

# Southern Greenlee County Trails Study

Task Assignment MPD 002E-14

October 2014



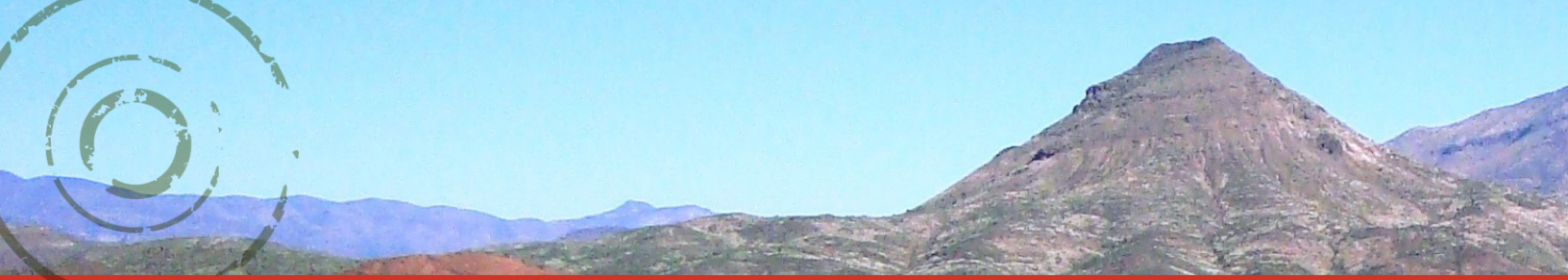












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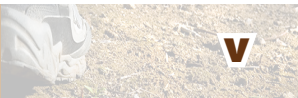
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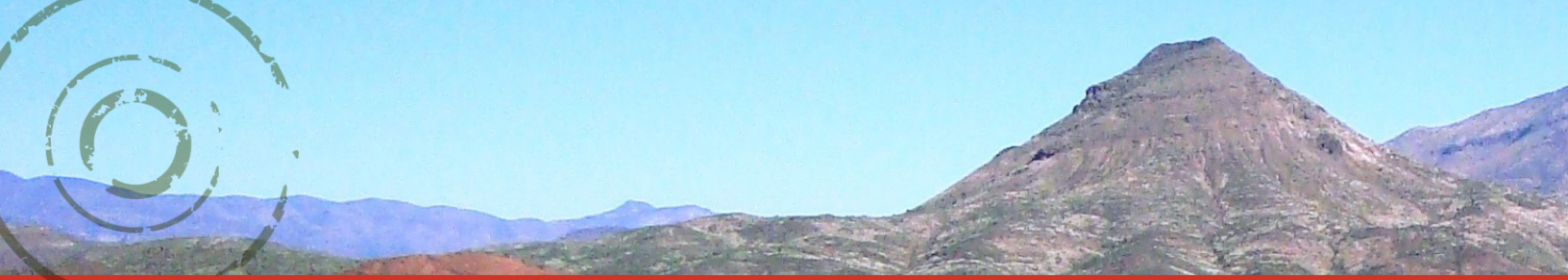
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- Exhibit A - North Study Area
- Exhibit B - South Study Area









# 1. INTRODUCTION

The Southern Greenlee County Trails Study is administered by the Arizona Department of Transportation (ADOT) and funded through the Planning Assistance for Rural Areas program (PARA). The PARA program provides federal funds to nonmetropolitan communities for the purpose of conducting transportation planning studies. This study reviews ways to improve multimodal connections throughout the Study Area (shown in [Figure 1](#), next page) by developing an implementable and comprehensive trails system plan.

## A. Study Purpose

The Southern Greenlee County Trails Study identified a framework of trails that could be developed to attract modern-day adventurers and naturalists to explore the rich natural and cultural heritage of Greenlee County. The study identifies trails that Greenlee County residents can use for recreation, enabling them to engage in healthy life choices with limited bike-car or pedestrian-car conflicts. Long dependent on mining as its economic base, this trails plan is another step Greenlee County is taking to diversify its economy by increasing tourism.

The purpose of the study was to:

- ◆ Improve access to destination points within the County.
- ◆ Establish trails that provide connections between major population centers.
- ◆ Use unimproved roads and existing railroad rights-of-way as part of a proposed trail system.
- ◆ Create trail loops that encourage locals and tourists to use the trails for recreation.

- ◆ Increase stewardship of the County's natural resources by providing recreational access to them.

## B. Process Overview

The first document of this Study, *Working Paper #1, Existing and Future Conditions*, covers the existing and future conditions in the Study Area and describes the strategies that were used for recommending the first network of possible trails to consider including in the final network.

The second document, *Working Paper #2, Plan for Improvements*, built on *Working Paper #1*. It describes how trails were assigned priority and became a part of the final network; identifies issues related to accessing trails that are not on County land or easements; and provides guidance on how trail projects can be funded. *Working Paper #2* responds to various deficiencies in the trails network reported by stakeholders, the public, and the study team.

This document is the final report and incorporates the majority of information from *Working Paper #1* and *Working*



Bridge over the abandoned Morenci Southern Railroad  
Source: HDR



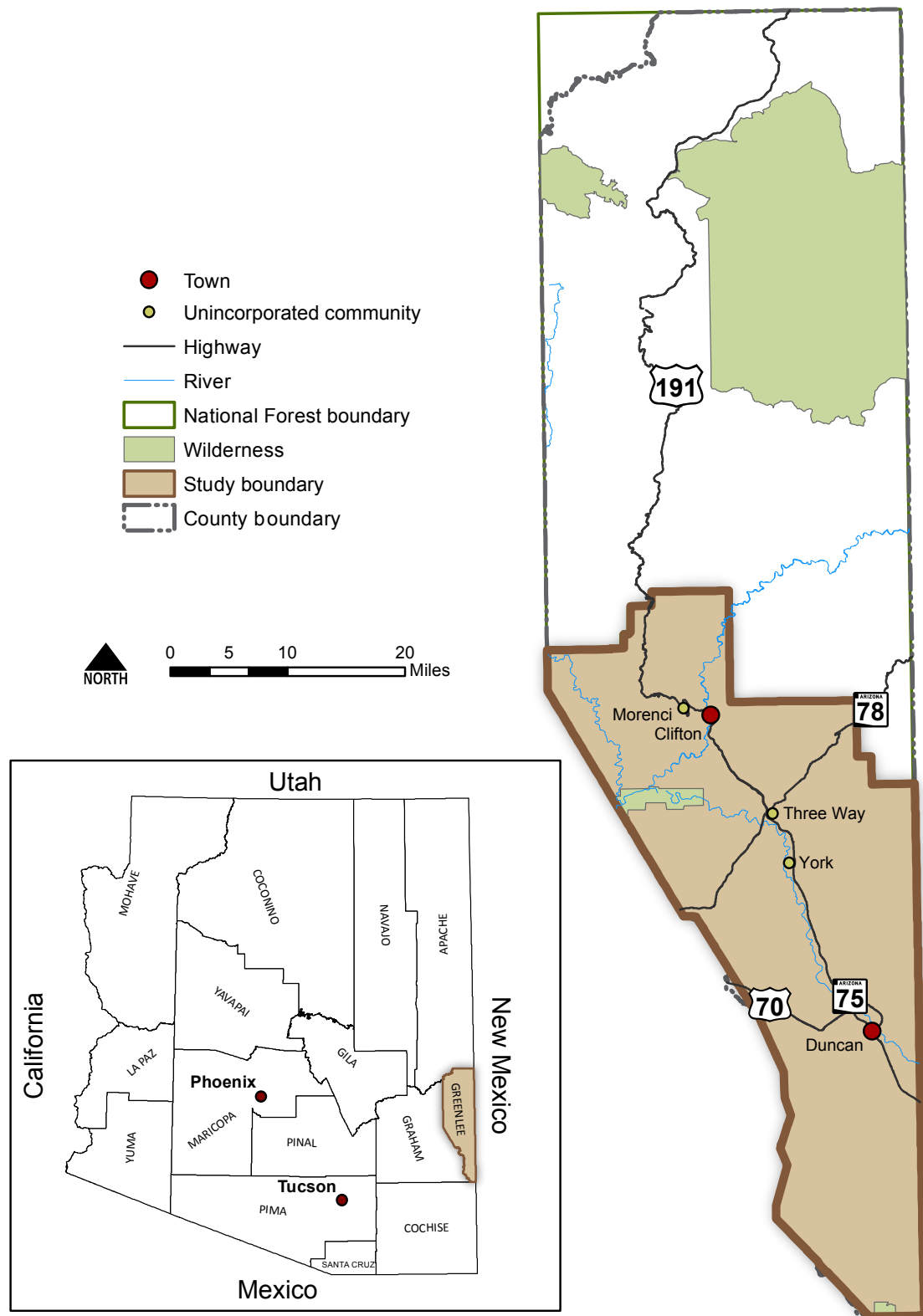
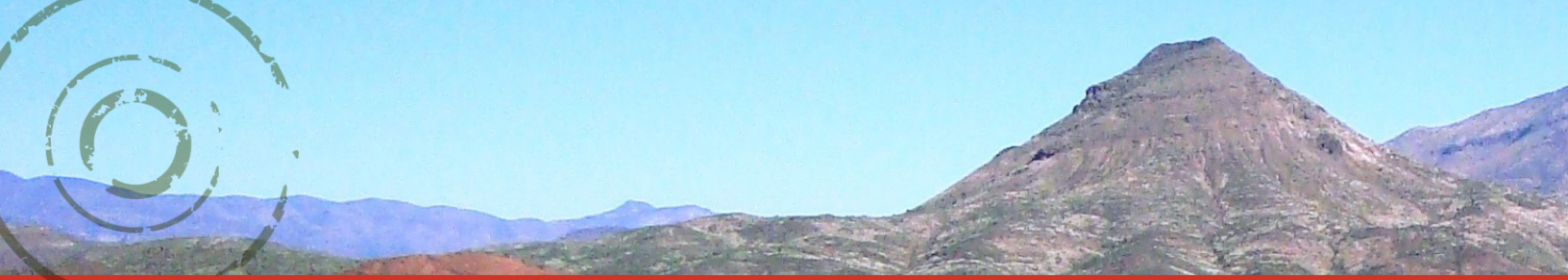


Figure 1: Study Area





*Paper #2.* It further describes signage and wayfinding opportunities and trail building and maintenance recommendations and guidelines.

#### **i. Agency Coordination and Public Involvement**

A Technical Advisory Committee (TAC) was established to provide input into the development and analysis of the trail network in Greenlee County. The TAC met several times during the planning process and provided the study team with insight into public use of the trails, guidance on local issues, and information on local stakeholder contacts. The following agencies were represented on the TAC:

- ◆ Greenlee County
- ◆ Town of Duncan, Arizona
- ◆ Town of Clifton, Arizona
- ◆ Town of Morenci, Arizona
- ◆ SouthEastern Arizona Governments Organization (SEAGO)
- ◆ ADOT
- ◆ Arizona State Land Department
- ◆ Bureau of Land Management

Stakeholders throughout the region were contacted to gain further knowledge of the area and how trails are being used.

The first public meeting was held in two locations, Clifton and Duncan, on February 26, 2014. The purpose of the meeting was to present information and maps in support of *Working Paper #1, Existing and Future Conditions*. The meeting began with a short presentation followed by an open house format where attendees could review maps, make comments, and ask questions. Comment cards were provided so attendees could give written comments in addition to or instead of oral comments. Comments received at the meetings were incorporated into *Working Paper #2*. A summary of the first meetings in Duncan and Clifton can be found in *Appendix A*.

The second public meeting was held in York on April 30, 2014. The purpose of the meeting was to present information and maps in support of *Working Paper #2, Plan for Improvements*. The meeting was in an open house format and attendees could review maps, make comments, and ask questions. Comment cards were provided so attendees

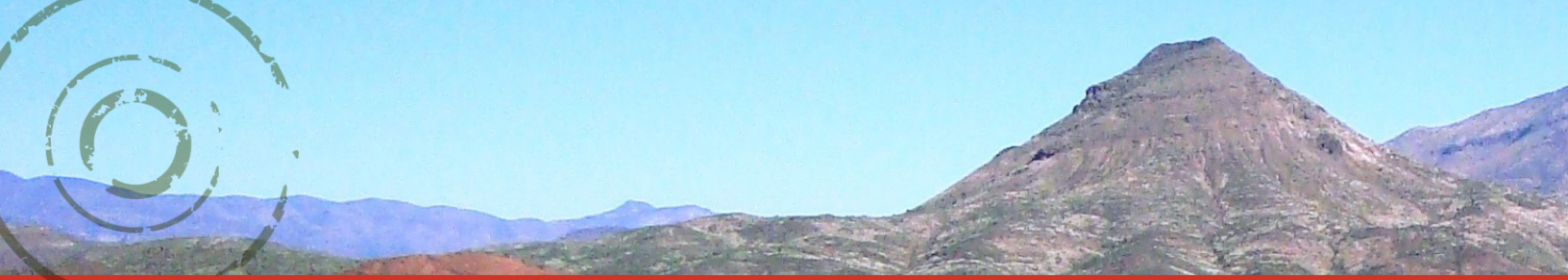


*Stakeholder meeting in Duncan, AZ*  
Source: HDR



*TAC meeting in Clifton, AZ*  
Source: HDR





could give written comments in addition to or instead of oral comments. Comments received at the meetings were incorporated into the final report. A summary of the meeting in York can be found in *Appendix B*.

### C. Study Area Overview

Greenlee County is located in eastern Arizona on the New Mexico border. Greenlee County is located 200 miles by road from Phoenix, and 170 miles by road from Tucson. **Figure 1** on page 2 shows Greenlee County and the location of the Study Area in Arizona.

Most of the 1,800 square miles of land within the County is public, managed by the U.S. Forest Service, Bureau of Land Management (BLM), or the Arizona State Land Department (ASLD). This study focuses on the lands south of the Apache-Sitgreaves National Forest, primarily along the Gila and San Francisco Rivers. The Study Area covers nearly 670 square miles of southern Greenlee County and includes the towns of Clifton and Duncan, and the communities of Morenci, York, and Three Way.

### D. Nomenclature

Throughout this report, unpaved features are called trails (unpaved includes routes cleared of vegetation and granite surfaces) and paved features are called paths (paved includes concrete and asphalt). When the general term *trails*, *trails network*, or *trails system* is used, it is inclusive of trails and paths.

## 2. EXISTING CONDITIONS

A full report on the Study Area's existing conditions can be found in *Working Paper #1, Existing and Future Conditions*. A summary is provided here.

### A. Environment

The environment section gives an overview of the area's physical, natural, and cultural resources.

#### i. Physical

Greenlee County is located along Arizona's physiographic Transition Zone between the Basin and Range province and the Colorado Plateau. This Transition Zone is characterized by rugged mountains and deep canyons (Peirce, 1985).

The Apache-Sitgreaves National Forest makes up much of the northern part of Greenlee County and is home to many hiking trails. The San Francisco and Gila Rivers are the two main water systems in Greenlee County. The San Francisco River flows through Clifton; the Gila River through Duncan. They converge south



*Greenlee County scenery*  
Source: HDR





of the Morenci mine where the Gila River continues west toward the Colorado River.

## ii. Natural

The County is abundant with vegetation. Much of the flora in the southern region of the Study Area grows low to the ground and is typical for a desert climate, such as mesquite, grasses, yucca, and creosote. Pine and fir trees can be found in the northern part of the County and in the Apache-Sitgreaves National Forest.

Small mammals and rodents such as raccoons and squirrels inhabit the neighborhoods in the towns. The wilderness and mountainous areas are home to larger animals such as mountain lions and big-horned sheep. Notable in Greenlee County is the high population of birds, specifically the sandhill crane. These cranes, which are more often found in wet climates, can be seen flying in large flocks down the Gila River each night.

## iii. Cultural Setting

Greenlee County has a rich history that has been well-preserved through its people, traditions, and architecture. Though Greenlee County is experiencing the largest housing expansion it has seen in a

century, it has managed to maintain its small town reputation through restoration and preservation projects.

Mining plays a crucial role in the culture and economy of Greenlee County. It began in the late 1800s, when three major mining companies—Arizona Copper Mining Company, Detroit Copper Mining Company, and Shannon Copper Mining Company—began operating and striving for control of the industry. Today, Freeport-McMoRan, Inc., (FMI) (previously Phelps Dodge) operates the Morenci mine and accounts for the majority of the employment in the County.

Ranching and agriculture make up another large portion of the employment in Greenlee County. Cattle ranches are found throughout the County, while much of the agriculture production is located in the Duncan region.

## B. Road System

The southern Greenlee County road system consists of a network of state highways, county roads, and local roads. State highways serving the Study Area include US 70, US 191, SR 78, and SR 75. US 70 crosses through Duncan connecting west to Safford and east into New Mexico. US 191 and SR 78 provide

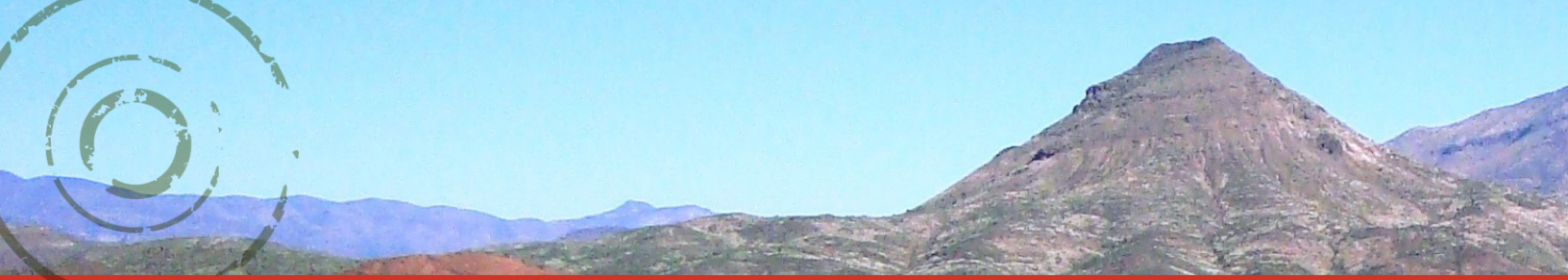


*Morenci open-pit copper mine  
Source: HDR*



*Ranching facilities remain throughout the area  
Source: HDR*





a northern route between Safford and the Study Area. At Three Way, SR 78 continues northeast to New Mexico, while US 191 continues north to Clifton, Morenci, and into the Apache-Sitgreaves National Forest. SR 75 serves as the main north–south corridor between Three Way and Duncan.

**C. Greenlee County Population and Employment**

**Table 1** shows both 2010 Census counts and the 2013 population estimates for Greenlee County. The Arizona Department of Administration has projected slow growth in Greenlee County through the 20-year planning horizon of this study. However, the recent increase in mining activity has resulted in 2013 population estimates that are higher than both the Arizona Department of Administration 2023 and 2033 population projections.

Quarterly Census of Economics and Wage (QCEW) data from the Bureau of Labor Statistics showed that Greenlee County had 3,406 jobs in 2010. Preliminary QCEW data from June 2013 showed over 5,300 jobs (Bureau of Labor Statistics, 2013). This data also reflects the influx of new workers needed to build and operate the expanded

mill and ore concentrator at the Morenci mine.

**D. Existing Trails**

Mining and ranching in the area have left a legacy of under used trails, roads, and abandoned railroad rights-of-way in the Study Area. Information on existing or possible future trails and paths was collected from several sources: the County engineer, the Forest Service, municipalities, stakeholders, and aerial review. Trails were mapped and, if available, details were recorded about condition and difficulty (see *Appendix C*).

**3. FUTURE CONDITIONS**

**A. Goals**

The purpose of the following goals, developed in *Working Paper #1*, is to provide direction for how trails could be planned, operated, and maintained so that current and future decisions about these resources are consistent with the County’s long-range vision for trails.

**Table 1: Greenlee County Population Outlook**

Geographic Location	Census 2010 <sup>a</sup>	2013 Estimate <sup>b</sup>	2023 Projection <sup>c</sup>	2033 Projection <sup>c</sup>
Clifton	3,311	4,339	3,334	3,349
Duncan	696	869	714	718
Morenci CDP <sup>1</sup>	1,489	5,705	1,505	1,512
York CDP	557		563	566
Unincorporated	2,384		2,410	2,421
Greenlee County	8,437	10,913	8,526	8,566

<sup>1</sup>CDP = Census Designated Place

Sources: <sup>a</sup>U.S. Census Bureau, 2010; <sup>b</sup>Arizona Department of Administration Office of Employment and Population Statistics, 2013 <sup>c</sup>Arizona Department of Administration projection based on 2010 Census totals; however, the totals are likely to be closer to the 10,900 to 11,000 range, based on increases of the 2013 estimate.



**Goal 1:** Provide a network of trails that creates opportunities to enhance physical and mental health and well being for residents and tourists.

**Goal 2:** Provide maximum access to trails and trailheads while respecting safety, sensitive natural resources, and other constraints.

**Goal 3:** Develop a trails network that becomes a point of pride and enhances economic development for Greenlee County.

**Goal 4:** Develop a trails network that can be feasibly and fiscally maintained by the County and trail stakeholders.

These goals for County trails need to be considered in the context of land ownership, as most of the routes cross federal or state land. If a trail is desired by the County and stakeholders to be available in perpetuity, and the trail does not currently fall within a County road right-of-way easement through state land, then acquiring a new easement from the State will need to be considered, along with an agreement covering maintenance and access issues.

A focus of the planning effort was to begin with the population centers of Clifton and Duncan. From these centers, the trails network radiates out, creating loops wherever feasible. The team also explored several possible new paths or trails, based on stakeholder input, including a San Francisco River path in Clifton and a bird-watching loop in Duncan.

A second planning focus was to connect County destinations. Destinations were identified and then linked by trails to either a new or existing trailhead or to an existing trail. Consideration was given to limiting the new or identified trails to a number that can

be maintained at a high standard—quality over quantity. And to selecting alignments that recognize land ownership boundaries and won't result in remnant parcels should the land be sold in the future.

## 4. ISSUES

Several issues relative to trail development were brought up by TAC members, stakeholders, citizens, and the study team. They are summarized below.

### A. Land Ownership

As discussed in *Working Paper #1*, many of the trails noted here and in *Exhibits A and B* (attached) follow long-established dirt roads and trails that cross lands owned or administered by agencies other than Greenlee County, or cross private land ([Figure 2](#), next page, shows land ownership in the Study Area). Many of these informal trails, while perhaps heavily used, lack legal status. Land ownership needs to be determined and the land either acquired or a long-term easement purchased for trail facilities deemed crucial to the overall trail network.



Bridge at Gila Box  
Source: HDR

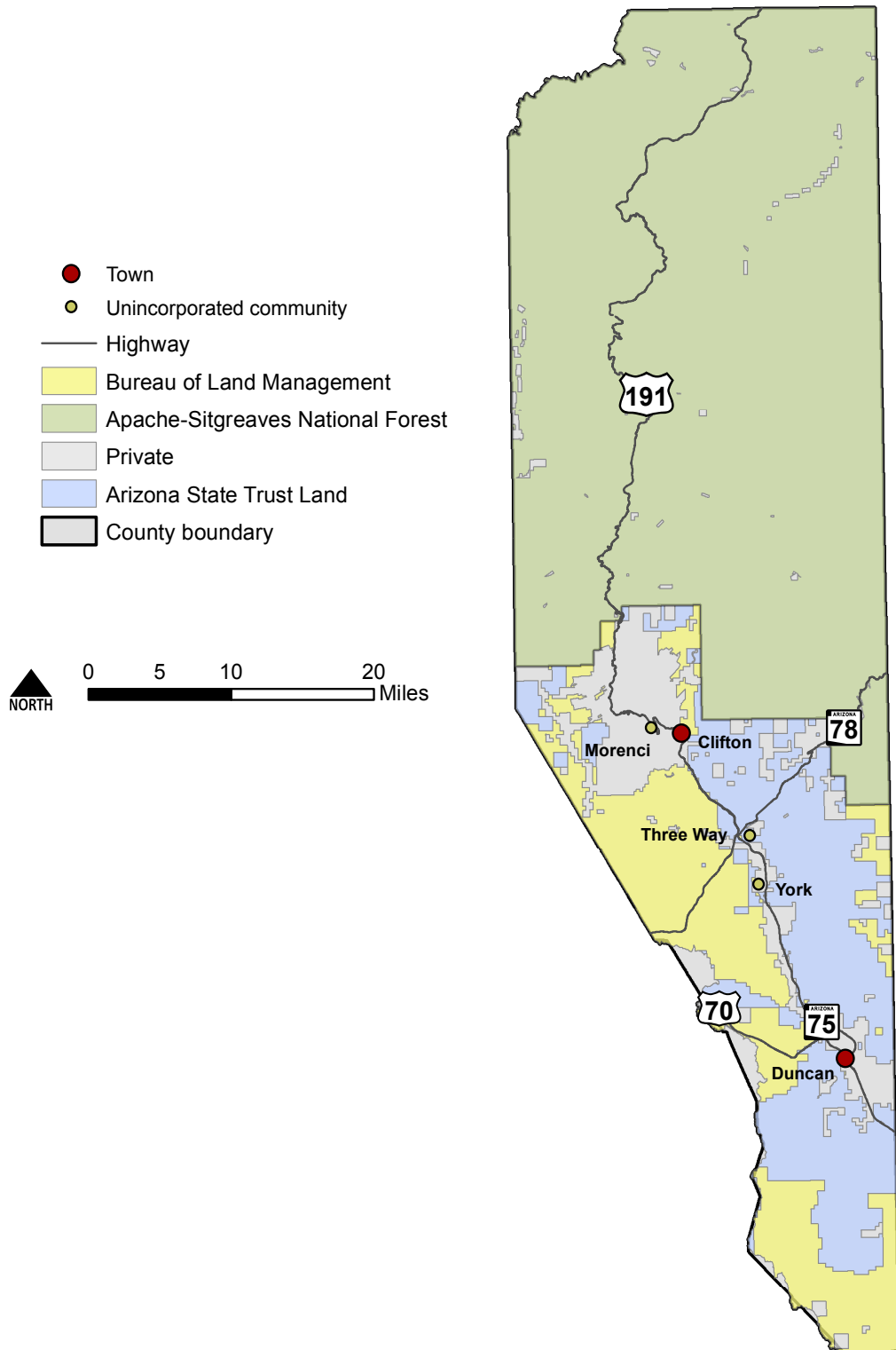
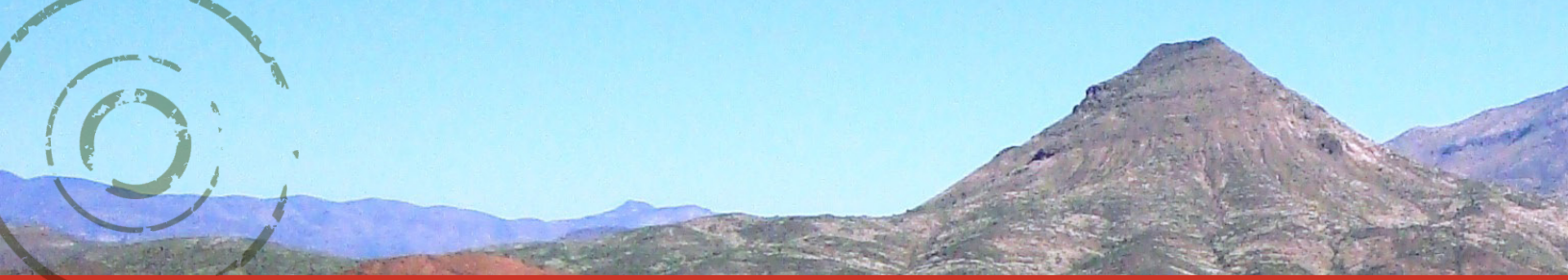


Figure 2: Land Ownership





Specific to ASLD land, when the State sells a parcel of their land to a private owner, trails without easements would disappear. Furthermore, the State would review easement requests in light of future parcel sales—they would likely not approve alignments resulting in remnant parcels or ones that would negatively affect the saleability of a parcel.

Also of note, there are proposed trails shown within the Apache-Sitgreaves National Forest. The proposed trails would need to be presented to the Forest Service for their consideration.

## B. Safe Routes to School

Safe Routes to School was mentioned several times as a concern by stakeholders and the public. Particularly in Clifton, children may live within a quarter-mile of their school but are still transported each day because getting there involves crossing US 191 in downtown Clifton. Crossing US 191 is daunting at most times of day and often dangerous at others



Safe Routes to School - walking bus  
Source: pedbikeimages.org

because of the volume of traffic entering and exiting the mine.

## C. Marketing

Southern Greenlee County has much natural beauty to offer visitors—mountain ranges, canyons, rivers, grasslands. But these are a well-kept secret. The area is somewhat off the beaten path, so a promotional effort to inform potential visitors, both in and out of State, would be beneficial.

## D. Education

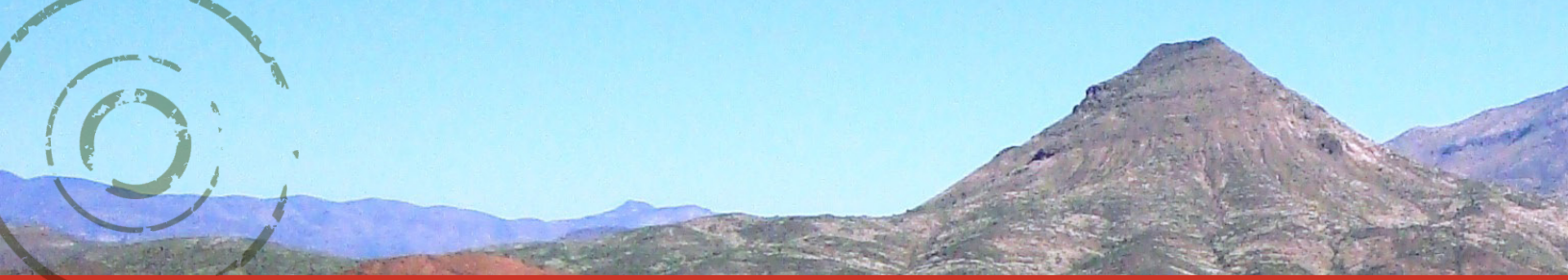
The study team heard several comments at the public meeting about vandalism of property by hunters and trail users and lack of respect. Educating residents and visitors about trail etiquette is a message that may need to be reintroduced periodically.

While the majority of users are careful and respectful, the message would be for the few who are not. The message could have aspects of common courtesy, trail yielding standards, property rights, and pack in/pack out rules.



# 5. TYPES OF FACILITIES

Many of the facilities shown in *Exhibits A and B* are informal trails with proposed facilities that connect or supplement the existing trails. From a larger system of possible trails, the final network shown in the exhibits was narrowed down using the criteria described later in this report. Existing and new trails alike may necessitate obtaining easements or permits through federal or state land.



Several types of facilities were identified for possible inclusion in the overall plan. While most of the projects will be trails, all of the possible elements, as they relate to this Study, are described here briefly. Where applicable, standards were extrapolated from resources such as the American Association of State Highway and Transportation Officials (AASHTO) 1999 *Guide for the Development of Bicycle Facilities* and the Federal Highway Administration (FHWA) *Manual on Uniform Traffic Control Devices*.

### A. Bike Route

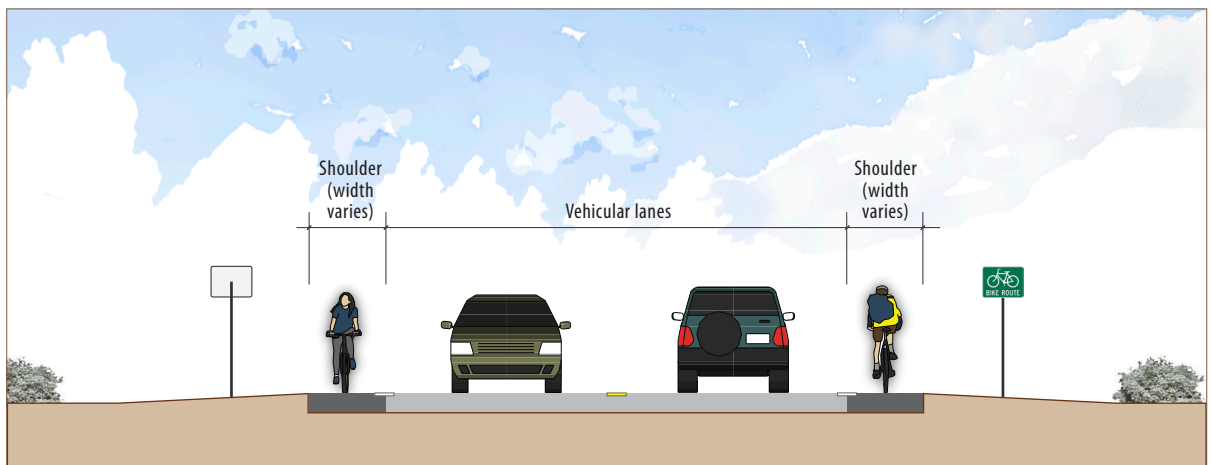
Bike routes are on-highway alignments where bicyclists are permitted to ride on the paved shoulder. All four highways in the area (US 191, SR 70, SR 75, and SR 78) are shown on the state's *Bicycle User Map* as bicycle routes. The effective shoulder width on most of these highways is less than 4 feet, though a few segments have an effective width greater than 4 feet and some have rumble strips.

ADOT bicycle policy is to include provisions for bicycle travel in all new major construction and major reconstruction projects on the state highway system. The

roadway design for new builds includes a 6-foot shoulder on rural two-lane highways that have less than 200 vehicles per hour. This would be an even better width for bicycle travel but a major reconstruction of any of the Study Area's four highways is not in this Study's planning horizon.

Bike routes on paved shoulders differ from paved bike lanes. Bike lanes are signed and marked for preferential use by bicyclists. These dedicated facilities help define the space for each use (bicycles versus vehicles). They are typically found in urban areas where vehicular traffic volumes are high. In contrast, paved shoulders are good solutions for rural highways. The shoulders are not exclusively for bicycles; they are primarily intended as a break-down area for cars.

The *Guide for the Development of Bicycle Facilities* does not have specific design specifications or standards for bike routes but they do have suggested guidelines. The minimum desired width is 4 feet but less than 4 feet is better than none at all. Where high bicycle traffic is expected or vehicular speeds are greater than 50 miles per hour, a shoulder wider than 4 feet is highly recommended.



*Paved shoulder bicycle route*



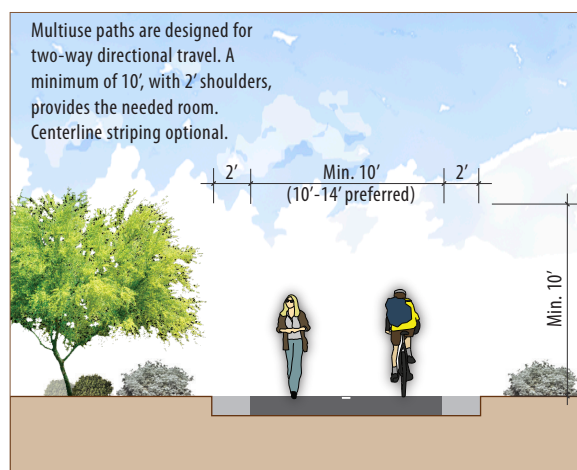


## B. Multiuse Path

Multiuse paths (also called shared use paths) are concrete or asphalt facilities that are at least 10 feet wide, with 2 feet on either side graded smooth at a 1:6 slope. The 10-foot minimum provides room for two-directional travel. The path can have a center line marking if desired, usually based on the amount of use the path gets.

Multiuse paths should be, and often are required to be, accessible to all users based on Americans with Disabilities Act (ADA) guidelines. Multiuse paths are especially desired where long, uninterrupted use can be achieved. They often occur along waterways, utility easements, railroad corridors, and long roadways with few driveways or cross streets. One location in the Study Area was considered for a multiuse path paralleling a highway. It was along the east side of SR 75 and US 191, between Duncan and Clifton, and would build on the existing path in York Valley. However, due to the terrain and many tributary crossings, building such a facility within the confines of the existing ADOT right-of-way would be unlikely so the facility is not shown on the maps.

Where multiuse paths parallel a highway, they should be widely separated from the highway. If the separation is less than 5 feet, a barrier should be installed between the path and highway. The *Guide for the Development of Bicycle Facilities* provides additional information and guidance.



Standard multiuse path

Where room or cost precludes building to the minimum 10-foot width, a narrower path can always be built. This narrower facility would be called a path, rather than multiuse path, though it would most likely still be used by many types of users.

## C. Sidewalk

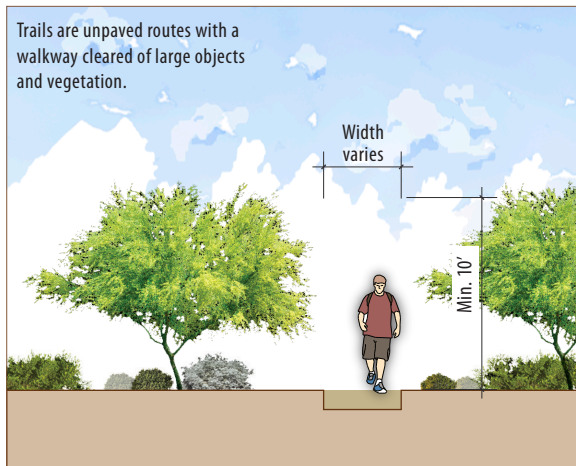
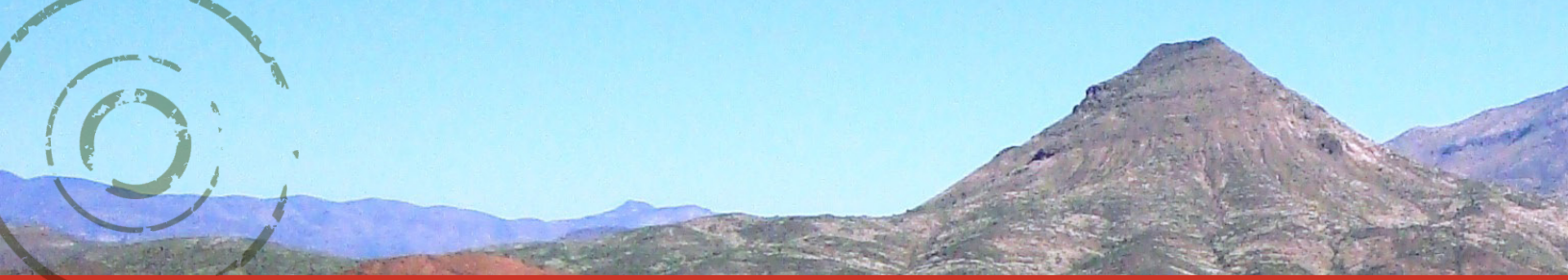
Sidewalks are paved concrete or asphalt paths that parallel local streets, either attached or detached from the curb, if a curb exists. Sidewalks are usually built in conjunction with roadway improvement projects.

## D. Trail

Trails are unpaved, cleared routes that can be used by pedestrians, joggers, hikers, mountain bicyclists, equestrians, or off-highway vehicles. The trail width varies with terrain and types of users. In Greenlee County, many "trails" follow old vehicular routes that are often quite wide and are still used today by off-highway and four-wheel drive vehicles. Trails used predominantly by hikers and mountain bicyclists are generally narrow (less than



A multiuse path in Scottsdale, AZ  
Source: HDR



*Standard trail*

4 feet wide). The trails in the Study Area are a combination of dirt roads (wide, easy terrain) and ones that follow steep topography (narrow, steep terrain).

### E. Wayfinding Signs

Wayfinding signs are a systematic network of directional signs that guide the public to specified destinations within the region. Wayfinding signs can promote the most prominent features and assets of a region. These signs can also be a marketing tool, with a logo and color scheme that is recognizable to users and helps establish a sense of place or theme.



*Bicycle wayfinding signs can include a distinct logo, distance, and directional information*  
Source: NACTO



*A back country trail in Tucson, AZ*

Installing new, off-the-shelf trail markers that have standard decals for user type and directional arrows would be a positive first step in promoting the trails system. Custom logo decals could be added later. For under \$7,000, a few hundred markers with decals could be purchased, installation not included.



*Trail markers customized for Greenlee County would guide trail users as do the custom markers found along the Black Hills Back Country Byway*





## F. Warning/Informational Signs

In the Clifton area on US 191 and east of Three Way on SR 75, the steep terrain and winding roads create some challenging, as well as beautiful, bike rides. Sight distances and shoulder widths (many 4 feet or less) are just two of the challenges. Special attention should be given to placement of warning signs in these areas. Future road improvement projects should include determining if wider, paved shoulders can be accommodated in the cross section.

There are a variety of signs used by agencies to guide bicyclists on their desired route and to alert motorists that the road is a shared facility. Warning/informational signs are placed only as often as needed to convey the message.

## G. Pedestrian Crossing

Pedestrian-activated crossings are more typically seen in urban areas. However, there are locations in the Study Area, such as

downtown Clifton, where crossing US 191 at certain times of the day is nearly impossible for pedestrians, and even difficult for cross traffic vehicles. Pedestrian crossings come in several types: simple crosswalks, high visibility crosswalks, and variations on the signalized crossings known collectively as hybrid beacons.



Example of a flashing beacon crosswalk  
Source: [pedbikeimages.org](http://pedbikeimages.org)

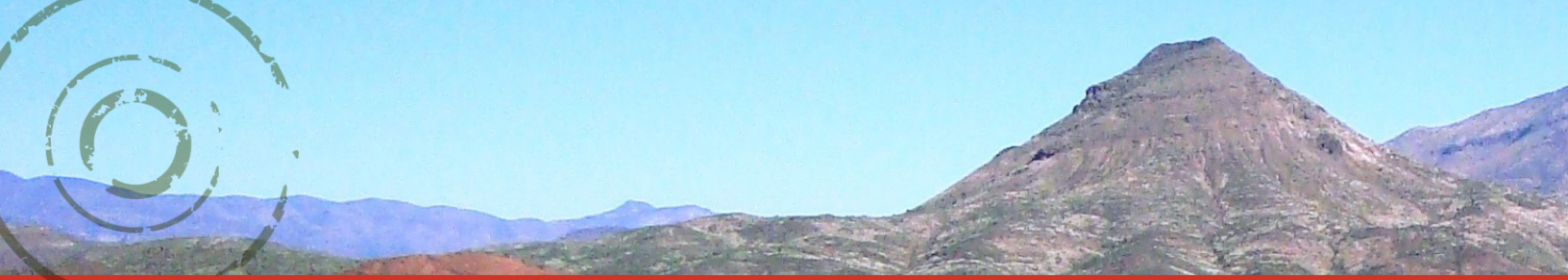


A variety of warning and informational signs are available



Example of a hybrid beacon crossing, Tucson, AZ  
Source: Federal Highway Administration





## H. Trail Stiles

In locations where recurring problems persist with trail users not closing gates, a pass-through stile may be an alternative. There are many types and designs (examples shown here) but any stile that permits people to pass through but prevents livestock from doing the same is appropriate.

## I. Trailhead

Trailheads can vary widely in size, amenities, and what modes they serve. A simple trailhead might consist of a few informal parking spots; a complex trailhead might



*Example of a step-over stile*  
Source: HDR



*Example of a walk through stile*  
Source: laspilitas.com

have hundreds of parking spots (including for horse trailers), restrooms, educational facilities, and picnic facilities.

## J. Trail Maps

The trails maps are attached to this document as separate exhibits. Exhibit A is a map showing the trail network for the northern region of the Study Area. Exhibit B shows the southern region.


Existing trails are shown as a solid line, while proposed trails are shown as dashed lines. Trails are organized by color and associated trail type, with paths shown as green lines and trails shown as red lines. The proposed trail system in Morenci (prepared by FMI planners and included here for reference) is shown with a blue dashed line for proposed paths and a purple dashed line for proposed trails.

Some County roads are shown on the map as trails. This was done because those roads were determined to be significant parts of the trail system and helped establish important loops or connections to major destinations and population centers around



*A view down to the informal trailhead at Mares Bluff*  
Source: HDR





the County. Information for on-road bicycling was obtained from the ADOT Bicycle Use Map, with colors denoting the existing width of roadway shoulder. Possible Safe Routes to School routes are indicated with thin blue lines. Destinations are shown on the maps as blue circles. Existing and proposed trailheads are shown on the map as light pink and yellow dots, respectively.

## 6. PRIORITIZATION

### A. Prioritization Strategy

This section describes the strategy used to define priority trails.

#### i. Evaluation Criteria

During the planning process and at the TAC and public meetings, criteria for selecting and prioritizing trails were suggested and discussed. Criteria provide an effective measure for selecting which trails or paths should be included in the trails network and in which order projects should be addressed. The list of improvements needs to be realistic and achievable so that progress can be shown immediately and over time. Being able to show progress in completing the system will build interest in and momentum for the overall effort. Large projects can be phased to match funding sources and to break them into manageable pieces.

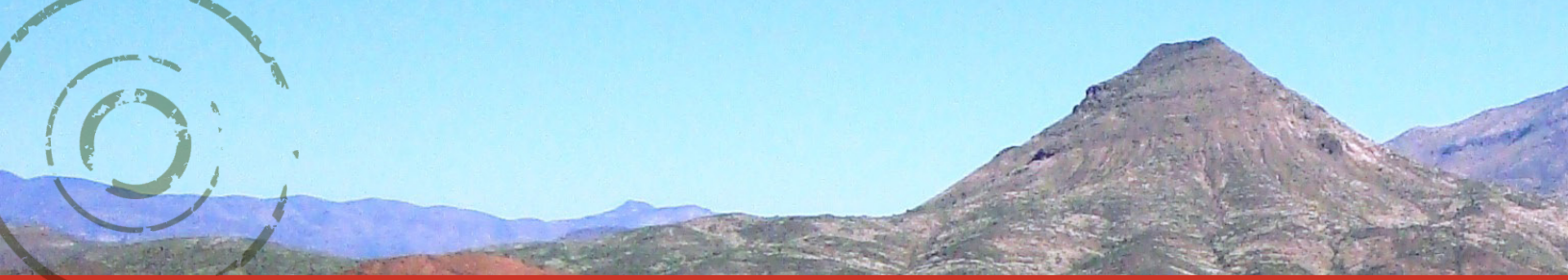
**Table 2**, next page, lists the criteria used to select the projects that became part of the final master plan. Projects needed to meet one, some or all of the criteria targets; the more criteria met, the more points gained (scoring detail can be found in *Working Paper #2*).

## 7. PLAN FOR IMPROVEMENTS

**Table 3**, page 17, lists the recommended projects by priority based on their scoring, by their distance from Clifton or Duncan, and by how complex they are (how quickly or likely they can be built). **Table 3** also includes recommended time frames (short-, mid- or long-term as described below) and a cost comparison (high-, medium-, or low-cost). Cost comparisons are based on order of magnitude costs developed for each project using the costs discussed in Section 8 *Planning Level Costs*. Cost comparisons are shown using one, two, or three dollar signs to represent relative costs. Larger projects were segmented to make manageable individual sections.

- ◆ Short-term projects are those that can be implemented fairly quickly, in the next 2 to 5 years, and with low cost.
- ◆ Mid-term projects are more complex and may require more planning time or may need to be submitted to a funding program. The time frame for these projects is generally 5 to 10 years.
- ◆ Long-term projects are the most complex, may involve obtaining easements or access from multiple property owners, and frequently cost the most. These projects generally are in the 10 to 20 year time frame.

As with all planning efforts of this type, time frames are for guidance only. The realities of construction, finances, and policies dictate that some of these projects may not be implemented within their suggested time frame or in the priority order. As opportunities to cost share or obtain grants arise, they should be acted upon to propel development of the entire system forward, regardless



**Table 2: Facility Selection Criteria**

<b>Criteria</b>	<b>Description</b>	<b>Scoring</b>
Does the project make or complete a loop?	The trail or path creates a walkable distance loop or is part of a system with several other loops providing the user distance options. It can also be one of several segments that will eventually create a loop.	1 = Yes 0 = No
Does the project access a destination?	The project connects to or passes through one of the regional destinations.	1 = Yes 0 = No
Is the project accessible, and can it be used by many types of trail users?	The trail is near a developed area and is, therefore, close to many potential trails users (within 5 miles of town center) and the trail can accommodate multiple types of users (bike, walk, etc.).	1 = Yes 0 = No
Does the project meet a safety need?	The project fixes or removes a known safety need such as providing access across a major vehicular thoroughfare for a Safe Route to School.	1 = Yes 0 = No
Does the project provide the user an opportunity to see and appreciate the County's natural resources?	The project connects to or passes through areas of natural beauty or features that local residents and visitors would appreciate.	1 = Yes 0 = No
How complex is the project?	Projects that require extensive construction or purchasing of right-of-way or easements would take more time, money, and planning than less complex projects.	1 = Little complexity 0 = High complexity
Does the project contribute to economic development in the area?	The project could be a draw to tourists or provide some other identifiable economic benefit.	1 = Yes 0 = No
Can the project be combined with another project, of any type, to cost share funding sources?	The project can be incorporated into another project at the same location, such as a trail along a road widening, to reduce costs for both projects and community disruption.	1 = Yes 0 = No

of whether they match the prioritization determined in this study. *Appendix D* lists trails that were deleted from the system during the planning process either because they were not desired or did not rank high in the criteria scoring.

### **A. Project Descriptions**

There are several larger projects that were identified during the process and they are described in more detail as follows.

#### **i. San Francisco River Path**

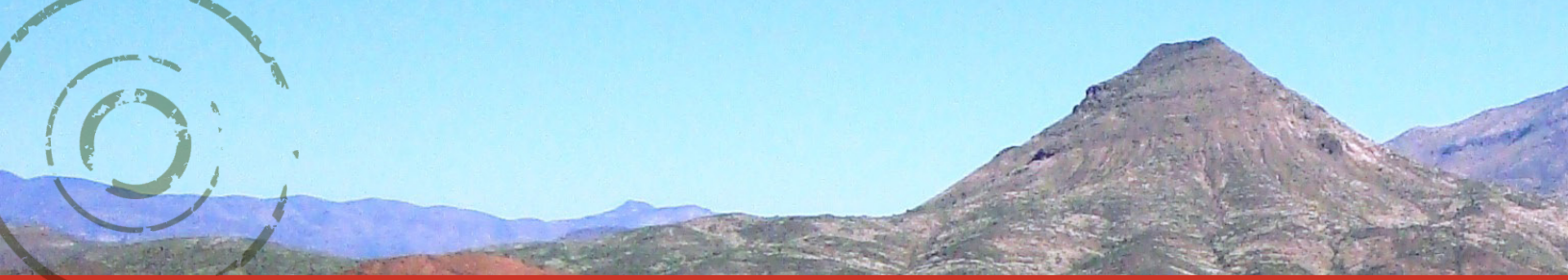
The proposed San Francisco River Path would follow the San Francisco River through the town of Clifton. The recommendation is to build a path on both sides of the river between the two bridges so a looped circuit can be created. Beyond the bridges, the path would be on one side of the river. The final alignment of the path would be a balance between locating it low enough for users to fully enjoy being near the water, and locating it high enough so it is not frequently





**Table 3: List of Recommended Facilities**


ID No.	Name	Description	Scoring	Proximity to Urban Area	Time Frame	Relative Cost Comparison
Trails and Paths						
T3	Gila Bird Trail	Birding trail along Gila River in Duncan	6	Duncan	Short	\$
T1a	San Francisco River Path	From Zorilla Avenue bridge to Park Avenue bridge, east side of river	5	Clifton	Short	\$\$
T1b	San Francisco River Path	From Zorilla Avenue bridge to Park Avenue bridge, west side of river	5	Clifton	Mid	\$\$
T1c	San Francisco River Path	From Park Avenue bridge to Ward Canyon Road, east side of river	5	Clifton	Mid	\$\$
T1d	San Francisco River Path	From Park Avenue bridge to Ward Canyon Road, west side of river	5	Clifton	Long	\$\$
T1e	San Francisco River Path	From Trailhead 1 south along river to Zorilla Avenue bridge	5	Clifton	Long	\$\$
T1f	San Francisco River Path	From Ward Canyon Road to Morenci trail, east side of river	5	Clifton	Long	\$\$
T1g	San Francisco River Path	From Ward Canyon Road to Trailhead 3, west side of river	5	Clifton	Long	\$\$
T4	Ashy Trail	From San Francisco River Road to Hickey Springs Trail	5	Clifton	Short	\$
T5	Mulligan Trail	From San Francisco River Road to Pleasant Valley Trail	5	Clifton	Short	\$
S1	Clifton SRTS	Between RV park and schools	4	Clifton	To be determined through a Safe Routes to School study	
S2	Clifton SRTS	Downtown Clifton to schools	4			
S3	Clifton SRTS	Shannon Road to US 191 to schools	4			
S4	Clifton SRTS	Ward Canyon Road to schools	4			
S5	Duncan SRTS	McCarty Trail west to Duncan Elementary	4	Duncan		
S6	Duncan SRTS	Campbell Street east to Duncan Elementary	4			
S7	Duncan SRTS	Ocotillo Street north to Duncan Elementary	4			
S8	Duncan SRTS	To Duncan High School from southeast	4			
S9	Duncan SRTS	To Duncan High School from Skyline Drive	4			
S10	Duncan SRTS	Route along Parks Canyon Road	4			
S11	Duncan SRTS	Route along East Avenue	4			
S12	Duncan SRTS	Route along Stadium Drive from Old West Highway	4			
S13	Duncan SRTS	Route along Wilson Road from Old West Highway	4			
T16	Riverview Trail	In Clifton behind Circle K	4	Clifton	Mid	\$
T2	York Valley Multiuse Pathway	Connection to existing York Multiuse Pathway	4	York	Mid	\$\$



**Table 3: List of Recommended Facilities** (continued)

ID No.	Name	Description	Scoring	Proximity to Urban Area	Time Frame	Relative Cost Comparison
T9	Big Lue Trail	Connection between Hamilton Trail and Black Jack Trail	4	N/A	Long	\$\$
T10	Rustler Trail	From Big Lue Trail, south to Greenlee Trail	4		Long	\$\$
T11	Greenlee Trail	Connection between Black Jack Trail and Duncan	4		Long	\$\$
T14	York Loop	Loop near York Valley connecting to Harris Camp Trail	4		Long	\$\$
Bicycle Routes						
B1	Highway 191	From Three Way north to the Apache-Sitgreaves Forest border (shoulder widening and signs). Segment into nine 3-mile sections for funding.	5	N/A	Long	\$\$\$
B2	Highway 75	From Three Way south to Duncan (shoulder widening and signs). Segment into six 3-mile sections for funding.	5		Long	\$\$\$
B3	Highway 78	From New Mexico west to Three Way (shoulder widening and signs). Segment into six 3-mile sections for funding.	5		Long	\$\$\$
B4	Highway 70	West from Duncan (shoulder widening and signs). Segment into five 3-mile sections for funding.	5		Long	\$\$\$
B5	Highway 191	From border of Apache-Sitgreaves Forest north to the County line. Segment into nine 3-mile sections for funding.	5		Long	\$\$\$
Trailheads						
TH1	Frisco Trailhead	North end of San Francisco River proposed path		Clifton	Mid	\$
TH2	Ward Canyon Trailhead	Where San Francisco River Path meets levee walk		Clifton	Short	\$
TH3	Shannon Trailhead	Shannon Road pull-off		Clifton	Mid	\$
TH4	Sunset Point Trailhead	Connection between Ashy Trail and Mulligan Trail		Clifton	Long	\$
TH5	Mares Bluff Trailhead	Ward Canyon Road		Clifton	Short	\$
TH6	Chacon Trailhead	Pull-off on Park Avenue		Clifton	Mid	\$
TH7	Riverview Trailhead	North of the Circle K		Clifton	Mid	\$
Other Projects						
O1	Hybrid beacon crossing of US 191 in Clifton	One located between 1st Street and 7th Street		Clifton	Short	\$
O2	Signage Program	Wayfinding and directional sign development and installation		N/A	Short	\$\$
O3	Education Program	Develop outreach through printed media			Mid	\$\$





under water or washed away by flooding. In addition, as a significant water source in the area, there may be environmental restrictions or mitigations needed relative to path building. Another option is to define the desired route, develop it as a trail, and advance it to a path in the future.

### **ii. Gila Bird Trail**

Along the Gila River in Duncan is a long levee that is already used by many people for recreation and bird watching. Defining and signing a trail there would formalize it as a trail facility. Duncan and nearby Virden, New Mexico, are increasingly becoming bird watching destinations. Of particular note are the sandhill cranes which make their annual migration flight through this area. Because these cranes tend to flock in very large groups, their migration can be quite impressive. The Southwest willow flycatcher can also be seen here, and bald eagles nest in the area.

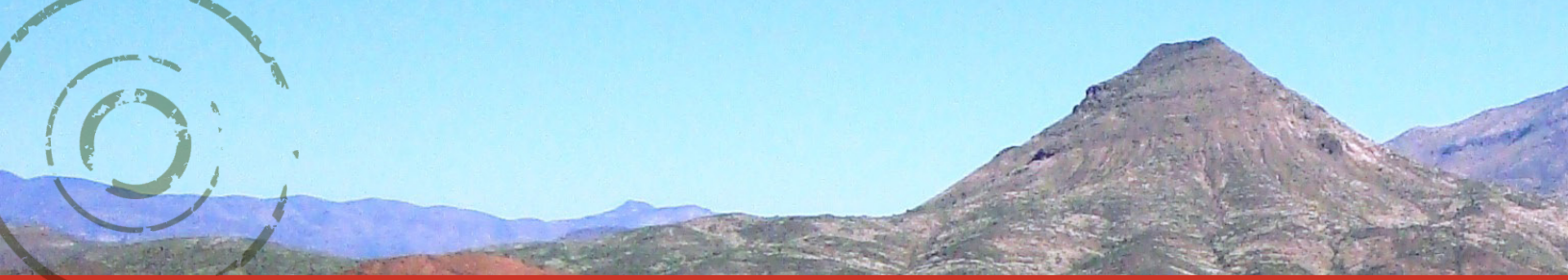
### **iii. Hickey Springs/Pleasant Valley Trail Loop**

Hickey Springs and Pleasant Valley Trails are two parallel trails in the Apache-Sitgreaves Forest. They could both be continued to the west and converge at a trailhead on the San Francisco River, creating a loop that begins near the town of Clifton. The two converging trails would be the Ashy and Mulligan Trails.

## **8. RECOMMENDED FIRST STEPS**

Following are recommended first steps to get the implementation process started. They are not prioritized in any manner.

- ☒ Convene a trails advisory group and establish a regular meeting date and time.
- ☒ Establish a Safe Routes to School committee and begin the process of selecting projects.
- ☒ Select first project(s) and then determine land ownership. Contact owner and begin negotiations for formalizing trail status.
- ☒ Establish a logo or colors for the trails network and buy and install new trail markers for wayfinding and to generate interest in the future system.
- ☒ After October 1, 2014, contact SouthEastern Arizona Governments Organization regarding what funding changes have occurred after the expiration of MAP-21 and determine what new funding options are available.
- ☒ Work with the Apache-Sitgreaves Forest Service and their travel management plan to coordinate trails on and between Forest Service land and County land.
- ☒ Set up a trail planning and/or building workshop for local volunteers.



## 9. PLANNING LEVEL COSTS

Planning level cost estimates were developed for the various facilities in the plan and are listed in [Table 3](#). They are presented as “order of magnitude” costs and are intended to be used for comparison purposes using only dollar signs to indicate the cost range. Detailed costs were beyond the scope of this study because the many factors that can influence the final cost—topography, physical obstructions—were unknown at this level.

Planning level costs and assumptions were determined for the different types of facilities and include contractor-rate cost for installation and overhead factors for items such as mobilization, stormwater pollution prevention plans, and contingencies (the overhead costs average about an additional 50 to 60 percent). The estimates are conservatively high. The cost for purchasing land or easements is not included.

An additional timeline consideration is the preparation by BLM of their updated resource and travel management plans, due to occur over the next 3 to 6 years. In these efforts, BLM takes into consideration local trail planning efforts. Some trails, such as Ashy or Mulligan, which occur on BLM land, could be planned and built under BLM’s plans rather than with County funding. This would also ensure those trails would be part of the BLM’s planned system. However, timing and the possibility that the projects would not be included are drawbacks to waiting.

### A. Bike Route (signs only)

For cost planning purposes, bike route signing improvements consist of installing signs that indicate the route. Sign cost is

based on Bike Route D11-1 sign style, 8 signs per mile, at \$400 a sign.

### B. Bike Route (widen paved shoulder)

For cost planning purposes, bike route paving improvements consist of providing a minimum 4-foot shoulder on both sides of the road. The per mile cost is \$266,000. Bike route projects can be segmented into 3-mile sections, as needed, to assist with funding resources and opportunities.

### C. Multiuse Path

For cost planning purposes, multiuse paths are assumed to be 10 feet wide, concrete. The cost per mile is \$478,000.

### D. Trails (new)

For cost planning purposes, new trails are assumed to be 4 feet wide, cleared native soil. As specific projects are implemented, widths may change as appropriate. The per mile cost is \$43,000.

### E. Sidewalk

For cost planning purposes, sidewalks are assumed to be 5 feet wide, concrete, both sides of road. The cost per mile \$225,000.

### F. Signs

Signs include wayfinding and trail markers. For planning purposes, the cost per sign is \$400.

### G. Trailhead

For cost planning purposes, trailheads include five unpaved parking stalls and signs. The cost is \$12,000.





## H. Hybrid Beacon Crossing

For cost planning purposes, hybrid beacon crossings are assumed to be \$75,000 which includes the pole and signal, and the crosswalk markings.

# 10. FUNDING

## A. Background

The following information provides recommendations to maximize external funding opportunities for trail projects recommended in this study. These recommendations are intended to provide an overall assessment of funding potential and to make suggestions about which elements could help increase the number of external funding opportunities available to pursue.

The following sections provide general conclusions regarding the project's overall funding potential, and a list of project components that will be the most compelling to funding agencies. In addition, steps to leverage and expand the project's funding potential are discussed.

Examples of applicable grant opportunities for the County to consider are included. However, a full list of relevant grant programs is not included in this report for two main reasons. First, the funding landscape can be volatile, dynamic, and unpredictable with program priorities, availability of funds, and evaluation criteria changing frequently. Second, much of the program information that could be provided now would likely be out of date by the time the design phase commences for any of the recommended projects.

## B. General Conclusions

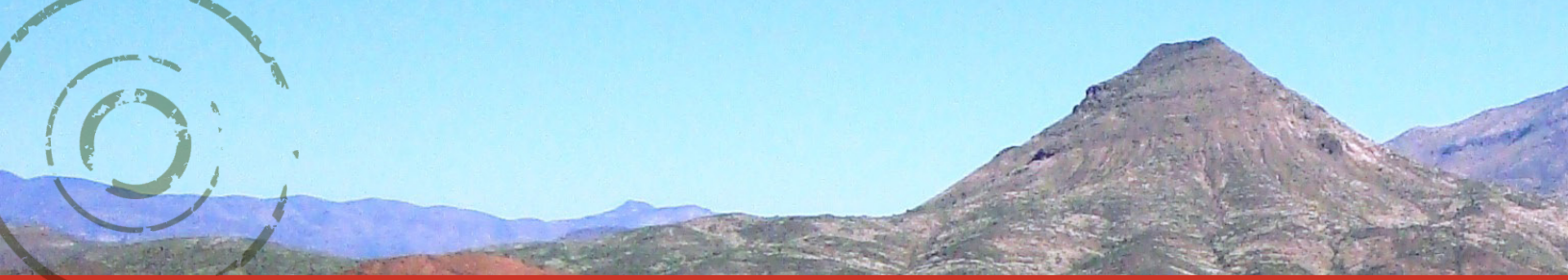
The Southern Greenlee County Trails Study projects have good funding potential, with several characteristics that could open up additional funding opportunities. Specifically, the objectives of the study paired with the overall goals of the County to enhance tourism, the history and ecology of the region, and the demographics of the area are all factors that could expand the types of funding programs the County could pursue. In addition, the project holds promise for even more expansive funding options if the County opts to include other, currently unplanned, project elements, such as environmental education, ecological conservation, and/or water-based recreational activities.

Projects related to parks, trails, and recreational activities (both passive and active) are typically among the most fundable

### Arizona State Parks

*The Arizona State Parks Department manages four grant programs that collectively provide up to \$4 million annually in funding from federal Recreational Trails Program funds. The programs support a variety of design and construction activities including recreational trail maintenance, construction of new motorized and non-motorized trails, development of recreational facilities (e.g., restrooms, signage, picnic areas), damage prevention and mitigation, creation and dissemination of informational materials, and more.*

*Notably, the Department's trails programs also funds the acquisition or lease of land for the purpose of obtaining future trail alignments. In addition, the Growing Smarter State Trust Land Acquisition Program provides funds for the purchase or lease of State Trust lands that are classified as "suitable for conservation."*



types of municipal projects. Most states offer a variety of government grants, loans, and other incentive programs for these kinds of projects. More importantly, parks and recreation projects are prime for local government funding, especially in cases when the municipal agency partners with local non-profits to seek funding from private and corporate foundations.

Although parks and recreation grants will be key to obtaining construction funds for the project, the County has other fundable features it could explore to expand funding potential. Exploiting these fundable features could not only help identify other funding opportunities, but also help circumvent the challenge that much of the project area exists on private land, or is owned by federal or state agencies.

### **C. Research Methods**

Comprehensive research was conducted into a wide range of government, corporate, and private/foundation funding opportunities. The research was based on the types of projects that are expected to emerge from the Southern Greenlee County Trails Study, demographics of the area, and the broader regional goals as they pertain to this project. Thus, funding searches focused on recreation, trails, historic preservation, environmental education, and economic and rural development.

### **Arizona Game and Fish**

*In 1990, Arizona citizens voted to allocate up to \$10 million per year in lottery ticket revenues to the Arizona Game and Fish Department's Heritage Fund Program for the conservation and protection of the state's wildlife and natural areas. Specifically, the Heritage Fund supports projects related to endangered species, urban wildlife, environmental education, and outdoor recreation.*

*The Public Access grant program provides funding for projects that create or maintain access to publicly held lands for recreational use. In state fiscal year 2014, a total of \$50,000 was available through this program with no maximum award amount.*

### **D. Fundable Features**

As noted earlier, the Southern Greenlee County Trails Study projects have a number of characteristics that make them attractive to a wide range of funders.

#### **i. Historical Significance of the Area**

Greenlee County and the towns therein of Clifton, Duncan, and Morenci are steeped in history that predates its formal establishment as a county in 1909. The area has a substantial number of locations officially designated by the National Registry of Historic Places (see [Table 4](#)). The use and promotion of trails to access historical landmarks (whether officially designated as such or not) adds a unique measure of interest for funders.

#### **ii. Recreational Opportunities Along Trails**

The proposed Southern Greenlee County trail system offers an abundance of recreational activities beyond general use for hiking and biking, providing access to camping, bird-watching, natural hot springs, and points of historical interest. This collection of activities is distinct to the area, enriches the experience





**Table 4: National Registry of Historic Places Listing for Historic Properties in Greenlee County, Arizona**

Name	Location	Town
Black Gap Bridge	Black Hills Back Country Byway 7.8 miles southwest of Clifton	Clifton
Clifton Casa Grande Building	8 Park Avenue	Clifton
Clifton Townsite Historic District	Confluence of Chase Creek and the San Francisco River	Clifton
Gila River Bridge	Black Hills Back Country Byway 6.8 miles southeast of Clifton	Clifton
Park Avenue Bridge	Park Avenue over the San Francisco River	Clifton
Dell Potter Ranch House	North of Clifton	Clifton
Solomonville Road Overpass	Black Hills Back Country Byway 4.5 miles south of Clifton	Clifton
Benjamin F. Billingsley House	202 Main Street	Duncan
Bear Mountain Lookout Complex	Apache-Sitgreaves National Forest	Mogollon Rim

of trail users, and creates opportunities to acknowledge and recognize project sponsors using interpretive signage and/or wayfinding signage. Like the historical elements of the project, the recreational component can add appeal to funders, and broadens the types of relevant funding programs from those that primarily support specific recreation opportunities, to include others such as birding groups, wildlife societies, and/or camping associations.

### iii. Rails-to-Trails

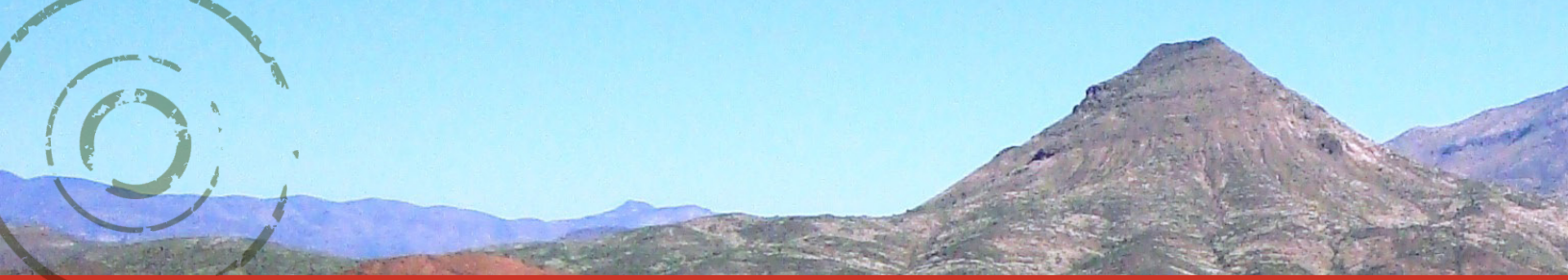
Greenlee County has an abundance of existing roads, paths, trails, and railways that can be used to create a cohesive network of trails. Typically, most railroad companies have formal corporate giving programs that can be tapped to support local capital projects, especially projects involving nonprofits. For example, the Union Pacific Foundation has awarded over 61 grants (totaling over \$307,000) to Arizona projects between 2010 and 2011.

### iv. Strong Corporate Presence

Freeport-McMoRan is the largest employer in Greenlee County, with annual revenues exceeding \$18 billion. The company has a vested interest in the community, and a history of supporting projects related to parks, economic development, and environmental causes. More importantly, the company has two formal corporate giving programs that are readily available to pursue for funding if the County partnered with an eligible local school or nonprofit organization (e.g., Boys & Girls Club).

### v. Rural Community Demographic

Many state and federal funding agencies prefer to fund projects that benefit rural communities with limited resources, rather than projects in urban areas with access to resources. Although not all funders use the same population parameters to define a small or rural community, in most cases, the County itself would qualify as a small and rural community. In those instances in which the County population does not apply, the applicant could be one of the towns in the County—all of which could certainly qualify.



There are several funding programs that specifically support projects in rural areas. For example, the Arizona Office of Tourism's Rural Tourism Development Grant Program provides funding for projects and programs that "strengthen the regional and local economies and expand tourism in rural communities throughout Arizona." In addition, the trails project may be eligible for Community Development Block Grant (CDBG) funds, which can be used to address a variety of community needs, including public facilities and parks. The Arizona Department of Housing, which facilitates the CDBG program, receives roughly \$13 million to fund eligible projects in the 13 rural communities in Arizona.

#### **vi. Demonstrated Local Support**

The project has already garnered support from ADOT, indicating strong interest in the outcome. Funders prefer to invest in projects that are endorsed and/or financially supported by local stakeholders, which makes them more attractive and less risky than projects that rely solely on one or two funding sources. Thus, ADOT's initial investment to date should be promoted to help leverage future funding from other funding prospects.

By capitalizing on the fundable features of the project, the County is likely to have more grant opportunities to pursue than it would otherwise have available. Similarly, the towns may want to consider implementing one or more of the following recommended funding strategies.

### **E. Recommendations**

The following section provides suggestions for leveraging project activities, maximizing

the County's competitiveness, and tapping into alternative sources of funding. These recommendations were derived using a combination of industry expertise specific to capital funding, review of technical materials, study team correspondence, and funding-specific research conducted for this project.


#### **i. Create a Long-term, Diversified Funding Plan**

To help guide the grant-seeking efforts for this project, the County should establish a diversified funding plan once the project elements have been conceptualized. This process could be as simple as keeping a spreadsheet of funding prospects the County would like to pursue, including relevant information about the targeted prospects (e.g., name of funding agency, program name, grant purpose, estimated grant deadlines, maximum request amounts, website address). If the County created and monitored this prospect list in tandem with the project planning and design phases, it would remain informed and apprised of key funder milestones, application requirements, and matching fund requirements. In some cases, maintaining a funding plan even helps keep the momentum of implementing the project simply because the deadline dates require action and follow-up.

#### **ii. Develop Relationships with Key Funders**

Greenlee County can build a robust and diverse portfolio of funding partners by developing strong relationships with key funding agencies. For example, by implementing the Trails Plan, the County is already cultivating a relationship with ADOT specific to this project. Similarly, the County can correspond with and engage other local and state funding agencies while disseminat-





ing results of the current study. Other ways to develop relationships with key funders may include (but are not limited to):

- ◆ Applying for other pre-construction grants (i.e., additional feasibility studies, planning, and design). This will help engage funding agencies early in the process, facilitate relationships with program officers, and solidify opportunities to obtain funding for construction portions of the project.
- ◆ Engaging program officers in the initial stages by discussing plans before they are solidified. For instance, the County could convene a local stakeholder or technical assistance coalition, and engage representatives in future planning. If the County is open to seeking and soliciting technical assistance from state agencies, involving state representatives can often generate enthusiasm and interest at these agencies for a particular project. Program officers/state representatives often become personally invested in a project—advocating internally for the completion of the project.
- ◆ Making use of the technical assistance provided by program officers. Not only will the information they provide be helpful for crafting a competitive grant application, but engaging them can help create additional “project champions” that advocate and promote the project to audiences that otherwise might not be accessible.

#### **F. Leverage Existing Support**

ADOT’s funding of the Trails Plan gives Greenlee County a substantial advantage in the eyes of other funding agencies because it has managed to obtain support at such an early stage of the project. Simply put, the County can capitalize on this support by referencing it in future proposals. As new

funding is secured from additional agencies, the investments and involvement should likewise be promoted.

#### **G. Leverage Fundable Features**

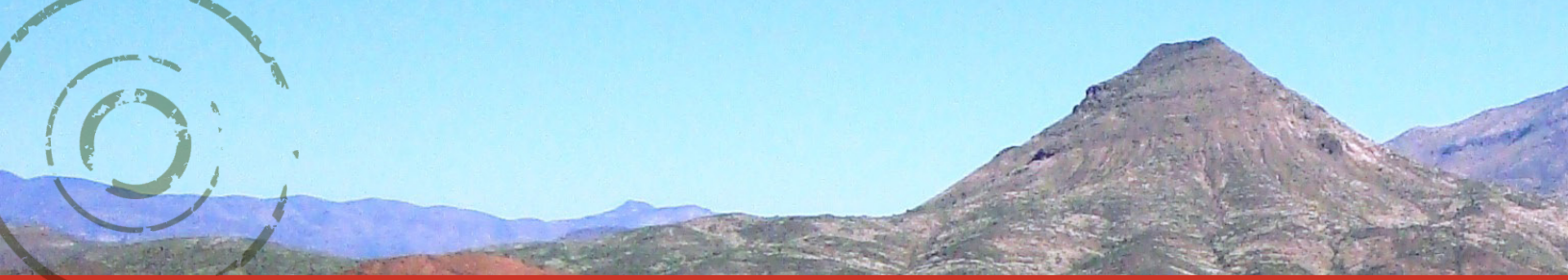
Focusing on the project features with strong funding potential will not only make the County’s grant applications more competitive, but also will allow the County to pursue specific types of funding. For instance, if the County incorporated historic landmarks when seeking funds for the construction of new trails, it could tap into historic preservation funds

##### **i. Historical Significance of the Area**

Funding for historic projects are available through: 1) the National Park Service, 2) the State Historic Preservation Office Division of Arizona State Parks, and 3) the National Trust for Historic Preservation. In addition to historic sites recognized by the National Historic Register (refer back to [Table 4](#) for examples), the County could pursue projects with local historic impact, such as the Mares Bluff War Memorial.

##### **ii. Recreational Opportunities Along Trails**

The proposed Greenlee County trail system offers an abundance of recreational activities beyond general use for hiking and biking, providing access to camping, bird watching, natural hot springs, and points of historical interest. This collection of activities is distinct to the area and enriches the experience of trail users. For instance, along the San Francisco and Gila Rivers are areas designated for bird watching, and areas known to have high populations of sandhill cranes.



### **iii. Economic Development Potential**

The County has deemed the Trails Plan as a priority project, in part because of its potential for raising new revenues. Thus, the County may want to consider opportunities for revenue-generating activities.

### **iv. Pursue Corporate Funding Opportunities**

Greenlee County is one of the geographical locations the Freeport-McMoRan Copper & Gold Foundation supports, and the trail improvements Greenlee County has proposed appear to fit well within the corporate funding focus areas for the Foundation (i.e., the categories of environment, safety, recreation, community development, and economically disadvantaged people).

The Foundation's General Social Investment Program is intended to address high-priority needs and community development, with special emphasis on projects designed to address economic and community development; community safety, health, and wellness; the environment; and cultural heritage and the arts.

Between 2007 and 2013, the Foundation awarded organizations in Greenlee County over \$1.3 million in grants (see [Table 5](#), next page). Based on preliminary research, this corporate foundation should be considered the top corporate prospect for trail improvement projects.

Including a company representative on the stakeholder committee during the planning process may help set the stage for future requests. Greenlee County could position itself to receive several grants in multiple years to help fund the construction of the trail projects. This funder will be especially

interested in any recognition benefits the County can offer for sponsoring the project (e.g., recognition on permanent signage, participation in ground-breaking events, media acknowledgement, etc.).

### **H. Create a Stakeholder Advisory Board**

An advisory board of local residents and landowners who own property in the Study Area could potentially make them more amenable to allowing access across their land. Stakeholders such as government landowners (e.g., representative from BLM) could also open up funding opportunities that otherwise might not be available or commonly known.

Obtaining input from local residents can also sometimes increase the appeal to funders, especially because it demonstrates the County cares about public input and/or is committed to fulfilling a need identified by the community. Knowing there is community acceptance of a project makes grantors more confident. Finally, engaging private citizens could also yield new funding opportunities or connections. Wells Fargo's Neighborhood Planning Grants Program provides funding to non-profit organizations and municipalities to support direct expenses related to project planning such as advisory group development, outreach and neighborhood organizing functions, and community meetings.

### **I. Potential Funding Sources**

Funding may be scarce and the application process competitive, but applying for federal and state funding is still a viable way to obtain money for design and construction of nonmotorized facilities. The following



**Table 5: Freeport-McMoRan Copper & Gold Foundation Grants Provided in Greenlee County (2007 – 2013)**

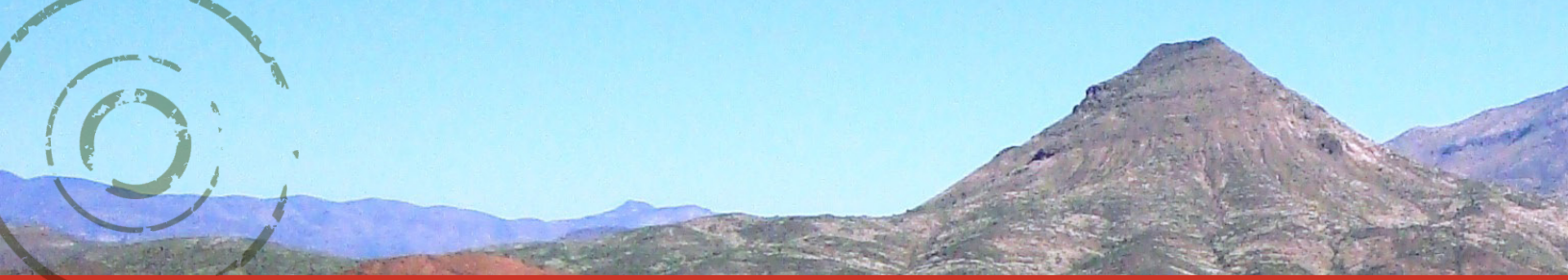
Name	Year	Amount (\$)	Purpose
Greenlee County Sheriff's Department	2010	62,800	Mobile response unit
Greenlee County Superintendent's Office	2012	85,000	Education program for science, technology, engineering, and math disciplines
Southeastern Arizona Governments Organization	2013	25,000	Asset inventory
Town of Clifton	2011	25,000	Business resource center/commercial kitchen
	2011	22,600	Food bank rehabilitation
	2013	104,000	Clifton Parks revitalization
Town of Duncan	2010	42,000	Pool project
	2012	118,500	Complete water pipeline project
Duncan Valley Rural Fire District	2007	100,000	General support
Duncan Unified School District No. 2	2011	65,500	Duncan Science and Arts Initiative
	2012	60,000	Technology upgrade
	2013	39,500	Library reading program upgrade
Morenci Unified School District No. 18	2009	150,000	General support
	2010	150,000	Continuing support
	2011	150,000	Community activities program
Duncan Pride Society	2013	13,000	Restore and preserve the Hal Empie mural
Gila Watershed Partnership	2012	25,300	Increase watershed stewardship training
	2013	27,611	Tourism efforts associated with birding
Southeastern Arizona Behavioral Health Services	2012	11,000	Set up Students Against Destructive Decisions chapters
Southeastern Arizona Workforce Connection	2013	35,888	Support the 2014 Summer Youth Program

information is not an all inclusive list but does highlight some of the more common sources.

#### i. Federal

Potential federal funding sources are listed below with the types of recommended facilities they could fund. Additional descriptions of the funding programs follows.

- ◆ Moving Ahead for Progress in the 21st Century (MAP-21)
  - ◇ Surface Transportation Program (STP) [trails, sidewalks, pullouts, shoulders]
  - ◇ Transportation Alternatives (TA)
    - Recreational Trails Program (RTP) [trails]



- ◆ Highway Safety Improvement Program (HSIP)  
[bike lanes, shoulders, crosswalks]
- ◆ Community Development Block Grants (CDBG)  
[sidewalks]

### MAP-21

MAP-21 funding for bicycle and pedestrian transportation was reduced and consolidated from the previous funding act (SAFETEA-LU) into a program called "Transportation Alternatives." The current MAP-21 Act expires October 1, 2014. The proposed reauthorization act would extend the funding for the next 6 years, if approved.

At the state level, the TA program gets funded by apportionments from STP, HSIP, Congestion Mitigation and Air Quality Improvement Program, National Highway Performance Program, and Metro Planning. Most bicycle and pedestrian projects would be funded from TA or STP (which has its own recreational trails category separate from the RTP).

### STP

The Surface Transportation Program provides funding for states and localities to use on projects that preserve and improve the conditions and performance on any Federal-aid highway; bridge and tunnel projects on any public road; pedestrian and bicycle infrastructure; and transit capital projects, including intercity bus terminals.

From Arizona's apportionment of STP funds, they first set aside monies for the TA program (see separate listing), for State Planning and Research, and for off-system bridges. The remaining funds are then split 50/50 between

the urbanized areas of the State and the remaining areas of the State.

Eligible activities applicable to the Southern Greenlee Trails project are:

- ◆ bicycle transportation and pedestrian walkways
- ◆ sidewalk modifications to conform to ADA standards
- ◆ recreational trails projects.

Contact:

Chris Vertrees, SEAGO, (520) 432-5301 ext. 209

### TA

From the STP, states receive an apportionment of TA funds. From that, the state can opt to set aside a portion specifically for the RTP. Of the remaining funds, 50 percent are allocated by population (urbanized areas) and 50 percent go to any area of the state. States can opt to take the latter 50 percent funding (for areas outside the Metropolitan Planning Organizations) and transfer it out of TA and into any other highway program.

Eligible activities related to the Southern Greenlee County Trails Study project are:

- ◆ planning, design, and construction of pedestrian and bicycle facilities
- ◆ safe routes for nondrivers
- ◆ converting abandoned railroads to trail corridors
- ◆ constructing turnouts, overlooks, and viewing areas
- ◆ recreational trails
- ◆ Safe Routes to School

Contact:

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## RTP

Arizona State Parks is the agency responsible for administering these funds in Arizona. Arizona's RTP funds are divided between motorized projects (30 percent), non-motorized projects (30 percent), and diverse trail projects (40 percent). To be considered, projects must be ready to move forward immediately, including having any required cultural and environmental clearances in hand.

There are seven categories of projects including maintenance of trails, building of trails, purchasing land or easements, and education. Project funding requests are capped at \$80,000. Trail maintenance requests are capped at \$30,000. To demonstrate commitment for Trail Maintenance projects, the RTP requires a match of at least 5.4 percent of the total project cost. Projects having a 10 percent match receive bonus points in the grant rating process. Applications are generally due in late February.

Following are examples of eligible project types with those most applicable to the Southern Greenlee County Trails Study highlighted in *italics*:

- ◆ *development, construction, and enhancement of recreational facilities, use areas, and trails (for example, trailheads, restrooms, access improvements, signing, picnic areas)*
- ◆ mitigation—defined as rectifying or reducing existing damage to natural (flora, fauna, and land) or cultural (prehistoric or historic archaeological sites) resources caused by unauthorized uses
- ◆ prevention of damage to natural or cultural resources
- ◆ *development and dissemination of trails related user information*
- ◆ *acquisition or lease of future trail alignments*
- ◆ renovation—defined as the redesign, reconstruction, non-routine maintenance, or relocation of recreational trails to benefit the natural environment or to mitigate and minimize the impact on the natural environment. Other reasons for renovation may include erosion and deterioration, improper original alignment, improper design, safety-related issues due to hazardous conditions, and natural disasters.

## Contact:

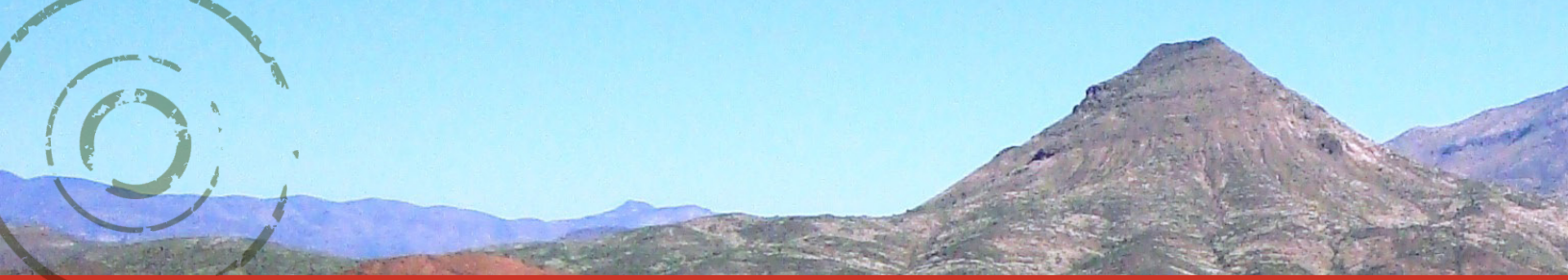
Robert Baldwin, Arizona State Parks,  
(602) 542-7130

## HSIP

HSIP funds are used for safety projects aimed at reducing traffic fatalities and serious injuries. Bicycle and pedestrian projects and all public roads are eligible for HSIP funding. Examples of eligible projects are:

- ◆ bicycle lanes
- ◆ roadway shoulders
- ◆ crosswalks
- ◆ intersection improvements
- ◆ signage

For bicycle and pedestrian projects to be eligible for funding, the safety aspect needs to be emphasized in the state's Strategic Highway Safety Plan. If that is not the case, the projects can also be eligible under lane departures and intersection safety, which would address bicycle and pedestrian accidents that occur. HSIP is a data-driven program so the safety concern must be carefully documented so the need can be strongly demonstrated.



Contact:

Chris Vertrees, SEAGO, (520) 432-5301 ext. 209

### **CDBG**

The primary statutory objective of the CDBG program, funded through the U.S. Department of Housing and Urban Development and administered by state Councils of Governments, is to assist low- to moderate-income neighborhoods. Funded activities generally prevent or eliminate slums or blight, or meet urgent community development needs. Communities applying for CDBG funds must hold at least two public hearings to let residents identify possible projects.

Projects that could be eligible, and applicable to the Southern Greenlee Trails Study, include installation and repair of curbs, gutters, sidewalks, and curb ramps. Like other federally-funded programs, projects must be environmentally cleared.

Contact:

Bonnie Williams, SEAGO, (520) 432-5301 ext. 211

### **ii. State**

Potential state funding sources are listed below with descriptions following.

#### **◆ Heritage Fund Grants [trails]**

In 1990, voters approved \$10 million a year from lottery revenues for parks. During the recession, lawmakers reappropriated funding for other purposes. Several attempts to restore it have failed at the Legislature and at this time it is not available.

Contact:

Robert Baldwin, Arizona State Parks, (602) 542-7130

## **11. SUPPORTING INFORMATION**

For planning purposes, the following information is provided to outline the steps for attaining facilities under different programs. Only the general steps are provided here.

### **A. Trail Building on Public Lands**

Trail building across State Trust and BLM land may require the purchase of easements and rights-of-ways.

#### **i. Arizona State Trust Land**

Some popular trails, such as the Arizona Trail and Maricopa Trail, were purchased from ASLD as perpetual rights-of-way. This allows pedestrians to access them without a permit. However, off-highway vehicle users still need an ASLD OHV decal to access them. To obtain a right-of-way across State Land, an application and supporting documents must be filled out that detail what the land would be used for. The ASLD also requests a United States Geological Survey topographical quadrangle map showing the easement alignment and length along with township and county designations. All clearances including archaeological, native plants, waters of the United States, and environmental quality must be met and submitted with the applications. Once all of these items are sent to the ASLD with the accompanying fee, it takes 12 to 16 months for the application to be processed.

The Arizona Preserve Initiative Program is an option for the acquisition of Trust land within incorporated cities and towns. The land must be within one mile of incorporated municipalities of less than 10,000 persons, or within three miles of municipalities equal to





or greater than 10,000 persons. This program was established to preserve unique resources, open space, scenic beauty, etc. A state or local government, business, state land lessee or group of citizens may petition the State Land Commissioner to have certain Trust land nominated and reclassified for conservation purposes. After all appropriate notifications, public hearings, consideration of physical and economic impacts to lessees and the Trust, the Commissioner may reclassify the subject land as suitable for conservation purposes. The land can then be appraised and auctioned for lease or for sale.

## **B. Safe Routes to School**

The SRTS program is an aid for state agencies to provide safe and practical pathways from populated neighborhoods to local schools. The SRTS program promotes healthy habits and aims to provide a flexible solution for local needs while maintaining a high level of safety for schoolchildren.

Under the MAP-21 bill, funding for SRTS was significantly cut and then combined with the remaining limited funding for what were previously called Transportation Enhancement projects. The funds are currently only available for projects in the two major metropolitan planning organizations—Maricopa Association of Governments and Pima Association of Governments. However, all interested parties continue to push for expanded funding in future bills. The opportunity exists to work on planning and preparation efforts so when funding is again available, the County's school districts are positioned to apply for projects.

### **i. SRTS Management**

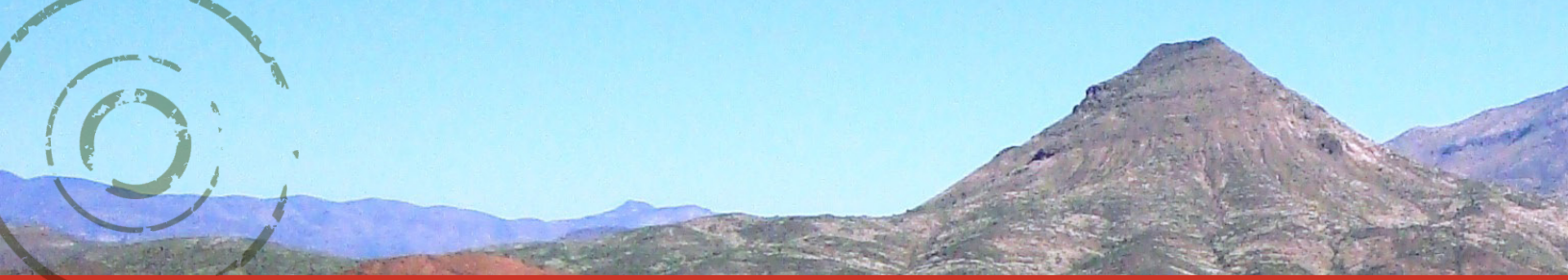
Many states, including Arizona, choose to manage their SRTS process through their Department of Transportation (DOT) in a central location. Other states, such as Florida and New York, operate as separate districts under the central agency. Each district is allotted state funding based on its Kindergarten – Grade 8 population. Every year, each district may submit infrastructure applications which are reviewed by an evaluation panel and ranked according to factors such as traffic engineering and roadway design.

### **ii. Establishing SRTS**

At the time of this report, ADOT does not have an SRTS coordinator or program. However, there are many guides and websites available to assist in the SRTS process and planning of projects. The Mississippi DOT created a useful guide for establishing Safe Routes to School projects, from which the following summary was extracted. The guide is intended to outline key steps (listed and then described below) involved in the process



*US 191 through Clifton is often busy and traffic includes large mine equipment, making it difficult to cross*  
Source: HDR



and is intended to be adapted to fit local agencies' needs.

### Key Steps

1. Enlist the right group of people
2. Hold a kick-off meeting
3. Gather information and identify issues
4. Identify solutions
5. Develop a plan
6. Get everyone started
7. Over time, readjust as needed

✓ The **first step** is to talk with community members and decide who wants to be involved in the effort and learn from them what projects they believe would be most beneficial. Parent teacher organization representatives, school principals, teachers, and neighborhood watch members are listed as potential interested team members; having a cross section of expertise is helpful and finding a champion is key. Then ask the children what they think about routes to school or what they would change.

✓ The **second step** is to hold a kick-off meeting. This will allow everyone to meet, create a vision, and work on next steps. The SRTS website has informational videos that can be played at the meeting to give members an idea of the process and the goal. The meeting would allow everyone to voice their concerns and create a unified and tangible goal.

✓ The **third step** is research. First, identify the area in which students can realistically walk to school based on distance. The list below gives recommendations on maximum walking distances based on age. Individual schools can provide their enrollment

boundaries, and walking distances should be calculated from those.

- ◆ elementary school : 1/2 mile radius
- ◆ middle school : 1 mile radius
- ◆ high school : 1 1/2 mile radius

Information must then be gathered to determine how many students are currently walking or bicycling to school and how many students would start to do so, given the establishment of a SRTS. Discussion with school administrators and local parents would provide more information. Traffic counts, speed data, and injury data would also be beneficial in determining what areas are most dangerous to children. Based on the information gathered, identify specific issues.

✓ The **fourth step**, identify solutions. With safety as the primary goal, identify education, encouragement, engineering, and enforcement solutions to the identified issues. Depending on the length of the list, the group may need to prioritize them. Establishing a set of criteria will be crucial to prioritization.

✓ The **fifth step** is to develop a plan. It can be a simple map, timeline, and how the projects will be evaluated. Evaluation, through data collection and analysis before and after implementation of SRTS projects, is an important component of the SRTS program.

✓ The **sixth step** is obtaining funding. Some solutions (new signs or fresh paint) may be affordable by the school district or can be donated. However, larger projects such as new paths or a pedestrian crossing would be the type of improvement funding for which communities apply.





## A. Rails-to-Trails

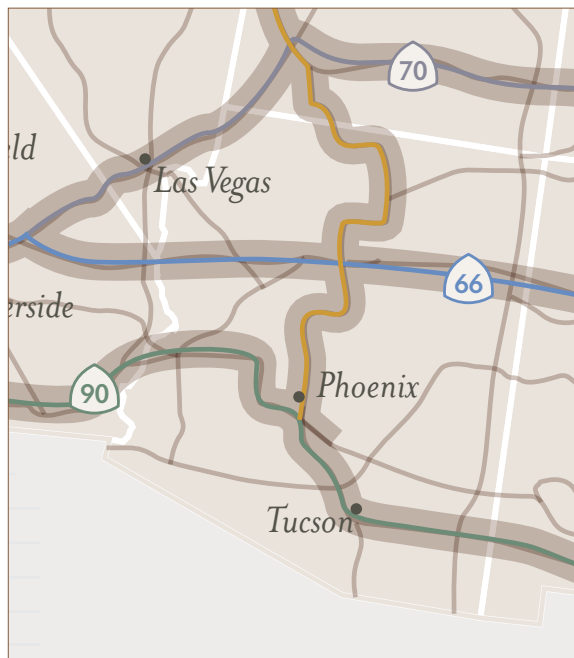
Rails-to-Trails are projects created from former rail lines. The Rails-to-Trails Conservancy is the organization that supports the effort to create these projects by providing planning tools and experience to local groups. There are more than 20,000 miles of rail-trails throughout the country.

The first step in the process is to determine if the rail is officially abandoned. If so, the next step is to determine how to obtain the land (purchase, option to buy, easement, donation, lease, or through eminent domain). If the rail is not officially abandoned but is not being used currently, railbanking is an option. Railbanking is the method by which a corridor can be used for a trail at present but still preserve it for future rail use. The final step is to plan, design, build the trail, and advertise the amenity.

## B. U.S. Bicycle Routes

Through an AASHTO task force, a national network of bicycle routes is developing called the U.S. Bicycle Route System, which will link urban, suburban, and rural areas. To date, close to 6,000 miles of U.S. Bike Routes have been established in 12 states with more than 40 states working to create routes. Most routes will be on existing roads.

In Arizona there are four Prioritized Corridors that cross the state (see graphic above right). Prioritized Corridors are not routes, but 50-mile-wide areas where a route may be developed. Corridor 90 crosses southern Arizona with the goal of passing through Tucson. Currently, many cross-country bicyclists use SR 78 and US 191 through Safford as the route of choice. While the



*Excerpt from the United States Bicycle Route System map.  
Source: Adventure Cycling Association*

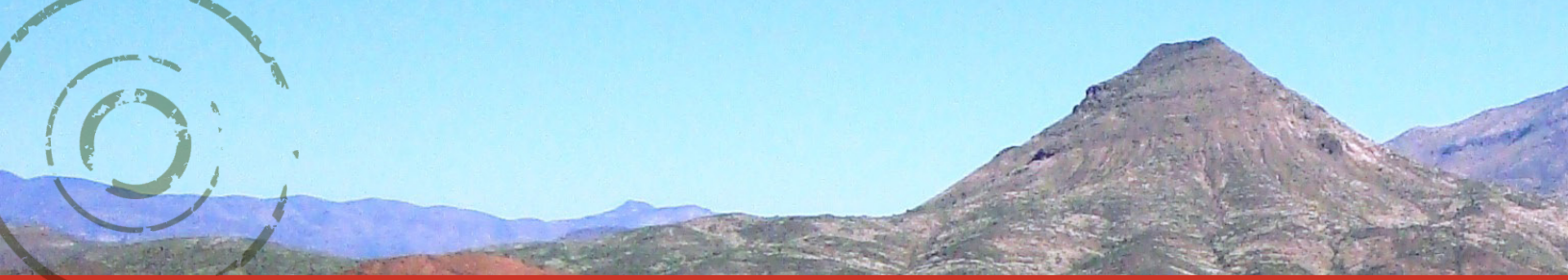
proposed Corridor 90 appears to cross the state farther south, all routes are still being considered in discussions among Arizona, New Mexico, and the national committee.

## C. Trail Design and Construction

Trail design guidelines and references are offered here should the County decide to use volunteer labor to construct trails or other amenities.

### i. Sustainability

Trail design will be an important element in defining how each path and trail will be used. The design should provide users with access to a variety of destinations while providing scenic, historic, and biologic sites along the trail for users to enjoy. While the trail designer must be accommodating of user needs, they must also be mindful of trail sustainability. The National Park Service provides defining criteria for sustainable backcountry



trails (Duffy, Basch, and Sharlow, 2012). Backcountry trails are defined as primitive and underdeveloped trails and do not refer to a specific geographic area. By this definition, a sustainable trail:

- ◆ supports current and anticipated use with minimum impact to the adjoining natural systems and resources
- ◆ produces negligible soil loss or movement while allowing naturally occurring fauna to inhabit the area
- ◆ may require occasional pruning and removal of plants to maintain the integrity of the trail
- ◆ minimizes braiding, muddiness, and erosion
- ◆ does not require re-routing or major maintenance

Following these standards will ensure that the trail will be an adequate facility for a variety of trail users while maintaining its quality and durability over long periods of time.

## ii. Documents

The following documents have been suggested as resources for path and trail design.

### Pathway to Trail Building

This document, published by the Tennessee Department of Environment and Conservation, outlines the details of trail design and construction (Tennessee Department of Environment and Conservation, 2007). The document provides general guidelines regarding topics such as trail gradient, layout, location, ADA compliance, and safety. The document provides useful techniques used during trail construction, and also highlights the benefits

of trail facilities including bridges, signs, and information kiosks.

### Desert Trails: Designing and Building Trails in a Harsh and Demanding Environment

*Desert Trails* was produced by Mark Flint, who began as a trail volunteer and is currently designing and supervising trails in Pima County, Arizona. This manual focuses on the design of sustainable and enjoyable trails in desert landscapes (Flint, *Desert Trails*, 2009). The document provides techniques on how to mitigate the effects of erosion on a trail due to water flow and how to design a trail that will provide the most enjoyment to its users. Flint states that a sustainable trail does not mean that no upkeep is required, but rather that the number of irreversible problems is reduced and the upkeep that is required is minimal.

### Forest Service: Trail Fundamentals and Trail Management Objectives

This document provides a reference for categorizing and managing trails within the National Forest Service boundary (Department of Agriculture, 2011). While these categories and techniques are not strictly enforced for trails outside of the boundary, they do provide a good example of a unified trail classification system.

## iii. Strategies

Several trail design strategies were taken from *Desert Trails* based on their usefulness towards current and potential trails in the Greenlee County area.

In *Desert Trails*, Mark Flint suggests trail armoring for steep grades when they cannot be avoided, which may be true of trails in the Study Area. Armoring is a trail building method in which rocks are placed on a trail





to prevent erosion and create a flat travel surface (Armoring, 2011). Rocks are laid with the flattest surface facing up and the area between rocks is often filled with soil or gravel to help prevent movement or settling. Armoring can also be used to harden a trail in rainy climates, cross muddy or sandy areas, and toughen the surface on high-traffic routes. The picture below shows a trail that has been armored with broken slabs of concrete and reinforced with rot-resistant logs (image below). The logs provide an extra level of reinforcement and are not required on all armored trails; the use of concrete slabs is a good use of a material that would otherwise go to a landfill.



Concrete slabs used to armor trail  
Source: [www.mtbikewnc.com](http://www.mtbikewnc.com)

Flint also states that the management of water is a defining factor of a sustainable trail. This is especially true for desert trails where rain isn't frequent but can pour at high velocity and high volume with no notice. He suggests controlling how and where the water flows by creating check dams made

of medium to large rocks above and below a trail. The image below shows a check dam on a desert trail. Check dams are placed where drainage crosses over a trail and are made to slow down the water as it crosses to prevent erosion. Rocks on the outside edges of the dam should be higher than those on the inside to direct flow through the middle. Rocks should also be placed at the base of the wall so that water does not fall straight down and cut the soil at the base.

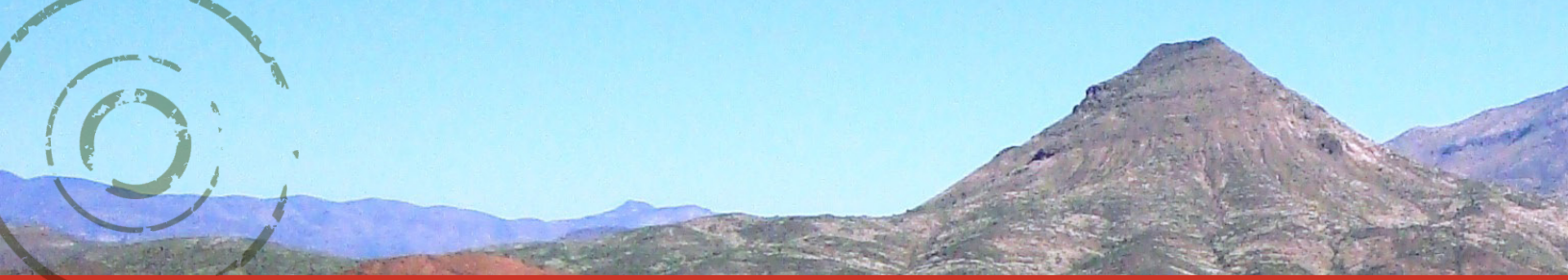


Check dam across desert trail  
Source: Flint, 2009

#### iv. Americans with Disabilities Act

The Americans with Disabilities Act now covers recreational trail accessibility with the new regulations being finalized. Under the proposed guidelines, trails are defined as *a route that is designed, designated, or constructed for recreational pedestrian use or provided as a pedestrian alternative to vehicular routes within a transportation system.* The proposed guidelines apply to trails which are *designed and constructed for pedestrian use.* This would be the case for most of the trails and paths proposed in this Study.

However, it is recognized there are circumstances where accessibility cannot



be achieved for all or parts of a trail. The following situations are considered acceptable departures from the requirements.

The building of a trail or segment of a trail would:

- ◆ cause substantial harm to cultural, historic, religious, or significant natural features or characteristics
- ◆ substantially alter the nature of the setting or the purpose
- ◆ require construction methods or materials that are prohibited by federal, state, or local regulations or statutes
- ◆ not be feasible due to terrain or the prevailing construction practices

This may be especially true in and around Clifton where ADA-compliant facilities may not be achievable due to the steep natural terrain.

Wherever possible, trails should be designed to be accessible (summary of provisions listed below) and signed and noted as such. However, given the terrain most of these trails pass through, this will not be feasible, bearing in mind that cost cannot be a consideration. Trails should not be signed as accessible unless the entire route is accessible, or non-accessible portions are clearly identified in advance. Providing information about the level of accessibility at trailheads and on maps will help all trail users understand the difficulty of the trail ahead of them.

The general guidelines for accessible recreational trails are:

- ◆ a clear tread width of at least 36 inches
- ◆ tread obstacles no more than 2 inches high (up to 3 inches high where running and cross slopes are 5 percent or less)

- ◆ a cross slope no more than 5 percent
- ◆ the running slope (trail grade) meets one or more of the following:
  - ◇ 5 percent or less for any distance
  - ◇ up to 8.33 percent for 200 feet maximum with resting intervals no more than 200 feet apart
  - ◇ up to 10 percent for 30 feet maximum with resting intervals 30 feet apart
  - ◇ up to 12.5 percent for 10 feet maximum with resting intervals every 10 feet
- ◆ no more than 30 percent of the total trail length may exceed a running slope of 8.33 percent
- ◆ a passing space is provided at least every 1,000 feet where the trail width is less than 5 feet wide
- ◆ signs are provided indicating the length of the accessible trail segment

## v. Maintenance

Path and trail maintenance will be a critical part of the success of the proposed trail network. The trails will need a dedicated team of personnel or volunteers to clean and repair the trails as often as is required.

### Tasks

To promote trail sustainability, certain tasks will need to be completed to clean, prune, repair, and maintain the condition of the trails for continued use. Shown in [Table 6](#), next page, are some basic tasks that can be expected from those maintaining the trails. While each trail will require a different level of care, this list provides a starting point on which to base future maintenance needs.

### Maintenance Groups

Maintaining the entire Greenlee County trail network would be a large task that





**Table 6: Typical Trail Maintenance Tasks**

Task	Frequency	Comments
Mowing	3-4 times annually	Minimum 4-foot path
Pruning	Annually	Prune back 4 feet from trail sides. Maintain a 14-foot vertical clearance
Tree/limb removal	Annually	Remove unhealthy/dead trees and limbs
Signage	As required	Repair/replace damaged signs. Locate areas requiring additional signage
Access control	As required	Replace damaged gates and other devices
Trail surface	As required	Repair or resurface as required
Drainage structures	Annually	Clean inlets. Keep swales clear of debris
Litter pick up	Weekly	Walk trail and remove trash/debris
Trash collection	Weekly	Remove trash from receptacles
Bridge inspection	Every 2 years	Ensure structural integrity of bridge. Bridges associated with road system already inspected annually

Source: Campbell Thomas & Co. (2010)

could not be completed by a single group or organization. Because of this, it will be important to establish multiple groups that are each responsible for the upkeep of one, or a small handful of trails.

The Rails-to-Trails Conservancy lists groups that may be willing and able to maintain trails as part of a volunteer or community service effort (Conservancy, 2007). Some of those groups might be:

- ◆ Boy and/or Girl Scouts
- ◆ Eagle Scouts
- ◆ adult service clubs (Kiwanis, Rotary, etc.)
- ◆ church groups
- ◆ school groups
- ◆ incarcerated individuals
- ◆ local youth organizations
- ◆ Soil Conservation Corps

The County would benefit from reaching out to any of these groups, or similar groups in the area, to ask for help in maintaining County trails. Since Greenlee County is a rural area, it might be useful to call upon frequent trail users and ask for their commitment to maintain the trails as they use them.

#### **D. Enforcement**

Enforcing applicable laws on the trails will help keep them safe and enjoyable for all users. Signs with directions and trail rules, along with publicly available maps and educational materials, will help users stay within the bounds of the law.



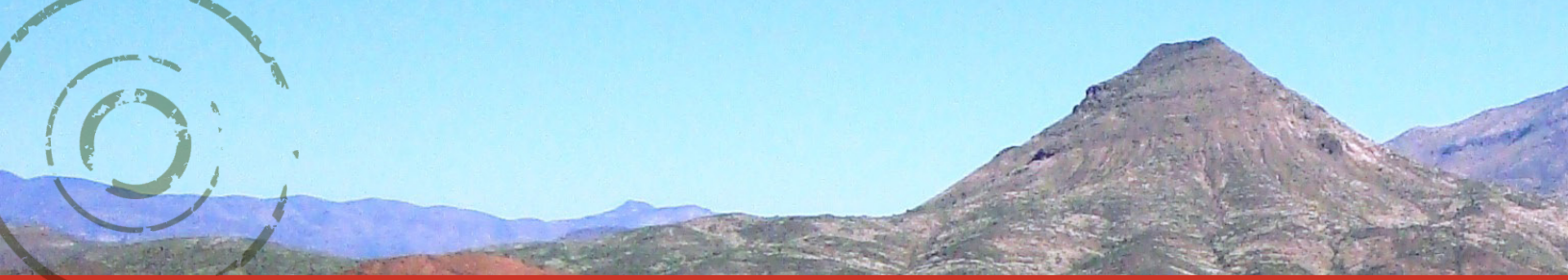
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## **APPENDIX A**

### **SUMMARY OF PUBLIC MEETING 1**



# Southern Greenlee County Trails Plan Study

**March 2014**

Prepared by  
Arizona Department of Transportation

### Introduction

The purpose of this project is to establish a plan for a county-wide system of multi-use trails. To do that, a process and vision for establishing the plan will be developed, trails data will be used to identify a priority network, and in working with stakeholders, a conceptual trails plan that identifies steps for funding and implementation will be developed.

### Public Meeting

To inform and involve community members of the study, ADOT hosted two public open houses, one at the Duncan Town Hall and the other at the Clifton Train Station on Wednesday, February 26, 2014 from 3-5 p.m. in Duncan and from 6-8 p.m. in Clifton. In addition to a presentation given in Duncan, there was an opportunity for Q&A, comments and suggestions for trail improvements. In total, 7 members of the community were in attendance in Duncan and 8 in Clifton.

### Newspaper Advertisement

A newspaper advertisement providing the date and locations of the open houses was published in the following newspaper:

- Eastern Arizona Courier (Weeks of February 10 and 17, 2014)

A copy of the advertisement can be found in Appendix A.

### Presentation and Meeting Materials

A presentation was given in Duncan and study boards and table top maps of the study area were displayed with the opportunity for questions and answers at the meetings. A comment form was provided to each attendee at the meetings. All meeting materials can be accessed on the study webpage at [azdot.gov/greenlee](http://azdot.gov/greenlee).

### The following comments/questions were received during the meetings:

- Please keep in mind the kids and their use of the river. Keeping the kids part of the river teaches them many things, i.e., respect for nature and land, non-criminal activities, etc. When kids can get out into nature—camp, fish, hunt, swim—they are staying active having fun and building lasting bonds of friendship memories. Please keep the kids in mind. Kids use the OHV Trails constantly in this area.
- Safe Routes to School in Clifton and Duncan need to be top priority.

### North Area Map-Clifton Meeting

- An OHV rider marked some favorite OHV routes in the Clifton area:
  - Follow San Francisco River from dead end north to Forest Rd. 212, then east to Frisdo Camp then south on Rattlesnake Rd. Travel through Loma Linda and follow Ward Canyon Rd. into Clifton.



## Public Meeting One Summary

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- Black Hills Back Country Byway south from connection at Highway 191.
  - Along west side of San Francisco River from 4s 30 E Trail to point where Corral Rd. meets river.
- An OHV rider noted a popular fishing location just south of Clifton along the San Francisco River. He also provided the name of a BLM Biologist (Heidi Blasius) who he has been in contact with regarding fish population in the area.
- Clifton residents from K7 Ranch informed the study team of vandalism and trespassing on their property and that they are not in favor of any trails in the area.

### **North Area Map-Duncan Meeting**

- Phil R. suggested that the Morenci Fitness Center be added as a destination.
- A TAC member pointed out that Laugharn Elementary School is on the same plot of land as Clifton High School and noted its correct location on the map.
- A meeting attendee suggested that the study team check the width of the shoulder along Highway 191, as there are sections greater than 4-feet wide.
- A meeting attendee noted a location near Murder Camp that is known to have petroglyphs.
- A meeting attendee informed the study team that the mine was considering installing a fence to keep the Bighorn sheep off of the mining roads; the fence could impact some proposed trail locations.

### **South Area Map-Clifton Meeting**

- Micah from the Forest Service suggested the International Mountain Bikers Association be included as a stakeholder group because they might be interested in biking in the area.

### **South Area Map-Duncan Meeting**

- Phil Ronnerud suggested the proposed Safe-Routes-to-School route near Duncan High School should connect to the Sandra Day O'Connor Path.
- Doug Barlow noted Burma Rd. is a good spot for OHV riding and marked where Burma Road splits.

### Comment Form Summary

The following comments were received and returned via the comment form that was provided at the public meeting. All comments received are included in this summary.

#### **Should the priority for the Southern Greenlee County Trails Plan:...**

- I am especially interested in bicycle amenities-mountain bikes not racing bikes for Coronado Trail. San Francisco River Route.

**Please list three trails (by name and/or number) that you consider the highest priority. They can be existing or proposed trails.**

- 1. Coronado Trail 2. Black Hills Back Country Byway 3. Morenci Mile-Morenci Community

**Please specify improvements on existing trails that need attention in the short term.**

- Hwy 191 route between Town of Clifton and Town of Morenci-some three miles long.

**Please list specific information for your favorite trail(s) that would help future users...**

- For three items I listed above I rate all three scale #1 worst condition-trails don't exist for mountain bikes.

**Do your children use existing trails or paths to walk or bike to school? Please let us know what trails provide access to local schools and what might be done to improve them for this use.**

- I'm concerned for children in both Clifton and Morenci communities-very, very few bicycle routes established.

#### **Additional Comments**

- Up to now, I confess ignorance of duties of ADOT. Only lately, it's good to see ADOT get even more involved. Only recently I've read that the AZ Dept. of Public Safety will be assigning an officer to Greenlee County after some 10 years being without.
- Concerns I have: Every trailhead has parking with signage listing rules of the trail, etc. The construction of the trail is critical for sustainability. Trails for mountain bikers should be built with loops with the first loop being easy and succeeding/further away from the trailhead more difficult. Any trail longer than 50 miles, maybe a campsite in the middle. 3 m/h walking, 3 m/h \* 8hrs=24 miles in one day. Advertising-create a website connected to the ADOT Bike/Pedestrian website with trails. Would like to see more loops in the trails. A consulting firm experienced with trail planning/construction for design plans.

A copy of the comment form can be found in Appendix B of this report.



## Appendix A

# Southern Greenlee County Trails Plan Study

## Public Open House

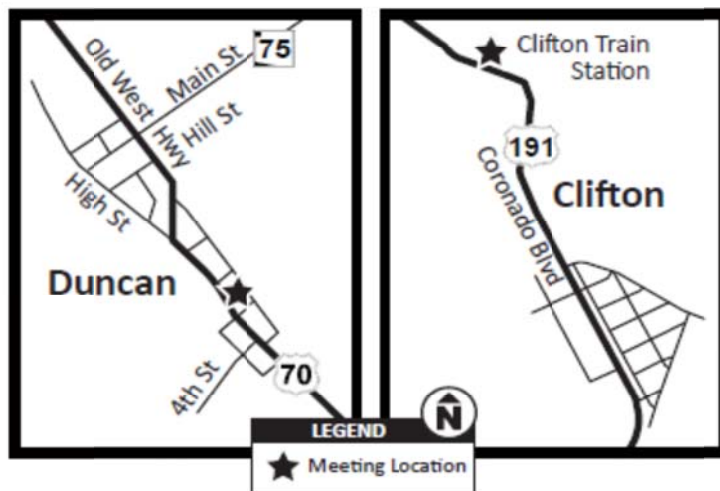
Greenlee County, in collaboration with the Arizona Department of Transportation (ADOT), is developing a plan for a regional system of multiuse trails funded through ADOT's Planning Assistance for Rural Areas (PARA) program. The study will establish a process and vision for creating the trails plan, identify a priority network and identify steps for funding and implementation of the plan. Your input is needed to help establish the trails plan.

## We want to hear from you

Join us on **Wednesday, Feb. 26, 2014**, from 3 to 5 p.m. at the Duncan Town Hall and from 6 to 8 p.m. at the Clifton Train Station for the public open house to learn more about the study and to share your ideas on a trails plan for Greenlee County. A 15-minute presentation followed by a question and answer session will take place at each location.

Duncan Town Hall  
506 SE Old W Hwy  
Duncan, AZ 85534

Clifton Train Station  
100 N. Coronado Blvd.  
Clifton, AZ 85540



If you require special assistance to participate in the public meeting, please contact [projects@azdot.gov](mailto:projects@azdot.gov) or 855.712.8530. Requests should be made as soon as possible to allow time to arrange the accommodation.

14-037

**ADOT**

FOR MORE INFORMATION:  
855.712.8530  
[azdot.gov/greenlee](http://azdot.gov/greenlee)

## Appendix B

### **Southern Greenlee County Trails Study** **Duncan Town Hall/Clifton Train Station** **COMMENT FORM**

Greenlee County in collaboration with the Arizona Department of Transportation is developing a plan for a regional system of multiuse trails to attract outdoor enthusiasts and provide recreation options for local residents. No one knows this area better than you and the study team wants to know about the great places you hike, bicycle, ride horses and drive off-road vehicles. Please help us by providing information on this comment form.

Should the priority for the Southern Greenlee County Trails Plan:

- A) Focus on interconnecting trails in and adjacent to the communities of Clifton and Duncan
- B) Focus on connecting populated areas with regional points of interest (i.e. – Gila Box Wilderness Area, Coronado Trail, etc)

Please list three trails (by name and/or number) that you consider the highest priority. They can be existing or proposed trails.

Please specify improvements on existing trails that need attention in the short term.

Please list specific information for your favorite trail(s) that would help future users understand the condition and difficulty. Rate both condition and difficulty on a scale of 1 to 5. A rating of 1 = worst condition/least difficult. A rating of 5 = best condition/most difficult

Do your children use existing trails or paths to walk or bike to school? Please let us know what trails provide access to local schools and what might be done to improve them for this use.

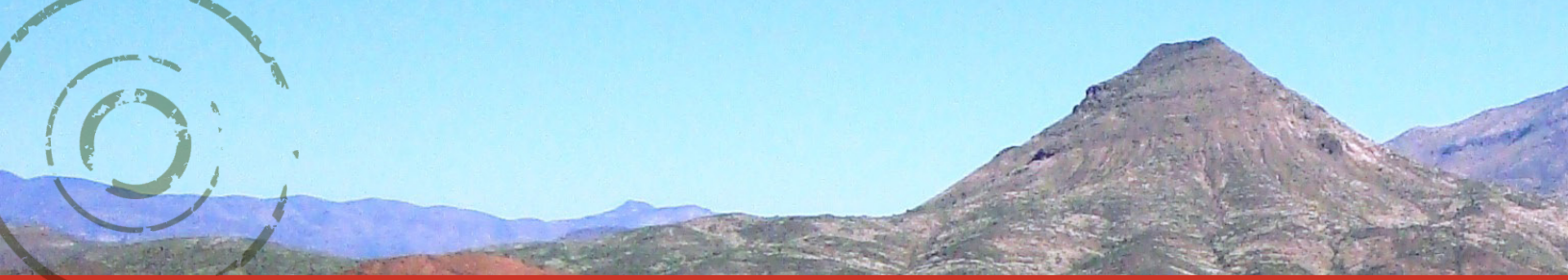


FOR MORE INFORMATION:  
[azdot.gov/greenlee](http://azdot.gov/greenlee)



## This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Completion of this comment form is completely voluntary. All comments provided will become part of the study's documentation. Under state law, any identifying information will become part of the public record, and as such, must be released to any individual upon request.



## **APPENDIX B**

### **SUMMARY OF PUBLIC MEETING 2**



# Southern Greenlee County Trails Plan Study

**May 2014**

Prepared by  
Arizona Department of Transportation

### Introduction

The purpose of this project is to establish a plan for a county-wide system of multi-use trails. To do that, a process and vision for establishing the plan will be developed, trails data will be used to identify a priority network, and in working with stakeholders, a conceptual trails plan that identifies steps for funding and implementation will be developed.

### Public Meeting

To inform and involve community members of the study, ADOT hosted a public open house at the Greenlee Country Club on Wednesday, April 30, 2014 from 5:30-7:30 p.m. in Duncan. Staff present at the meeting included Laura Paty (HDR) and C.T. Revere and Mark Hoffman (ADOT). As part of the open house, there was an opportunity for Q&A, comments and suggestions for trail improvements. In total, 7 members of the community signed-in.

### Newspaper Advertisement

A newspaper advertisement providing the date and locations of the open houses was published in the following newspaper:

- Eastern Arizona Courier (Weeks of April 14 and 21, 2014)

A copy of the advertisement can be found in Appendix A.

### Meeting Materials

Maps of the study area and trails were available for review along with the opportunity for questions and answers about the study. In addition, comment forms were available to each attendee of the open house.

The following comments/questions were noted on the maps:

- A bicycle loop from Three Way, north on US 191 to Ward Canyon Road, southeast on Ward Canyon Road to Skyline View Road, southwest to Three Way.
- Black Jack Cave is south of SR 78 about halfway between Dromedary Trail and Big Lue Trail. There is no parking.
- Out of Duncan there is a trail suitable for OHV's. It somewhat parallels SR 70 all the way to Safford.
- There is good horseback riding country south and west of the Duncan airport; no specific trails. There is a potential trailhead location south of the airport, where two gas lines intersect.
- Equestrians are able to ride south from Duncan all the way to Lazy B Ranch; no specific trails.

A copy of the comment form can be found in Appendix B of this report.

## Appendix A

# Southern Greenlee County Trails Plan Study

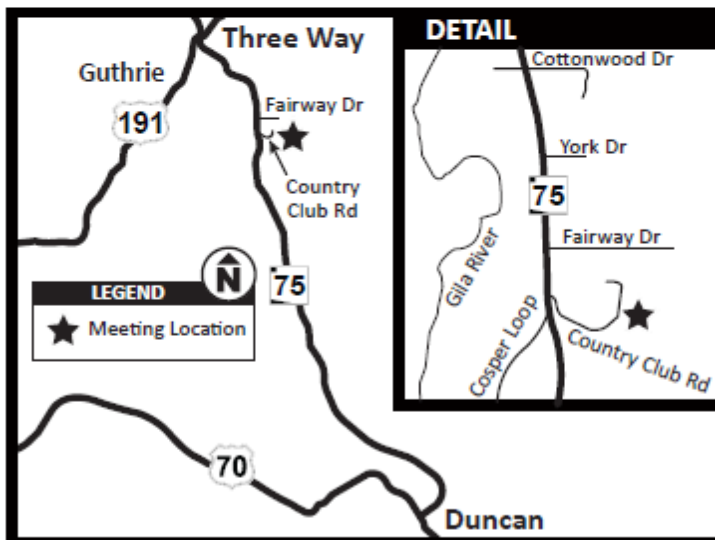
## Public Open House

Greenlee County, in collaboration with the Arizona Department of Transportation (ADOT), is developing a plan for a regional system of multiuse trails funded through ADOT's Planning Assistance for Rural Areas (PARA) program. The study will establish a process and vision for creating the trails plan, identify a priority network and identify steps for funding and implementation of the plan. Your input is needed to help establish the trails plan.

## We want to hear from you

Join us on **Wednesday, April 30, 2014** from 5:30 to 7:30 p.m. at the **Greenlee Country Club** to learn more about the study and to share your ideas on a trails plan for Greenlee County. Members of the study team will be available to provide information and take comments.

Greenlee Country Club • 510 Country Club Rd. • Duncan, AZ 85534



If you require special assistance to participate in the public meeting, please contact [projects@azdot.gov](mailto:projects@azdot.gov) or 855.712.8530. Requests should be made as soon as possible to allow time to arrange the accommodation.

14-151

**ADOT**

FOR MORE INFORMATION:  
855.712.8530  
[azdot.gov/greenlee](http://azdot.gov/greenlee)



## Appendix B

### **Southern Greenlee County Trails Study Greenlee Country Club COMMENT FORM**

Greenlee County, in collaboration with the Arizona Department of Transportation, is developing a plan for a regional system of multiuse trails to attract outdoor enthusiasts and provide recreation options for local residents. No one knows this area better than you, and the study team wants to know about the great places you hike, bicycle, ride horses and drive off-road vehicles. Please help us by providing information on this comment form.

Please list by name or number the three facilities you consider the highest priority.

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Please specify improvements on existing trails that need attention in the short term.

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Please list specific information for your favorite trail(s) that would help future users understand the condition and difficulty. Rate both condition and difficulty on a scale of 1 to 5. A rating of 1 = worst condition/least difficult. A rating of 5 = best condition/most difficult

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Do your children use existing trails or paths to walk or bike to school? Please let us know what trails provide access to local schools and what might be done to improve them for this use.

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FOR MORE INFORMATION:  
[azdot.gov/Greenlee](http://azdot.gov/Greenlee)  
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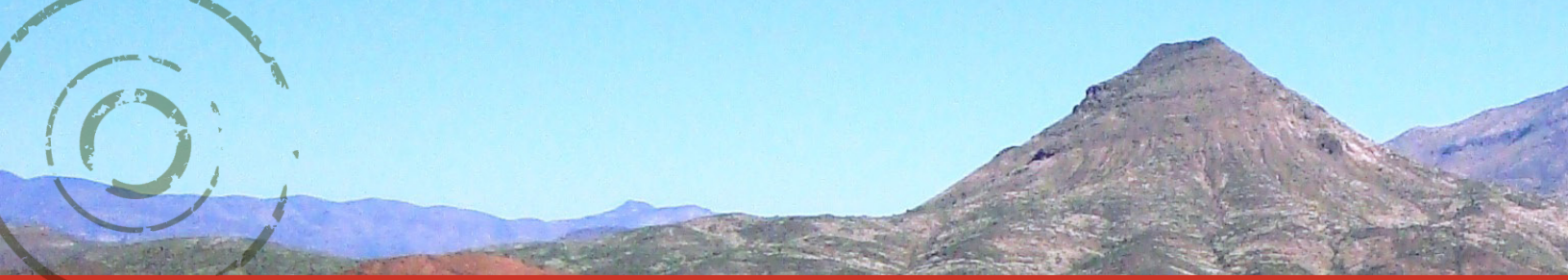
Completed comment forms can be submitted to C.T. Revere, ADOT Community Relations Officer at the completion of the public meeting or sent to the ADOT Outreach Team by May 7, 2014. Please send comments to 1221 S. Second Ave., Tucson AZ , 85711; email [projects@azdot.gov](mailto:projects@azdot.gov); or call 855.712.8530.

Completion of this comment form is completely voluntary. All comments provided will become part of the study's documentation. Under state law, any identifying information will become part of the public record, and as such, must be released to any individual upon request.



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## **APPENDIX C**

### **TRAIL DATA FOR RECOMMENDED TRAILS**

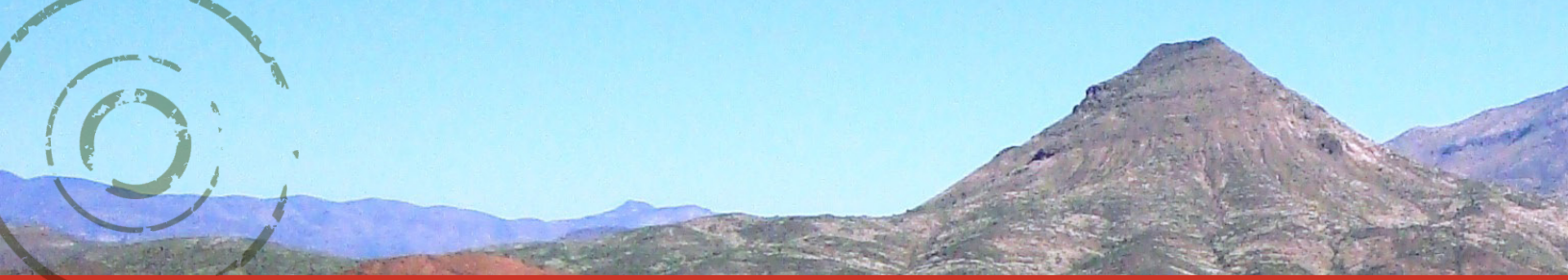




## Trail Data for Recommended Trails

ID No.	Name	Trailhead Elevation (feet)	Distance (one way) (miles)	Elevation Gain (feet)	Accumulated Elevation Gain (feet)	Current Surface Condition
<b>Existing Trails</b>						
	Pleasant Valley Trail	3,502	7.0	2,300	3,141	Dirt; needs clearing
	Mares Bluff	3,502	0.7	300	336	Dirt; needs grading/possible clearing
	Hickey Springs Trail	3,502	10.9	2,100	2,726	Forest trail; may need some grading
	Black Hills Back Country Byway	3,812	21.0			Cleared/graded dirt
	Safford-Morenci Trail	4,772	15.7	1,327	2,637	Cleared/graded dirt
	Painted Bluff Trail	6,213	11.5	2,650	3,617	Dirt; may need some clearing/grading
	Pinal Trail	6,670	2.0	500	573	Dirt; may need some clearing/grading
	Sardine Trail	6,169	6.0	1,900	2,500	Dirt (Forest Road 8375)
	Frye Trail	6,172	3.5	400	850	Cleared/graded dirt
	Chase Creek Recreational Trail	3,553	1.1	130	89	Cleared/graded dirt
	4S 30 E Trail	3,473	0.5	533	431	Dirt; may need some clearing/grading
	Lemon Squeezer	3,475	0.4	233	217	Dirt; may need some clearing/grading
	Dark Canyon Trail	5,412	2.9	1,101	1,097	Dirt (Guthrie Peak Rd)
	Tollhouse Canyon Trail	3,481	3.6	888	854	Cleared/graded dirt
	Walnut Trail	3,477	3.7	856	970	Cleared/graded dirt
	Jim Davis Trail	3,522	5.0	791	805	Dirt road (Jim Davis Trail)
	Skinner Trail	3,677	1.5	344	330	Dirt road (Skinner Road)
	Scully Creek Trail	3,502	6.6	1,068	969	Dirt road (Scully Creek Trail)
	O'Connor Trail	4,082	7.3	730	563	Cleared/graded dirt
	Duncan Loop	3,776	5.5	347	408	Cleared/graded dirt
	Brushy Trail	5,118	2.3	810	840	Dirt; may need some grading
	Black Jack Trail	6,265	2.0	405	526	Dirt; may need some grading/clearing
<b>New Trails</b>						
T3	Gila Bird Trail	3,644	4.7	19	46	Dirt; needs clearing in some areas
T4	Ashy Trail	3,595	2.5	1,033	912	Dirt; needs clearing/grading
T5	Mulligan Trail	4,092	1.8	271	83	Dirt; needs clearing/grading
T6	Sunset Trail	5,128	1.3	1,131	792	Dirt; needs clearing/grading
T7	Roadrunner Trail	5,722	1.0	757	0	Dirt; needs clearing/grading
T8	Hamilton Trail	5,896	2.0	490	476	Dirt; needs clearing/grading
T9	Big Lue Trail	6,249	7.5	892	1,259	Dirt; needs clearing/grading
T10	Rustler Trail	5,526	14.4	1,569	932	Dirt; needs clearing/grading

*table continues on next page*



ID No.	Name	Trailhead Elevation (feet)	Distance (one way) (miles)	Elevation Gain (feet)	Accumulated Elevation Gain (feet)	Current Surface Condition
T11	Greenlee Trail	6,675	26	2,914	229	Dirt; needs clearing/grading
T12	Three-Way Trail	3,775	1.7	97	16	Dirt; needs clearing/grading
T13	Harris Camp Trail	4,857	16.4	1,271	1,896	Dirt; needs clearing/grading
T14	York Loop	4,384	7.3	821	469	Dirt; needs clearing/grading
T16	Riverview Trail	3,471	0.6	317	269	Dirt; needs clearing/grading
T17	Dromedary Trail	4,935	21.5	1,253	298	Dirt; needs clearing/grading clearing/grading
<b>Existing Paths</b>						
	Levee Path	3,466	1.5	35	32	Paved
	South Clifton 1 Mile Path	3,463	1.0	35	32	Paved
	Loma Linda Path	4,085	0.4	15	19	Dirt
	Verde Lee Loma Linda Path	3,950	1.0	147	110	Paved
	York Valley Path Phase 1	3,471	0.5	44	23	Paved
	Sandra Day O'Connor Walk	3,465	0.3	3	0	Paved
<b>New Paths</b>						
	Proposed York Valley Path	3,513	1.4	26	13	Dirt; needs paving
	East side San Francisco River	3,481	3.6	42	49	Dirt; needs clearing in some areas
	West side San Francisco River	3,577	2	138	45	Dirt; needs clearing in some areas



## APPENDIX D

### TRAILS ELIMINATED FROM FINAL RECOMMENDED LIST

Throughout the planning process, trails and trail amenities were added to and deleted from the map. Some were deleted based on public and stakeholder comments. Others, as noted in *Working Paper #2, Plan for Improvements*, were removed because they did not rank high enough in the criteria scoring. Those trails are listed here. In the future, as desired, these trails can be revisited as potential facilities.

#### Trails Eliminated from Final Recommended List

ID	Location in Study Area	Location Description
A	South	Connection from Tyler Farms Road to Jackrabbit Drive
B	South	Connection between Lover's Lane and Lunt Lane
C	South	Connection from Quarter Horse Road to Shadowridge Lane
D	South	Connection around golf course
E	South	Small wagon trail off US 70
F	South	Small wagon trail off US 70
G	South	Small wagon trail off US 70
H	North	Connection to Mesa Tank Road across Gila River
I	North	Connection to Union Pacific Railroad
J	South	North of Lazy B Ranch
K	South	Connection off US 70
L	North	Connection to Trail "O"
M	North	San Francisco River Road to Hot Springs Road
N	South	Connection across Union Pacific Railroad
O	North	Connection off Mesa Tank Road
P	North	Connection to Trail "L"
Q	North	From San Francisco River to San Francisco River Road
R	North	Morenci Southern Railroad
S	North	Gila Box Riparian National Conservation Area – Hot Springs Road to Subia Ranch Road
T	South	Trail around Walnut Mountain



