

Navajo Wash:



Hedrick Acres Neighborhood Pocket Park

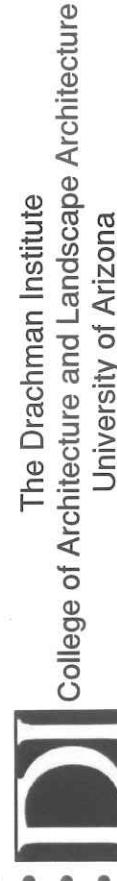
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Prepared for:
Hedrick Acres Neighborhood Association

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The Drachman Institute is the research and public service unit of the College of Architecture and Landscape Architecture at the University of Arizona, dedicated to the environmentally sensitive and resource-conscious development of neighborhoods and communities. The Drachman Institute dedicates its research and outreach activities to the proposition that housing is the building-block of neighborhoods, and neighborhoods are the building-blocks of communities.

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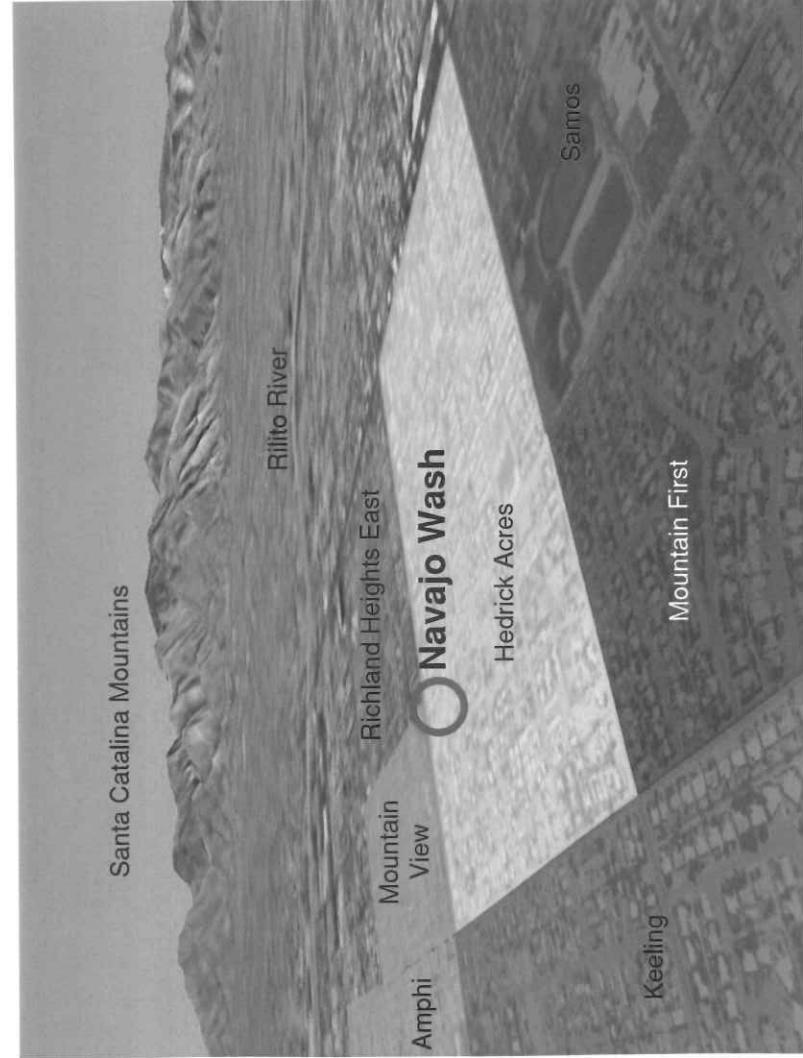
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Introduction - The Navajo Wash
Wash is located in the Hedrick Acres neighborhood. Hedrick Acres is a centrally located, well established neighborhood in mid-town Tucson. It has convenient access to many of the surrounding natural amenities but at present does not have a park within its neighborhood boundaries. The neighborhood association approached the Drachman Institute with the idea that the Navajo Wash site would be an ideal location for a neighborhood pocket park. This booklet is meant to provide the neighborhood with analysis on a variety of different elements currently existing or affecting the Navajo Wash and a masterplan of how they would like to see the site enhanced and enriched.

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Location - The Navajo Wash is an approximately two acre parcel of land owned by the city of Tucson. It was formerly used by the Department of Transportation as a storage area. Presently it functions primarily as a storm water management site. At the southeast corner of the site there exists a large drainage basin which two surface washes flow into. The other aspect of the site involving storm water management is a drainage channel (unpaved) which runs the length of the site. This channel helps convey any excess water, not drained by the basin, into larger drainage systems. At present the only other use contained within the site is a 40 space parking lot. This lot is used by university commuter students who catch the CATRAN bus system at a nearby stop.

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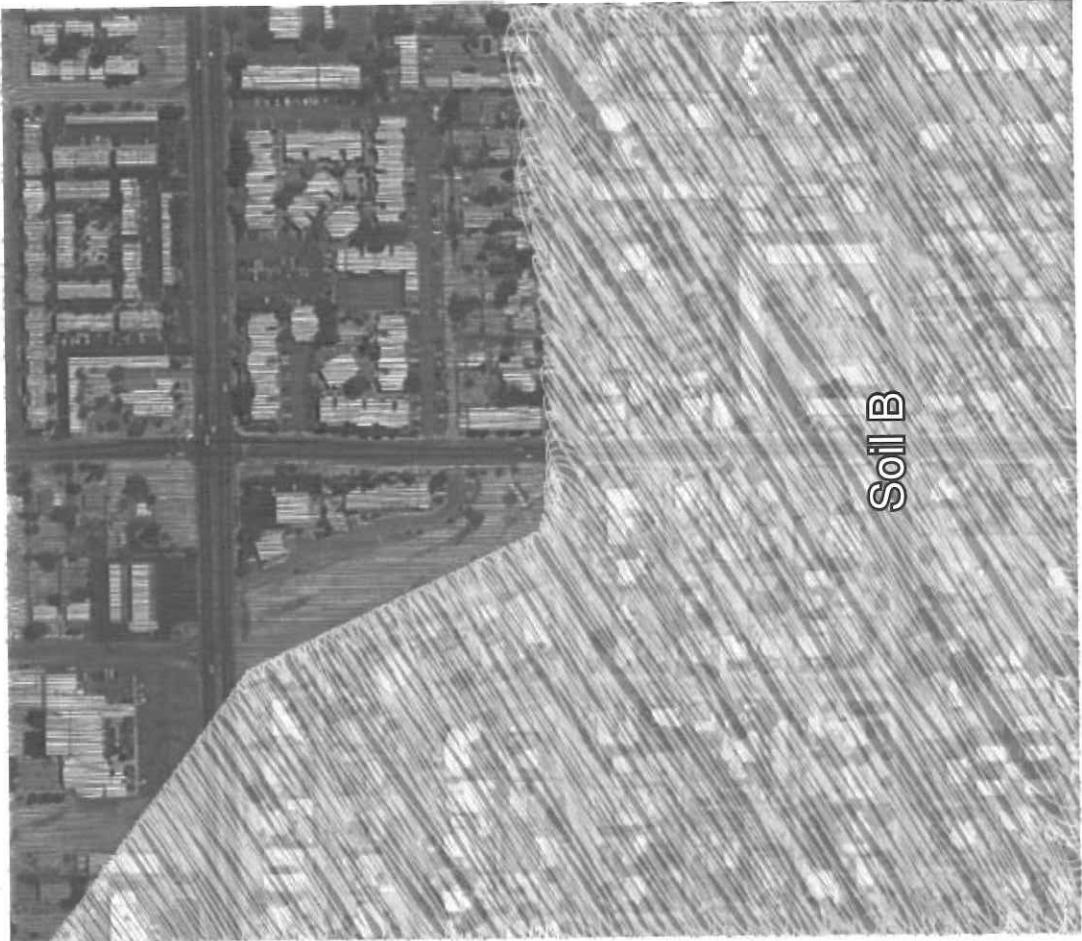
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Soil B

- **Soil Conditions** - The soil conditions within the Navajo Wash site are very similar to those that exist across the Tucson Valley. There exists little to no organic materials that generally make up O and P soil horizons. What is seen at the surface are typically A horizon soils. In a representative profile these soils are pale-brown gravelly loam at a depth of 11 inches. Below this is a layer of white indurated hardpan that is approximately 31 inches thick. The soil is moderately alkaline and calcareous throughout. Permeability is moderate to moderately rapid through the gravelly loam but once it reaches the hardpan it is slow. Planting root depth ranges from 4-20 inches.
- Within the drainage channel on site we can assume that the soils here are even more compacted and in many cases may closely resemble concrete. Adding vegetation will help break up the soils within the site at large and help increase permeability.

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- **Topography** - The topography of the site follows the natural topography which drops as one moves from the southeast to the northwest of the site. The slope in this direction is a gradual one to two percent. Within the site itself the parking lot sits approximately 4 feet above the wash channel surface elevation. There are no drainage problems of concern within the site primarily because if there were, the site would not be doing its job. Any modifications to the site should be done at grade or below grade to ensure that water flows are not hindered, diverted, or damaged.

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Local Washes - The Navajo Wash
Wash is a secondary wash within the Tucson city limits.
The Navajo Wash begins at the corner of Mountain Ave. and Hedrick Dr. It is fed from the south by the Mountain Ave. Wash and from the east by the Wilson Ave. Wash.
The Mountain Ave. roadway in the year 2000 underwent city implemented improvements during which some major drainage modifications were done.

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- **Watershed** - These two maps show at different scales the larger watershed of which the Navajo Wash is a part. When attempting to resolve local flooding and water related issues one must remember there are larger natural systems at work here. From the maps one can see that the Navajo Wash is part of a major east-west watershed within the Tucson city limits. Its defined area is approximately 1000 feet wide at any given point along its entire course. Once it reaches Oracle Rd. it contributes to the Flowing Wells Wash, which eventually drains into the Santa Cruz River.



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Disturbed Watercourse The city of Tucson has labeled the Navajo Wash site as a disturbed watercourse. In particular it is noted as having sparse vegetation. The area cannot host a high volume of vegetation because the possibility that this vegetation could hinder or divert water flow. But certainly the site can play host to thoughtful placement of vegetation clusters. These clusters are recommended to be placed on the higher elevation parts of the site and out of the wash channel. The banks of the channel can host single trunked trees placed in a direction parallel with the water flow.

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- Operation Splash - The intersections of Mountain Ave. and Hedrick Dr. and Mountain Ave. and Blackridge Dr. (shown with stars) are areas the city has recognized as areas subject to local flooding.
- While this localized flooding does not have major implications on the Navajo Wash site, these are two areas upstream which contribute to the overall quantity of water arriving on site. It can be assumed that any water not able to properly drain at these sites would continue downstream to the Navajo Wash.

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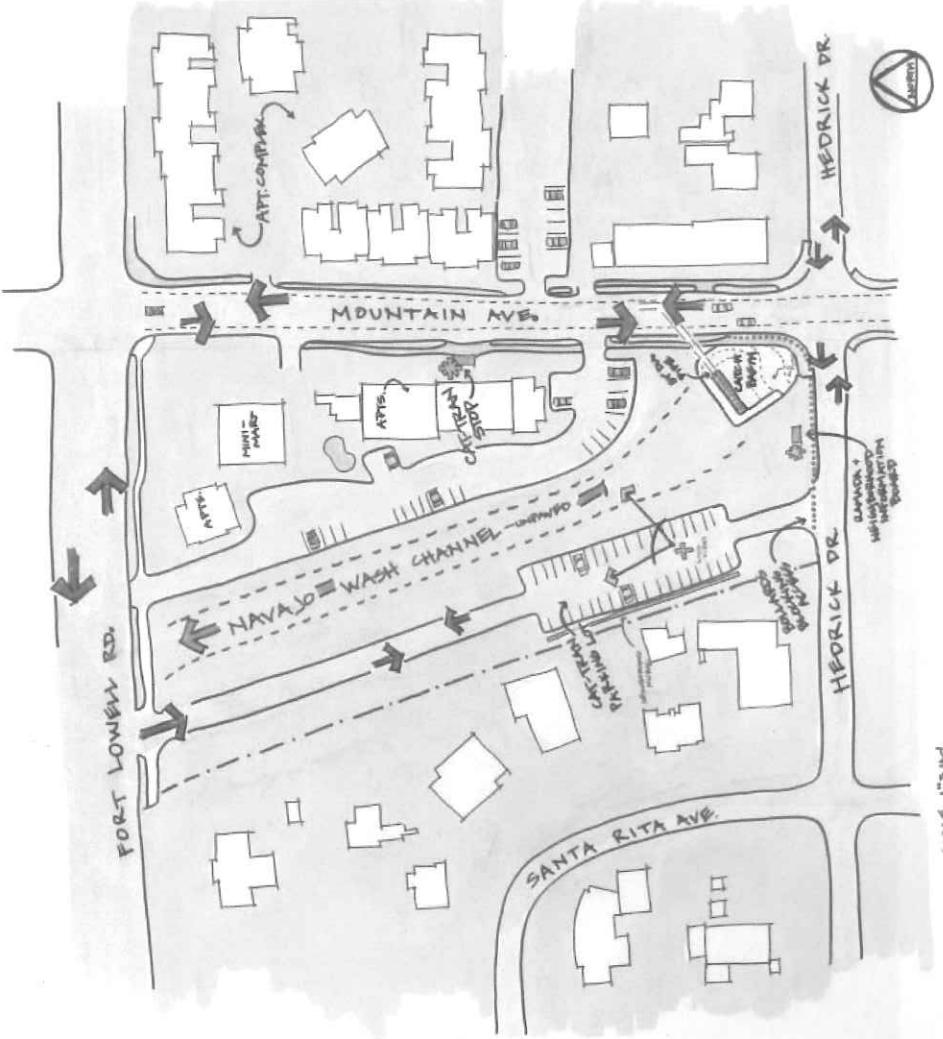
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- Site Analysis - The Navajo Wash resides just off the intersection of Mountain Ave. and Fort Lowell Rd. These are two major transportation corridors within mid-town Tucson. To the west and south of the site are low density residential units. To the east are three-story apartment units.
- At the southeast corner of the site there is a major drainage basin. As indicated, currently existing on site is a small parking lot serving commuter students who use the CTRAN services to reach the university. Vehicular access to this parking lot is from Fort Lowell Rd. There are excellent views of the Santa Catalina Mountains to the north-northeast. Also located on site is a small ramada which houses the neighborhood activity/information board. The only vegetation existing on site is through chance natural occurrence primarily occurring around the drainage basin.

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Concept - The Navajo Wash
parcel of land presents an excellent opportunity for a small, passive-use oriented pocket park for the Hedrick Acres Neighborhood. Some primary improvements include: addition of vegetation, establishment of wildlife habitat (bird and reptile), a designated pathway, curb cuts in the parking lot to promote water harvesting, and a shaded seating area. The establishment of wildlife habitat is accomplished through the use of native vegetation occurring in small clusters, with those clusters containing structurally diverse vegetation. The main wash channel has been left clear so as to not disrupt any water drainage during major rain events. No paved surfaces have been added. The added vegetation should aid in making the soils more permeable.

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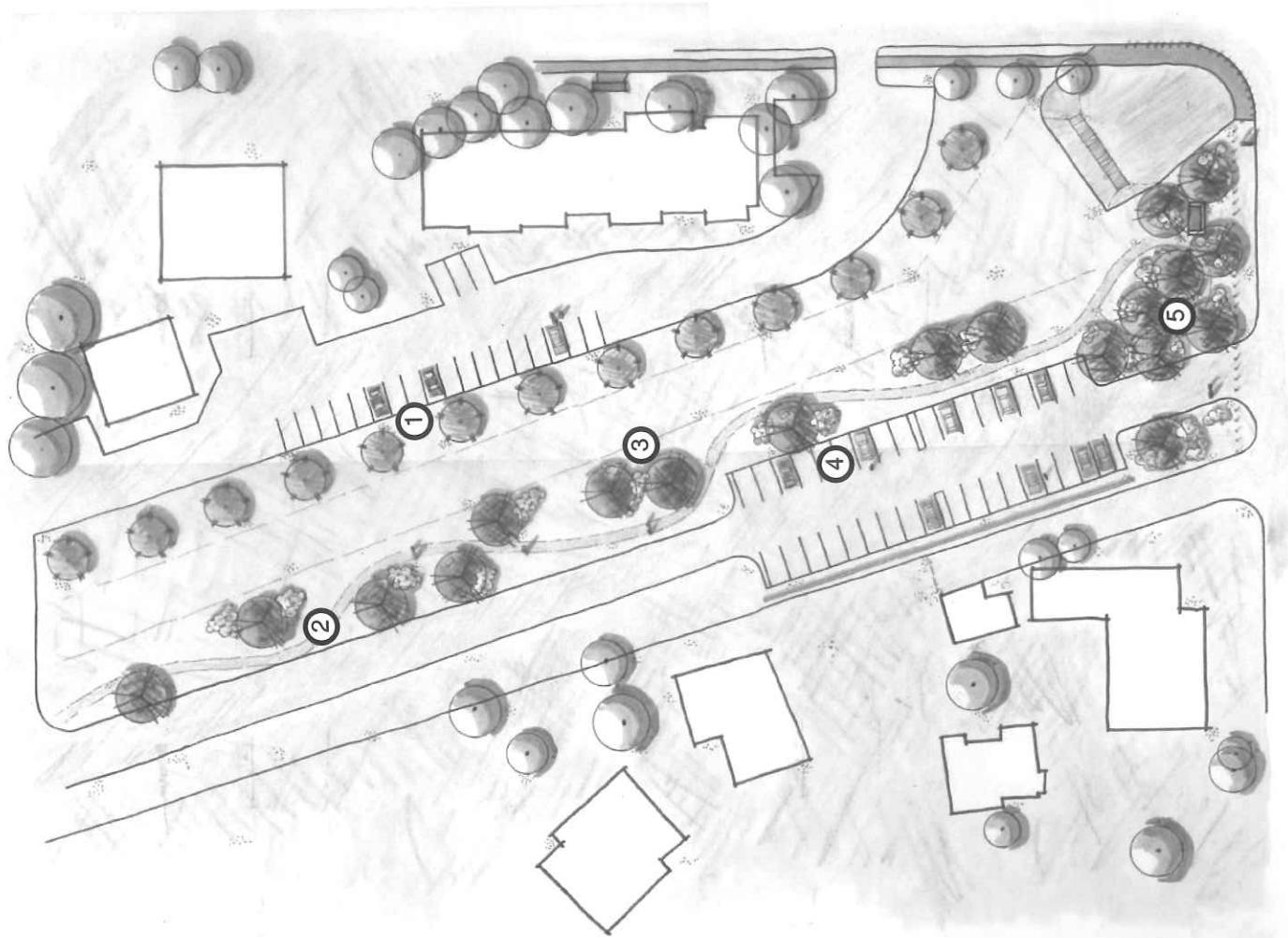
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- 1. **linear row of trees** - located on the steeper east slope leading out of the wash channel a long row of trees is proposed running parallel to the direction of water flow.
- 2. **pathway** - a designated non-paved pathway runs the entire length of the wash parcel.

- 3. **small vegetation clusters** - are placed intermittently along the length of the pathway.
- 4. **curb cuts** - a series of curb cuts within the existing parking lot is proposed to promote rainwater harvesting. These curb cuts drain into swales which help supply water to adjacent clusters of vegetation.

- 5. **mesquite bosque** - a small cluster of native mesquite trees surrounds the existing community bulletin board. This dense cluster of trees provides plenty of shade for the benches placed underneath their canopies. The pathway at this point makes a loop, completing back onto itself.

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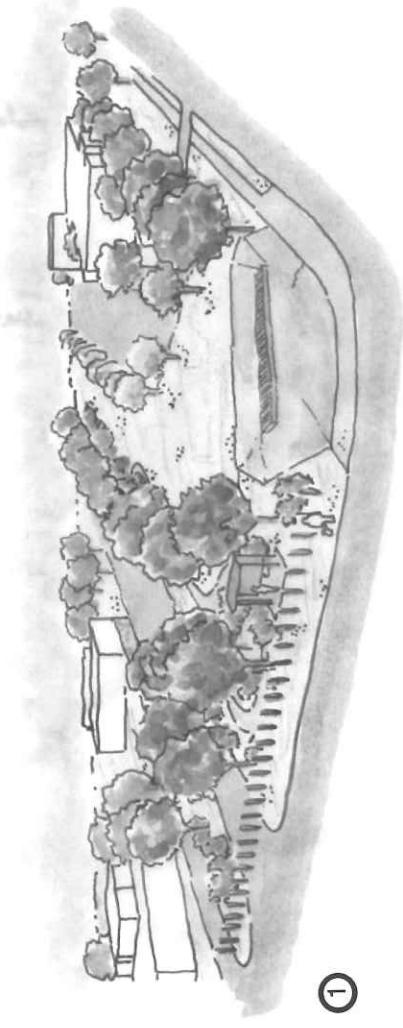
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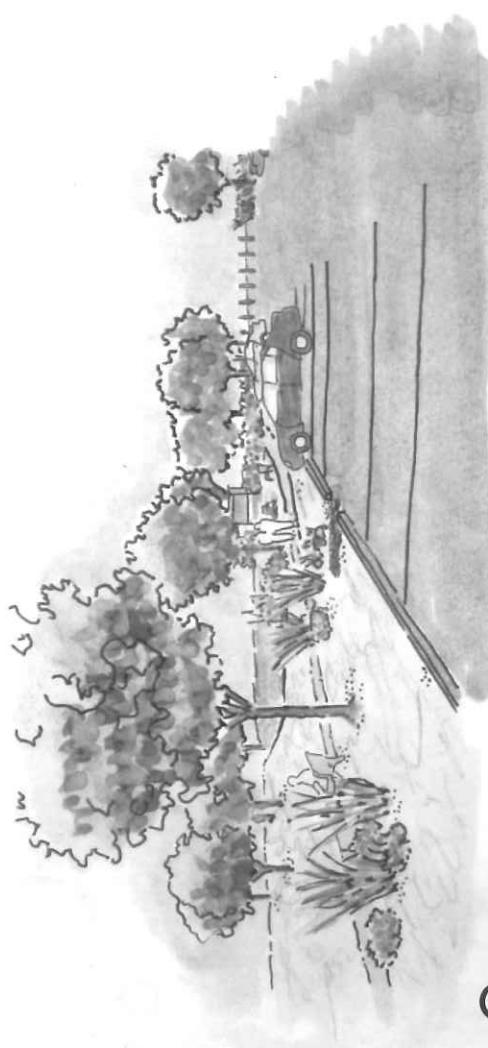
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- 1. This perspective shows a view of the Navajo Wash from the south. In the foreground one can see the current community activity board now surrounded by a small bosque of mesquite trees. Within this area the path makes a large loop and it is recommended benches be placed here to take advantage of shaded seating opportunities.



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- 2. This perspective is from the northern reaches of the parking lot facing south. Shown on the left is the proposed pathway. Along the length of this pathway there would be small clusters of native vegetation that receive rainwater harvested off the parking surface. Benches interspersed would provide for resting and viewing.



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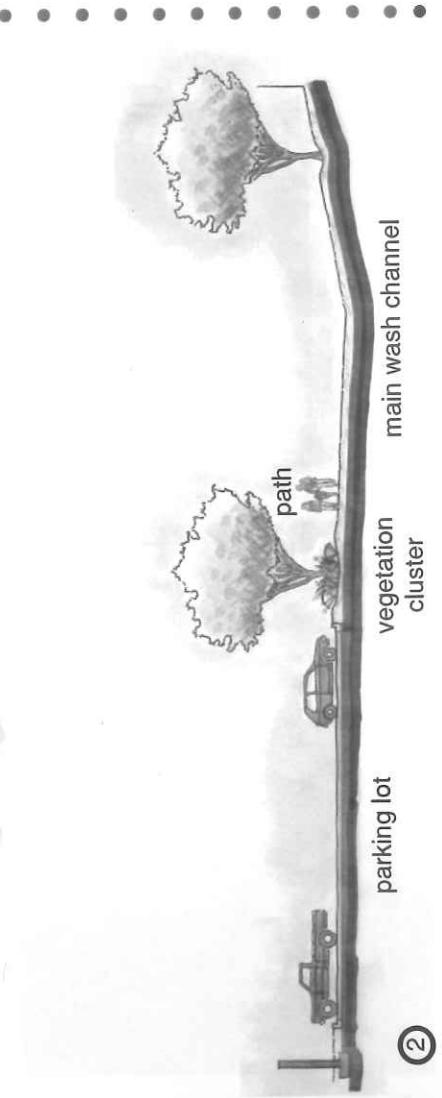
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1. A series of curb cuts is proposed within the existing parking lot. These curb cuts will help promote rainwater harvesting by directing surface runoff from within the paved parking surface into small vegetated basins. The use of native vegetation, adapted to the natural climate and precipitation rates will help ensure that the site stays vegetated.

2. This section drawing depicts an east-west cross section of the wash site with incorporated improvements.

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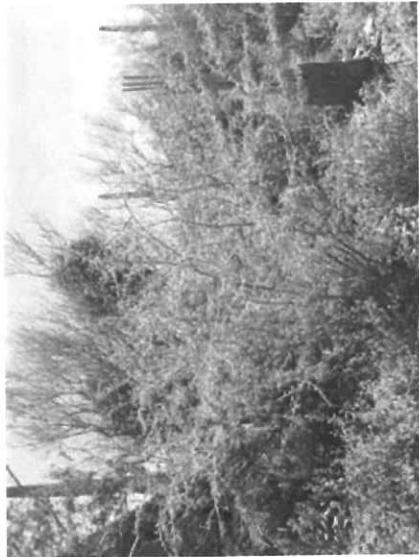
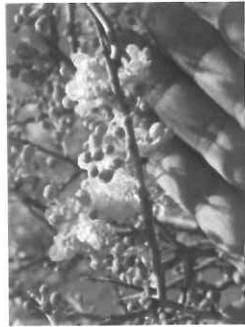
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Native Vegetation

- The use of native vegetation is strongly recommended.
- These native plants have long adapted to the climate regime present in the Sonoran Desert. In particular they are adapted to the extreme heat and relative lack of precipitation. The planting of native vegetation is one way to help ensure the site stays lush and vegetated for years to come.
- Additionally these native plants are favored by native wildlife (birds and lizards), and help provide important habitat, along with food and nesting sites.

Native Trees

Acacia constricta - Whitethorn Acacia (top)

Prosopis velutina - Velvet Mesquite (middle)

Parkinsonia floridum - Blue Palo Verde (bottom)

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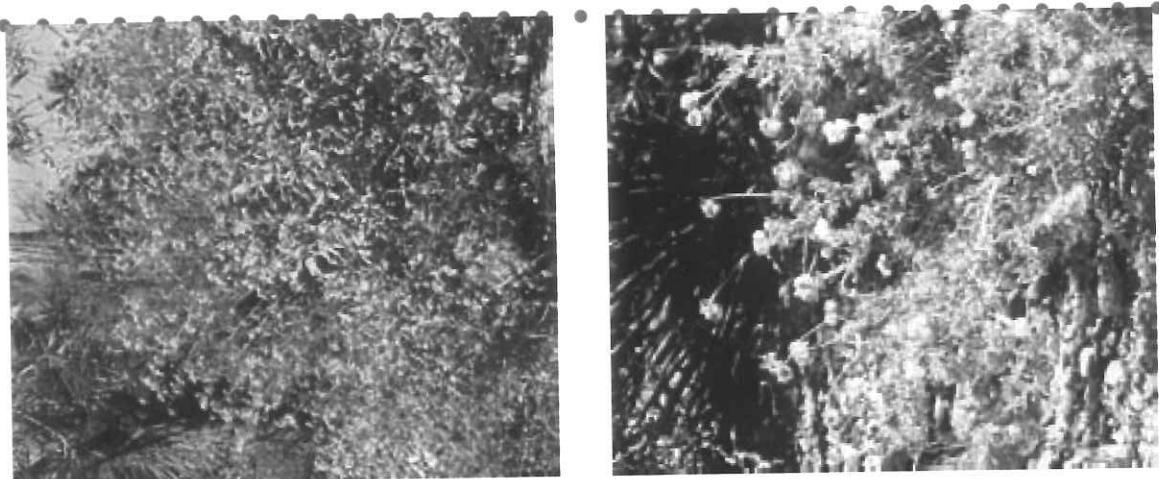
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Native Annuals/Forbs

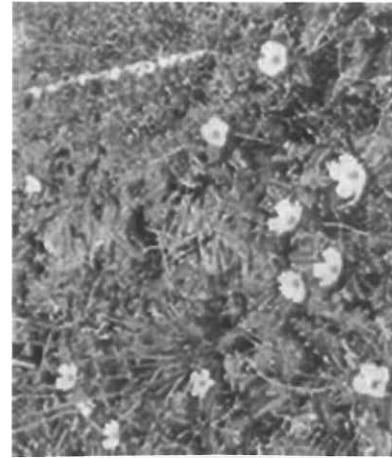
Bahia absinthifolia - Bahia (top left)

Baileya multiradiata - Desert marigold (top right)

Eschscholzia mexicana - Mexican poppy (middle)

Kallstroemia grandiflora - Summer poppy (bottom left)

Lesquerella gordoni - Bladderpod (bottom right)



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Native Annuals/Forbs

• *Penstemon parryi* - Parry penstemmon (top left)

• *Plantago insularis* - Indian wheat (top right)

• *Salvia columbariae* - Chia (middle)

• *Senna covesii* - Desert senna (bottom left)

• *Sphaeralcea ambigua* - Globemallow (bottom right)

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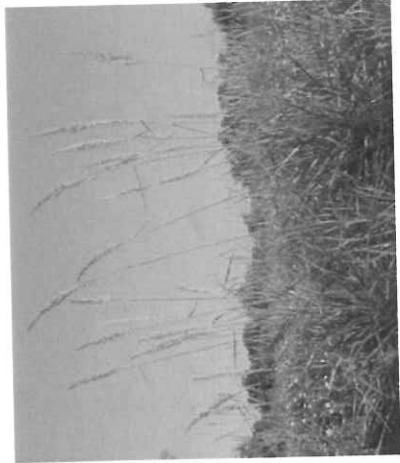
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- **Native Grasses**
- *Sporobolus cryptandrus* - Sand dropseed (top left)
- *Sporobolus contractus* - Spike dropseed (top right)
- *Enneapogon desvauxii* - Pappusgrass (middle left)
- *Aristida purpurea* - Purple threeawn (middle right)
- *Bouteloua rothrockii* - Rothrock grama (bottom left)
- *Digitaria californica* - Arizona cottontop (bottom right)