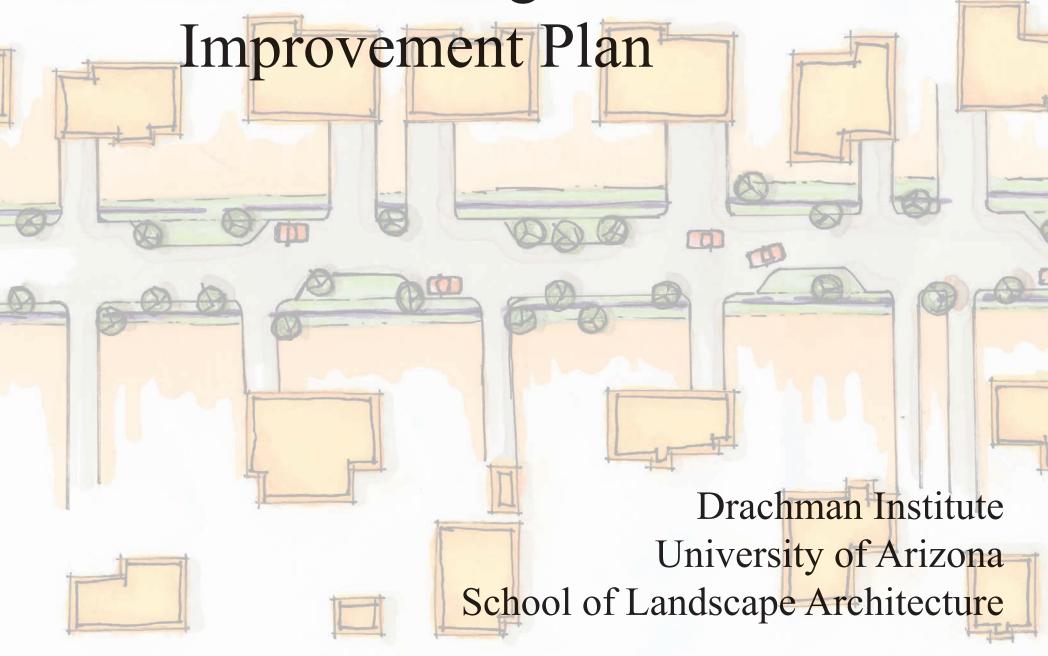
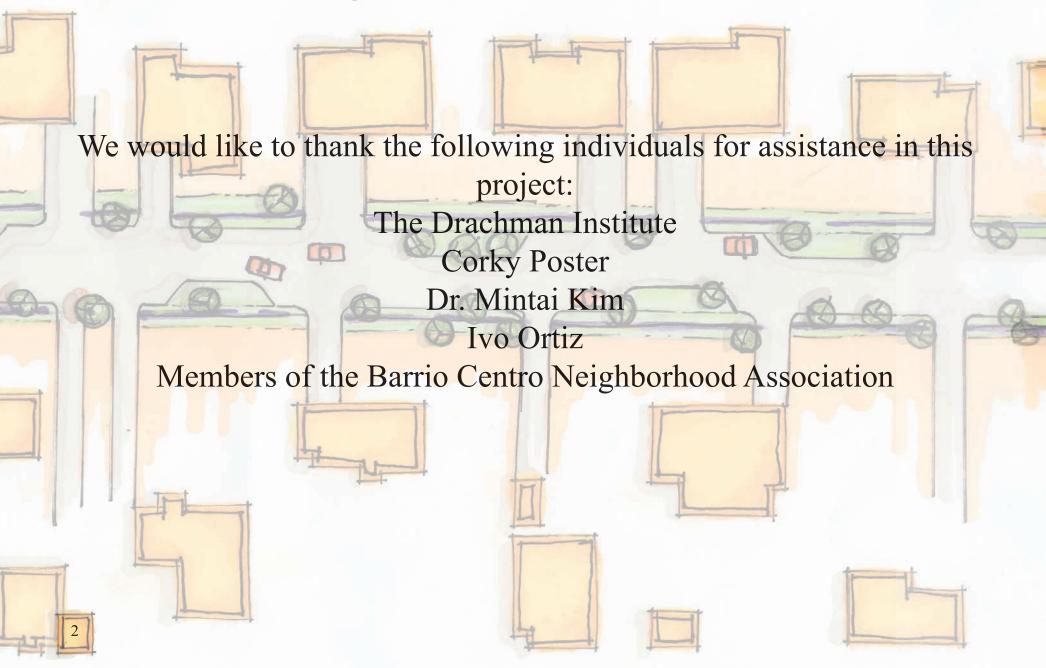
Barrio Centro Neighborhood



Acknowledgements



Introduction



Project Introduction

On behalf of the Barrio Centro Neighborhood Association, Ivo Ortiz requested a neighborhood improvement assistance from the Drachman Institute. Specifically, the neighborhood wished to address improvement of the easement along South Tucson Boulevard, development of a BMX botanical park, introduction of bike paths, and overall beautification of the neighborhood. The Drachman Institute presented this project to the Landscape Planning Studio within the department of Landscape Architecture at the University of Arizona and the project was selected by this group to be completed in the Spring of 2005. Through analysis and meetings with the neighborhood residents, the Barrio Centro Neighborhood Improvement Plan was created.

Neighborhood Introduction

Barrio Centro is a vestige of a neighborhood that once covered a much larger area, and was the first real suburb of downtown Tucson. It was constructed over a period of several years in the early 1950's during the post-war suburban boom. Like most neighborhoods of that era and since, it is based largely around the automobile. The Barrio is composed of two subdivisions that were built in separate phases, each with a unique character. The neighborhood is bordered by East 22nd Street to the north, South Tucson Boulevard to the west, South Country Club Boulevard to the east and Aviation Parkway to the south.

Goals & Objectives

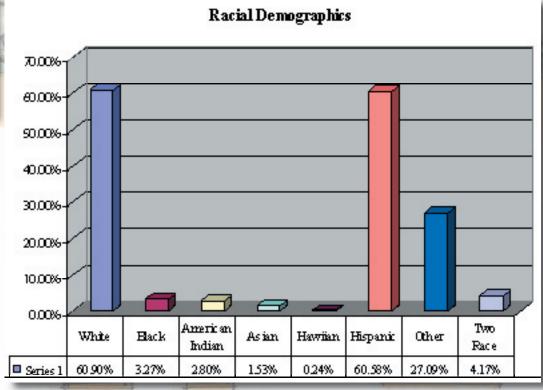
- To improve the sense of community and quality of life for residents in the neighborhood through the redesign of the public spaces and connections throughout the neighborhood, as well as to offer concepts for improvement of the connections to the greater community, primarily reducing dependence on private vehicular transport.
- To create a model of economically, socio-culturally, and environmentally sound neighborhood improvement for Tucson neighborhoods.

Neighborhood Demographics



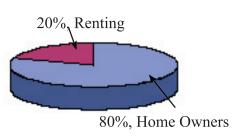
The Barrio Centro Neighborhood is located within the boundaries of a single census tract. The data reflects the demographics of the entire census tract and not only the neighborhood. All of the charts and graphs are based on the 2000 census.

The racial demographics for the census tract indicate that a majority of the population is white and/or Hispanic. The percentages total more than 100% due to individuals declaring several races for one person when responding to the census survey.



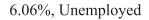
Neighborhood Demographics

Housing Occupancy



Housing occupancy in the area is an important aspect of analysis. It shows that 80% of the area's residents own thier own homes. This means that they are more vested in their property and neighborhood and are more likely to participate in neighborhood improvements.

Percentage of Employment

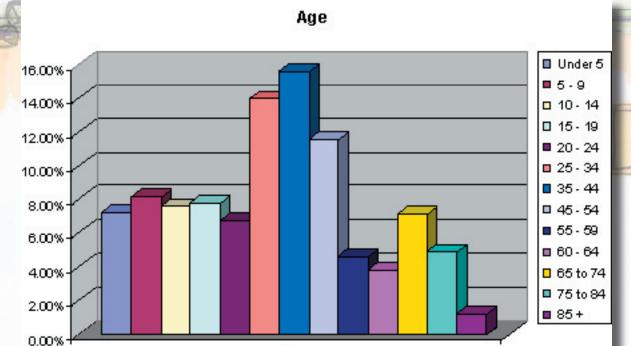


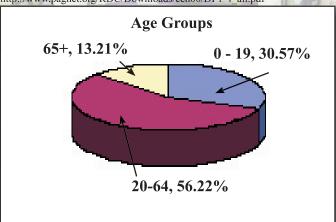


93.94%, Employed

The percentage of unemployment within the population is 6.06% for the 2000 census. This rate is higher than the unemployment rate of 3.2% for Pima County in that census.

http://www.pagnet.org/RDC/Downloads/cen00/DP1-4_all.pdf





Age demographics were considered to determine the needs of the community. Due to the fact that over 30% of the community is under 19, the neighborhood may need additional park and recreational space to accommodate the large youth population.

Neighborhood Character

Neighborhood Open Space

Within the nieghborhood there are variety of open spaces. The main areas of focus are the "left over" spaces in the form of easements and vacant lots. Eastmor Park is the only designated open space. Adjacent to the park, there is an entry point to Aviation Bikeway and it is in close proximity to an open parcel that is currently used as an informal BMX bike park. It is important to create links between these spaces and throughout the nieghborhood to create a greater sense of identity within the neighborhood and enhance the walkability of the community.



Easement on South Tucson Boulevard



View from Eastmor Park to Aviation Bikeway, which borders the southern edge of the neighborhood.



Typical easement along streets where streetscape improvements could occur.



One of the trails in the BMX bike park area.



View into Eastmor Park from the Aviation Bikeway entrance.

Neighborhood Character

Home Character

There are a variety of styles in home and landscape treatments in the neighborhod. Most homes were built in the 1950's. They are ranch style with attached carports and vegetation such as arborvitae, Italian cypress and pines. The newer homes have adobe style exterior and a more arid yard. Some of the homeowners have extended their yard into the easement space making the pedestrian paths discontinuous. One unifying factor in the community is the use of wildflowers as a landscape treatment. In addition to thier yards, residents have been planting them in the easements and other open spaces within their neighborhood.



Typical newly constructed homes with southwestern adobe style and desert vegetation.



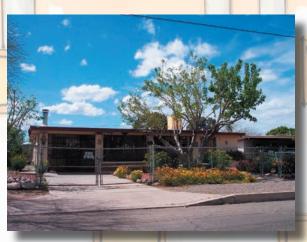
Development of new, higher density infill houses on South Tucson Boulevard next to Aviation Parkway.



Example of older style homes within the neighborhood.

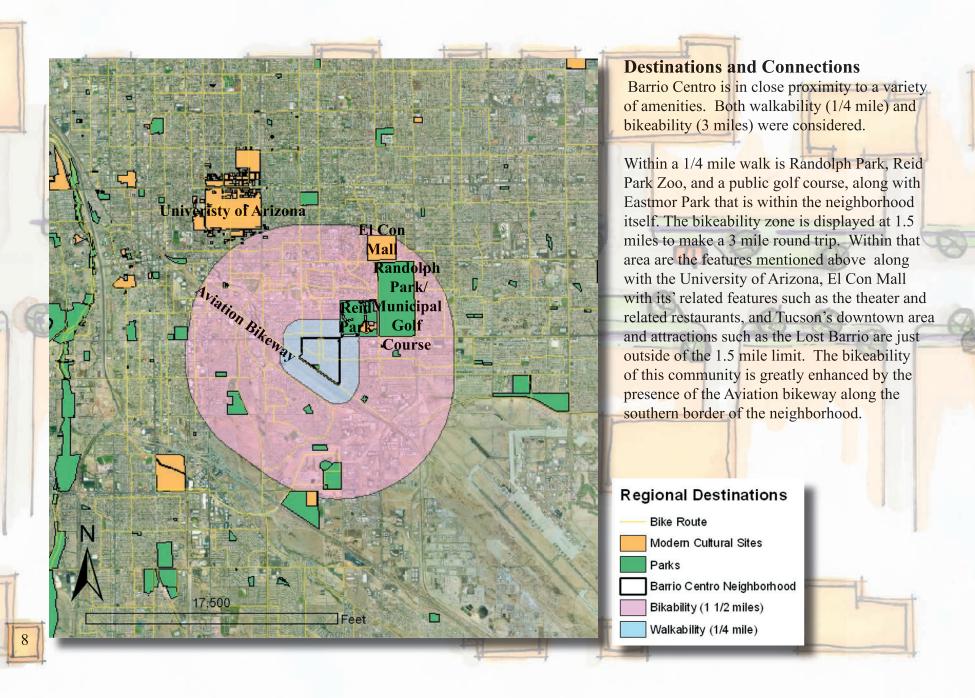


A wildflower along the fence at Eastmor Park.



Example of residences utilizing wildflowers as a landscape treatment.

Destinations



Land Use

Varied densities scattered within a neighborhood ensure a greater mix of income and age groups, which creates a more diverse and therefore stable neighborhood. Also, a variety of uses in the neighborhood provides jobs and services close to home, reducing the number and length of car trips a resident must make on a daily basis, saving both resources and time. Finally, this variety of uses provides destinations for walks and bike rides, which encourages outdoor activity, an essential aspect of a physically healthy neighborhood.

Aspects to consider:



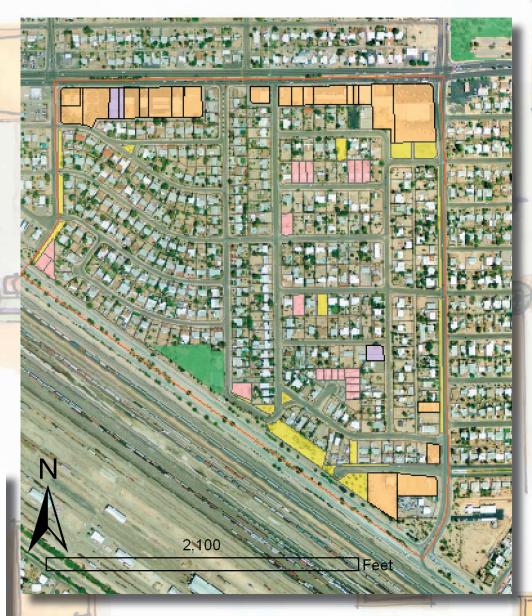
Commercial

□ Civic

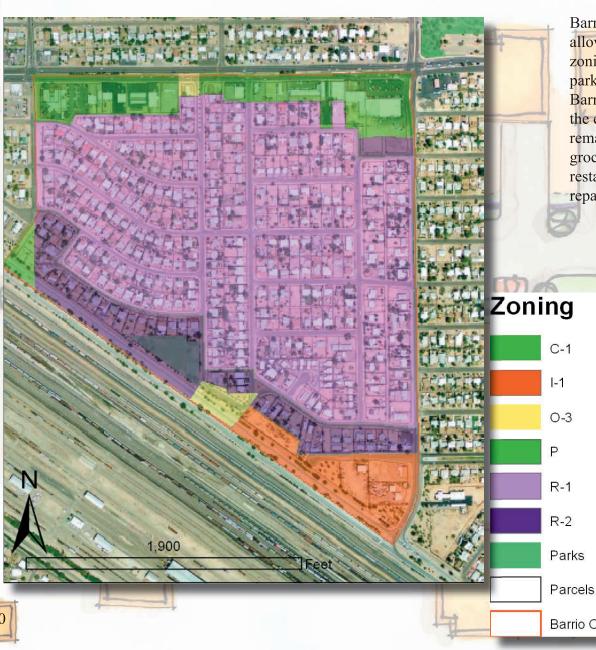
□ Open space

Land Use Barrio Centro Neighborhood Undesignated Open Space





Zoning



Barrio Centro includes a variety of land uses allowed within the zoning code. Current zoning permits commercial, residential, office, parking, and industrial. The zoning within Barrio Centro allows many different uses along the edges of the neighborhood while the center remains residential. Current uses include a grocery store, bar, convenience store, bookstore, restaurants and other retail spaces, and a truck repair shop.

C-1 Local Commercial

A restrictive commercial zone, limited to retail sales with no outside display/storage. Office, residential, and restaurants permitted.

I-1 Light Industrial

Commercial, industrial, and manufacturing uses; residential restricted to caretakers' residences. Limited retail sales allowed.

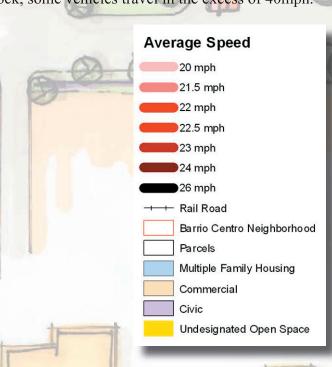
O-3 Office

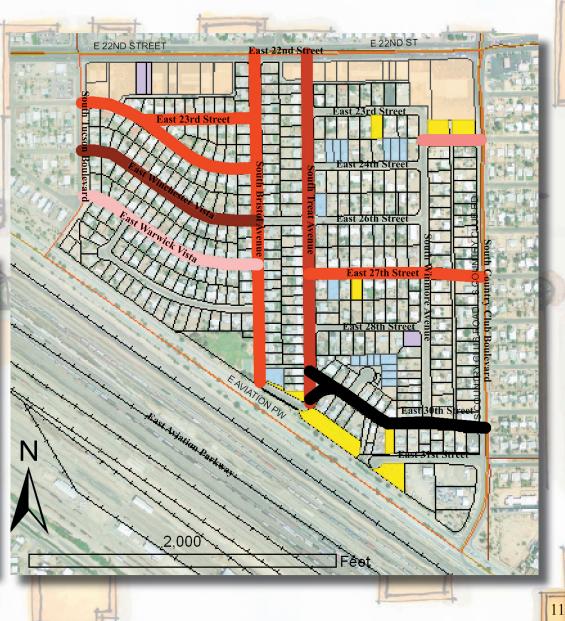
Professional and semi-professional office, high density residential developments, and limited research and development uses permitted.

Barrio Centro Neighborhood

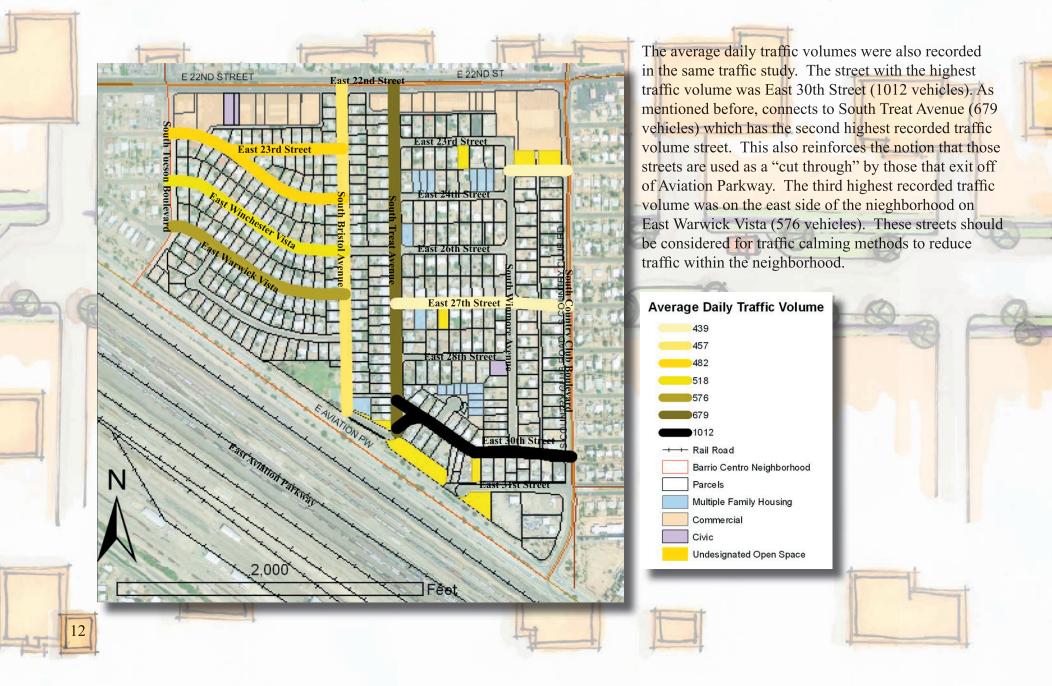
Traffic Analysis: Speed Analysis

Average speeds in the neighborhood were documented in a recent traffic study. The average speeds recorded ranged from 20-26 miles per hour. The street with the highest average speed is East 30th Street (26 mph). This street is often used as a "cut through" from Aviation Parkway on to South Treat Avenue which has the third highest recorded average speed (23 mph). The speeds recorded in this study are not excessive due to the placement of the recording devices. They were located near corners where traffic is slowed by turning. Residents estimate that mid block, some vehicles travel in the excess of 40mph.





Traffic Analysis: Volume Analysis



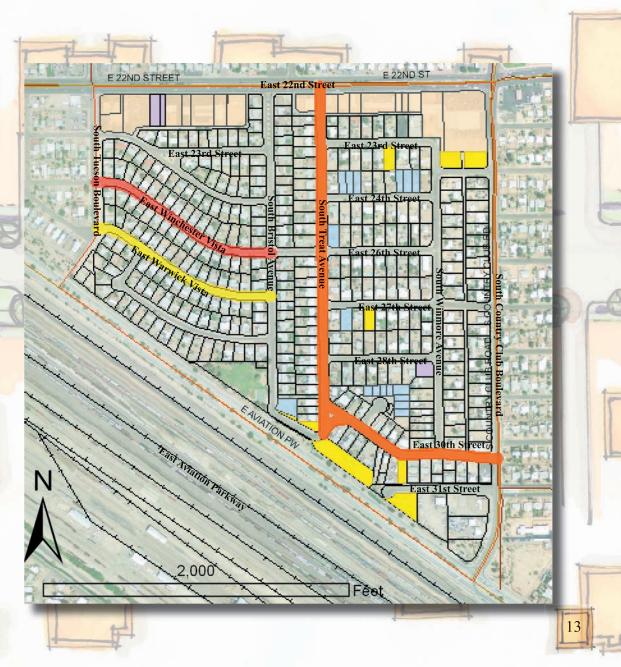
Traffic Analysis: Streets of Concern

The traffic study information was overlayed to determine which streets have both a high traffic volume and a high average speed. This allows for prioritization when implementing traffic calming methods. East 30th Street and South Treat Avenue were among the top three in both categories and therefore are deemed as streets of concern. When implementing the neighborhood improvement plan, these streets should be the starting point of the project. Targeting these areas will immediately reduce the volume and the speed of vehicles and discourage the use of motorists that would typically use the neighborhood as a "cut through" to East 22nd Street.

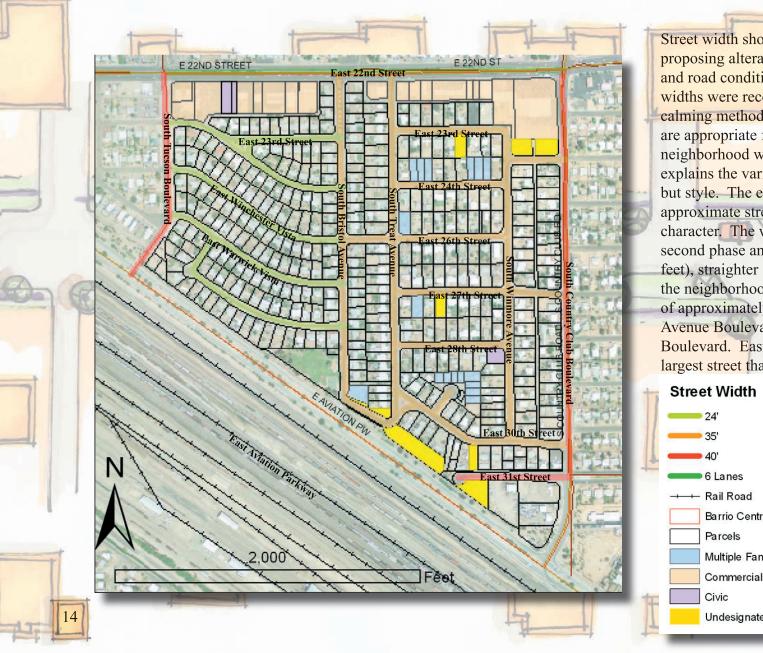
Streets of Concern

Total Average Daily Traffic

1012
576
679
Average Speed
23
24
26
Rail Road
Barrio Centro Neighborhood
Parcels
Multiple Family Housing
Commercial
Civic
Undesignated Open Space



Traffic Analysis: Street Width



Street width should also be considered when proposing alterations to the current streetscape and road conditions. The approximate street widths were recorded to determine which traffic calming methods and streetscape improvements are appropriate for each individual street. The neighborhood was created in two phases which explains the variation not only in street width but style. The east side was constucted first, the approximate street with is 24 feet with a sinuous character. The west side was created in the second phase and has wider (approximately 30 feet), straighter streets. The streets that border the neighborhood are much larger with a width of approximately 40 feet on both South Tucson Avenue Boulevard and South Country Club Boulevard. East 22nd has a width of 6 lanes. The largest street that borders the neighborhood is



Aviation Parkway on the south that is not walkable as it is an 8 lan<mark>e p</mark>arkw<mark>ay</mark> and seperated from the neighborhood by a large wall.

Sidewalk Analysis

Public Right-of Way (connections):

All of the functions in a typical Tucson neighborhood are connected by streets. Neighborhood streets differ from major thoroughfares in that they are not simply vehicular corridors, but also pedestrian and bicycle routes, play spaces, and meeting venues. Because the street as the primary public venue, the street becomes the primary public face of the community, the primary arena in which every resident and visitor experiences the neighborhood. The character of the street therefore is the primary dictator of the character of the community. A neighborhood street is composed of a variety of layers because it is home to such as variety of functions (ex: children playing and vehicular traffic). The quality of each layer makes its own contribution to the character of the streets. Since neighborhood life largely revolves around the street, improving the experience of the street inherently improves the experience of life in the neighborhood.

□ Veh<mark>icular</mark> right-of-way

Bicycles

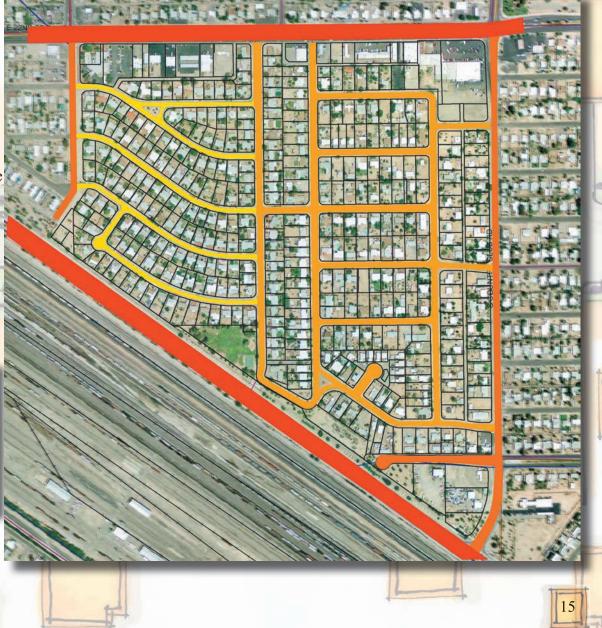
Pedestrian

Front Yards and Facades

Barrio Centro Sidewalk Analysis

> Good Condition Poor Condition

No Pedestrian Right-of-Way



Potential Traffic Calming Solutions

Chicane

Description:

• a series of narrowing or curb extensions that alternate from one side of the street to the other forming S-shaped curves

Potential Impacts:

- no effect on access
- limited data available on their effect on speed, volume and collisions
- street sweeping may need to be done manually
- can impact parking and driveway access
- provides opportunity for landscaping

Emergency Response Issues: (

- limited data available on their effect on delay to emergency response
- emergency response typically prefer two-lane chicanes to speed humps

Cost: \$5,00 and \$15,000

Data and diagrams provided by Institute of Transportation Engineers (1997).

http://www.ite.org/traffic/tcdevices.htm

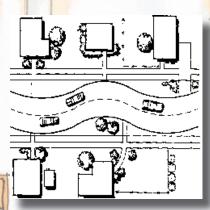




Photo provided by:

http://www.markham.ca/markham/channels/engin/transportation/trafficcalming.htm

Neighborhood Traffic Circles

Description:

- raised islands, placed in intersections, around which traffic circulates
- motorists yield to others already in the intersection
- require drivers to slow to a speed that allows them to comfortable maneuver around the barrier

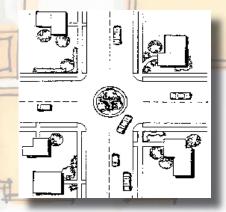
Potential Impacts:

- no effect on access
- reduction in mid-block speed of about 10 percent, area of influence tends to be a couple hundred feet upstream and downstream of intersection
- \bullet intersection collisions have been reduced on average by 70% and overall collisions by 28%
- can result in bicyle/automobile conflict at intersections

Emergency Response Issues:

• emergency vehicles typically slow to approximately 13 mph; delay of 5-8 seconds per traffic circle

Cost: approximately \$3,500 to \$15,000





http://www.ci.austin.tx.us/roadworks/images/traffic circle.jpg

Potential Traffic Calming Solutions

Speed Humps: (raised crosswalks)

Description:

Size: typically 12 to 14 feet

Shapes: parabolic, circular and sinuous

Height: 3-4 inches

• typically are marked with signage and paving markings

Potential Impacts:

- no effect on non-emergency access
- speeds increase approximately 0.5 mph between humps
- traffic volume is reduced by approximately 18%
- potential increase in traffic noise due to braking and acceleration of vehicles

Emergency Response Issues:

- concern of jarring emergency rescue vehicles
- approximately.. delay of 3 to 5 seconds per hump and 10 seconds for an ambulance with patient

Cost: Approximately \$2,000

Data and diagrams provided by Institute of Transportation Engineers (1997).

http://www.ite.org/traffic/tcdevices.htm



Photo provided by:

http://www.co.arlington.va.us/Departments/ EnvironmentalServices/dot/planning/ntc/ lyonvill/EnvironmentalServicesKeyblvd.

Center Island Narrowing

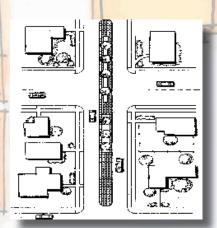
Description:

• raised islands located along the center line of a street that narrow the travel lanes at that location

Potential Impacts:

- may reduce parking and driveway access
- reduces pedestrian crossing width
- may visually enhance the street through the landscaping but may also limit visibility of pedestrian crossings
- bicyclists prefer not to have the travel way narrowed into path of motor vehicles
- collision, speed and volume data are not available

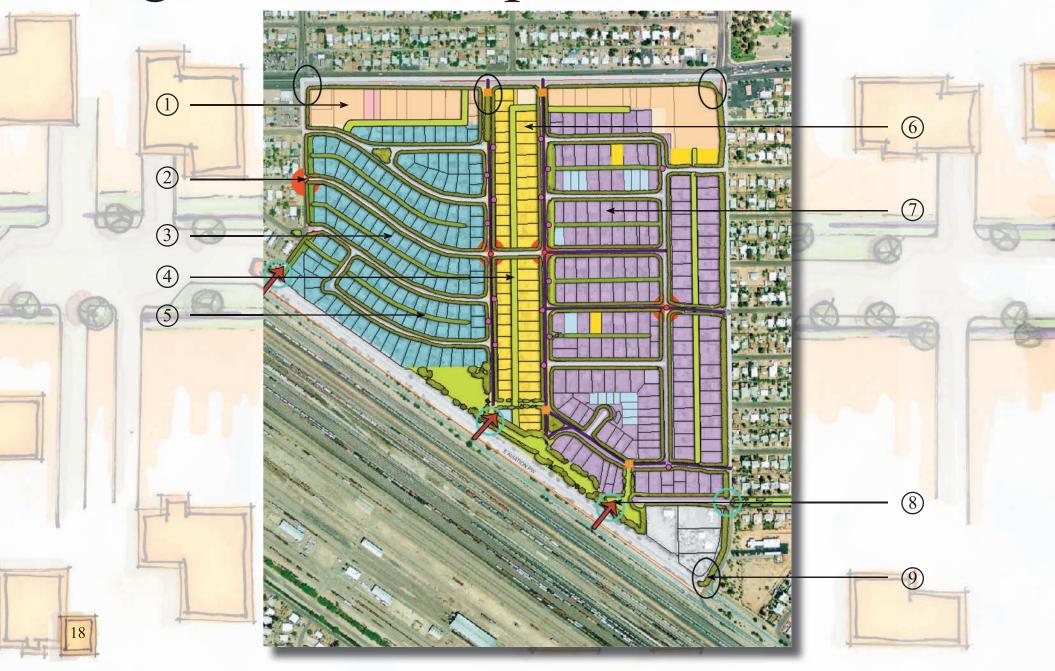
Cost: \$5,000 - \$15,000





Photograph provided by: http://www.ite.org/traffic/tcdevices.htm

17



①Commercial Improvement Area

In this zone the front face of the commercial will be improved to provide a more attractive introduction to Barrio Centro, as well as a more inviting comfortable space for pedestrians. The back space could be renovated to provide welcoming entries to customers entering from the neighborhood, encouraging individuals to walk instead of drive.

2 Traffic Circles

The four-way intersections in the neighborhood along major traffic routes have been designated for implementation of traffic circles, decreasing the speed and volume of traffic on the cut-through route. Like the chicanes, the traffic circles will also be used to harvest rain water to passively irrigate vegetation.

3Street Edge Improvement Area

Since the streets are already narrow in this section of the nieghborhood, there is little room for any improvements that would further narrow the lanes. Therefore these streets will only have alteration to the pedestrian space.

(4) Major Alleys

These alleys provide broad pedestrian linkages between important nodes in the neighborhood. Their primary function is to allow pleasant pedestrian access commercial features along 22nd street, removing the need to walk next to high-speed traffic.

(5) Narrow Alleys

These spaces can be improved to allow for minor pedestrian circulation between the homes. Plants providing backyard habitat for native birds will be used throughout, requiring little care while providing joy to residents.

6 Thoroughfare Area

This area constitutes the two main streets in the neighborhood. Slowing, but not impeding traffic on these roads is crucial, and chicanes have been implemented to physically narrow the road, as well as to cause traffic to weave. The pedestrian areas alongside these routes will also be improved in a manner similar to the other sections.

Street Narrowing Area

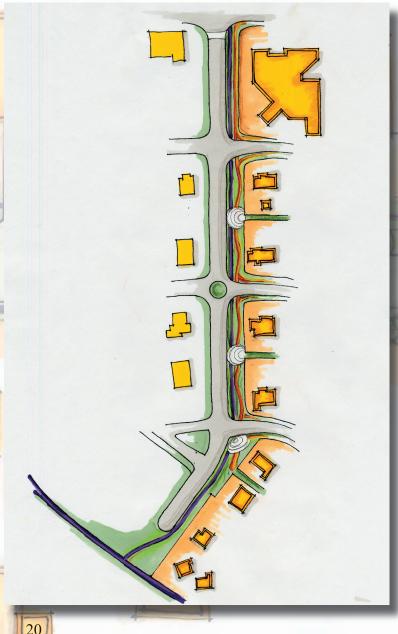
This area's streets are approximately 10 feet wider than the area to the west, and the pedestrian right of way is narrower. To improve the pedestrian experience, as well as to slow traffic on the streets, chicanes will be placed on designated streets. The chicanes will be used to collect street runoff, watering plant species for native birds and butterflies.

8 Bicycle Entry Points

The existing entry point from Aviation bikeway adjacent to the park has been augmented with two additional entries. The new access point at the end of Tucson forms the beginning of a bike route that will lead all the way to the Broadway Greenway, and on to the University of Arizona. The other access points allows for cyclists to enter the park from the beginning of the bike path and exit further along after passing through the park. Also, this provides bike access to the Country Club bike route that leads to destinations including Reid Park and El Con Mall.

(9)Entries

These points were identified as important moments of introduction to the neighborhood for vehicles (black) or pedestrians/cyclists (blue). Striking features should be included to announce the arrival at the neighborhood, and to establish sense of place from the beginning on one's experience in the neighborhood.



Tucson Boulevard Corridor

The 40' easement along Tucson Blvd serves as a greenway which includes separate bike and pedestrian paths. The Aviation Bike Path now opens up onto Tucson, and thus begins the extension of the Tucson bikeway north toward the schools, parks, and washes just north of the neighborhood. The greenway includes water harvesting collection areas and planting that will attract birds, butterflies, and other wildlife. Informal nodes are created where neighborhood alleys extend onto the greenways, allowing neighbors to spontaneously gather and meet.



The red zone indicates the area of South Tucson Boulevard that will be altered in the Neighborhood Improvement Plan.



Section showing separated paths on proposed Tucson Boulevard greenway.



The red zone indicates the area of the proposed expansion of the existing park that will be altered in the Neighborhood Improvement Plan.

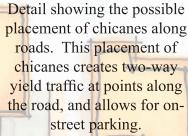


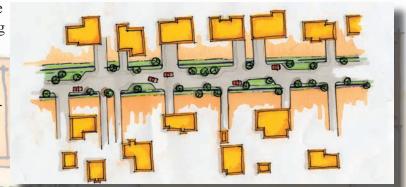
Section showing streetscape improvements on 24' road.

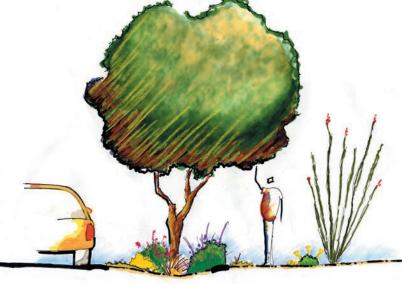


Open Space Amenities

Street closures will allow for a linear strip of recreational open space along the southern edge of Barrio Centro. The open space has several zones of use: an existing active recreation park, the newly created BMX bike park, botanical garden, and dog park. The street closures will eliminate the vehicle from the recreation zone without blocking access to private drives or inhibiting circulation for residents or emergency vehicles. Increased pedestrian and bike routes better connect the park to the rest of the neighborhood, and encourage walking and biking to these amenities. Not only does this park become a destination within the neighborhood, but it also becomes a featured destination along the Aviation Bikeway.







Street Narrowing Area

This area's streets are approximately 10 feet wider than the area to the west, and the pedestrian right of way is narrower. To improve the pedestrian experience, as well as to slow traffic on the streets, chicanes will be placed on designated streets. The chicanes will be used to collect street runoff, watering plant species for native birds and butterflies.

Perspective showing 35' road after addition of planted chicanes.

The red zone indicates the area of the proposed road narrowing and traffic calming methods suggested in Neighborhood Improvement Plan.

Backyard Habitats



Brushfooted butterfly on a flower.

The residents of Barrio Centro have expressed an interest in creating backyard habitats that attracts butterflies, birds, and other appealing wildlife. Adding colorful wildflowers and other native plants to yards, alleys, and other open space areas enhances the aesthetics of the neighborhood while providing a safe haven for wildlife, especially in an area where residential development has eliminated most natural areas. Planting native plants for birds and butterflies helps to conserve water, and may improve air, water, and soil quality throughout the neighborhood. The wildlife habitat will provide a peaceful place to watch songbirds, butterflies, and other wildlife from the comfort of your own porch.

There are several programs that can fund backyard habitats and that can reward individuals and communities for their efforts. The Arizona Game and Fish Department Heritage Grant Program provides funds for habitat enhancement to increase opportunities for wildlife viewing in an urban area. Another program, the National Wildlife Federation Backyard Wildlife Habitat Program, is an effort to help people garden for wildlife. The program encourages individuals, neighborhoods, and

business owners to plan their landscape with the needs of wildlife in mind, and gives them the tools needed to make it happen. This program has a component that allows a community such as Barrio Centro to be certified as Community Wildlife Habitat. The Tucson Audubon Society offers series of free Urban Bird Walks, one of which is the Kino Wetlands, just south of Barrio Centro. Enhancing Barrio Centro's habitat to attract birds could draw a variety of songbirds, as well as some rare migrating or wetland bird species on their way to Kino Wetlands.

Plant List (Birds and Butterflies)

Acacia smallii

Chilopsis linearis

Prosopis velutina

Cercidium hybrid

Lycium berlandieri

Zizyphus obtusiflolia

Olneya tesota

Celtis pallida

Atriplex spp

Encelia farinose

Justicia candicans

Buddleia marrubifolia

Calliandra eriophylla

Trees

Sweet Acacia Desert Willow Velvet Mesquite Desert Museum Hybrid Ironwood Hackberry

Shrubs

Wolfberry Graythorn Saltbush Brittlebush Hummingbird Bush Wooly Butterfly Bush Fairy Duster

Wildflowers

Penstemon Salvia Desert Marigold Goodding's Verbena Mexican Poppy **Evening Primrose** Globemallow Trailing Four O'Clock Thistle Desert Lupine

Vines.

Oueen's Wreath

Snapdragon Vine

Slender Janusia

Yellow Orchid Vine

Penstemon spp Salvia spp Baileya multiradiata Verbena gooddingii Esch<mark>scho</mark>ltzia mexicana Oenothera primiveris Sphaeralcea spp Allionia incarnate Cirsium neomexicanum Lupinus sparsiflorus



Humming bird at a thistle flower.

Antigonon leptopus Maurandya antirrhiniflora Cholla/Prickly Pear Callaeum macroptera Janusia gracilis

Hedgehog Barrel Cactus

Opuntia spp Echinocereus engelmannii Ferocatus wislizenii

Brittle bush in bloom. Mielke, Judy. 2000. Native Plants for Southwestern Landscapes. Austin: University of Texas Press. http://wc.pima.edu/~bfiero/tucsonecology/

plants/wflowers.htm

http://www.fireflyforest.com/flowers/ comflowers.html

Cacti

