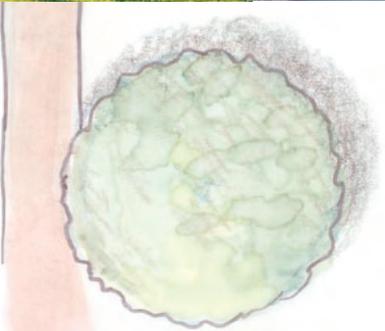
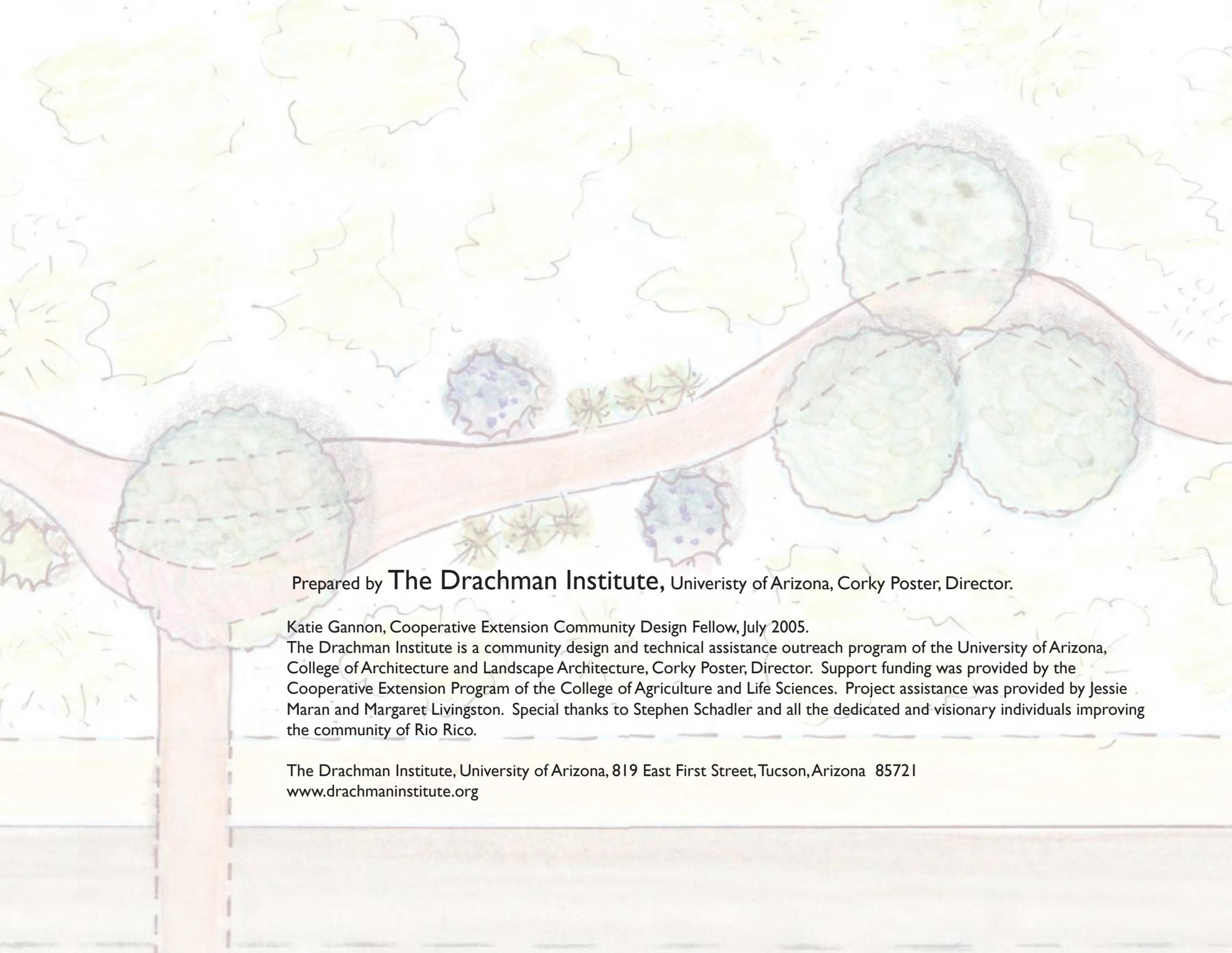


MAKING THE CONNECTION:

COMMUNITY FITNESS & THE RIO RICO COMMUNITY-SCHOOL GREENWAY



PREPARED BY THE DRACHMAN INSTITUTE
OF THE UNIVERSITY OF ARIZONA
JULY 2005

A watercolor illustration of a landscape. A winding path in shades of pink and orange leads through a scene with various trees and bushes. Some trees have green foliage, while others are purple or blue. The background is filled with soft, yellowish-green washes, suggesting a bright, sunny day. The style is soft and artistic, with visible brushstrokes and blended colors.

Prepared by **The Drachman Institute**, University of Arizona, Corky Poster, Director.

Katie Gannon, Cooperative Extension Community Design Fellow, July 2005.

The Drachman Institute is a community design and technical assistance outreach program of the University of Arizona, College of Architecture and Landscape Architecture, Corky Poster, Director. Support funding was provided by the Cooperative Extension Program of the College of Agriculture and Life Sciences. Project assistance was provided by Jessie Maran and Margaret Livingston. Special thanks to Stephen Schadler and all the dedicated and visionary individuals improving the community of Rio Rico.

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Summary

This project is the result of a local initiative by a group of concerned educators and healthcare professionals in the Rio Rico Community who want to address and begin to reverse the problem of childhood obesity within the community.

First we look into the complex problem of obesity, identify the root causes and ramifications of an inactive populace and identify what can be done to begin to reverse this disturbing trend.

Next the report examines national responses to the epidemic of obesity, initiatives engaged on many fronts, including community and urban design, transportation planning, and schools.

The report explores the community of Rio Rico from a local and regional perspective and identifies unique opportunities to effect the fitness and activity level of the community at the local level.

Finally, the report provides a conceptual master plan for a community greenway that connects people and neighborhoods to fitness opportunities, schools, local shopping, and other neighborhoods through a safe, scenic, affordable greenspace that invites and encourages physical activity.

Problem Statement

Americans are becoming heavier each year. There is more opportunity today to do less with our bodies than ever before. Physical activity has been engineered out of our lives and often design of the built environment precludes physical activity to the extent that it is downright dangerous to walk or bicycle. Often our only choice for exercise is to operate an indoor exercise machine or pay to go to a gym facility.

Our public schools play a huge role in the fitness and activity level of our children. But while public expectations are demanding of our schools, record overcrowding of facilities and burgeoning and severe budget crises within the public school system limit the services schools can offer. Budget cuts erode support for public education and reduce the capacity of public schools to equip children for the 21st century. Public schools are being asked to do more with less resources.

Meanwhile there is a growing national dialogue between community leaders and educators seeks to build partnerships within the community to sustain and strengthen public education, while fostering community and expanding resources available for use by the entire community. Communities and schools can do more for less when they join forces. Schools have the potential to serve as a much greater resource to the community.

The Rio Rico community is a microcosm of these national trends. Concerned healthcare and education professionals have joined forces to identify positive interventions the schools and community can make to reverse the growing prevalence of obesity in children while at the same time identifying opportunities to build and nurture neighborhoods and community around children and schools.

The Rio Rico Community Greenway Proposal invites the community into the schools while connecting neighborhoods to each other and to town services. It provides safe routes to school while promoting physical activity for the entire community. It provides a recreational amenity and a scenic and unique community resource while expanding educational resources and the learning environment for all citizens.

July 29, 2005

The Epidemic of Obesity

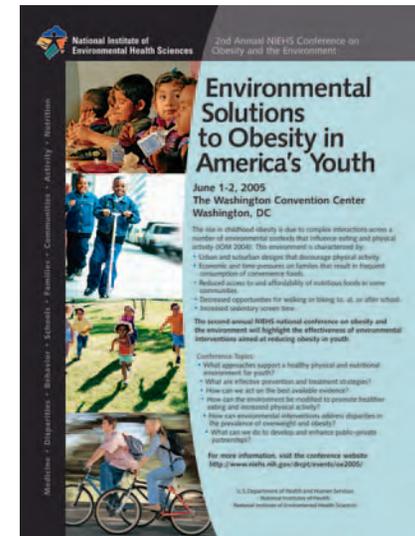
Obesity is a national health crisis. The Centers for Disease Control (CDC) report that in the year 2002 nearly 65% of Americans were overweight and 31% were considered obese. According to the CDC over two-thirds of Americans do not engage in the recommended 30 minutes of moderate exercise at least five days a week. In the year 2000, 40% of all adults engaged in no leisure-time physical activity; Hispanics were 63% more likely than whites to report no physical activity, and women are 20% more likely to report no leisure time activity. Meanwhile, the number of young people who are overweight has more than doubled in the last 30 years. Trends show obesity on the rise well into the future.

Physical inactivity is a major cause of sickness and disease in the United States. A 2002 “Call to Action” by the Surgeon General warned that obesity and overweight related maladies will soon cause as much preventable disease and death as cigarette smoking. It is estimated by the CDC that as many as 300,000 deaths annually are associated with overweight and obesity. Health care costs directly attributable to obesity are enormous, estimated at \$75 billion in 2003 (CDC).

Both the CDC and the Surgeon General emphasize the connection between exercise and weight control and between exercise and overall health. To begin to reverse the disturbing and accelerating trends in obesity, many changes in American behaviors and lifestyles must occur. Approaches to the problem that are comprehensive and address multiple roots of the problem will be key.

The planning and design of our communities must be addressed to affect the primary causes of obesity, especially among children. The siting and design of school facilities, neighborhoods, and community facilities are critically important to reduce many of the barriers to physical activity that currently exist in our built environment.

It will take years to begin to reverse the trends. There is much urgent work to be done.



Health Benefits of Physical Activity

In addition to weight control, physical activity helps prevent heart disease, controls cholesterol levels and diabetes, slows bone loss associated with aging, lowers risk of certain cancers and helps reduce anxiety and depression. Overweight children experience low self-esteem, negative body image, depression, stigma, teasing and bullying, and social marginalization.

Causes of Obesity in America

- Car dependent community design.
- Convenience and time savings of motorized travel.
- Increased reliance on fast food, prepared foods and soda.
- Increased sedentary time and screen time.
- Lack of access to exercise facilities.
- Lack of sidewalks and safe street crossings.
- Sharp reduction in number of children walking to, at, or after school due to siting/location of newer schools
- Safety concerns surrounding pedestrian activity (traffic speed and volume, and crimes against children).



Yavapai Drive approaching Garrett's from the west is hostile to bicycles and pedestrians. New subdivisions are located on both sides of the narrow street.

Barriers to Improving Existing Environment

Not only are there significant impediments to walking and bicycling as noted above, but there are additional barriers to making sustained positive change in the way we build communities:

- Lack of awareness of the “problem.”
- Inertia: institutional, attitudinal, behavioral.
- Vested interests in status quo.
- Competition for funding resources to affect change.
- Public decision-making emphasizing short term outcomes.
- Outdated land-use planning regulations.
- Ineffective public involvement.
- Public agencies/professionals with narrowly perceived missions.



The development patterns embraced over the last 50 years are characterized by segregated land uses, low density development and auto-centered transportation systems. The design of much of our urban and suburban environments have effectively eliminated walking or bicycling as a means of transportation and leisure. Even very short trips are now made by car. Walking or bicycling to school has become dangerous. Streets are designed to move cars at maximum efficiency. Elevators have decreased the use of stairs. Physical activity has literally been engineered out of our life.



Getting Communities Moving

National Initiatives for Creating Active Communities

There are many national initiatives that seek improvement in public health through community planning and design. Lasting change starts at the grassroots with concerned citizens and public officials taking action locally. There are significant resources available to support local initiatives and positive change.

Smart Growth Movement

The concept of Smart Growth has emerged as a collection of public policies designed to shift the course of development and design of the built environment so as to minimize the negative impacts of sprawl and to favor investments in the health and livability of existing communities (Morris, 2002). www.smartgrowth.org.

10 Objectives of Smart Growth

1. Mix land uses
2. Utilize existing community assets
3. Ensure a broad range of housing options
4. Create walkable, compact neighborhoods
5. Promote distinctive communities with sense of place
6. Preserve open space and natural beauty
7. Strengthen and encourage growth in existing communities
8. Provide a variety of transportation choices
9. Make development decisions predictable, cost-effective, fair
10. Encourage citizen participation in development decisions



Healthy People 2010 is a national health initiative of the U.S. Department of Health and Human Services Centers for Disease Control (CDC). The program establishes national goals to reduce preventable threats to health. Specific goals for increasing physical activity call for walking to be the mode of choice for 50 percent of trips to school under one mile by the year 2010. www.healthypeople.gov.

The White House **Healthier US Initiative** launched in 2002 identifies four keys for a healthier America. The first is to “be physically active every day,” along with “eat a nutritious diet, get preventative screening, and avoid risky behaviors.” www.healthierus.gov.

Schools as Centers of Community: Community/School Partnerships

Increasingly, education and society each require the other. Communities must play a powerful role in supporting the academic and social mission of public education to prepare all of our children to lead productive lives in a democratic society. Community-school partnerships create public capital that supports and sustains public education. At the same time, schools serve as an anchor for a community; they bring neighbors together for PTA meetings, school plays and soccer games, they offer libraries to residents and classrooms for adult education classes.

School districts and state and local governments are facing severe and unprecedented budget constraints. There is an urgent need to develop creative solutions and incentives that encourage increased collaboration between schools, local government agencies, civic and community organizations and healthcare professionals and stretch limited public tax dollars. New Schools / Better Neighborhoods (NSBN) is a civic advocacy organization formed to promote schools as centers of vital neighborhoods. Visit NSBN at www.nsb.org.

National Center for Bicycling & Walking

is a major program of the Bicycle Federation of America, Inc. (BFA), a national nonprofit organization established in 1977 whose mission is to create bicycle-friendly and walkable communities. The BFA received a major multi-year grant from the Robert Wood Johnson Foundation to provide comprehensive information and resources to communities and professionals working to create more activity-friendly communities. This comprehensive website can be accessed at www.bikewalk.org.



The Role of Schools In Preventing Childhood Obesity

In *Preventing Childhood Obesity: Health in the Balance* (2004) the National Academy of Science recommends that state and local education authorities and schools take action to reduce the prevalence of childhood obesity:

1. Ensure all children participate in a minimum of 30 minutes of moderate exercise each school day.
2. Expand opportunities for physical activity through physical education classes, intramural and interscholastic sports programs.
3. Allow after school use of school facilities as community centers.
4. Institute walk and bicycle to school programs.
5. Develop curricula for nutrition and physical activity to reduce sedentary behaviors.
6. Develop school policies to keep students free from advertising.
7. Conduct annual assessments of each student's BMI (body mass index) percentile and make this information available to parents.

Safe Routes to School

Thirty years ago 66% of all students arrived to school on foot or bike; today it is less than 30% nationwide. In Rio Rico, according to the district office, less than 3% of the student population walk or bike to school. The Safe Routes to School Movement endeavors to increase the proportion of children who walk and bike to school. The goal is to make walking and bicycling to school a safe and attractive option. www.saferoutestoschools.org

Benefits of walking/bicycling to school:

- Improves strength, builds muscle, decreases body fat
- Experience freedom/responsibility of getting to school
- Children arrive at school alert/refreshed
- Increase connection of children to communities
- Reduce morning traffic congestion
- Improves self-image
- Increases likelihood of physically active adulthood
- Improve health and weight
- Improves endurance, balance, flexibility



Infrastructure + Inspiration = Healthy Communities

Physical changes to the built environment combined with motivation will increase in physical activity.

The National Center for Bicycling suggests these steps.

Schools:

- Build within walking distance of population (location)
- Make it easy to walk and bike to school (access)
- Design and develop friendly sites (design)
- Control cars
- Encourage biking and walking
- Plan and manage schools as community centers

Parks and Recreation:

- Include parks/playing fields in new subdivisions
- Add parks to neighborhoods that lack them
- Locate parks where they are easily accessible by bikes and pedestrians
- Create smaller park sites instead of larger regional facilities that require a car
- Ensure schools and school grounds meet a broad range of community needs
- Develop trails that neighborhoods can walk or bike on



Greenways and Trails

A **greenway** is a system of linear open spaces, of various widths, linked together in a network, and managed for multiple purposes, such as recreation, transportation, ecology, education, aesthetics.

Key elements

1. Greenways are a conduit for movement.
2. Greenways provide linkages (synergies).
3. Greenways are multifunctional.



Fitness Benefits of Greenways

Trails and greenways provide healthy recreation and transportation opportunities by creating attractive, safe, accessible places to bike, walk hike, jog and skate:

Greenways make it easier for people to engage in physical activity.

Trails and greenways connect people with places and provide an opportunity for physical activity on a daily basis.

Trails and greenways make natural and scenic areas accessible and cause people to actually want to be outside and physically active.

Trails and greenways connect neighborhoods and schools so children can walk or bicycle to school or to a friend's house.

Trails and greenways provide a cost effective and convenient way to exercise and provide a social connection as well.

If you build it, they will come

Case studies show that new greenways get used because the amenity lowers the cost of walking or bicycling (in terms of time, safety, comfort). Where no safe, direct way to make a non-motorized trip existed before the development of a greenway, the creation of a trail induces people to walk. Greenways have the ability to attract people out of their cars for trip making (in addition to recreation) because greenways provide a direct route, a pleasant travel experience and a way to get exercise while making the trip, all at a personal cost savings.



Community Benefits of Greenways

Transportation. Facilitate non-motorized trip making.

Economic. Increase property values along the route, job creation for gear for fitness and related services.

Public Health. Increase physical activity levels, decrease auto emissions.

Open Space. Preserve scenic corridors, habitat and recreation space.

Education. Use interpretive signage for wildlife, ecological and historic aspects of trail.

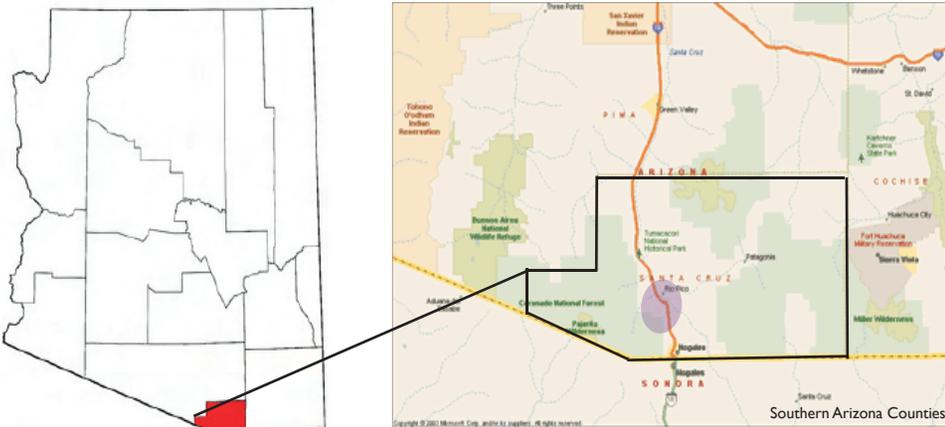
Social Capital. Increase interaction among community members.

The Community of Rio Rico

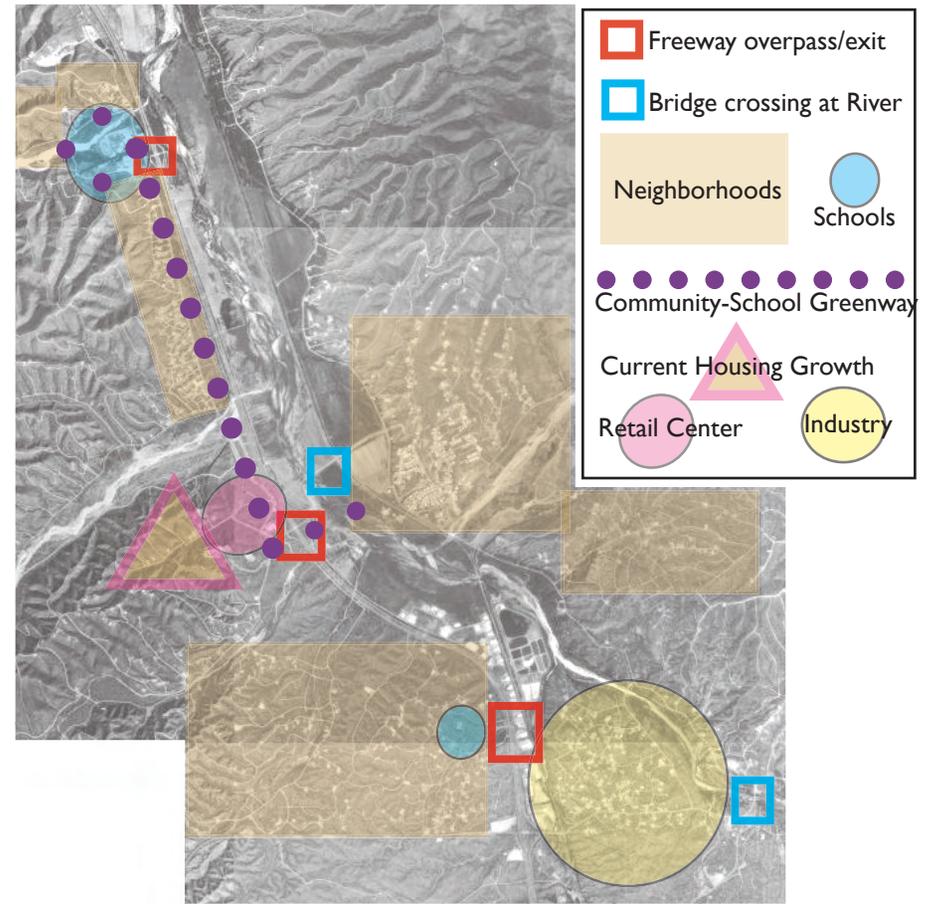
Rio Rico is at 3800 feet elevation in Santa Cruz County in Southern Arizona. The region offers beautiful vistas across hilly Sonoran Desert grassland to the rugged peaks of the Santa Ritas. Rio Rico is located among the foothills of the 6000 foot high mountain ranges of the San Cayetano to the east, the Tumacacori Mountains to the northwest and the Atascosas to the west. National Forests exist both east and west of the community. Rio Rico is located 57 miles south of Tucson and 12 miles north of Mexico.

This region of the Sonoran Desert offers amazing biodiversity due to the range of available habitats and proximity of year round water. The area is nationally known for its excellent birding, with several birding preserves, such as Patagonia-Sonoita Creek Preserve (Nature Conservancy) and Buenos Aires National Wildlife Refuge and Ciengas (Arizona State Game and Fish). The Santa Cruz River with its perennial flow north, is an international bird migration corridor and historically is quite important to the history and settlement of the area.

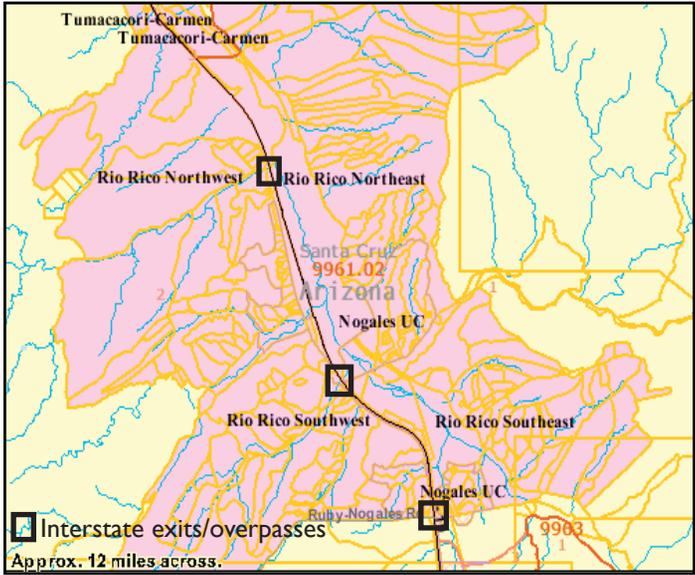
The entire 40 mile Santa Cruz River Corridor from Rio Rico north to Sahuarita is lined with Master-planned retirement and golf communities. The area continues to experience rapid housing growth, the major industry in the region.



Rio Rico, Arizona is a dispersed, rural, unincorporated community of 11,000 inhabitants covering a geographic area of approximately 12 square miles. It is divided through the center by Interstate 19, a busy freeway extending from Nogales, Arizona to Tucson, Arizona. The Santa Cruz River runs adjacent to the Interstate on the east. Connections between the east and west side of the community are made across the Freeway by three overpasses at approximately three mile increments. Rio Rico has grown in four distinct settlement patterns. In the southeast is Rio Rico's South Industrial Park; driven by its proximity to Mexico, the 270-acre park is an international warehousing and distribution center benefiting especially from the Mexican produce trade and maquiladora manufacturing plants located in Sonora, Mexico.



Southwest Rio Rico was founded as a planned community in 1969 with the Rio Rico Resort and Golf Course. This area is also the gateway to Pena Blanca Lake and the Coronado Forest recreational areas. Calabasas Middle School is located in the southwest portion of Rio Rico, isolated from other Rio Rico Schools that are grouped at one location in the northwest. Modest single family homes and some multifamily units occur along the west frontage road to northwest Rio Rico. More expensive homes occur along the east side of the Santa Cruz River and in the San Cayetano foothills of northeast Rio Rico. The largest concentration of housing occurs in the center of the community along Rio Rico Drive, east of the Santa Cruz River and in close proximity to Sonoita Creek. The commercial center, consisting of a Garret's grocery store, a public library and a couple of restaurants, is across the overpass on the west side of the Interstate.

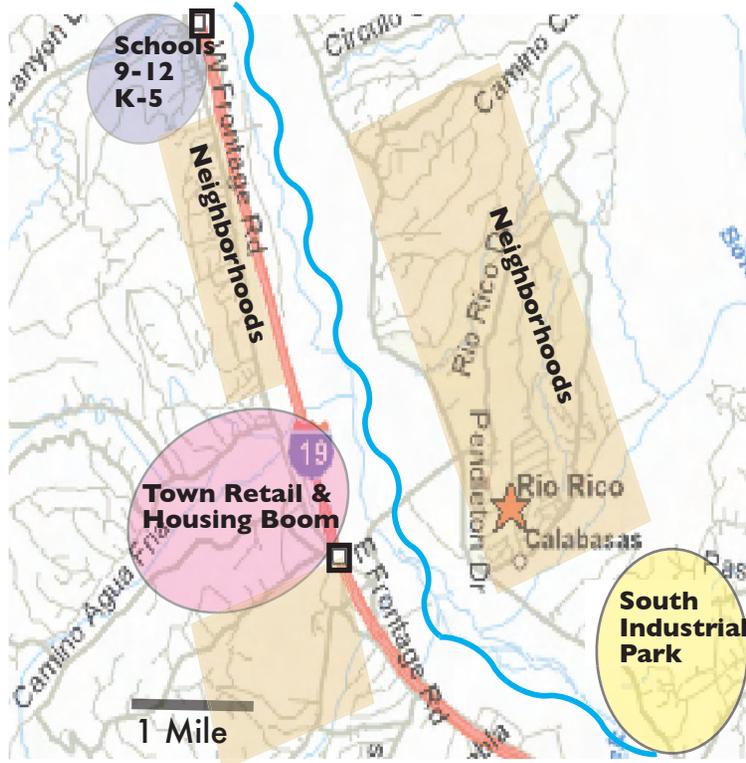


Rio Rico Planning Considerations

Because Rio Rico is an unincorporated community, haphazard growth over 30 years - shaped and controlled by private sector investment decisions - has created a community that lacks cohesion, connection and a clear center.

Rio Rico has a library and few other public facilities. It has two remotely located parks, inaccessible to neighborhoods and pedestrians. There is one privately owned racquet and swim club. Santa Cruz County School District #35 provides recreational amenities to the community yet the schools are isolated, separated from the population by narrow, high speed roads accessible only by car. There is a complete absence of pedestrian infrastructure; it would appear that pedestrians have not been considered at all.

The quality of business and housing growth that Rio Rico can attract in the future depends upon the ability of the community to ensure the health and safety of its citizens and to supply basic public amenities such as parks, recreation opportunities, community facilities, open space, walking and bicycling routes, safe streets and connections between neighborhoods and services.



New subdivision located south of Garret's lacks any pedestrian connection to larger community.

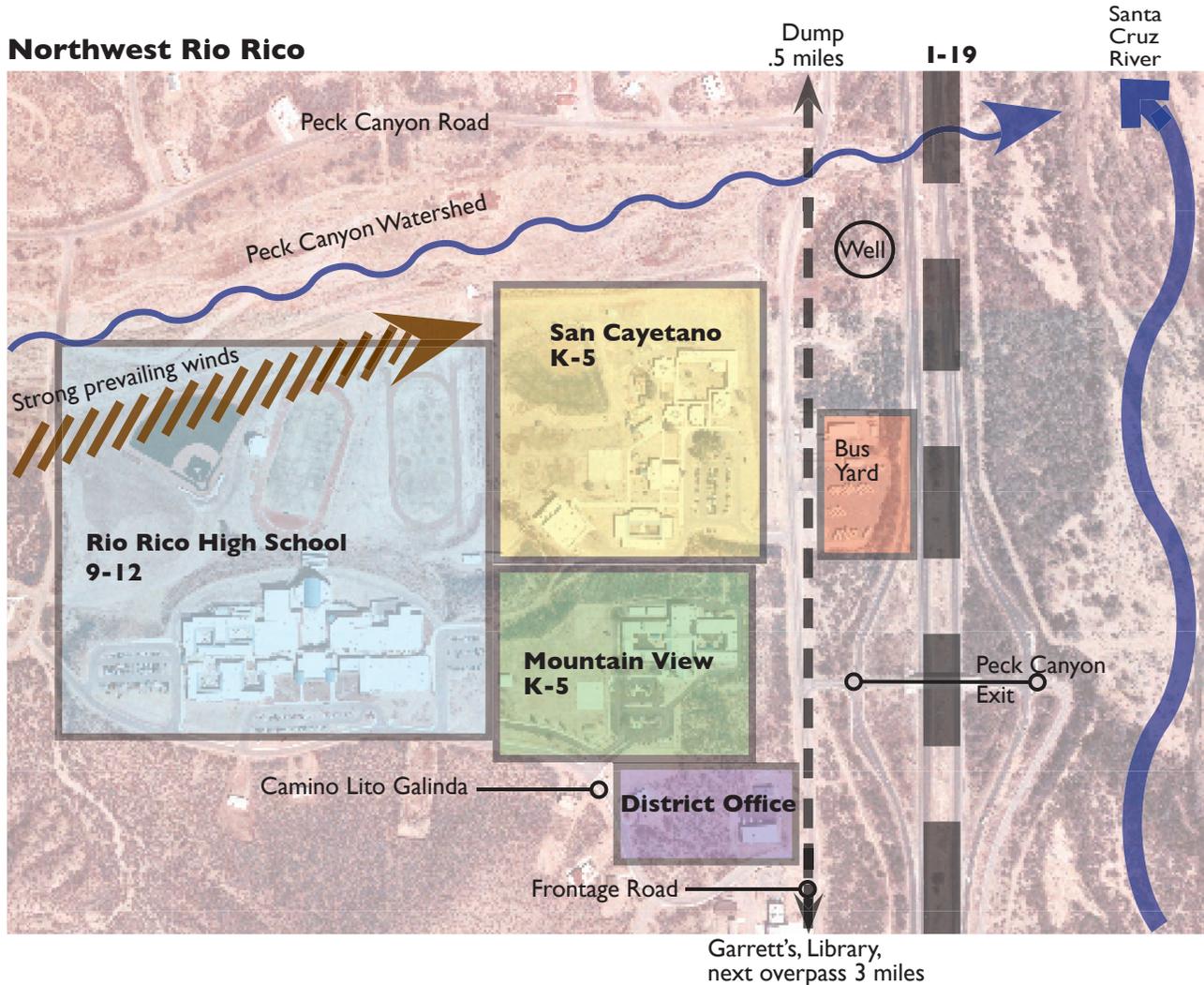


Scenic Rio Rico. Cutting of the Santa Cruz River with San Cayetano beyond. Winter - northeast Rio Rico.



Unfriendly, high speed frontage road discourages any pedestrian/bicycle travel.

Northwest Rio Rico



Rio Rico Schools

Rio Rico High School was built 11 years ago and has an enrollment of 1010 students; the facilities were built for 1450. The high school serves Rio Rico and the communities of Tubac, Carmen, Tumacacori and Amado. Seventy-nine percent of Rio Rico High School students receive free or reduced price lunches. The student body is approximately 85 percent Hispanic with 74 percent reporting Spanish as the primary home language.

Adjacent to the High School are two elementary schools (K-5): Mountain View, located directly east, and San Cayetano, located to the northeast. The High School buildings are positioned on top of a ridge and the ball fields are located below in the Peck Canyon floodplain. The Peck Canyon Wash runs into the Santa Cruz River just west of the schools, on the opposite side of I-19. The field area adjacent to the wash was once a riparian area but has been disturbed and is now much degraded. Dominated by invasive species such as desert broom and the non-native tamarisk bush, no native riparian vegetation remains. A community well within a cottonwood grove is located adjacent to the site.

Currently, the bus system is the exclusive mode of transport to the three schools (97% of children arrive by bus). Legally, Santa Cruz County School District Number 35 (the District) must provide bus transportation to all residents, including those within walking distance, when no "safe" routes to school exist. The Drachman Institute design team walked the Frontage Road and noted that the road also serves the regional landfill and is heavily utilized by trucks. A steep hill just north of the school meets a narrow bridge crossing the Peck Canyon Wash. The result is a high speed, narrow truck crossing, intimidating and dangerous to even adults. Children that live just north of the schools require transport by bus to reach school safely.

Issues Affecting Santa Cruz Valley Public Education

- Severe budget shortfall in the year 2005
- Over-crowding of school facilities
- Reduction in future funding
- Nation-wide trend of erosion of support for Public Education
- Community stress factors such as, health and obesity rates, poverty.



Rio Rico Community-School Greenway Project Goal

Master Plan a multi-modal, interconnecting loop trail, between three adjacent schools and the school district office and extending along the 3 mile county-owned Frontage Road to Garrett's, with connections to all neighborhoods along the way; enhanced with multi-purpose amenities serving both the community and school populations, to be referred to as a Community-School Greenway.

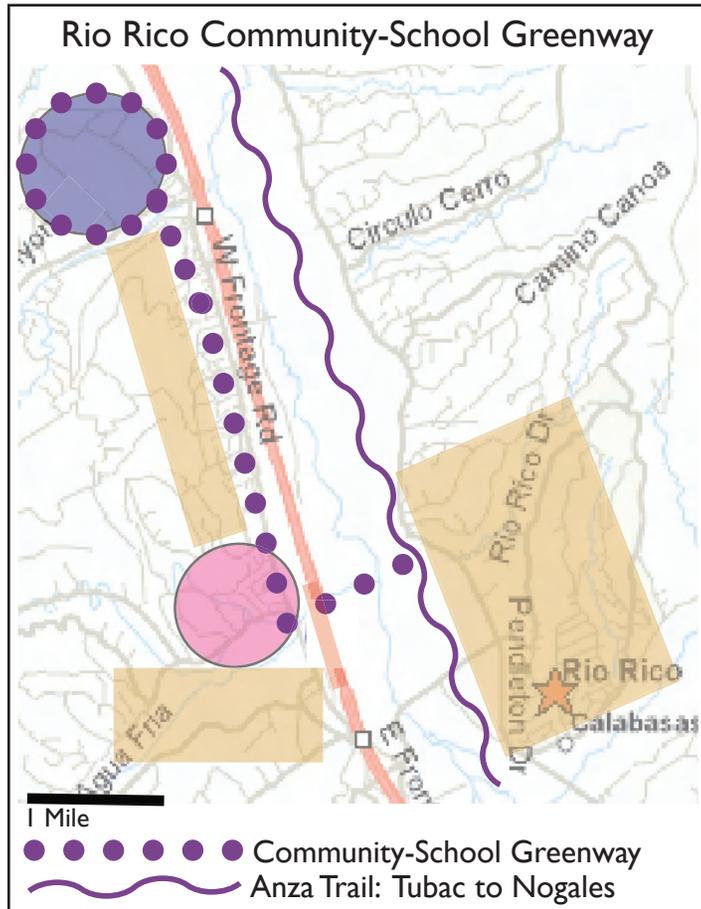
Project Objectives

- Provide safe routes for walking and bicycling to school
- Build health/fitness infrastructure for community of Rio Rico
- Expand school/community educational resources and facilities
- Expand learning environment to outdoors
- Provide recreational amenity for community of Rio Rico
- Provide walking access between schools and district office
- Build partnerships between schools and community
- Enhance area aesthetics
- Create a center for the community around schools, children and education
- Create a physical and social connection between neighborhoods and schools
- Encourage and motivate physical activity
- Ensure safe pedestrian and bicycle environment
- Incorporate physical activity into daily life





Rio Rico Community-School Greenway
Master Plan



Making the Connection Between Rio Rico Neighborhoods and Rio Rico Schools

The Greenway connects the community of Rio Rico to itself: neighborhoods to schools, to town services, and to one other. The Greenway extends through and around the Rio Rico school complex (including the school district office) and proceeds south along the three mile County Frontage Road to the town shopping plaza. An essential connection is then made east across the Rio Rico Drive overpass to the Anza Trail Head at the Santa Cruz River. This directly ties the Greenway into a larger regional trail system. The Anza Trail is a scenic, regional recreational trail extending from Nogales to Tubac along the Santa Cruz River.

The adjacent map shows the route of a 3-mile scenic greenway along the 150' wide public right-of-way (ROW) of the County Frontage Road. This provides a safe pedestrian and bicycle connection between the retail corridor, new and existing neighborhoods, and three Rio Rico Schools.

Features

- Separates vehicles from pedestrian/bicycle traffic.*
- Separates pedestrians from bicycles.*
- Serves as community recreational corridor.*
- Preserves a scenic corridor.*
- Provides safe connections between neighborhoods, schools and businesses.*
- Connects to Anza Trail (regional trail system).*

The Anza Trail, extending from Nogales to Tubac is connected to the Community-School Greenway.



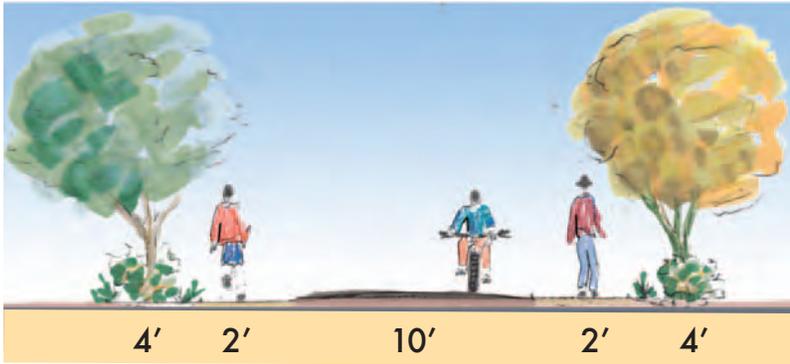
Garrett's, Rio Rico Library, restaurants, new subdivisions are connected to the proposed Greenway.



Picnic area located at Garrett's shopping center is made accessible to bikes and pedestrians by the Greenway.



Community Greenway- West Frontage Road

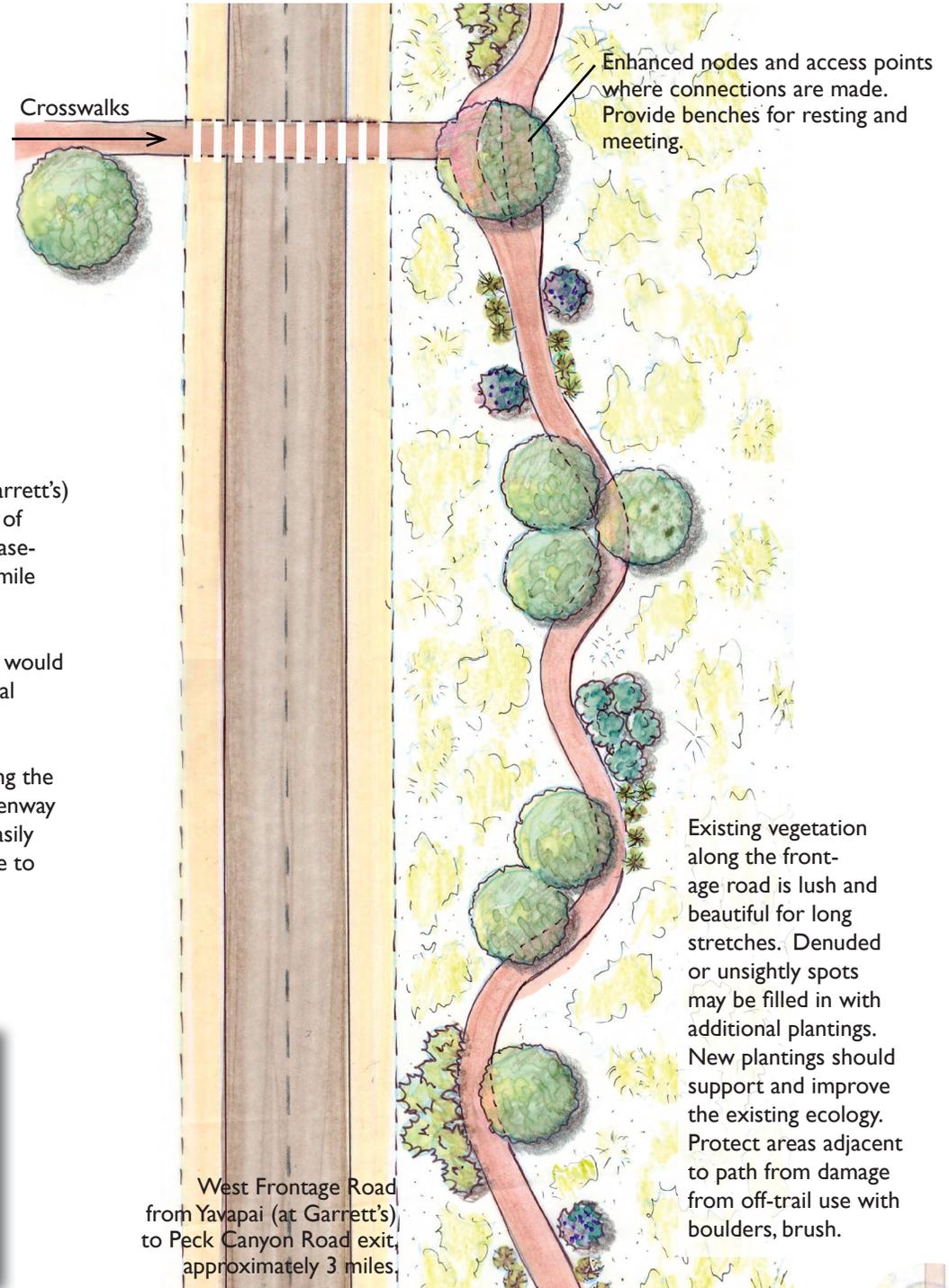


A 150' County right-of-way exists along the West Frontage Road from Yavapai (at Garrett's) north to the High School and Primary Schools at Peck Canyon Road Exit, a distance of about 3 miles. A functional and scenic greenway route meanders along the Utility Easement that currently exists and runs parallel to the Frontage Road for most of the 3 mile distance.

This multiple-use corridor is feasible and may prove to be a low cost route as there would need to be only limited site preparation to make the utility easement into a functional bicycle/pedestrian greenway.

Legible and attractive connections to new and existing neighborhoods are made along the entire route, along with safe street crossings and Greenway access points. The Greenway experience is integrated into everyday life as an alternate transportation route, an easily accessible, enjoyable exercise opportunity and a social conduit, as well as a safe route to school.

Established neighborhoods along Frontage Road north to schools are connected to one another, to schools and to town services via the proposed Greenway.

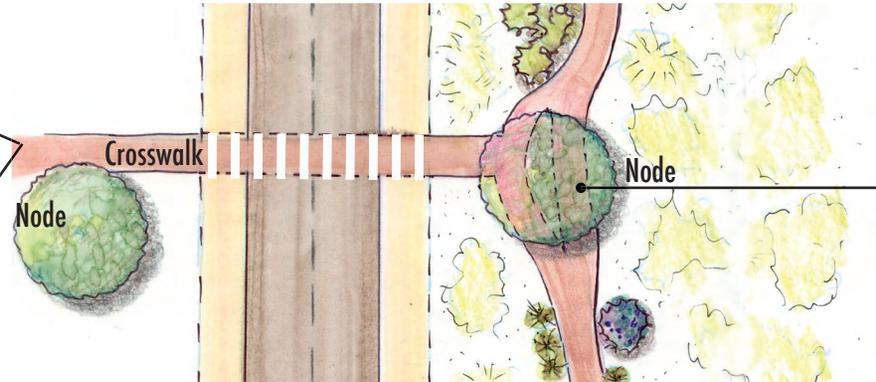
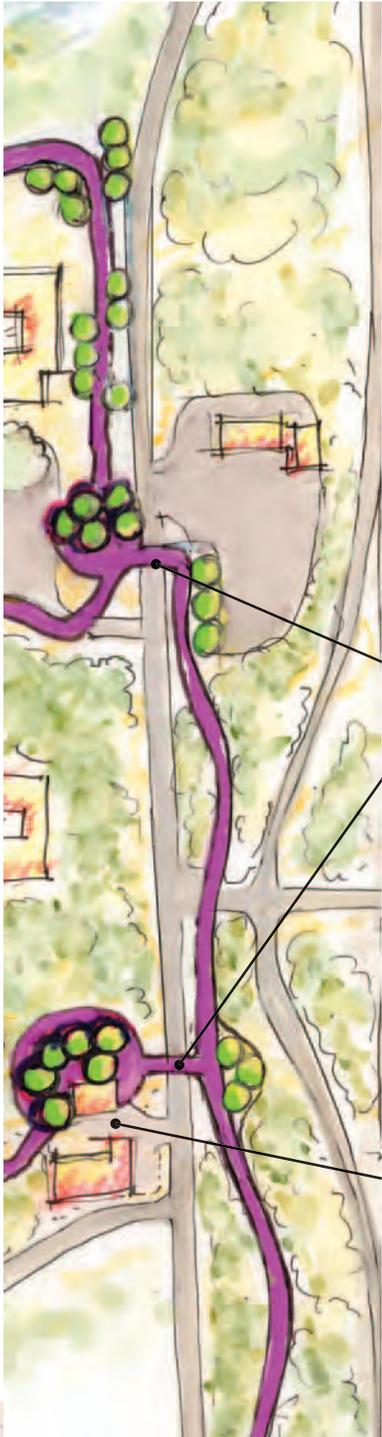


Safe Crossings and Connections

Safe, visible crossings create essential connections.

Crosswalks connect neighborhoods to the greenway, provide children access to schools, and are designed to subjugate autos to pedestrian movement at crossing points.

Safe street crossings require clear delineation. Clear signage along with material, color and texture changes from asphalt roadway offer effective and attractive differentiation.



Create enhanced nodes at access points and where connections are made. Provide shade, seating, a place to meet, rest, sit.

District Offices - Proposed Gateway and enhanced node for use by District Office employees, among others.



Gateways

Enticing, inviting, intriguing. Highlight a scenic view, provide a sitting place for reading, talking, eating, resting, meeting.



San Cayetano. Proposed Gateway/Node location. Provide seating under the canopy of cottonwoods - a great meeting spot.



Gateway Examples



Mountain View Primary School - Great location for Gateway to Greenway with a scenic view of the San Cayetano Mountains to the east.

District Offices - Proposed Gateway and Trail Node



Gateway Concept for Mountain View

Event Ramada Group Area

*Establish memorable places
Offer locations for activities, services
Highlight points of interest
Permit rest stops and socializing*

Develop a park-like area with multiple shade trees, bench seating and a permanent shelter/structure with fixed tables. Additional amenities would include access to power, a drinking fountain and perhaps barbecue facilities with night lighting. Plant tall shade trees west of the bleachers and place a small bike rack in the vicinity to support and encourage individuals who bicycle to and from events, though direct access by car is available and plentiful (angle parking is available adjacent to the fields). The space would enhance outdoor activities already occurring on the school sports fields and encourage families to hang out and socialize during games. School clubs and organizations could sell concessions.

With lights on the baseball and softball fields, the community has access to evening ball games. The space would be flexible and invite other events and uses: a staging area for a cross country race, a community 10K run, a group celebration, or a community festival.

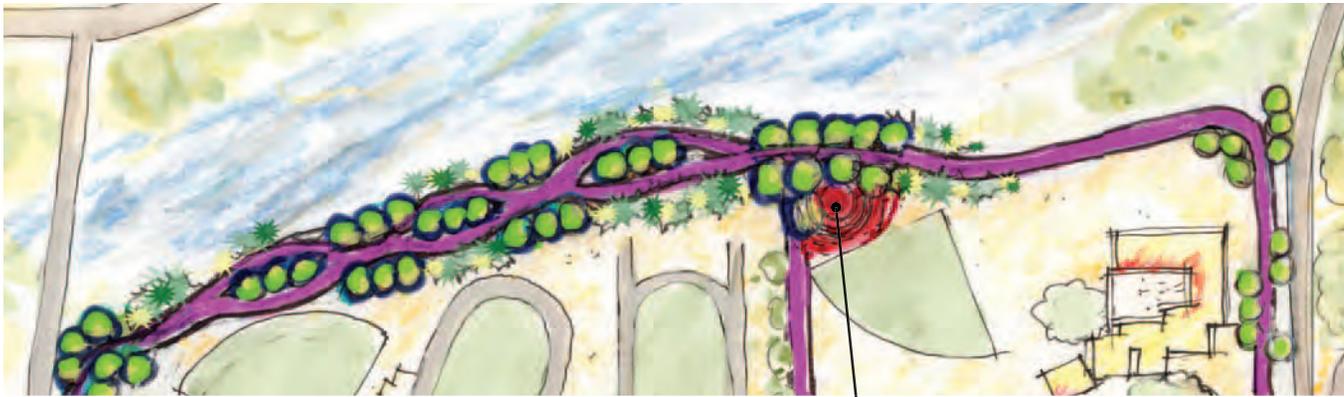


An event ramada with bountiful trees and shade, located in the vicinity of the sports fields, will enhance and reinforce activity that is already occurring and serve as a staging point for new activities and social events.



Design examples of group areas that would expand the use of school athletic facilities.

Outdoor Classroom



The Greenway/fitness trail offers many opportunities to extend learning to the outdoors. This opportunity is further enhanced with facilities such as an outdoor classroom, essentially a shade and seating structure where groups can gather. The facility will also support outdoor sports events at San Cayetano Primary School. Further enhancements could include a drinking fountain and water feature.

The design of the structure itself could be educational, illustrating desert adapted architecture.



Outdoor classroom sited at the northwest corner of San Cayetano's softball field, can be used for many purposes.



Outdoor classroom modeled on Tohono O'odham Pit House providing shelter from the wind and sun.

Educational Opportunities

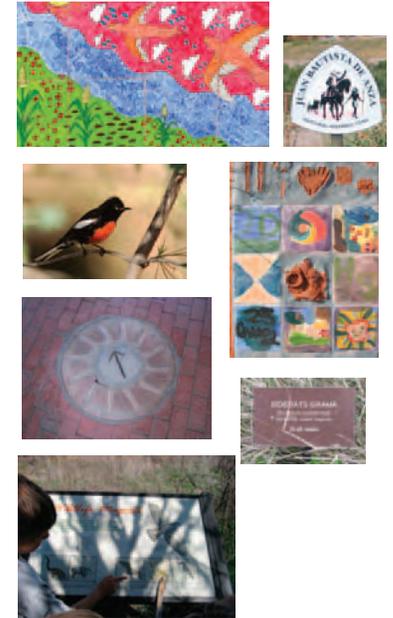
History
Science
Ecology
Geology
Art



The Rio Rico Community-School Greenway has abundant potential to educate, inform, and inspire not only school children, but the entire Rio Rico community.

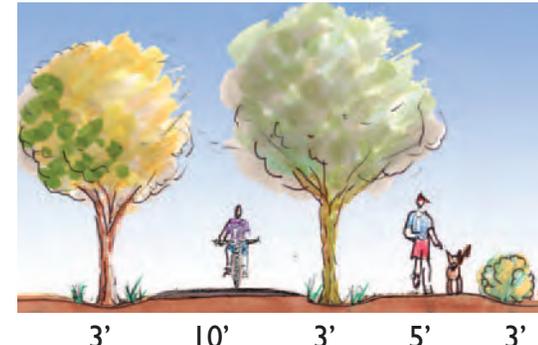
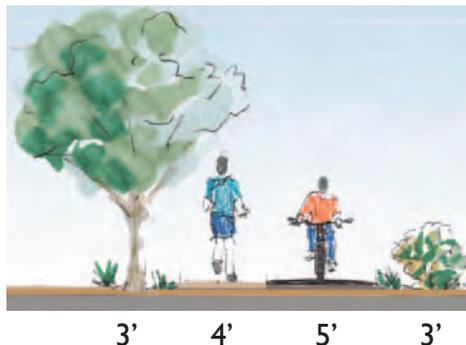
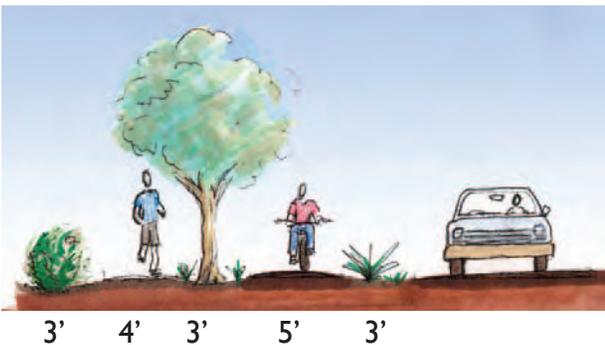
To create an environment that fosters lifelong learning, interpretive signage for self-guided use of the greenway can be employed describing the local ecology, geology, hydrology, and local and regional history. Art opportunities abound, to interpret the trail itself, to celebrate cultural diversity, to stimulate social discourse, to memorialize community members, and for the aesthetic enjoyment of art.

For the schools, the greenway is a vast resource for experiential, hands-on learning, providing a rich learning environment that extends beyond the classroom doors. This expansion of learning opportunities to the natural world develops environmental literacy and awareness, connects children to the local ecology, and grounds them in their local community.



Trail Profile - School Grounds

The School Greenway offers a series of loop trails around and within the grounds of the three schools and the District Office, providing a range of distances and difficulties. Trails are designed to include walkers, joggers, runners, mountain and road bicyclists, roller skaters and bladers. Trail sections will vary depending upon conditions on the ground. For example, the hilly area from the district office to Mountain View Elementary School will require a narrow trail compared to the area along Peck Canyon Wash where school property extends into the river bed. Variation of the trail profile used in combination with changes in surface materials and vegetation creates a interesting and enjoyable greenway experience.



Trail Nodes

Nodes are places along the Greenway where something happens. A node can consist of a bench, or a prominent tree or an interpretive sign. It can be as elaborate as full picnic and bathroom facilities. A node can offer a refreshing drink of water from a water fountain, a shady bench, a place to rest or wait or meet; it is a place where two trails intersect, an opportunity to view an interesting natural feature or a scenic vista.



Simple trail nodes.



Opportunities for Trail Nodes



A spontaneous gathering node under a giant cottonwood tree at San Cayetano Elementary School.

A meeting space.

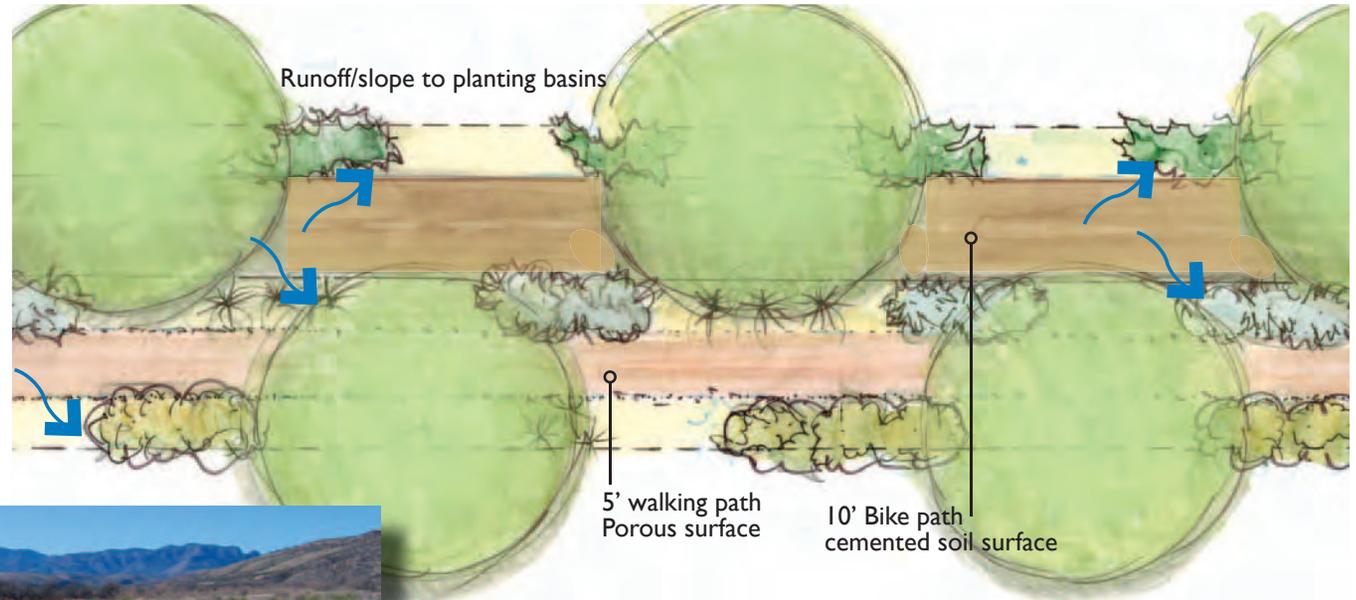


An existing group of deciduous trees (shown here in winter) provide shade and a gathering spot. The addition of a couple of benches would enhance the function of the space.

Peck Canyon Wash Riparian Trail

The Peck Canyon Wash has suffered significant disturbance due to grading and formation of the adjacent playing fields. Streamside vegetation plays an important role in preventing erosion, stream bed scouring and bed widening. In addition to providing habitat for native bird species, native vegetation along streams protects the ecosystem from invasive and non-native plant species as well as pollutants.

Re-vegetating the area with bird attracting native plants would create an opportunity to learn about local ecology and environmental awareness while providing a significant aesthetic enhancement to the lower field area and would also prevent additional erosion and mitigate future damage from flooding.



4' 10' 4' 5'



Warty gray bark of the distinctive, Netleaf Hackberry. The berries are a favorite of native birds.



Western Tanager



The locally occurring Mexican Elderberry tree entices native birds and insects with juicy berries and showy flowers.



White-tailed kite

Native grasses, such as Tanglehead, hold soil in place and provide food and cover for birds.



The stalwart and shade giving native mesquite tree; its bean pods are eaten by many wildlife species.

Restoring Ecology, Hydrology Along Peck Canyon Wash

Rio Rico is located in a region rich with bird and wildlife. Peck Canyon Wash has been severely disturbed by adjacent land use. The structure of the waterway has been changed and banks have been cemented in some areas. It appears the flooding may occur on occasion in the lower field area.

Reclamation, recovery, and restoration is a simple process to begin. Locally occurring vegetation such as Velvet Mesquite, Western Hackberry Tree, Hackberry bush, Mexican Sumac, and Wolfberry bushes can be planted and/or seeded along with native grasses. The school could sponsor planting parties and class activities. Studies can be performed, complete with bug and bird counts to gauge recovery. The scenic benefits would enhance the vistas from all three schools.



Great Horned Owls often nest in cottonwood trees.



Spotted Towhee



Peck Canyon Wash before construction of Rio Rico High School.



Peck Canyon Wash after construction of Rio Rico High School shows significant loss of vegetation and definition of stream channel.





Funding Strategies

Because the Greenway Project accrues multiple benefits from the same investment, there are many opportunities to fund the project. The Greenway could qualify for funds that are earmarked for community development and revitalization, fitness and health initiatives, recreation, open space, safe routes to school, school district transportation budget, economic development programs, county transportation infrastructure, public art monies, education, ecology, and the list goes on. This is a partial list of potential donors/funds.

Robert Woods Johnson Foundation
 Transportation Enhancement Act
 Center for Disease Control and Prevention
 Local Health Conversion Foundations
 Arizona Department of Transportation
 National Institute for Health
 Rails to Trails
 Santa Cruz County
 In-Kind Donations
 Design Competitions
 Developers/Builders
 Non-Profit Organizations
 Sponsorships
 In-kind donation
 Memorial projects
 Fund-raising events



Implementation

Project Phasing

Greenways are additive. Put all the pieces together and the whole becomes greater than the sum of its distinct parts. It is likely the Greenway will expand over time responding to physical and social changes in the community. Every piece of the Greenway provides more opportunity than existed before.



- Build in increments
- Pursue multiple funding sources
- Form alliances with community groups
- Build on successes
- Develop momentum
- Engage the community in design and implementation
- Sponsor design competitions
- Recognize/celebrate support through greenway design

Implementation Opportunities



The proposed route offers several inherent opportunities:

- Proposed route has unobstructed physical access
- Greenway route is controlled by only two owners
- Multiple funding/grant possibilities locally and nationally
- Project can be completed in smaller pieces
- Fills urgent need for community recreational facilities
- Multiple benefits accrue from one investment
- Community partnerships can be formed for installation & maintenance

Surface Materials



There are myriad paving and surface materials available today, from recycled materials to pavers to natural surfaces with hardener additives. To enhance the experience of nature and minimize radiant heat, we recommend a neutral colored surface. Bicycles and wheelchairs require a firm surface in all weather conditions so a surface treatment or installed material will be necessary. Pathways should be crowned in the center to shed water toward the adjacent vegetation areas. A porous surface is feasible, though it is recommended in combination with crowning and only for areas where the soil has excellent drainage.

Walking surfaces are optimally a surface with inherent “give.” Unimproved earth surface is a possibility, depending upon the soil characteristics. Areas of high use or design significance could have unique surface treatments such as brick on sand or ceramic tile inlay.

Surface choices: Compacted soil, Stabilized Decomposed granite, Compressed earth, Porous pavers, Geo-textiles, Bark chips, Asphalt, Concrete.

Design Principles for Trails that Get Used

Individuals must choose to exercise but communities can make the choice easier. Frequently cited barriers to exercise are lack of time or access to convenient outlets for recreation. One of the primary ways to improve public health is to use planning techniques that integrate walking and bicycling into daily routines and try to substitute these activities for part of the time we spend driving every day --- so trail location is key. These trail design principles from Roger Hughes, Ph.D. (Executive Director, St. Luke’s Health Initiatives, public foundation in Phoenix, AZ), serve as guidelines for designing trails to become a part of everyday.

Integration - Trails should be integrated with other recreational, educational and social resources.

Adaptation - Trail design should provide maximum adaptability to natural social and economic changes.

Diversity of Fitness profiles - Provide variety of experiences for different populations with varying abilities.

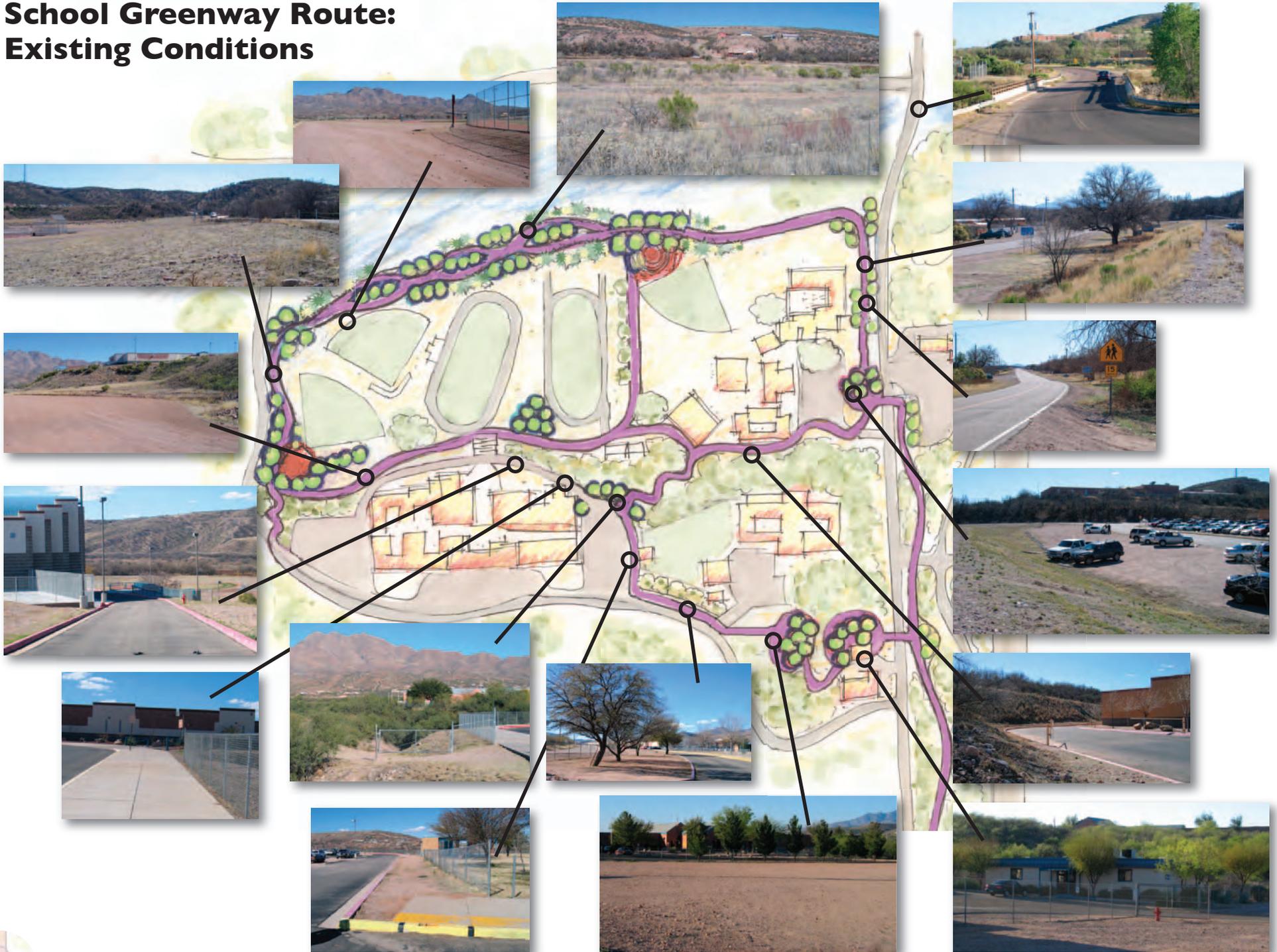
Exploration - Intelligent communities encourage maximum exploration and lifelong learning.

Chunking - Design should allow for manageable chunks of experience.

Motivation - Design should invite and inspire participation



School Greenway Route: Existing Conditions



Partnerships



The project is unique in that the process of developing and implementing the Greenway provides an opportunity to build community while simultaneously building support for the project. The project comes out of the community, is built for and by the community, and strengthens the community at the same time.

For design, installation and maintenance of the trail system look to the school population, to clubs and service organizations; there are educational opportunities and vocational possibilities all along the Greenway. The support and participation of local businesses, employee groups, neighborhoods, and individual families builds a sense of pride and ownership the project. There are opportunities for art projects and construction of benches, planting trees, building the trail, designing and installing gateway treatments.

Future Greenway Expansion



The Greenway is inherently expandable. Future expansion should head south to connect to Calabasas Middle School and incorporate additional neighborhoods. The residential areas along Rio Rico Road should be linked into the system. This will require pedestrian friendly bridges over the Santa Cruz River and safer overpasses over I-19 to accommodate pedestrians and bicyclists. Close to the school cluster at Peck Canyon Road, the narrow and high speed bridge over Peck Canyon Wash is extremely dangerous for bicyclists and pedestrians. An prefabricated pedestrian bridge could be installed in the future. These decisions will be made within the context of other competing demands, and the existing and potential resources and the priorities of the community.

Resources

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[Smart Growth Movement](#), www.smartgrowth.org.

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[Preventing Childhood Obesity: Health in the Balance](#), National Academy of Science, 2004