:**  
Vehicular roadways within or adjacent to the boundaries of the Riverpark
- **Santa Cruz Riverpark Equestrian Trail:**  
Equestrian linear trail and loop trails system throughout park
- **Santa Cruz Riverpark Carriage Route:**  
Designated paved streets starting from the Santa Cruz Historic Park.

The **Santa Cruz Riverpark Drive** will be signed with secondary signage along its entire length to direct drivers to entrances to the features and activity centers of the Riverpark. Signs directing visitors to the Riverpark access points will occur at each intersection for a distance of 3 miles from the access points. At designated major park attractions and at both ends of the Riverpark Drive, signs will be placed to direct visitors to I-19, I-10 and the Central Business District. These signs will comply with City of Tucson standards and be consistent in format with the Santa Cruz Riverpark logo. Signs designating Santa Cruz Riverpark exit ramps from Interstate 19 and Interstate 10 should comply with State highway sign codes.

The **Santa Cruz Equestrian Trail** will be signed at the trail access points, with directional signs leading to proposed staging areas and to linkages with Tucson Mountain Park, the Catalina Mountains via the Rillito River, and to Saguaro National Monument west. The signage format will be consistent for all equestrian trails, including the Santa Cruz Riverpark logo and a horse symbol.

The **Santa Cruz Riverpark Trail** will be signed within the park to delineate the linear non-vehicular trail and to direct users to various park amenities. Signs will be placed at trail intersections within the park and at the trailheads. The Santa Cruz Riverpark Trail System will be signed outside of the park boundaries on major linkages to direct visitors to the park. Signage format will be consistent for all non-vehicular trails, and include the Santa Cruz Riverpark logo and a bicycle symbol. At entry/exit points, signage will direct users to linkages with community attractions within the designated Santa Cruz Riverpark Trail System, naming the attraction and the mileage via the signed Santa Cruz Trail System. The signage should be particularly complete between the Riverpark and the University of Arizona, Pima Community College and the Central Business District.

The **Santa Cruz Riverpark Carriage Routes** will be signed at designated intervals to direct horse-drawn vehicles on one of several routes, to designate boarding locations, and to advise motor traffic of the potential presence of slower vehicles. The signage will be consistent in format with the Santa Cruz Riverpark logo and a buggy symbol.

### 1. LONG CARRIAGE ROUTE

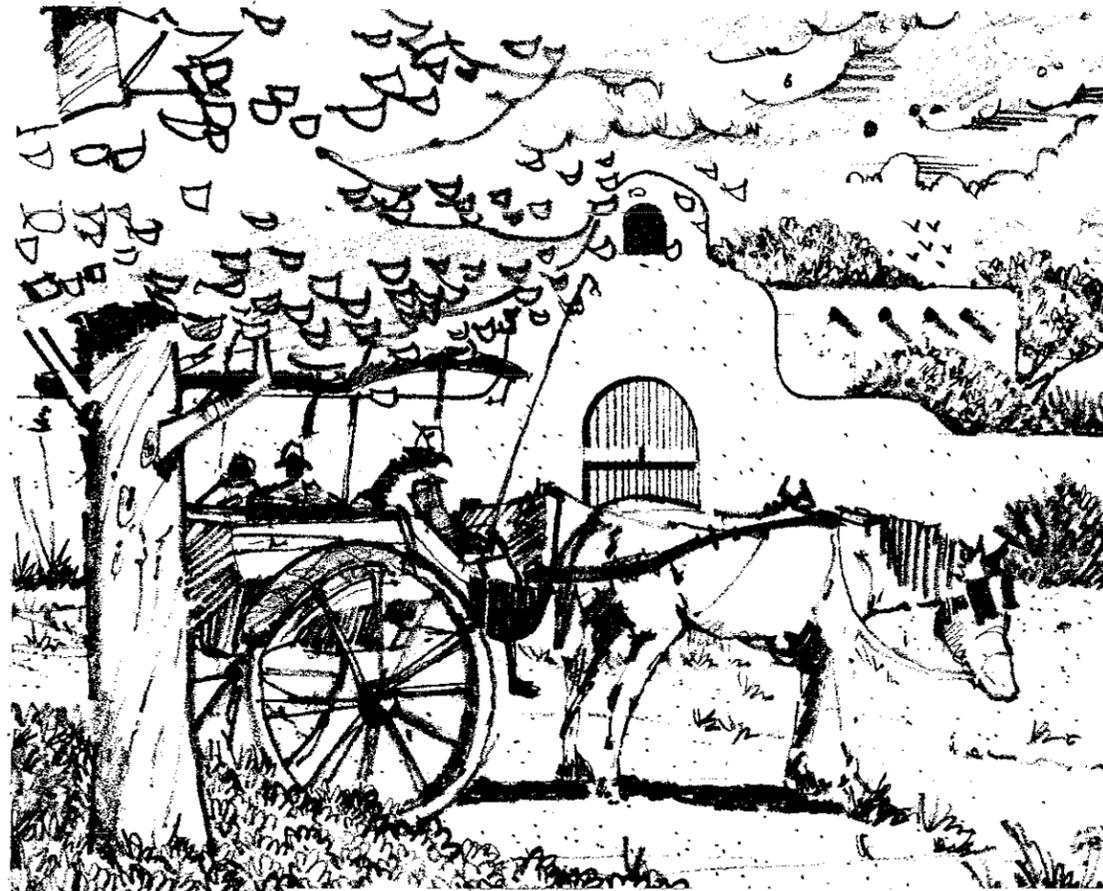
**Board at Santa Cruz Historic Park**  
to Mission Lane  
to Riverpark Drive through Rio Nuevo  
to St. Mary's Road  
to Main Street  
to Alameda  
to Granada  
to Community Center parking lot  
through Butterfield Underpass  
to Frontage Road  
to Mission Lane (Santa Cruz Historic Park)

### 2. SHORT CARRIAGE ROUTE

**Board at Santa Cruz Historic Park**  
to Mission Lane  
to Riverpark Drive through Rio Nuevo  
to Congress Street  
to Granada  
to Community Center parking lot  
through Butterfield Underpass  
to Frontage Road  
to Mission Lane (Santa Cruz Historic Park)

### 3. "A" MOUNTAIN ROUTE

**Board at Santa Cruz Historic Park**  
to Mission Lane  
to Grande Avenue  
to Cedar Street  
to Sentinel Peak Road  
to Overlook (Return)



**SANTA CRUZ RIVERPARK CARRIAGE ROUTES**

## Recommendations

- Implement the continuous bicycle/pedestrian trail within the Riverpark, beginning with connections between existing trail links.
- Integrate bicycle access trails with PAG Bikeways Plan; upgrade all bicycle access routes to a minimum Bikelane status and resolve conflicts.
- Integrate the bicycle/pedestrian Riverpark Trail with existing and proposed residential and industrial complexes.
- Provide pedestrian pathways connecting the Riverpark with CBD and public facilities.
- Establish the Riverpark Drive, with signage and entry points along all road segments as they are completed.
- Sign all major and minor access routes to the Riverpark and associated park features. Sign Interstate highway interchanges as park nodes develop.
- Provide shaded parking areas at frequent intervals throughout the Riverpark, with large parking lots at major access points.
- Use Suntran bus system to publicize transportation to the Riverpark. Provide bus bicycle racks.
- Utilize existing roadways and bicycle/pedestrian trails for service roads.
- Provide a continuous equestrian trail throughout the Riverpark, integrated with existing trails and connecting to equestrian facilities as they develop.
- Negotiate a carriage ride concession, providing buggy rides within the Riverpark and to historic areas of the City. Sign route and boarding places.
- Implement a Santa Cruz Riverpark Equestrian Patrol.

# HISTORY, CULTURE, ARCHAEOLOGY

The Riverpark site represents a continuum of occupation along the Santa Cruz River of at least 5500 years, with few interruptions. Development of archaeological resources within the park provides the opportunity to study cultural evolution throughout this long time span to achieve an understanding of the people, their activities and their use of the environment. The historical and cultural resources of the Riverpark represent its most irreplaceable assets, and must be given highest priority in the park program and site development.

The 1976 Santa Cruz Riverpark Masterplan encouraged preservation and restoration of historic and archaeological resources along the Santa Cruz River. The history of the river as a focal point and essential element for life in the Valley is well documented.

A National Historic District nomination proposed in the 1976 plan has not materialized. This proposal, based in part on qualifying for Federal assistance, is not as viable today since Federal funding is not readily available.

Changes which have occurred since the 1976 Plan offer further substantiation of Riverpark historic preservation efforts:

- Recognition of the largest intact Hohokam archaeological site in the Santa Cruz Riverpark.
- Publication of a review of prehistoric and historic cultural developments in the Santa Cruz River basin by the Arizona State Museum. (*An Archaeological Synthesis of the Tucson Basin: Focus on the*



*Solomon Warner's Flour Mill at the base of Sentinel Mountain, where grain was stored and ground in Tucson, Arizona Territory, 1887.*

*Santa Cruz and its River Park; and Cultural Resources within the Proposed Santa Cruz Riverpark Archaeological District with Recommendations and a Management Summary*, both reports by Julio L. Betancourt, 1978).

- Evolution of a significant historic preservation attitude in the Barrio Historico and El Presidio neighborhoods adjacent to the Santa Cruz Riverpark.
- Moving and enhancement of the Garden of Gethsemane from the river channel to a site north of Congress Street and the Rio Nuevo development.
- A desire to relocate the Tucson Rodeo Museum to a site southeast of Mission Road and Mission Lane.
- Historic preservation of the Cordova, Fish, Stevens and Corbett houses in the Tucson Museum of Art block.
- Historic preservation of the Fremont House at the Tucson Community Center.

## Prehistoric Sites

The archaeological resources within the Santa Cruz Riverpark area possess significance at the regional level for understanding prehistoric adaptations to the southern Arizona basin. Sixty-three sites with evidence of cultural activity prior to 1920 have been located within the Riverpark area; nine are at least 75% undisturbed. There is evidence of Archaic occupation in eight sites and Hohokam occupation in fifty-one sites, none of which has completely escaped disturbance. Even today,



*Silver Lake, a resort with dining room, bar, dance hall and bathhouse, was a popular recreation destination in Tucson, Arizona Territory, 1898.*

these sites in the Riverpark have been only partially surveyed for prehistoric and historic remains.

### Hohokam Village Site

The large and well-preserved ancient Hohokam village (BB:13:15) adjacent to the Santa Cruz Riverpark offers a unique opportunity for prehistoric interpretation of the early human occupation of the Tucson Basin. Nearly two miles of habitation evidence has been identified along the east side of the river channel from Valencia Road northward to the Airport Wash. The area of dense artifacts remains basically undisturbed, having escaped destruction from development, agriculture, landfill and vandalism.

The site has been classified by the Arizona State Museum as an extremely significant Hohokam village containing critical data of great interest to the archaeology of the Tucson Basin. This Hohokam village contains numerous pithouses in varying densities, many extra-mural features, storage pits, cremations, a possible ballcourt, a prehistoric canal and a large central plaza area. Ceramics found on the site suggest continuous occupation from the Pioneer Period (ca. A.D. 500) through the Classic Period (ca. A.D. 1300) of the Hohokam. The site is under the jurisdiction of the Arizona State Lands Department.

Preservation of this prehistoric Hohokam site and excavation for scientific value and public interpretation must receive the highest priority, with ownership transferred to the Arizona State Parks and Recreation Department or another State agency for administration and development coordinated with the Santa Cruz Riverpark Masterplan and the City of Tucson. The Arizona State Museum may be an appropriate overseer for the project, with excavation and curation in cooperation with the Papago Indian Tribe. Funding for excavation and public interpretation may combine State of Arizona, Papago and City of Tucson resources.

Participatory archaeology and a demonstration area should be incorporated into the design of an Indian Cultural Center close to the excavation site. Through artistic rendering, interpretive displays, partial reconstruction, observation of excavations completed and in progress, and tours, the resources of the Hohokam Village site offer an opportunity to view earliest life in the Tucson Basin, to examine more closely the Hohokam culture and to become acquainted with some modern archaeological excavation techniques. The Center will also serve as a repository for the artifacts recovered from the site. Admission fees will generate revenues for continuing excavation.

A second archaeological site of major importance is west of the Riverpark boundary and south of Silverbell Park and the Animal Control Center. "Rabid Ruins" (AA:12:46) is a Hohokam pithouse village and large cremation cemetery, which has been partially excavated, and is classified as a large habitation site with little disturbance. After the site has been excavated for scientific value, a Riverpark trail marker nearest to the site would indicate the presence and describe the significance of Rabid Ruins. Preservation as an historic site is recommended.

## Historic Sites

More recent environments and events along the river are also relevant to the complete historical picture of the Santa Cruz. Twenty-four separate historic sites have been identified within the Riverpark, including the remains of a Spanish mission complex, two flour mills, a hotel, a Mexican settlement and a lime kiln, which date to the Territorial period.

Several notable activities have occurred near the channel in the same general vicinity at the base of Sentinel Peak, including the sites of Solomon Warner's Mill (about 1875, and now on the National Register of Historic Places), San Augustin Mission (mid-1700's, first Anglo settlement of what is now Tucson) and the two-story "El Convento" (late 1790's), and the Silverlake Hotel and resort (1880). Replication of these and other historic elements on or near their origins would offer an opportunity to understand and appreciate the environment that flourished along the river in the 19th century.

An historic theme village is proposed for the site southeast of Mission Lane and Mission Road with replicas of Silverlake Hotel, Territorial shops and houses, Warner's Mill, El Convento and other similar recreations capturing the essence of life in Territorial days. The site is also an appropriate staging area for the annual Tucson Rodeo Parade, and the Rodeo Museum should be relocated there. A concession offering buggy rides through historic areas of the city would complete the scenario, offering visitors and residents participatory experience in the Territorial history of Tucson. Historic documentation sources are abundant through the Arizona Historical Society and the University of Arizona, and can offer direction for interpretation of the beginnings and subsequent growth of early Tucson.

Three examples of the historic continuum of agriculture in the Santa Cruz basin are exemplified within the Riverpark. In the Hohokam village at the south end of the park (Midvale Greenpark), traces of a prehistoric canal system indicate the importance of farming in the prehistoric period. Agriculture, irrigation, commercial fish stocking and milling were Territorial activities in the central Riverpark area (Santa Cruz Historic Park). Contemporary agriculture techniques at the University of Arizona Experimental Farm (Santa Cruz Gardenpark) represent the last vestige of riverland agriculture. All three agricultural periods will be recognized and incorporated into the park program, through preservation of the Hohokam village site at Midvale Greenpark, re-creation of the territorial village at Santa Cruz Historic Park, and by a farmers' market and allotment gardens at Santa Cruz Gardenpark.

## Contemporary Art and Culture

Policies to encourage contemporary art and cultural events within the Santa Cruz Riverpark are equally important.

The City of Tucson should foster public art in the Riverpark by sponsoring competitions and providing park locations for works of art. Pre-

cedent has been established by the Downtown Development Corporation which requires works of art to be integrated into the La Entrada and Rio Nuevo developments.

Preservation, interpretation and reconstruction of the historic and archaeological resources within the Santa Cruz Riverpark will provide a view of the Tucson Basin through time by acknowledgement of the continuous human habitation which has occurred along the Santa Cruz River. Implementation of the Riverpark itself with the inclusion of public art will signify the continuing relevance of the river and its contribution to the cultural life of Tucson.

## Recommendations

- Protect, excavate and interpret the Hohokam pit village site between Valencia and Drexel Roads in cooperation with the State of Arizona Land Department, and Departments of Parks and Recreation and Archaeological Resources.
- Design and implement an Indian Cultural Center adjacent to the Hohokam site, with interpretative displays and participatory archaeology.
- Provide an historic marker for the Rabid Ruins site and for all sites and events of historic significance in or near the Riverpark. Refer to *Cultural Resources Within the Proposed Santa Cruz Riverpark Archaeological District*, Julio Betancourt, September, 1978.
- Develop the Santa Cruz Historic Park as a reconstruction and interpretation of the historic sites and events of the Santa Cruz River basin during the Territorial period.
- Relocate the Rodeo Museum to the Santa Cruz Historic Park.
- Adopt a City ordinance to prohibit illegal digging and defacing historical property on City property.
- Generate interest and enthusiasm for the preservation and development of Riverpark historic and cultural resources through a public awareness program to educate citizens to the nature and goals of historic preservation.
- When proposed Riverpark development or activity will alter the landscape of a known or newly discovered archaeological site, representatives from the City should meet with archaeologists to assess and mitigate the resources and impacts on known and potential resources of the project area.
- Implement an historic buggy ride concession through the central City area.
- Respond to the cultural diversity of the residential neighborhoods along the Riverpark through design of facilities which reflect and enhance local needs.
- Develop an amphitheatre in the Riverpark for cultural events including concerts, drama and dance.
- Establish the Tucson Riverpark Plaza as an art and cultural resource center for the Riverpark, including a unique feature such as the proposed "Tucson Skypark".

# WATER RESOURCES

Water resource issues in the Tucson and Pima County area have been a growing public concern since 1976. Many changes have occurred which directly affect the Santa Cruz Riverpark:

## Channelization and Riverbank Stabilization

- A portion of the West Branch of the Santa Cruz River has been channelized for development of Midvale Greenpark.
- The Rio Nuevo Redevelopment Project has channelized and soilcreted a portion of the main channel.
- Soilcrete bank stabilization has occurred in the northern section of the river channel along the Broadbent Interstate Center, Arizona Department of Transportation storage yard, North Tucson Business Center, and the Roger Road Wastewater Treatment Plant.
- Studies are underway to complete channelization from Rio Nuevo to El Camino Del Cerro.

## Storm Runoff Increases

- The volume of runoff from storm peaks as estimated in the 1976 study has been recalculated using a new, more reliable methodology by the Pima County Department of Engineering, generating larger values than those in the original study.
- Urbanization and development in the southeast area will increase runoff in the Julian Wash.
- The Rio Nuevo and Midvale Farms residential developments adjacent to the main channel will produce large amounts of urban storm runoff.
- There will be increased urban storm runoff from such new developments as San Xavier Industrial Park, Papago Industrial Park, Broadbent Interstate Center, the growing Tucson Civic Center and Downtown redevelopment.

## Running Water in Santa Cruz River Channel

- Envisioned in the 1976 plan to be 4 miles long, 30 feet wide, a running channel is no longer appropriate. Channelization, groundwater quality considerations, and new priorities for the use of treated sewage effluent have altered this scenario.

## Groundwater Supply and Quality

- Groundwater supply problems will become serious through increasing depletion of groundwater resources, which can also result in surface subsidence.
- Groundwater has evidenced contamination from landfills that are located in floodplains and contain toxic substances which have leached into the groundwater resources.

## Public Attitudes

The public has become increasingly oriented toward water conservation as expressed in the following positions:

- Water conservation advocates drip-type irrigation.
- Potable groundwater should not be used for golf course irrigation.
- Flood plains should be used for parks, bike and jogging trails, and golf courses rather than development.

- Groundwater should not be used for lakes or running river channels.
- Native and drought tolerant vegetation rather than high water-using ornamental plantings are preferable.
- Recycling of water through the utilization of storm runoff, treated sewage effluent, and industrial cooling water are desirable objectives.
- Limited water resources should be managed and enjoyed as a public amenity.

## Analysis of 1976 Water Management Position

While the basic premises of the 1976 Riverpark Masterplan are still valid, recommendations regarding water management and flood control need revision and updating in relation to the changes which have occurred in the six-year interim.

- **1976** Flood waters in the main channel should be allowed to flow through the project without detention or obstruction.  
**1982** Still a basic premise, the current perspective increasingly advocates seasonal water harvesting through grading to retain surface drainage and through channel diversion to create detention ponds and recharge areas along both tributaries and the main channel. Storm flow from developments, when feasible, would be retained and utilized within the Riverpark before allowing water to return directly to the main channel. Detention ponds are technically feasible and highly recommended in the Santa Cruz Riverpark, enhancing flood control methods and providing a source of irrigation water. A further benefit of water harvesting is the generation of habitat for wildlife, which significantly adds to the total Riverpark environment. The system advocated for utilizing both urban and natural storm runoff draining toward the Santa Cruz River involves **diversion, detention, retention, grass-filtration, and recharge**.
- **1976** The specific quantity defined as the 100-year flood should be contained within well-defined limits.  
**1982** The current perspective supports the 1976 view and recommends the concept of terracing the channelized riverbanks wherever possible, such as on the west bank of the channel at Silverbell Golf Course and Silverbell Regional Park.
- **1976** The riverbanks must be stabilized to a reasonable degree.  
**1982** A reasonable degree of bank stabilization is desirable and necessary. Terracing and natural bank stabilization through planting is preferable to deep cuts requiring artificial, structural stabilization such as rip-rap, soil-cement and concrete. Terracing and planting are effective for flood and erosion control, visually superior, no more costly and provide a filtration system for purification of water slated for groundwater recharge. A recommended approach is to use structural channelization below the 60-year flood line and a wider terrace with natural materials from the 60 to 100-year flood line where water turbulence and suspended materials are less of a detriment to bank erosion.

- **1976** Maximum recharge must be achieved.
- 1982** While adhering to this position, which advocated widening the riverbed to increase the recharge surface and potential, the updated perspective is for collection of the water before it enters the main channel. This water management system also supplies irrigation for park landscape while simultaneously upgrading the water quality through grass-filtration, subsequently increasing the groundwater resources through recharge.
- **1976** Necessary modifications in the river's configuration should be accomplished without significant changes in its natural characteristics (direction, gradient, hydraulic energy, etc.).
- 1982** Current engineering plans call for channelization and bank stabilization for the full length of the channel as it passes through Tucson. Goals and objectives of the Riverpark can best be served through the design and implementation of alternatives to a straight, deep channel with concrete stabilization. As indicated in the *Final Environmental Impact Statement* for the Santa Cruz Riverpark, no single engineering solution need apply. A variety of open spaces and natural areas can be created through site-specific approaches to channel modification.

In addition, the results of two studies currently underway may affect changes in the water concept for the Riverpark. The *Tucson Effluent Reuse Plan* addresses the potential use of treated sewage effluent by the Papago Indians and the mines. Depending on negotiations and appropriations, effluent may be available to the Riverpark at selected points. The *Tucson Urban Storm Runoff Study* by the U.S. Army Corps of Engineers addresses the flood control aspects of the Santa Cruz River above the Tucson area.



*Bend of the main river channel through the Rio Nuevo Redevelopment Project. New trails and tree planting on both benches.*

Channel stabilization, land development, technical updates, and awakened public attitudes have altered perspectives of water use in the Santa Cruz River. These changes introduce new potentials for water harvesting and recycling in the Riverpark. While the 1976 plan generated the concepts for flood control, this Masterplan Update extends the theory by recommending a technically feasible water harvesting program and delineating potential sources of water and storage areas.

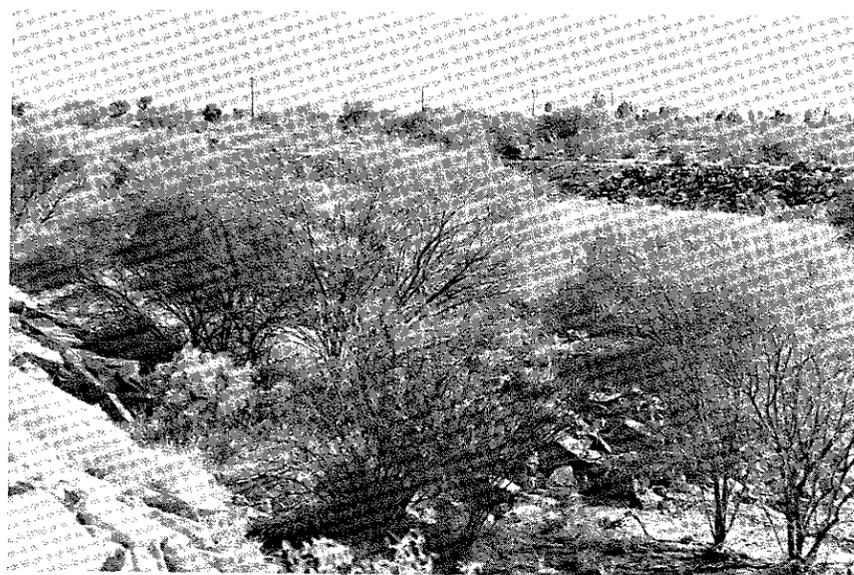
## Santa Cruz Riverpark Water Management Plan

The water management plan for the Santa Cruz Riverpark must control flooding and erosion while providing for physical and psychological comfort for park users, unique recreational resources, visual diversity and park identity, and habitat for wildlife. The proposed water management plan will fulfill the objectives of the Riverpark while recharging the groundwater aquifer with filtered water.

### Water Sources in the Tucson Basin

Although Tucson currently relies on groundwater, there are several sources of water:

- Groundwater
- Storm Runoff
  - Desert Watersheds
  - Urban Watersheds
- Treated Sewage Effluent
- Industrial Cooling Water
- Central Arizona Project Water



*Significant natural vegetation in the Julian Wash near its confluence with main river channel, with rip-rapped bank on far side.*

**Groundwater.** The Santa Cruz River is one of the major recharge sources for the Tucson Basin groundwater aquifers. Recharge occurs through storm runoff from precipitation which averages 11" per year on the desert floor, and up to 30" per year in the surrounding mountains. Summer storms (June-August) which contribute 65% of the total precipitation are local and intense and produce large amounts of runoff. Winter storms (October-May) are more widespread and less intense, producing lesser flows. Approximately 60% of the storm runoff in the major channels returns to the Tucson area groundwater aquifer. Realization of the limited amounts of precipitation, the current overdraft of valuable groundwater supplies and anticipated future demands for potable water have reduced the acceptability of using groundwater for park irrigation. As the value of groundwater increases, the utilization of other water resources becomes more attractive. The use of groundwater in the Riverpark should be limited to human consumption and water activity contact.

**Storm Runoff.** Local storms deliver greater amounts of water than can be readily absorbed and returned to the groundwater aquifers. Approximately 15% of the storm runoff leaves the Tucson Basin as both surface and subsurface flows. As urban development continues, opportunity will decrease for natural infiltration and the quantity of urban runoff will increase. Capturing and utilizing this storm runoff offers a relatively untapped source of water for park irrigation. Two types of watersheds are available for harvesting water — Desert and Urban. **Desert Runoff** has relatively high water quality, with moderate amounts of suspended particles and small amounts of bacteria. Harvested desert runoff may be used directly for unrestricted irrigation. **Urban Runoff** is higher in bacterial contamination, metals, and chemicals. Urban runoff can be collected in sealed detention ponds to reduce seepage losses, and fenced for limited public access. Harvested urban water may be partially purified through turf irrigation prior to channel infiltration and recharge and detention in activity ponds.

**Recycled Treated Sewage Effluent Water.** Treated effluent is currently used to irrigate some Tucson area golf courses. It is an appropriate and recommended water resource for the Santa Cruz Riverpark. Use of effluent water will require:

- Construction of a distribution system from the wastewater treatment plant to serve the Riverpark. Alternatively, small treatment plants may be constructed at selected locations in the Riverpark.
- Resolution of allocation of treated effluent to serve the Papago Indians, mines, farms and recreation users.
- Improved quality of effluent water from secondary to high tertiary level with additional reduction of levels of heavy metals, soluble organics, bacteria and virus. This requirement should be met at or near the treatment plant before the effluent enters a distribution systems.

The *Tucson Effluent Resuse Plan* has proposed the use of treated sewage effluent by the Papago Indians and by the mines south of the Riverpark. If this plan takes effect, the required pipeline from the treatment plant would probably follow the Santa Cruz River, allowing effluent availability at selected points within the Riverpark.

**Industrial Cooling Water.** Substantial amounts of industrial cooling water, used for summer cooling and as part of the manufacturing process, currently enter the sewage system. The volume of industrial cooling wastewater is greatest in summer when irrigation water needs for plant materials in the Riverpark also peak. In order to recover industrial wastewater for Riverpark use, separation of cooling and sanitary waters would be necessary as well as construction of a distribution pipeline from the industry to the park. Since several industrial parks are in close proximity to the Riverpark, a study should be made to determine the quantities, seasonality, and quality of industrial cooling water sources, together with a distribution study.

**Central Arizona Project Water.** An excellent potential water source, the Central Arizona Project is not expected to reach Tucson before 1989. The potential for interaction between the Central Arizona Project and the Riverpark will depend upon the final alignment of the canal or pipeline, the terminus selected and the appropriation of its use for Riverpark irrigation and recreation.

### Water Harvest and Use

The collection and use of storm runoff offers the greatest currently acceptable means for meeting the water needs of the Riverpark. Flooding and erosion problems can also be addressed through water harvesting of both desert and urban runoff. The grass-filtration as well as the filtering capabilities of the coarse alluvium beneath the river channel will result in cleaner water to recharge the groundwater aquifers.

Quantities of storm runoff water are plentiful. The amounts of water runoff for 10-year frequency storms were calculated in the 1976 plan, providing the following statistics:

Tributary Wash	Acre Feet of Water
Hughes Wash	360
San Xavier Rock & Materials Wash	180
Mission Manor Area	200
Airport Wash	1160
Old Julian Wash	160
Tucson Arroyo	1500
Congress Street Storm Sewer	NIC
St. Mary's Road Storm Sewer	200
Extended Flowing Wells Wash	670
Tucson Gas and Electric	250
Rodeo Wash	430
Julian Wash including Tucson Diversion Canal	3000
Robles Pass Wash	60
Big Wash	110
West 36th Street Wash	55
Extended Cholla Wash	70
Speedway Boulevard Storm Sewer	NIC
Extended Silvercroft Wash	190
Extended Anklam Wash	110

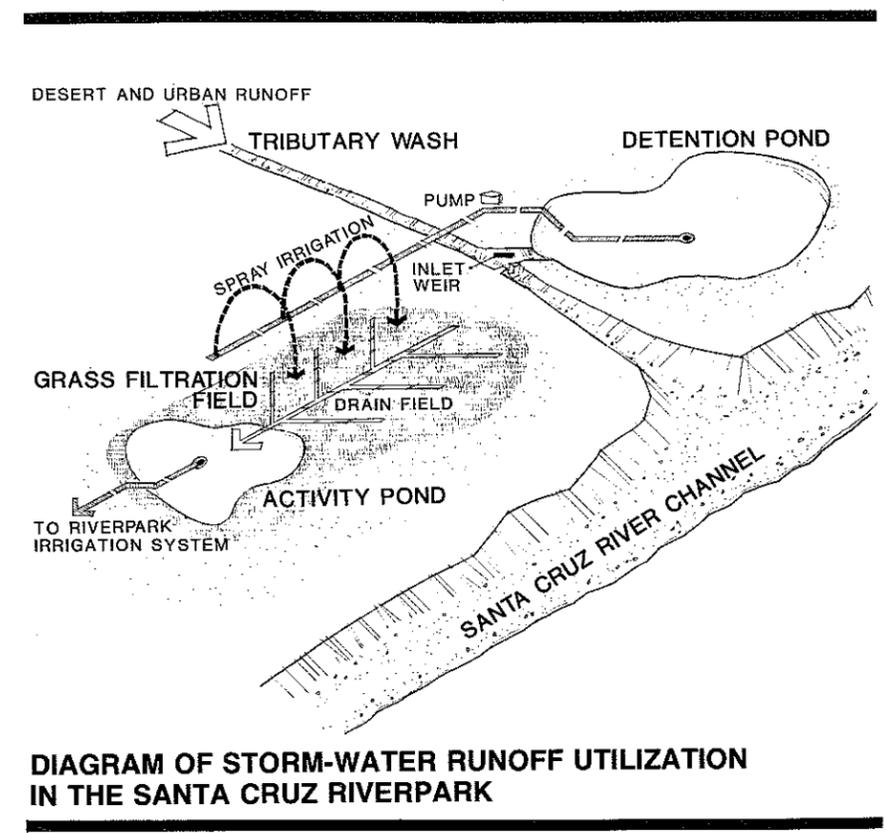
### Water Detention and Retention Basins

The first step of the water harvest process is to provide detention or retention basins at the points of natural runoff collection.

**River Channel Detention Basins** are unlined collection areas formed by diverting storm runoff from the main river channel into adjacent Riverpark land. They serve primarily to keep runoff from leaving the Tucson area. The detention basins also decrease flooding and erosion by reducing the volume and slowing the velocity of storm runoff in the main channel. They allow for recharging the groundwater aquifer through delayed infiltration of the detained water.

The design of the main channel detention pond includes inlet and outlet structures to control the flow and velocity of water into and out of the pond and a stabilized dike to form and protect the pond from erosional damage from main channel floodwaters. River channel detention ponds also provide desert riparian wildlife habitat and create a visual amenity for the park.

**Tributary Wash Detention Basins** are lined or unlined areas where storm floodwaters are collected directly or diverted from tributary channels. Detailed, site-specific hydrological studies will be necessary to determine park irrigation needs and expected amounts of runoff in order to design tributary wash detention basins.



The lined detention basins serve as holding ponds, providing a source of irrigation water and enhancing the visual and habitat resources of the Riverpark. A perimeter fence would limit access for controlled recreation uses and prevent swimming. When gravity flow is not feasible, pumping stations lift water from these tributary detention ponds to treatment systems.

Three systems can be utilized to treat detention pond water for higher uses, such as water-related recreation or recharge:

- Bulrush and reed marsh: Circulation of water through plant-lined channels to treat the urban runoff water.
- Grass-filtration fields: Spray irrigation of collected runoff water over grass and soil. When grass fields are used for recreation, a 4-foot depth of soil over an impervious or plastic lining and a subsurface tile or plastic pipe collection system, which facilitates collection and storage of filtered water. As cited in the 1976 plan and verified by recent studies, grass and soil percolation is a proven filtration method.
- Chemical treatment: Addition of chemicals, such as chlorine, to improve water quality.

Following the treatment process, the quality of the water is suitable for limited public contact, and can be pumped or drained into activity ponds. Gravity systems which transport water from points of detention downstream to points of use are preferable to pumping systems. These lined activity ponds are suitable for boating and fishing, and are visual attractions in the Riverpark.

The character of the detention ponds and activity ponds will be small, open and natural, with perimeters of grasses, shrubs and trees providing visual diversity within the park, and a rich wildlife habitat. In some cases detention ponds may be covered by tennis courts or other surfaces to deter evaporation. Detention canals are an alternative design form. Evaporation will be reduced by providing shade from overhanging plants. Water retention is also gained through storage within the plant materials.

**Retention Basins** are shallow unlined collection areas formed by grading and mounding for development of Riverpark open space areas. The grading and mounding encourages local surface drainage to collect, retaining storm water. They are temporary and seasonal, and can serve as a significant source of water to enhance drought-tolerant native vegetation in natural areas and supplement the irrigation of turf areas. Existing naturally depressed areas already function as retention basins. Graded retention areas are incorporated throughout the Riverpark in as many locations as site-specific design allows. They are a key element in creating a green park in the desert.

### Water Supplements

Interim periods of lack of storm runoff which inevitably occur in the Sonoran desert would result in an absence of water in collection ponds. Besides groundwater, the utilization of treated effluent recycled from the sewage treatment plants and distributed by a pipeline to the deten-

tion ponds would supplement the storm runoff supply. Before this water could be utilized, further treatment would be needed. Tertiary treatment could occur at the sewage treatment plants, or, the effluent would be treated at the point of use.

Contamination of the groundwater has occurred through the use of improperly treated sewage effluent, contaminated storm runoff and water percolation through landfills. Great caution should be taken to avoid designing any water-oriented features over or near landfills in the Riverpark unless the water basin is lined. Since the composition of Riverpark landfills is largely unknown, irrigation in those areas must be a minimal drip-type system to preclude leaching of possible contaminants into the groundwater aquifers.

Pending the results of a feasibility study, industrial cooling water may provide a seasonal supplemental water supply. An additional water source supplement may exist in the chemically contaminated wells nearby (some within 1/2 mile of the Santa Cruz River channel). The contaminated water could be greatly diluted with surface water in the detention ponds or pumped to irrigated grass filtration areas, where deep seepage can be controlled.

## Channel Conditions

### Main Santa Cruz River Channel

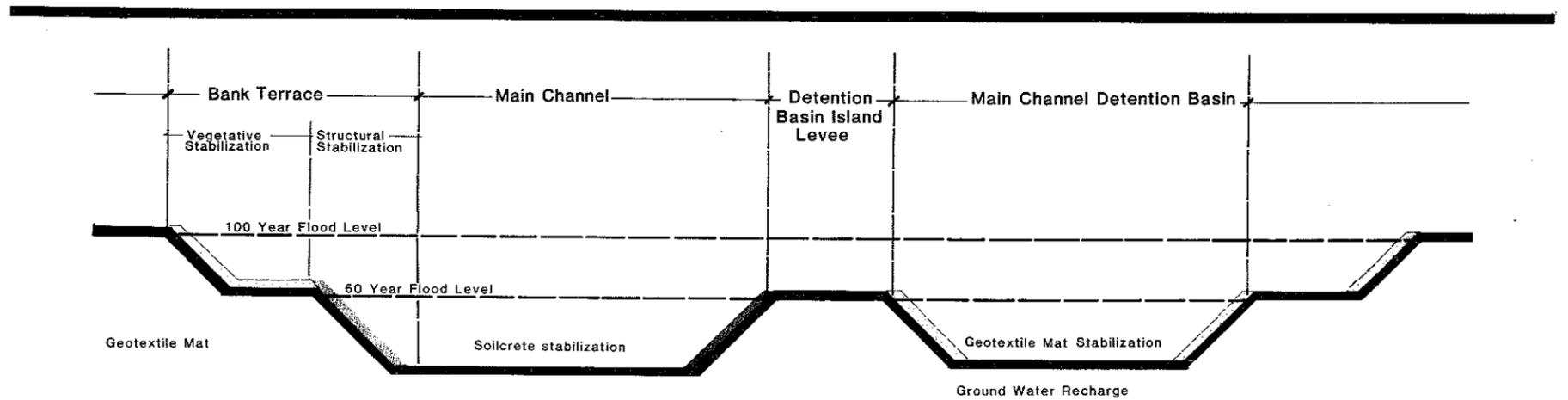
It is assumed in this study that the Santa Cruz River channel will be soilcrete stabilized at least to the 10-year flood level. Above this level, stabilization is required to the 100-year flood level, but optional methods exist:

- Continuous soilcrete stabilization to 100-year flood level. This method is most practical where the channel right-of-way is at least 250' wide and where development encroaches to channel banks.
- Terraced soilcrete stabilization. This method creates one or more terraces above the low-flow (10-year-flood) level to the 100-year flood level. Terraces may be used for trails, planted for habitat support or, when space permits, developed into playing fields subject to periodic flood inundation.
- Terraced soilcrete and alternate stabilization. In this method, the bank up to the first terrace would be soilcreted, with protection for banks above the terrace provided by rip-rap, geotextile fabric with planting, or planting alone. The advantage to this alternative is the development of a more natural river edge. Textures introduced by plants and rip-rap could create visual variety and relief from the stark character of soilcrete. Riparian communities then can be reintroduced to the river channel by grading retention areas on these terraces adjacent to the low-flow stabilized edges.

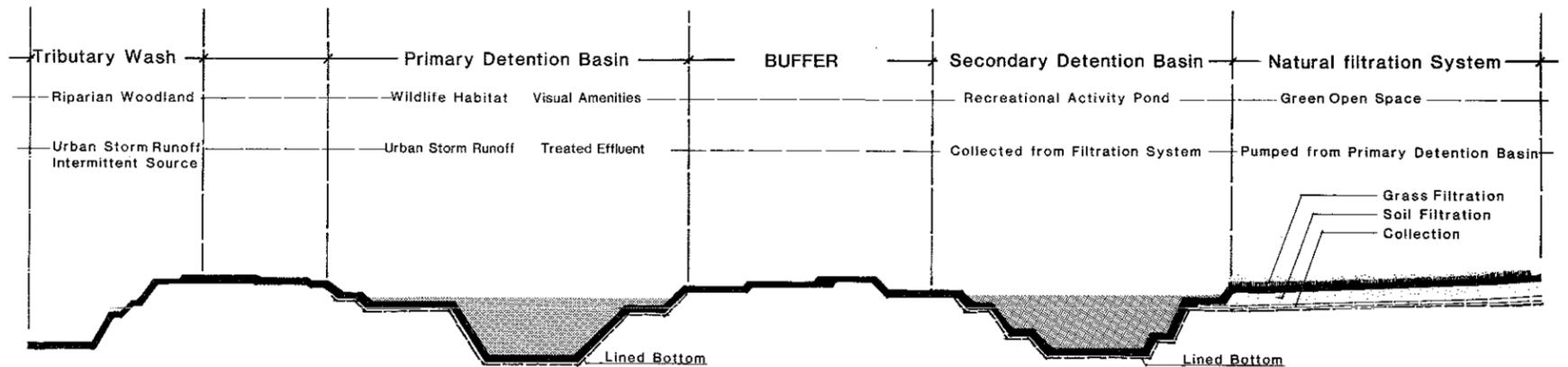
### Tributary Washes

Two types of tributary or side washes exist in the Riverpark, characterized by low- and high-volume runoff.

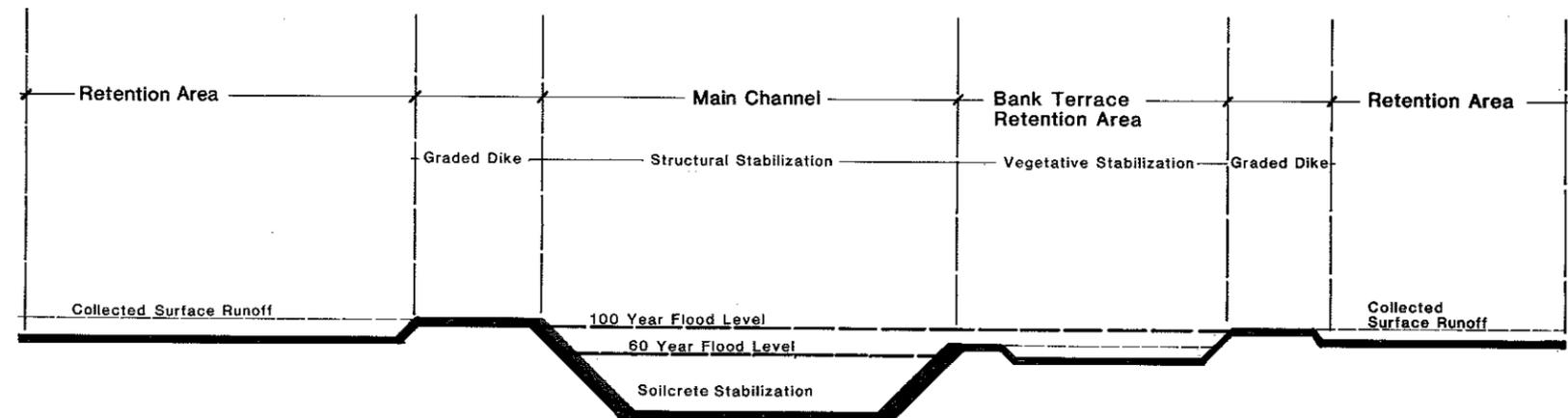
Low-volume tributary washes should remain in their natural state, with their existing riparian conditions enriched and expanded. These



MAIN RIVER CHANNEL DETENTION BASIN



TRIBUTARY WASH DETENTION BASINS



WATER RESOURCE MANAGEMENT PROTOTYPES

RETENTION AREAS

washes offer adjacent trail opportunities and can act as linkages between residential communities and the Riverpark.

High-volume washes will inevitably be concrete-lined for protection of adjacent properties. The highest potential for detention ponds exists along the high-volume tributary washes. These washes offer lower peak discharges and more stable conditions than the main river channel and exhibit a high frequency of urban storm runoff. The amounts of harvestable runoff will continue to increase with the rate of urbanization, distributing water detention resources along the Riverpark as development occurs.

Several specific sites within the Riverpark have been identified for storm water detention ponds. These high opportunity sites result from the analysis of natural attributes (water channels, vegetation, topography, site character and configuration), historic and adjacent use, and the park program which has been developed for the specific planning unit.

### PROPOSED DETENTION SITES

PLANNING UNIT	NAME	WATER SOURCES
1	Midvale Greenpark	Main River Channel Mission Manor Wash
1	Midvale Greenpark	Airport Wash
3	Amphitheatre Greenpark	Main River Channel
3	Amphitheatre Greenpark	Julian Wash
7	Santa Cruz Gardenpark	Main River Channel
7	Santa Cruz Gardenpark	Silvercroft Wash



Retention Basin contains seasonal storm water runoff, encouraging vegetation near main river channel south of Silverlake Road.

## Irrigation

Planted vegetation, with the exception of grass playing fields, will be irrigated with drip-type systems. Graded retention areas will provide seasonal irrigation water for stands of native, naturally volunteering vegetation, creating small habitat areas.

Plants for the Riverpark will be carefully selected for drought resistance and low water consumption. Indigenous trees, shrubs and plants as well as introduced varieties of drought tolerant plants will be used. Trees will be the most predominant type of plant material used in the Riverpark, providing a continuous green ribbon and shade for the park user.

### WATER REGIME MODEL: SANTA CRUZ RIVERPARK

SOURCE	PROCESS	PURPOSE
<b>Urban Storm Runoff</b>		
Tributary Channels	Detention or Retention	Irrigation
	Gravity flow or Pumping	Flood control
Water Harvesting: Surface Areas	Treatment	Aquifer recharge
	Distribution	Water activity (limited)
	Infiltration	Habitat
		Visual
Water Harvesting: Surface Areas	Retention	Recreation
	Infiltration	Habitat
		Aquifer recharge
		Visual
		Irrigation
<b>Desert Storm Runoff</b>		
Main River channel	Detention	Flood control
	Distribution	Aquifer recharge
	Infiltration	Irrigation
		Visual
		Habitat
<b>Industrial Cooling Water</b>		
	Storage	Irrigation
	Distribution	Habitat
		Visual
		Water activity (limited)
<b>Treated Sewage Effluent</b>		
	Tertiary treatment	Irrigation
	Storage	Habitat
	Distribution	Visual
<b>Groundwater</b>		
	Pumping	Human consumption
	Storage	Water activity (contact)
	Distribution	

## Recommendations

- Implement a Riverpark water management system independent of groundwater, if possible, providing water needs to the park through use of channelized storm runoff and water harvesting, with treated sewage effluent and industrial cooling water as supplementary water sources.
- Design park units to maximize potential for seasonal water supplies from the main river channel, tributary channels and surface drainage.
- Detain and utilize urban runoff collected on site for irrigation, recreation and habitat enhancement.
- Concurrent with development of individual park units, construct graded water retention areas and storm water detention systems.
- Develop adjacent land parcels to direct surface drainage toward retention basins within the Riverpark.
- Treat urban storm runoff to make it available for higher recreational use.
- Provide flood control through terracing of banks wherever possible. Design trails and playfields into terraces and enrich habitat potential.
- Stabilize channel banks with natural materials whenever possible.
- Provide tertiary treatment of sewage effluent at the wastewater treatment plant or, when appropriate, at the point of use.
- Construct a treated effluent distribution system to serve the Riverpark as well as golf courses, parks, school grounds and other public greenspaces.
- Construct an industrial cooling water delivery system to supplement Riverpark water needs.
- Divert contaminated groundwater to the Santa Cruz Riverpark for dilution and/or irrigation with controlled seepage.
- Avoid landfill areas when designing park water features, or seal to preclude contaminating recharge to the groundwater aquifer.
- Select indigenous or drought-resistant plant materials whenever possible.
- Provide irrigation of plant materials by drip systems.

# WILDLIFE HABITAT

There was a time when dense stands of vegetation, extensive groves of cottonwood, ash and mesquite, and running water created ideal habitats for wildlife in the Santa Cruz River valley. It is claimed that beaver, river otter, raccoon, birds and water fowl all found food, protection and water to sustain life.

Extensive farming practices and grazing, begun in the mid-nineteenth century, eventually led to erosion and a depleted water table which altered the conditions for wildlife support by the late 19th century. Following the years of agricultural use, land disturbances from urban and residential development, quarrying, sanitary landfill, and vandalism, more and more natural habitat was removed from the Santa Cruz River valley.

Development of the Santa Cruz Riverpark offers a unique opportunity to re-create wildlife habitats. The 1976 Master Plan cited the importance of restoring the Santa Cruz River, to the maximum degree possible, to its original status as a significant natural area largely through the reintroduction of running water in the main channel. Four habitats were described, and plant, amphibian, reptile, mammal and bird species which might be associated with these habitats were specified.

The main channel, however, which once encouraged vegetation by offering pockets for water collection, seed germination and wildlife protection as well as a high water table, is currently being straightened, steepened and made impermeable in many areas through concrete soil stabilization.

Riparian zones — rich concentrations of trees, shrubs and grasses offering food and sanctuary to animal life — which once occurred naturally along the flood plain can now be redeveloped on the banks and benches of the channelized river by recycling captured urban runoff to create habitat. Thus, the Riverpark provides a setting which has the three key ingredients of habitat development and management: water, vegetation and landform.

Integrating wildlife habitat considerations into the larger concerns for the Santa Cruz Riverpark Plan involves *research*, *analysis* and *synthesis* phases.

## Research Phase

In the research phase, the goal is a working list of wildlife species that either occur now or could occur by virtue of the species' association with vegetation communities found or planted. This list is developed on the basis of established research work in the field of habitat analysis at the federal, state and university level.

Two hundred and fifty (250) vegetative cover types are found in Arizona; thirty (30) were surveyed for data on species occurrence. Ten (10) were selected as representative samples occurring in the Santa Cruz River corridor. Of these, four (4) were determined to be predominant vegetative cover types that could be found in the study site.

- Semi-desert Grassland Biome
- Scrub Grassland Biome
- Sonoran Desert Scrub Biome
- Desert Riparian (Mesquite Bosque)

Wildlife species associated with these cover types were grouped into life form categories. These included Amphibian, Bird, Fish, Mammal and Reptile. This species list represents those life forms found in association with the cover types mentioned.

## NUMBERS OF WILDLIFE SPECIES ASSOCIATED WITH EXISTING SANTA CRUZ RIVERPARK VEGETATIVE COVER TYPES, COMPARED TO TOTAL SPECIES IN PIMA COUNTY

	Pima County	Semi Desert Grassland Biome	Scrub Grassland Biome	Sonoran Desert Scrub Biome	Desert Riparian (Mesquite Bosque)
Amphibian	12	12	13	9	0
Bird	269	59	0	62	37
Fish	14	0	0	0	0
Mammal	88	73	4	70	4
Reptile	59	53	1	46	10
<b>TOTAL</b>	<b>442</b>	<b>197</b>	<b>18</b>	<b>187</b>	<b>51</b>

A species list for each life form group was developed. The list includes those species known to be rare and endangered in the State and on the Federal Register. The list presents a conceptualization of wildlife species that either do now occur or have occurred in plant communities growing in similar conditions in or around this region of the country.

## Analysis Phase

A survey from aerial photos and field trips provided the data for the analysis phase. The Santa Cruz River corridor was classified according to landform zones in order to reconstruct the actual conditions in the corridor as they are influenced by water dynamics and land use. The landform zones were classified as follows:

- Channel bottom
- Riparian zone
- Upland
- Tributary channel

Vegetative communities form in response to landform and water availability. Analysis of the air photos and the field observations resulted in the delineation of remnants of the naturally existing vegetative cover types on site; slide examples were taken and catalogued.

Within the vegetative cover types exists a habitat structure. The existing habitat structure is a vertical layering of vegetation and landform which includes 1) tree canopy 2) sparse tree canopy 3) small trees, shrubs and cacti 4) grass and ground covers 5) cliff and slope cover.

## Synthesis Phase

The synthesis phase involved the introduction of new cover types and the enhancement of existing cover types, by the manipulation of landform, water and plant material. Species occupation of these enriched or created habitats is assumed to be through migration. No plans are made to introduce wildlife other than fish. The strategy is to create the opportunity for wildlife occupation due to the availability of new supportive habitat conditions. The wildlife management program is directly related to the proposed water resource management program developed for the Riverpark.

## Wildlife Habitat Management Program

Up to 195 species could occur along the Santa Cruz River corridor. Habitat manipulations and improvements can be directed to select any one of a number of species, species groups or combinations of species groups by introducing habitat conditions conducive to specific wildlife.

Eight types of wildlife habitat are envisioned in the Riverpark. The management program involves enhancement of the four existing cover types and creation of four new types. Each is a by-product of the combination of water, vegetation and landform.

The existing **Sonoran Desert Scrub**, **Scrub Grassland**, and **Semi-desert Scrub** will be enhanced by using small check dams and earth berms to retain surface storm water runoff. Drought tolerant shade trees will be introduced.

The existing **Desert Riparian**, found primarily in tributary washes will be enhanced by using small check dams. Drought tolerant shade trees will be introduced.

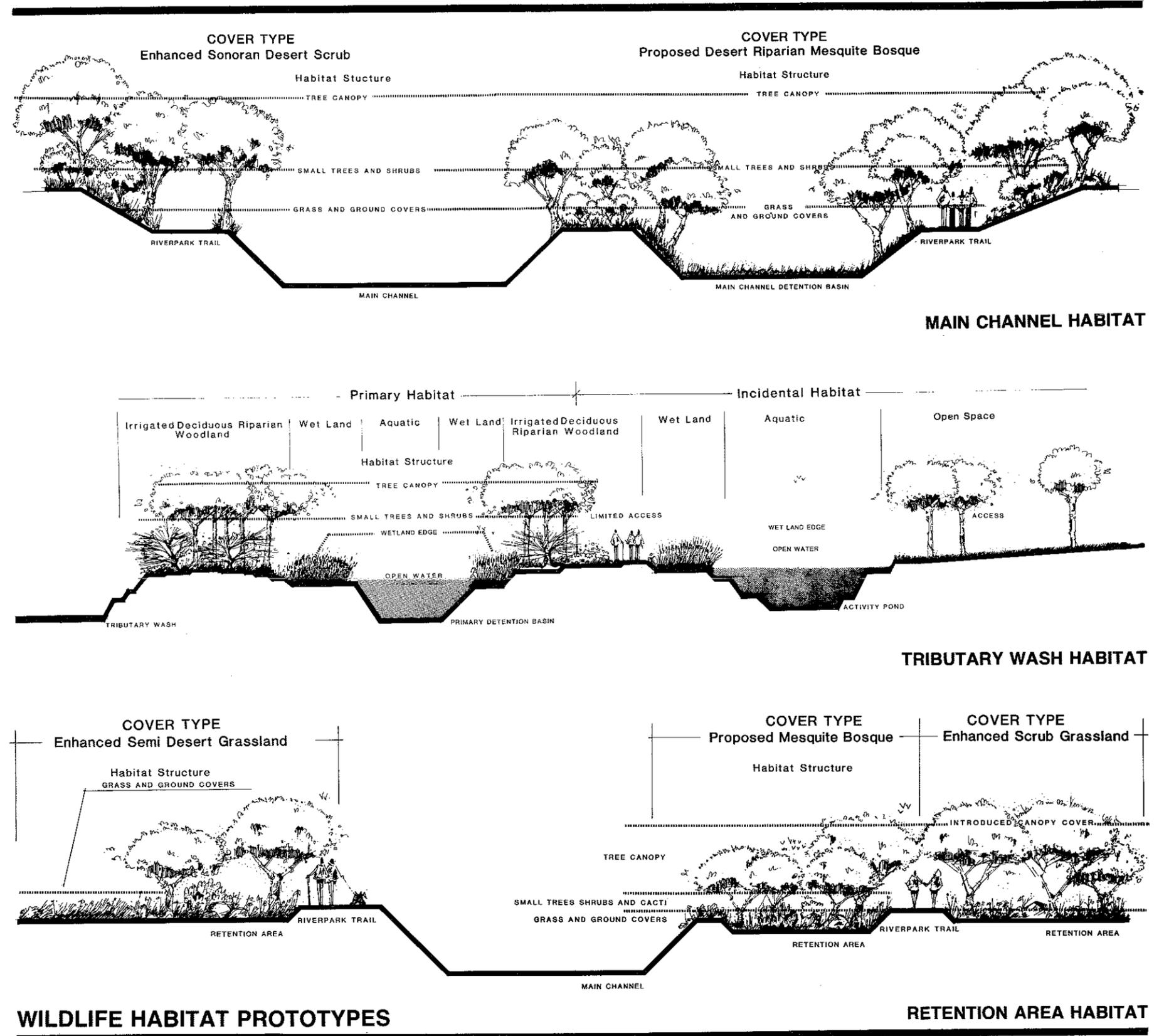
The new **Irrigated Deciduous Riparian Woodland** will be created near detention and activity ponds. The trees will provide a high canopy in the vertical layering of the vegetation structure near the water.

The new **Riparian Wetland** will be created at the edges of detention and activity ponds.

The **Aquatic** habitat of the detention and activity ponds will allow the introduction of fish and waterfowl.

The new **Desert Riparian** will be created by retaining desert storm water runoff and introducing native trees.

The relationship of the eight habitat types is illustrated in the Wildlife Habitat Management Program chart.



## Recommendations

- Create landforms in the Riverpark to retain and detain water and introduce appropriate plant species for food, cover and nesting requirements of targeted wildlife species.
- Create primary, permanent habitat areas in main river channel water detention ponds.
- Enhance large Riverpark land areas not programmed for active park use by creating seasonal retention basins to attract and support wildlife.
- Supplement primary water detention areas with treated effluent or industrial cooling water for year-round habitat support.
- Fence high priority habitat areas for protection of wildlife and to prevent park visitor contact with unfiltered water.
- Introduce targeted fish species in open water activity ponds.
- Create terraces and utilize natural materials for main river channel flood control and bank stabilization wherever possible.

## WILDLIFE HABITAT MANAGEMENT PROGRAM

COVER TYPE	PRIORITY	WATER RESOURCE MANAGEMENT PROGRAM	LANDFORM ZONE	HABITAT STRUCTURE	MAJOR INTRODUCED PLANT SPECIES	ASSOCIATED LIFE FORMS	
1. Sonoran Desert Scrub	Medium to high	Retained surface runoff		Tree canopy Small trees, shrubs and cacti Grass and ground cover Cliff and slope cover	Mesquite Blue Palo Verde Mexican Palo Verde Desert Hackberry Sweet Acacia	Birds Mammals Reptiles	
2. Scrub Grassland Biome	Medium to high	Retained surface runoff					
3. Semi-desert Scrub Biome	Medium to high	Retained surface runoff					
4. Desert Riparian	Medium to high	Tributary wash — retained urban storm runoff					
5. Irrigated Deciduous Riparian Woodland A. Detention basin B. Activity pond	High Low	Urban storm runoff and treated effluent. Irrigation		Tree canopy Small trees, shrubs and cacti Grass and ground cover	Cottonwood Willow Sycamore Ash Walnut	Birds Mammals Reptiles	
6. Riparian Wetland A. Detention basin B. Activity pond	High Low	Urban storm runoff and treated effluent with minimal water level fluctuation			Grass and ground cover	Cattail Bullrush Giant Reed Common Reed Arrowweed	Waterfowl Amphibians
7. Aquatic	High	Urban storm runoff and treated effluent with minimal water level fluctuation			Open water	None	Fish Amphibians Waterfowl
8. Desert Riparian	Medium	Retained surface runoff			Small trees, shrubs and cacti Grass and ground cover	Blue Palo Verde Mesquite Catclaw Acacia Smoketree Desert Willow Jumping Bean Netleaf Hackberry Mexican Palo Verde	Birds Mammals Reptiles Amphibians

## WATERFOWL SPECIES NATIVE TO ARIZONA



Waterfowl Pond

COMMON NAME	GENUS SPECIES	FOOD HABITS	COVER REQUIREMENTS
American wigeon	Anas americana	Aquatic vegetation	Shallow open water
Black bellied whistling	Dendrocygna autumnalis	Aquatic seeds and grains	Trees adjacent to wetlands
Blue winged teal	Anas discors	Aquatic vegetation, seeds and invertebrates	Shallow wetlands and marshlands
Bufflehead	Bucephala albeola	Mollusks, crustaceans, aquatic vegetation and seeds	Open water
Canvasback	Aythya valisneria	Aquatic vegetation, crustaceans, seeds and invertebrates	Open water
Cinnamon teal	Anas cyanoptera	Aquatic vegetation, seeds and invertebrates	Shallow vegetative wetlands
Common golden eye	Bucephala clangula	Mollusks, crustaceans, aquatic vegetaion and seeds	Open water
Common merganser	Mergus merganser	Fish	Cliffs near streams
Gadwall	Anas strepera	Aquatic vegetation and seeds	Shallow ungrazed wetlands
Greater scaup	Aythya marila	Mollusks, crustaceans, aquatic vegetation and seeds	Deep open water
Green winged teal	Anas crecca	Aquatic vegetation and seeds	Shallow open water
Lesser scaup	Aythya affinis	Invertebrates	Shallow open water
Mallard	Anas platyrhynchos	Aquatic vegetation and grains	Marshland, shallow water
Mexican	Anas diazi	Aquatic vegetation and seeds	Shallow marsh
Northern shoveler	Anas clypeata	Aquatic seeds and invertebrates	Wetlands and ponds
Pintail	Anas acuta	Aquatic vegetation and seeds	Ungrazed marsh and open water
Redhead	Aythya americana	Aquatic vegetation, crustaceans and mollusks	Wetlands
Ring-necked	Aythya collaris	Aquatic vegetation, seeds and crustaceans	Wetlands
Ruddy	Oxyura jamaicensis	Aquatic vegetation and seeds	Wetlands and open water

**WILDLIFE SPECIES LIST—  
EXISTING OR POTENTIAL EXISTING**

**AMPHIBIAN**

**9 total 3 threatened or endangered**

- Toad, Colorado River
- Toad, Couch's Spadefoot
- Toad, Great Plains
- Toad, Western Spadefoot
- Toad, Red-Spotted
- Toad, Sonoran Green
- Toad, Southwestern
- Toad, Great Plains Narrowmouth
- Toad, Woodhouse's

**BIRD**

**62 total 8 threatened or endangered**

- Bunting, Varied
- Caracara
- Cardinal
- Cowbird, brown-headed
- Dove, inca
- Dove, mourning
- Dove, white-winged
- Falcon, Aplomado
- Falcon, prairie
- Flicker, common
- Flycatcher, Ash-throated
- Flycatcher, beardless
- Flycatcher, wied's crested
- Gnatcatcher, black-tailed
- Hawk, gray
- Hawk, harris
- Hawk, swainson's
- Hummingbird, broad-billed
- Hummingbird, rufous
- Junco, dark-eyed
- Martin, purple
- Mockingbird
- Oriole, Scott's
- Owl, elf
- Owl, ferruginous
- Owl, great horned
- Owl, long-eared
- Owl, screech
- Phainopepla
- Phoebe, black
- Phoebe, say's
- Poor-will
- Pyrrhuloxia
- Quail, gambel's
- Quail, scaled
- Roadrunner
- Shrike, loggerhead
- Sparrow, black-chinned
- Sparrow, black-throated
- Sparrow, brewer's
- Sparrow, five-striped
- Sparrow, rufous-crowned
- Sparrow, sage
- Sparrow, white-crowned

- \* Bufo alvarius
- Scaphiopus couchi
- Bufo cognatus
- Scaphiopus hammondi
- Bufo punctatus
- \* Bufo retiformis
- Bufo microscaphus
- \* Gastrophyne olivacea
- Bufo woodhousei

- \* Passerina versicolor
- \* Caracara cheriway
- Cardinalis cardinalis
- Molothrus ater
- Scandafella inca
- Zenaida macroura
- Zenaida asiatica
- \* Falco femoralis
- Falco mexicanus
- Colaptes auratus
- Myiarchus cinerascens
- \* Camptostoma imberbe
- Myiarchus tyrannulus
- Poliophtila melanura
- \* Buteo nitidus
- Parabuteo unicinctus
- Buteo swainsoni
- \* Cynanthus latirostris
- Selasphorus rufus
- Junco hyemalis
- Progne subis
- Mimus polyglottos
- Icterus parisorum
- Micrathene whitneyi
- Glaucidium brasilianum
- Bubo virginianus
- Asio otus
- Otus asio
- Phainonpepla nitens
- Sayornis nigricans
- Sayornis saya
- Phalaenoptilus nuttallii
- Cardinalis sinuatus
- Lophortyx gambelii
- Callipepla squamata
- Geococcyx californianus
- Lanius ludovicianus
- Spizella atrogularis
- Amphispiza bilineata
- Spizella breweri
- \* Aimophila quinguestriata
- Aimophila ruficeps
- Amphispiza belli
- Zonotrichia leucophrys

- Starling
- Swift, vaux's
- Tanager, western
- Thrasher, crissal
- Thrasher, curve-billed
- Thrasher, Le conte's
- Thrush, hermit
- Towhee, brown
- Towhee, greentailed
- Towhee, rufous-sided
- Verdin
- Vulture, black
- Warbler, Lucy's
- Woodpecker, gila
- Woodpecker, ladder-backed
- Wren, cactus
- Wren, canyon
- Wren, rock

**MAMMALS**

**58 total 1 threatened or endangered**

- Badger
- Bat, big brown
- Bat, big free-tailed
- Bat, brazilian free-tailed
- Bat, california leaf-nosed
- Bat, long-tongued
- Bat, pallid
- Bat, pocketed free-tailed
- Bat, sanborn's long-nosed
- Bat, southern yellow
- Bat, townsend's big-eared
- Bat, underwood's mastiff
- Bat, western mastiff
- Coyote
- Fox, Kit
- Gopher, Botta's pocket
- Javelina
- Mouse, Arizona pocket
- Mouse, bailey's pocket
- Mouse, cactus
- Mouse, canyon
- Mouse, deer
- Mouse, desert pocket
- Mouse, fulvous harvest
- Mouse, hispid pocket
- Mouse, little pocket
- Mouse, merriam's
- Mouse, rock pocket
- Mouse, southern grasshopper
- Mouse, western harvest
- Mouse, white-footed
- Muskrat
- Myotis, California
- Myotis, cave
- Myotis, fringed
- Myotis, small-footed
- Myotis, yuma
- Pipistrelle, western
- Rabbit, antelope Jack
- Rabbit, desert cottontail
- Rabbit, eastern cottontail
- Rat, arizona cotton
- Rat, banner-tailed kangaroo
- Rat, desert kangaroo
- Rat, desert wood

- Sturnus vulgaris
- Chaetura vauxi
- Piranga ludoviciana
- Toxostoma dorsale
- Toxostoma curvirostre
- Toxostoma lecontei
- Catharus guttatus
- Pipilo fuscus
- Pipilo chlorurus
- Pipilo erythrophthalmus
- Auriparus flaviceps
- Coragyps atratus
- Vermivora luciae
- \* Malanerpes uropygialis
- Picoides scalaris
- Campylorhynchus brunneicapillus
- Catherpes mexicanus
- Salpinctes obsoletus

- Rat, hispid cotton
- Rat, merriam's kangaroo
- Rat, ord's kangaroo
- Rat, southern plains wood
- Rat, white-throated wood
- Shrew, desert
- Skunk, eastern spotted
- Skunk, hog-nosed
- Skunk, hooded
- Squirrel, harris' antelope
- Squirrel, rock
- Squirrel, round-tailed ground
- Squirrel, spotted ground
- Squirrel, white-tailed antelope

**REPTILES**

**46 total 8 threatened or endangered**

- Chuckwalla
- Gecko, western banded
- Iguana, desert
- Lizard, desert horned
- Lizard, desert night
- Lizard, desert spiny
- Lizard, collared
- Lizard, eastern fence
- Lizard, flat-tail horned
- Lizard, fringe-toed
- Lizard, greater earless
- Lizard, lesser earless
- Lizard, long nose leopard
- Lizard, brush
- Lizard, regal horned
- Lizard, side-blotched
- Lizard, tree
- Snake, arizona coral
- Snake, banded sand
- Snake, blackneck garter
- Snake, blacktail rattle
- Snake, checkered garter
- Snake, coachwhip
- Snake, common king
- Snake, longnose
- Snake, lyre
- Snake, mohave rattle
- Snake, night
- Snake, gopher
- Snake, rosy boa
- Snake, saddled leafnose
- Snake, sidewinder rattle
- Snake, sonoran whip
- Snake, speckled rattle
- Snake, spotted leafnose
- Snake, tiger rattle
- Snake, western blackhead
- Snake, western blind
- Snake, western diamondback rattle
- Snake, western ground
- Snake, western patchnose
- Snake, western shovelnose
- Tortoise, desert
- Turtle, sonoran mud
- Whiptail, canyon spotted
- Whiptail, western

- Sigmodon hispidus
- Dipodomys merriami
- Dipodomys ordii
- Neotoma micropus
- Neotoma albigula
- Notiosorex crawfordi
- Spilogale putorius
- Conepatus mesoleucus
- Mephitis macroura
- Ammospermophilus harrisi
- Spermophilus variegatus
- Spermophilus tereticaudus
- Spermophilus spilosoma
- Ammospermophilus leucurus

- Sauromalus obesus
- Coleonyx variegatus
- Dipsosaurus dorsalis
- Phrynosoma playtyrhinos
- Xantusia vigilis
- Sceloporus magister
- Crotaphytus collaris
- Sceloporus undulatus
- Phrynosoma m'calli
- Uma notata
- Cophosaurus texanus
- Holbrookia maculata
- Gambelia wislizenii
- Urosaurus graciosus
- Phrynosoma solare
- Uta stansburiana
- Urosaurus ornatus
- \* Micruroides euryxanthus
- Chilomeniscus cinctus
- Thamnophis cyrtopsis
- Crotalus molossus
- Thamnophis marcianus
- \* Masticophis flagellum
- \* Lampropeltis getulus
- Rhinocheilus leconiei
- \* Trimorphodon biscutatus
- \* Crotalus scutulatus
- Hypsiglena torquata
- Pituophis melanoleucus
- Lichanura trivirgata
- Phyllorhynchus browni
- Crotalus cerastes
- Masticophis bilineatus
- Crotalus mitchelli
- Phyllorhynchus decurtatus
- Crotalus tigris
- Tantilla planiceps
- Leptotyphlops humilis
- Crotalus atrox
- Sonoran semiannulata
- Salvadora hexalepis
- Chionactis occipitalis
- \* Copherus agassizi
- Kinosternon sonoriense
- \* Cnemidophorus burti
- Cnemidophorus tigris

\*Endangered species

# SECURITY

Security in and around the Santa Cruz Riverpark is an essential concern. The goal of a safe, vandal-resistant park can only be achieved if crime-inhibiting factors are incorporated in the design and management policies of the Riverpark at the outset and carried on throughout the park development.

Austin, Texas  
 Boston, Massachusetts  
 Chico, California  
 Cincinnati, Ohio  
 Denver, Colorado  
 Lansing, Michigan  
 Littleton, Colorado

Lowell, Massachusetts  
 Portland, Oregon  
 Sacramento, California  
 San Antonio, Texas  
 Scottsdale, Arizona  
 St. Louis, Missouri  
 Wichita, Kansas

## Riverpark Security Survey

In order to benefit from the experience of other Riverpark developments, letters were sent to police departments as well as parks and recreation departments in the following fourteen cities:

Questions were asked regarding size, location and features of the parks; types of vandalism and crimes encountered; effective prevention methods; and use of patrols for Riverpark security.

RIVERPARK LOCATION	RESPONDENTS						DEGREE OF VANDALISM & CRIME					TYPE OF VANDALISM OR CRIME					PATROLS: HORSE, VEHICLE, FOOT				SECURITY TECHNIQUES				
	Police Department	Parks & Recreation Department	None to date	Minimal	Less than city overall	Same as other parks	Higher than average	Graffiti	Destruction: lighting, plants	Vagrants, drinking, drugs	Scavengers, indecent exposure	Serious crime: rape, assault	Regular police patrols	Riverpark patrols	Special event patrols	Civilian, youth patrols	Ordinances: glass, trespass, curfew	Supervision & police presence	Immediate damage restoration	Ample lighting	Heavy park usage	Good overall visibility			
AUSTIN, TEXAS	●	●		●					●	●		●	●			●						●	●	●	
BOSTON, MASS.						N	O		R	E	S	P	O	N	S	E									
CHICO, CALIF.	●						●		●	●	●			●				●							
CINCINNATI, OHIO	●	●		●				●	●	●	●			●	●		●	●						●	
DENVER, COLO.	●	●	●			●		●	●	●			●	●											
LANSING, MICH.																									
LITTLETON, COLO.						N	O		R	E	S	P	O	N	S	E									
LOWELL, MASS.						N	O		R	E	S	P	O	N	S	E									
PORTLAND, OREGON	●	●		●		●		●			●		●	●											
SACRAMENTO, CALIF.	●			●									●	●	●		●								
ST. LOUIS, MISSOURI		●	●										●	●											
SAN ANTONIO, TEXAS		●						●					●		●									●	
SCOTTSDALE, ARIZ.	●			●					●	●			●	●	●		●	●						●	
WICHITA, KANSAS	●			●					●	●			●	●	●		●	●						●	
TOTAL RESPONSES	8	6	2	4	2	2	1	3	2	4	3	3	4	9	3	4	4	3	3	2	4	2			

RIVERPARK SECURITY SURVEY RESPONSES

Telephone and letter responses were received from twelve of the cities. The consensus of responses indicates that riverpark security problems are no greater than those encountered elsewhere within each city; and heavy park usage, especially of trail systems, is a crime deterrent. Serious crime in these riverparks is relatively rare. Slight increases in crime-related problems were noted for riverparks that were more remote in nature and larger in size.

Graffiti is the vandalism problem most often expressed; prompt removal of graffiti and prompt restoration of vandalized or damaged park fixtures will deter further vandalism.

A variety of patrols is used by riverparks, including horse, canine, motorcycle and motorboat. Most cities have a designated park patrol force. Civilian employees, recreation leaders and youth groups frequently serve as park security, checking for vandalism, noting maintenance needs and enforcing rules. Additional patrols are often employed for special park events.

## Tucson Police Department Interview

The results and conclusions from the Riverpark Security Survey were reviewed by the Community Resources Department of the Tucson Police Department. The findings were acceptable with the following additions:

- Develop a park patrol of Tucson police officers to patrol the entire park as one beat. The patrol may consist of pedestrian, equestrian, or three-wheeled off-road vehicles. Funding for this special force may be provided by a combination of city and private resources (concessionaires, adjacent businesses).
- Locate activity areas close to parking lots for access by police officers.
- Provide police access to park trails (service roads) by keyed barriers or breakaway barriers.
- Place metal Haline bright white lights under bridges to eliminate the attraction of vandals and vagrants.
- Do not light targets; light potential hiding areas. Focus lighting away from eyes of an approaching police officer.
- Design mounding and planting to preclude places for criminals to hide.
- Provide graffiti walls. Where graffiti is not desirable, plant vines to cover vertical surfaces or cover with paint-resistant finish.
- Design park use areas with social age groups in mind. For example, areas used by the elderly are not compatible with teenage areas but can be associated with pre-school areas.

Follow-up contact with the Community Resources Department, Tucson Police Department, is encouraged during site-specific Riverpark design to optimize surveillance opportunity and to explore funding mechanisms for a Riverpark Police Patrol.

Both policy and design recommendations are advocated to promote security and prevent crime and vandalism within the Santa Cruz Riverpark.

## Design Recommendations

- Provide sufficient amenities at locations of greatest need, including restrooms, trash receptacles and parking. These facilities must be completely visible and/or thoroughly signed to direct the public to the facility and preclude such activities from taking place in unauthorized locations.
- Use pictographic signs which are easily deciphered by all cultures. Directional signs and facility identification signs must be incorporated early in the development of the park, as soon as individual facilities are opened. Even undeveloped areas of the Riverpark should be signed now to begin developing the Riverpark identity.
- Specify cost effective materials of maximum durability in the design of all park fixtures and equipment. Bronze, brass, copper, and other such valuable metals should be firmly affixed so that scavenging cannot occur. The durability of concrete over asphalt will offset its higher initial cost. Materials which are flammable, especially wood, have been vandalized in Phase 2 of the Santa Cruz Riverpark development and should be avoided.
- Avoid locating benches and other park elements under bridges and overpasses. Objects can be dropped or thrown from above to injure people and damage features. In addition, these obscure locations attract vandals and vagrants.
- Specify materials durable under the climatic extremes of Tucson, particularly heat and sun. Wind and heavy rains must also be considered.
- Provide optimum visibility conditions for park surveillance. Maximize lighting to eliminate areas of concealment from patrol. Trees, shrubs and mounds in the Riverpark should be designed to allow maximum visibility. Design park units to allow police patrols to survey the area from roadways and parking lots.
- Design park access and facilities to restrict access to off-road vehicles. Use of these vehicles in the park area to date has been incompatible with the park.
- Include local artisans in the design of park units whenever possible. Sculpture, murals or other folk art executed by neighborhood artists will foster a vested interest in the park by residents leading to a higher level of security.

## Policy Recommendations

- Implement a Riverpark Police Security Force immediately. Visibility of this patrol will reduce vandalism at the outset and permit the use of a smaller security force when Riverpark development is complete.
- Develop horse-mounted patrols, both police and civilian. Stables and equestrian trails throughout the park will enable surveillance by horseback in character with the setting, provide access to any park area, and promote positive public relations. Horse-mounted patrols have proved very popular and colorful in other cities throughout the U.S.A.
- Encourage neighborhood watch programs from existing and developing residential and business communities. Surveillance by adjacent community groups will increase feelings of participation and belonging while helping to reduce vandalism.

- Implement the continuous Riverpark Trail System. Heavy and continuous trail use provides an undesignated mobil patrol which will deter vandalism and crime. Prioritize implementation of the Riverpark Trail for the complete length of the park.
- Publicize park facilities and events, including trail brochures and special events announcements. Grand opening events should accompany every stage of completed development. More events bring more people and promote use of the park.
- Restore damaged and vandalized Riverpark elements immediately. Graffiti invites more graffiti; one broken light encourages another. Assignment of responsibility for early identification and repair of damaged elements is essential.
- Enforce City ordinances. The City has already adopted a park curfew, glass and alcoholic beverage ordinances in its parks. They should be enforced.
- Lock parking areas and restrooms when park is not staffed. When the park is closed or cannot be supervised, access should be restricted.
- Install emergency call boxes at intervals throughout the park. Free, direct lines to the police and/or fire departments will facilitate emergency contact.
- Involve adjacent businesses, commercial and industrial, in the development of park units. Existing and planned businesses (motels, industrial parks, etc.) should be involved in the design and development of adjacent park facilities. They should encourage guests and employees to use the park. New business development and the adjacent park area should be designed and implemented simultaneously.
- Invite residential communities to participate in park program and design. Every effort should be made to promote integration of the park with the community. Early involvement of adjacent communities in park development will encourage feelings of identity and responsibility.

# IMPLEMENTATION

## Phasing

The bicycle/pedestrian Riverpark Trail is the framework and spine of the Riverpark and should be developed in its entire length as expeditiously as possible. Riverpark Trail implementation is also important for providing park security. Trail linkages to specific attractions within and outside of the park can be implemented as development progresses for each planning unit.

The schedule for developing individual planning units of the Santa Cruz Riverpark will be determined by the Tucson Parks & Recreation Department in conjunction with other City departments and private development. Their analysis of specific projects and their priorities for the entire park in relation to revenue and other resources required will be the basis for prioritizing the development of planning units. Site-specific analysis and detailed design for each planning unit will occur at the time of final design of each unit. Priorities for developing the planning units are indicated.

PARK ELEMENT / PLANNING UNIT	DEVELOPED	UNDER CONSTRUCTION	DEVELOPMENT PRIORITY			LAND ACQUISITION NEEDED	USE AGREEMENT OR USE EASEMENT NEEDED	STATUS
			HIGH	MED	LOW			
CONTINUOUS RIVERPARK TRAIL	●	●	●					OVER 2 MILES OF RIVERPARK TRAIL COMPLETED TO DATE.
1. MIDVALE GREENPARK		●						RIVERPARK DRIVE (CALLE SANTA CRUZ) CONSTRUCTION
2. SANTA CRUZ EQUESTRIAN PARK		●						
3. AMPHITHEATRE GREENPARK		●						
4. SANTA CRUZ HISTORIC PARK		●						
5. RIO NUEVO / MANZO	●	●	●					RIVERPARK TRAIL COMPLETE. PHASE 1 DEVELOPMENT NEEDS RENOVATION.
6. TUCSON RIVERPARK PLAZA	●	●	●					RIVERPARK TRAIL PARTIALLY DEVELOPED (PHASE 2).
7. SANTA CRUZ GARDENPARK		●						
8. SILVERBELL RIVERTRAIL		●						SILVERBELL REGIONAL PARK IN PLANNING STAGE.

### RIVERPARK IMPLEMENTATION STATUS

## Funding

Development and completion of the Santa Cruz Riverpark will require a funding strategy which utilizes all possible funding sources: Federal, State, local and private.

Funding techniques include the following:

- **City of Tucson Capital Improvement Program**, including General Revenues and bond issues. A Parks and Recreation bond issue is planned for 1985.

- **Block Grants**, including funding for development of the Hohokam archaeological site in cooperation with the State Parks and Recreation Department or other State agency.
- **Private "quasi Governmental" Agencies**, such as the Downtown Development Corporation which is responsible for the Rio Nuevo Redevelopment Project.
- **State of Arizona or Pima County Flood Control Funds**, utilized to provide channel maintenance roads which may also serve as Riverpark trails and service roads.
- **Federal Grant-in-Aid programs**, including historic preservation assistance.
- **Private-Public collaborative ventures**, including lease-build agreements for developing park equestrian facilities, the amphitheatre bandshell, and other concession facilities.
- **Rezoning applications**, stipulating shared cost of development of the adjacent Riverpark property and dedication of a minimum of 30' of Riverpark edge to the City.
- **Agreements with Existing Businesses**, involving maintenance, security and upgrading adjacent Riverpark facilities by adjoining property owners as well as a park use agreement for a 30' minimum along the channel edge.
- **Private Gifts and Donations**. Service organizations may be solicited to fund particular facilities within the park.

Implementation of certain park projects by private investment is encouraged, stimulated by carefully selected public action and guided by regulation. This concept is particularly relevant in the case of adjacent land development. Requirements and objectives of the Santa Cruz Riverpark must always be met. Methods for encouraging private investment include loans and guarantees, bonus provisions (higher density, allowances, etc.), tax concessions, grants and matching funds.

## Land Acquisition

Land acquisition is the highest priority in the Riverpark phasing strategy. Securing land for the Riverpark and finalizing adjacent land uses will create the setting for park development.

Methods of acquiring use of land for Santa Cruz Riverpark include:

- Direct purchase acquisition (City of Tucson ownership) of land parcel
- Easement acquisition
- Acquisition by trade
- Private ownership participation agreement
- Public ownership (County, State, Federal) use agreement

The following land parcel acquisitions and use agreements or use easement techniques are needed.

## PROPOSED PROPERTY ADDITIONS TO SANTA CRUZ RIVERPARK

PLANNING UNIT	LOCATION	PURPOSE	CURRENT OWNERSHIP	ATTAINMENT METHOD
Midvale Greenpark	San Xavier Sand and Gravel Operation Site (south of Valencia Road)	To begin Santa Cruz River channelization (transition of natural to stabilized)	Private	Acquisition
Midvale Greenpark	Hohokam village site east of Calle Santa Cruz	Archaeological repository, Interpretive Center and Indian Cultural Center	State	Transfer to State Parks & Recreation Department or other State agency
Midvale Greenpark	Bend of river channel into Midvale Park on west bank	Easement for continuation of Riverpark Trail	Private	Use agreement with developer
Santa Cruz Equestrian Park	East riverbank adjacent to Lamar City Acres	Easement for channel stabilization	Private	Acquisition
Amphitheatre Greenpark	Parcel bordering I-19 at 12th Avenue	Access to and parking for Amphitheatre Greenpark	Private	Use easement
Amphitheatre Greenpark	Land between Cottonwood Lane and river channel	Continuous park development on west bank	County and private	Use agreement and acquisition
Amphitheatre Greenpark	Parcels on east bank between proposed amphitheatre facility and Silverlake Road	Access to amphitheatre facility, channel stabilization and continuous park development on east bank	Private	Acquisition
Santa Cruz Historic Park	West bank north of Silverlake Road	Easement for Riverpark Trail and equestrian trailhead up West Branch of Santa Cruz River	County	Use agreement
Rio Nuevo Riverpark Trail	Adjacent to I-10 south of Tucson Arroyo	Riverpark Trail development	State	Use agreement
Riverpark Plaza	Northwest corner to Speedway and I-10	Entry plaza for proposed Riverpark Plaza	Private	Acquisition
Riverpark Plaza	East bank parcels, channel adjacent to Broadbent Interstate Center	Development of Riverpark Plaza river channelization and Riverpark Trail	State	Use agreement
Santa Cruz Gardenpark	University of Arizona Casa Grande Highway Farm	Major Riverpark proposed development: Santa Cruz Gardenpark	University of Arizona	Acquisition
Santa Cruz Gardenpark	Proposed Riverpark Drive alignment	Riverpark Drive easement between Grant Road and Prince Road	State and private	Acquisition
Santa Cruz Gardenpark	Channel and east bank area adjacent to ADOT storage yard	River channelization, Riverpark Trail development and main channel detention pond facility	State	Use agreement
Santa Cruz Gardenpark	Channel adjacent to University of Arizona farm	River channelization and Riverpark Trail development	Private	Use agreement with Developer
Silverbell Riverpark Trail	East bank adjacent to North Tucson Business Center	Riverpark Trail easement	Private	Use agreement

## Citizen Participation

Public participation in the Riverpark implementation process is an important component. The Santa Cruz Riverpark is both a regional and neighborhood park. The existing and projected adjoining residential neighborhoods should be integrated into the planning, design, implementation and management of each planning unit for mutual benefit.

Three levels of citizen participation can be integrated in the planning and implementation procedures:

- Identification of neighborhood needs through involvement of neighborhood association citizens' groups in planning advisory roles. Differences in cultural background and demographic conditions should be reflected in Riverpark plans and programs.
- Utilization of special expertise and talent of citizens with specific vocational or avocational knowledge in natural, sociological, economic, physical or aesthetic areas.
- City of Tucson Citizen Participation Department.

## Coordination

Cooperation and coordination among City, County and State governments as well as private developers is imperative for Riverpark implementation. Integration of park plans with area, neighborhood and subdivision plans and rezonings must be an established regular procedure. The current and future activities of the Downtown Development Corporation will be an important source of development opportunity for implementation of the Riverpark.

Needs, activities and funding strategies must be coordinated with projects and priorities of departments represented by the Santa Cruz Coordinating Committee.

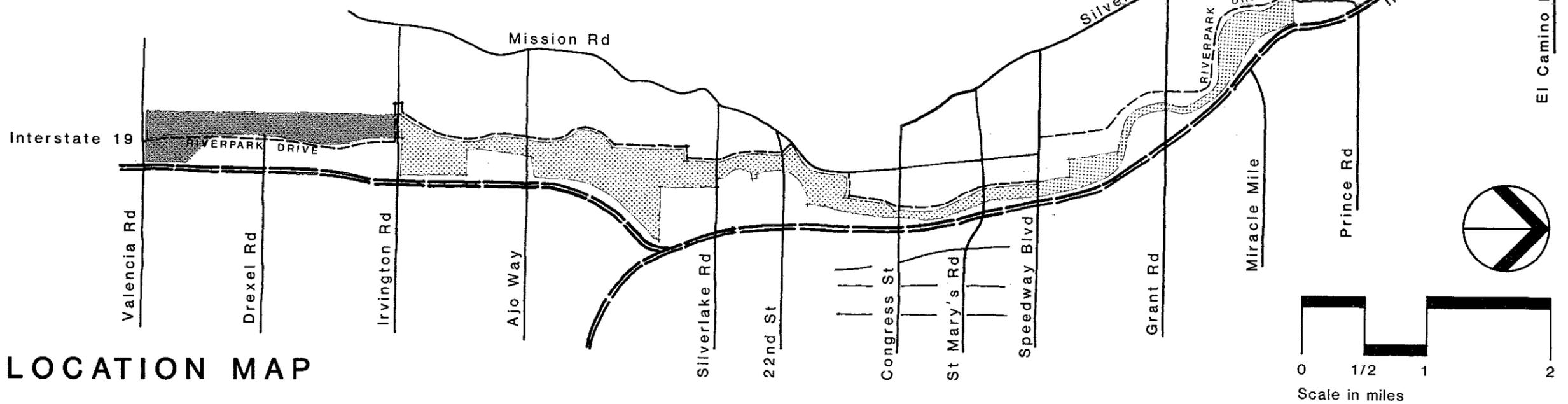
## Recommendations

- Coordinate implementation of Riverpark facilities with development of adjacent land.
- Implement the Riverpark Trail throughout the full length of the park as the highest priority. Connect existing trail segments first (e.g., Silverbell Park and Rio Nuevo).
- Prioritize planning unit implementation in conjunction with State and Federal programs available for supplemental funding.
- Land acquisition for the Riverpark can take the form of City ownership, lease, trade or development partnerships.
- Explore new development partnerships such as land sale contracts, owner participation agreements, self-sustaining concessions, use agreements and trade-offs.
- Attain the use of a minimum of 30' along both banks of the river channel.
- Provide for citizen participation input as nodal design and development adjacent to existing neighborhoods commences.
- Define and provide a management safety and security program concurrent with site development.

**PLANNING UNITS**

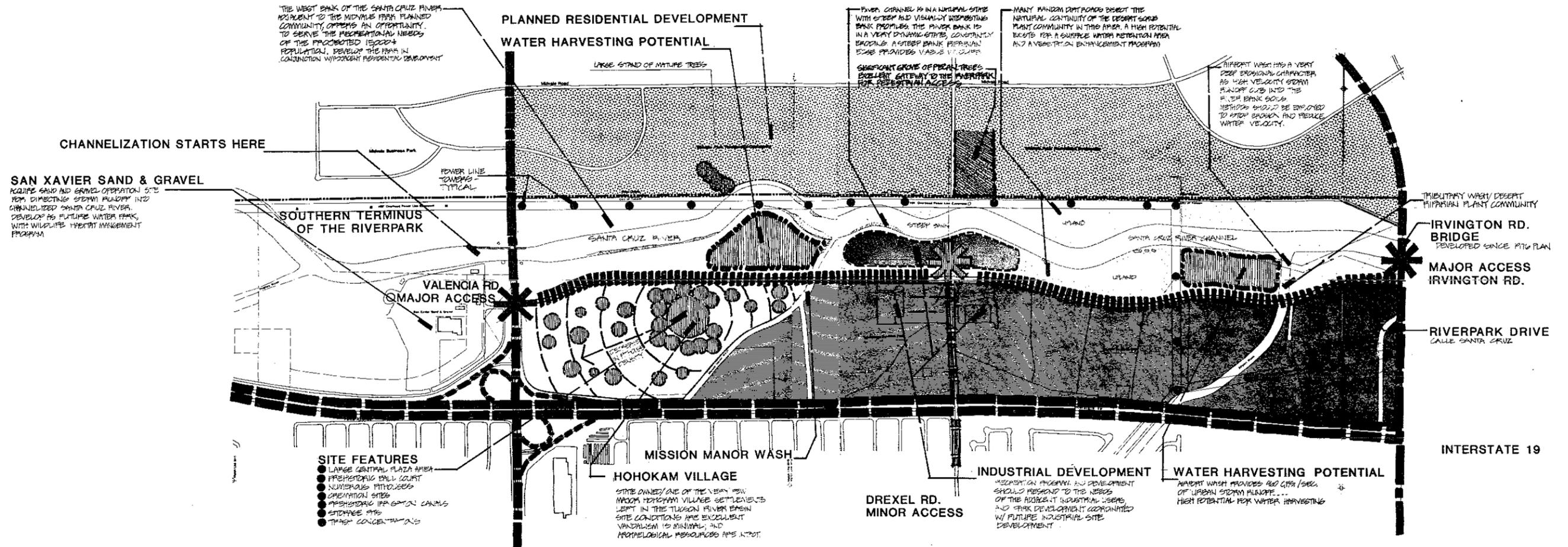
# SANTA CRUZ RIVERPARK PROGRAM MATRIX

PLANNING UNIT	PARK ACTIVITY				VEHICULAR CIRCULATION		RIVERPARK TRAIL		FACILITIES			RECREATION ACTIVE					PASSIVE			CULTURE													
	MAJOR ACCESS	MINOR ACCESS	LARGE SCALE PARKING	SMALL SCALE PARKING	RIVERPARK DRIVE	PEDESTRIAN / BIKE TRAIL	BIKE RENTAL	EQUESTRIAN TRAIL	EQUESTRIAN RENTAL	EQUESTRIAN STAGING	RIVERPARK INFORMATION	ADMINISTRATION CENTER	CONCESSIONS PLAZA	COMFORT STATIONS	SPECIAL RECREATION	ACTIVITY PLAZA	COURT SPORTS	BALL FIELDS	GREENSPACE ACTIVITY	PLAYGROUNDS	BOATING / FISHING	SWIMMING / WADING	FITNESS / JOGGING COURSE	GROUP PICNIC AREAS	PICNIC GROVES	OPEN SPACE / NATURE STUDY	HIKING / STROLLING	HISTORIC SITES / MARKERS	HISTORIC INTERPRETATION	CULTURAL HERITAGE	CULTURAL ACTIVITY	ART IN THE PARK	
1. MIDVALE GREENPARK	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2. SANTA CRUZ EQUESTRIAN PARK	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
3. AMPHITHEATRE GREENPARK	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
4. SANTA CRUZ HISTORIC PARK	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
5. RIO NUEVO / MANZO	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
6. TUCSON RIVERPARK PLAZA	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
7. SANTA CRUZ GARDENPARK	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
8. SILVERBELL RIVERTRAIL	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●



# MIDVALE GREENPARK

The rich archaeological site recently discovered on the southeast portion of the Midvale planning unit creates a unique opportunity for public displays and interpretation of the ancient Hohokam culture which once inhabited the Santa Cruz River basin. A large proposed residential community on the west bench and an industrial park on the east suggest recreational park needs and the development of a regional park facility which will respond to user needs in southwest Tucson.



## ADJACENT LAND USE KEY



## NATURAL RESOURCES

### Site Condition

**Main River Channel:** This section of the channel is characterized by extremely steep banks. Channel is meandering with varying widths and several severe erosion areas; no channel stabilization has occurred.

**Tributary Channels:** Mission Manor Wash enters the main channel from the east at the southern end of the planning unit.

Airport Wash is a major tributary wash along the Santa Cruz River, entering main channel from the east at the northern end of the planning unit. Plans are in process for channelization of wash.

**Surface Drainage:** Scattered, intermittent drainage patterns occur in the agricultural land on the west bench, draining to the river channel.

**Landform and Configuration:** Park land is flat and moderately wide paralleling the channel on the east bench. Pockets of park land occur on the west bench, with the channel and trail leaving the park at one point.

**Vegetation:** Strong, riparian groupings in the channel. Desert scrub and trees are scattered throughout the entire east bank and at southern end of west bank.

### Opportunity/Constraint

Stabilization of the channel is essential to allow use of adjacent land for park programs. Terracing of the channel will allow trail systems and playing fields in the flood zones, providing visual variety, wildlife habitat and separation of activities. A major opportunity for a main channel detention pond occurs at the channel bend south of Mission Manor Wash.

Wash provides a buffer between park and industrial park. Runoff from wash provides minor source of water for detention pond.

Large amounts of runoff from Airport Wash create an opportunity to divert and detain storm water for flood control and irrigation.

As the west bench is developed, drainage can be directed to collect in retention basins. Retention basins can also be formed on the east bank.

Opportunity for broad terraces serving as activity areas from upper terrace to channel. Negotiations with the developer of the large housing community on the west bench are necessary for Riverpark trail continuity.

Opportunity to enhance existing vegetation and to design park features incorporating the more mature vegetation.

### Site Condition

Vegetation in Mission Manor Wash is significant.

**Wildlife Habitat:** Sufficient land acreage; some existing vegetation; water basin potential.

### LAND USE

**Historic Use:** One of the largest and richest undisturbed habitation sites of the Hohokam culture in the Santa Cruz basin exists on the southeast corner of this planning unit. West bench is former agricultural land.

**Current Use:** Land is predominantly vacant with occasional illegal dumping areas. Many off-road vehicular trails occur, with large disturbed areas in the channel and on the banks south of the Irvington Road bridge.

### Adjacent Land Use:

**South:** park boundary is Valencia Road. San Xavier Sand and Gravel Co. is immediate neighbor.

**West:** Midvale Park, a large residential, commercial and industrial community planned to accommodate a future population of up to 20,000.

**North:** Unit boundary is Irvington Road.

**East:** Land zoned industrial, with Santa Cruz Business Park and Parque de Santa Cruz in development stage.

### CIRCULATION

**Access:** Major park access potential at Irvington; minor access from Drexel to park areas from east and west, no bridge across channel is planned. Interchange

### Opportunity/Constraint

Vegetation buffer between park and industrial land along Mission Manor Wash can be enriched.

Significant opportunities to enhance existing vegetative areas by forming retention basins and detention ponds to create wildlife habitat areas.

Unique opportunity to restore, reconstruct and interpret a prehistoric Hohokam village. Historic preservation and participatory archaeology can be provided for public education and recreation, expanding cultural opportunities in the Riverpark.

Vacant status of land creates optimum opportunity for park development. Use of off-road vehicles needs control.

Opportunity to begin channelization of river south of park boundary.

Opportunity for park to respond to needs of community as it develops.

Park access potential.

Respond to needs of industrial employees; interface Riverpark development as industrial development occurs.

Good access for regional and local visitors to recreational park activities and archaeological exhibits.

### Site Condition

from I-19 at Valencia with potential for interchange at Irvington as industrial parks develop.

**Riverpark Drive:** Calle Santa Cruz under construction on east bench, parallels the channel throughout this planning unit.

**Linkages:**  
Airport Wash

Midvale Park

Santa Cruz River Main Channel

### Opportunity/Constraint

Calle Santa Cruz provides a continuous Riverpark Drive experience through this park unit from Valencia Road to Irvington Road.

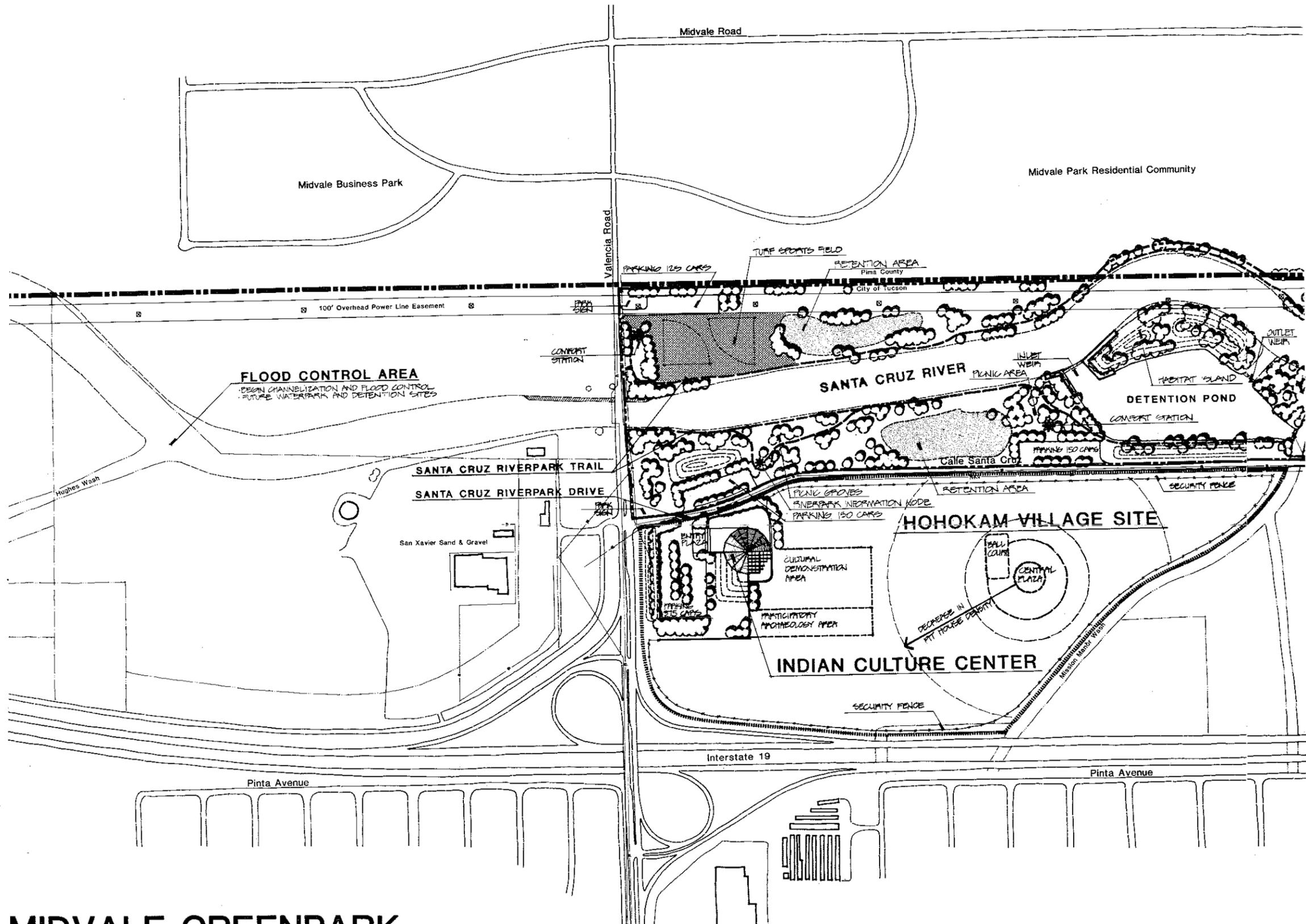
Potential bike path link to large residential community east of I-10.

Opportunity for strong bicycle/pedestrian linkages between Riverpark and residents of Midvale Park.

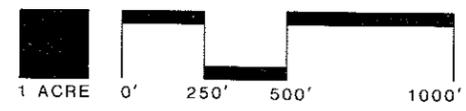
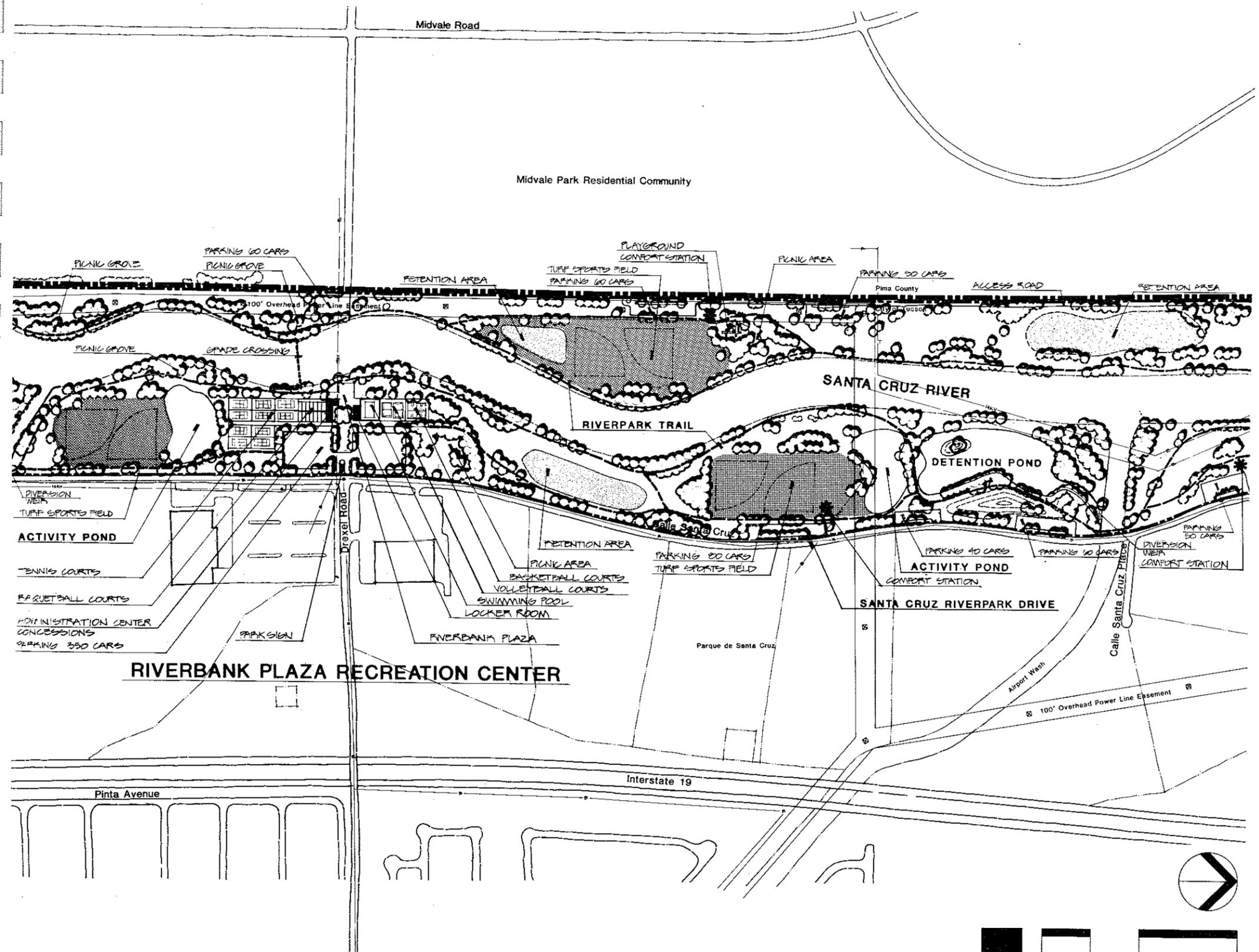
Equestrian linkage to facilities and trails in southwest city and county areas.

### Recommendations:

- Acquire property from San Xavier Sand and Gravel for channelization of river and future "water park."
- Negotiate use easement with Midvale Farms for Riverpark Trail continuity.
- Transfer ownership of property containing the Hohokam archaeological site from Arizona State Lands Department to the Arizona State Parks Department or other appropriate State agency.
- Develop site and resources of the prehistoric Hohokam village to promote public education and understanding of the historic significance of the Santa Cruz River. Incorporate an Indian Cultural Center as a repository and interpretive center.
- Develop water detention ponds and retention basins on site for irrigation, habitat and water related activities. Create and enhance habitat to attract wildlife.
- Provide recreational opportunities for adjacent residential communities and industrial employees.
- Utilize large, developable land areas for large-scale regional recreational activities, especially playing fields.
- Develop linkages for bicycle/pedestrian trails between the Riverpark and Midvale Farms.
- Create a Riverpark Drive experience through planning unit on east bench.



# MIDVALE GREENPARK



# MIDVALE GREENPARK DESIGN PROGRAM

Migratory ducks swoop down to the Riverpark water ponds, delighting small children who share crusts of bread with them . . . a local tennis tournament is in full swing and from the swimming pool come shrieks of youngsters escaping the late summer heat . . . the modern recreation facility contrasts with the primitive ballfield in the Hohokam village, where visitors in a participatory archaeology program sift the earth for ancient remnants of the Indians who once occupied this land along the temperamental flowing river . . .

## VEHICULAR CIRCULATION

### Major Access

#### Valencia Road

Regional access to the southern portion of the Riverpark via I-19  
Southern terminus of the Santa Cruz Riverpark system  
Direct access to the Indian Cultural Center and Hohokam village site with large capacity parking lot (375 cars)

#### Irvington Road

Proposed Interstate 19 interchange would improve regional access to the Riverpark and service Parque de Santa Cruz Business Park and Midvale Park Residential Community as well.  
Access to Santa Cruz Riverpark Drive  
Entry to west bank access road and park features

### Minor Access

#### Drexel Road

Access to Santa Cruz Riverpark Drive  
Entry to the Midvale Recreation Center with large capacity parking area (350 cars)  
West bank access to small parking area (60 cars)

#### Midvale Park Residential Community

Additional access nodes can be developed on the west bank in conjunction with the final street layout for the development.

### Santa Cruz Riverpark Drive

Calle Santa Cruz, between Valencia and Irvington Roads, defines the eastern boundary of this section of the park, providing access to east bank features.  
Large capacity parking lots located at the Indian Cultural Center (375 cars) and Midvale Recreation Center (350 cars)  
Medium capacity parking lots (up to 150 cars) located adjacent to

sports fields and picnic areas  
Additional parking provided by on-street spaces

## RIVERPARK TRAIL SYSTEM

### Santa Cruz Riverpark Trail

Southern terminus of Riverpark Trail at Valencia Road  
Bicycle rental concession at Midvale Recreation Center  
Combined Riverpark Trail and Equestrian Trail follow river channel and detention pond edges along both banks  
Riverpark Trail set on terraced bank where sectional design permits  
Grade crossings of channel at Midvale Recreation Center and Irvington Road Bridge (for Riverpark Trail)

### Trail Loops

Riverpark Trail loops connect trail to the Indian Cultural Center, Midvale Recreation Center, picnic areas and sports field areas.

### Trail Links

Strong connection of west bank trails to the Midvale Park Residential Community Trail System  
Equestrian Trail link down the Santa Cruz River to San Xavier Mission area

## RECREATIONAL FEATURES

### Riverbank Plaza Recreation Center

Centralized sports facilities located around the Riverbank Plaza Recreation Center and adjacent to large capacity parking, supporting regional recreation

#### Riverbank Plaza

Large open plaza adjacent to the Riverpark Trail  
Central sculpture or water feature  
Abundant seating areas  
Shade from trees, overhead structures, or fabric canopy  
Concession booths and vendor carts  
Bike parking area  
Riverpark information node  
Overlook of the Santa Cruz River and Riverpark Trail

#### Administration Center

Facilities administration  
Court rental and scheduling office  
Sports equipment sales, service and rental shop  
Bike rental concession  
Food and drink concessions  
Riverpark information  
Meeting and storage rooms  
Restrooms

#### Locker Room

Lockers and dressing areas  
Restrooms and showers  
First aid station

#### Swimming Pool

Olympic-sized outdoor pool  
Sunning decks and seating areas  
Pool filter and storage area in locker room

#### Sports Courts

Controlled use and access through administration center  
10 lighted tennis courts  
14 handball/raquetball courts  
2 lighted sand volleyball courts  
2 lighted basketball courts

#### Parking Lot

Large capacity required for central activity area, shaded and bermed perimeter to reduce visual impact  
Riverpark signage for park orientation

### Greenpark Recreation Areas

Various combinations of the following picnic facilities and recreation elements in association with parking areas form recreation pockets on both banks

#### Picnic Areas

Central ramada or space for group activities  
Picnic tables under small ramadas or in shade tree groves  
Outdoor cooking facilities  
Drinking fountains and trash receptacles  
Adjacent parking facilities

#### Picnic Groves

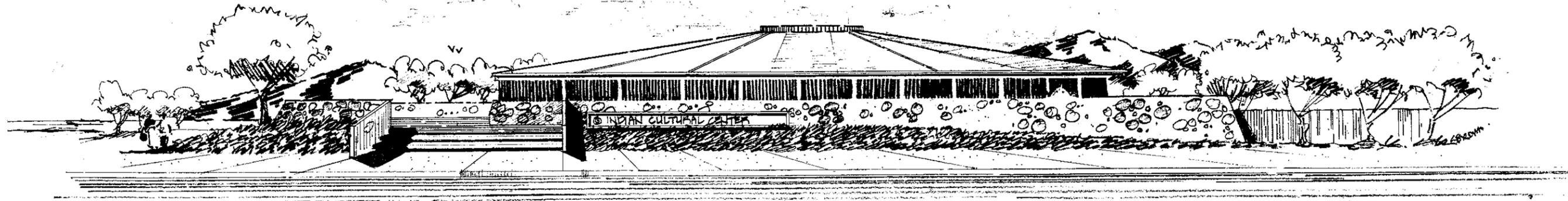
Individual and sometimes isolated picnic sites  
Picnic tables or grass mounds under shade groves  
Natural settings adjacent to Riverpark Trail

#### Comfort Stations

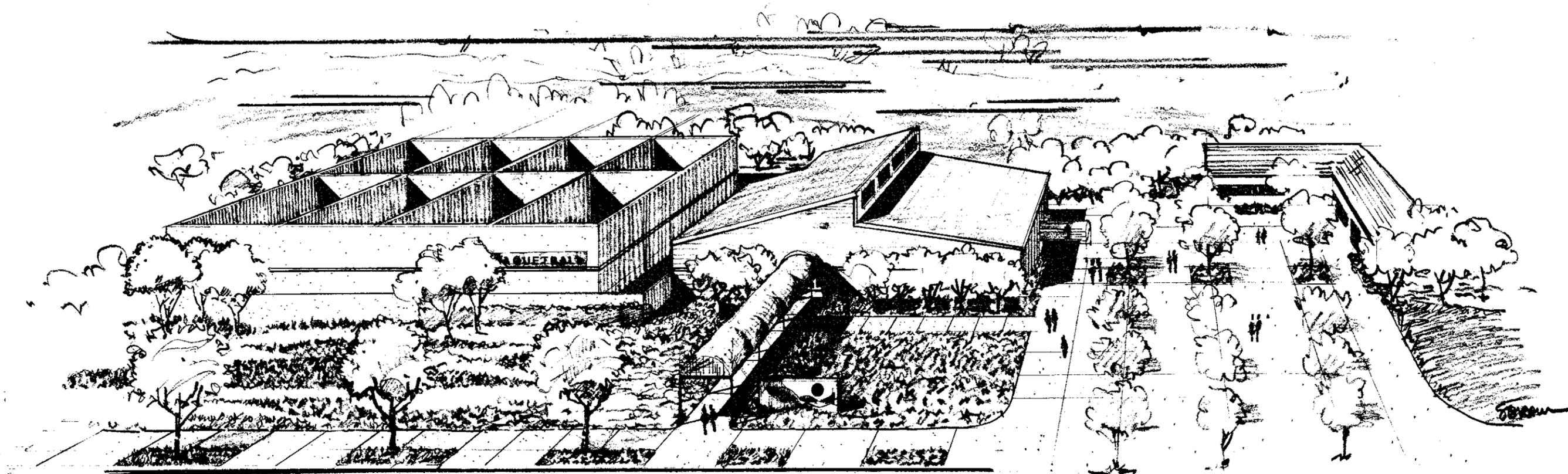
Restrooms  
Drinking fountains  
Riverpark information

#### Turf Sports Fields

Graded, open turf fields with backstops to allow for a range of organized sports and unstructured play  
Seating and observation areas under perimeter tree clusters



*Indian Cultural Center*



*Riverbank Plaza Recreation Center*

#### Activity Ponds

Boat and fishing dock with rental concession  
Strolling path and seating areas around perimeter  
Water feature creates a strong visual amenity

#### Playgrounds

Play structures located in shade groves  
Seating areas for supervision  
Located adjacent to picnic facilities

#### Open Space Recreation

Natural areas or enhanced vegetation for low intensity recreation to remain undeveloped; wildlife habitat

#### Hiking and Strolling Path

Low volume natural or gravel paths through natural setting

#### Nature Study

Screened observation areas for bird watching and nature study of habitat areas at detention ponds and graded retention areas

### CULTURAL FEATURES

#### Indian Cultural Center and Hohokam Village Archaeological Site

A combined facility to promote the understanding of Indian culture and the adaptations of the Hohokam people to prehistoric life in the Tucson Basin

##### Indian Cultural Center

Controlled access point to the Hohokam village archaeological site  
Repository for public display of artifacts, reconstructions, interpretive renderings, models and displays depicting Hohokam life  
Cultural demonstration plaza  
Controlled area for participatory archaeology  
Staging area for guided tours of archaeological dig  
Administrative office  
Entry plaza  
Screened parking lot

##### Hohokam Village Archaeological Site

Perimeter security fence to protect archaeological resources  
Undisturbed Hohokam pithouse village  
Central Plaza  
Ball Court  
Pit houses in decreasing density from the Central Plaza  
Irrigation canal  
Working archaeological dig and display of site features  
Pathways linking site features to the Indian Cultural Center

### WATER RESOURCES

#### Channel Condition

Santa Cruz River channel is widened and stabilized to reduce flood hazard and enhance groundwater recharge. Channelization begins south of Valencia Road.

Banks are terraced on both sides to create diversity of the river's edge.

#### Water Harvesting

Water management techniques to utilize stormwater runoff in the Riverpark

##### Mission Manor Wash

Combined main channel and tributary wash detention basin  
Turf field for grass filtration of the water  
Lined activity pond stores filtered water for recreational and irrigation use.

##### Airport Wash

Tributary wash detention basin  
Turf field for grass filtration of the water  
Lined activity pond stores filtered water for recreational and irrigation use.

#### Retention Areas

Graded retention areas for collecting local runoff, enhancing native vegetation and groundwater recharge

#### Effluent Water Delivery System

Piping for effluent water to Mission Manor Wash and Airport Wash detention basins to supplement runoff sources

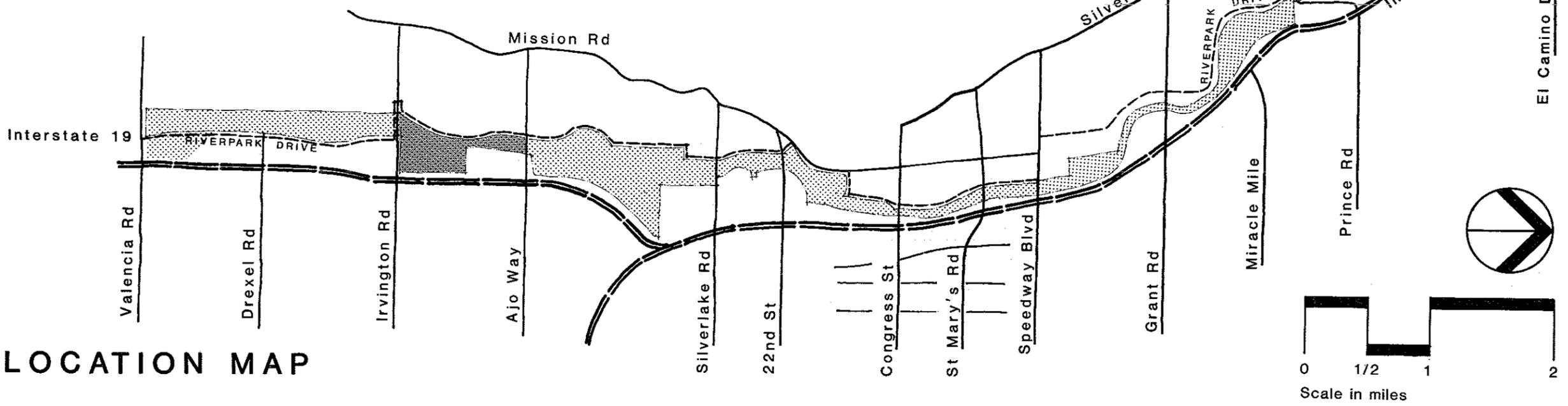
### SPECIAL CONSIDERATIONS

#### San Xavier Sand and Gravel Site

Channelization of the Santa Cruz River should begin in the widened portion of the river adjacent to the gravel extraction operation. The process of constructing the channel entry will provide much raw material for the operation. Furthermore, when the extraction process is complete on the site, its landforms should be reclaimed as a "sculptural waterpark."

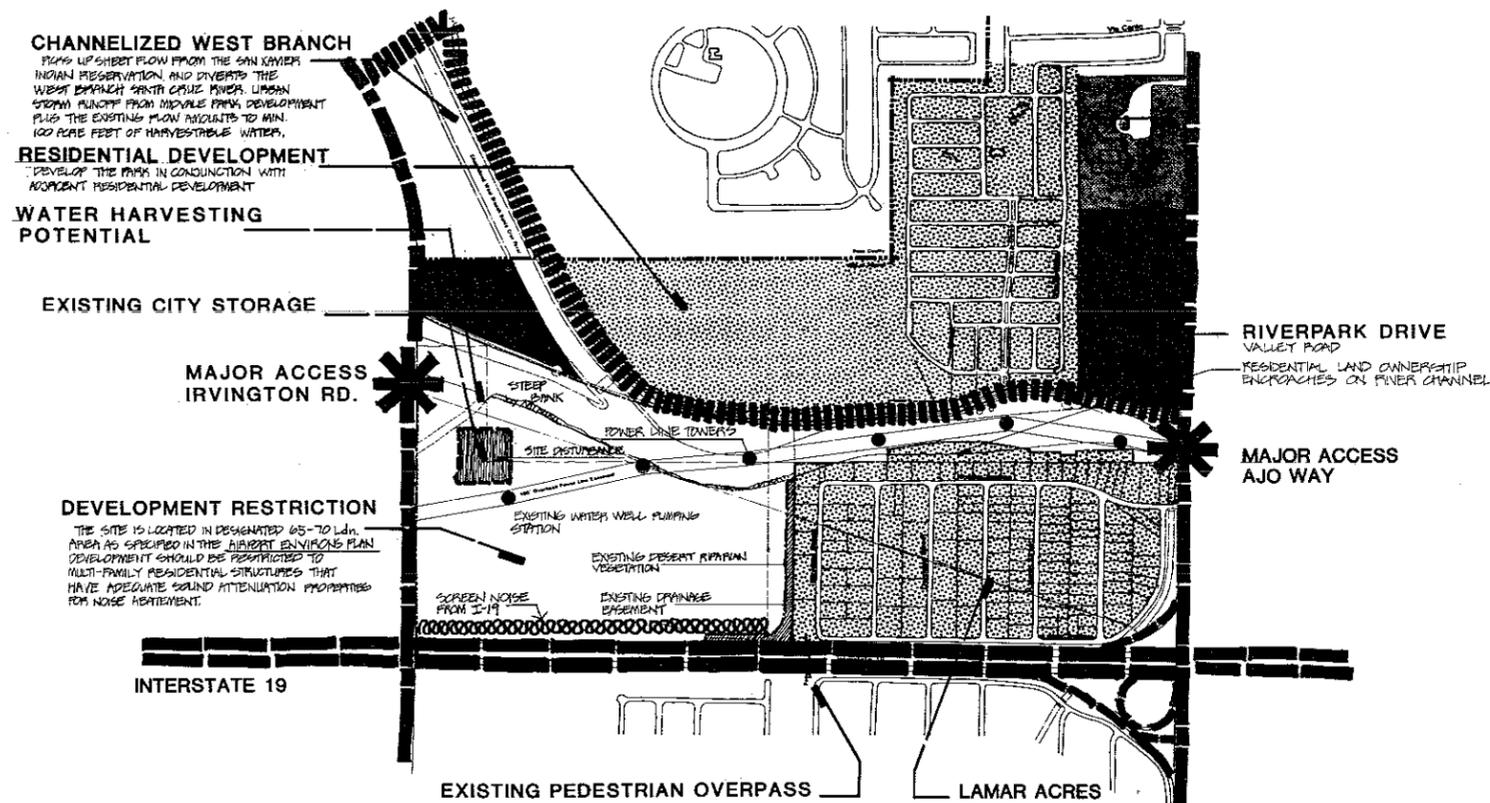
# SANTA CRUZ RIVERPARK PROGRAM MATRIX

PLANNING UNIT	VEHICULAR CIRCULATION				RIVERPARK TRAIL				FACILITIES			RECREATION ACTIVE				PASSIVE			CULTURE															
	MAJOR ACCESS	MINOR ACCESS	LARGE SCALE PARKING	SMALL SCALE PARKING	RIVERPARK DRIVE	PEDESTRIAN / BIKE TRAIL	BIKE RENTAL	EQUESTRIAN TRAIL	EQUESTRIAN RENTAL	EQUESTRIAN STAGING	RIVERPARK INFORMATION	ADMINISTRATION CENTER	CONCESSIONS PLAZA	COMFORT STATIONS	SPECIAL RECREATION	ACTIVITY PLAZA	COURT SPORTS	BALL FIELDS	GREENSPACE ACTIVITY	PLAYGROUNDS	BOATING / FISHING	SWIMMING / WADING	FITNESS / JOGGING COURSE	GROUP PICNIC AREAS	PICNIC GROVES	OPEN SPACE / NATURE STUDY	HIKING / STROLLING	HISTORIC SITES / MARKERS	HISTORIC INTERPRETATION	CULTURAL HERITAGE	CULTURAL ACTIVITY	ART IN THE PARK		
1. MIDVALE GREENPARK	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
2. SANTA CRUZ EQUESTRIAN PARK	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
3. AMPHITHEATRE GREENPARK	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
4. SANTA CRUZ HISTORIC PARK	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
5. RIO NUEVO / MANZO	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
6. TUCSON RIVERPARK PLAZA	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
7. SANTA CRUZ GARDENPARK	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
8. SILVERBELL RIVERTRAIL	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●



# SANTA CRUZ EQUESTRIAN PARK

Santa Cruz Equestrian Park is a transitional land parcel, located between encroaching industrial development to the south, established neighborhoods to the north and east, and a proposed manufactured housing community to the west. The greatest degree of compatibility will be achieved by responding to the surrounding residential neighborhoods. Cluster housing which maximizes open space will diversify residential opportunities. Adjacent equestrian facilities will complement the housing and provide a southern terminus for Riverpark equestrian programs and facilities.



## NATURAL RESOURCES

### Site Condition

**Main River Channel:** The channel is in a natural state, steep on both sides with two serious erosion areas at north and south ends of Wellfield site. Benched terrace on west bank at north end of site.

**Tributary Channel:** Channelized West Branch of Santa Cruz River enters the main channel from west; this is a major storm runoff channel.

An east-west drainage easement runs from I-19 to the main channel between the park boundary and Lamar Acres.

**Surface Drainage:** East bench slopes gently to north and west directing water to wash adjacent to Lamar Acres. Site development would generate surface drainage.

**Landform & Configuration:** Site is extremely flat. Large rectangular land on east bench at southwest end of planning unit; relatively narrow strip of park on west side and on east side paralleling Lamar Acres.

Pinch point of park land where Lamar Acres property projects into channel.

**Vegetation:** Sparse desert vegetation; some plant density in channelized West Branch of Santa Cruz River and in wash between Lamar Acres and park area.

**Wildlife Habitat:** Landform and acreage are sufficient for habitat generation.

### Opportunity/Constraint

Erosion areas must be stabilized. Terrace offers opportunity for visual and recreational diversity, and habitat development.

Channel entry may amplify erosion problems in main channel as construction of Midvale Farms progresses and silt collects behind energy dissipator. As development occurs, water velocity will increase causing east bank erosion.

Drainageway encourages vegetation and provides opportunity for pathway from residences east of I-19 to the Riverpark.

Retention basin opportunity as site is developed.

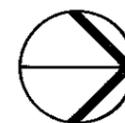
Large scale developable land area on east side of channel. Neighborhood park area potential on west bench.

Land constraint for Riverpark Trail continuity on east bench.

Vegetation enhancement potential in tributary wash areas.

Site grading to form retention basin will create wildlife habitat.

### ADJACENT LAND USE KEY



## LAND USE

### Site Condition

**Historic Use:** Former agricultural land use in evidence on west bench of main channel.

**Current Use:** East bench is zoned R-1. City is using the southeast section of the park land for storage of construction materials.

Site is located in designated 65-70 Ldn area as specified in the *Airport Environs Plan*, June 21, 1982. This rating indicates moderately high noise exposure from airport arrivals and departures at Tucson International Airport.

#### Adjacent Land Use:

**South:** Industrial park, separated from Riverpark by Irvington Road.

**West:** Southwest corner is zoned commercial; mid-section of west bench is a proposed subdivision of manufactured homes; northwest area is established mobile home community.

**North:** Lamar Acres, an older established low-density neighborhood.

**East:** Park boundary is Interstate 19; large residential community lies beyond highway.

### CIRCULATION

**Access:** Major park access at Irvington Road and Ajo Way; I-19 interchange at Irvington.

### Opportunity/Constraint

None

Storage use conflicts with park program and facilities planned for this site. A new storage location can be provided at Amphitheatre Greenpark.

Restricted Land Use: Land uses permitted include multi-family structures with adequate sound-proofing properties. A disclosure statement to prospective residents regarding the property location in an air corridor, and a deed restriction allowing aircraft to fly over the property are both mandatory for residential development.

Relate park use at south end of site to industrial park. Potential for public equestrian facilities.

Respond to existing and future residential neighborhoods with neighborhood park facilities on west bench.

Respond to existing residents by providing compatible park uses.

Buffering is needed between I-19 and park land. Respond to residential community by providing connection to Riverpark trails.

Good site access, particularly for public facilities at south end of site; southern equestrian terminus potential if staging area is provided.

### Site Condition

**Riverpark Drive:** Riverpark Drive (Valley Road) on the west bench is partially complete from Ajo to Irvington.

**Linkages:** Channelized West Branch of Santa Cruz.

Existing pedestrian overpass over I-19 provides access to park for large residential population to the east.

### Opportunity/Constraint

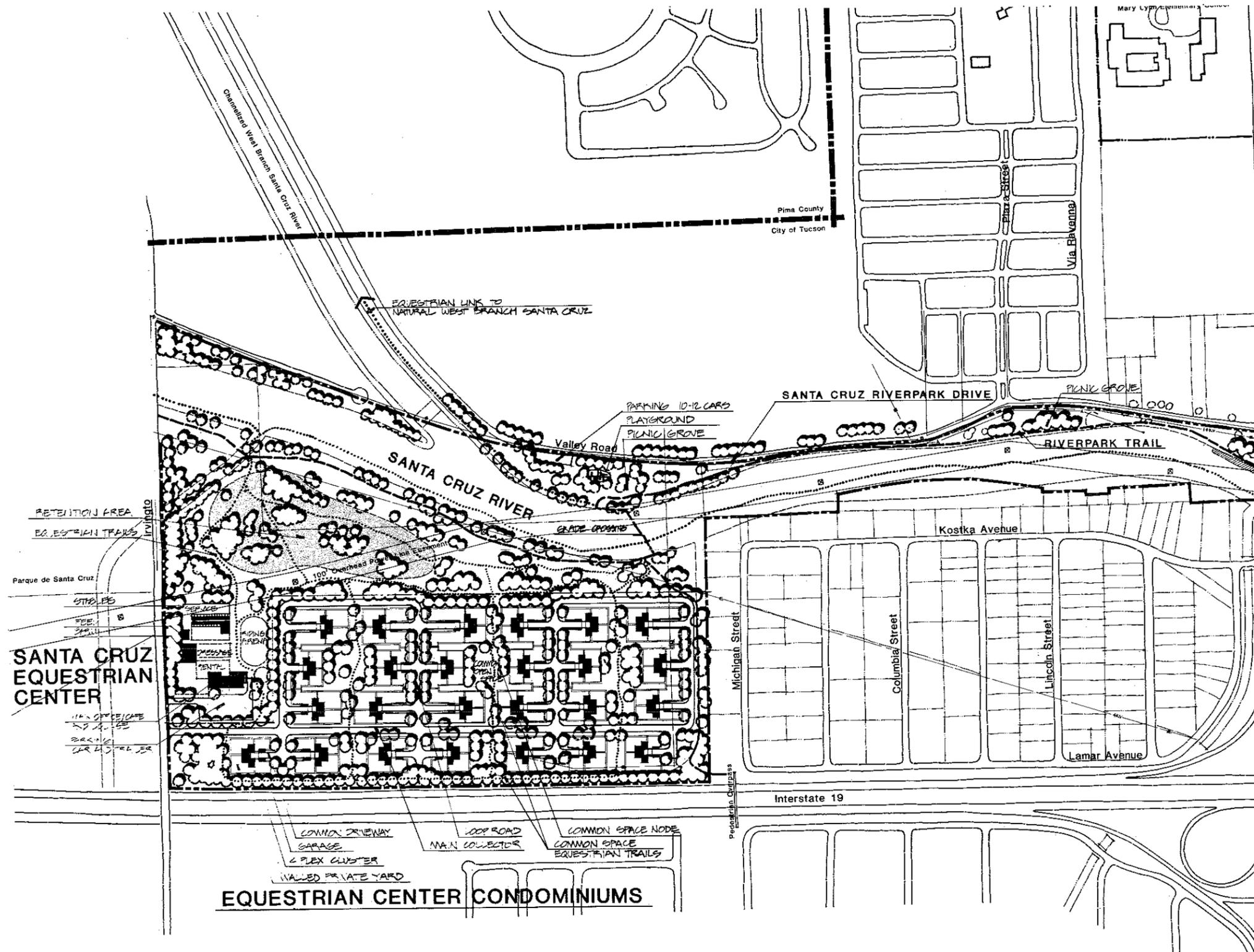
Completion of this segment of Riverpark Drive will coincide with projected future development of adjacent land.

Opportunity to follow channelized West Branch with Riverpark Trail loop through Midvale community; and for equestrian trail links to Santa Cruz Historic Park and Kennedy Park via the natural West Branch of the Santa Cruz.

A pedestrian trail following the natural drainageway from I-19 overpass to park trail system can be provided.

## Recommendations

- Land Negotiations: in order to respond to and support the existing and projected residential communities on three sides of this planning unit, the major portion of this site should be sold to a private developer to provide residential units and equestrian facilities as specified in this plan. Residential use is compatible with the current R-1 zoning, and will partially compensate for the recommendations of the 1976 plan which advocated housing development on other land parcels subsequently zoned commercial or industrial. The sale of the land will also generate revenue for the City to acquire the additional park parcels which are considered essential to the overall park plan as indicated in this document. In order to properly develop this parcel, the following policies are advised:
  1. Retain city ownership of a 60' strip of park land along the east side of the main channel for trail systems as indicated on park plan.
  2. Respond to the Santa Cruz Riverpark by coordinating housing development with installation of trees and pathways of Riverpark Trail system, if they have not already been implemented.
  3. Utilize R-1 zoning and relate to the residential communities which occur on three sides of this site. Provide cluster development of 4-plex condominium units with party-walls and adequate sound attenuation properties to mitigate aircraft noise. Design project with landscaped private and common area amenities as well as with recognition and response to adjacency and facilities of Riverpark.
  4. Provide an equestrian center in common ownership for residents of adjacent housing and for park visitors, including rental and boarding facilities, arena, corral, tack room. Also provide equestrian-oriented restaurant, staging area and trailer parking. Locate equestrian center at south end of site, adjacent to Irvington Road.
  5. Accompany every sales contract with a truth-in-sales ordinance. Seller must inform buyer of air corridor over property.
  6. Deed restrictions must include an air space right-of-way (buyer must acknowledge that property is within air corridor).
- Remove city storage facilities now occurring on this site to space appropriated in Amphitheatre Greenpark.
- Acquire a minimum of 30' of land for Rivertrail continuation on east bank adjacent to Lamar Acres.
- Create retention basin on east bench to collect surface drainage as site is developed; enhance habitat to attract wildlife.
- Provide buffering trees and shrubs between the park/residential development and I-19.
- Develop neighborhood park facilities in response to adjacent residential communities on west bench.
- Complete Riverpark Drive on west bench as residential development occurs.
- Provide pedestrian pathway from I-10 overpass to Riverpark Trail following natural wash at south boundary of Lamar Acres.
- Develop equestrian trails throughout site area, connecting equestrian center with Riverpark equestrian trails and linking with channelized West Branch of Santa Cruz.



# SANTA CRUZ EQUESTRIAN PARK

# SANTA CRUZ EQUESTRIAN PARK DESIGN PROGRAM

A covey of quail runs for cover as the crowd gathers early this crisp January morning at the Santa Cruz Equestrian Center . . . teenagers, their pockets bulging with carrots for their favorite horses, bicycle over from nearby homes, while others arrive with horse trailers carrying proud Arabians and sturdy quarter horses. . . a scout troop encourages a string of rental horses around the pond and down to the river channel trail, while a couple enjoys breakfast on the veranda of the western cafe. . . .

## VEHICULAR CIRCULATION

### Major Access

Irvington Road

Direct entry to Santa Cruz Equestrian Center  
Access to Equestrian Center condominiums  
Connects Calle Santa Cruz and Valley Road sections of Santa Cruz  
Riverpark Drive  
Link to Rodeo Grounds

Ajo Way

Regional access to the Riverpark via Interstate 19  
Access to Santa Cruz Riverpark Drive

### Santa Cruz Riverpark Drive

Valley Road between Irvington Road and Ajo Way. Follows channelized West Branch Santa Cruz to the Santa Cruz River, then defines western boundary of this section  
Small parking lot (10-12 cars) at playground/picnic grove with additional parking along on-street spaces

## RIVERPARK TRAIL SYSTEM

### Santa Cruz Riverpark Trail

Horse rental and trail staging at the Santa Cruz Equestrian Center  
Combined pedestrian/bicycle trail and equestrian trail follows east river bank from Irvington Road to Lamar City Acres, then traverses channel to follow west bank to Ajo Way  
Riverpark Trail on terraced bank on the east bank  
Grade crossings of the channel at Irvington Road, Lamar City Acres and Ajo Way  
Riverpark Trail underpasses at Irvington Road and Ajo Way bridges

### Trail Loops

Equestrian riding trails weave through native vegetation on the east

bank. Riding trails connect to common areas of the Santa Cruz Equestrian Center condominiums and the Santa Cruz Equestrian Center.

### Trail Links

Equestrian trail link up the channelized West Branch Santa Cruz to Kennedy Park and the natural West Branch Santa Cruz  
Pedestrian trail link along the northern edge of the Equestrian Center condominiums to the Interstate 19 pedestrian overpass

## RECREATIONAL FEATURES

### Santa Cruz Equestrian Center

Southside center serves public and condominium equestrian enthusiasts with full rental and boarding facilities, and access to riding trails.

#### Equestrian Office

Rental office  
Rental corral and staging area  
Administration for stable rentals  
Riders' lounge and trail cafe  
Equestrian information center  
Seating porch with hitching post  
Restrooms

#### Stables

Stalls for rental horses

Rental stalls for condominium owners and the public  
Corral and exercise area  
Service access and storage area

#### Barn

Feed and supply store  
Tack room with adjacent dressage area

#### Riding Arena

Fenced arena for practice, demonstration and show riding

#### Parking Lot

Car parking for rental users and trailer parking for horse owners

## GREENSPACE RECREATION

### Picnic Groves

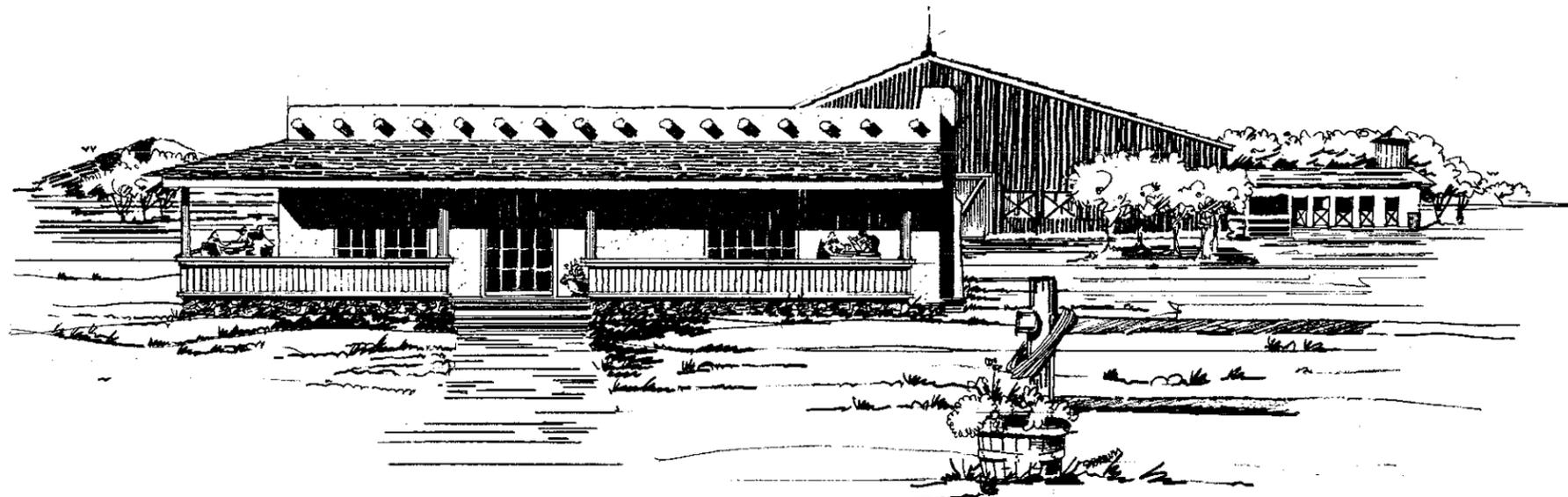
Individual picnic sites of grass mounds in shade groves  
Located adjacent to the Riverpark Trail for trail users and local residents

### Playground

Play structures located in shade groves  
Seating areas for supervision  
Located adjacent to picnic grove

### Open Space Recreation

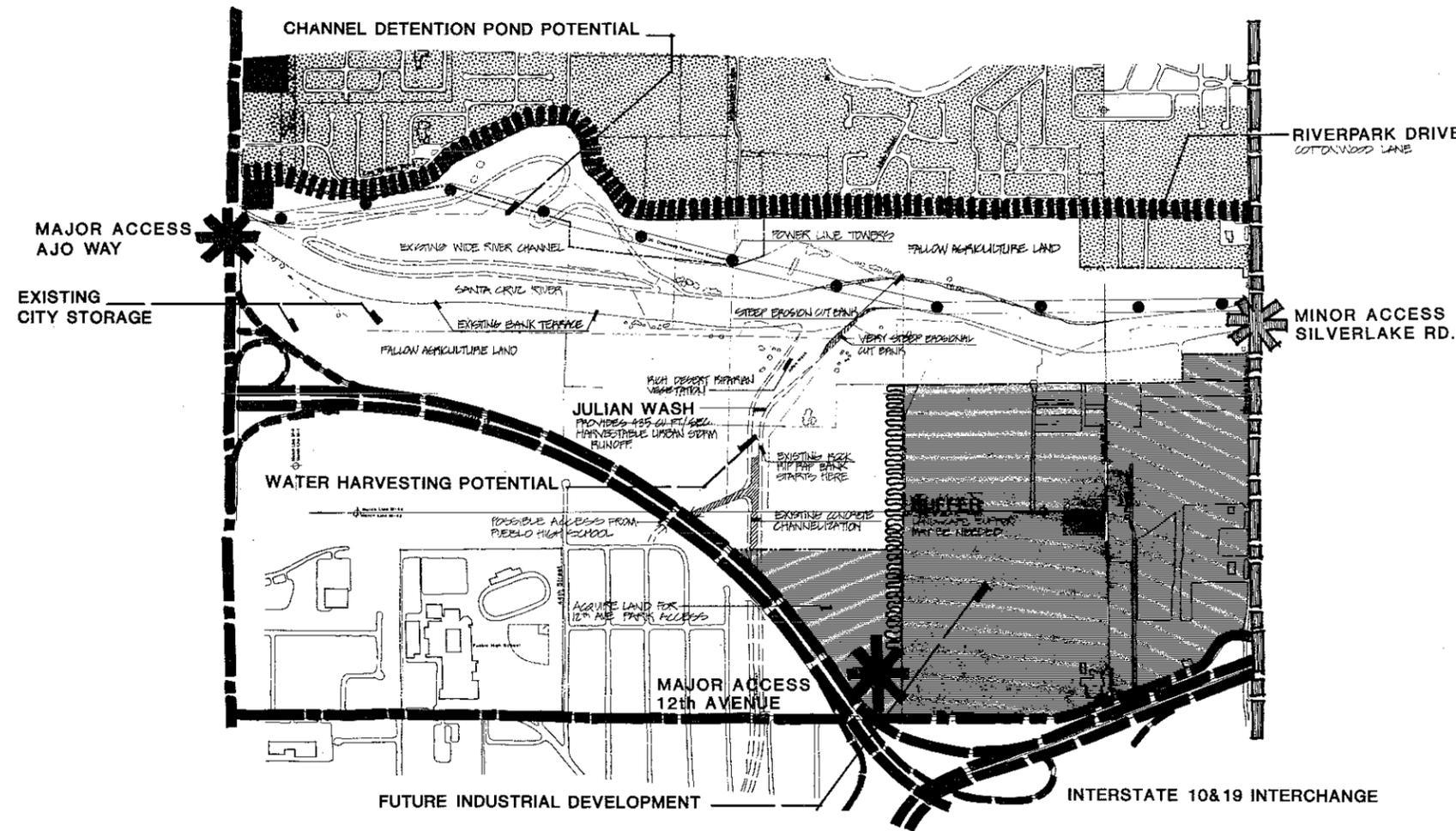
Natural or enhanced areas for low-intensity or compatible recreation in



*Riverpark Trail Cafe and Equestrian Center*

# AMPHITHEATRE GREENPARK

Amphitheatre Greenpark represents the largest contiguous undeveloped land parcel in the Riverpark system. The size and accessibility of the site together with its relative isolation from residential neighborhoods present an opportunity for large-scale program features and major regional park development. Amphitheatre Greenpark also contains one of the largest urban storm runoff tributaries, providing the opportunity for significant water harvesting.



## ADJACENT LAND USE KEY



## NATURAL RESOURCES

### Site Condition

**Main River Channel:** Channel is wide, in natural state. Existing terracing on east bank.

Depression in channel bottom at south end of unit.

**Tributary Channel:** Julian Wash is a major urban storm runoff drainageway which is stabilized with rip-rap and concrete. Steep erosional cut bank at main channel entrance with rich vegetation.

**Surface Drainage:** Site slopes to main channel. Site development will generate harvestable runoff.

**Landform and Configuration:** Large, level land areas on both sides of main channel.

**Wildlife Habitat:** Land area, water and vegetation potential are sufficient for habitat generation.

### LAND USE

**Historic Use:** Former farm fields are apparent; historic Silver Lake site has no trace. Evidence of past landfill activity.

**Current Use:** Southeast corner is used for storage of City dumpsters. Several areas are still used for dumping. Recent farming activity on west bench.

Sand and gravel excavation business operates on west bench between park and mobile home community.

### Opportunity/Constraint

Terraces offer opportunity for visual and recreational diversity; banks need stabilization with limited soilcrete (lower bank) and planting (upper banks and terraces).

Depressed area offers opportunity for water harvesting from main channel.

Storm runoff can be harvested and diverted to detention pond developed nearby for limited water recreation. Riparian zone in Julian Wash can be enhanced.

As site is developed, on-site runoff can be retained for irrigation, habitat and recreation potential.

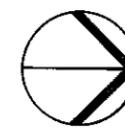
Ideal for major large-scale development of regional facilities.

Julian Wash can be enhanced for habitat. Detention and retention ponds offer significant habitat opportunity, particularly those on west bench which have less intense proposed park program activities.

None evident.

Continued storage of dumpsters can be accommodated at same location; area should be fenced. Landfill activity should be curtailed.

Borrow pit affords excellent site for detention pond; diversion ditch from main channel would direct flow.



## Site Condition

### Adjacent Land Use

**South:** Ajo Way is park border; beyond is existing low density residential neighborhood.

**West:** Active sand and gravel excavation business; large mobile home community.

**North:** Zoned for industrial park.

**East:** I-19 boundary; land zoned for commercial development beyond highway. Pueblo High School nearby.

## CIRCULATION

**Access:** Site access from south at Ajo Way interchange on I-19. Right-of-way at northeast corner off of 12th Avenue and I-19.

**Riverpark Drive:** Cottonwood Lane is scheduled for construction in the near future.

**Linkages:** Completion of Freedom Drive connecting Ajo Way and Cottonwood Lane is scheduled for construction.

## Opportunity/Constraint

Ajo Way provides buffer; no intense park program should occur at south end of site.

Acquisition of sand and gravel land area would provide recreation area for nearby residents.

Day use facilities for employees of industrial complex. Park amenities could be implemented in conjunction with industrial park development.

No conflict for large-scale park facility. Possible link between park and school.

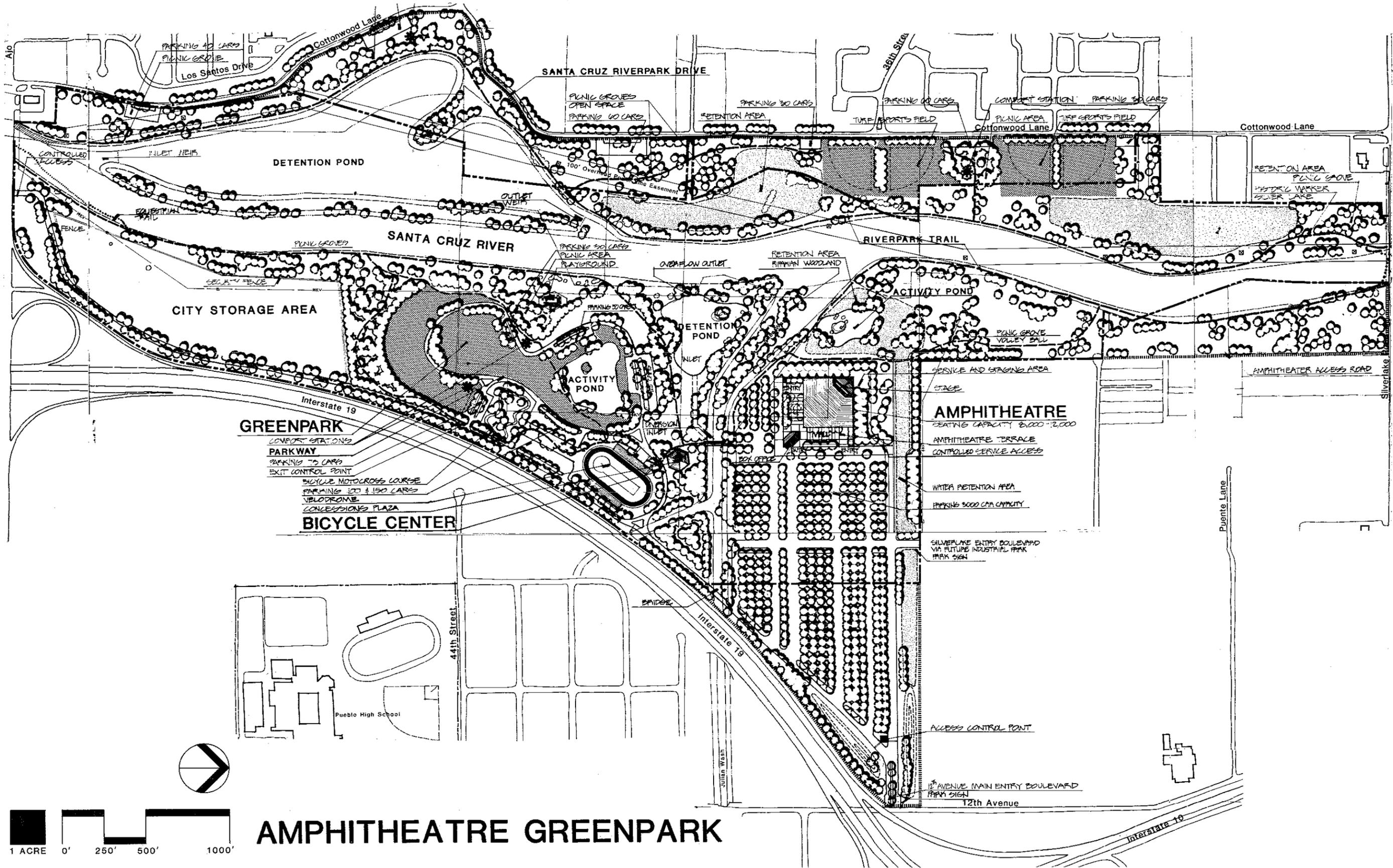
Good accessibility to site from I-19 as well as local traffic. Additional accessibility from I-19 possible by constructing interchange at 12th Avenue.

Construction will complete Riverpark Drive in this planning unit.

Opportunity to add pedestrian and Bicycle trail along Freedom Drive from Santa Cruz Riverpark to West Branch of Santa Cruz River for link with Kennedy Park.

## Recommendations

- Negotiate use easement for access to park from 12th Avenue.
- Acquire use of County and private land between Cottonwood Lane and river channel for continuous park development on west bench.
- Acquire land parcels on east bank between Amphitheatre facility and Silverlake Road for access, channel stabilization and east bench park development.
- Provide for City storage at southern end of site.
- Collect urban storm runoff and site drainage in detention and retention ponds for irrigation, water recreation and wildlife habitats.
- Maximize natural channel condition when stabilization occurs through retention of terraces for trails and recreation use. Limit soilcrete to lower banks with vegetative stabilization on upper banks and terraces.
- Develop recreation facilities for adjacent industrial employees and residents.
- Screen highways and industrial site from park with buffer plants and trees.
- Construct an interchange from I-19 at 12th Street to facilitate traffic flows to and from park events.



**GREENPARK**  
 COMFORT STATIONS  
 PARKWAY  
 PARKING 75 CARS  
 EXIT CONTROL POINT  
 BICYCLE MOTOCROSS COURSE  
 PARKING 100 & 150 CARS  
 VELODROME  
 CONCESSIONS PLAZA  
**BICYCLE CENTER**

**AMPHITHEATRE**  
 SEATING CAPACITY 2,000-2,000  
 AMPHITHEATRE TERRACE  
 CONTROLLED SERVICE ACCESS  
 WATER RETENTION AREA  
 PARKING 3000 CAR CAPACITY  
 SILVERLAKE ENTRY BOULEVARD  
 VIA FUTURE INDUSTRIAL PARK  
 PARK SIGN

# AMPHITHEATRE GREENPARK



# AMPHITHEATRE GREENPARK DESIGN PROGRAM

It has been warm for a Sunday in March . . . early this afternoon the bicycle races in the Velodrome began and the enthusiastic cheers for the winners are heard by those peddling the paddleboats and fishing along the edge of the pond . . . motocross activities are in full swing and picnic areas are filling up with families arriving for an evening concert in the Amphitheatre . . . across the river a softball game has just finished, and wisps of smoke rise from barbeque grills . . . bicyclists are lined up at the drinking fountain, as horseback riders wind their way toward the food concession . . . children are running through the mesquite grove, displacing an occasional squirrel or lizard . . .

## VEHICULAR CIRCULATION

### Major Access

12th Avenue

Existing regional access to this activity hub of the Riverpark via an Interstate 19 interchange at Ajo Way and an Interstate 10 interchange off 22nd Street. Access would be greatly improved by a 12th Avenue/Interstate 19 interchange, which would also service future industrial development.

Main entrance to Amphitheatre parking lot and parkway connecting other features

Ajo Way

Regional access to the Riverpark via Interstate 19

Access to Santa Cruz Riverpark Drive

Service access for the City storage area and overflow exit for the parkway

Vehicular link to Kennedy Park

### Minor Access

Silverlake Road

Access to Santa Cruz Riverpark Drive

Secondary access road along eastern park edge to Amphitheatre

Future Industrial Development

Development of the industrial zoned land adjacent to the Amphitheatre should include a secondary Amphitheatre entrance as part of its circulation plan.

### Parkway

Entry Boulevard

Six-lane divided road is designed to accommodate traffic to Amphitheatre and present strong entry image.

Amphitheatre Parking Lot

Large scale parking facility with capacity for 3,000 cars

Control points for fees collection

Strong tree planting for ample shade

Lot can be used for car shows, bazaars, street fairs, and other outdoor community events.

Parkway Loop

Roadway encircles Greenpark connecting Velodrome, Greenpark Concession Plaza, activity pond, picnic areas, greenspace, and parking lots.

One-way road controls traffic flow and relieves congestion.

Large capacity parking adjacent to Velodrome (325 cars, plus 200 temporary spaces)

Medium capacity parking lots (up to 125 cars) and on-street parking distributed along Parkway

Controlled Exit Road

Exit-only road connects Parkway to Ajo Way for traffic dispersion during high park activity.

### Santa Cruz Riverpark Drive

Cottonwood Lane between Ajo Way and Silverlake Road delineates the western boundary of this park section and provides access to west bank features.

Medium capacity parking (up to 60 cars) located around detention pond and at sports fields area

Additional parking provided by on-street spaces

### Amphitheatre Shuttle

Bus service from the Community Center or local shopping centers for large Amphitheatre events

## RIVERPARK TRAIL SYSTEM

### Santa Cruz Riverpark Trail

Bicycle rental concession at the Greenpark Concession Plaza

Combined Riverpark Trail and Equestrian Trail follow river channel and detention pond edges along both banks.

Riverpark Trail set on terraced bank on east bank adjacent to Greenpark and Amphitheatre, and on west bank adjacent to retention areas and sports fields

Bridge crossing of Julian Wash adjacent to the Greenpark Concession Plaza

Grade crossings of the channel at Ajo Way, adjacent to the Amphitheatre, and at Silverlake Road

Riverpark Trail underpasses at Ajo Way and Silverlake Road bridges

### Trail Loops

Pedestrian/bicycle trail loop runs through Greenpark connecting Riverpark Trail to picnic areas, activity pond, Velodrome, and Concession Plaza on the east bank.

Trail Loop to the picnic area and sports fields on the west bank

### Trail Links

Riverpark Trail to Kennedy Park and West Branch Santa Cruz via Freedom Drive

## RECREATIONAL FEATURES

### Bicycle Activity Center

Unique combination of facilities tied to an extensive Riverpark Trail system will establish Tucson as a major bicycle center in the west.

Velodrome Racing Facility

Entry plaza with box office and event information

Earth-integrated facility with 333 meter oval racing track

Track surface is concrete banked 35° in the corners and 15° in the straights

Spectator stands adjacent to the straights are shaded by colorful tensile fabric

Infield area with team pits may be used for other events

Locker room/first aid station

Restrooms

Bicycle Motocross Course

Rugged dirt racing track consisting of mounds, jumps, tight turns, and water hazards

Shaded spectator areas in tree groves adjacent to the course

Concession Plaza

Bicycle rental and repair concession

Riverpark Trail information

Food and drink concessions

Restrooms and drinking fountain

Bicycle parking area

### Greenpark Recreation Areas

Various combinations of the following picnic facilities and recreation elements in association with parking areas form recreation pockets on both banks.

Picnic Areas

Central ramada or space for group activities

Picnic tables under small ramadas or in shade groves

BBQ pits

Drinking fountain and trash receptacles  
Adjacent parking facilities

#### Picnic Groves

Individual and sometimes isolated picnic sites  
Picnic tables or grass mounds under shade groves  
Generally located in natural settings away from parking  
Picnic groves adjacent to business parks for workers' lunch use

#### Comfort Stations

Restrooms  
Drinking fountain  
Riverpark information node

#### Large Open Fields

Turf fields with no built features to allow flexibility in active recreation and passive use

#### Turf Sports Fields

Graded, open turf fields with backstops to allow for a range of organized sports and unstructured play  
Seating and observation areas under perimeter tree clusters

#### Activity Ponds

Boat and fishing dock with rental concession  
Strolling path and seating areas around perimeter  
Water feature creates a strong visual amenity

#### Playgrounds

Play structures located in shade groves  
Seating areas for supervision  
Located adjacent to picnic facilities

#### Exercise Course

Exercise stations set along a jogging trail

#### Open Space Recreation

Natural or enhanced areas for low intensity recreation to remain undeveloped

#### Hiking and Strolling Paths

Low volume natural or gravel paths through natural setting

#### Nature Study

Screened observation areas for bird watching and nature study of habitat conditions at detention ponds and retention areas

#### CULTURAL FEATURES

Amphitheatre Facility

Major regional open-air entertainment facility for staging large concerts, theatre and other cultural events

#### Entry Plaza

Gathering and staging space for people arriving for events from the parking lot or shuttle bus  
Box office and administration facilities  
3 controlled Amphitheatre entry gates  
Abundant seating areas with shade trees  
Accent sculpture or water feature  
Restrooms and first aid station  
Information node for events and park orientation

#### Amphitheatre Terrace

Arrival plaza for dispersal of people from entry gates to seating  
Concessions area with open air dining plaza  
Program and souvenir booths  
Restrooms and drinking fountains

#### Seating Area

Turf bowl to accommodate 8,000-12,000 people for events  
2 tiered slope to turf  
lower tier 12° slope  
upper tier 24° slope  
3 large aisles distribute people to seating  
Perimeter tree screen divides seating area from Amphitheatre terrace

#### Service Area

Controlled access road to area behind stage  
Parking area with loading dock for equipment trucks

#### Silver Lake Historic Marker

Recognition of the significance of Silver Lake, adjacent milling facilities and the resort during Tucson's Territorial period

#### WATER RESOURCES

##### Channel Condition

Santa Cruz River channel is widened and stabilized to reduce flood hazard and enhance groundwater recharge.  
Banks are terraced on both sides to create diversity of the river's edge.

##### Water Harvesting

Water management techniques to utilize stormwater runoff in the Riverpark

##### Main Channel

Main channel detention basin on west bank to capture water from the Santa Cruz and channelized West Branch Santa Cruz

Porous bottom of basin to facilitate groundwater recharge

#### Julian Wash

Tributary wash detention basin and diversion inlet  
Turf field for grass filtration of the water  
Lined activity pond stores filtered water for recreational and irrigation use.  
Wash bottom developed into a riparian zone

#### Amphitheatre Parking Lot

Lot drains to a lined activity pond.  
Bulrushes and reeds provide natural filtration of the water.  
Water used for visual interest and irrigation

#### Retention Areas

Areas graded for the collection and retention of local runoff to enhance vegetation growth and groundwater recharge

#### Effluent Water Delivery System

Piping of effluent water to the Julian Wash detention basin to supplement runoff sources for irrigation needs

#### SPECIAL CONSIDERATIONS

##### City Storage Area

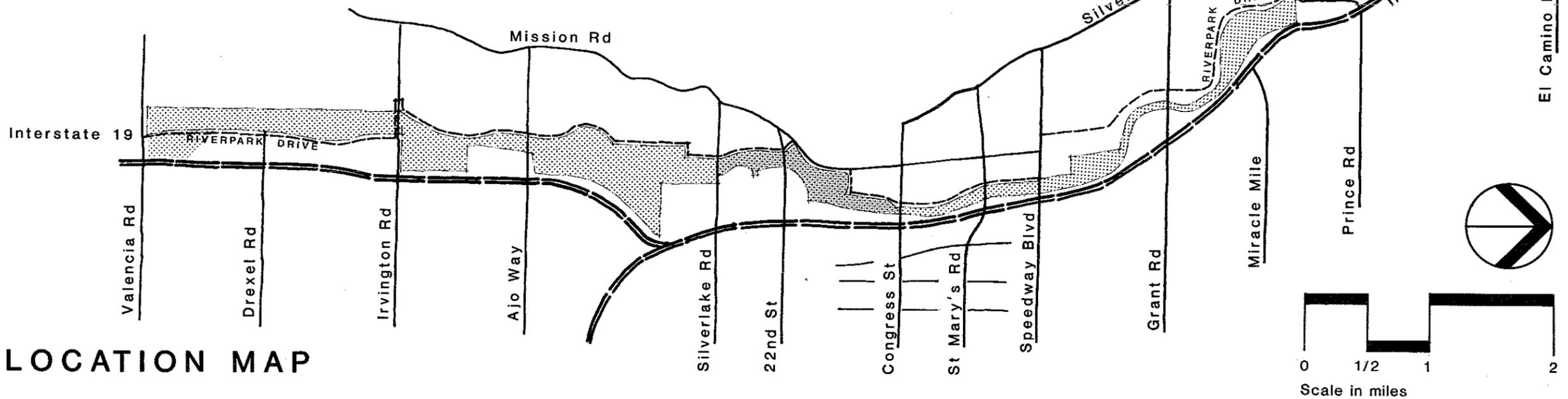
Move storage facilities from Irvington Road yard and consolidate with other city storage needs on this site. Access from Ajo Way and through the park. Storage area separated from the park by a security fence and heavy screen plantings

##### Industrial Development North of the Amphitheatre

City to coordinate with developer to provide additional access to the Amphitheatre parking lot

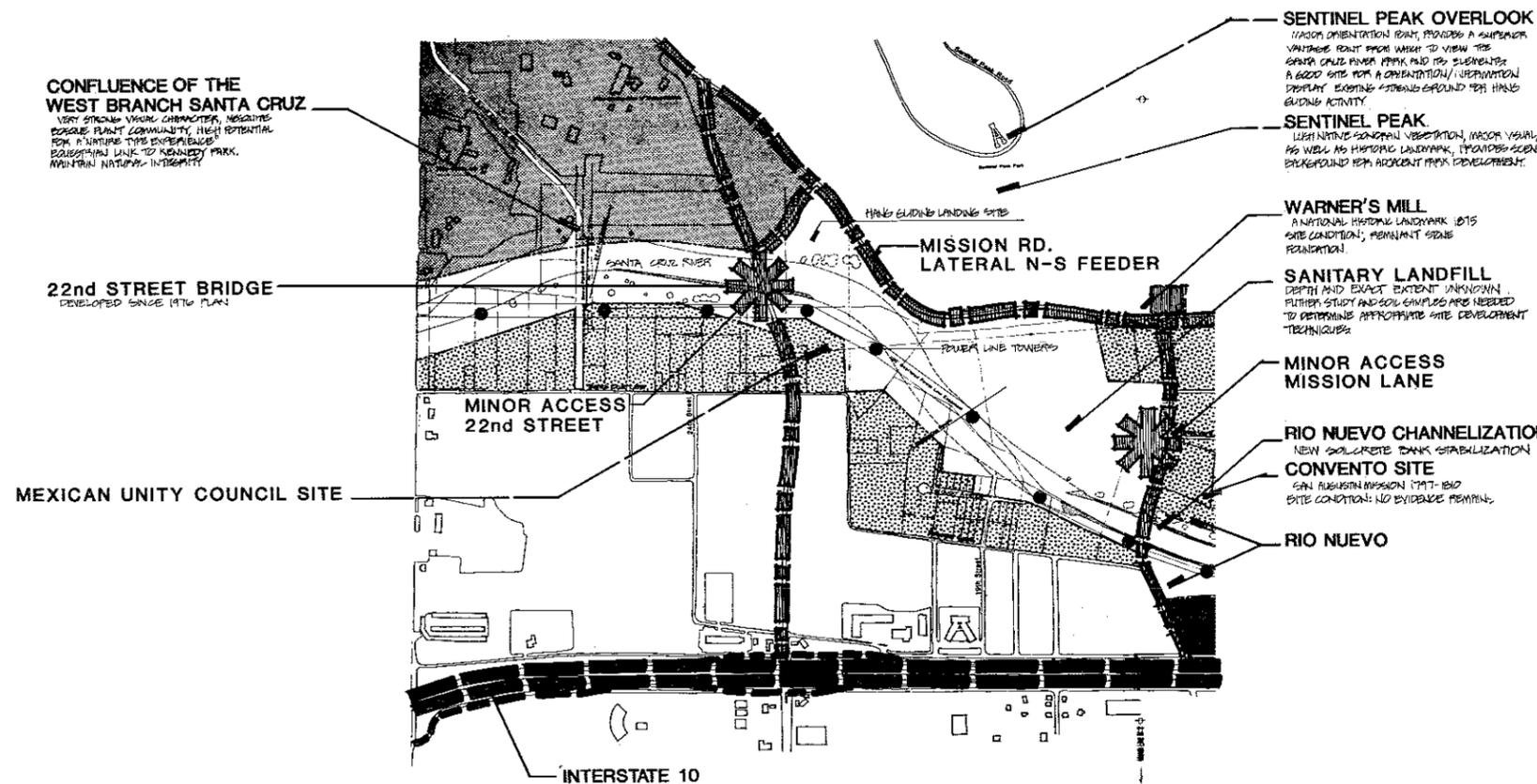
# SANTA CRUZ RIVERPARK PROGRAM MATRIX

PLANNING UNIT	VEHICULAR CIRCULATION				RIVERPARK TRAIL		FACILITIES			RECREATION ACTIVE				PASSIVE			CULTURE																
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2. SANTA CRUZ EQUESTRIAN PARK	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
3. AMPHITHEATRE GREENPARK	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
4. SANTA CRUZ HISTORIC PARK	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
5. RIO NUEVO / MANZO	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
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7. SANTA CRUZ GARDENPARK	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
8. SILVERBELL RIVERTRAIL	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●



# SANTA CRUZ HISTORIC PARK

The Santa Cruz Historic Park planning unit is extremely significant as the "Birthplace of Tucson," the site of the first Anglo settlement in the Tucson area. Traces of notable territorial buildings and events exist on or near this portion of the Riverpark, which is in close proximity to the Central Business District of contemporary Tucson. Recent abuse of the site as an unregulated landfill has drastically altered the topography and course of the river; site development will necessitate special hydrologic engineering expertise. Re-creation of a pioneer settlement on this site, complete with historic markers, interpretive displays and buggy rides, will re-affirm the community's pride and interest in its rich history.



## NATURAL RESOURCES

### Site Condition

**Main River Channel:** South of the 22nd Street bridge stabilization, the channel is in a natural state with moderately steep banks. To the north the channel has been soilcreted for stabilization; very steep banks. Erosion has been a problem near the Verdugo Avenue neighborhood, which has been pulled back from the riverbank.

**Tributary Channel:** Natural West Branch of the Santa Cruz enters the main channel at south end of site, near 22nd Street bridge.

**Surface Drainage:** Due to the heavy use of the site as a landfill, surface drainage on this site must be collected and directed away from the site. Percolation through landfill on the site can contaminate groundwater aquifers.

**Landform and Configuration:** Site is dominated by Sentinel Peak, the most prominent topographic and historic landmark in Tucson, which provides a visual backdrop for a large, flat land area between the base of the mountain and the river channel. "A" Mountain is frequently used by hang-gliding enthusiasts.

Narrow, transitional land ribbons to north and south of larger area. Disturbed land areas adjacent to 22nd Street bridge.

**Vegetation:** A rich riparian habitat exists along the lower

### Opportunity/Constraint

Some opportunities for retaining natural channel condition at the south end of channel. Channelization should solve erosion problems.

Equestrian side trail can be directed from main channel and up natural West Branch for regional linkages.

Major constraint for any water-oriented park use. All site uses must be carefully engineered and constructed due to instability of understructure and potential from methane gas build-up resulting from past uncontrolled dumping. However, land area between Sentinel Peak Park and river channel is suitable for reclamation and park development if suitably engineered.

Dramatic siting offers unique opportunity for park development with historic emphasis. Landing site for hang gliders can be provided. Landform grading potential near river channel to screen site from contemporary intrusions.

Park trails and neighborhood park development are appropriate in transitional areas.

Preservation of existing vegetation, particularly in West Branch,

## Site Condition

reaches of the West Branch of the Santa Cruz and at its confluence with the main river channel. Tree clumps along main channel. Natural desert vegetation on Sentinel Peak.

**Wildlife Habitat:** Natural habitats exist in West Branch channel.

## LAND USE

**Historic Use:** Birthplace of Tucson: Father Kino mission was founded in this area. Historic Flowing Wells water system bisects the Santa Cruz River near the entry of the West Branch into the main channel. The sites of Warner's Mill and the Convento, part of San Augustin Mission, are in close proximity to the park border. Historic Silver Lake resort was also nearby. Extensive agricultural use adjacent to river occurred in the 1800's.

**Current Use:** Extensive landfill has occurred on site in recent years; dumpsters on site. Flowing Wells corridor for utility easement crosses site with sewer pipe bridge over main channel. Land is currently vacant.

### Adjacent Land Use:

**South:** Mexican Unity Council property; several established low-density residential neighborhoods border park land.

**West:** Dominated by "A" Mountain, site is adjacent to Sentinel Peak Park, separated by Mission Road. To the west of the southern strip are commercial development and institutional facilities. To the west of the northern strip is residential development.

## Opportunity/Constraint

will provide visual and recreational richness.

Habitat enhancement opportunity in West Branch channel.

Prime historic re-creation opportunity. Historic markers could be placed at the actual sites of historic activities and further illustrated in the Santa Cruz Historic Park interpretive center. Park program emphasis can complement historic events through equestrian orientation and pioneer theme, including new location for the Tucson Rodeo Museum and staging site for Rodeo Parade.

Park development will offer significant improvement of present situation. Utility easement and sewer pipe bridge present some visual constraints. Development of site must respond to existence and evaluation of landfill.

Neighborhood park amenities can be provided for adjacent residents on east bench of river channel.

Potential to provide linkages and expand amenities of both Riverpark and Sentinel Peak Park. Recreation program opportunities for adjacent residents.

## Site Condition

**North:** Rio Nuevo — extensive new residential community.

**East:** Established low-density, rural neighborhoods (Kroeger Lane neighborhood immediately adjacent). East of northern strip, land use is commercial (motels, government facilities), I-10 and the Central Business District.

## CIRCULATION

**Access:** Minor access to site from Mission Lane and from 22nd Street, with Mission Road serving as connector street. Interstate 10 interchanges at Congress Street and 22nd Street.

### Riverpark Drive:

Mission Road traverses planning unit on west bench of channel.

**Linkages:** West Branch of Santa Cruz accessible for horse trail.

Butterfield Underpass, north of this park unit, links Riverpark to CBD.

## Opportunity/Constraint

Respond to residential needs by integrating Riverpark Trail and facilities in adjacent park strip. Provide neighborhood park for nearby residents.

Relate park development to motels for mutual benefit. Provide linkages to and utilize facilities of CBD. Historic buggy ride route to CBD can tie together rural and urban history.

Good access for regional and local park visitors.

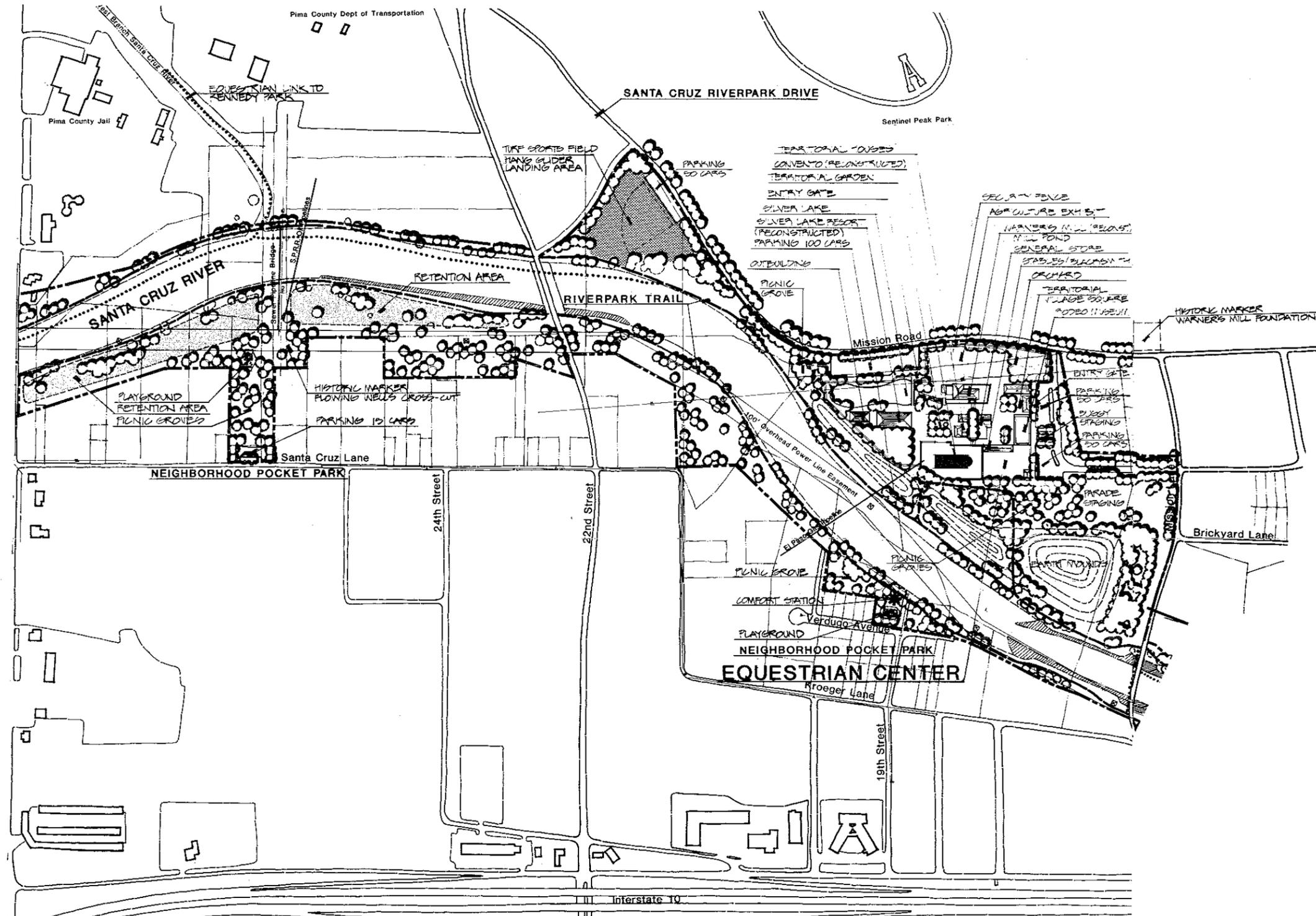
Opportunity to provide continuous Riverpark Drive experience throughout unit.

Equestrian Trail linkage can be provided from Santa Cruz Trail System through West Branch of Santa Cruz River to Kennedy Park.

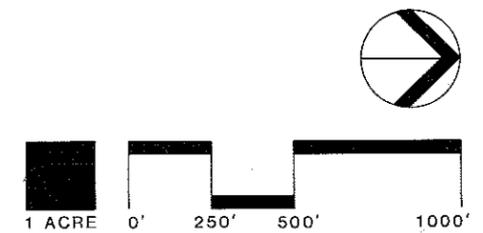
Utilize linkage between park and CBD for pedestrian and automobile accessibility. Also use Butterfield Underpass for Rodeo Parade.

## Recommendations

- Negotiate a use easement with the County for Riverpark Trail continuity on West bank north of Silverlake Road.
- Develop the most important historic site of the Riverpark with an historic theme pioneer village.
- Provide historic markers on sites of significant pioneer activities.
- Stabilize main channel to prevent loss of further Riverpark land.
- Control direction of surface drainage on site to preclude contamination of groundwater as site is developed.
- Enhance existing natural vegetation for visual, habitat and recreational amenities.
- Develop neighborhood park facilities on east bench. Provide open fields and picnic areas together with a landing site for hang gliders.
- Develop equestrian facilities including staging area for rodeo parade, rental facilities and historic carriage ride boarding point and terminus.
- Enhance linkages of site with Kennedy Park and Central Business District.
- Respond to the proximity of Rio Nuevo and the CBD with pedestrian, bicycle, and vehicular connections.



# SANTA CRUZ HISTORIC PARK



# SANTA CRUZ HISTORIC PARK DESIGN PROGRAM

surrey pulled by a matched pair of quarterhorses pulls up to the General Store . . . down the road is the replica of Warner's Mill, where a woman dressed in a long calico gown and poke bonnet relates highlights of the Old Pueblo 100 years ago . . . across the Village Square, the Rodeo Museum attracts future cowboys and old timers who rode the range when the Santa Cruz still flowed year-round . . . while the sounds of an anvil echo from the Blacksmith Shop . . .

## VEHICULAR CIRCULATION

### Major Access

Silverlake Road  
Connects Cottonwood Lane and Mission Road sections of Santa Cruz Riverpark Drive  
22nd Street  
Regional access from Interstate 10 and eastside areas of the City  
Access to Santa Cruz Riverpark Drive

Mission Road  
Entry to Santa Cruz Historic Park with medium capacity parking (100 cars)

Mission Lane  
Entry to Santa Cruz Historic Park and Equestrian Center with medium capacity parking (100 cars)  
Connects to Tucson Community Center parking lot via Frontage Road and Butterfield Underpass (for shuttle service)

### Santa Cruz Riverpark Drive

Mission Road between Silverlake Road and Mission Lane becomes western boundary of Historic Park past 22nd Street. Riverpark Drive then follows Mission Lane to Rio Nuevo.

## RIVERPARK TRAIL SYSTEM

### Santa Cruz Riverpark Trail

Horse rental and staging area at the Santa Cruz Historic Park Equestrian Center  
Combined pedestrian/bicycle trail and equestrian trail along both banks

through linear transition area. Riverpark Trail along both banks north of 22nd Street. Equestrian trail in the channel to the Historic Park on west bank.  
Grade crossings of the channel at Silverlake Road, 22nd Street and Mission Lane  
Riverpark Trail underpasses at Silverlake Road and 22nd Street

### Trail Loops

Pedestrian/bicycle and equestrian trail loops connect Riverpark Trail to Santa Cruz Historic Park and Equestrian Center.

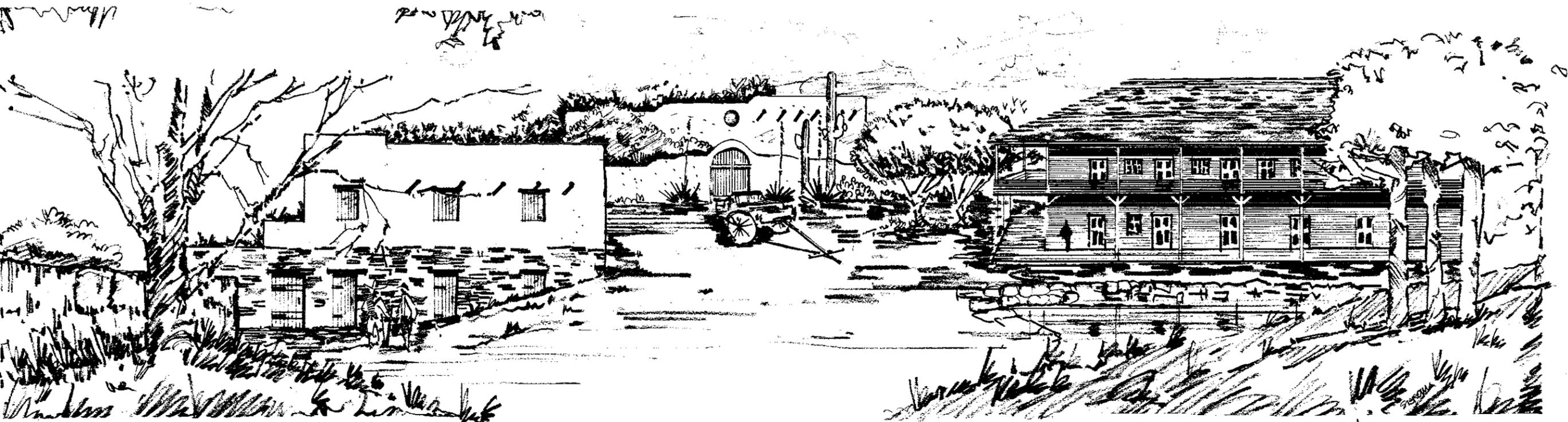
### Trail Links

Equestrian trail link to Kennedy Park via the West Branch Santa Cruz Riverpark Trail link to the Tucson Community Center and Central Business District via Mission Lane, Frontage Road, and the Butterfield Underpass. This connection also joins the Rodeo Parade Staging Area to the downtown.

## RECREATIONAL FEATURES

### Equestrian Center

Central equestrian facility provides for horse rental and trail staging adjacent to the downtown area.



*Warner's Mill, El Convento and Silver Lake Hotel Replicas in Historic Theme Village*

#### Equestrian Office

Rental office  
Equestrian information  
Hitching post  
Restrooms

#### Staging Area

Central space for the preparation of rental horses and trail riders

#### Stables

Stalls for rental and buggy horses  
Feed and equipment storage

#### Rodeo Parade Staging Area

Open field adjacent to Equestrian Center for preparation of riders in the Rodeo Parade

#### Parking Lot

Car and trailer parking adjacent to Equestrian Office

#### Greenspace Recreation Area

##### Neighborhood Pocket Parks

Small parks adjacent to existing neighborhoods for local residents and Riverpark Trail users  
Consists of a picnic grove, playground, small open area, and a comfort station

##### Turf Sports Field

Graded open turf field with backstop  
Ample area allows for multiple informal use including hang glider landing from Sentinel Peak  
Seating areas under perimeter tree clusters

##### Picnic Groves

Individual picnic sites of grass mounds or picnic tables located in shade groves

##### Playground

Play structures located in shade groves  
Adjacent seating areas for supervision

##### Comfort Station

Restrooms  
Drinking fountain  
Riverpark information node

#### Open Space Recreation

Low intensity recreation in natural areas

#### Nature Study

Observation areas for bird watching and nature study adjacent to retention areas

### CULTURAL FEATURES

#### Santa Cruz Historic Park

Historic theme village set in the shadows of Sentinel Peak along the Santa Cruz River depicts elements of Tucson's Spanish Colonial and Territorial periods. Set on the site of Tucson's settlement and early growth, this park establishes the historical significance of a currently neglected site while reclaiming a landfill. Development will require grading, capping and positive drainage of the site to prevent runoff percolation into the landfill.

##### "Silver Lake" and Millrace

Lined pond at entry gate becomes the setting for the Silver Lake Hotel Spillway and millrace power the water wheel at Warner's Mill  
Water recirculates via pumping station

##### Silver Lake Hotel

Reconstruction of the original resort hotel  
Hotel to house a restaurant, saloon, and Territorial exhibits

##### Warner's Mill

Working reconstruction of Solomon Warner's flour mill  
Displays and exhibits of Territorial agriculture and irrigation techniques

##### Territorial Houses and Gardens

Replicas of Territorial homes with displays of frontier lifestyles

##### El Convento structure of the San Augustin Mission

Reconstruction of El Convento set in a walled Spanish courtyard  
Exhibits of the Spanish Colonial influence on Tucson's settlement and early development

##### General Store

Replica of a Territorial store  
Displays of goods, sundries, clothes and craft items of early Tucson  
Souvenir sales and bookstore

##### Territorial Village Square

Replicas of early merchant buildings  
Displays of early entrepreneurs of the Tucson Basin and their stories of success or failure  
Display of change in the Santa Cruz River through recent history  
Lecture room  
Administrative offices

#### Rodeo Museum

Museum of equestrian articles and displays  
Replica of a Territorial blacksmith's shop and stables  
Staging plaza for the Historic Buggy Ride

#### Historic Buggy Ride

Ride through downtown Tucson on a Territorial period horse-drawn buggy  
Route begins at the Historic Park and loops through Rio Nuevo, El Presidio, Tucson Museum of Art, La Entrada, El Centro, and the Community Center parking lot.

#### Entry Gates

Controlled access points for fees collection  
Gate at "Silver Lake" with adjacent parking for 100 cars  
Gate at Territorial Village Square with adjacent parking for 100 cars.  
Also serves as service access during park non-active hours

#### Historic Markers

Markers of small plazas recognizing significant history in the Riverpark

##### Flowing Wells Cross-Cut

Major irrigation project in the 1910's to harvest the waters of the Santa Cruz for agricultural use

##### Warners' Mill Site

Remaining foundation of Solomon Warner's Mill at the base of Sentinel Peak  
Connect this site to the Historic Park by a pedestrian trail

##### San Augustin Mission

Develop a commemorative plaza on the site of the first significant structure in Tucson

### WATER RESOURCES

#### Channel Condition

Widened and stabilized river channel to reduce flood hazard and enhance groundwater recharge.

Existing Rio Nuevo channelization begins south of Mission Lane.  
Natural West Branch of Santa Cruz joins main channel.

#### Water Harvesting

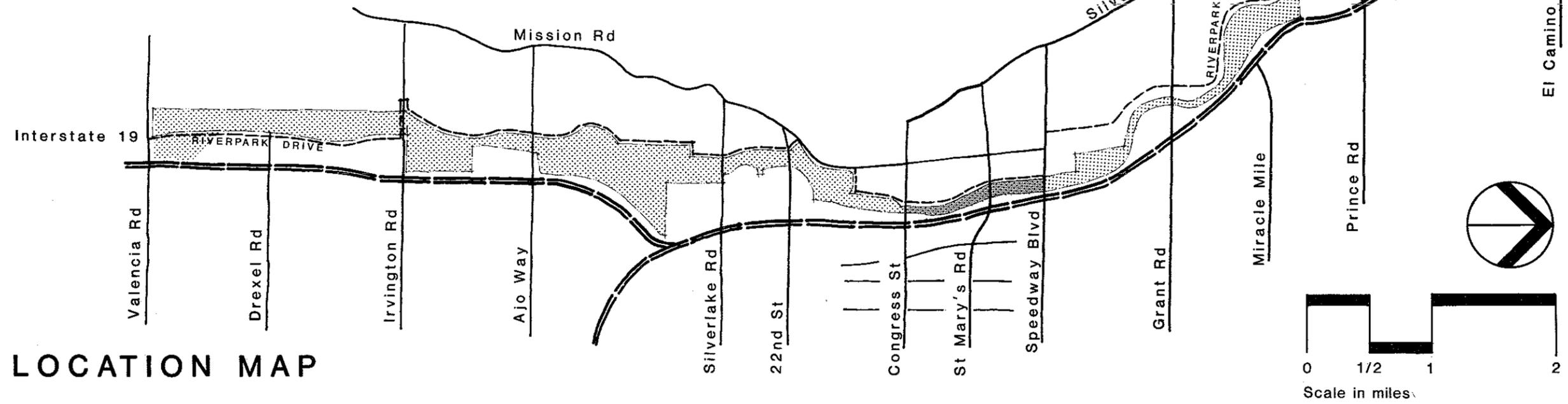
Water management techniques for local runoff collection

#### Retention Areas

Area graded for the collection and retention of local runoff to enhance vegetation growth.

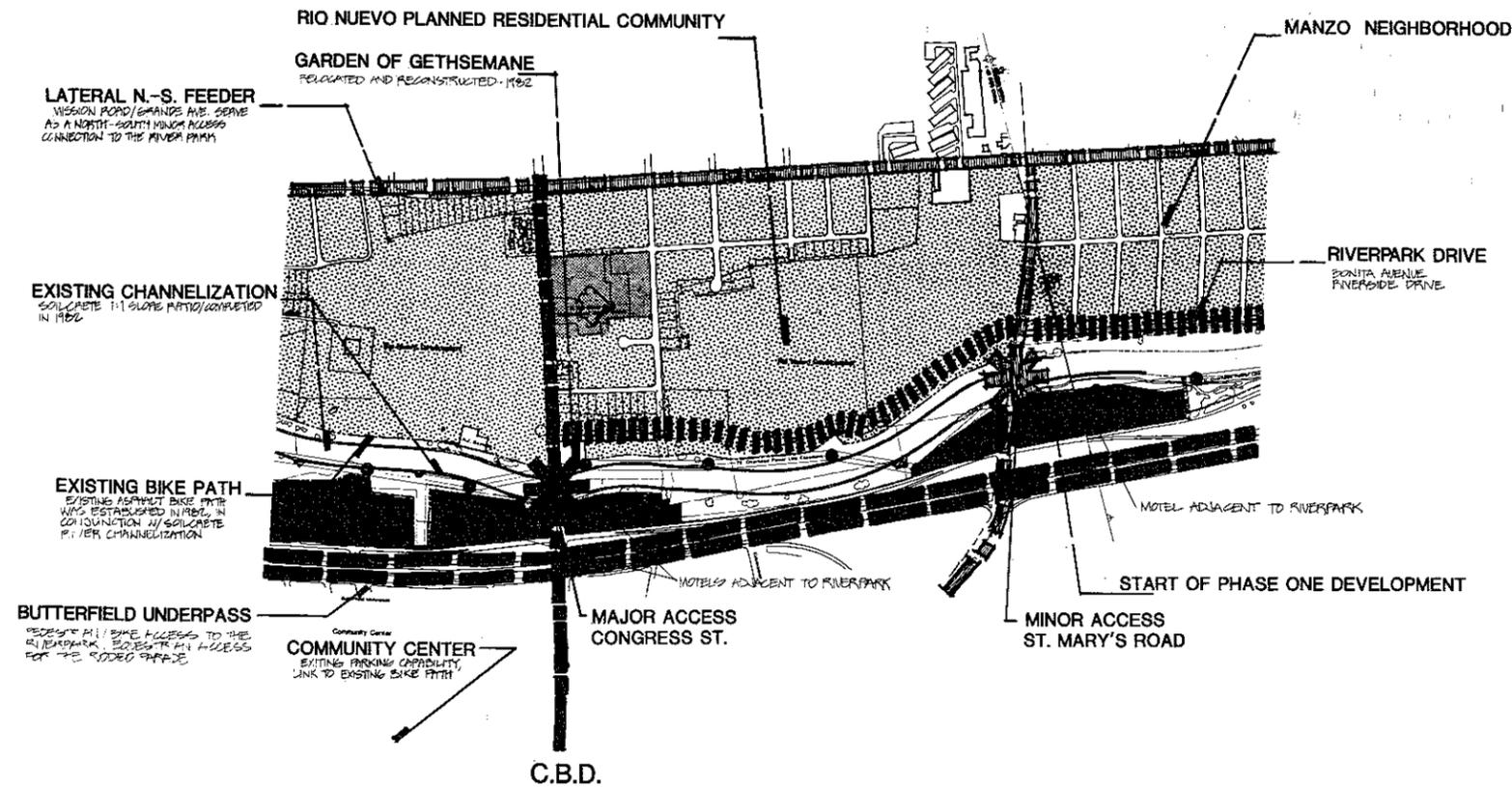
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6. TUCSON RIVERPARK PLAZA	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
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8. SILVERBELL RIVERTRAIL	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

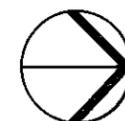


# RIO NUEVO RIVERPARK TRAIL

The significance of the Santa Cruz Riverpark in this planning unit lies in its proximity to downtown Tucson and to potential high recreational demand from the Rio Nuevo Redevelopment Project. With the exception of the far northwest section, this linear strip of Riverpark has been largely preplanned through the Rio Nuevo Redevelopment Project on the west bench, and Phase I of the Santa Cruz Riverpark Masterplan on the east bench. The Riverpark Trail, as well as much of the landscaping has already been installed on both banks, allowing this section of the park to serve as an established focal point for further significant Riverpark expansion to the north and south.



## ADJACENT LAND USE KEY



## NATURAL RESOURCES

### Site Condition

**River Channel:** Main channel has been stabilized with soilcrete in preparation for the Rio Nuevo Redevelopment Project. Banks are **very steep** (1:1) and channel width has little variation.

Three stepped structural dams in the channel bottom control collection of river debris and velocity of flow.

**Tributary Channels:** Structural drainage ditches on the east bench drain runoff from I-10 and on the west bench from Rio Nuevo.

**Surface Drainage:** Insignificant due to limited park area.

**Landform & Configuration:** Park area is very narrow to moderately narrow ribbon on each side of channel with larger pockets on the west bench (Garden of Gethsemane, Rio Nuevo, Community Plaza). Bank edge at main channel is exceedingly abrupt.

**Vegetation:** A few native tree groupings at each end of planning unit. Introduced trees in Rio Nuevo and Santa Cruz Riverpark Phase I include Chilean Mesquite, Blue Palo Verde and Cottonwoods used to shade trails. Shrubs used as entry accents. Much of remaining land hydroseeded in native grasses.

**Wildlife Habitat:** Limited land area; no water harvesting planned for site.

### LAND USE

**Historic Uses:** Site of St. Augustin Mission on west bank.

### Opportunity/Constraint

Guard rails may be necessary where trail is in close proximity to edge.

Structures will impede equestrian trail in channel unless ramps are supplied.

No opportunity for water detention due to limited park land area.

No water retention opportunity.

Very little opportunity for park facilities other than trails due to narrow configuration of land.

Opportunity to design vacant northwest section incorporating existing trees. Additional park elements should maximize amenities of planted vegetation.

No habitat enhancement potential.

Opportunity for historic marker at Mission site. Respond to Garden

### Site Condition

Garden of Gethsemane has been relocated out of the flood level to a site north of Congress Street.

**Current Use:** West bench has been integrally designed into Rio Nuevo Redevelopment Project. Northern section of west bench is vacant. East bench includes Phase I of the Santa Cruz Riverpark.

#### Adjacent Land Use:

**South:** Santa Cruz Historic Park site.

**West:** Rio Nuevo Redevelopment Project; Manzo residential neighborhood.

**North:** Speedway Boulevard; Phase II of Santa Cruz Riverpark.

**East:** Commercial zoning with motel developments.

### CIRCULATION

**Access:** Major access at Congress Street, St. Mary's Road and Speedway Boulevard. Access from I-10 at three interchanges. Minor access to park at Mission Lane.

**Riverpark Drive:** On the west bench Riverpark Drive will connect Mission Lane to Congress through Rio Nuevo, with exact alignment currently undetermined. From Congress Street to St. Mary's Road, the Drive will follow the alignment of Bonita along the Riverpark edge.

**Linkages:** Underpasses exist at Congress Street and Butterfield to connect the Riverpark to the CBD. Large parking lot at Community Center. St. Mary's Road

### Opportunity/Constraint

of Gethsemane in Riverpark design.

West bank of Riverpark will serve as neighborhood park for Rio Nuevo and Manzo residential areas. East bench can serve as Riverpark trail entry. Ramadas are good stopping places for trail users, local residents and visitors.

Provide access to CBD and Community Center parking through this unit.

Respond to neighborhood recreational needs.

Opportunity to complete continuous Riverpark Trail on both banks.

Potential for coordination with motels for recreational activities, equipment rentals.

Excellent potential for access to Riverpark trails and parking areas.

Good opportunity to provide continuous Riverpark Drive experience through entire length of planning unit.

Opportunity exists to enhance connections and encourage people-flows between CBD and Riverpark. Linkage potential between Riverpark and CBD via

### Site Condition

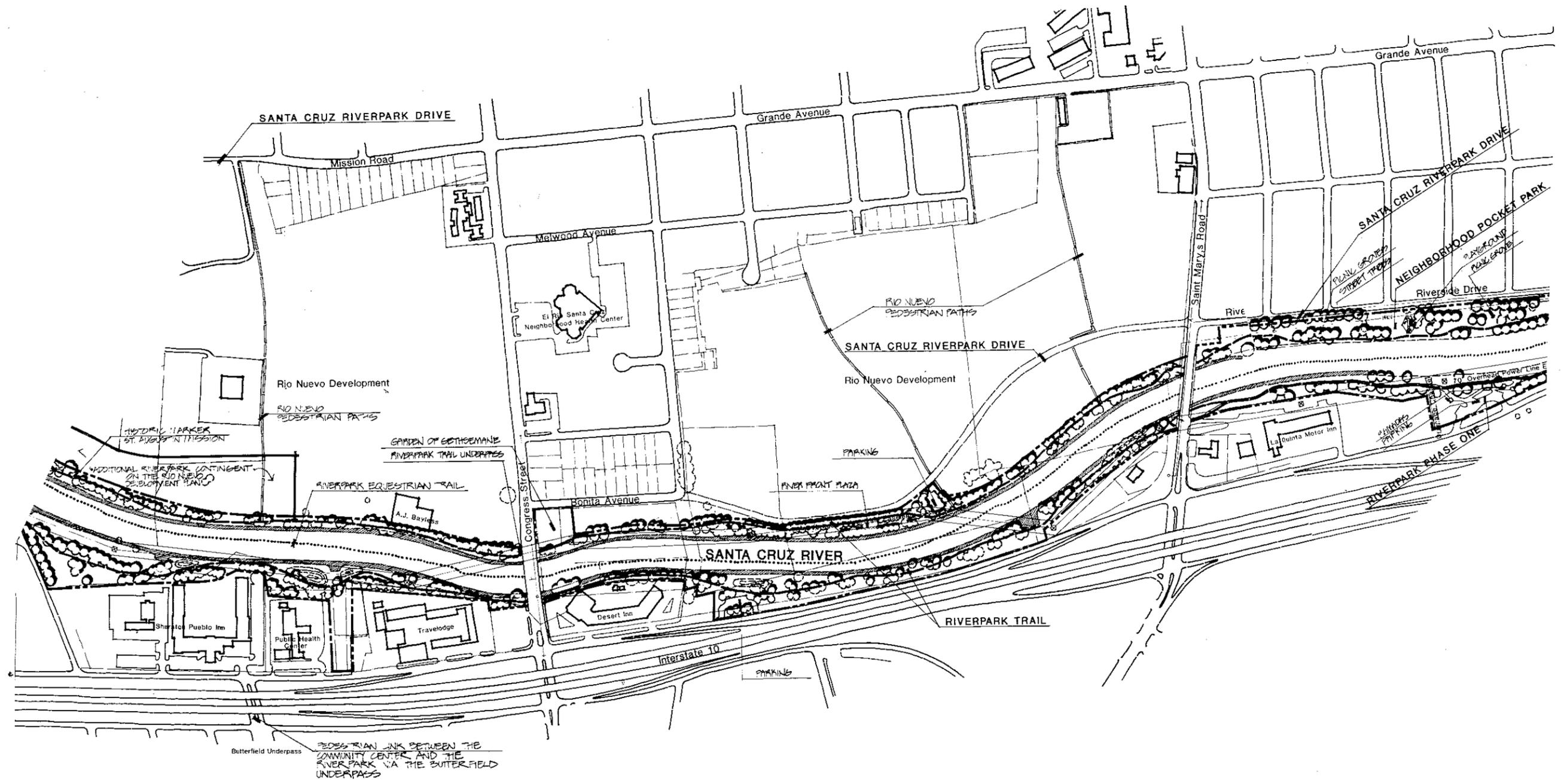
offers linkage to Pima Community College, and via Speedway to the University of Arizona.

### Opportunity/Constraint

Butterfield Underpass and Congress Street for pedestrian and vehicular access. Rodeo Parade can be staged at Historic Park and proceed through Butterfield Underpass to beginning of parade route. Community Center parking lot can accommodate parking for large-scale events at Santa Cruz Historic Park.

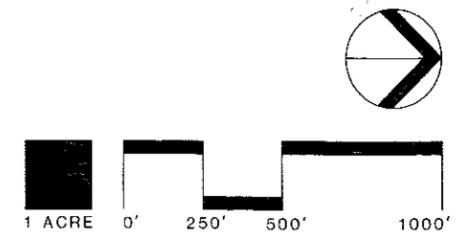
### Recommendations

- Negotiate use agreement with the State of Arizona for Riverpark Trail development near Interstate 10 and the Tucson Arroyo.
- Provide an historic marker at the site of St. Augustin Mission.
- Integrate Riverpark Trail design with Garden of Gethsemane access.
- Enhance and integrate natural vegetation on site. Respond to Rio Nuevo plant selections.
- Provide guard rails where Riverpark Trail alignment is close to steep channel edge.
- Respond to adjacent residential and visitor recreation needs with Riverpark plan and program.
- Enhance the use of existing Riverpark facilities by supplementing with amenities such as benches, picnic tables, drinking fountains and bike racks.
- Develop commercial facilities within Rio Nuevo to support and complement park activities, including food establishments and sporting goods sales and rentals.
- Create open space linkages from the Riverpark into the Rio Nuevo development to coordinate and expand the recreational potential.
- Encourage adjacent motels to utilize and contribute to the amenities of the Riverpark by offering bike rentals, park activity schedules and pathways connecting to the Riverpark Trail system.
- Link to and align pedestrian/bicycle trails designed into adjacent planning units with existing Riverpark trails.
- Enhance pedestrian linkages with CBD and Community Center parking area.



Community Center  
 PARKING FOR RIVERPARK ACTIVITIES  
 AT THE COMMUNITY CENTER LOT WITH  
 SHUTTLE SERVICE TO RIO NUEVO AND  
 THE SANTA CRUZ HISTORIC PARK

# RIO NUEVO RIVERPARK TRAIL



# RIO NUEVO RIVERPARK TRAIL DESIGN PROGRAM

Bicyclists on both sides of the channel wave to each other, watched by older folk who are enjoying the evening scene from benches along the Riverpark Trail . . . neighbors from Rio Nuevo are dismantling an arts and crafts display in the plaza, while health enthusiasts visit the exercise stations along the trail . . . at the bottom of the steeply-banked river channel, a string of mounted horses heads north, creating a striking scene with the flaming Arizona sunset over head . . .

## VEHICULAR CIRCULATION

### Major Access

Congress Street

Regional access to the central portion of Santa Cruz Riverpark via Interstate 10

Links Riverpark to Central Business District, Civic Center, La Entrada and Community Center

Access to Rio Nuevo main entry and Santa Cruz Riverpark Drive

### Minor Access

St. Mary's Road

Regional access to the central portion of the Santa Cruz Riverpark via Interstate 10

Connection between the Riverpark and Pima College (East Campus) Access to Santa Cruz Riverpark Drive

### Santa Cruz Riverpark Drive

Mission Road between Mission Lane and Congress Street

Rio Nuevo Boulevard between Congress Street and St. Mary's Road with a strong Rio Nuevo entry node at Congress Street

Parking will be provided in conjunction with commercial development in Rio Nuevo adjacent to the river.

## RIVERPARK TRAIL SYSTEM

### Santa Cruz Riverpark Trail

Bicycle rental from motels on east bank or Rio Nuevo commercial development on west bank

Pedestrian/bicycle trail on both banks

Equestrian trail located in the channel through this section

Riverpark Trail underpasses at Congress Street (west bank only) and St. Mary's Road

## Trail Links

A system of pedestrian/bicycle paths will link Rio Nuevo residential development to the Santa Cruz Riverpark Trail.

A proposed pedestrian/bikeway/tramway loop will interconnect the Riverpark with La Entrada, the Civic Center, Community Center, and El Centro.

Bike trail link to Pima College via St. Mary's Road

## RECREATIONAL FEATURES

### Bicycle Rental

Bicycle rental will be provided at the motels on the east bank.

Additional equipment rentals and food/drink concessions will be provided by the commercial sector of Rio Nuevo.

### Greenspace Recreation

Urban Park Plaza

Shaded plaza and grass terraces provide multiple use space for community activities and relaxation.

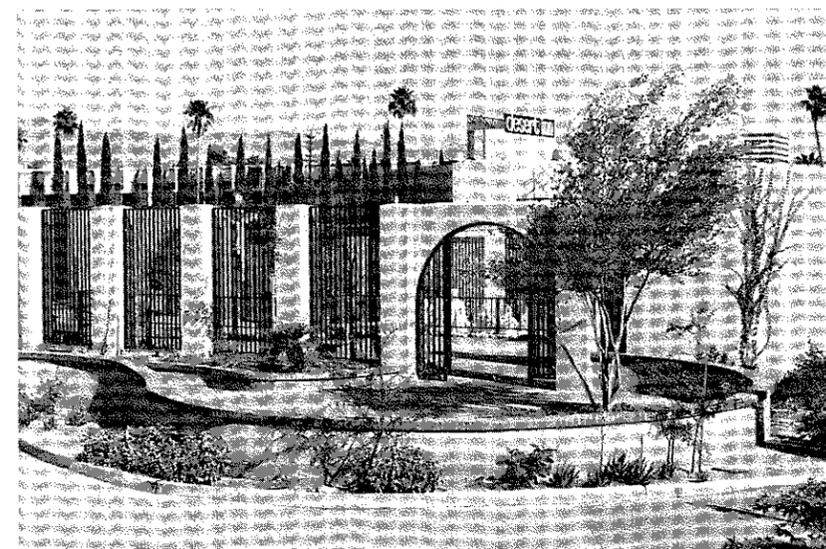
Exercise Course

Exercise stations set along the Riverpark Trail

Neighborhood Pocket Park

Small parks adjacent to existing neighborhoods for local residents and Riverpark Trail users

Picnic tables, seating area, and play structures in a shade grove with small adjacent open area for play



*New setting for the Garden of Gethsemane has been provided on the west bank of the Santa Cruz River channel, north of Congress Street, adjacent to Rio Nuevo project.*

## Riverpark Phase I

Re-use of existing ramadas for roadside picnic area for tourists

## Rio Nuevo Redevelopment Project

Additional greenspace corridors and activity areas in the Rio Nuevo Development will create a strong tie to the Santa Cruz Riverpark.

## CULTURAL FEATURES

### Garden of Gethsemane

Formal urban plaza on the riverbank honoring the religious sculptures of Felix Lucero

Small adjacent parking plaza

## WATER RESOURCES

### Channel Condition

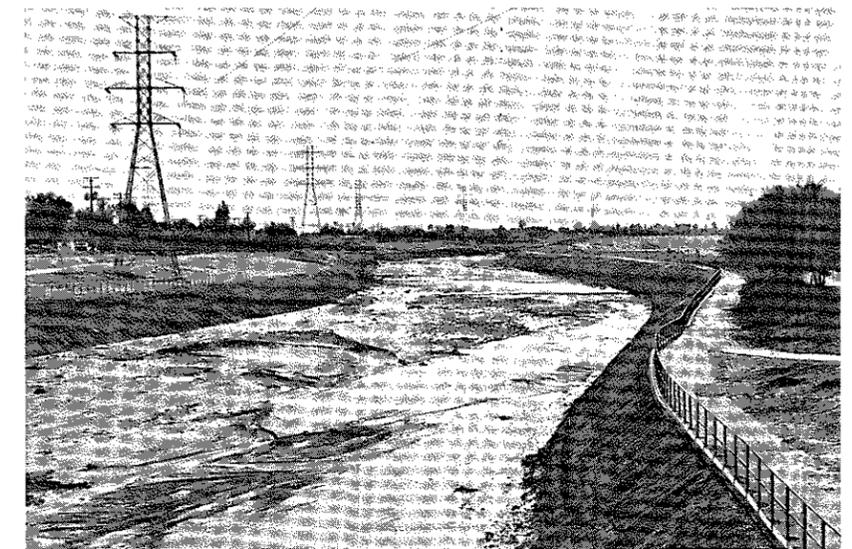
Soilcrete channelization exists through Rio Nuevo and north of St. Mary's Road.

Present studies by Simons & Li are investigating channelization options from St. Mary's Road to El Camino Del Cerro.

## SPECIAL CONDITIONS

### Rio Nuevo Development

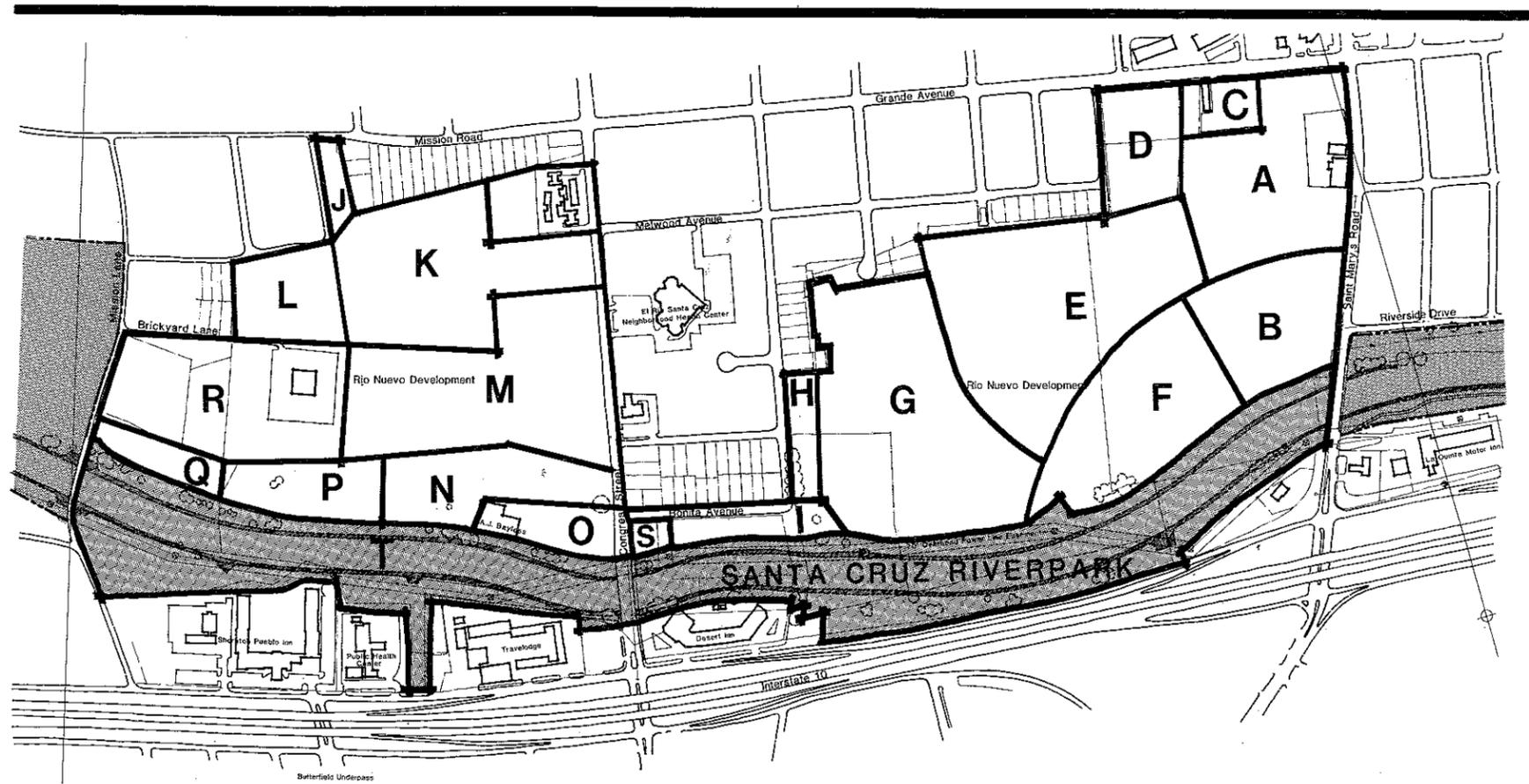
See the Redevelopment Plan for Rio Nuevo by the Downtown Development Corporation for details on the planned community and further information on its relationship to the Santa Cruz River.



*Construction of the Rio Nuevo Redevelopment Project has stabilized steep river banks, providing a guard rail and continuous Riverpark Trail.*

# RIO NUEVO LAND USE PLAN

Rio Nuevo plan prepared by Cella Barr Associates and used by permission of the Downtown Development Corporation.



## KEY

### PRINCIPLE USES:

- A. Shopping Center
- B. Commercial/Office
- C. Existing GSA Uses
- D. Medium to High Density residential
- E. Medium to High Density Residential
- F. Medium to High Density Residential
- G. Medium to High Density Residential
- H. Single Family Buffer Lots
- I. Residential/Commercial Mixed Use Option
- J. Single Family/Duplex Buffer
- K. Medium Density Residential

L. Open Space

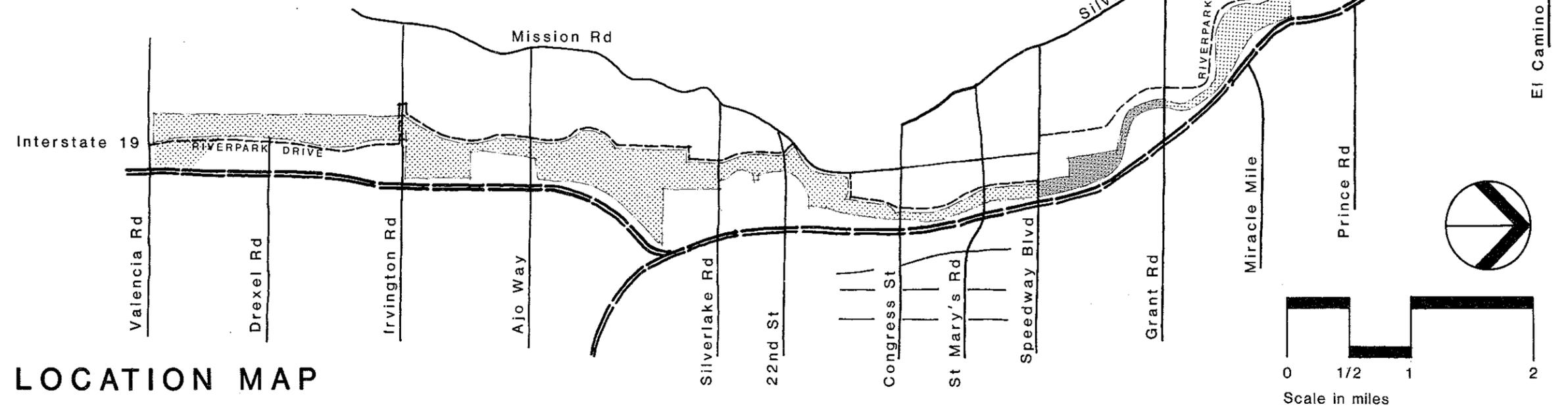
- M. Medium to High Density Residential
- N. Medium to High Density Residential
- O. Riverpark Related Plaza and Commercial
- P. Riverpark (Public)
- Q. Riverpark (Public)
- R. Existing Bus Maintenance Facility
- S. Garden of Gethsemane (Public)
- T. Riverpark (Public)

### ALTERNATIVE USES:

- C. Shopping Center Related Commercial
- K. Nursing Home
- N. O. & P. Specialty Commercial Recreation

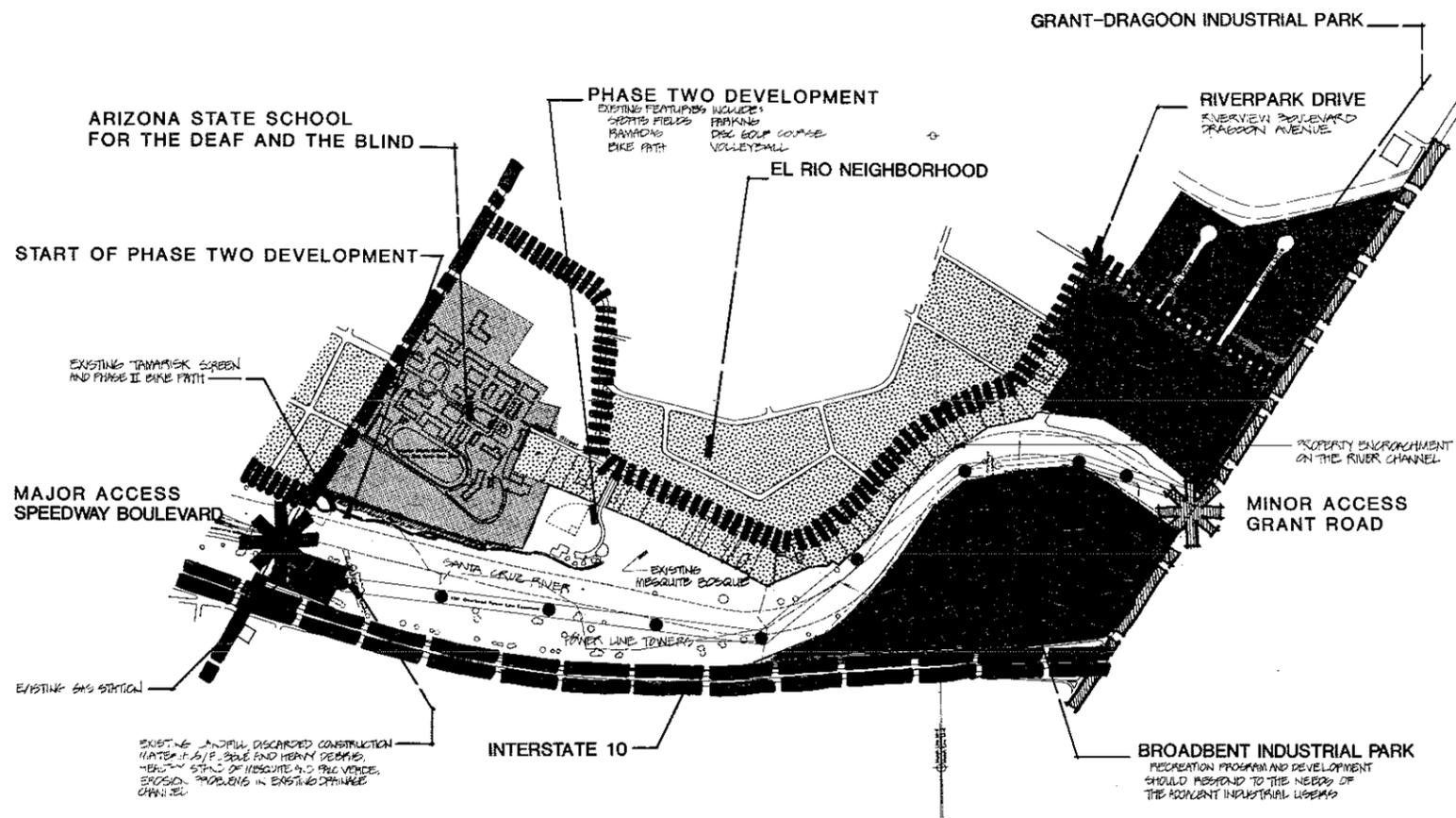
# SANTA CRUZ RIVERPARK PROGRAM MATRIX

PLANNING UNIT	VEHICULAR CIRCULATION				RIVERPARK TRAIL				FACILITIES			RECREATION ACTIVE				PASSIVE			CULTURE															
	MAJOR ACCESS	MINOR ACCESS	LARGE SCALE PARKING	SMALL SCALE PARKING	RIVERPARK DRIVE	PEDESTRIAN / BIKE TRAIL	BIKE RENTAL	EQUESTRIAN TRAIL	EQUESTRIAN RENTAL	EQUESTRIAN STAGING	RIVERPARK INFORMATION	ADMINISTRATION CENTER	CONCESSIONS PLAZA	COMFORT STATIONS	SPECIAL RECREATION	ACTIVITY PLAZA	COURT SPORTS	BALL FIELDS	GREENSPACE ACTIVITY	PLAYGROUNDS	BOATING / FISHING	SWIMMING / WADING	FITNESS / JOGGING COURSE	GROUP PICNIC AREAS	PICNIC GROVES	OPEN SPACE / NATURE STUDY	HIKING / STROLLING	HISTORIC SITES / MARKERS	HISTORIC INTERPRETATION	CULTURAL HERITAGE	CULTURAL ACTIVITY	ART IN THE PARK		
1. MIDVALE GREENPARK	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2. SANTA CRUZ EQUESTRIAN PARK	●																																	
3. AMPHITHEATRE GREENPARK	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
4. SANTA CRUZ HISTORIC PARK		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
5. RIO NUEVO / MANZO	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
6. TUCSON RIVERPARK PLAZA	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
7. SANTA CRUZ GARDENPARK	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
8. SILVERBELL RIVERTRAIL	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●



# TUCSON RIVERPARK PLAZA

The Tucson Riverpark Plaza site offers the highest visibility of the Santa Cruz Riverpark from Interstate 10, which parallels this planning unit at a close proximity. The Plaza will provide orientation and information for visitors, acting as a "Gateway to Tucson" and as a main entry to the Riverpark. Additionally, the Plaza will be a gathering place for local festivals and events.



## ADJACENT LAND USE KEY



## NATURAL RESOURCES

### Site Condition

**Main River Channel:** A constriction for park development in the north portion of the planning unit has been caused by encroaching industrial and residential development on opposite channel sides. Banks are variably steep and gently sloping. Main channel has been stabilized with soilcrete on the east bank parallel to the Broadbent Interstate Center. Remainder of channel is in natural state.

**Tributary Channel:** Speedway Boulevard storm channel enters main channel from the east north of Speedway. Considerable bank erosion in channel.

**Surface Drainage:** Site slopes gently toward channel.

**Landform and Configuration:** Flat to gently sloping. Wide (300'-500') portion along east bank from Speedway to industrial park; wedge of land on west bank adjacent to Speedway (Phase II). Adjacent land development and private ownership on the northern portion of the planning unit has created an extreme pinch point on both benches.

**Vegetation:** Strong existing vegetation screen parallel to channel between park and State school. Extensive vegetation cover (volunteer Palo Verde) in tributary channel and scattered mature native trees and native grasses throughout planning unit.

**Wildlife Habitat:** Sufficient land area to form retention basins to capture runoff. Storm channel supports existing vegetation and directs seasonal runoff.

### Opportunity/Constraint

Constricted channel area and development encroachment minimizes opportunity for channel stabilization and trails.

Erosion control necessary for park development. Natural materials will optimize visual and habitat potential.

Opportunity to collect and recycle water on site as park development occurs.

Potential for large-scale activities on southern portion of east bank. Recreational development potential on west bench. Major park constraint in north portion due to relationship of development to river edge.

Potential for enhancing tributary channel vegetation as visual interest feature and habitat.

Enhancement of storm channel drainageway and retention of surface drainage will provide habitat.

## LAND USE

### Site Condition

**Historic Use:** Probability of historic agricultural use; past landfill activity evident on east bench.

**Current Use:** Phase II of Santa Cruz Riverpark on west bench. Vacant land on east bench. Zoning is commercial. Power lines are strong visual impact.

### Adjacent Land Use:

**South:** Gas station and privately owned adjacent land at southeast corner bordering Speedway.

**West:** From South to North: Arizona State School for the Deaf and Blind; Riverview residential neighborhood; auto wrecking yard.

**North:** Residential neighborhood (El Rio); Grant Dragoon Industrial Park. Grant Road is boundary.

**East:** Interstate 10 is boundary of southeast parcel. Broadbent Interstate Center adjacent to park at northeast.

### Opportunity/Constraint

Landfill is compacted construction rubble and offers no development restrictions.

Complement Phase II park development. Potential for urban image park node rather than pastoral.

Privately owned land is a constraint to site access.

Park program should respond to any needs of school. Wrecking yard needs screening.

Relate to neighborhood with park facilities.

Provide picnic and day use area for workers from industrial parks.

### Site Condition

**Riverpark Drive:** Land ownership precludes park-adjacent drive through most of unit.

### Opportunity/Constraint

Drive may utilize existing roads at some distance from park.

## Recommendations

- Acquire gas station site and adjacent commercial property at northwest corner of Speedway Boulevard and I-10 to facilitate major site entry.
- Negotiate use agreement with State for Plaza development, river channelization and Riverpark Trail on east bank of channel adjacent to Broadbent Interstate Center.
- Create strong Tucson and Riverpark entry image at southern end of site.
- Provide large plaza area for cultural events and gatherings.
- Respond to visibility and site access from I-10 by providing orientation node and facilities for travelers.
- Grade site as development occurs to collect and retain surface drainage on site for visual and habitat enhancement.
- Stabilize Speedway Boulevard storm channel; enhance existing vegetation.
- Respond to adjacent residential areas and industrial parks by providing playgrounds, picnic and day use facilities.
- Retain Riverview Boulevard as a secondary access road to Phase II facilities to restrain traffic through existing neighborhood.

## CIRCULATION

**Access:** Major access at Speedway from I-10 interchange and for local traffic entry.

Minor access from Riverview Drive into Phase II.

Limited access possible at Grant Road.

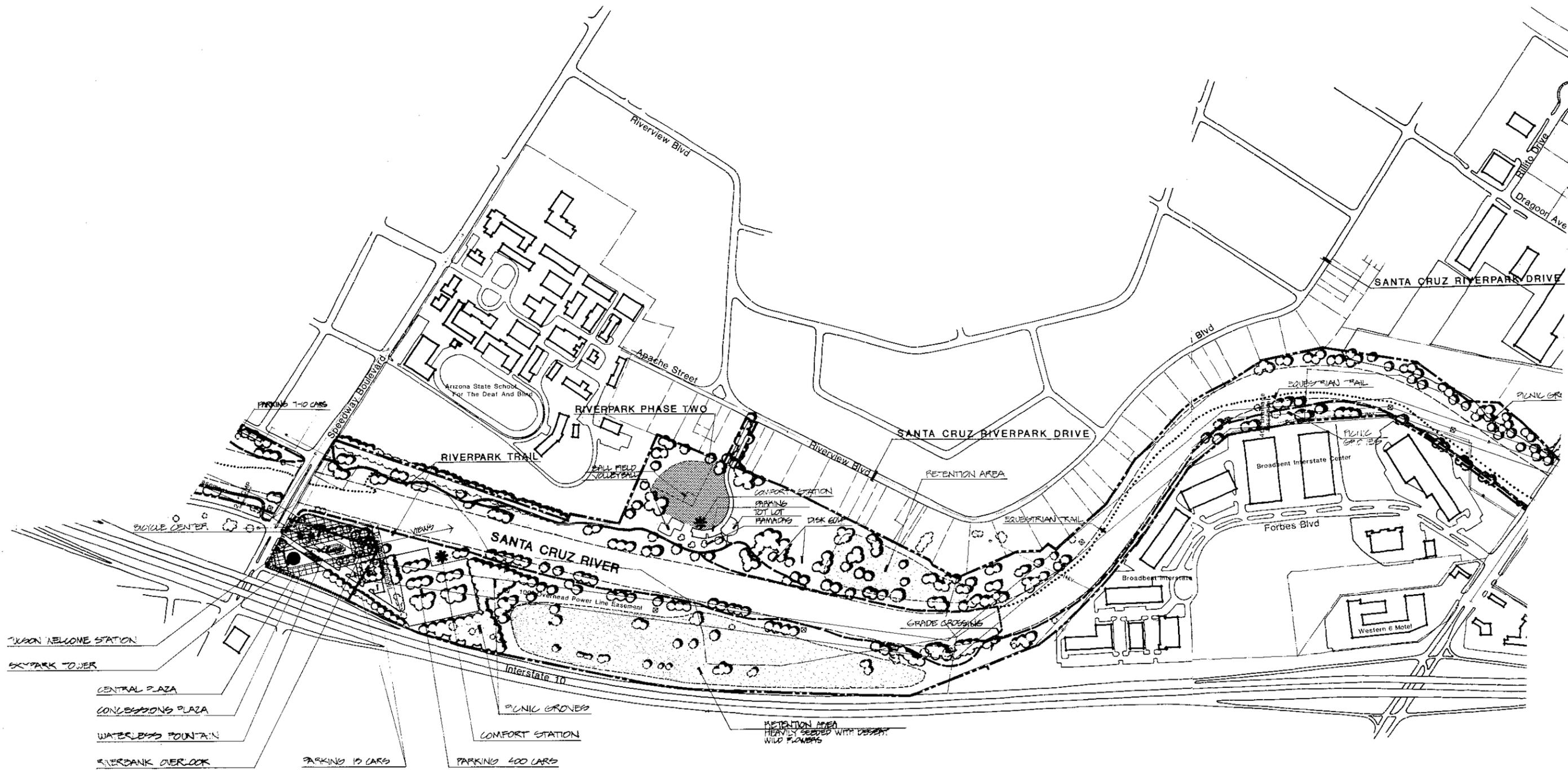
**Linkages:** Potential for linkage to Northwest District Park from Riverpark Trail via Riverview Boulevard and El Rio Golf Course. Linkage to Pima Community College and University of Arizona via Speedway Boulevard.

Best site access will be at gas station location, Speedway and I-10.

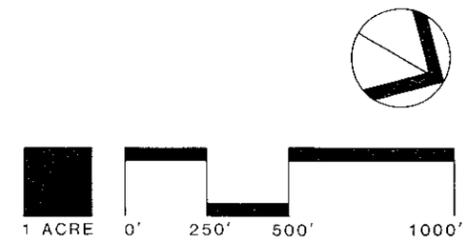
Residential community preceding entrance limits amounts of traffic desirable.

Access from Grant Road very restricted and not recommended.

Affirm Riverpark Trail linkages to community assets with signs and pathways where appropriate.



# TUCSON RIVERPARK PLAZA



# TUCSON RIVERPARK PLAZA DESIGN PROGRAM

Tucson Skypark Tower has been visible for many miles up the Interstate highway, drawing travelers to the Riverpark Plaza in Tucson's renowned Santa Cruz Riverpark . . . information, refreshments, a chance to stretch and relax are welcomed opportunities . . . perhaps it's time for one of the exciting happenings at the Plaza, an impromptu puppet show, musical performance or a traditional Tucson festival . . . and always, the visual enjoyment of the famous Waterless Fountain . . .

## VEHICULAR CIRCULATION

### Major Access

Speedway Boulevard

The "Gateway to Tucson and the Santa Cruz Riverpark" for Interstate 10 travelers and tourists

Regional access to the Riverpark from north and south areas via Interstate 10 and from the east and west city areas via Speedway Boulevard

Links Riverpark to the University of Arizona, Old Tucson, and the Arizona Sonora Desert Museum

Direct access to the Tucson Riverpark Plaza with large capacity parking facilities (400 cars)

Connects Riverside Drive and Riverview Boulevard sections of the Santa Cruz Riverpark Drive

### Minor Access

Grant Road

Regional access from Interstate 10

Access to Santa Cruz Riverpark Drive

### Santa Cruz Riverpark Drive

Riverview Boulevard and Dragoon Avenue between Speedway Boulevard and Grant Road

Access to Phase II park development with small capacity parking

## RIVERPARK TRAIL SYSTEM

### Santa Cruz Riverpark Trail

Bike rental concession at the Tucson Riverpark Plaza

Continuous Riverpark Trail on east bank. Riverpark Trail on west bank from Speedway Boulevard to the end of Phase II park development where it traverses to east bank

Equestrian Trail in channel (from Rio Nuevo section) past Riverpark Plaza parking lot, then on east bank to the Broadbent Interstate Center where it returns to the channel

Grade crossing of the channel at Broadbent Interstate Center  
Riverpark Trail underpasses at Speedway Boulevard and Grant Road (east bank only)

### Trail Links

Riverpark Trail link to Northwest District Park via El Rio Drive

Riverpark Trail link to Pima College Downtown Campus via Speedway Boulevard

Pedestrian trail link to Arizona School for the Deaf and the Blind campus

## RECREATIONAL FEATURES

### Bicycle Center

Bike rental concession adjacent to the Tucson Riverpark Plaza

Bike parking area

Comfort Station

Restrooms

Drinking fountain

Riverpark information node

## Greenspace Recreation

Riverpark Phase II

Existing neighborhood recreation park with small parking lot

Metal plate picnic ramadas

Turf area with softball field

Sand volleyball courts

Disk golf course

Playground

Add comfort station to existing facilities

Picnic Groves

Individual picnic sites of picnic tables or grass mounds in shade groves

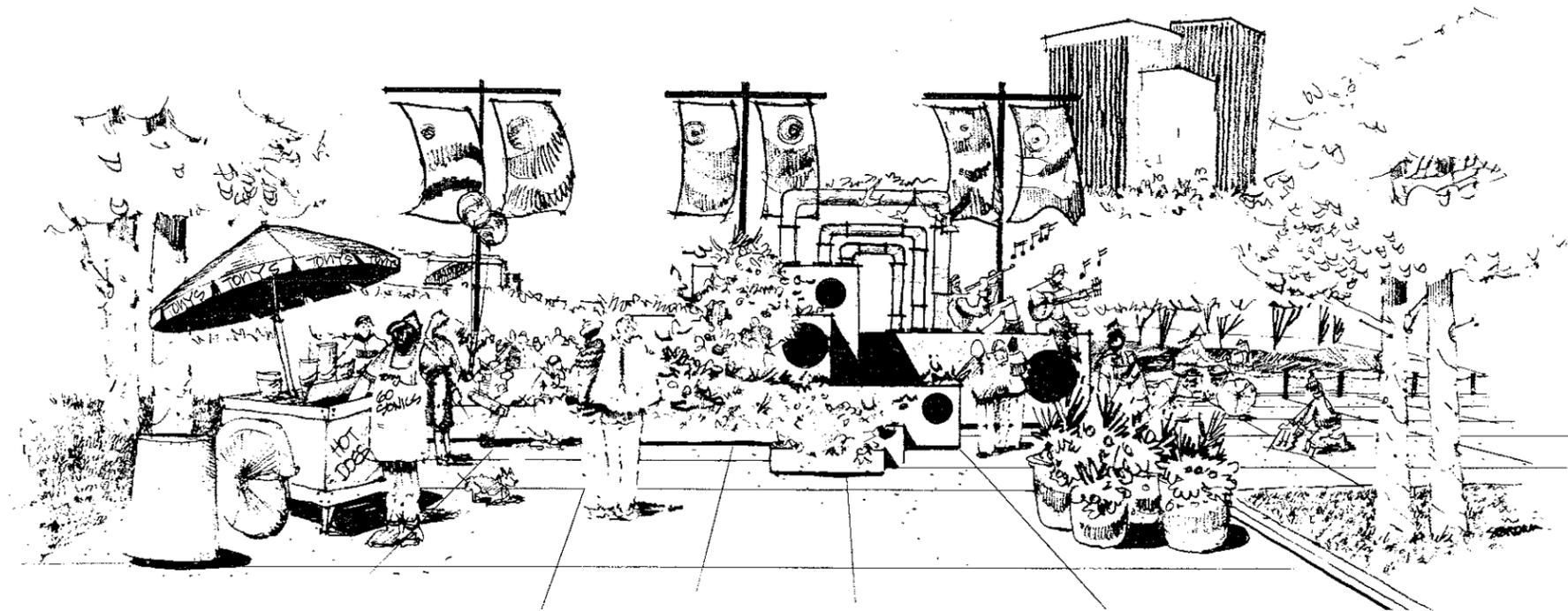
Large picnic grove area located adjacent to the Tucson Riverpark Plaza

Picnic groups adjacent to business parks for workers' lunch use

## Open Space Recreation

Enhanced native landscape accent by desert wildflowers provides a natural accent to the "Gateway to Tucson" and low intensity recreation area.

Hiking and Strolling Paths



*Central Riverpark Plaza with Waterless Fountain*

Low volume natural paths through the natural setting

Nature Study

Bird watching and passive enjoyment of the flower fields

## **CULTURAL FEATURES**

### **Tucson Riverpark Plaza**

Grand urban plaza extends from the Santa Cruz River to Interstate 10 projecting a strong image as the "Gateway to Tucson" for visitors, tourists, and resident park users. Central Plaza with a strong sculptural form is framed by surrounding tree masses and accented with colorful banners. Ample seating is found throughout. The spacious plaza provides an exciting backdrop for community gatherings and festivals.

#### Central Plaza

Open rectangular plaza set at a diagonal to the river and freeway  
Space is bisected by parkway road with a bus stop

#### Skypark Tower

Creates poignant vertical accent in the plaza  
Overviews of the city, Riverpark and brilliant sunsets from observation decks and landscaped Skypark

#### Waterless Fountain

Cascading horizontal sculpture is accented by colorful projecting pipes  
Water metaphor is created by flow plants with blue and white accent flowers

#### Tucson Welcome Station

Information and assistance center adjacent to the Central Plaza orients visitors to Tucson and the Santa Cruz Riverpark

#### Concessions Plaza

Activity hub of the Tucson Riverpark Plaza  
Food and drink concessions  
Bike and roller skate rental  
Riverpark souvenir shop  
Clustered seating areas in shade  
Comfort station

#### Riverbank Overlook

Shaded plaza overviews the Santa Cruz River and the Riverpark Trail

#### Parking Lot

Large interior lot for 400 cars provides a major parking node for the central portion of the Riverpark

## **WATER RESOURCES**

### **Channel Condition**

Widened and stabilized river channel to reduce flood hazard and enhance groundwater recharge.

Both banks terraced adjacent to Riverpark Phase II for edge diversity  
Riverpark to receive minimum 30' dedication (average 60') above bank stabilization on east bank for the Riverpark Trail adjacent to Broad-bent Interstate Center

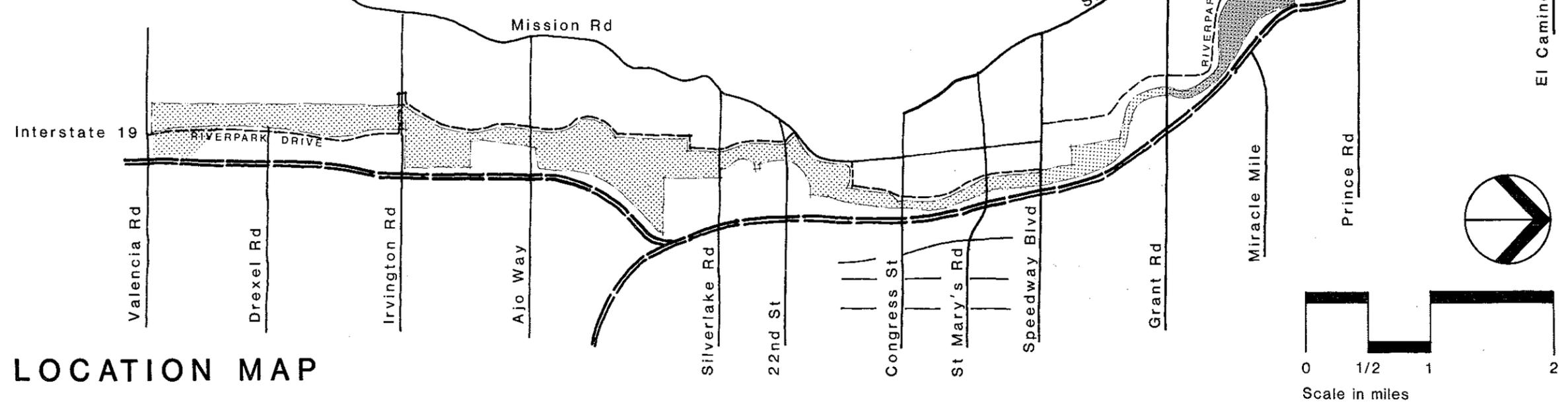
### **Water Harvesting**

#### Minor Tributary Wash

Enhanced riparian zone of drainage channel adjacent to the Riverpark Plaza creates a green, natural accent.

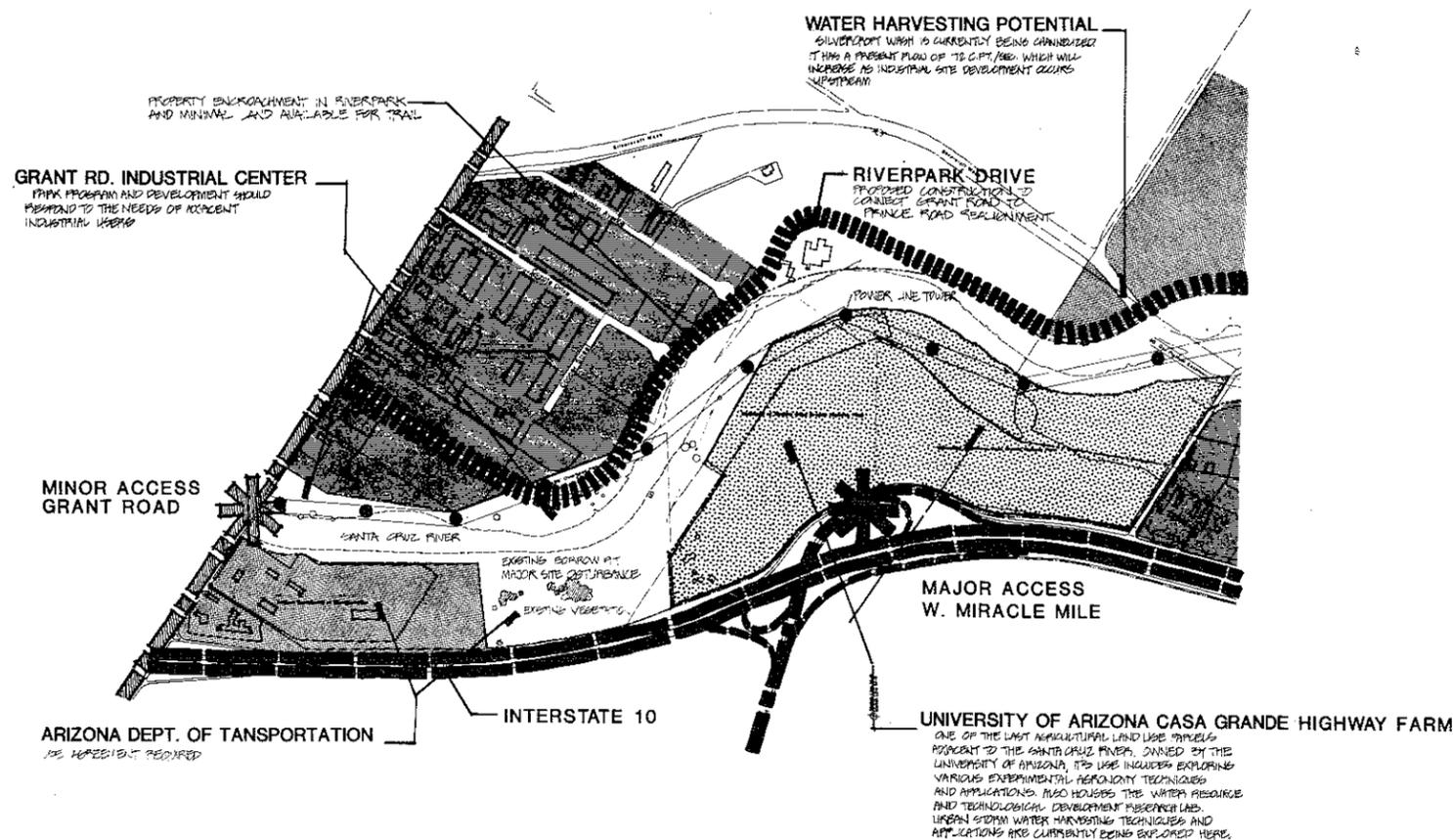
# SANTA CRUZ RIVERPARK PROGRAM MATRIX

PLANNING UNIT	PARK ACTIVITY				VEHICULAR CIRCULATION				RIVERPARK TRAIL				FACILITIES				RECREATION ACTIVE				PASSIVE				CULTURE								
	MAJOR ACCESS	MINOR ACCESS	LARGE SCALE PARKING	SMALL SCALE PARKING	RIVERPARK DRIVE	PEDESTRIAN / BIKE TRAIL	BIKE RENTAL	EQUESTRIAN TRAIL	EQUESTRIAN RENTAL	EQUESTRIAN STAGING	RIVERPARK INFORMATION	ADMINISTRATION CENTER	CONCESSIONS PLAZA	COMFORT STATIONS	SPECIAL RECREATION	ACTIVITY PLAZA	COURT SPORTS	BALL FIELDS	GREENSPACE ACTIVITY	PLAYGROUNDS	BOATING / FISHING	SWIMMING / WADING	FITNESS / JOGGING COURSE	GROUP PICNIC AREAS	PICNIC GROVES	OPEN SPACE / NATURE STUDY	HIKING / STROLLING	HISTORIC SITES / MARKERS	HISTORIC INTERPRETATION	CULTURAL HERITAGE	CULTURAL ACTIVITY	ART IN THE PARK	
1. MIDVALE GREENPARK	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2. SANTA CRUZ EQUESTRIAN PARK	●				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
3. AMPHITHEATRE GREENPARK	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
4. SANTA CRUZ HISTORIC PARK		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
5. RIO NUEVO / MANZO	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
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8. SILVERBELL RIVERTRAIL	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●



# SANTA CRUZ GARDENPARK

Santa Cruz Gardenpark offers a major visual amenity for the Riverpark, with its existing agricultural character and significant orchards. Preservation of these amenities while incorporating park programs into the site, and continuing water research are high priorities for this planning unit.



## ADJACENT LAND USE KEY



## NATURAL RESOURCES

### Site Condition

**Main River Channel:** Natural state; channel makes wide bend through site. West bank is steep; east is gentle slope.

**Tributary Channel:** Silvercroft Wash enters main channel from west at north end of site. Wash has been concrete stabilized.

**Surface Drainage:** East bench slopes to west; land has been plowed in north-south furrows to retain drainage on site.

**Landform and Configuration:** Flat, significantly broad band of land on east side of channel; narrow strip with pocket of land at south end on west side of channel.

**Vegetation:** Significant groves of trees, farm fields and ample vegetation on east bench; desert vegetation with native trees at south end of site. Native plant materials occur along riverbed.

**Wildlife Habitat:** Large land area; several water harvest opportunities; significant vegetation existing on site for food, cover and nesting.

### LAND USE

**Historic Use:** Agricultural and water research.

**Current Use:** Major portion is University of Arizona Demonstration Farm and Water Research and Technology Lab. Zoned for R-1 development

### Opportunity/Constraint

Opportunity for detention ponds from east bank of channel at south end of bend to provide for irrigation needs of agricultural land and for water research.

Good detention pond opportunity on west bench by diverting runoff from wash before it joins main channel.

Continue to retain all water on site.

Large land area on east bench provides opportunity for significant park development. West bench pocket offers local recreation opportunity.

Most significant vegetation in Santa Cruz Riverpark. Good soil and water opportunity for productive farming and small allotment plots. South portion of site (ADOT) has native vegetation with some tree masses.

Opportunity to create and enhance major habitat areas for wildlife.

Soil condition conducive to continuing productivity. Water research activities are complementary and should continue.

Extraordinary site for park development while retaining vegetation, farmland and water research activities. Most current uses could continue as a public

## Site Condition

when University sells property (approximately ten years).

### Adjacent Land Use:

**South:** State of Arizona Department of Transportation owns southern section of site. Some borrow pits exist on land which is currently not used by ADOT.

**West:** Vacant; zoned industrial. Tucson Police Academy at northwest portion. Grant Road Industrial Park at southwest corner.

**North:** Ft. Lowell Road is boundary; commercial use beyond road (motel, small RV park).

**East:** I-10 borders site. Additional U of A agricultural land on far side of highway. Zoned industrial.

## CIRCULATION

**Access:** Existing access to site is via the Frontage Road off of Prince Road:

**Riverpark Drive:** No Riverpark Drive experience currently exists in northern part of park.

**Linkages:** Silvercroft Wash intersects channel Riverpark Equestrian Trail.

## Opportunity/Constraint

demonstration area and allotment gardens. Camping sites for travelers can be accommodated in the existing orchard, which provides both shade and privacy.

ADOT portion of site may offer potential for expanded park use — with little or no land acquisition expense. Borrow pits offer retention pond potential for enhancement of wildlife habitat. Asphalted storage and maintenance yard may need screening from adjacent park use.

Opportunity to have park facilities developed in conjunction with procurement of building permit when industrial development commences. Respond to potential park use by industrial park employees.

No conflict with adjacent use for major park development.

U of A land east of I-10 is not easily accessible for Riverpark; industrial/commercial development is recommended.

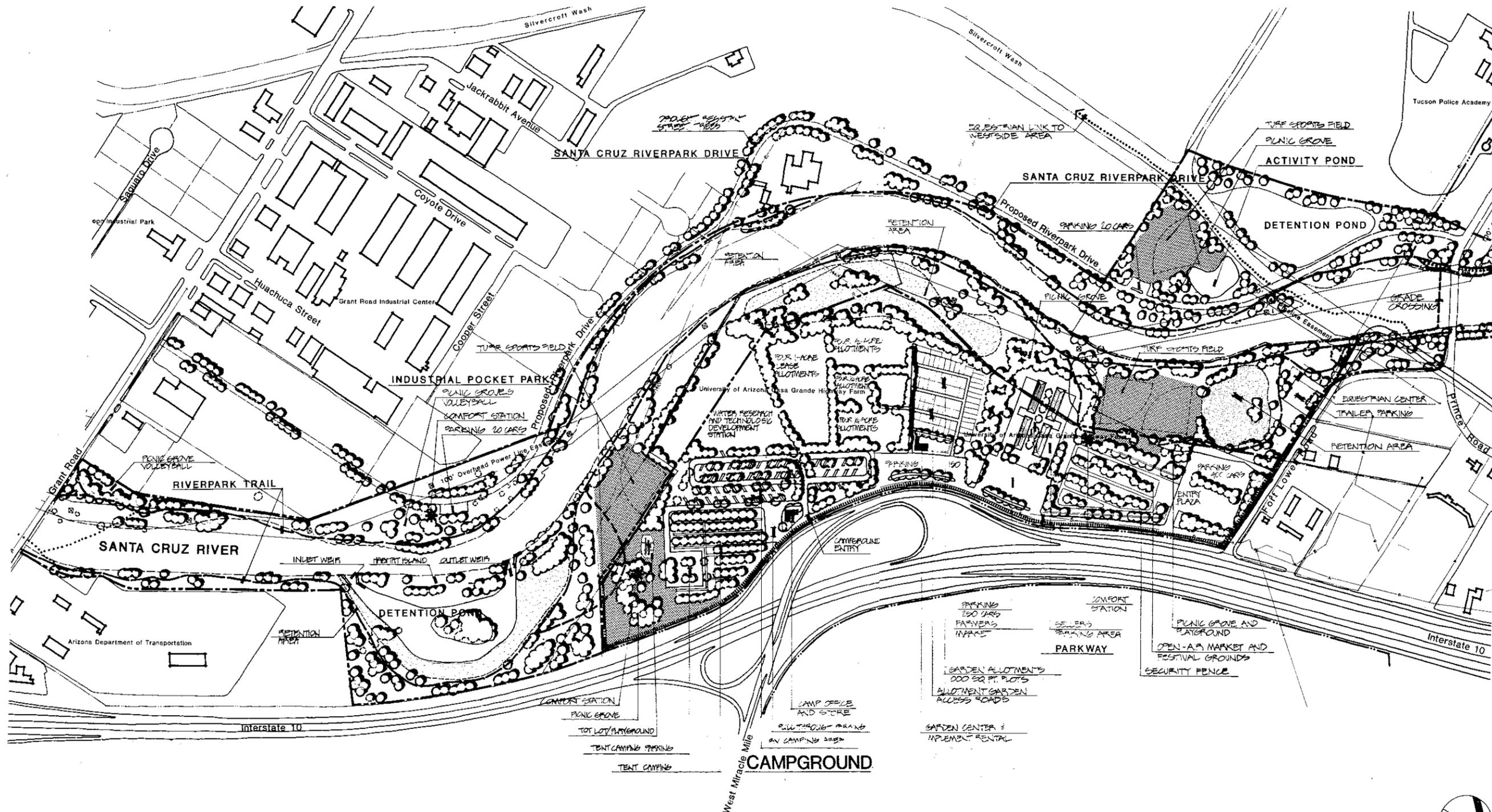
Access is limited; better access must be provided to accommodate high public usage. Construction of Prince Road bridge and road extension will improve access. Access from Miracle Mile can be explored.

Riverpark Drive experience could be provided between Grant and Prince by new road construction on west bench.

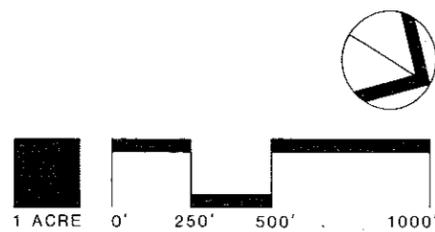
Opportunity for equestrian trail to link with west side equestrian facilities.

## Recommendations

- Acquire University of Arizona Casa Grande Highway Farm property, when it becomes available, for major Santa Cruz Riverpark development. In the interim, acquire and develop a minimum 60' strip adjacent to the channel on the east bench through the planning unit for Riverpark Trail and minimum park development.
- Acquire property on west bank for proposed Riverpark Drive alignment between Grant Road and Prince Road.
- Negotiate use agreement with Arizona Department of Transportation for river channelization, trail development and detention pond on east bank adjacent to ADOT storage yard.
- Negotiate use agreement with private developer for use of property adjacent to U of A farm for channelization and Riverpark Trail.
- Retain water research facility on property; develop public program to interpret water conservation issues.
- Develop water detention ponds and retention basins for capturing and recycling storm runoff on site.
- Enhance and expand agricultural character of site for visual amenity, wildlife habitat and productive agricultural activities.
- Require developer of industrial land on west bench to dedicate a minimum of 30' to the Riverpark, and provide plant materials, irrigation and the Riverpark Trail through the property.
- Respond to Grant Road Industrial Center by providing picnic and day-use facilities for workers.
- Buffer park from I-10 and adjacent industrial uses with plant material screens.



# SANTA CRUZ GARDENPARK



# SANTA CRUZ GARDEN PARK

Fresh tomatoes, zucchini, cantaloupe and eggplant create a colorful display of late summer produce in the market stalls . . . travelers who have camped overnight under the orchard canopy in the Riverpark enjoy the bustling open-air marketplace along with many local residents . . . a group of children listen intently to a guide explaining water harvesting and conservation in the Sonoran Desert, as several senior citizens pass by, carrying hoes to cultivate their garden plots . . .

## VEHICULAR CIRCULATION

### Major Access

Miracle Mile West

Regional access to the northern portion of the Riverpark from south-bound Interstate 10 traffic. Access for north-bound Interstate and Miracle Mile traffic can be provided with road modifications  
Direct access to campgrounds for southbound Interstate traffic

Prince Road Realignment

Proposed road will provide needed access and vital river crossing to greatly improve accessibility and circulation along the northern portion of the Santa Cruz River  
Regional access to the Riverpark via Interstate 10  
Access to proposed Riverpark Drive

### Minor Access

Grant Road

Regional access to the Santa Cruz Riverpark via Interstate 10  
Riverpark collector for westside and eastside residents  
Access to proposed Santa Cruz Riverpark Drive

Parkway

2-way road runs along eastern edge of the Gardenpark connecting festival grounds, Farmer's Market, allotment gardens, and campgrounds  
Access points at Miracle Mile West and Fort Lowell Road  
Large capacity parking at the festival grounds (400 cars) and Farmer's Market (225 cars)  
Medium capacity parking at the Garden Center/allotment gardens (150 cars)

### Santa Cruz Riverpark Drive

Proposed construction on the west bank between Grant Road and

Prince Road alignment  
Provides access to this portion of the Riverpark and improves access to adjacent industrial property  
Creates a Riverpark Drive experience and brings more people into contact with the Santa Cruz River along the isolated northern portion  
Creates a buffer between the Riverpark and adjacent proposed industrial development

## RIVERPARK TRAIL SYSTEM

### Santa Cruz Riverpark Trail

Trail staging at the Equestrian Center  
Combined Pedestrian/Bike trail and Equestrian trail follows river channel and detention pond edges along both banks  
Riverpark Trail set on terraced bank where sectional design permits Grade crossings of the channel at Grant Road and Prince Road Bridges  
Riverpark Trail underpasses at Grant Road (east bank only) and Prince Road bridges

### Trail Loops

Pedestrian/Bike trail loop connects Riverpark Trail to Farmer's Market, festival grounds, picnic area, and sports fields

### Trail Links

Equestrian trail link up the Silvercroft Wash to the westside and bicycle trail link to Jacobs Park via Prince Road

## RECREATIONAL FEATURES

### Santa Cruz Campgrounds

Camping facilities in the Riverpark setting will meet a highly demanded recreational need in close proximity to Tucson's city life and special attractions.

Camp Office

Controlled entry road  
Rental and lot assignment desk  
Campground administration  
Campers' lounge  
Supply store  
Riverpark information node  
Restrooms/showers  
Waste disposal station for trailers  
Recreational Vehicle Camping

Loop road to RV lots  
Diagonal lots with water and power hook-ups  
Tent Camping

Parking lot with equipment shuttles to campsites  
Campsites with water and fire pits are located in existing tree grove  
Greenpark area adjacent to the tent camping area

### Allotment Gardens

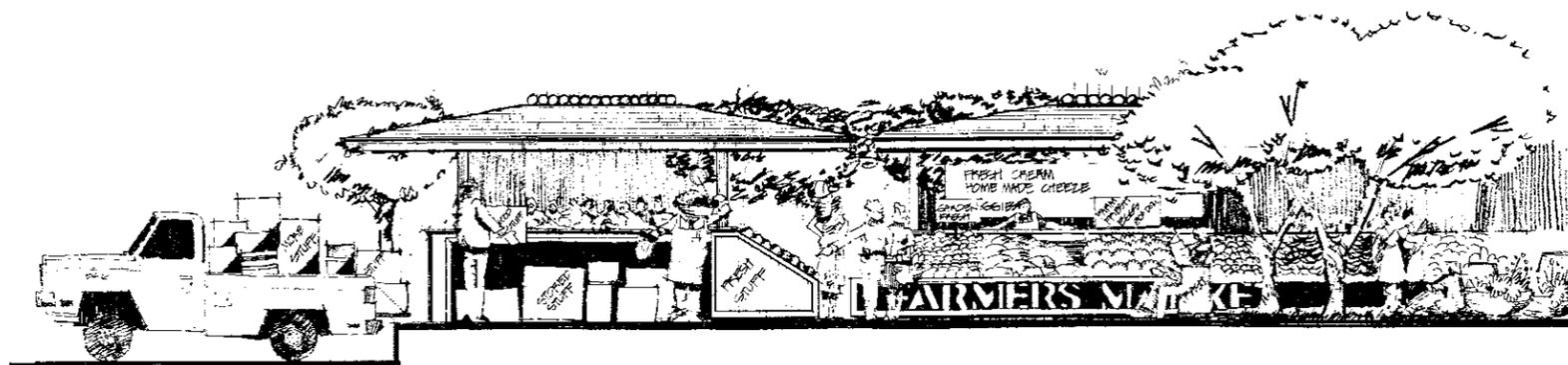
Seasonal rental of plots for raising of vegetables, fruits, and flowers by city dwellers. Retains agricultural character in the Riverpark that was a primary component of the river in Tucson's Territorial and formative periods.

Garden Center

Allotment rental office  
Garden supply and seed store  
Equipment rental yard  
Garden information  
Demonstration garden  
Restrooms  
Adjacent parking lot

Allotment Fields

Plots ranging from 1 acre plots to 1,000 sq. ft. gardens



*Produce Stalls in Farmers' Market*

As use demands larger plots will be divided into small plots  
Central road provides access to plots  
Hose bibs located throughout plots

### **Equestrian Center**

Trail head and rest area  
Equestrian staging area and corral  
Equestrian trail information  
Trailer parking lot

### **Greenpark Recreation Areas**

Various combinations of the following picnic facilities and recreation elements in association with parking areas form recreation pockets on both banks.

#### **Picnic Areas**

Central ramada or space for group activities  
Picnic tables under small ramadas or in shade groves  
BBQ pits  
Drinking fountain and trash receptacles  
Located adjacent to parking facilities

#### **Picnic Groves**

Individual and sometimes isolated picnic sites  
Picnic tables or grass mounds under shade groves  
Generally located in natural settings away from parking  
Picnic groves adjacent to business parks for workers' lunch use

#### **Comfort Stations**

Restrooms  
Drinking fountain  
Riverpark information node

#### **Large Open Fields**

Turf fields with no built features to allow flexibility in active recreation and passive use

#### **Turf Sports Fields**

Graded, open turf fields with backstops to allow for a range of organized sports and unstructured play  
Seating and observation areas under perimeter tree clusters

#### **Activity Ponds**

Boat and fishing dock with rental concession  
Strolling path and seating areas around perimeter  
Water feature creates a strong visual amenity

#### **Playgrounds**

Play structures located in shade groves

Seating areas for supervision  
Located adjacent to picnic facilities

#### **Industrial Pocket Parks**

Picnic groves, small activity areas, and comfort stations suited to use by workers from adjacent industrial development

### **Open Space Recreation**

Natural or enhanced areas for low intensity recreation to remain undeveloped

#### **Hiking and Strolling Paths**

Low volume natural or gravel paths through natural setting

#### **Nature Study**

Screened observation areas for bird watching and nature study of habitat conditions at detention ponds and retention areas

### **CULTURAL FEATURES**

#### **Farmer's Market**

Open air produce and dry goods market. Sales stalls operated by truck farmers and small producers recreates the rural market setting, reinforcing the agricultural character of this park section.

#### **Market Plaza**

Linear open space flanked on the sides by covered market stalls  
Trees shade central corridor occupied by small vendors and seating areas

#### **Market Stalls**

Sectioned stalls face market plaza with service access to the rear  
Roof structure protects buyers, sellers, and goods from the sun and the elements  
Stalls provided to sellers on a rental basis

#### **Parking**

Large parking area for customer at one end of the plaza  
Seller parking is behind stalls for easy service access

#### **Tucson Festival Grounds**

Special 5-acre fenced grounds to host shows, fairs, festivals, bazaars, and other large group activities

#### **Entry Plaza and Gates**

Controlled access to events

Large 400 car lot adjacent to the entry plaza  
Additional parking available at the Farmer's Market and Garden Center

#### **Festival Grounds**

Large turf area provides flexibility for exhibit and show set-up  
Circulation loops encircle and define spaces  
Central tree groups provide natural shade

### **WATER RESOURCES**

#### **Water Research and Technology Development Station**

Existing University facility should be retained and expanded to monitor and improve the components of the Santa Cruz Riverpark Water Management Program

#### **Water Harvesting**

Multiple water management techniques to utilize stormwater runoff in the Riverpark

#### **Main Channel**

Main channel detention basin on the east bank adjacent to ADOT facilities to capture water from the Santa Cruz and downtown sources draining into the main channel  
Porous bottom to basin to facilitate groundwater recharge

#### **Silvercroft Wash**

Tributary wash detention basin  
Turf field for grass filtration of the water  
Lined activity pond stores filtered water for recreational and irrigation use

#### **Retention Areas**

Areas graded for collection and retention of local runoff to enhance vegetation growth and groundwater recharge  
Festival grounds and parking lot drain to adjacent retention area

#### **Effluent Water Delivery System**

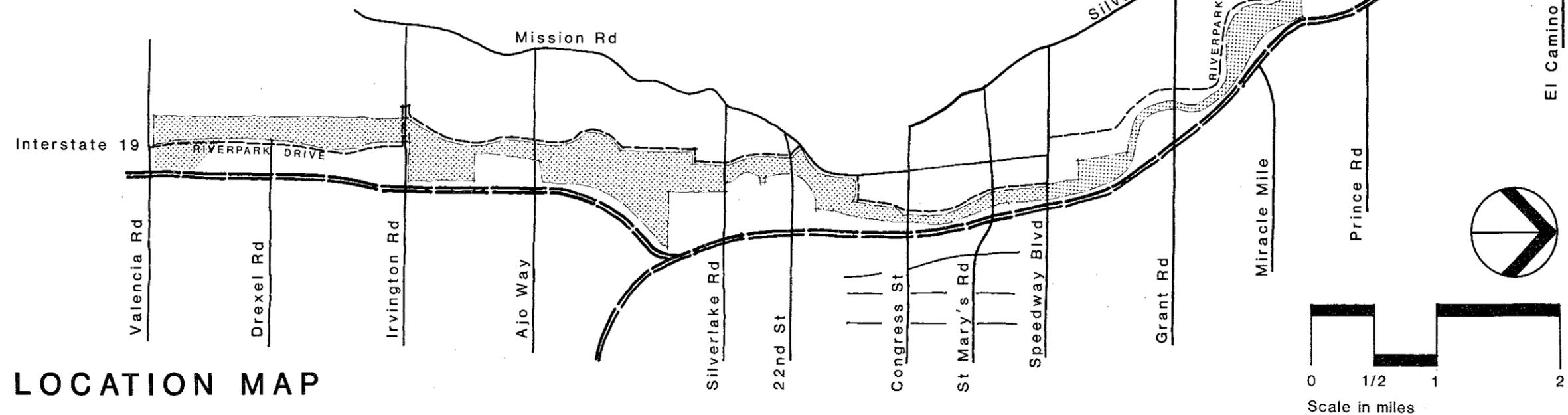
Piping of treated effluent water to the site for greenspace irrigation

#### **Channel Condition**

Santa Cruz River channel is widened and stabilized to reduce flood hazard and enhance groundwater recharge.  
East bank is terraced adjacent to the Gardenpark to create diversity in the river's edge.  
Channelized Silvercroft Wash joins the Santa Cruz River.  
Riverpark to receive minimum 30' dedication (average 60') above bank stabilization on the west bank adjacent to industrial development for the Riverpark Trail. Large dedication will be required to develop Industrial Pocket parks.

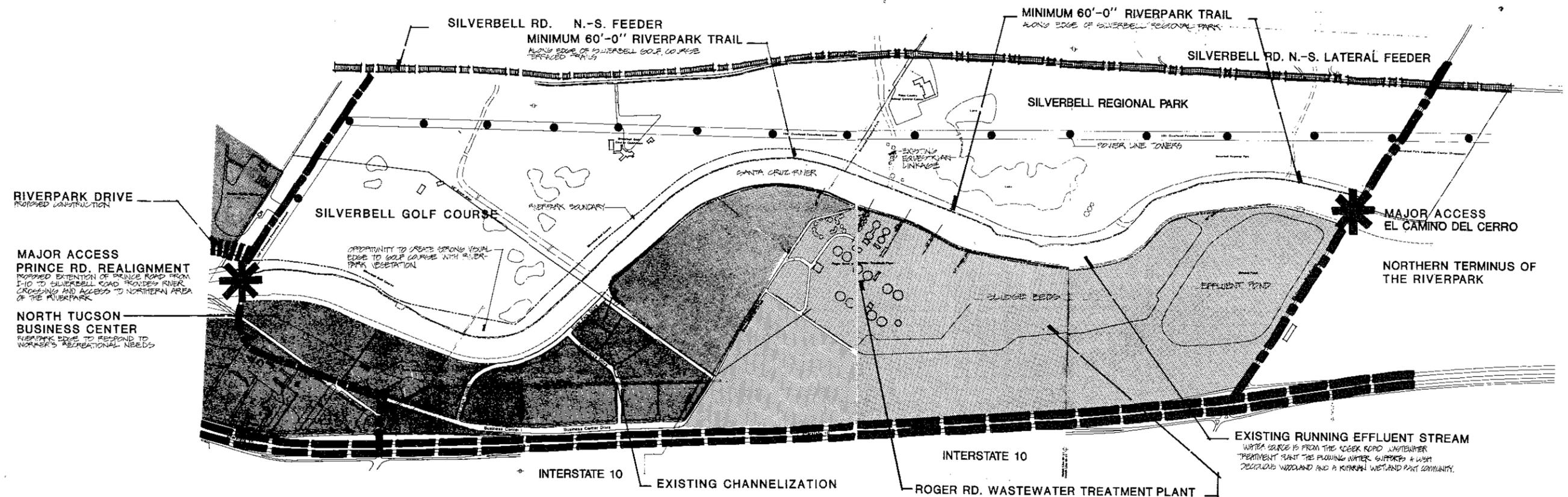
# SANTA CRUZ RIVERPARK PROGRAM MATRIX

PLANNING UNIT	PARK ACTIVITY				VEHICULAR CIRCULATION		RIVERPARK TRAIL		FACILITIES			RECREATION ACTIVE					PASSIVE			CULTURE														
	MAJOR ACCESS	MINOR ACCESS	LARGE SCALE PARKING	SMALL SCALE PARKING	RIVERPARK DRIVE	PEDESTRIAN / BIKE TRAIL	BIKE RENTAL	EQUESTRIAN TRAIL	EQUESTRIAN RENTAL	EQUESTRIAN STAGING	RIVERPARK INFORMATION	ADMINISTRATION CENTER	CONCESSIONS PLAZA	COMFORT STATIONS	SPECIAL RECREATION	ACTIVITY PLAZA	COURT SPORTS	BALL FIELDS	GREENSPACE ACTIVITY	PLAYGROUNDS	BOATING / FISHING	SWIMMING / WADING	FITNESS / JOGGING COURSE	GROUP PICNIC AREAS	PICNIC GROVES	OPEN SPACE / NATURE STUDY	HIKING / STROLLING	HISTORIC SITES / MARKERS	HISTORIC INTERPRETATION	CULTURAL HERITAGE	CULTURAL ACTIVITY	ART IN THE PARK		
1. MIDVALE GREENPARK	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2. SANTA CRUZ EQUESTRIAN PARK	●				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
3. AMPHITHEATRE GREENPARK	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
4. SANTA CRUZ HISTORIC PARK		●			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
5. RIO NUEVO / MANZO	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
6. TUCSON RIVERPARK PLAZA	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
7. SANTA CRUZ GARDENPARK	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
8. SILVERBELL RIVERTRAIL	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●



# SILVERBELL RIVERPARK TRAIL

Silverbell Regional Park is currently being masterplanned and marks the northern terminus of the Santa Cruz Riverpark. The existing and proposed water, open space and recreation features of Silverbell Park and the amenities of Silverbell Golf Course will be connected by the Santa Cruz Riverpark Trail through this planning unit to provide continuous linkages to all Riverpark attractions.



## ADJACENT LAND USE KEY



INDUSTRIAL



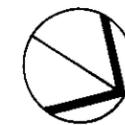
COMMERCIAL



RESIDENTIAL



PUBLIC



## NATURAL RESOURCES

### Site Condition

**Main River Channel:** River channel is very broad with sloping sides. A narrow low-flow stream carries treated effluent from the Wastewater Treatment Plant to Marana farms.

Channel is soilcrete stabilized on east bank adjacent to treatment plant; additional soilcrete protection will be added to top of bank for further stabilization. West bank is in natural condition with graded terraces.

**Tributary Channel:** Three outflow pipes on east bank emit treated effluent into channel; three natural side channels enter river from west.

**Surface Drainage:** Minimal due to limited land area.

**Landform and Configuration:** Manipulation of the topography within Silverbell Park has created lakes and mounding in first phase of park development.

Riverpark land consists of a 100' wide strip of land on the west side of channel; approximately 60' strip on east side ends at sewer main.

**Vegetation:** Sparse in main channel; rich vegetation in flowing treated effluent channel. Existing vegetation area below outflow of Silverbell Lake. Green turf and young trees in golf course.

**Wildlife Habitat:** Ponds on golf course; lake in Silverbell Regional Park, cover and food in nearby agricultural fields.

### Opportunity/Constraint

Treated effluent could be used in irrigating Riverpark greenspaces.

Opportunity to add dense vegetative barrier for visual and odor control when soilcrete is added. Opportunity for trail separation by retaining terraces.

Side channels may provide equestrian trail access to Tucson Mountain Park in coordination with Silverbell Park equestrian activities.

No harvestable surface water in Riverpark portion of unit.

Mounding adds visual interest to landscape.

Riverpark program will be limited to trail systems due to minimal park area.

Continued minimal effluent outflow in channel and lake will retain support for existing habitat. Golf course provides visual amenity.

Water bodies and fields offer habitat for wildlife potential in this unit.

## LAND USE

### Site Condition

**Historic Use:** Agricultural land. Rabid Ruins Hohokam site is second largest prehistoric find in Riverpark.

**Current Use:** Park land currently vacant.

### Adjacent Land Use:

**West:** Silverbell Golf Course; vacant land north of established course is to be developed into an additional 9-hole golf course. Silverbell Regional Park in planning stage.

**East:** Vacant land; south area platted for North Tucson Industrial Park. North area agricultural fields. Roger Road Sewage Treatment Plant adjoins Riverpark at northeast corner.

### CIRCULATION

**Access:** East section of Riverpark is accessed through North Tucson Business Park via River Park Drive off of Business Center Drive. Access to west section through Silverbell Regional Park. Interchange from I-10 at El Camino Del Cerro.

**Riverpark Drive:** Silverbell Road parallels golf course and regional park; connection from previous unit needed for continuous route.

**Linkages:** Silverbell Riverpark Trail is a linear transitional area.

Washes on west bench and Rillito channel are accessible from Santa Cruz channel.

### Opportunity/Constraint

Opportunity for historic marker or interpretive placque regarding Hohokam community. Should not define exact location for public until excavation is complete.

No restraints on park development.

Golf course offers visual access opportunity of large, green open space and water bodies created from treated sewage effluent.

Open space in cultivation offers visual amenity. Treatment plant is visual and olfactory nuisance. Screening and westerly winds will help.

Prince Road Realignment will greatly facilitate access to east bench of park. No park access through golf course adjacent to west section.

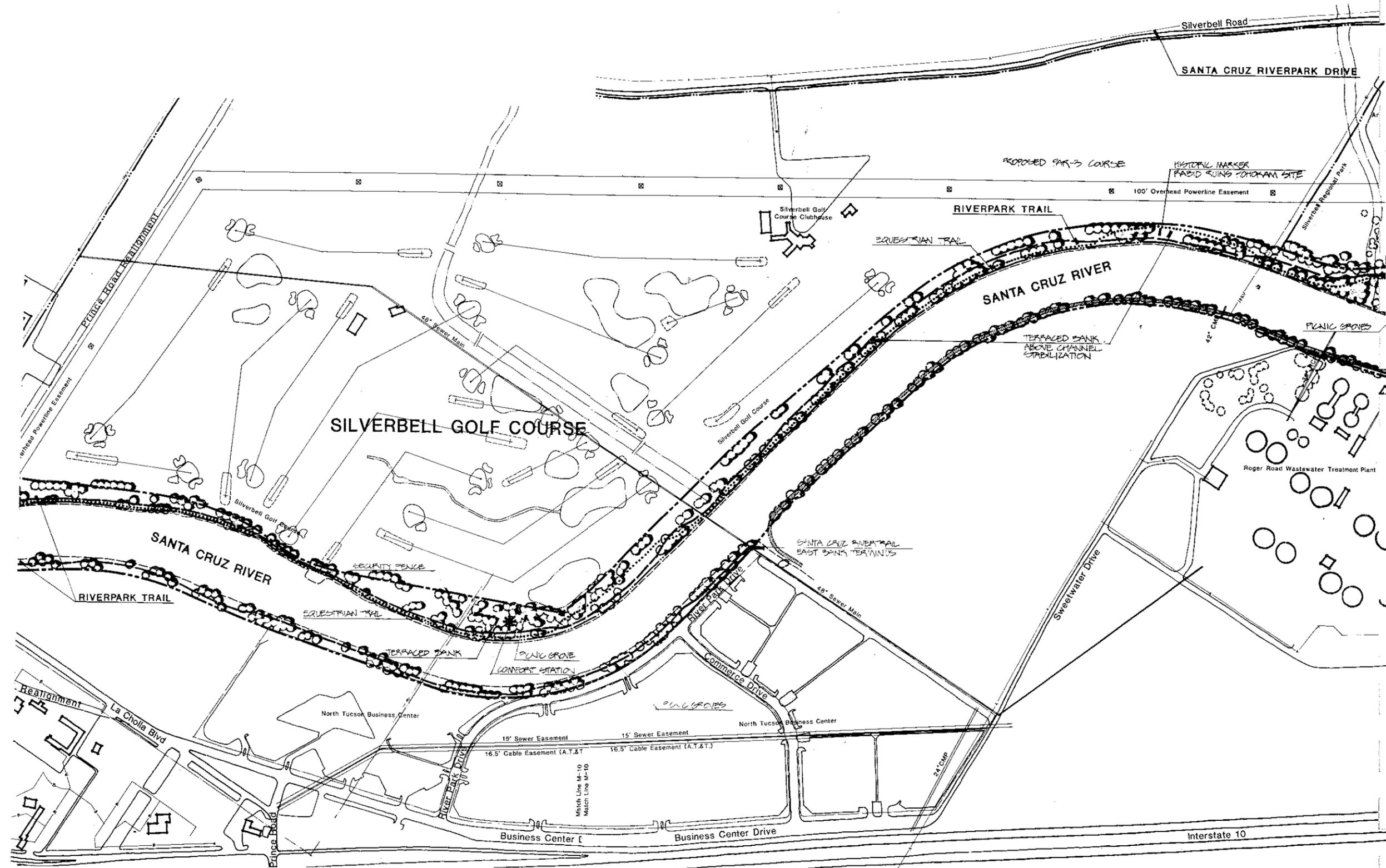
Riverpark Drive opportunity to follow Prince Road Realignment to Silverbell Road to northern terminus of park.

Trail provides linkage from Silverbell Regional Park to Santa Cruz Gardenpark.

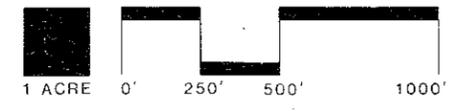
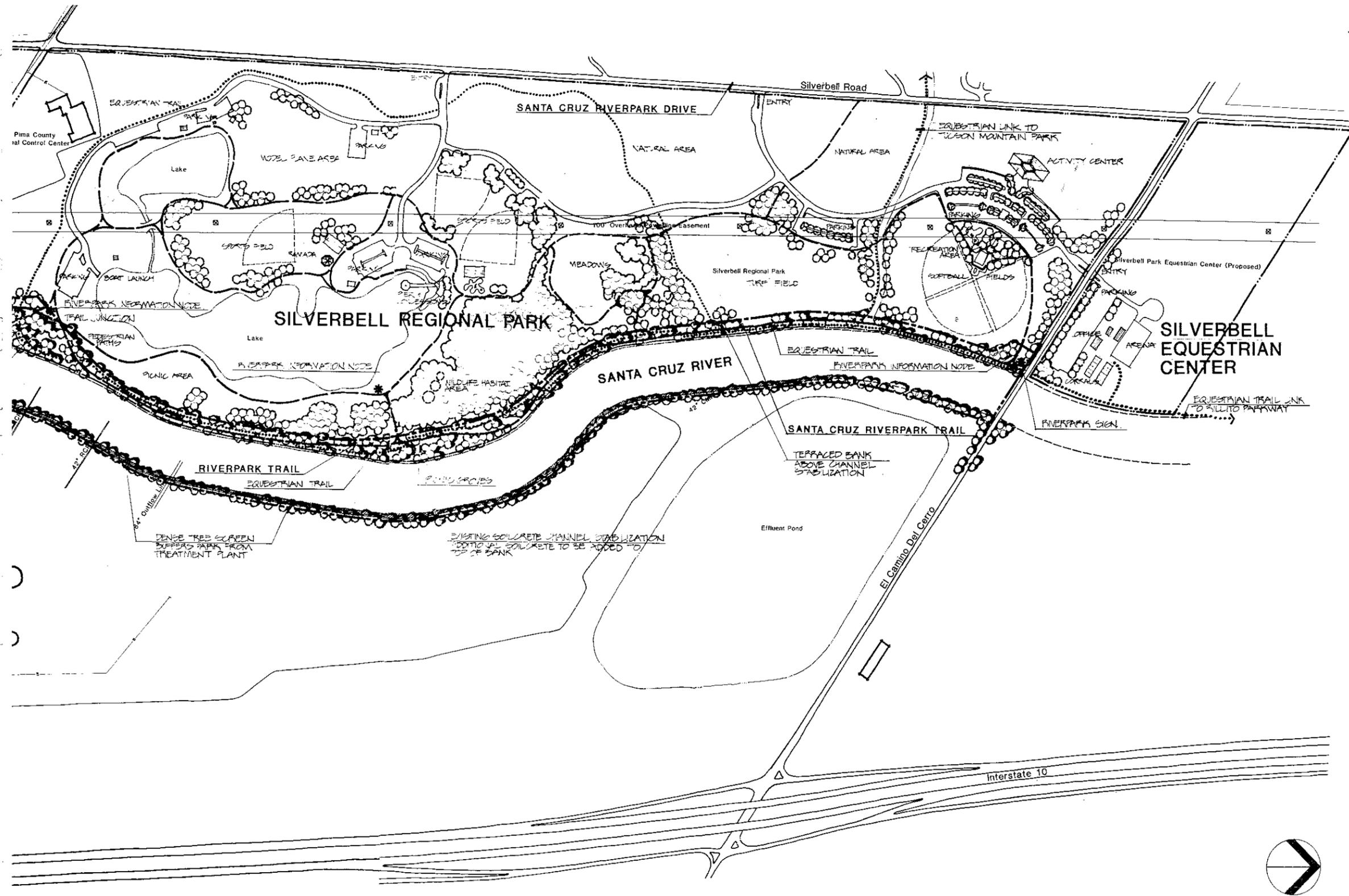
Opportunity for equestrian linkages from Riverpark to Tucson Mountain Park and to Rillito channel. Trail coordination needed with Silverbell Park.

## Recommendations

- Negotiate use agreement for trail easement along east bank adjacent to North Tucson Business Center.
- Provide a trail marker stating the archaeological significance of Rabid Ruins Hohokam site.
- Negotiate a policy for using treated effluent to irrigate Riverpark greenspaces using precedent established in Silverbell Golf Course.
- Create strong visual and activity connection where Riverpark interfaces with Silverbell Park and Silverbell golf course utilizing strong vegetation masses, land forms and terracing.
- Provide dense natural buffering along entire east bank to screen wastewater treatment plant.
- Utilize terraces on west bank to create separate equestrian and bicycle trails.
- Provide signage for trail crossing from end of east bank trail at Prince Road when bridge construction takes place.



# SILVERBELL RIVERPARK TRAIL



# SILVERBELL RIVERPARK TRAIL DESIGN PROGRAM

Sails of the wind-surfers on Silverbell Lake are bright stamps of color against the deep blue summer sky . . . a soccer game is getting under way, while lessons are progressing at the swimming pool, and model airplanes are soaring through the air in Silverbell Regional Park . . . a group of elderly gentlemen have been pitching horseshoes most of the afternoon while young bicyclists race along the Silverbell Riverpark Trail . . . ducks and birds of many varieties are dunking in the nearby ponds, loudly extolling the virtues of sunshine, water, and green foliage . . .

## VEHICULAR CIRCULATION

### Major Access

Prince Road Realignment

Regional access to northern portion of the Santa Cruz Riverpark via Interstate 10  
Connects the proposed section of Riverpark Drive with Silverbell Road

El Camino Del Cerro

Regional access to the Riverpark via Interstate 10  
Northern terminus of the Santa Cruz Riverpark Drive system  
Entry to Silverbell Park and the Silverbell Equestrian Center

### Santa Cruz Riverpark Drive

Silverbell Road between the Prince Road Realignment and El Camino Del Cerro defines the western boundary of Silverbell Golf Course and Park with entries to both facilities.

## RIVERPARK TRAIL SYSTEM

### Santa Cruz Riverpark Trail

Northern terminus of the Riverpark Trail at El Camino Del Cerro  
Northern terminus of the Riverpark Equestrian Trail at the Silverbell Equestrian Center.

Horse rental at the Equestrian Center

Bike rental at Silverbell Concessions Plaza

Combined pedestrian/bike trail and equestrian trail follow river channel along the west bank. Pedestrian/bike trail only on east bank to the North Tucson Business Park, where the east trail ends

Riverpark Trail set on terraced bank on west bank

Grade crossing of the channel at the Prince Road Bridge

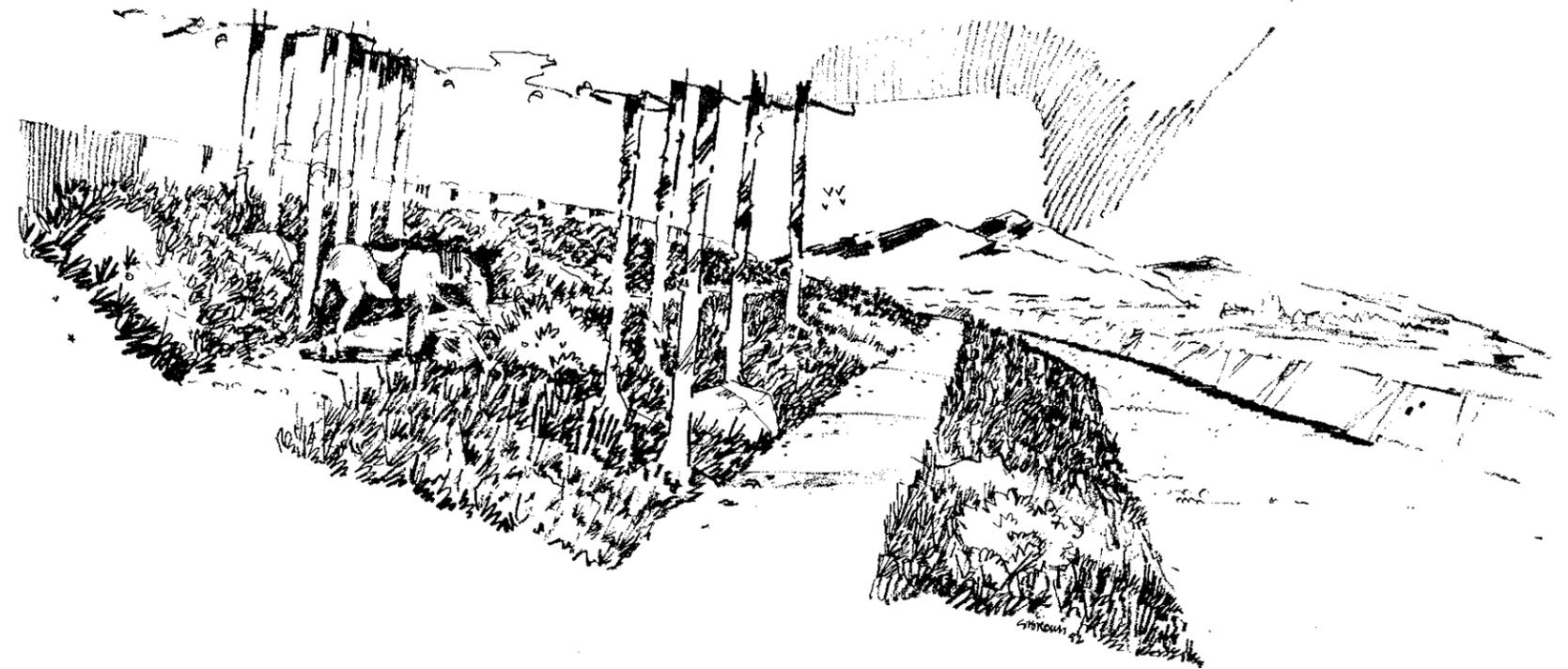
Riverpark Trail underpass at the Prince Road Bridge

### Trail Loops

Three trail junctions connect the Riverpark Trail with Silverbell Park



*Riverpark Trail on Bench;  
Equestrian Trail in Channel*



*Both Riverpark Trails on Benched Terraces*

pathways and park features — Concessions Plaza, picnic areas, sports fields, activity center.

#### **Trail Links**

Equestrian trail link up Sweetwater Wash to the Tucson Mountain Park area

Equestrian trail link down the Santa Cruz River to the Rillito Parkway and Canada Del Oro

#### **RECREATIONAL FEATURES**

##### **Riverpark Trail Recreation**

Low intensity recreation along the Santa Cruz Riverpark Trail in a large open space setting created by adjacent existing park development (Silverbell Golf Course and Regional Park)

##### **Picnic Groves**

Individual and sometimes isolated picnic sites

Picnic tables or grass mounds under shade groves

Picnic groves adjacent to North Tucson Business Center to accommodate workers' needs

##### **Comfort Station**

Restrooms

Drinking fountain

Riverpark information node

##### **Nature Study**

Screened areas for bird watching and wildlife observation along the Riverpark Trail

##### **Silverbell Golf Course**

Existing 18-hole course with clubhouse establishes a strong open-space character in the northern portion of the Santa Cruz Riverpark.

Add 9-hole executive course north of the clubhouse

Screened security fence prevents trail users from interfering with golfers, while maintaining open space character.

##### **Silverbell Regional Park**

Existing regional park with expanded recreational facilities will create an active northern terminus for the Santa Cruz Riverpark. The following is a list of activities to occur on the site. See City of Tucson Silverbell Regional Park Plan for specific program.

##### **Park Trails**

Bicycle, pedestrian and equestrian

##### **Water-based Activities**

Boating and fishing lake  
Model boating lake  
Wildlife pond

##### **Picnic Areas and Open Space**

Playgrounds

Sports Fields

Softball/baseball complex

Multi-purpose

Activity Center

Visitors' center

Concessions

Arts and crafts

Auditorium

Swimming Pool

#### **Silverbell Equestrian Center**

Currently planned facility is the northern equestrian terminus of the Riverpark. The following is a list of proposed site activities. See the City of Tucson Silverbell Equestrian Center Plan for specific program.

Stable office and tack room

Stables

Dressage arena

Main show arena and bleachers

Equipment and feed storage

Cross country and steeple chase course

Parking

Trail staging areas

#### **CULTURAL FEATURES**

##### **Rabid Ruins Hohokam Archaeological Site**

When excavated, this site may provide additional artifacts for display at the Indian Cultural Center.

##### **Historic Marker**

Marker is located on the Riverpark Trail in such a manner to not reveal exact site location before archaeological investigation.

#### **WATER RESOURCES**

##### **Channel Condition**

Widened and stabilized river channel to reduce flood hazard and en-

hance groundwater recharge

Bank is terraced adjacent to Silverbell Golf Course and Regional Park to create edge diversity in the river channelization.

East bank adjacent to the Roger Road Wastewater Treatment Plant has no active park use, but is heavily planted above stabilization to create a dense screen.

##### **Water Harvesting**

##### **Minor Tributary Washes**

Washes running through Silverbell Golf Course and Regional Park are enhanced to create rich riparian strips

##### **Effluent Water Use**

Roger Road Wastewater Treatment Plant is the current and future source of effluent water for park irrigation.

Additional treatment facilities will need to be added to meet effluent water demands by park and other users.

Maintain existing riparian growth in the northern Santa Cruz River with minimal outflow.



# DESIGN GUIDELINES

# DESIGN GUIDELINES

## Introduction

In order to attain a sense of visual unity and to establish standards which can be upheld in subsequent phasing and Riverpark development, Design Guidelines offer general and definitive criteria for the selection, use and relationships of repetitive park elements. Additionally, these Guidelines will provide a characteristic identity throughout the Riverpark by the recurrence of colors, forms, materials and features.

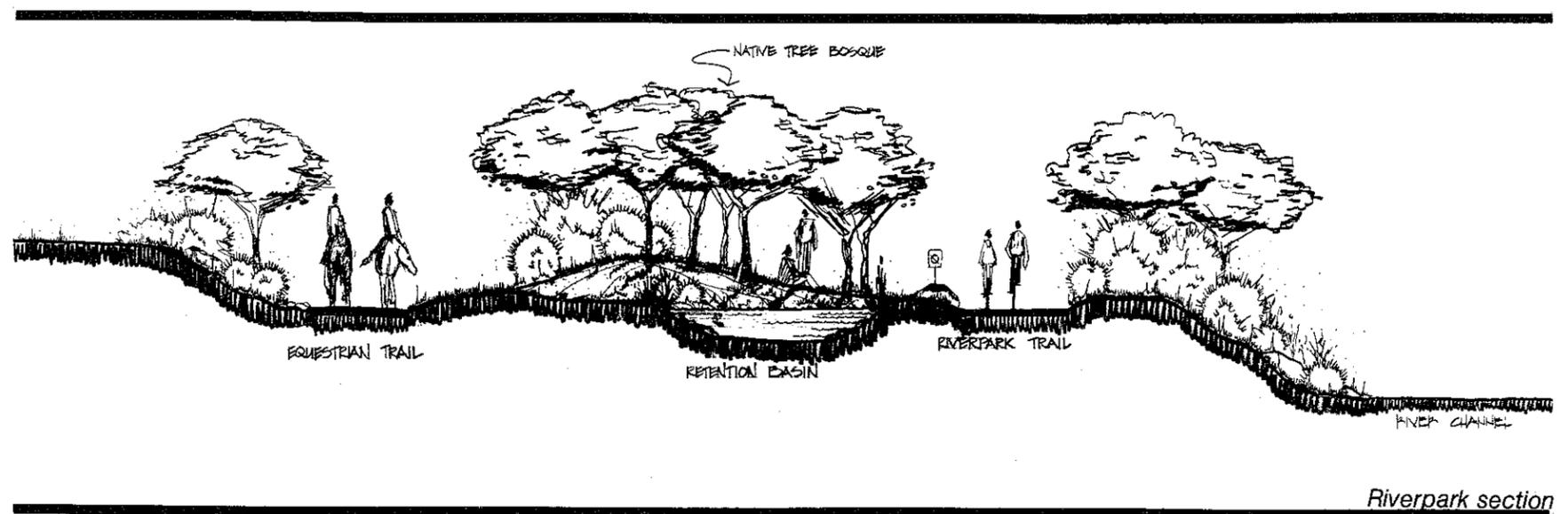
Design Guidelines are applicable to the common elements which occur in the Riverpark system, and blend with the natural background of the park. Earthtones were established as the overall background colors for these functional repetitive park accessories. Accent colors for color identification and recognition of accessories are strongly recommended. Identifying accent colors may be integral or applied as a color stripe or appropriate geometric design. Colors found in the established Riverpark logo—blue, sandy brown and orange—are the recommended color choices for accents in these repetitive elements.

A color analysis for the Riverpark should be undertaken to establish color support and consistency for the repetitive, functional park accessories and for the individual activity units. Each of the eight park units offers a diversity of densities and a variety of experiences and activities. These serve as contrasts to the background fabric while retaining harmony and compatibility with the Riverpark character. To dramatize and reinforce each unit image, further studies should be done to explore individual color, texture, scale and materials for site-specific purpose and design. These selections should relate to the function and behavior patterns anticipated for the feature or site, and should meet the criteria in the unit design programs.

## Recommendations

### General Design Recommendations

- Devote a minimum of 50% of the land area to unstructured open space in conjunction with natural vegetation.
- Incorporate a diversity of density into the design of activity spaces. Passive recreational areas used for picnics, resting or conversation will include trees, ramadas or benches and be separated from active recreational areas such as athletic fields and public events facilities.
- Cluster activities requiring supervision and operations management to provide efficient use of land, personnel, and facilities, as well as to promote maximum public access and use. Community sports centers, athletic fields and structured sport activities are appropriate recreation groupings.
- Design elements and facilities to be responsive to the regional, cultural, climatic, ethnic and historical setting of the Santa Cruz River and the Tucson community. Structures and remnants of archaeological and historical value will be preserved and enhanced or integrated into the park design and program whenever possible. Water, landforms and plant materials will be utilized to mitigate climatic extremes and provide oasis areas.
- Design facilities of the Riverpark accessible to the handicapped, the elderly, and children, when appropriate, making the park a focus for recreation and enjoyment for all members of the community.
- Maintain a continuous high standard of design for all structures and accessories in the Riverpark with durability and ease of maintenance given priority equal to aesthetic considerations. Flexibility of design and innovation is encouraged within the basic parameters stated in these guidelines.



- Generate additional design guidelines for high activity park unit nodes addressing color, texture, scale, materials, lighting and hydrology to meet the criteria specified in the expanded park program.
- Recognize the fragility of the desert environment and the uniqueness of water in the Tucson area. Sound ecological principles will be design determinants.
- Incorporate environmental behavior principles into specific site design to achieve desired function and behavior objectives.

### Security Design Recommendations

- Provide sufficient amenities at locations of greatest need, including restrooms, trash receptacles and parking. These facilities must be completely visible and/or thoroughly signed to direct the public to the facility and preclude such activities from taking place in unauthorized locations.
- Use pictographic signs which are easily deciphered by all cultures. Directional signs and facilities identification signs must be incorporated early in the development of the park, as soon as individual facilities are opened. Even undeveloped areas of the Riverpark should be signed now to begin developing the Riverpark identity.
- Specify cost effective materials of maximum durability in the design of all park fixtures and equipment. Bronze, brass, copper, and other such valuable metals should be firmly affixed so that scavenging cannot occur. The durability of concrete over asphalt will offset its higher initial cost. Materials which are flammable, especially wood, have been vandalized in Phase 2 of the Santa Cruz Riverpark development and should be avoided.
- Avoid locating benches and other park elements under bridges and overpasses. Objects can be dropped or thrown from above to injure

people and damage features. In addition, these obscure locations attract vandals and vagrants.

- Provide optimum visibility conditions for park surveillance. Maximize lighting to eliminate areas of concealment from patrol. Trees in the Riverpark should be high-canopied to allow maximum visibility. Design park units to allow police patrols to easily survey the area from roadways and parking lots.
- Design park entry and facilities to restrict access to off-road vehicles. Use of these vehicles in the park area to date has been incompatible with the park.
- Include local artisans in the design of park units whenever possible. Sculpture, murals and folk art executed by neighborhood artists will foster a vested interest in the park by residents leading to a higher level of security.

### Design Guidelines

#### LANDFORMS

Landforms will be used in the Riverpark for aesthetic and functional purposes. Berms, mounds and boulders provide diversity in a basically flat landscape, define park edges and boundaries, form outdoor spaces and enclosures, create visual and acoustic buffers, and accentuate entryways. Additionally, landforms can provide seating surfaces for observation and lounging around playfields and in picnic groves, deflect or enhance wind movement, direct surface drainage and form water retention basins in support of wildlife and irrigation needs.

### Landform Recommendations:

- Manipulate contours in as natural and aesthetic a manner as possible.
- Evaluate height of land forms in areas needing surveillance so that visibility is not impaired.
- Balance cut and fill locally in site-specific land form design whenever possible.

#### BERMS

Slope	Not to exceed 5:1 in narrow areas; 7:1 in broad, open areas. In the event that 3:1 is exceeded, non-mortared 10" minimum rip-rap shall be used.
Material	Earth
Surface Options	Lawn (turf) where approved by city Native grasses and/or wildflowers Decomposed granite
Form	Longitudinal axis within a natural configuration

*Remarks:* Care must be taken to preclude berms from directing water onto parking lots, playgrounds or any other activity use area.

#### MOUNDS

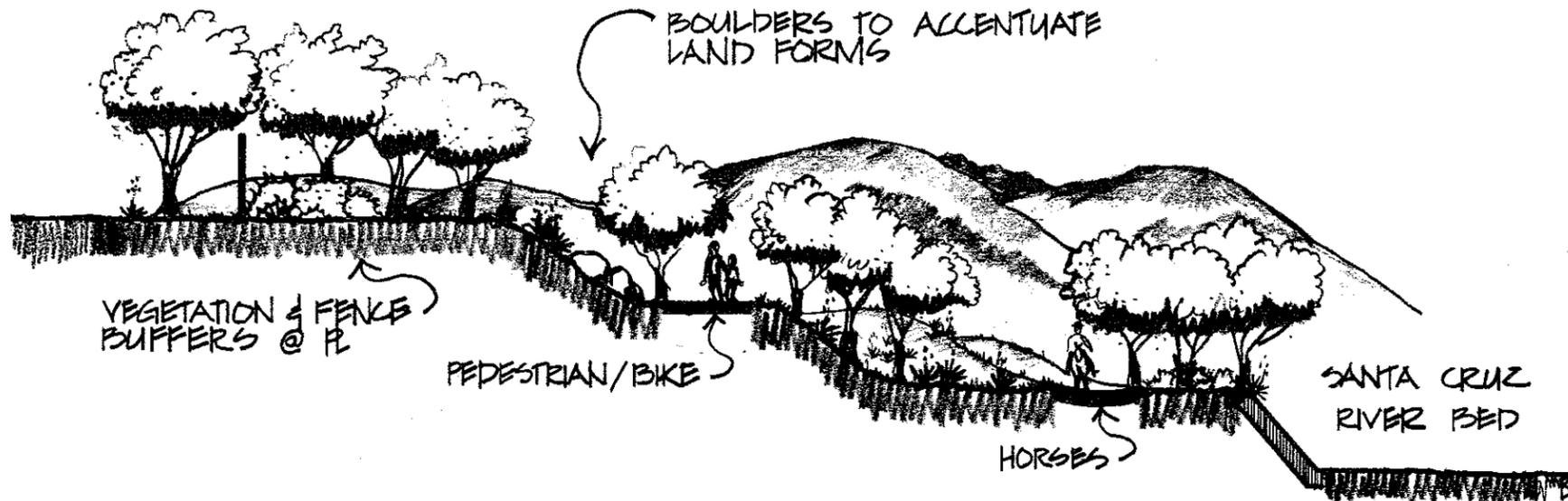
Slope	Not to exceed 3:1
Material and Surface	Same as berms
Form	Free form curvilinear; natural configuration

*Remarks:* The use of mounds is particularly encouraged for seating and lounging.

### LANDSCAPE MATERIALS

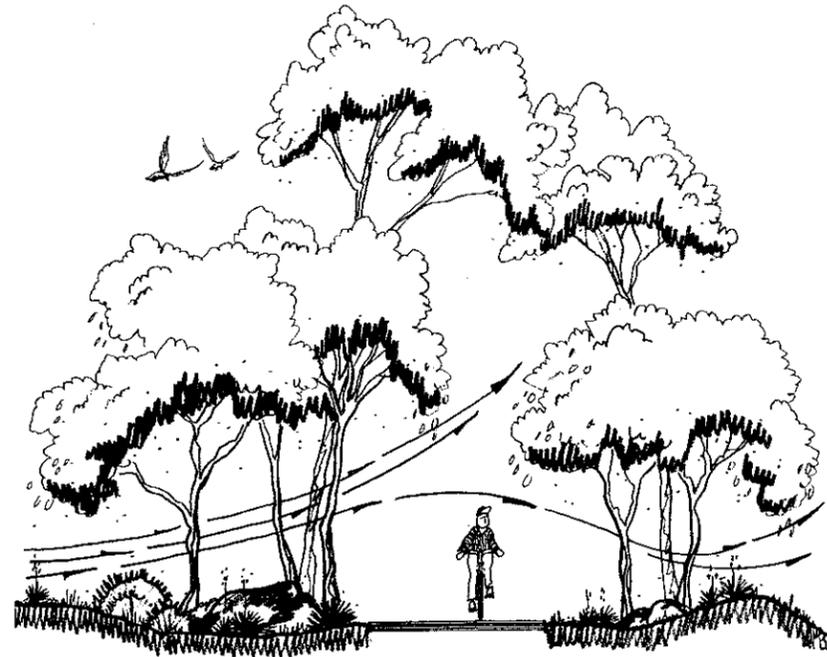
On a visual level trees, shrubs and ground covers create the overall identity of the Santa Cruz Riverpark; plant material conveys a park image to the public, providing shade for park users and contributing to wildlife habitat.

Since the Riverpark will not be a continuously grassy, green park due to its arid setting and water considerations, plant material must be judiciously chosen and carefully used to create continuity and unity of the planning units and park elements. In areas where plant materials create irrigation and maintenance needs exceeding their value, inert ground covers such as decomposed granite should be widely used. Basically, plants in the Riverpark should define paths, trails and activity spaces, buffer and screen incompatible adjacent uses; accentuate particular elements and facilities, and provide shade. While indigenous plants are advocated for the majority of park needs, non-native plant materials may be used specifically in urban park units, or activity nodes.



Land forms

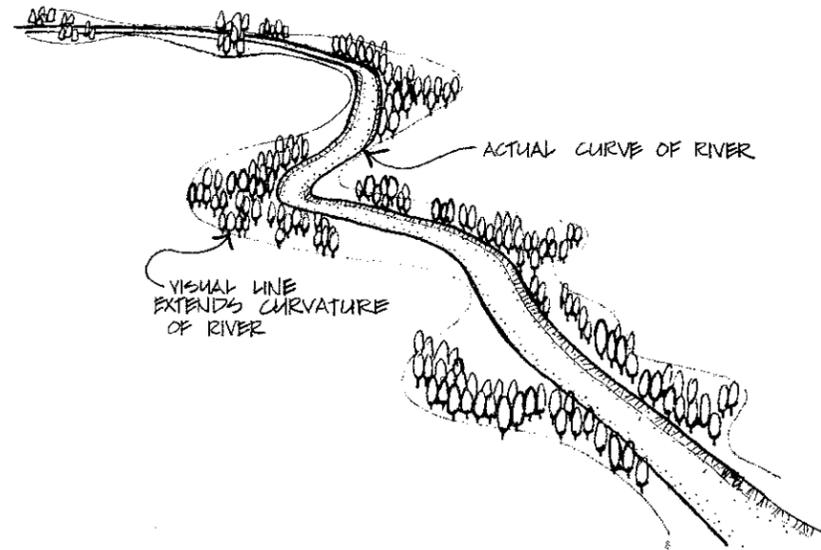
On a functional level, planting is extremely important to the Riverpark, providing erosion control, wildlife habitats, water filtration, and recreational surfaces. Planting design can effectively alter climate by screening direct sun and mitigating reflection and reradiation off ground surfaces. Vegetation can allow early morning sun warmth and temper late afternoon heat; deflect winter wind and channel summer breezes. In combination with water, earth mounding and site improvements, desert riparian environments can be created within the Riverpark, particularly near the river's edge.



High canopy trees allow breeze to cool trail users through natural evaporative cooling effect. Canopy provides shade from intense summer heat. Deciduous trees will allow sun to penetrate to trail in winter.

### Plant Material Recommendations:

- Maximize use of native and naturalized drought-tolerant plant material to promote water conservation and affirm regionality.
- Provide low maintenance design and vegetation to minimize operating budget needs.
- Use a limited number of plant species to avoid disunity and visual confusion.
- Group trees and shrubs in groves and bosques to replicate natural plantings; except where the linear use of trees along park trails provide identity and shade to the pathways and trails.
- Select plant species to preclude health and safety problems such as thorns, attraction of bees, allergenic pollen.
- Use high canopy shade trees to provide shade and natural, evaporative cooling for buildings, outdoor spaces, pedestrian areas, trails, roads and parking areas while enhancing visibility.



Trees should emphasize the winding character of the river channel.

- Increase vegetation, density near river's main and tributary channel edges to create an "oasis-like" spine for Riverpark, and utilize natural evaporative cooling effect.
- Design tree planting to emphasize the historic winding character of the river.
- Introduce new planting from selected species that are microclimatically and ecologically appropriate.
- Design site-specific plans to incorporate existing plant materials.
- Locate plant materials to take advantage of on-site storm water run-off.

### TREES

#### Primary

Primary tree species should comprise approximately 75% of the trees in the Riverpark. Shade is a primary design factor and should be provided liberally by trees in parking lots, picnic groves, playgrounds, rest areas, along Riverpark Trail, comfort stations, and other places.

#### Use

Shade, park image, trail delineation

#### Species

Prosopis velutina  
(Native mesquite)  
Cercidium floridum  
(Blue palo verde)  
Acacia smallii  
(Acacia)  
Populus fremontii  
(Cottonwood)  
Quercus virginiana  
(Live oak)

Remarks: Locate trees to frame views, whenever possible, and to identify major access nodes, grade crossings and bridges.

### Secondary

Secondary tree species should comprise approximately 25% of the trees in the Riverpark, subject to the requirements of individual planning units and design needs.

#### Use

Buffer, screening, accent

#### Species

Chilopsis linearis  
(Desert willow)  
Nerium oleander  
(Oleander)  
Platanus racemosa wrightii  
(Arizona sycamore)  
Sambucus mexicana  
(Mexican elder)

### Parking Lots

Shade, accent

Eucalyptus microtheca  
(Microtheca eucalyptus)  
Fraxinus velutina  
(Arizona ash)  
Quercus virginiana  
(Live oak)  
Prosopis chilensis  
(Chilean mesquite)

### SHRUBS

Accentuate signage  
Define and screen parking areas, playgrounds and other activity areas

Dodonaea viscosa (green)  
(Hopseed bush)  
Cassia nemophylla  
(Cassia)  
Acacia redolens  
(Prostrate acacia)  
Larrea tridentata  
(Creosote bush)  
Encelia farinosa  
(Brittle bush)  
Vaquilinea californica  
(Arizona rosewood)  
Dasylirion Wheelerii  
(Desert spoon)  
Caesalpinea pulcherrima  
(Red bird of paradise)  
Leucophyllum frutescens  
(Texas ranger)  
Salvia greggii  
(Sage)  
Agave huachucensis  
(Huachuca agave)  
Atriplex canescens  
(Four-wing salt bush)

Remarks: Caution should be used in the placement of shrubs so as not to create security problems; visibility is a primary concern. Use shrubs in groupings.

**VEGETATIVE GROUND COVER**

**Plants to 2' Height**

<i>Use</i>	<i>Species</i>
At high-use urbanized areas (entrances, inter-sections), for erosion control, aesthetic accenting, spatial definition, relief of hard edges (corners), and defining entryways	Vinca major (Vinca)
	Trachelospermum jasminoides "Asiaticum" (Asian star jasmine)
	Lantana montevidensis (Trailing lantana)
	Dalea Greggii (Dalea)
	Verbena peruviana (Peruvian verbena)
	Rosmarinus officinalis "Prostrata" (Prostrate rosemary)
	Rosa banksiae (Lady Bank's Rose)
	Gazania rigens (Trailing gazania)
	Verbena Gooddingii (Verbena)
	Acacia redolens prostrata (Trailing acacia)
	Juniperus species

**Lawn (turf)**

Playfield, picnic groves, and playgrounds	Drought-tolerant hybrid Bermuda species
---	---

Remarks: Concentrate turf at essential areas to minimize irrigation and maintenance.

**Native Grasses and Wildflowers**

<i>Use</i>	<i>Species</i>
Erosion control Open space cover	Hydromulch seed mix to be approved by the City landscape architect

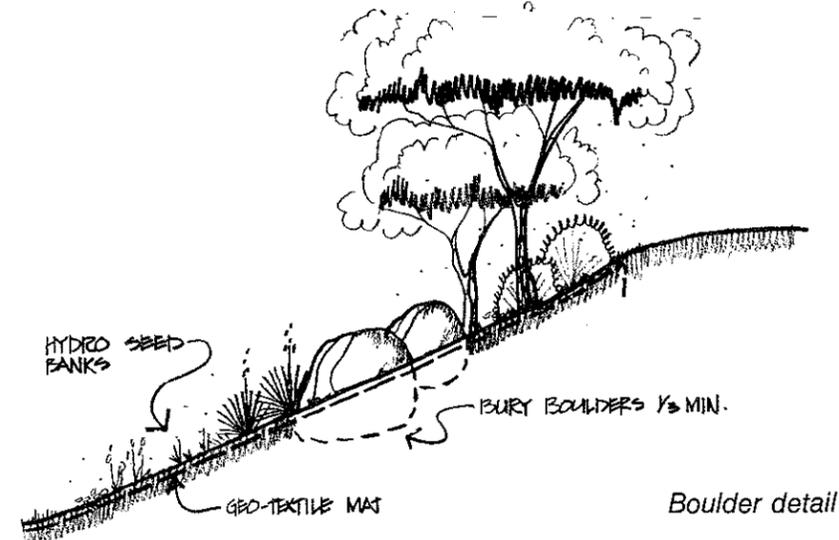
**INORGANIC GROUND COVER**

**Decomposed Granite**

<i>Use</i>	<i>Criteria</i>
Pedestrian trails, lining edges of bikepaths, under trees and between use areas	Light gold, 1½" depth

<b>Sand</b>	
Under play equipment	Clean, washed
<b>Rock</b>	
Erosion control at natural drainageways; grade changes	Santa Cruz river-run 8" minimum
<b>Boulders</b>	
Material	Indigenous Santa Catalina Gneiss, (not mine-quarried material)
Placement	Boulders are to be planted with 1/3 of their mass in the ground.
Grouping	Boulders will be placed in natural random groupings of odd numbers.

Remarks: The use of boulders to accentuate land forms is encouraged.



**RIVERPARK CIRCULATION**

**Riverpark Trails**

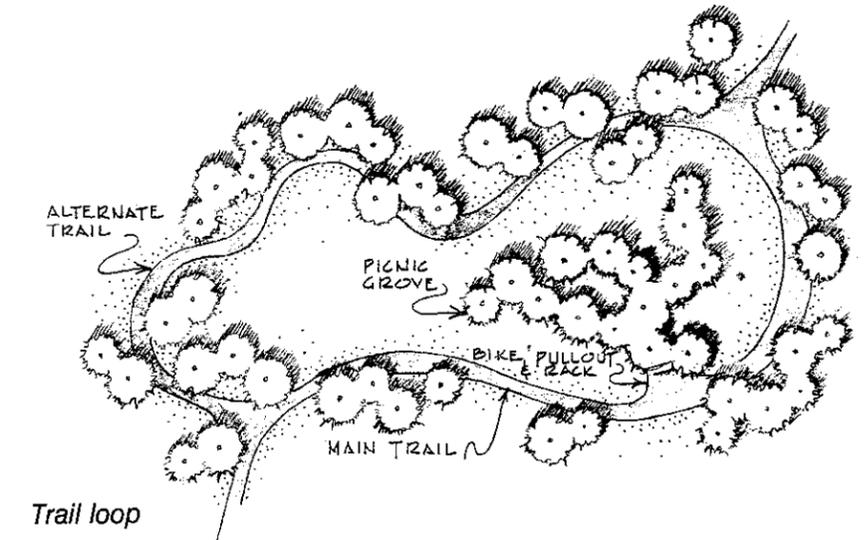
Trails within the Riverpark provide connections between all park elements and to adjacent areas. They serve as a basic framework or spine for park development and shall be easily accessed, continuous and clearly signed. The Circulation chapter of the Masterplan Update addresses routes and signage of Riverpark Trails.

**BICYCLE/PEDESTRIAN TRAIL**

Material	Concrete
Color	Earth tone

Surface	Sand finish
Width	Variable from 8' to 16'
Minimum curve radius on main trail	25'

Remarks: Where space is available, design alternate routes.



**Pedestrian Strolling Paths**

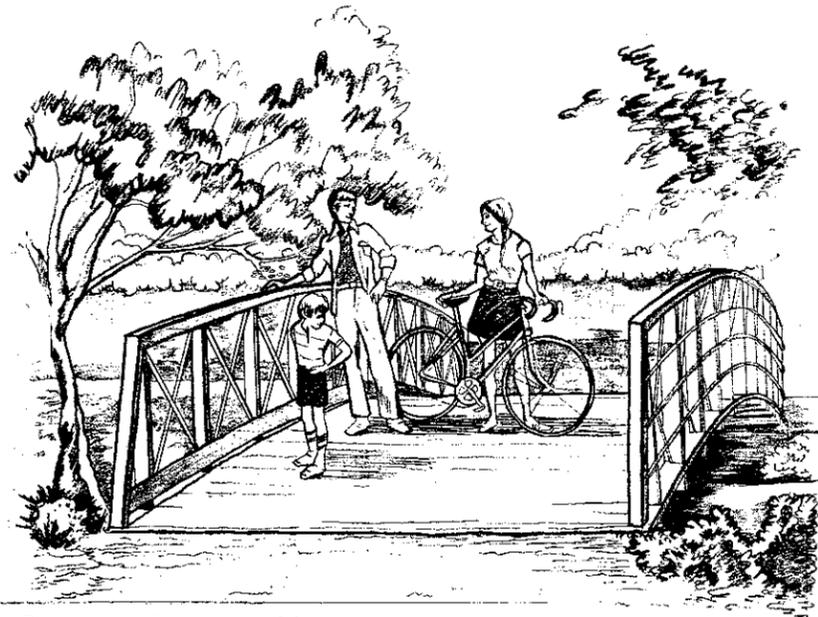
Material	Decomposed granite; options — concrete asphalt, brick
Color	Light gold
Width	Variable from 4' to 10'
Edge	Extruded concrete
Form	Curvilinear free form

**Exercise Course**

Material	Decomposed granite
Color	Light gold
Width	Varies from 4' to 10'
Edge	Extruded concrete
Form	Curvilinear free form
Stations	To be located adjacent to existing shade trees wherever possible; plant shade trees where none exist.

### Bridges

Construction style	Low profile, pony truss.
Material	
Structure	Cor-ten steel
Deck	Concrete



Pedestrian/bicycle bridge

### Pedestrian Crosswalks

Pedestrian crosswalks shall be provided wherever the Riverpark Trail crosses a street or parking lot entry road.

Material	Stamped concrete
Color	Earth-tones

### EQUESTRIAN TRAILS

Material	Exposed earth
Edge	Defined by use of native plant materials
Width	Variable from 10' to 20'
Form	Curvilinear free form

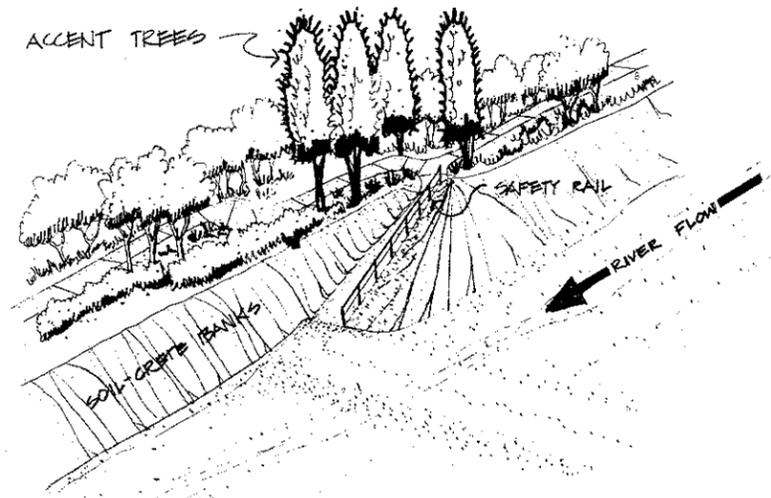
*Remarks:* The use of signage should be kept to a minimum for horse trails; trees and shrubs should be used to suggest directions in as natural a way as possible. Where horse trail parallels bike trail, a minimum separation of 15' shall be maintained.

### Grade Crossing of River Channel

Equestrian grade crossings of the river channel are necessary where space precludes trail continuation on the riverbank.

Slope	Not to exceed 10% Provide rail on outer edge.
Material	Soilcrete, integrally designed into bank stabilization
Width	8' minimum

*Remarks:* Lower end of ramp should point in same direction as River flow.



Grade crossing

### Carriage Route

Material	Surface streets with light blue painted line for buggy lane
Lane Width	12' minimum

*Remarks:* Trail should be clearly defined by the use of signage and major intersection crossings shall be designated.

### Roadways and Parking Lots

#### ENTRY ROADS

Entrances to the park shall be visually definitive, identifying a sense of entry and a preview of features within. Entranceways will be emphasized by land forms, trees, natural screens and buffers while allowing for security visibility.

Material	Porous asphalt with stamped, colored concrete in earth tone colors at the entry passageway
Width	24' minimum

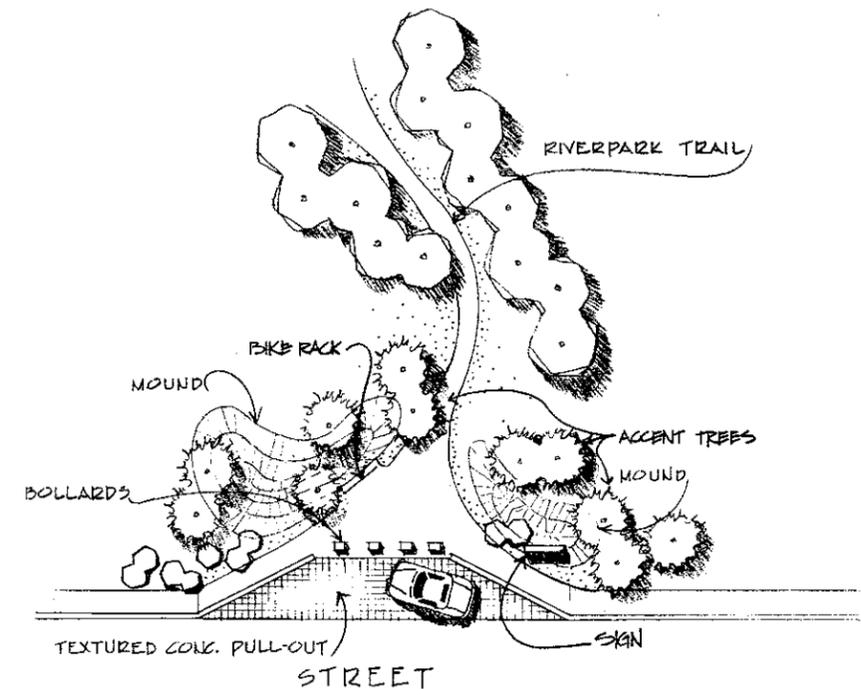
#### SERVICE ROADS

Bicycle/Pedestrian trails provide service roads for the Riverpark. A separate service road system is discouraged.

#### DROP-OFF NODES

Space should be provided for cars to pull out of traffic and drop-off bicyclists or other park users. These areas should occur where the Riverpark Trail or significant park activity intersects major streets and space is insufficient for providing parking.

Material	Stamped, colored concrete
Width	15' (10' minimum)
Length	40' minimum
Bollards	Concrete, spaced 6' O.C. maximum with one removable



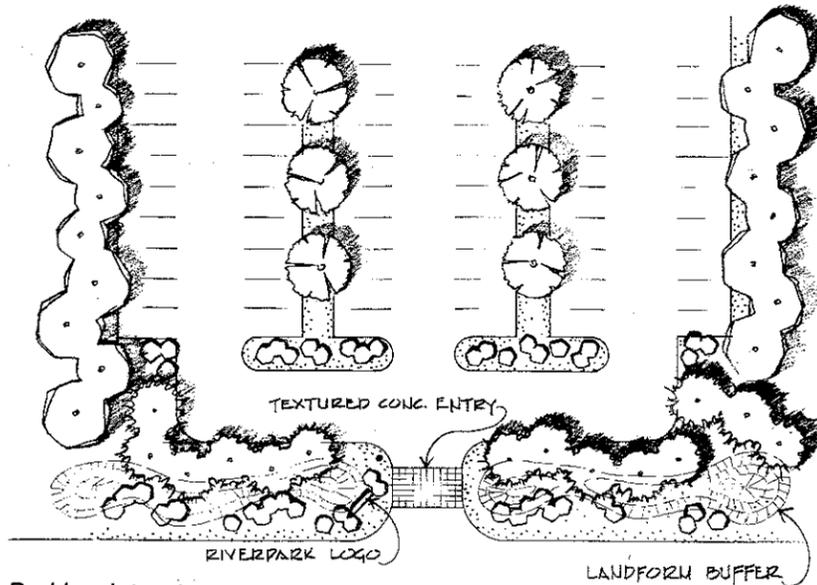
Drop-off node

#### VEHICULAR PARKING LOTS

Material	Porous asphalt
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Parking bay size	10' x 20' painted striping
Handicap bays	12' x 20', minimum 2 per 100 bays
Bollards	3' wood, 8" x 8" posts placed in center of each parking stall

Remarks: It is essential that the design of parking lots clearly directs movement and provides shade for parked cars.



Parking lot entry

Two types of parking areas are recommended for the parking:

**Major Lots**

In major lots runoff will be diverted for collection, detention and recycling within the park.

Curbs	Std. C.O.T. 14" vert. curb 8-1202-001 (TYP) at wheel stop edge of parking lots. Extruded curb at other edges and around planters. (Allow 3' of overhang for car bumpers.)
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Planting areas	Planting areas for shade trees will be delineated by curbs.
----------------	---

Slope	Parking lot to slope for maximum surface runoff to water collection system
-------	--

**Minor Lots**

In minor parking areas runoff will be utilized for irrigation of planted shade islands.

Curb	Std. C.O.T. 14" vert. curb 8-1202-001 (TYP) at wheel stop edge of parking lots. Extruded curb at other edges. No curb at planting islands.
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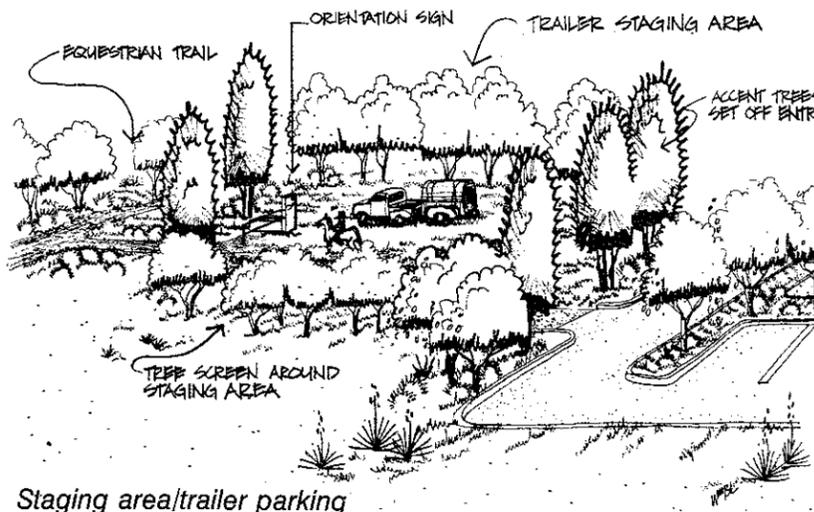
Planting areas	Grade planting areas to serve as retention basins for parking lot. Parking stalls to be pitched toward planters.
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**EQUESTRIAN STAGING AREAS**

Staging areas to accommodate equestrian needs will be located within the Riverpark at Silverbell Regional Park, Santa Cruz Garden Park, Santa Cruz Historic Park and Santa Cruz Equestrian Park. The total area for each staging area should be 1-3 acres, including trailer parking and unloading, watering troughs, hitching rails, and information signs regarding the trail and equestrian safety rules.

**Trailer Parking and Unloading Areas**

Staging areas will be defined through the use of trees and mounds, and will have the appearance of an open meadow. They will be adjacent to parking lots and clearly signed to preclude unauthorized use. The trail head should be visible and signed for easy access. Each parking area should accommodate 10-15 rigs.



Staging area/trailer parking

**Horse Watering Trough**

Material	Cast-in-place concrete incorporating Santa Cruz Riverpark logo.
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Remarks: The use of automatic and self-watering systems is discouraged.

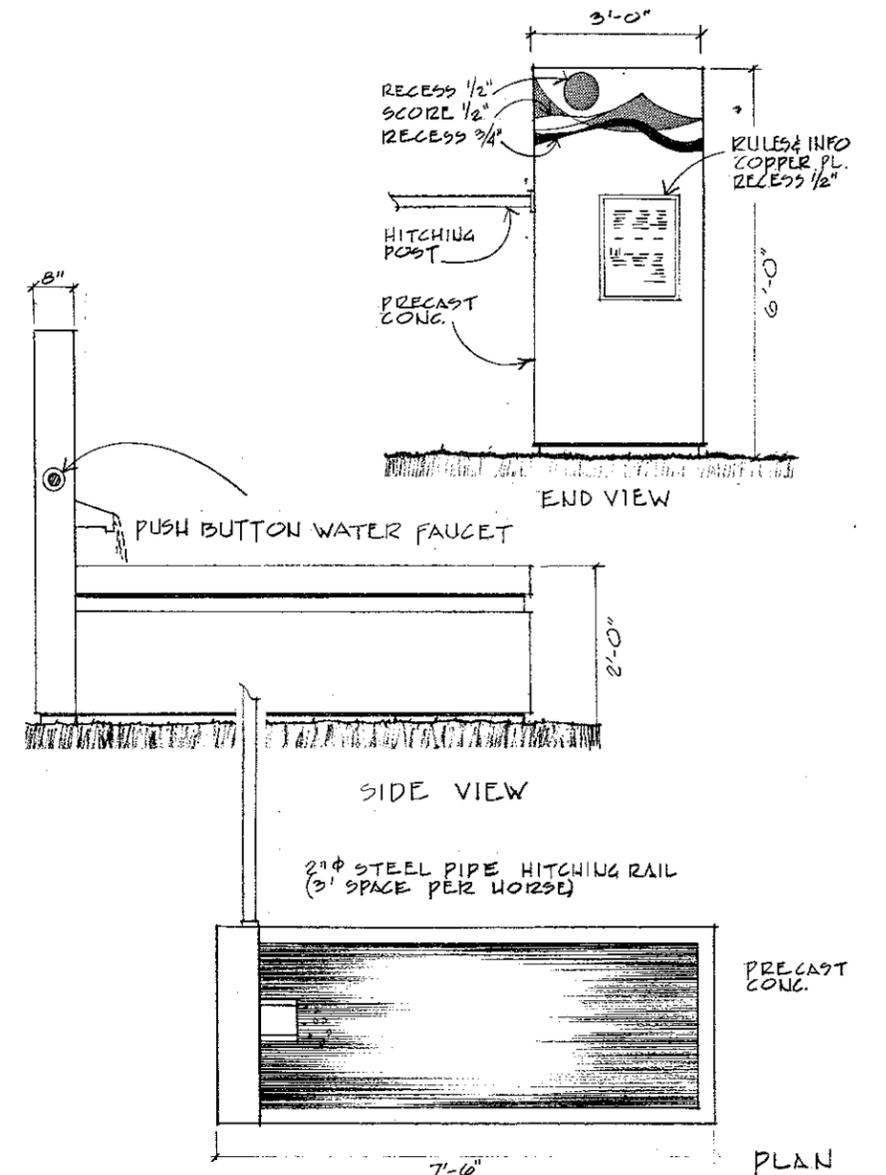
**Hitching Rail**

Material	Galvanized steel
Style	Post and Rail

Remarks: Allow 3' of rail per horse.

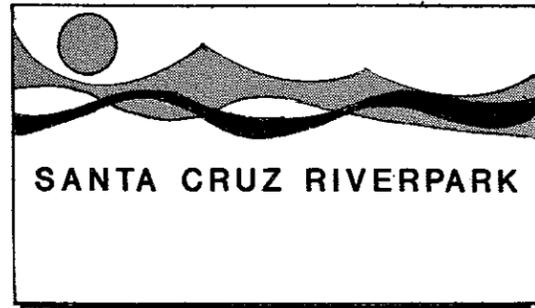
**Information Signs**

These signs will follow the guidelines of Riverpark Information Signs and will include equestrian trail rules, trail destinations and mileage. Signs will be located in conjunction with watering troughs.



Horse watering trough and staging area information sign

**SIGNAGE**



Standard Santa Cruz Riverpark logo

The logo of the Riverpark provides a major theme for park image and identity. This logo shall remain a standardized feature throughout the Riverpark, reproduced in pre-cast or cast-in-place concrete with the same fabrication, materials, finish and colors as are incorporated in the original entry signs currently in place in the Riverpark. The Riverpark logo will be incorporated into all entry signs, information signs, and, where possible, into sculptural and architectural elements (e.g., concrete bollards, watering troughs, etc.). For consistency and cost-effectiveness, a form with the logo design should be supplied by the City to the contractor.

**Riverpark Drive and Trails Signage**

All trails in the Riverpark will be signed as specified under Signage in the Circulation chapter.

**RIVERPARK DRIVE SIGNAGE**

Signs identifying and leading to the Riverpark Drive will incorporate the Santa Cruz Riverpark logo and be attached to existing street sign poles as secondary signage. They will comply with City of Tucson standards.

**BICYCLE/PEDESTRIAN TRAIL SIGNAGE**

**Riverpark Trail System (external)**

Signs used outside of the park boundaries in the bicycle/pedestrian trail system will incorporate the Santa Cruz Riverpark logo, a bicycle symbol and include mileage to the Riverpark in meters and in miles. Signs will conform to COT standards.

**Riverpark Trail (internal)**

Signs within the Riverpark will mark bicycle/pedestrian trail entries and provide direction throughout the park. They will include the Santa Cruz Riverpark logo and a bicycle symbol.

Material options	a. Baked enamel on steel b. Pre-cast concrete bollards; sand finish
Dimensions	a. 18" x 24" on steel post. b. 12" x 12" x 32" from ground plane
Color	a. Brown and white b. Gray concrete with Santa Cruz Riverpark approved logo

Remarks: Where sign marks entry to trail, bicycle symbol only may be used. Where sign provides direction, symbol destination, mileage and arrow will be included.

**Street Crossings**

Where trails cross streets, warning signs with the international bicycle crossing symbol shall be used. Signs will conform to City of Tucson standards.

**EQUESTRIAN TRAIL SIGNAGE**

**Mounted Trails**

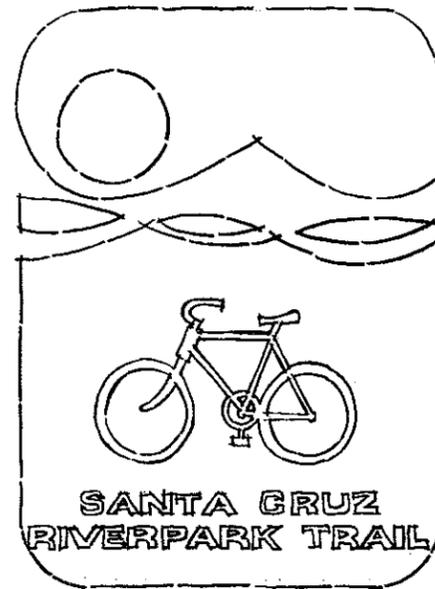
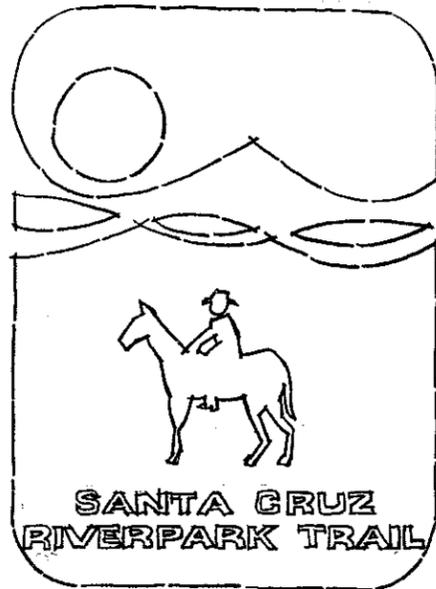
Mounted trails should not be signed along trail. Staging area trailheads should be signed with bollards as described under bicycle/pedestrian trails, but incorporate a horse symbol.

Material	Steel
Finish	Baked enamel
Color	Brown and white

Remarks: Trailhead signs may be incorporated into Equestrian Information signs at staging areas or exist separately. They should identify the trail and specify trip distance to the next Riverpark staging area and water.

**Carriage Trails**

Horse and buggy trail signs will conform to COT standards and be attached to street sign poles. Signs will incorporate the Santa Cruz Riverpark logo and a buggy symbol. Signs will identify the buggy route and boarding locations, and will warn motor vehicles of slower-moving vehicles along the route.



Santa Cruz Riverpark Signs

Internal signs

External signs

## Entry and Information Signage

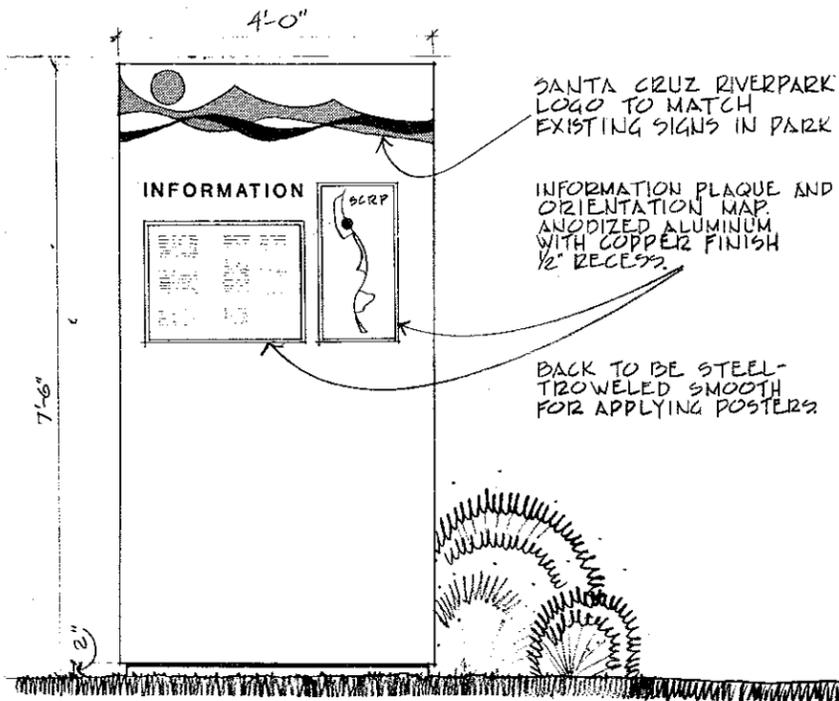
### RIVERPARK INFORMATION/ORIENTATION SIGNS

Informational signs will provide direction to attractions both within the local planning unit and throughout the Riverpark. They will be similar to Riverpark entry signs, include the Santa Cruz Riverpark logo, and allow for posters announcing upcoming events to be posted on the back surface. The size will be appropriate to the specific park location.

Information signs shall be placed adjacent to parking lots at main entry paths and at trail crossings to maximize clarity of circulation.

Material/Color	Gray concrete with surface recess for plaque to match Riverpark entry signs. Colors to be approved by the City Landscape Architect.
Plaque	Anodized aluminum with copper finish.
Plaque surface options	a. Etched b. Raised Information in lettering and in braille to be provided together with a diagrammatic orientation map.

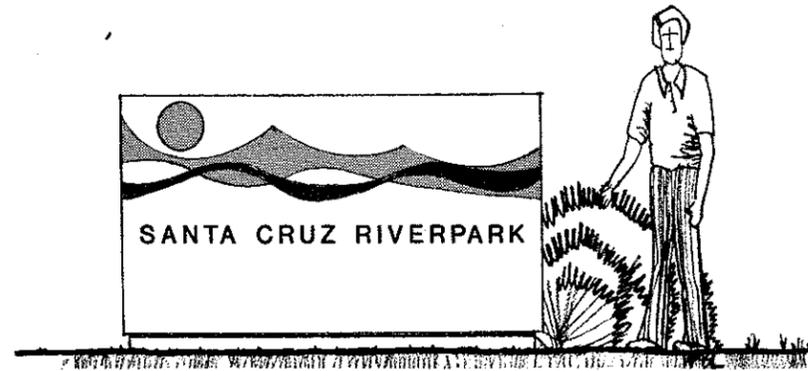
Remarks: Back of node to be steel troweled smooth concrete for applying posters.



Information/orientation sign

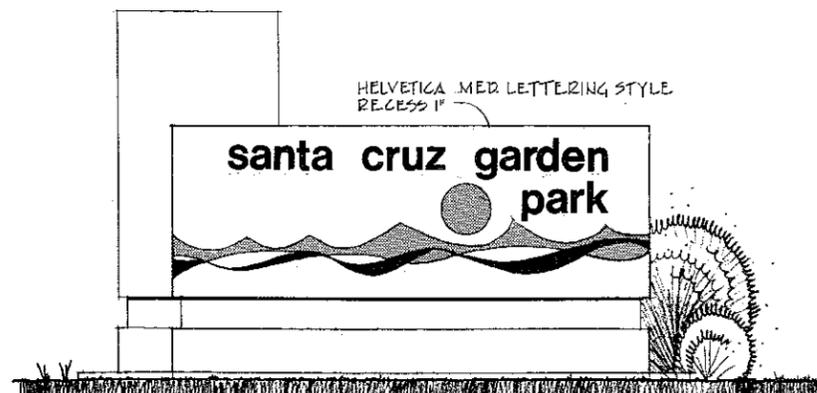
### STANDARD SANTA CRUZ RIVERPARK LOGO ENTRY SIGNS

Entry signs of gray, relief concrete bearing the Santa Cruz Riverpark logo and name have been incorporated into the entries of the developed Riverpark segments. They serve as instant recognition and should continue to be used at access points to all subsequently developed park units.



Standard Santa Cruz Riverpark sign

For unique and specific elements such as thematic parks, and large-scale developments adjacent to or part of the Santa Cruz Riverpark, a sign wall is to be designed and detailed for use at specific site entries (e.g., Phase Two, Rio Nuevo). Sign walls will include the Santa Cruz Riverpark logo and the unit or project name in concrete or in metal.



Sign wall example

### IDENTIFICATION SIGNS

For clear identification of buildings and specific amenities (e.g., potable water, rest rooms, high voltage, storage), pictorial symbols are recommended. Where pictorial signs are not possible, both Spanish and English labels should be included.

Material	Steel
Finish	Baked enamel
Color	Color keyed to function

### ARCHITECTURAL GUIDELINES

Structures in the Riverpark will provide protection from the elements and enclose functional necessities. In addition, they will create architectural accents throughout the park and aid in providing an identifiable park image.

### Architectural Recommendations:

- Cluster park structures together in groupings throughout the park and at parking areas for aesthetic, functional and economic purposes.
- Design structures with low maintenance, durability and vandal-proofing as high priorities.
- Display architectural integrity and compatibility with the character of Tucson and the Southwest in all park structures.
- Design buildings to interface with the Riverpark Trail and enhance the character and spatial experience of the Riverpark.
- Provide earthforms and landscaping around the northwest corners of buildings to mitigate late afternoon summer sun and winter winds.
- Use shade devices around buildings to provide comfortable shaded space in summer and late fall, and warm outdoor space in winter and early spring mornings.
- All structures shall be accessible to parking areas with handicapped access provisions.
- Site Riverpark structures to optimize prevailing winds and solar orientation; and to maximize views of the mountains and downtown while screening negative visual impacts (billboards, power lines and other offensive on- or off-site features).
- Provide a choice of sun or shade through covered and open outdoor areas to respond to variable weather conditions.
- Building scales will generally recognize a hierarchy of heights, stepping down as they approach the River to maximize ventilation and preserve views from within the park; however, concentrations of buildings at riveredge may be appropriate in urban settings.
- Where conditions require buildings to be located over landfills, alternate foundation methods are now available; care should also be taken to provide positive drainage away from buildings.

## THEMATIC RIVERPARK STRUCTURES

Thematic structures are one-of-a-kind architectural elements proposed in this Masterplan Update for the Santa Cruz Equestrian Park, Amphitheatre Greenpark, Santa Cruz Historic Park, Tucson Riverpark Plaza, and Santa Cruz Garden Park planning units. They will be individualistic and unique as may be appropriate for the particular purpose and character of the planning unit, within the general recommendations already delineated. All thematic structures within a planning unit shall be compatible and harmonious to one another, reinforcing the particular theme.

## RIVERPARK FACILITIES STRUCTURES

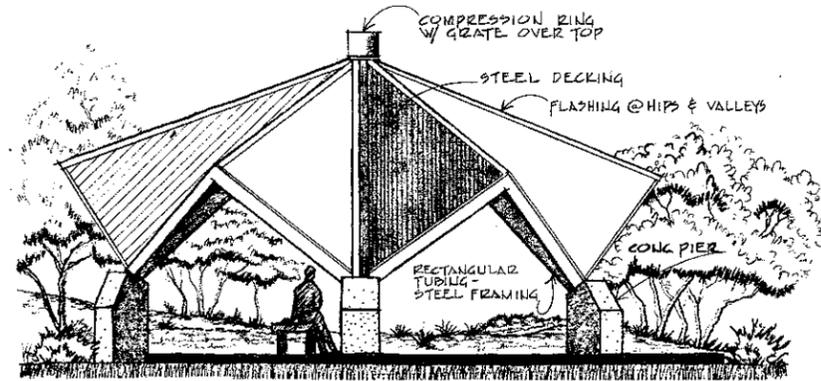
(Ramadas, Rest Rooms and Concession Stands)

Form	Folded-plate system
Material	
Foundation and Supports	Cast-in-place concrete
Roof	Cor-ten steel decking over square tubing frame Option: painted steel decking
Color	
Ground Plane	Earth tones
Vertical elements	Earth tones
Roof	"Terra cotta" baked enamel or naturally weathered color of Cor-ten.

Surface Finish  
Ground plane and vertical  
element options

- a. Sand finish concrete
- b. Exposed aggregate with  
integral color concrete base

Remarks: Ramadas, rest rooms and concession stands will be similar in form and materials to provide continuity and identity.



Riverpark facilities structure

## RIVERPARK ACCESSORIES

All furniture and accessories will be designed as coordinated groups which harmonize with the architectural structures of the Riverpark. Consistency of materials, colors and forms will promote identity and unity.

## Accessory Recommendations:

- Permanently locate all Riverpark accessories.
- Design and select Riverpark accessories with ease of maintenance and vandal resistance as highest priorities.
- Group accessories within an area together whenever appropriate and possible.
- Provide handicap access to all accessories.
- The use of wood accessories is discouraged.

## Typical Groupings

The following items will be included in designated areas:

### PICNIC AREAS

#### Standard

- Bike rack
- Drinking fountain
- Pole light
- Shade trees
- Table and benches
- Trash receptacles

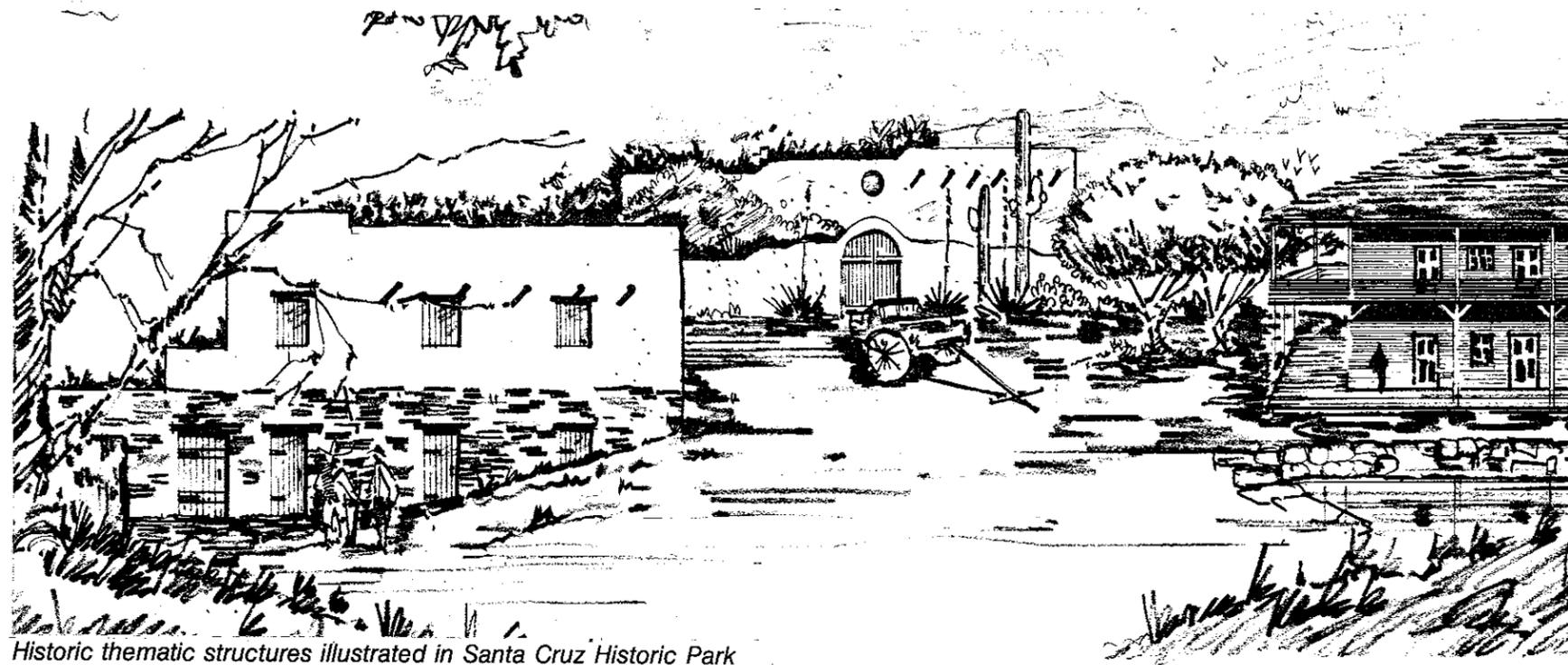
#### Optional

- Cooking facilities
- Ramada

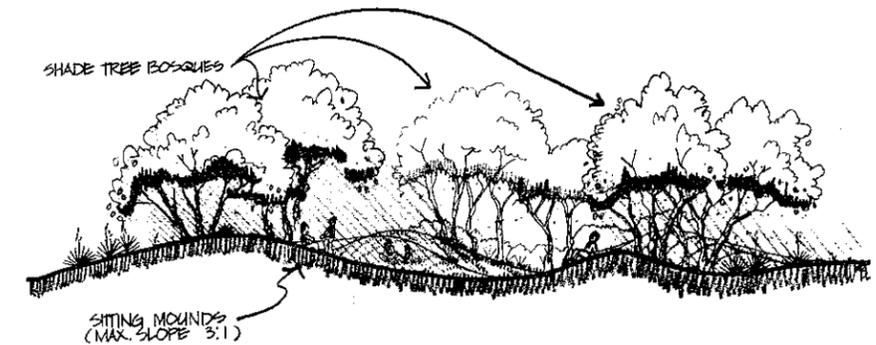
### PICNIC GROVES

- Shade trees
- Sitting mounds
- Trash receptacle

- Boulders
- Drinking fountain
- Pole lighting
- Table and benches



Historic thematic structures illustrated in Santa Cruz Historic Park



Picnic grove

### PLAYGROUNDS

- Benches
- Drinking fountain
- Play equipment
- Shade trees
- Trash receptacle

- Bike rack
- Pole lighting

**COMFORT STATIONS**

*Standard*

- Benches
  - Bike rack
  - Drinking fountain
  - Pole lighting
  - Rest room
  - Shade trees
  - Trash receptacle
- REST STOPS**

- Bench
- Pole light
- Shade trees
- Trash receptacle

**TURF AND SPORTS FIELDS**

- Bike rack
  - Pole lights
  - Shade trees
  - Trash receptacle
- ENTRY AREAS**

- Bench
- Bike rack
- Information/Orientation sign
- Pole lights
- Shade trees
- Trash receptacle

**Accessories**

**PICNIC TABLES AND BENCHES**

Material options

- a. Poured-in-place concrete
- b. Precast concrete

Surface options

- a. Exposed aggregate with integral color base (Sides only)
- b. Steel-troweled concrete with integral color

Color

Earth tones

**TRASH RECEPTACLES**

*Receptacle Holder*

Material

3" x 4" steel posts

Height

24"

Form

Set in circular concrete foundation

*Receptacle (can)*

Material

20 gallon galvanized steel can with lid

Form

Cylindrical

*Optional*

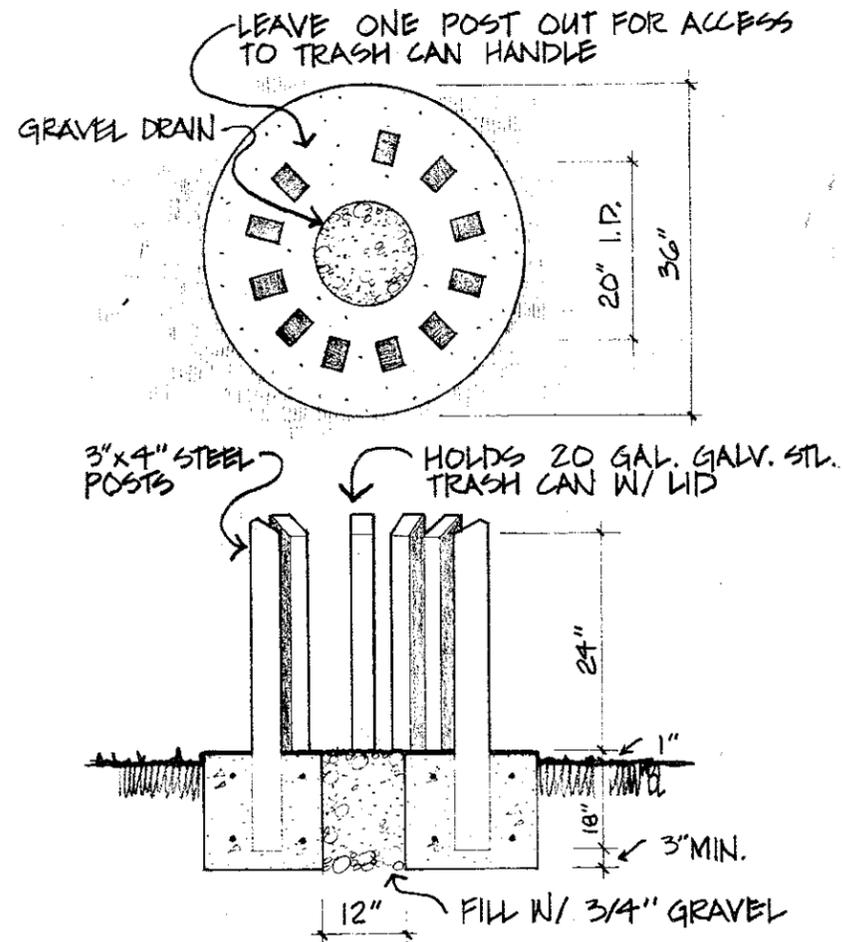
- Hitching post
- Information/Orientation sign

- Bike rack
- Drinking fountain

- Benches
- Drinking fountain
- Sitting mounds

- Drinking fountain

Remarks: Provide eye bolt, chain and padlock to secure trash receptacle handle to steel post.



Trash receptacle

**DRINKING FOUNTAINS**

Material options

- a. Pre-cast exposed aggregate concrete
- b. Heavy rolled steel

Color

Earth tones

Bowl

Stainless steel

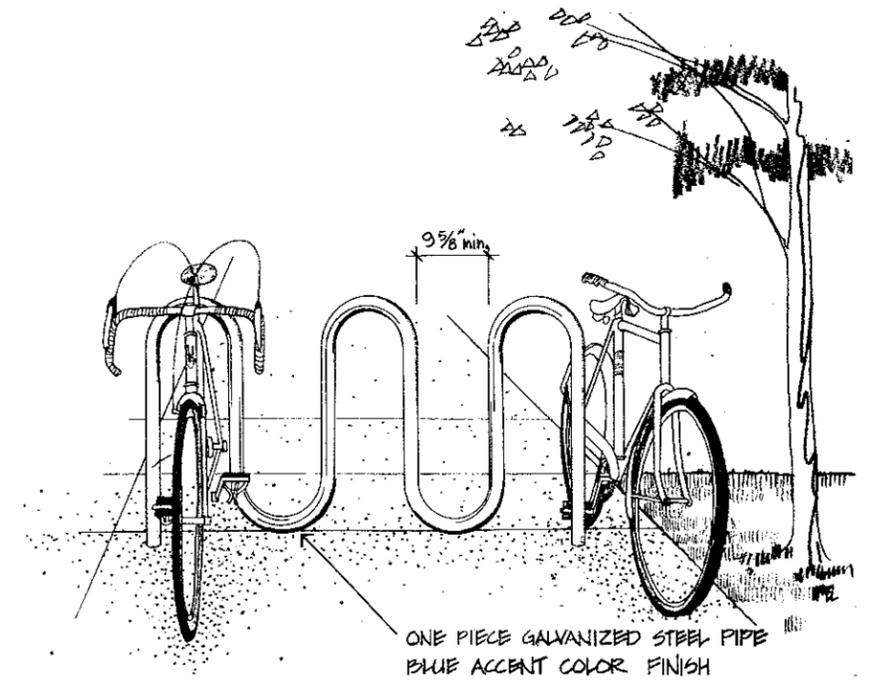
Remarks: All drinking fountains should include a bubbler operable by a vandal resistant push-button.

**BIKE RACKS**

Material

One piece galvanized steel pipe

Remarks: Bike racks shall be located at pull-offs separate from but with access to the Riverpark Trail.



Bike rack

**BOLLARDS**

Bollards in the Riverpark are of two types: **concrete** for use in urban situations as space definers for plazas and courtyards, and as Riverpark Trail entry and directional markers; and **wood** for use in natural settings as trail access impediments to motorized vehicles and as parking lot definers. Both types will serve decorative as well as functional purposes.

**Concrete Bollards**

Material

Pre-cast concrete

Height

Minimum 32" from finished grade

Form

Square, 12" x 12"

Color and Finish

Follow finish and motif of Santa Cruz Riverpark signs already installed at park entries.

**Wood Bollards**

Material

Cedar or treated Douglas Fir

Height

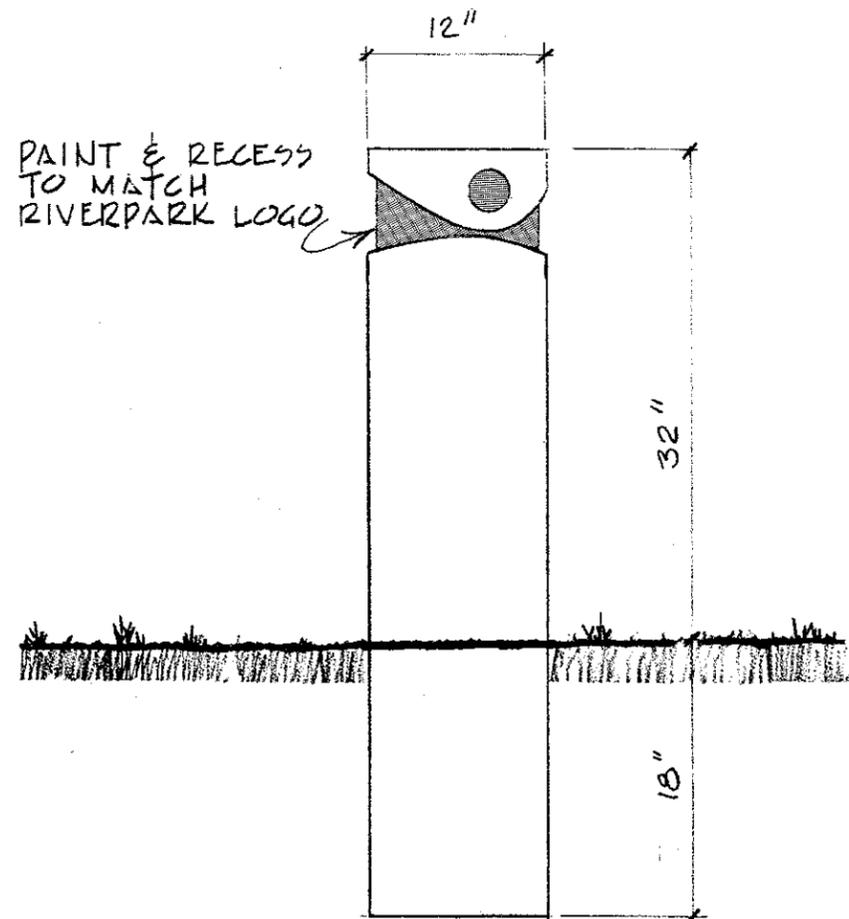
Minimum 32" from finished grade

Form

Square, 8" x 8" post

Color

Natural



Square concrete bollard

### WALLS

Walls will be used to retain banks, define space and separate park facilities from private property. In addition, walls 18' to 22' in height may be used for seating. In these cases, tops of walls must be smooth and flat.

#### Material options

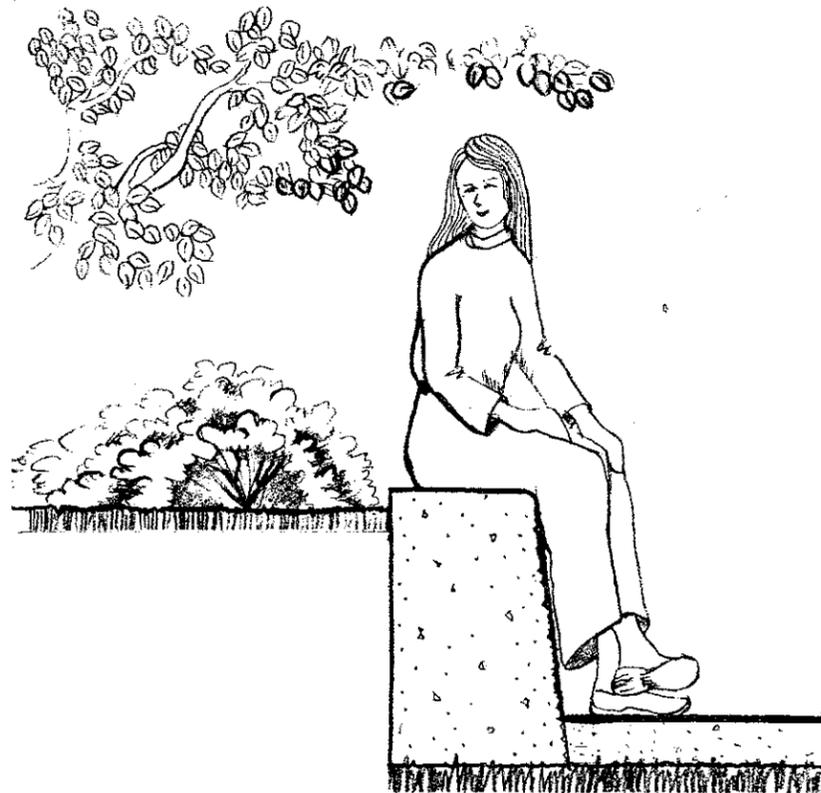
- Masonry: brick, slump block, adobe
- Stucco, over CMU
- Monolithically poured concrete (seat walls to be battered 1½"/ft. in height)
- Stone

#### Finish options

- Natural masonry
- Rough stucco
- Smooth, sand finish or exposed aggregate concrete
- Natural weathered rock

### Color options

- Earth tones
- Compatible with adjacent structures
- Integrally-colored earth-tone concrete and exposed aggregate



Battered retaining/seat wall

### FENCES AND SAFETY RAILS

Fencing and safety rails will be utilized in the Riverpark to define the park boundary, restrict public access to particular areas, and to separate service areas.

#### Materials

Chain-link fabric, steel rails and posts with organic coating

#### Color options

Painted steel pipe: brown, black or green, depending on setting

*Remarks:* Rural thematic park units (e.g., Santa Cruz Equestrian Park, Santa Cruz Historic Park) should incorporate wood fencing. Urban thematic park units (e.g., Tucson Riverpark Plaza) may incorporate wrought iron and wrought iron/masonry fencing. Utility fencing should be unobtrusive, blending into the surrounding landscape.

### LIGHTING

Vandalism, energy savings and light pollution (particularly in regard to Kitt Peak Observatory) are primary considerations in selecting lighting for the Riverpark. Therefore, at the development stage of each park unit, a lighting study should be conducted to mitigate light pollution into residential and commercial areas, maximize energy savings, and to identify the most vandal-proof light fixtures in production. There should also be contact with the Tucson Police Department regarding security issues of lighting within park units.

#### Pole Lights

Height	25' minimum
Design	Shielded down-lighting, vandal-proof
Lamp	Low-pressure sodium
Pole Material	Galvanized steel with dark bronze finish

*Remarks:* Pole lights should be used in areas of high active use, e.g., playing fields, ramadas, and multi-use areas; at park entrances, and in parking lots.

#### Lights Under Bridges

Design	Integral and vandalproof
Lamp	Metal Haline bright white light.

### COOKING FACILITIES

#### Material options

- Steel-reinforced monolithically poured concrete
- Masonry
- Stone

#### Height

32' to 36' (work surface)

*Remarks:* All cooking units shall include an adjustable rack and a clean-out.

### PLAYGROUND EQUIPMENT

#### Material

Steel pipe with aluminum, high-density polyethylene and stainless steel fittings; and all heart redwood decking

#### Structure

4' Modules

#### Color

Bright, varied colors

### WATER FEATURES

Aside from the water elements described in the Water Resources chapter of the Santa Cruz Riverpark Masterplan Update, decorative water features such as fountains, waterfalls and reflecting pools should be kept to a minimum.