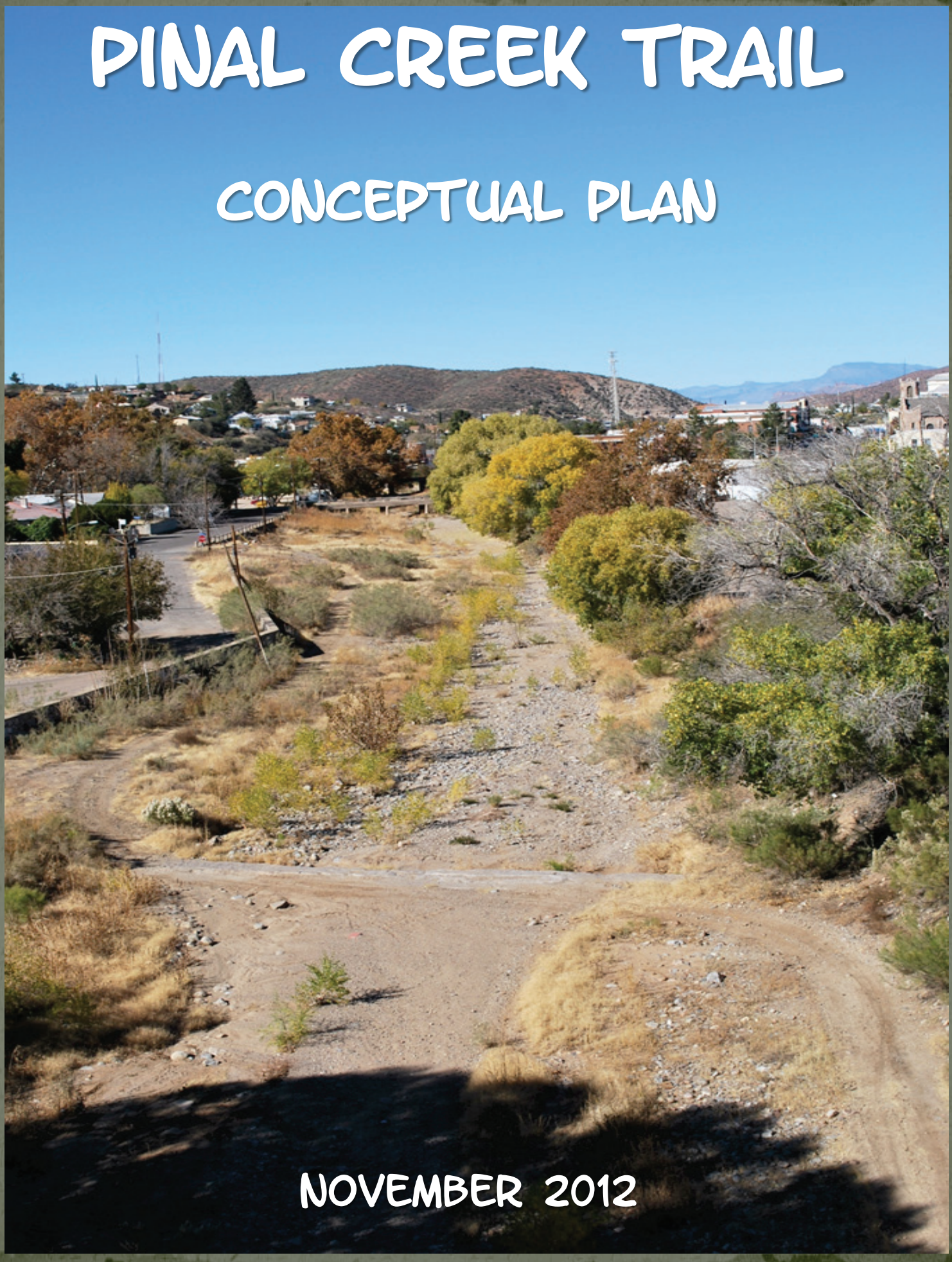
PINAL CREEK TRAIL

CONCEPTUAL PLAN



NOVEMBER 2012

COBRE VALLEY COMPREHENSIVE TRANSPORTATION STUDY

PINAL CREEK TRAIL

CONCEPTUAL PLAN

Final Report

November 2012

Prepared For: City of Globe and Gila County

Funded By: ADOT Planning Assistance for Rural Areas (PARA) Program

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Trail graphic prepared by RBF Consulting

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PINAL CREEK TRAIL CONCEPTUAL PLAN (SUPPLEMENTAL DOCUMENT)

This separate large format document contains; Map Atlas, Study Segments, Cross-sections, Photographs, and Implementation Plan Figures.

Note: All alternatives, cost estimates and property impacts were developed with information available at the time of this study and may change over time.

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1.0 INTRODUCTION

Located in a mountainous area 80 miles east of the Phoenix area, the City of Globe has a population of roughly 7,500 people with another 8,000 in the immediate region. The climate is somewhat milder than the low desert areas making it ideal for outdoor activities including walking, hiking and cycling. To meet this need for outdoor recreational opportunities, the City is considering developing a Globe Greenbelt concept. The concept of turning Pinal Creek, which runs through the City, into a functioning urban greenbelt, has long been the dream of several citizens of the community. It is also seen by the elected officials, staff and the public as a valuable resource that can ultimately serve as a unifying recreational and open space feature in Globe.

1.1 Purpose of the Study

The Pinal Creek Trail corridor study is being conducted in conjunction with the Cobre Valley Comprehensive Transportation Study, to provide alternative modes of transportation to key educational and recreational areas in the Globe area. The purpose of the study is to review previous trail studies and recreation trail plans that will address the most critical current and future non-motorized modes of transportation within the study area. The study is being funded by Federal Highway Administration's (FHWA) State Planning and Research Program and administered through ADOT's Multimodal Planning Division.

The study was guided by the City of Globe:

- Globe Public Works Department
- Globe Parks and Recreation Department
- ADOT – Multimodal Planning Division (MPD)
- ADOT – Globe District
- Central Arizona Governments (CAG)
- Special Trail/Bicycle Users Group
- Globe City Council
- Public Input (Planning Workshop)

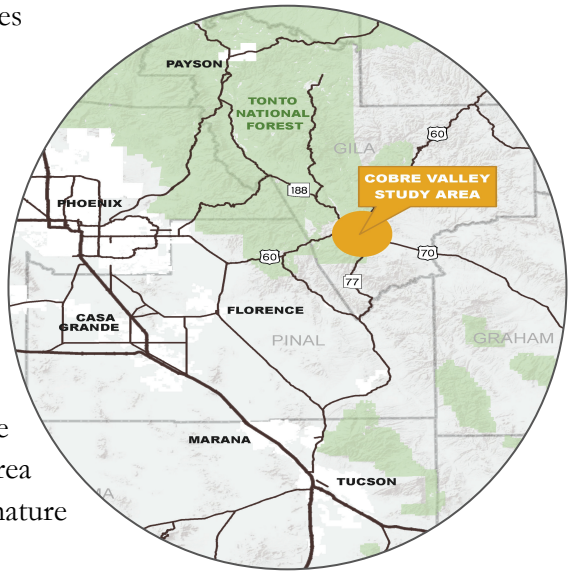
1.2 Study Objectives

The principal focus of this study is to develop a conceptual plan for the Pinal Creek Trail corridor; identifying viable implementation strategies to make this dream a reality. The Plan will address safety, environmental, economic and sustainability issues specific to the Pinal Creek Trail area. Discussions with members of the Technical Advisory Committee (TAC) passionate about the establishment of the trail resulted in the following preliminary study objectives:

- Identify the limits of the multi-use trail corridor
- Develop alternative conceptual alignments for the trail
- Identify any critical environmental factors
- Identify linkages to parks, schools, downtown, and other amenities
- Discuss design considerations for future projects
- Identify low cost improvement alternatives
- Identify funding sources and strategies
- Engage the public and trail users in development of the plan

- Develop a GIS based trail alignment
- Review right of way impacts of proposed alternatives
- Develop an implementation strategy

1.3 Study Area Overview



Located approximately 80 miles east of Phoenix, Arizona, the City of Globe is an important copper mining center in central Arizona. Nestled in the steep canyons north of the Pinal Mountains, silver and copper mining in the late 1900's led to population and infrastructure growth to support mining activities. While still heavily dependent upon the mining industry, the area now concentrates on tourism and preserving the historic nature of the community.

PINAL CREEK TRAIL FACT SHEET

Location:
Approximately 80 miles east of Phoenix along a segment of Pinal Creek.

Study Area:
Approximately 8 miles of scenic corridor traversing portions of the City of Globe, and Gila County.

Trail Features:
Along Pinal Creek,
Scenic views,
Elevation: 3,500 feet,
Access to historic downtown,
Access to local parks,
Community Center,
Community College,
Wooded greenbelt areas.

The Pinal Creek Trail corridor study area includes the community of Globe and portions of Gila County, which were originally established as a mining camp for the area's abundant copper mines. The Pinal Creek Trail corridor study area consists of approximately 8.2 miles within the City of Globe and Gila County and is included in the CAG planning area. CAG is one of the six Council of Governments (COGs) established by the Governor's Executive Order 70-4 (1970) in an effort to create regional groupings for effective regional planning. The CAG region is comprised of Gila and Pinal County and seventeen incorporated communities, including the City of Globe, the Town of Miami and Gila County.

Regional access to the study area is provided by US 60, a major east-west highway connecting Phoenix to New Mexico. Additional local and regional access is also provided by US 70, a major east-west highway connecting the City of Globe with I-10 southeast of Safford. SR 188, a north-south highway connecting the City of Globe to SR 87, and SR 77, a north-south highway connecting the City of Globe to Tucson.

Adjacent to the Pinal Mountains and the Tonto National Forest, the study corridor offers scenic vistas where visitors can enjoy the spectacular views with access to community parks and other amenities. The center of the corridor s located near the historic downtown district. The corridor follows Pinal Creek with portions traversing wooded greenbelt areas with flowing water during the spring snow melt and following rain storms.

1.4 Study Process

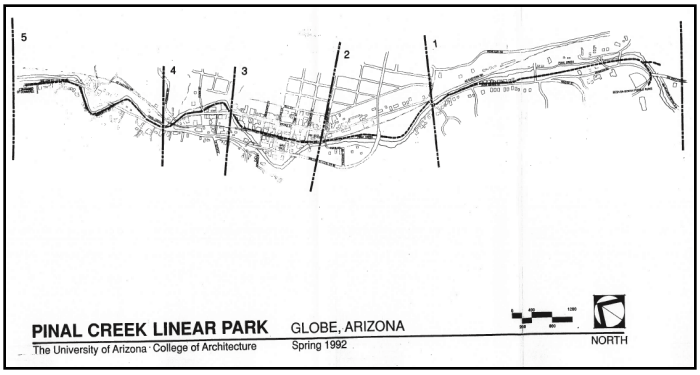
Figure 1.1 illustrates the process utilized to complete this evaluation of the Pinal Creek Trail conceptual study. Throughout the study process, consistent communication is made with the key proponents of the trail, who provided technical guidance, support, advice, suggestions, and recommendations, and performed document reviews. A special Pinal Creek Trail public input meeting was held to actively engage the public in development of strategies for development of the trail. Meetings were held with the City of Globe staff to develop strategies and alternatives based on input received from the City Council and the public. GIS maps were generated to show the approximate location of the trail footprint and to identify potential impacts to affected property parcels. A draft implementation plan was developed with input from the stakeholders and was presented at a formal public meeting to receive comments. Based on feedback from all stakeholders the Pinal Creek Trail Corridor implementation plan was developed and is presented in chapter 6.

FIGURE 1.1 STUDY PROCESS

2.0 REVIEW OF 1992 PINAL CREEK LINEAR PARK CONCEPT PLAN

In 1991 the City of Globe retained the services of the University of Arizona in preparation of a conceptual plan for an urban greenbelt along Pinal Creek. The Pinal Creek Linear Park concept is a multi-use trail system, designed to create an urban "greenbelt" and open space corridor within the City of Globe. The project seeks to develop and enhance Pinal Creek in order to provide linked public access to a number of significant recreational amenities, as well as natural and historical resources. This trail project is an extraordinary opportunity to develop a unique Urban, Recreational, Interpretive, and Historic Trail. The final report was published in May of 1992.

2.1 1992 Pinal Creek Linear Park Concept Report



The Globe Greenbelt concept consisted of turning Pinal Creek, which runs through the City of Globe, into a functioning urban greenbelt. The City of Globe teamed with the University of Arizona to develop the *Pinal Creek Linear Park Concept Report* that outlined the preliminary concepts and alignment for a multi-use trail along Pinal Creek. The proposed urban multi-use trail system of pathways includes both "on-street" and "off-street" facilities for pedestrians and bicyclists. As an urban trail, it provides access from downtown Globe to undeveloped natural areas. As a recreational trail, it provides day-use opportunities for bicycling, jogging and walking to a wide variety of user groups. The trail interconnects park and recreation areas with residential communities along a scenic, natural, historic, geologic, and water-oriented route. As an interpretive trail, it educates the community about natural resources.

2.2 Original Pinal Creek Linear Park Goals

The following goals resulted from the original study:

- Create a unifying greenbelt identity for the community
- Provide for the safety and convenience of pedestrians and bicyclists
- Promote environmental restoration by cleaning up Pinal Creek by planning trees and other native vegetation
- Create a continuous path for pedestrians and bicyclists
- Provide linkages to parks, schools, downtown, and other adjacent activities and development
- Provide economic development opportunities for the community

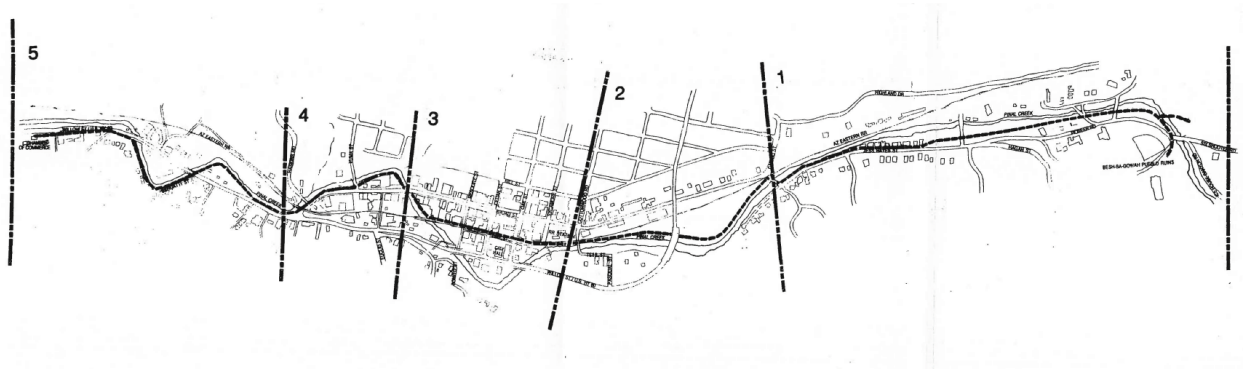
2.3 Original Study Segments

The Pinal Creek Linear Park is approximately 3.5 miles long and generally parallels Pinal Creek. The trail project begins at Besh-Ba-Gowah Archaeological Park in Globe, passes through the center of town, and ends at the City of Globe Chamber of Commerce. The study was divided into five reaches as shown in Table 2.1 and Figure 2.1 below.

TABLE 2.1: 1992 STUDY SEGMENTS

Segment Limits	ID
Besh-Ba-Gowah to Carico Street Bridge	Reach 1
Carico Street Bridge to Sycamore Pedestrian Bridge	Reach 2
Sycamore Pedestrian Bridge to Broad Street Crossing	Reach 3
Broad Street Crossing to US Highway 60	Reach 4
US Highway 60	Reach 5

FIGURE 2.1: 1992 PLAN VIEW OF REACH SEGMENTS



2.4 Property Ownership

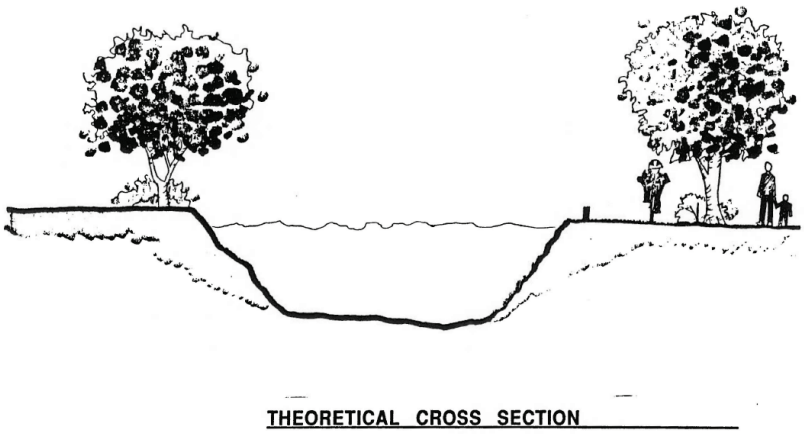
The original plan for the trail traversed through 115 separate property parcels along the 3.5 miles of the recommended alignment. The reluctance of private property owners to relinquish property or grant public use easements have stymied the project for several years.

2.5 Original Design Concepts

The original study presented a wide variety of design concepts for construction of the trail from using existing sidewalks, building paved paths to building elaborate structures and bridges. Where feasible, the proposed multi-use trail system calls for separated bicycle and pedestrian paths, as recommended in the *AASHTO Guide to the Development of Bicycle Facilities*. The design calls for five foot wide on-street *bicycle lanes,* 10 foot wide paved two-way *bicycle paths,* paved pedestrian *sidewalks,* and unpaved *pedestrian paths*. Accessible ramps at street intersections would meet requirements of the American with Disabilities Act. The main sewer line of the community runs beneath the Creek

bottom though a majority of the project limits and needs to be avoided during trail construction activities. Figure 2.2 illustrates a typical trail cross-section.

FIGURE 2.2: TYPICAL TRAIL CROSS-SECTION



Reach 1 (Besh-Ba-Gowah to Carico Street Bridge)

The conceptual trail design for this portion of the Pinal Creek Linear Park is a combination of "on-street" bicycle lanes and a secondary footpath designed for passive recreational use. The bicycle lanes begin at the Besh-Ba-Gowah Pueblo Ruins and continue to the Ruiz Bridge where the bicycle facility transitions to a two-way multi-use recreation path throughout the linear park as shown in Figure 2.3. As illustrated in the figure, the plan also called for sidewalks added to both sides of Ruiz Canyon Bridge, a linear park located at the intersection of Broad and Carico streets (1), a riparian area at junction of Jesse Hayes and Icehouse roads (7 & 8), expanded commercial access (4), and a connection with the botanical garden and community center. A typical section for Reach 1 is shown in Figure 2.4.

FIGURE 2.3: REACH 1 LAYOUT PLAN

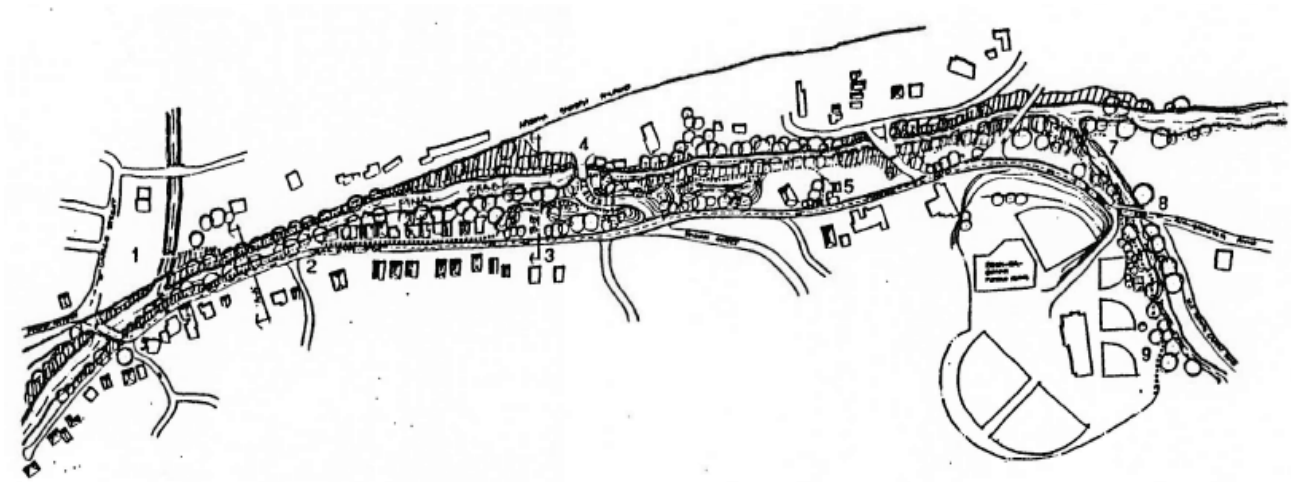
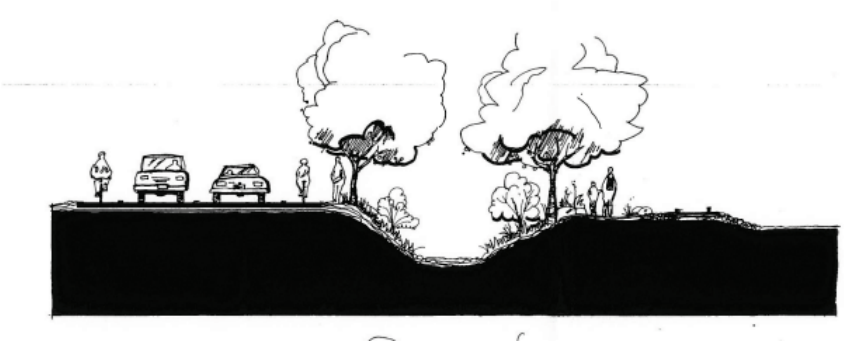


FIGURE 2.4: TYPICAL REACH 1 CROSS-SECTION



Reach 2 (Carico Street Bridge to Sycamore Pedestrian Bridge)

The Reach 2 pathway extends along the northern bank of the Pinal Creek primarily on Arizona Eastern Railroad property as shown in Figure 2.5. As illustrated in the figure, key elements identified in the plan included: a detention basin (4), a secondary entrance with picnic tables and parking (5), new baseball diamond (7), an outdoor pavilion (9), access and parking facilities (10). The trail would pass under the US 60 viaduct located midway through the reach section. A typical cross section along Reach 2 is shown in Figure 2.6.

FIGURE 2.5: REACH 2 LAYOUT PLAN

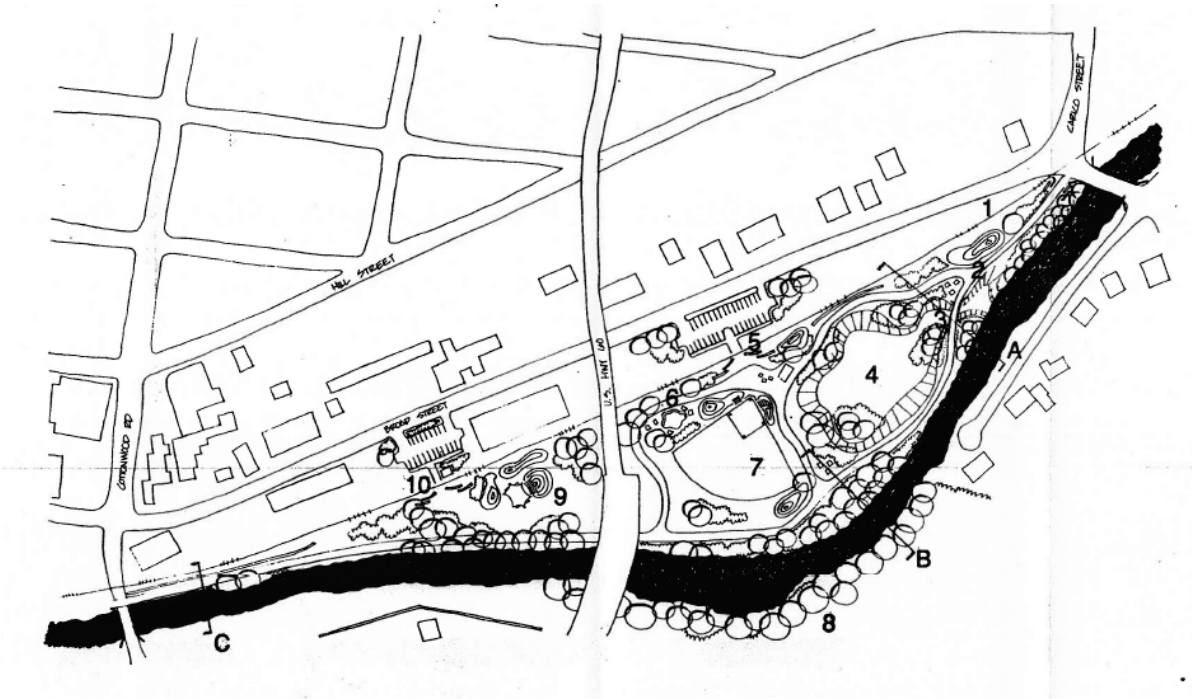
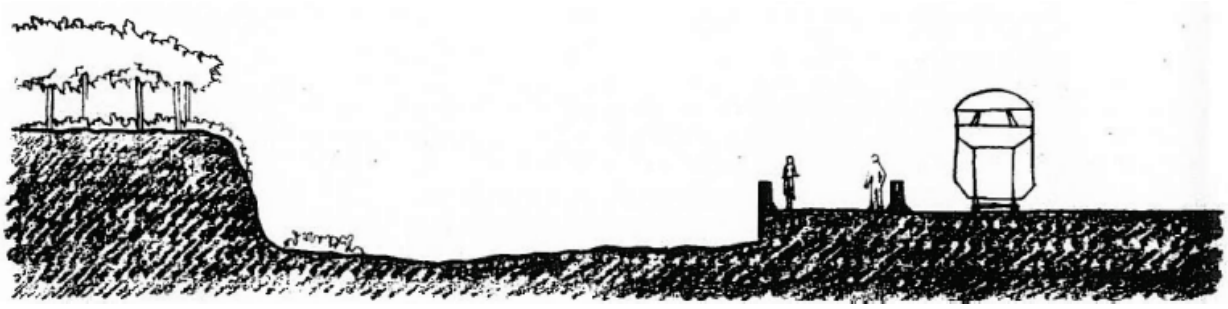


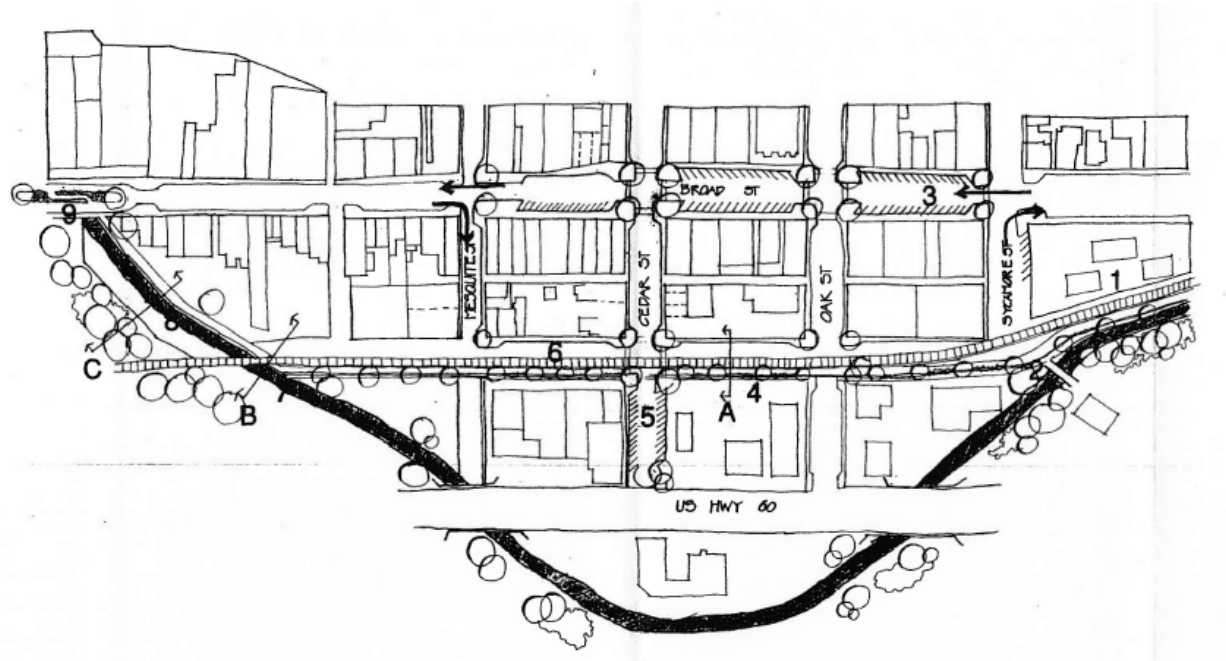
FIGURE 2.6: TYPICAL REACH 2 CROSS-SECTION



Reach 3 (Sycamore Pedestrian Bridge to Broad Street Crossing)

Figure 2.7 illustrates the location of the Reach 3 trail. The Reach 3 trail follows Pine Street from the Globe railroad depot (1) to Pinal Creek where it crossed the railroad tracks and entered the creek bed on a cantilevered structure and crosses Broad Street (9) as shown in Figure 2.7. Reach 3 also provides access to all the downtown Globe amenities, including City Hall, Globe Public Library, Cobre Valley Center for the Arts, the post office, banks, and other local businesses.

FIGURE 2.7 REACH 3 LAYOUT PLAN



Reach 4 (Broad Street Crossing to US Highway 60)

Figure 2.8 provides an illustration of the Reach 4 section that continues within the creek for about half its length. As shown in the figure, a small park area was proposed near the China Town area (2) with a transition segment where it moves from the creek to the sidewalk along Broad Street (3), and follows the sidewalk the remainder if the Reach. A typical cross-section for Reach 4 is shown in Figure 2.9.

FIGURE 2.8 REACH 4 LAYOUT PLAN

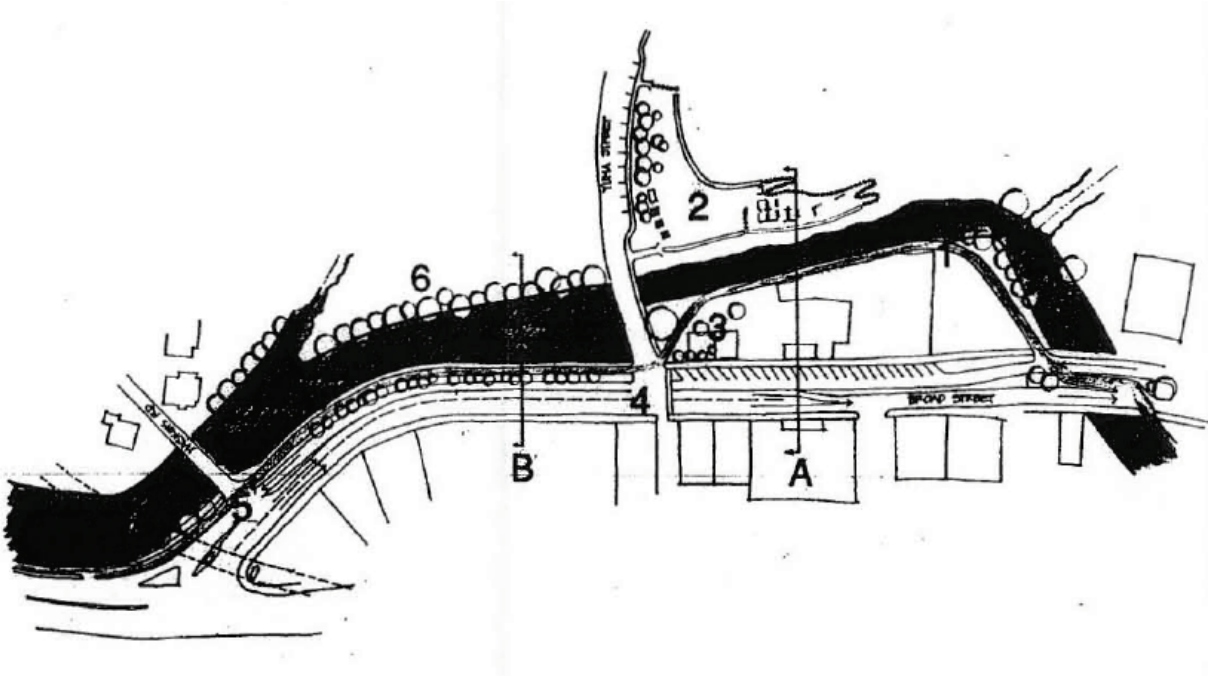
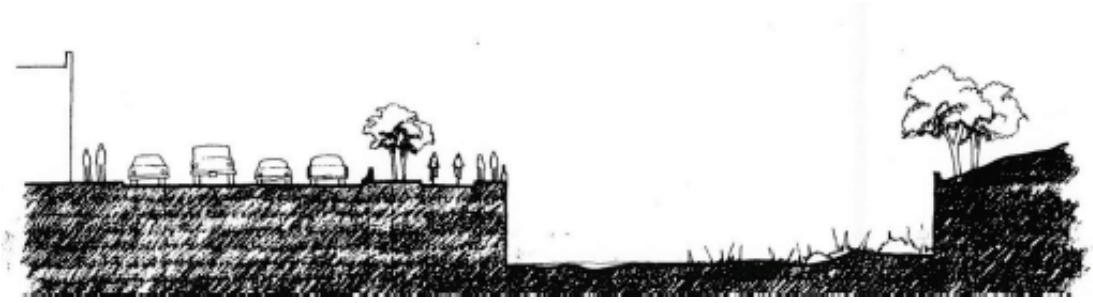


FIGURE 2.9: TYPICAL REACH 4 CROSS-SECTION



Reach 5 (AZ State Highway 60 to Globe Chamber of Commerce)

Figure 2.10 illustrates the location of the Reach 5 trail. Reach 5 transitions from a local sidewalk section to a cantilevered section overhanging Pinal Creek along the concrete drainage channel. From there it transitions to a pathway through a wooded section where a small park is proposed (2) across the creek, as illustrated in Figure 2.10. The trail follows Pinal Creek the rest of the way to the Globe-Miami Chamber of Commerce where it ends. Figure 2.11 presents a typical cross section for Reach 5. It is important to note that no overhanging structures are recommended to be constructed as part of this updated plan.

FIGURE 2.10 REACH 5 LAYOUT PLAN

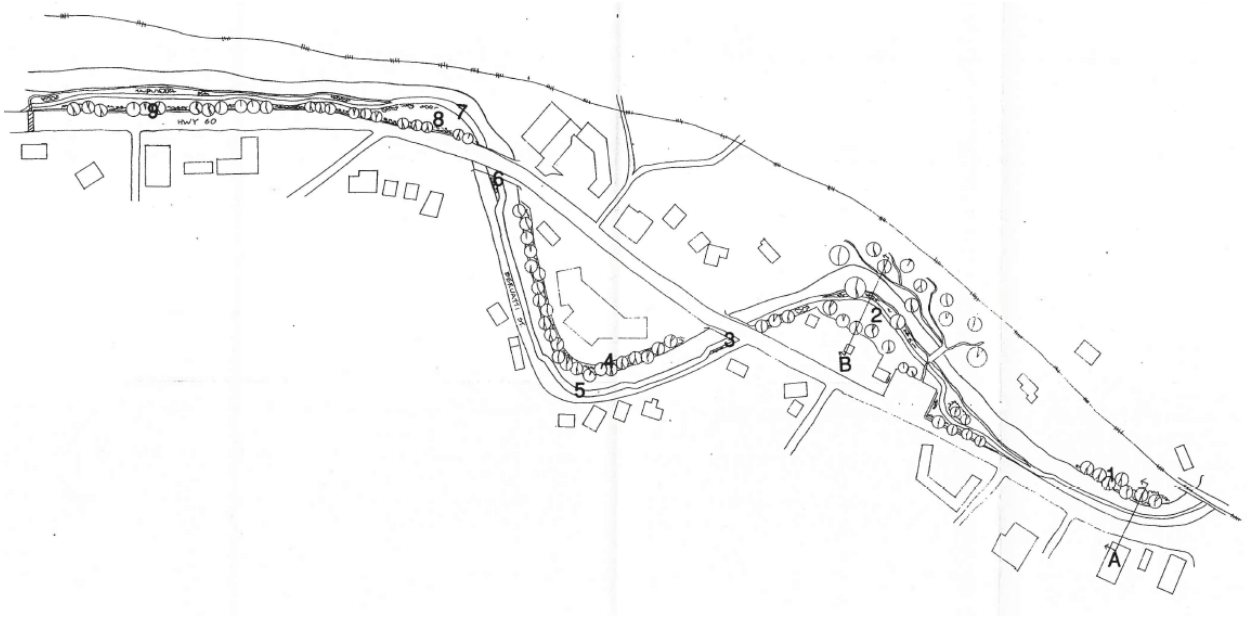
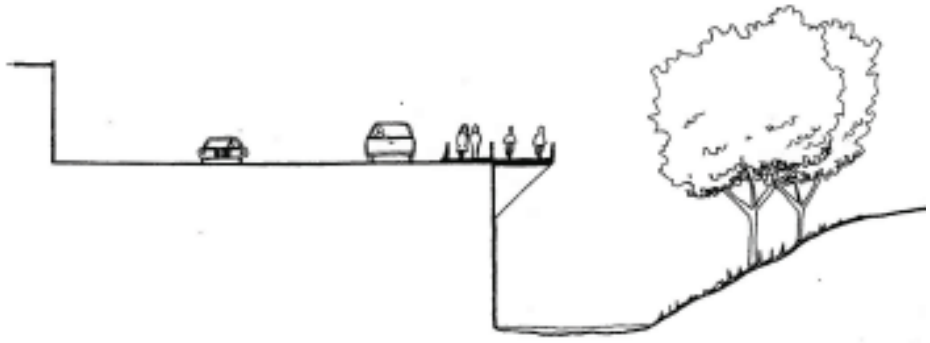


FIGURE 2.11 TYPICAL CROSS-SECTION OF REACH 5



SECTION A

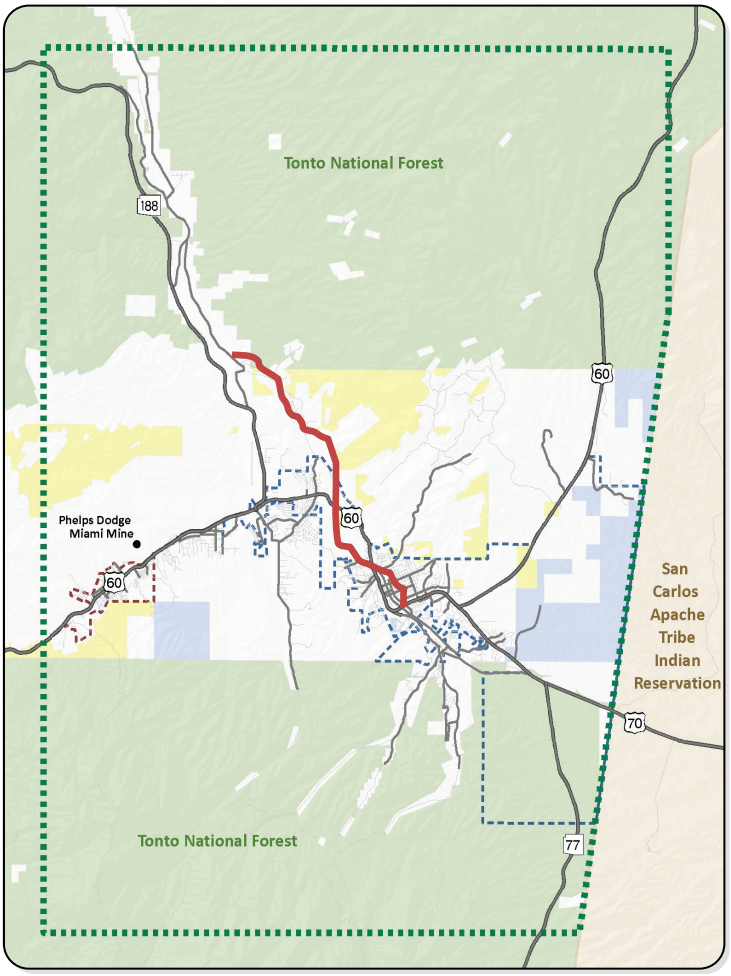
3.0 TRAIL DESIGN FACTORS

The City of Globe continues to maintain a keen interest in planning, designing and constructing various segments of the Pinal Creek Trail. The trail is planned to be multi-use facility for pedestrian, bicycle and equestrian traffic. The intent of this study is to build upon the concepts identified in the original 1992 study. The design factors required for implementation of the trail are discussed below. In addition, this section provides a summary of design factors outlined in the FHWA *Designing Sidewalks and Trails for Access* report.

3.1 Land Ownership Status

Privately owned land accounts for more than a third of all land within the study area. Other major landowners within the study area include:

- Arizona State Land Department (ASLD), shown in blue on the right, covers three percent of the study area.
- Bureau of Land Management (BLM), shown in yellow on the right, covers four percent of the study area.
- Tonto National Forest, shown in green on the right, covers approximately 62 percent of the study area.



The preliminary plan for the trail traverses property that is owned by the City of Globe, mining companies, Arizona Eastern Railroad, or privately owned. The trail does not pass through State, BLM or Forest Service lands.

3.2 Trail Location

Proponents of the Pinal Creek Trail prefer to keep the alignment entirely within Pinal Creek; however, they understand that this is not possible in some locations due to topography and environmental considerations. The trail will begin near the Gila Pueblo Community College, along Six Shooter Canyon Road, and extend northerly along the creek's proximity for approximately eight miles and terminate at the Bixby Road and Pinal Creek Road intersection. The trail is located within

the jurisdiction of the City of Globe and Gila County and traverses numerous private parcels. Refer to the *Pinal Creek Conceptual Plan Supplemental Document* for detailed trail alignments and potential parcel impact information.

3.3 Environmental and Cultural Resources Overview

A general inventory of the physical, natural, and cultural environment is an important component of the transportation planning process. When environmental conditions and concerns are reviewed in the early stages of the transportation planning process, transportation solutions can be developed to lessen the negative impacts on the natural environment. A general analysis was performed in conjunction with the *2012 Cobre Valley Comprehensive Transportation Study* and should be reviewed for environmental concerns along the Pinal Creek Trail corridor. Detailed environmental analysis and clearance may be required depending on the location of the trail and funding source.

3.4 Trail Design Guidelines

A multi-use path serves as part of a transportation circulation system and supports multiple recreation opportunities, such as walking, bicycling, and inline skating. A multi-use path typically has a surface that is asphalt, concrete, or firmly packed crushed aggregate. The multi-use path should be physically separated from motor vehicular traffic with an open space or barrier. Multi-use paths should always be designed to include pedestrians even if the primary anticipated users are bicyclists.

Trail Access

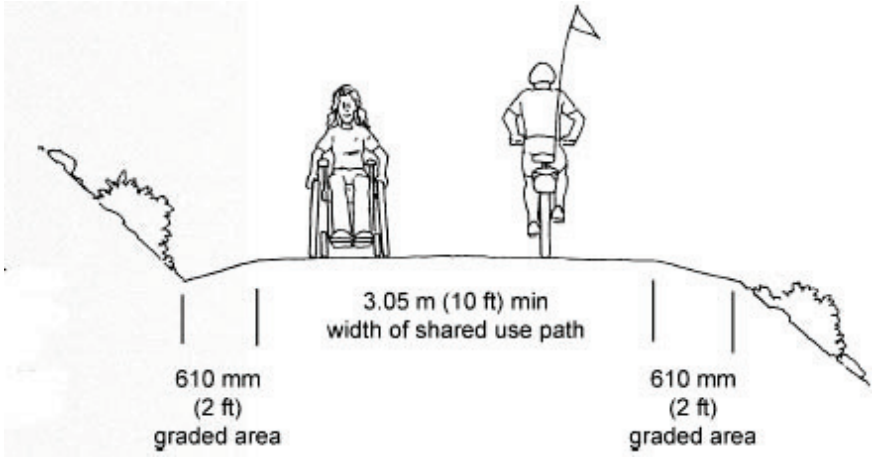
Creating a multi-use path that provides access for people with disabilities involves more than the trail itself; ensuring that an accessible pathway leads up to the multi-use path must also be considered. In addition, all access points along the multi-use path should be accessible to people with disabilities. According to the FHWA *Designing Sidewalks and Trails for Access* report, facilities around the trail should also be designed for access. For example:

- Trailhead and destination areas with parking and bathrooms should conform to *ADA Accessibility Guidelines for Buildings and Facilities* (ADAAG) requirements for accessible parking and bathrooms;
- Elements, such as picnic areas, should be connected with a pathway that meets the accessible design recommendations for multi-use paths;
- Road access points should meet the recommendations in Chapter 16; and
- Signage at the access point should conform to ADAAG requirements for font size, font type, and contrast.

Trail Width

The FHWA *Designing Sidewalks and Trails for Access* report provides guidelines for the appropriate trail widths based on user usability. According to the report, the width of the multi-use path tread not only affects pedestrian usability but also determines the types of users who can use the path. Factors, such as the movement patterns of designated user groups, should be considered. The tread of a multi-use path should be at least 10 feet wide, however, a minimum of 8 feet may be used on multi-use paths that will have limited use. Multi-use paths should also have graded areas at least two feet on either side of the path as shown in the Figure 3.1.

FIGURE 3.1: TYPICAL TRAIL DESIGN CROSS-SECTION



Source: FHWA

Trail Geometery

The FHWA *Designing Sidewalks and Trails for Access* report provides guidelines for the appropriate trail geometry. According to the report, people with mobility impairments have a difficult time negotiating steep grades because of the additional effort required to travel over sloped surfaces. Manual wheelchair users may travel very rapidly on downhill pathways but will be significantly slower on uphill segments. Steep running grades are particularly difficult for users with mobility impairments when resting opportunities are not provided. Less severe grades that extend over longer distances may tire users as much as shorter, steeper grades. In general, running grades on multi-use paths should not exceed five percent and the most gradual slope possible should be used at all times. The AASHTO guide provides detailed information on horizontal alignment, curve radii, grade, structures, and other design elements affecting trail alignment and should be consulted when developing the final trail design.

Severe cross slopes can make it difficult for wheelchair users and other pedestrians to maintain their lateral balance because they must work against the force of gravity. Cross slopes can cause wheelchairs to veer downhill and create problems for individuals using crutches who cannot

compensate for the height differential that cross slopes create. The impacts of cross slopes are compounded when combined with steep grades or surfaces that are not firm and stable. Cross slope can be a barrier to people with mobility impairments; however, some cross slope is necessary to drain water quickly off of multi-use paths. Designers must balance the negative effect cross slopes have on pedestrian mobility against the necessity of including cross slopes to provide adequate drainage. For asphalt and concrete, a cross slope of two percent should be adequate, while for non-paved surfaces, such as crushed aggregate, the maximum recommended cross slope is five percent.

Trail Surface Type

As outlined in the FHWA *Designing Sidewalks and Trails for Access* report, the accessibility of the multi-use path surface is determined by a variety of factors including:

- Surface material;
- Surface firmness and stability;
- Slip-resistance;
- Changes in level; and
- Size and design of surface openings.

Multi-use paths are generally paved with asphalt or concrete, but may also use prepared surfaces such as crushed stone or soil stabilizing agents mixed with native soils or aggregates. High use trails passing through developed areas or fragile environments are commonly surfaced with asphalt or concrete to maximize the longevity of the multi-use path surface and promote bicycle and inline skating use. Multi-use paths that have been built using crushed aggregate generally are unusable by inline skaters and slow down the speed of bicyclists. In areas with steep terrain, where bicyclists or inline skaters are the primary users, and in areas subject to flooding or drainage problems, paved surfaces should be provided.

Hard Surfaces

Hard surfaces are preferred by bicyclists and skaters as it provides a stable surface and ease of travel. Hard surfaces can be comprised of concrete, asphalt soil cement, resin-based stabilizers, or wooden boardwalk. According to the Rails to Trail Conservancy, boardwalks are the most expensive per mile to build, followed by concrete and asphalt as shown below:

- Asphalt: $150K - $250K (per mile)
- Concrete: $250K - $400K (per mile)
- Soil cement: $60K - $100K (per mile)
- Resin-based stabilized material: varies

Soft Surfaces

Soft surfaces are preferred by runners, joggers, walkers and hikers as they tend to absorb the impact to the body. Soft surfaces are generally natural earth, crushed granular stone, cinders, or wood chips. According to the Rails to Trail Conservancy, the comparative cost of these materials is:

- Natural Earth: $50K - $70K per mile
- Crushed/granular stone: $80K - $120K per mile
- Cinders: $90K - $100K per mile
- Woodchips: $65K - $85K per mile

The trails could be constructed in a phased approach starting as natural earth surfacing and be upgraded to concrete or asphalt as additional funding becomes available.

Trail Surface Design

The trail base should be graded in conformance to horizontal and vertical alignment requirements. Typically a sub-base material of crushed stone of 6" thickness should be placed on the subgrade and compacted to maximum density. The final wearing course will be placed on the sub-base to provide a durable, smooth surface. The surfacing material on the multi-use path significantly affects which user groups will be capable of negotiating the terrain. As outlined in the FHWA *Designing Sidewalks and Trails for Access* report, the firmness, stability, and slip resistance of the multi-use path surface affects all users but is particularly important for people using mobility devices such as canes, crutches, wheelchairs, or walkers.

- **Firmness** is the degree to which a surface resists deformation by indentation when a person walks or wheels across it. A firm surface would not compress significantly under the forces exerted as a person walks or wheels on it.
- **Stability** is the degree to which a surface remains unchanged by contaminants or applied force so that when the contaminant or force is removed, the surface returns to its original condition. A stable surface would not be significantly altered by a person walking or maneuvering a wheelchair on it.
- **Slip resistance** is based on the frictional force necessary to permit a person to ambulate without slipping. A slip resistant surface does not allow a shoe heel, wheelchair tires, or a crutch tip to slip when ambulating on the surface.

Multi-use paths should have a firm and stable surface. Asphalt and concrete are firm and stable in all conditions. Other multi-use path materials, such as crushed limestone, are also firm and stable under most conditions. If a more natural surface is desired, synthetic bonding materials should be considered.

Clearing (Vegetation) Obstructions

The minimum horizontal clearance from the edge of pavement to an obstruction such as vegetation is two feet as recommended in the FHWA *Designing Sidewalks and Trails for Access*. Provide a minimum vertical clearance of 10 feet from the pavement surface to overhead obstructions to accommodate maintenance vehicles and bicyclists. Otherwise, minimize the removal of natural vegetation along the path of the trail.

Railings

As outlined in the FHWA *Designing Sidewalks and Trails for Access* report, low forms of edge protection, such as curbs, are not recommended on multi-use paths because of the negative impact they have on bicyclists. If needed, the minimum railing height on a multi-use path should be 42 inches. Based on the situation, it may also be beneficial to provide a gripping surface in addition to a railing. If a handrail is included as part of the railing design, it should meet the specifications in ADAAG 4.26.

Signs

Signs that clearly describe the multi-use path conditions are an essential component to enhance pedestrian access. Providing accurate, objective information about actual multi-use path conditions will allow people to determine whether a particular multi-use path is appropriate to them. As outlined in the FHWA *Designing Sidewalks and Trails for Access* report, providing information about the condition of the multi-use path s is strongly recommended for the following reasons:

- Users are less likely to find themselves in unsafe situations if they understand the demands of the multi-use path before beginning;
- Frustration is reduced and people are less likely to have to turn around on a multi-use path because they can identify impassible situations, such as steep grades, before they begin;
- Users can select multi-use paths that meet their skill level and desired experience;
- The level of satisfaction increases because the user is able to select a multi-use path that meets his or her expectations; and
- If more difficult conditions will be encountered, users can prepare for the skill level and equipment required.

Park and Recreation Areas

Several park and recreation areas were identified in the original greenbelt study and will be re-evaluated based on changed conditions of the area since the original report was published. Several new areas have also be recommended including trailhead locations at both ends of the trail. Each park area will be designed in detail during the final design in accordance with current standards.

New recreation areas may be identified by the City of Globe in the future and should be included in the final improvement strategy.

ADA Rest Area

Periodic rest areas are beneficial for all multi-use path users, particularly for people with mobility impairments and when grade or cross slope demands increase. Rest area distances should vary depending on the terrain and intended use and if only located on one side of the trail, should they should be located on the uphill side. Rest areas located on both sides of the trail are preferred when the trail has high volumes of use or higher traffic speeds, since it reduces potential conflicts. As identified in the FHWA *Designing Sidewalks and Trails for Access* report, rest areas should heave the following design characteristics:

- Grades that do not exceed five percent;
- Cross slopes on paved surfaces that do not exceed two percent and cross slopes on non-paved surfaces that do not exceed five percent;
- A firm and stable surface;
- A width equal to or greater than the width of the trail segment leading to and from the rest area;
- A minimum length of 60 inches;
- A minimal change of grade and cross slope on the segment connecting the rest area with the main pathway; and
- Accessible designs for amenities such as benches, where provided.

In addition, benches located along a trail are critical for people that have disabilities. Backrests should be provided on some benches to provide support and aid for those that have difficulty standing from a seated position.

Lighting

Trail lighting should be considered during the final design of each proposed segment to provise a safe facility. The use of solar lights is an environmentally-sensitive option that may be a cost-effective method of providing lighting to remote locations.

4.0 PUBLIC INVOLVEMENT

As a component of the *Cobre Valley Comprehensive Transportation Study*, a Pinal Creek Trail conceptual plan and design workshop was held in order to receive community input and generate local ideas for the development of a regional multi-use trail along Pinal Creek. The workshop was conducted near Pinal Creek at the Besh-Be-Gowah Archeological Park in Globe on the evening of October 27, 2011, as shown in the announcement flier Figure 4.1. Approximately 11 members of the public and project team participated in a Pinal Creek Trail Design Workshop as seen in Figure 4.1 below.

FIGURE 4.1: PINAL CREEK WORKSHOP

While there were obvious differences among the topic areas and thus clear differences amongst the comments provided, a few key themes did emerge from the exercise that should be considered and addressed when undertaking future planning efforts:

- **Land Ownership** – At the design workshop, many participants recognized that much of the land within the Pinal Creek is privately owned land. Participants noted that a closer analysis of these conditions would be necessary in order to define a preferred alignment. A large well defined trail may be less feasible in locations of private property than those areas that are publicly owned.

- **Natural Spring** – Many participants envision the trail corridor as a place that promotes the natural features of the larger study area. One of the most noted and discussed natural features within the trail corridor consisted of the Natural Spring, referred to locally as "Maurel Spring", located near Libby's El Rey Café. Many participants expressed a strong desire to make this spring a prominent feature within the project.
- **Railroad** - Workshop participants universally recognized the importance of the railroad as it relates to the trail corridor. From a physical and historical standpoint, they see the railroad and rail depot as potential trail assets. Although, some discussion arose as to how railroad land ownership would be addressed.

As part of the Pinal Creek Trail Design Workshop, a facilitated mapping exercise was conducted to receive input regarding geographic areas, physical features, and specific elements found along or near the proposed trail corridor. Workshop attendees were asked to review a large printed aerial map and to draw or write their ideas about the corridor directly on the map. This exercise was intended to be free flowing to utilize the results of the previous *Opportunities and Constraints Analysis* for general reference as well as to inspire additional thought. The concepts for the Pinal Creek Trail were also presented during the first public meeting for the Cobre Valley Comprehensive Transportation Study.

The attendees agreed that it would be a good idea to implement and trails incrementally in phases. They felt that perhaps a "pilot project" could be developed along a particularly popular section of trail. The results of the group's brainstorm included:

- The first priority for any pilot project should focus on the area between Libby's and Connie's bridge. The natural spring located behind Libby's would make for an excellent trailhead and destination due to its natural beauty and bird watching opportunities. The pilot project should be identified in this area due to its proximity to downtown and potential for increased users in the area.
- Local funding could be supplemented with "sweat equity" assistance from the City of Globe, high school football team or Boy Scouts. It was thought that some materials could be donated and that one or more of these groups could coordinate and participate in a Saturday afternoon activity to work on the construction of a segment of trail improvements that would be a source of community gathering and pride.
- The group also suggested that it would be important to identify a "project champion". This project champion would ideally be a community leader who could be a vocal supporter of the Pinal Creek Trail, keeping the vision for the development of the trail at the forefront of the community consciousness and garner support from volunteers and elected officials to provide funding opportunities for the construction of the Pinal Creek Trail.

5.0 TRAIL CONCEPTUAL LAYOUT

The initial trail concept was developed using the 1992 *Pinal Creek Linear Park Concept Report* as a starting point and expanding the limits of the trail as envisioned by the City of Globe sponsors. The expanded limits are from Bixby Road to the Gila Pueblo Community College, increasing the overall length of the trail system from 3.5 to 8.2 miles with connector trails. The initial concept of the City of Globe was to keep the trail entirely within the banks of Pinal Creek.

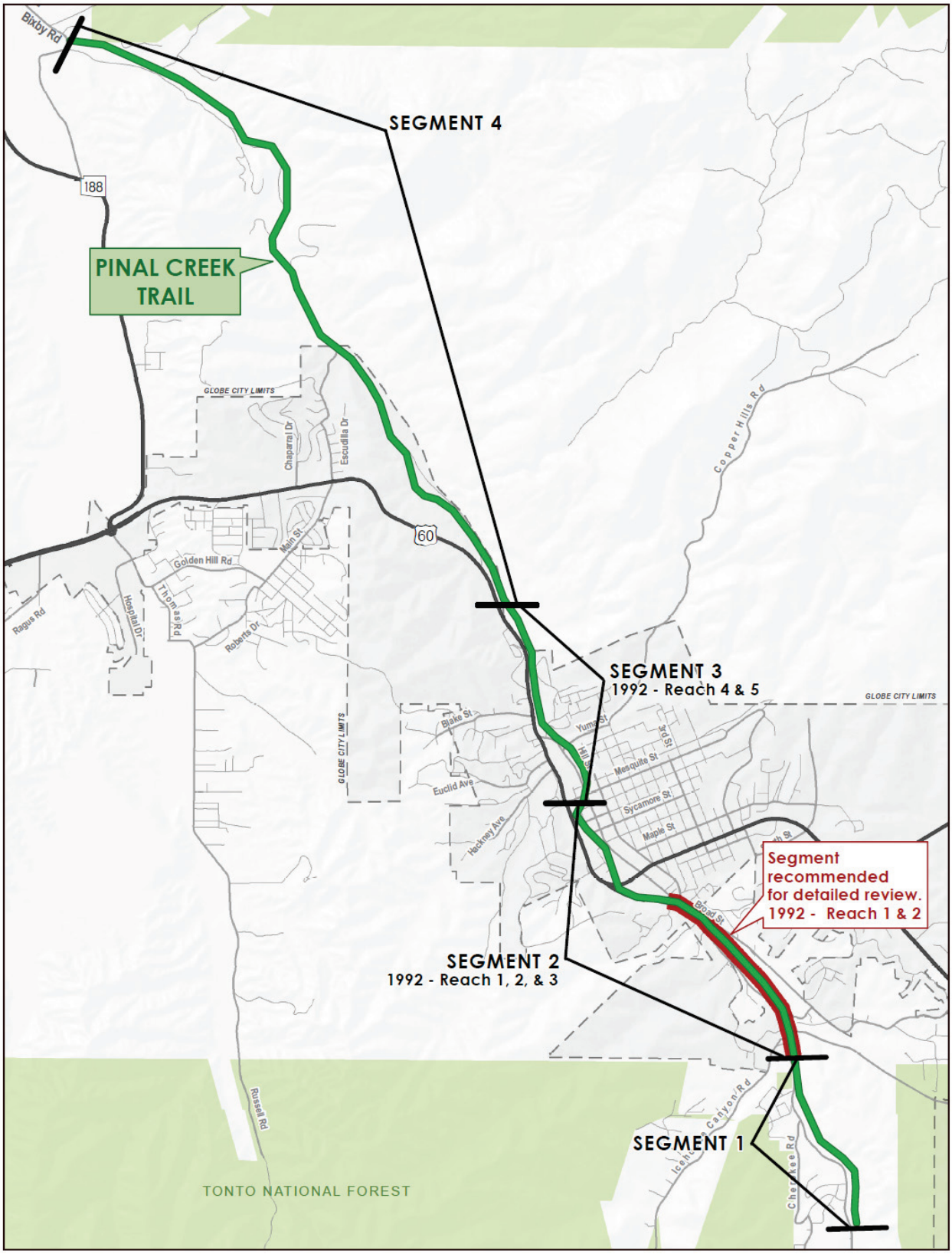
Upon extensive field visits and walking the entire trail corridor, it became evident that although not impossible it would be challenging in some areas to develop the trail entirely within Pinal Creek. Agreement was reached to maintain the long-term goal of the entire trail in the creek with a phased approach starting with a street system that would be moved into the creek in a series of phased construction efforts. This approach has the advantage of a quick implementation of a trail system while providing a long-term plan to assist the City in applying for grant funding.

The approach began with the development of trail segments for review and analysis based on the Reaches identified in the *Pinal Creek Linear Park Concept Report*. As shown in Figure 5.1 below, four segments were identified.

- Segment 1 is an extension of the trail system to the south to Gila Pueblo College.
- Segment 2 includes the original study Reaches 1, 2 and 3.
- Segment 3 contains Reaches 4 and 5.
- Segment 4 is a new portion of trail extending northerly along Pinal Creek Road to the junction of Bixby Road.

The concepts that are presented in this section are conceptual and are intended to provide the general layout of the trail and affected property owners for particular segments. Detailed plans are not included and should be developed when each individual trail segment is funded for construction. Detailed maps of the proposed trail location with property owners identified, is contained the separate *Pinal Creek Trail Conceptual Plan Supplemental Document*. Also included in the supplemental document are segment layouts, cross-sections, photographs, and the implementation plan.

FIGURE 5.1 PINAL CREEK TRAIL STUDY AREA



5.1 Segment 1 – Community Center to Gila Pueblo Community College

Study Segment 1 begins at the Gila County Community College and extends approximately 1.15 miles to the Globe Community Center. This Segment includes two options for constructing the trail; a creek and sidewalk/street option. The Segment provides access from the Globe Community Center to the Gila Pueblo College. There are sidewalks from the college to Winchester Drive and paved shoulder is available the remainder of the segment. The original concept for Segment 1 was to keep the trail within the creek bed while trying to avoid the areas of preinnial flows as depicted in Figure 5.3. Table 5.1 summarizes the benefits and challenges involved in building and maintaining the trail.

FIGURE 5.2: SEGMENT 1 TRAIL LAYOUT

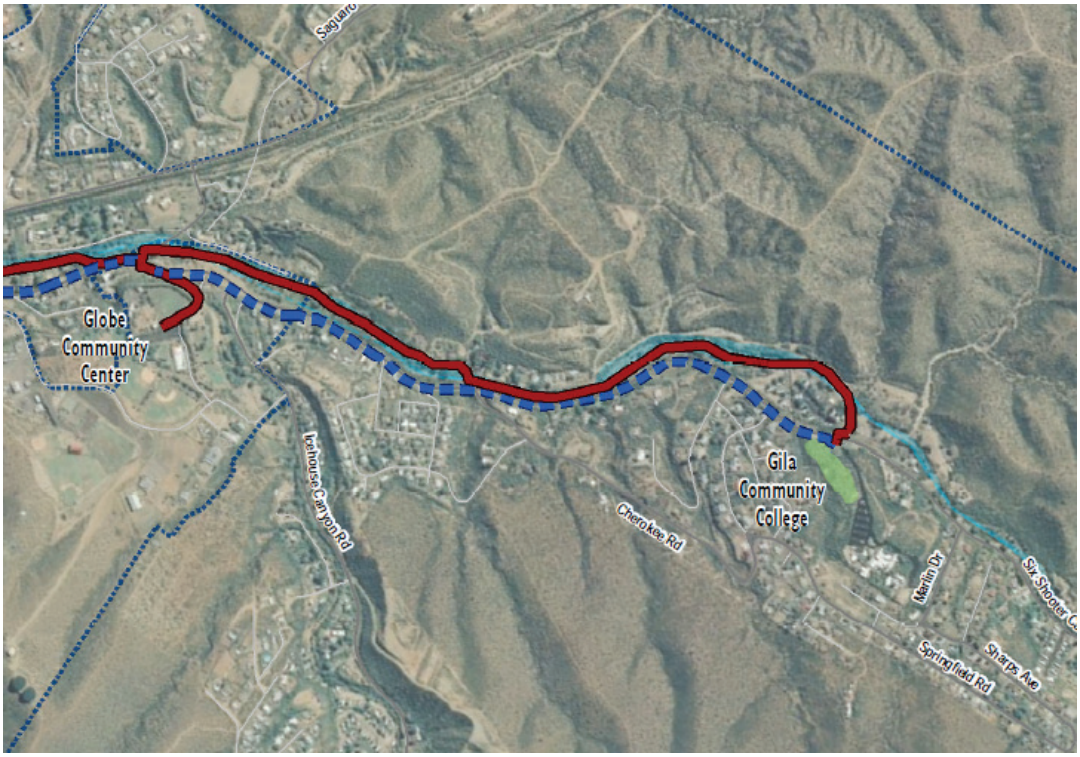


FIGURE 5.3: ORIGINAL SEGMENT 1 TRAIL CONCEPT

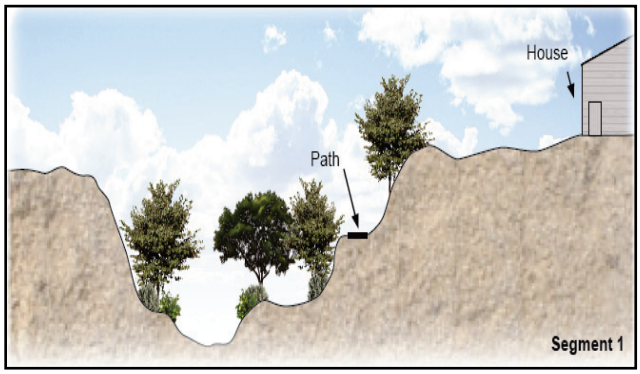


TABLE 5.1: SEGMENT 1 TRAIL BENEFITS AND CHALLENGES

Option	Benefit	Challenge
Roadside	■ R/W is available along the road. ■ No major construction required. ■ Can quickly be designated a trail.	■ Potential conflicts with traffic. ■ Narrow roadway/sidewalks. ■ Not scenic. ■ Little vegetation.
Creek	■ Scenic trail experience. ■ More vegetation. ■ No roadway conflicts. ■ Greenbelt experience.	■ Extensive construction is required. ■ Environmental and Clean Water Act (CWA) Section 404 permitting if federal funds are used. ■ Several property owners to deal with. ■ Concern of washout during floods. ■ Increased maintenance costs.

5.2 Segment 2 – Railroad Depot to Globe Community Center

This segment begins at the Globe Community Center and continues to the Globe Railroad Depot. As shown in Figure 5.4, the blue dashed line is street option and the red is the creek bed option. The original concept for Segment 2 was to follow along the bank of the creek or construct the trail within the creek above perennial flows and protected by rip-rap as shown in Figure 5.5. An analysis of the benefits and challenges of the roadside, top of bank and creek trail options were considered and are summarized in Table 5.2.

FIGURE 5.4: SEGMENT 2 TRAIL LAYOUT

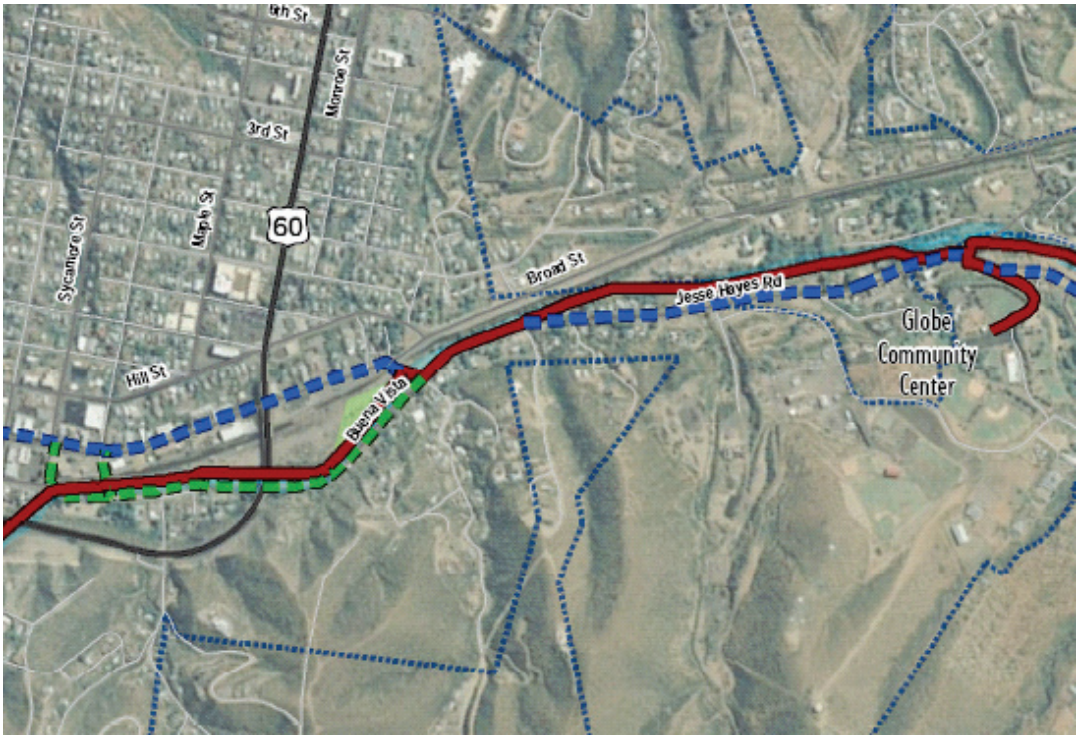


FIGURE 5.5: ORIGINAL SEGMENT 2 TRAIL CONCEPT

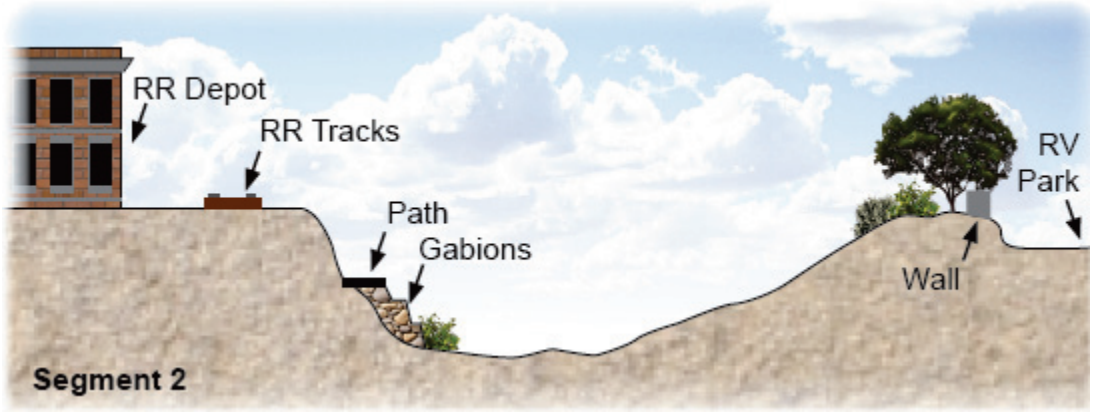


TABLE 5.2 SEGMENT 2 TRAIL BENEFITS AND CHALLENGES

Option	Benefit	Challenge
Roadside	■ R/W is available along the road. ■ Fairly simple construction. ■ Can quickly be designated a trail. ■ Construct new pedestrian bridge.	■ Potential conflicts with traffic. ■ Not scenic. ■ Little vegetation.
Creek	■ Scenic trail experience. ■ More vegetation. ■ No roadway conflicts. ■ Greenbelt experience. ■ Moderate construction effort.	■ Extensive construction is required. ■ Environmental and CWA Section 404 permitting if federal funds are used. ■ Several property owners to deal with. ■ Concern of washout during floods. ■ Increased maintenance costs.
Top of Bank	■ Off the roadway. ■ Out of the creek bed. ■ Less maintenance. ■ No washout potential from floods. ■ Adjacent to recommended park.	■ Within the Railroad R/W. ■ Potential conflict with Railroad operations.

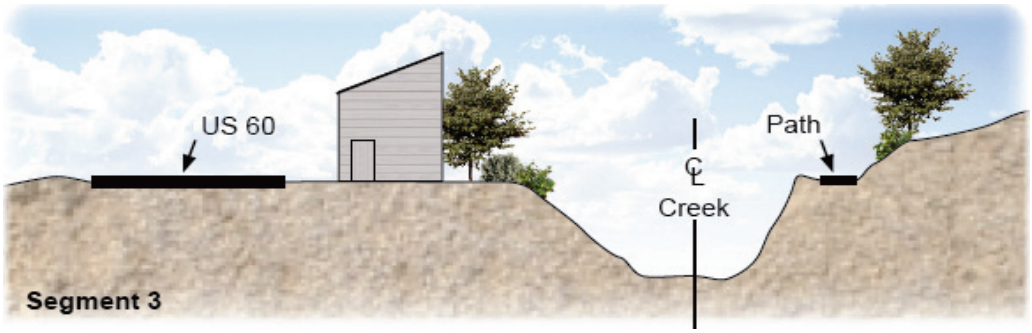
Photos near the Globe Railroad Depot.

5.3 Segment 3 – Pinal Creek Road/US 60 to Broad Street/Pinal Creek

Segment 3 begins at the Globe Railroad Depot and ends at the intersection of US 60 and Pinal Creek Road. The original layout of this segment is shown in Figure 5.6, with the blue dashed illustrating the street option, the red line following the creek bed, and the green line representing a connector to the Old Dominion Hiking Park. The original concept for Segment 3 was to keep the ultimate trail within the creek bed, although portions may has to be located adjacent to the highway. Figure 5.7 shows the original trail concept to keep the trail as high above the perennial flow as possible.

FIGURE 5.6: SEGMENT 3 TRAIL LAYOUT

FIGURE 5.7: ORIGINAL SEGMENT 3 TRAIL CONCEPT



The photos below display typical conditions along this Segment. The photo on the top left shows the Corps of Engineers flood control channel, the top right shows the lush greenbelt area near the junction of US 60 and Broad Street, the photo on the lower left indicates a typical box culvert structure, and the photo on the lower right the portion of the trail that would be located along US 60.




A preliminary analysis of the benefits and challenges of this trail segment options was performed and is summarized in Table 5.3.

TABLE 5.3 SEGMENT 3 TRAIL BENEFITS AND CHALLENGES

Option	Benefit	Challenge
Roadside/ Sidewalk	■ R/W is available along the road. ■ No major construction required. ■ Can quickly be designated a trail.	■ Potential conflicts with traffic. ■ Not scenic. ■ Little vegetation.
Creek	■ Scenic trail experience. ■ More vegetation. ■ No roadway conflicts. ■ Greenbelt experience.	■ Extensive construction is required. ■ Environmental and CWA Section 404 permitting if federal funds are used. ■ Several property owners to deal with. ■ Concern of washout during floods. ■ Increased maintenance costs.

5.4 Segment 4 – Bixby Road to Pinal Creek Road/US 60

Study Segment 4 starts at the junction of Pinal Creek Road and US 60 and runs along Pinal Creek Road to Bixby Road. Original concepts for Segment 4 located the trail along the existing Pinal Creek Road in order to keep the trail within existing road right-of-way easements as shown in Figure 5.9. Initial screening of the benefits and challenges to the original concept are summarized in Table 5.4.

FIGURE 5.8: SEGMENT 4 TRAIL LAYOUT

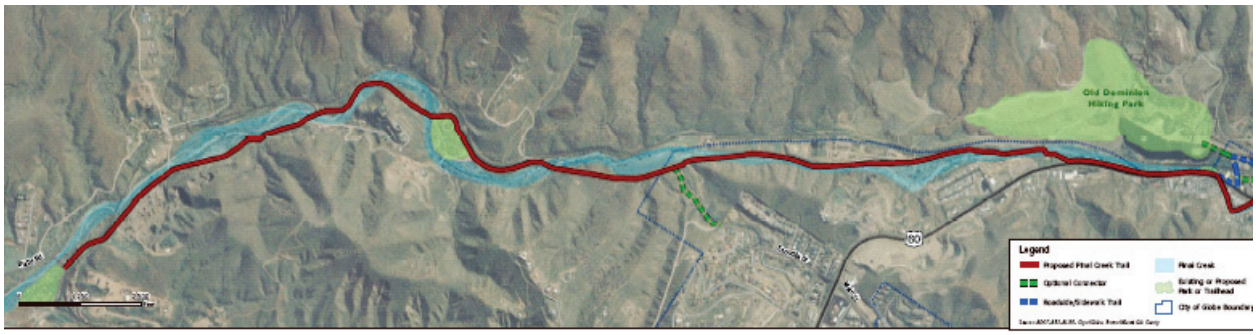
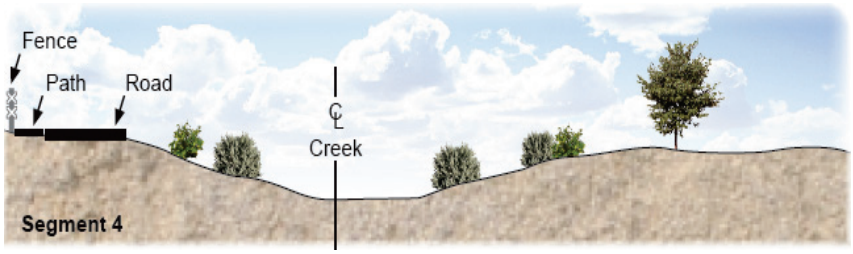


FIGURE 5.9: ORIGINAL SEGMENT 4 TRAIL CONCEPT



Above are photos of segment 4, along Pinal Creek Road and typical creek crossing.

TABLE 5.4 SEGMENT 4 TRAIL BENEFITS AND CHALLENGES

Option	Benefit	Challenge
Roadside	■ Along established R/W (Pinal Creek Road). ■ Fairly simple construction. Could use road stabilizers. ■ Near the creek. ■ Remote rural setting.	■ Little vegetation for shade. ■ Road is dusty. ■ Several creek crossings. ■ Environmental and CWA Section 404 permitting if federal funds are used for the creek crossings.

6.0 RECOMMENDATIONS

Based on discussions with local citizens and potential users of the Pinal Creek Trail multi-use pathway, the ultimate preferred alternative is to construct the trail entirely within the Pinal Creek bed. Although this is the ultimate preferred alternative, construction of the trail will need to be made in phases as outlined below. To establish a trail system immediately, it is recommended that the City of Globe designate and install trail blazing signage for the temporary route. The temporary route will follow the existing sidewalk and paved roadway surfaces. Initially, there will be limited connectivity between the segments. Section 6.2 discusses the recommended phasing strategy for the trail corridor. It is further recommended that subsequent phases of trail construction within the Pinal Creek bed be initially soft surfacing material to keep costs lower. The City may in the future decide to upgrade the soft surfaces to hard paved ones.

6.1 Recommended Segment Improvements

The ultimate trail system will need to be constructed in a phased approach as funds become available for the project. Table 6.1 outlines the recommended improvements for each study segment.

TABLE 6.1: TRAIL SEGMENT IMPROVEMENT RECOMMENDATIONS

	Limits	Recommendation	Timeframe
Segment 1 - Gila Community College to Globe Community Center (Approx. 1.26 miles)			
	Entire Segment	Initially the trail should be located along the paved roadway shoulder and sidewalk system. The City will designate the trail and install signage.	Short-term
	Entire Segment	Construct trail within Creek bed.	Long-term
Segment 2 - Globe Community Center to Broad Street/Pinal Creek (Approx. 1.77 miles)			
	Entire Segment	Designate initial trail along streets and sidewalks.	Short-term
	Entire Segment	Construct trail within creek bed.	Long-term
Segment 3 - Broad Street/Pinal Creek to Pinal Creek/US 60 (Approx. 1.34 miles)			
	To Old Dominion Hiking Park	Designate initial trail along streets and sidewalks to connect to Old Dominion Mine Park.	Short-term
	Murphy Street to US 60/Pinal Creek Road	Construct path along north side of US 60. Widen the bridge over Pinal Creek for pathway.	Mid-term
	Entire Segment	Construct trail within creek bed.	Long-term
Segment 4 - US 60/Pinal Creek Road to Bixby Road (Approx. 3.69 miles)			
	US 60/Pinal Creek Road to Bixby Road (3.67 miles)	Construct path along existing Pinal Creek Road. Apply soil stabilizer to portion of road surface to provide hard surface.	Mid-term

6.2 Phased Approach

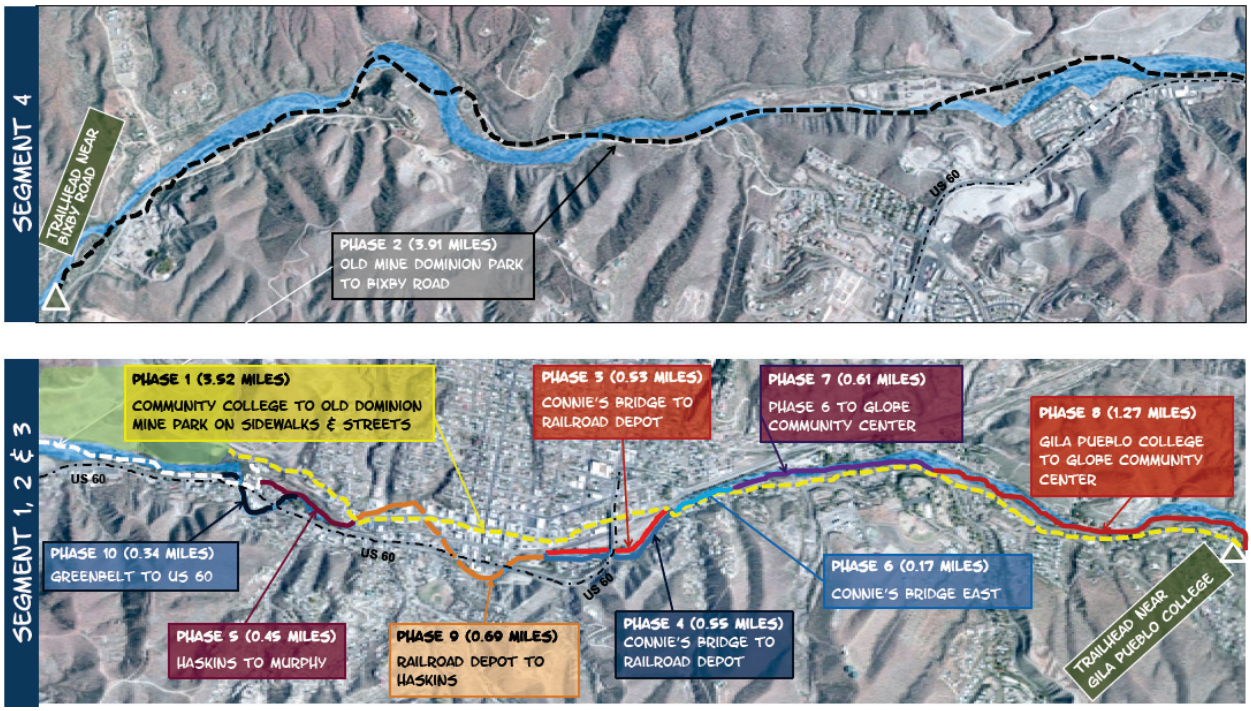
The ultimate trail system will need to be constructed in a phased approach as funds become available to complete the entire corridor. The City of Globe may be able to complete portions of the work with volunteers and City forces, while some sections will require engineering and construction by others. It is recommended the trail be constructed to the design standards discussed in section 3.4 of this report. Table 6.2 summarizes the recommended trail construction phases based on 2012 cost factors for a soft surface material. These phases were designed to maintain continuity of the trail system as subsequent phases are completed. Actual sequence of construction may vary depending on the available funding and community priorities.

TABLE 6.2: TRAIL IMPLEMENTATION PHASES

Phase	Limits	Scope	Est. Cost
1	Gila County Community College to Old Dominion Mine Park	The City of Globe to install trail blazing signing for the temporary route.	$45,000
2-1	Old Dominion Mine Park to Bixby Road	Construct a segment of the trail a distance of 3.63 miles along Pinal Creek Road.	$250,000
2-2	Old Dominion Mine Park to Bixby Road	Construct a segment of the trail a distance of 0.58 miles along the north side of US 60.	$310,000
3	Connie's Bridge to Railroad Depot	Construct trail along the top of bank on Railroad property (0.53 mile).	$75,000
4	Connie's Bridge to Railroad Depot	Construct trail within the creek bed a distance of 0.55 miles. Replace existing pedestrian bridge.	$200,000
5	Haskins Road to Old Dominion Park	Construct trail within the creek bed along greenbelt area (0.45 miles).	$90,000
6	Connie's Bridge east	Construct trail along Jesse Hayes Road within the City right of way for 0.17 miles.	$40,000
7	Phase 6 to Globe Community Center	Construct trail within the creek bed a distance of 0.61 miles to Beer Tree Road.	$120,000
8	Globe Community Center to College	Construct trail within the creek bed a distance of 1.27 miles to near the community college.	$175,000
9	Railroad Depot to Haskins Road	Construct trail within the creek bed a distance of 0.69 miles	$125,000
10	Greenbelt to US 60/Pinal Creek Road	Construct trail within the creek bed a distance of 0.34 miles	$60,000

Figure 6.1 shows a summary of the ten recommended implementation phases to complete the trail along the entire corridor. Future phases could include upgrading the trail surface with hard paving materials.

FIGURE 6.1 SUMMARY OF PINAL CREEK TRAIL SYSTEM IMPLEMENTATION PLAN



Phase 1 (Existing Local Street and Sidewalk System)

The first phase of the proposed trail system will be located entirely along existing sidewalks and local streets. Figure 2.2 provides an illustration of the recommended improvements for Phase 1. The advantage of this initial phase is the immediate establishment, recognition, and use of the designated Pinal Creek Trail system.

For this initial phase, implementation costs are relatively low and fairly easy to complete. This initial trail system will provide a linkage between the historic Globe Downtown District, Globe Community Center, Gila County Community College and the Old Dominion Mine Park. The estimated cost to implement Phase 1 is approximately $45,000.

During Phase 1, it is recommended that the City of Globe purchase and install trailblazing signs along the route. Since this initial route is entirely along local streets with relatively low traffic a striped dedicated bike lane is not recommended. Also, the widths of the local streets, ranging from 24 to 18 feet, are not wide enough to accommodate a dedicated bike lane.

FIGURE 6.2: PHASE 1 TRAIL RECOMMENDATION

Phase 2 (Murphy Road to Bixby Road)

Implementation of Phase 2 of the Pinal Creek Trail plan involves two separate projects to complete the preliminary trail system from the Gila County Community College to Bixby Road. The first project is the construction of a soil stabilized trail surface along the approximately 3.63 miles along Pinal Creek Road. This segment traverses 19 different property parcels located south of the Old Dominion Mine Park. Phase 2 as shown in Figure 6.3.

According to the City of Globe Engineering Department a road easement may have been granted to Gila County that will aid in development of Phase 2. The City will research this easement prior to initiation of construction activity; if the easement is in place, the construction can proceed after an Intergovernmental Agreement (IGA) is negotiated. If the easement is not currently in place, in negotiation with each affected property owner will need to be completed. Figure 6.4 illustrates a typical cross-section along the first project of Phase 2. The estimated cost of Project 1 of Phase 2 is $300,000 for construction of a soil stabilizing material along Pinal Creek Road from Bixby Road to the Junction of US 60.

The second project included in Phase 2 is a potential Transportation Enhancement project to complete the sidewalk and railing along approximately 0.58 miles on north side of US 60. The project would also include widening of the bridge across Pinal Creek. Completion of these projects will provide a preliminary trail system along the entire corridor. The construction of this Project consists of a new concrete pathway along the north side of US 60 as illustrated in Figure 6.5. As shown in the figure, the path will require small retaining walls and railing and should be constructed

entirely within the ADOT right-of-way. Widening of the US 60 bridge across Pinal Creek or a modification to accommodate the path will also be required. The estimated cost of Project 2 of Phase 2 is $350,000.

FIGURE 6.3: PHASE 2 TRAIL PROJECTS

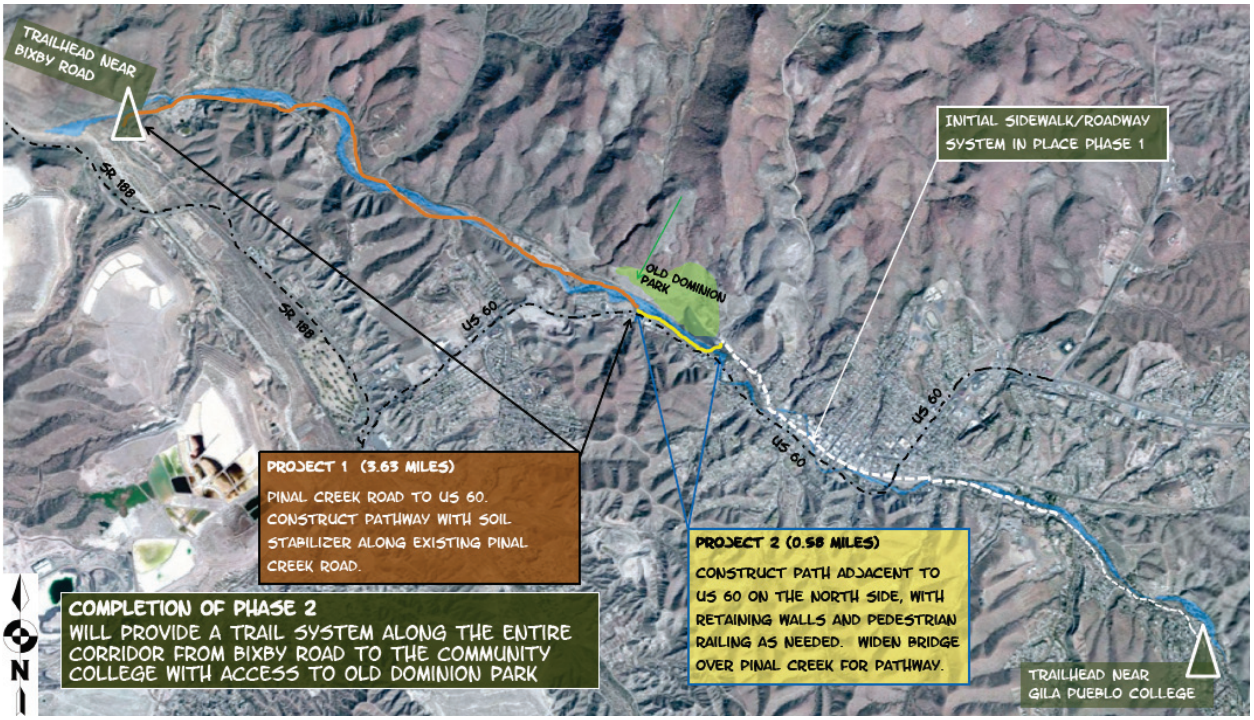


FIGURE 6.4: PHASE 2 - PROJECT 1 PINAL CREEK ROAD CONCEPTUAL CROSS-SECTION

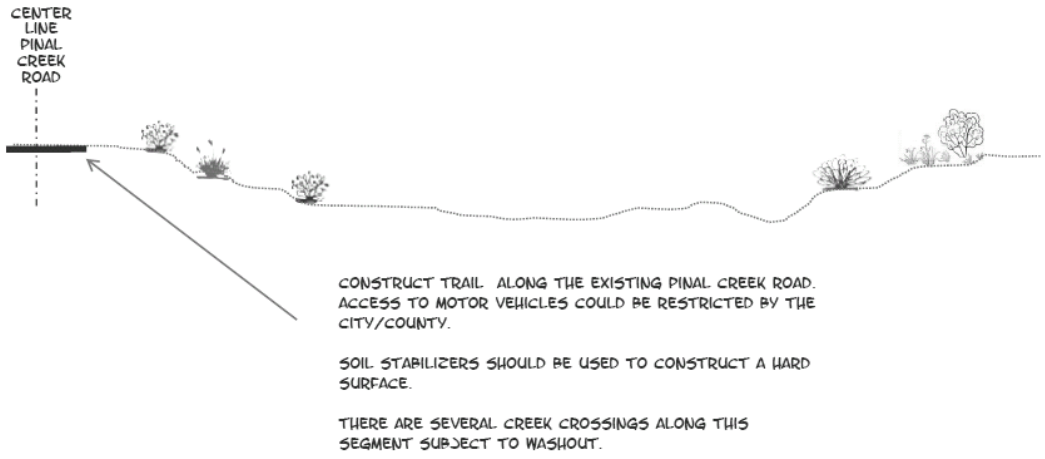
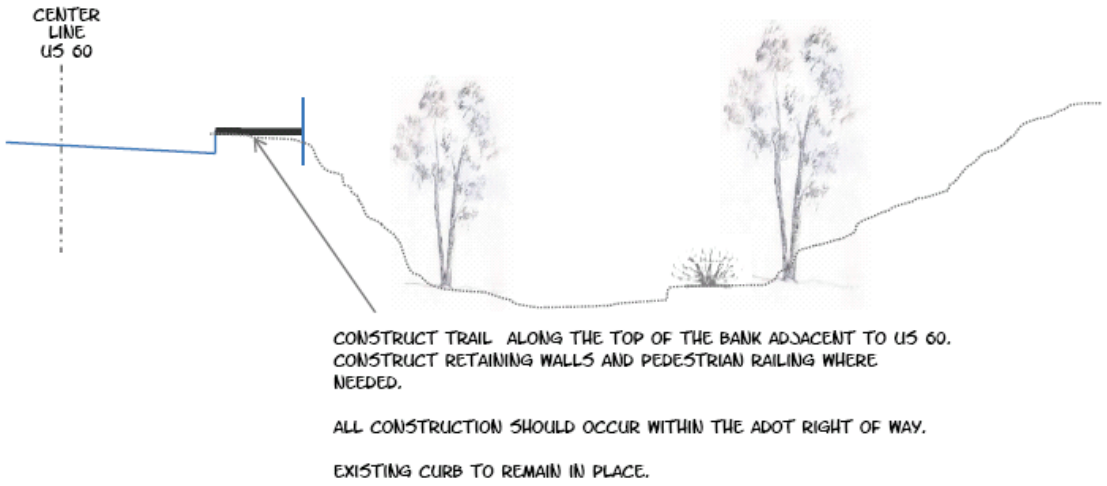


FIGURE 6.5: PHASE 2 – PROJECT 2, US 60 CONCEPTUAL CROSS-SECTION



Phase 3 and 4 (Railroad Depot – Connie's Bridge)

Phases 3 and 4 provide a loop trail along both sides of Pinal Creek through designated greenbelt areas. This area is located near the historic Globe downtown area and will serve as the core of the trail system. The loop trail will provide users the option of staying in the centralized downtown area near the Globe Railroad Depot. Figure 6.4 illustrates the location of Phase 3 and 4 along with the greenbelt areas located along this segment.

Phase 3 is recommended to be constructed first as it lies mostly on Arizona Eastern Railroad property. This segment along the top of the creek bank would be easily constructed upon concurrence from all affected property owners. This section is most suitable to be completed by City of Globe or by volunteer efforts. Phase 3 is recommended to be a hard surface of soil stabilizer to provide a durable wearing surface at an estimated cost of $75,000.

Phase 4 could be constructed after completion of Phase 3 and would involve more construction effort to build. It would be contained within the Pinal Creek zone and would affect 12 individual property owners. Currently, there is a road within the creek bed that could be utilized for the routing; however, there are areas requiring vegetation removal, grading and flood protection. This Phase would also include the replacement of the existing pedestrian bridge across Pinal Creek. Attempts were made to salvage the bridge, however, the latest inspection by a structural engineer determined is could not be saved. The estimated cost of Phase 4 is $150,000.

A typical cross-section for these two phases is shown in the Figure 6.7. The Phase 3 trail would be constructed on the right-side of the creek, while Phase 4 would need to be constructs on the left-side.

FIGURE 6.6: PHASE 3 AND 4 TRAIL PROJECTS

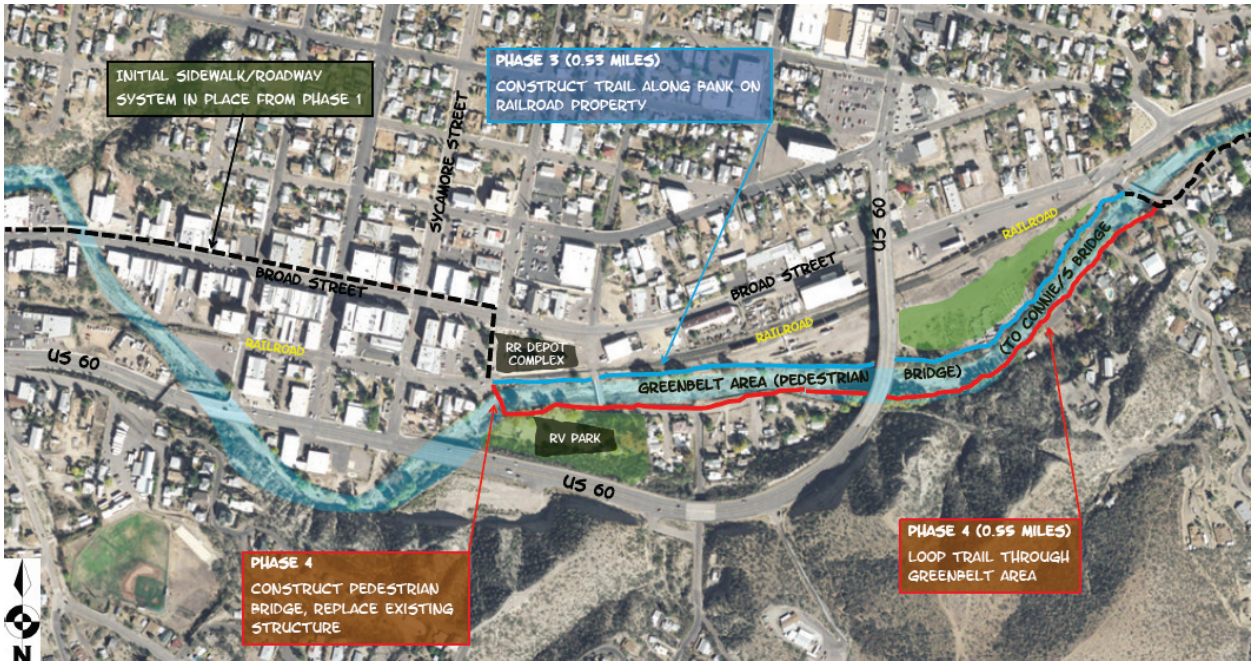
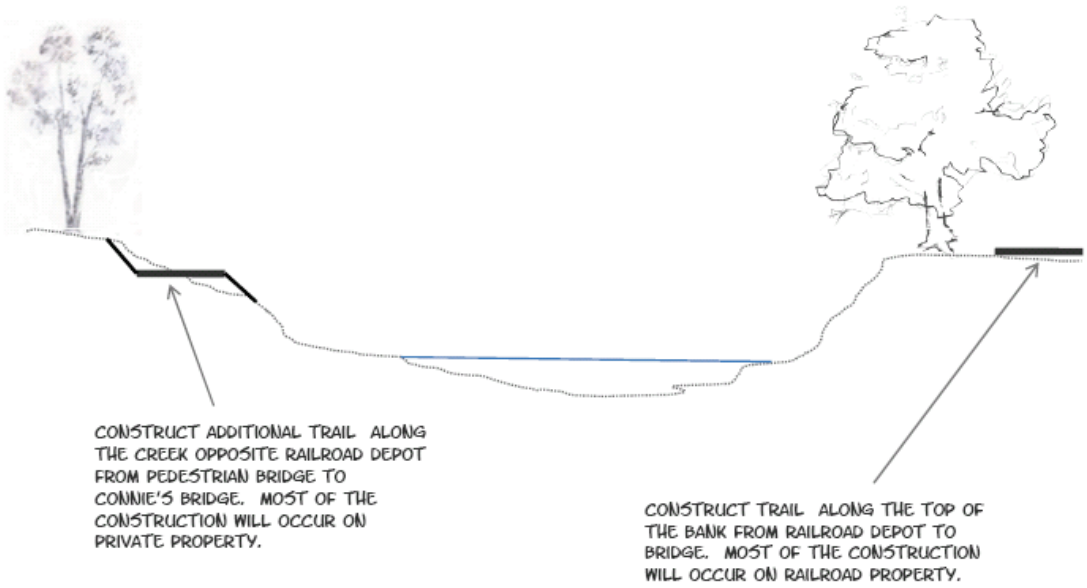


FIGURE 6.7: PHASE 3 AND 4 CONCEPTUAL CROSS-SECTION



Phase 5 (Haskins Road to Murphy Street)

This Phase includes the construction of a trail along Pinal Creek from Haskins Road to Murphy Street, as illustrated in Figure 6.8. A majority of this segment is located through an area with large cottonwood trees and near a natural spring, which lends itself to a natural greenbelt area. This portion of the trail would enter Pinal Creek near the railroad bridge on Haskins Road and continue though the greenbelt area connecting to Globe Street. This section will require extensive excavation and careful engineering design to assure the path grades are within standards. At Globe Street, the trail will continue to Murphy Street where it connects with the previously complete trail developed during Phase 1. The section along Globe Street will require minimal earthwork with flood protection. The approximate cost of Phase 5 is $90,000.

FIGURE 6.8: PHASE 5 TRAIL PROJECT

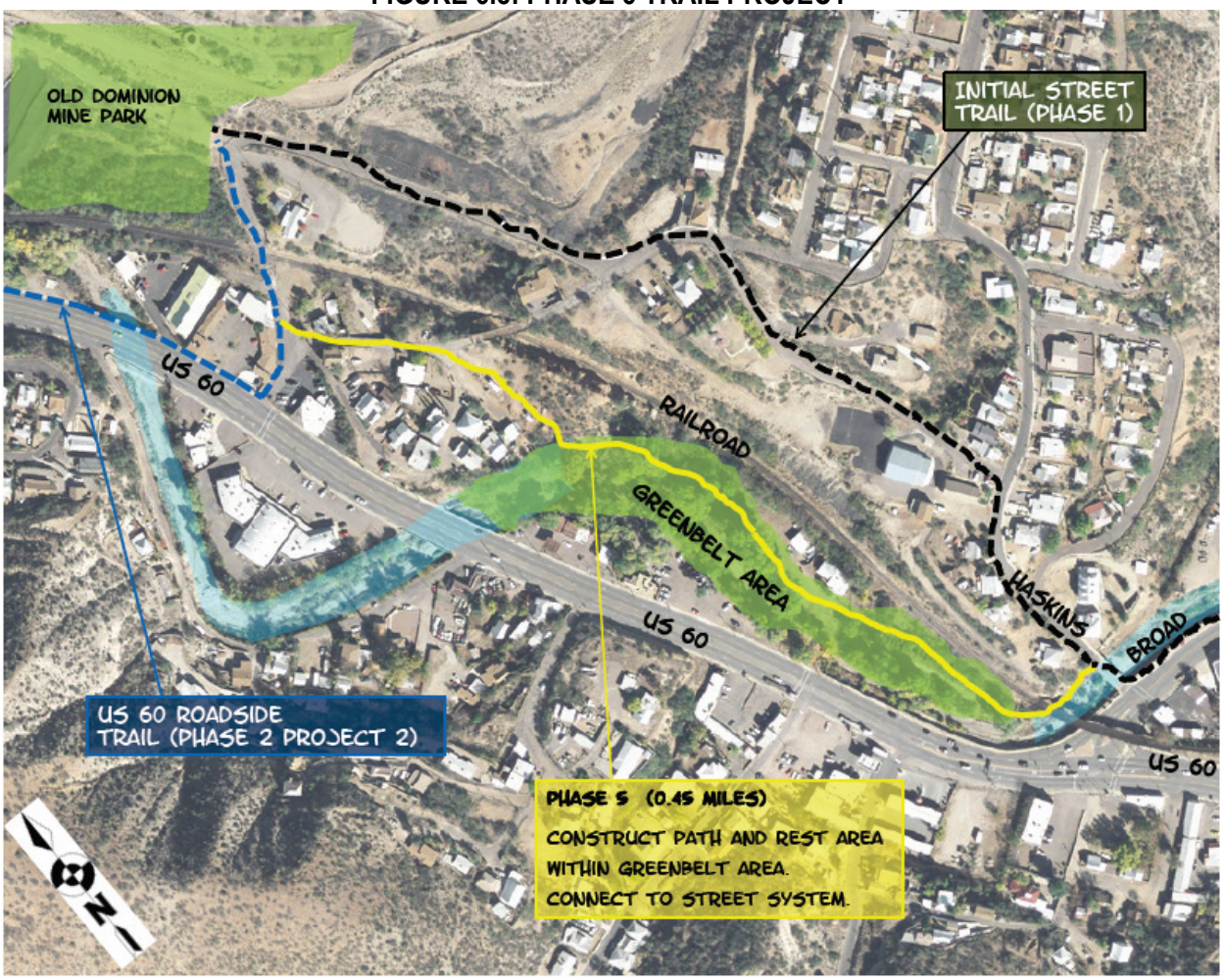
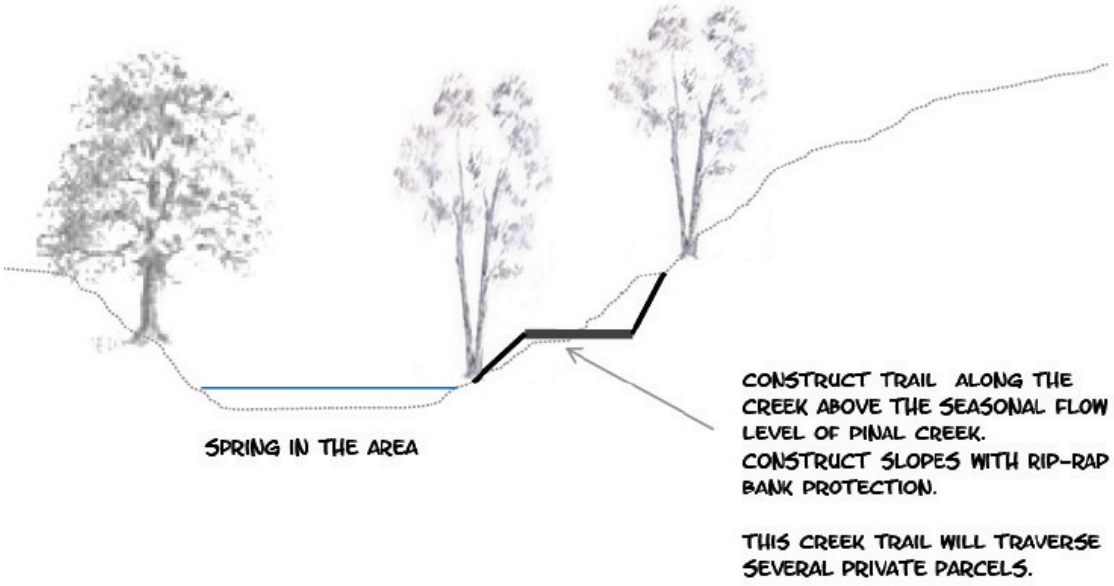


FIGURE 6.9: PHASE 5 CONCEPTUAL CROSS-SECTION



Phase 6 (Connie's Bridge East)

Phase 6 of trail construction will involve the installation of approximately 0.17 miles of path adjacent to Jesse Hayes Road. The path should be separated from the roadway as far as possible while remaining within the existing right-of-way. This Phase could also be completed by City or volunteer resources to minimize construction costs. Figure 6.10 illustrates the recommended Phase 6 trail project.

A hard surface material is recommended for this Phase to provide a smooth durable wearing surface along the creek side and within the existing Jesse Hayes Road right-of-way as shown in Figure 6.11. The estimated cost of this phase of construction is $40,000.

FIGURE 6.10: PHASE 6 TRAIL PROJECT

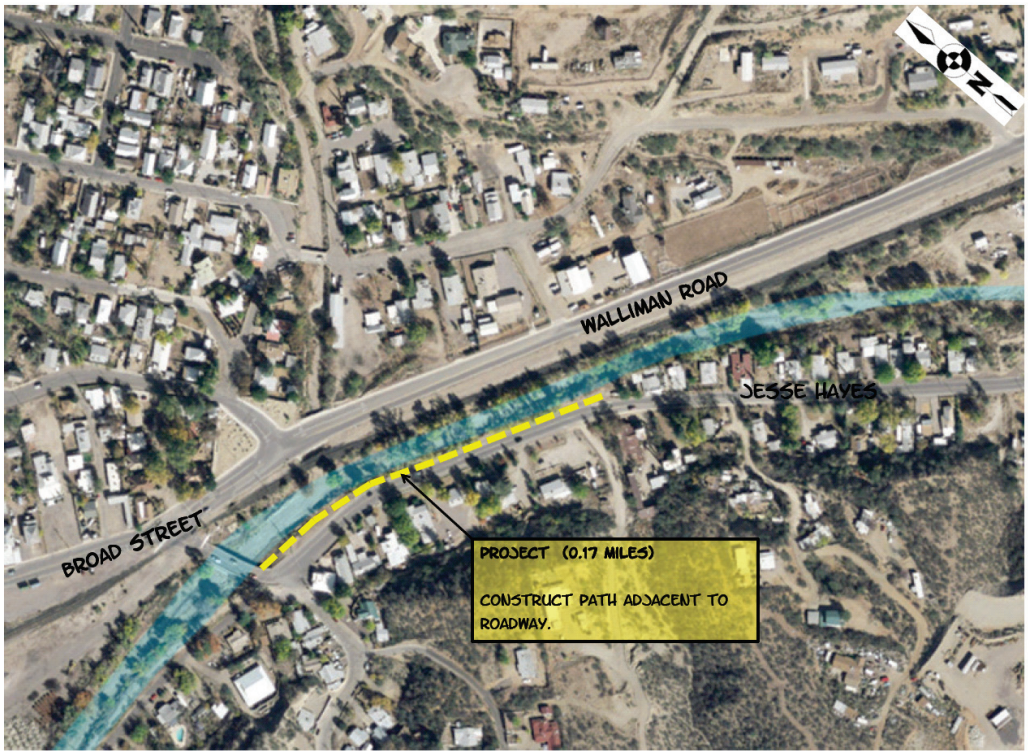
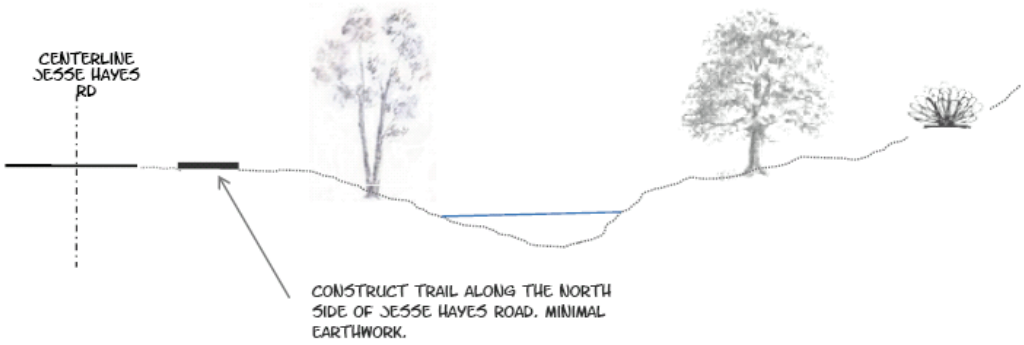


FIGURE 6.11: PHASE 6 CONCEPTUAL CROSS-SECTION



Phase 7 (Connie's Bridge to Globe Community Center)

Figure 6.12 provides an illustration of the recommended Phase 7 trail construction. This Phase of trail construction will connect to Phase 6 to the Globe Community Center. This Phase will involve major vegetation removal, earthwork and flood protection activities and will impact nine property

parcels. Construction activities are recommended to remain within the creek bed along the roadside bank, where the terrain is more suitable for a multi-use path, and to eliminate a creek crossing. A soft surface material is recommended along this segment. The trail should be constructed above the normal flow of Pinal Creek and be protected from seasonal runoff and flood events. Figure 6.13 illustrates the typical cross-section for this phase. The estimated cost of this phase is $120,000.

FIGURE 6.12: PHASE 7 TRAIL PROJECT

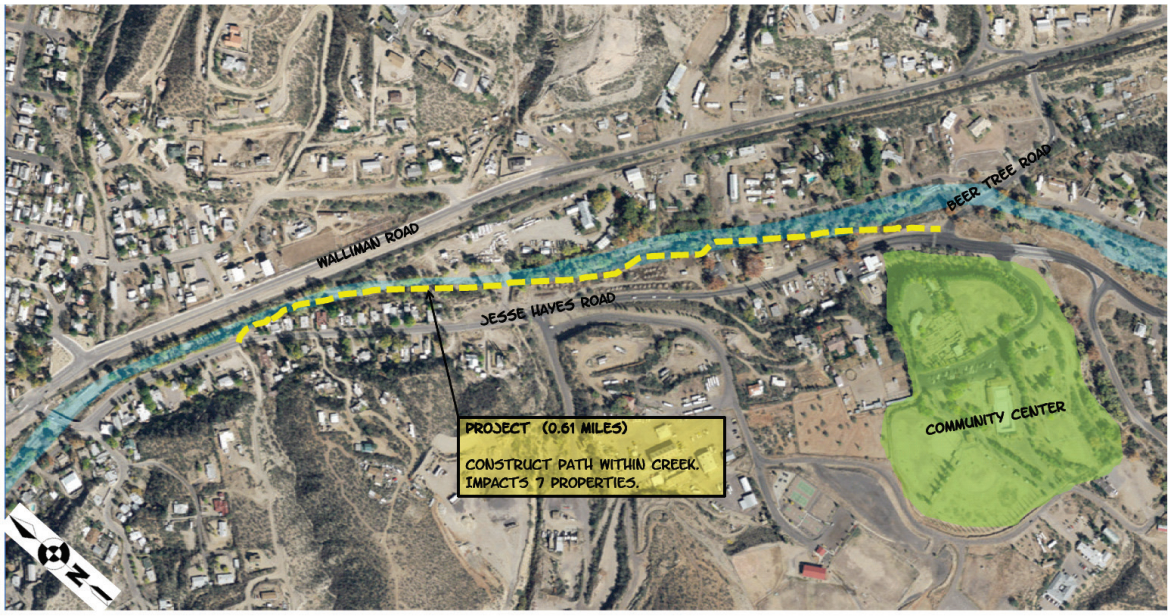
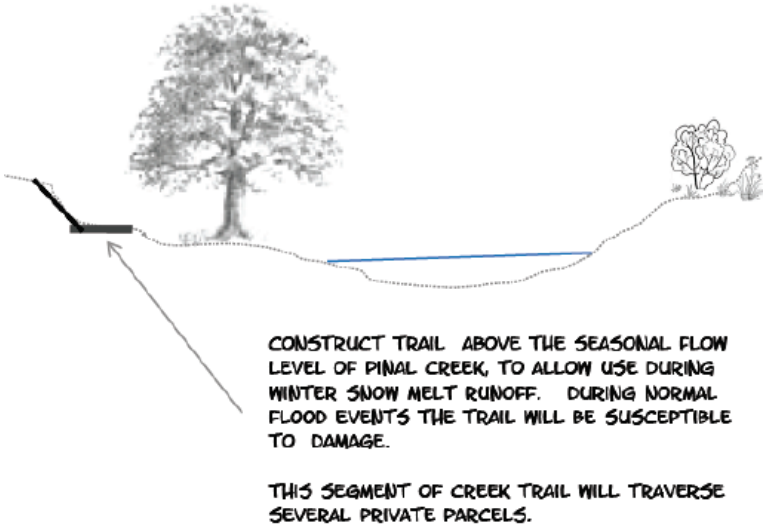


FIGURE 6.13: PHASE 7 CONCEPTUAL CROSS-SECTION



Phase 8 (Gila Community College to Globe Community Center)

Figure 6.14 illustrates the location of Phase 8. Phase 8 includes approximately 1.27 miles of trail located through Pinal Creek from the Globe Community Center to the Gila County Community College. Upon completion of Phase 8, a majority of the trails system will have been relocated to the creek bed.

This Phase will require fairly extensive earthwork and flood protection measures will cross several a low water crossings that provide access to private property, and traverse under one bridge. The area near the bridge structure will need to be constructed of concrete or similar material to minimize flood damage. A soft surface is recommended to lower construction costs. Construction of Phase 8 could be constructed in separate efforts, although this is not recommended in order to maintain trail continuity. The approximate cost for this Phase is $175,000. Figure 6.15 illustrates the cross-section for this Phase.

FIGURE 6.14: PHASE 8 TRAIL PROJECT

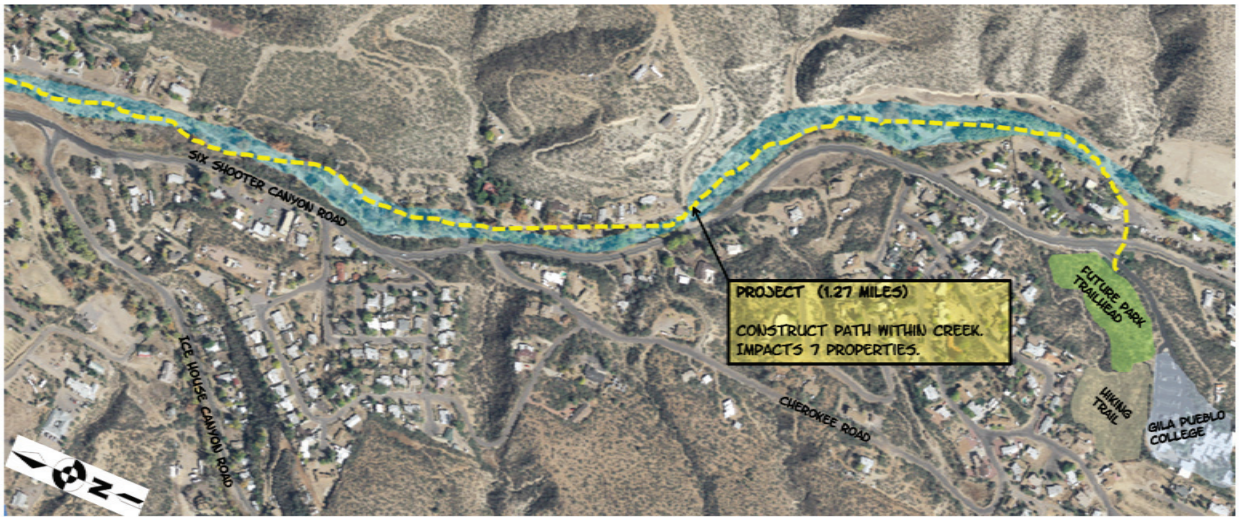
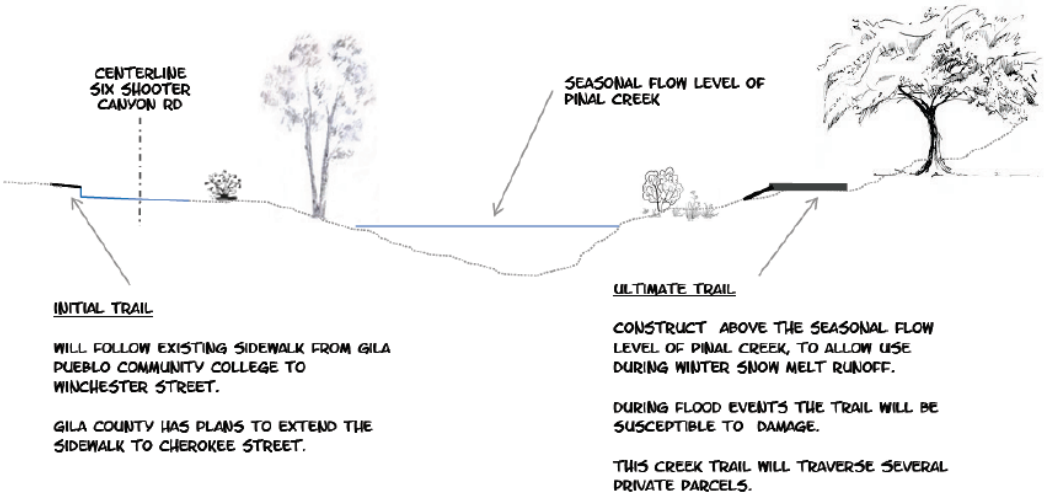


FIGURE 6.15: PHASE 8 CONCEPTUAL CROSS-SECTION



Phase 9 (Globe Railroad Depot to Haskins Road)

Figure 6.16 illustrates the location of Phase 9. As illustrated in the Figure, Phase 9 moves the trail into the creek bed from the Railroad Depot to Haskins Road. The segment will connect to Phase 3 and 4 trail construction to the south and to Phase 5 on the north.

This section of trail is challenging since it passes through several roadway bridges and culverts, including one railroad bridge, two ADOT bridges and three city bridges. The portion of the trail from Yuma Street to Haskins Road is contained within the US Army Corps of Engineers flood control channel with vertical sides. Extensive earthwork and bank protection will be required to protect the path from flood damage. Figure 6.17 illustrates a typical cross-section along this Phase. It is recommended to keep the trail along the north side wall as shown for a smooth connection to the Phase 5 path. The estimated cost of this phase is $125,000.

FIGURE 6.16: PHASE 9 TRAIL PROJECT

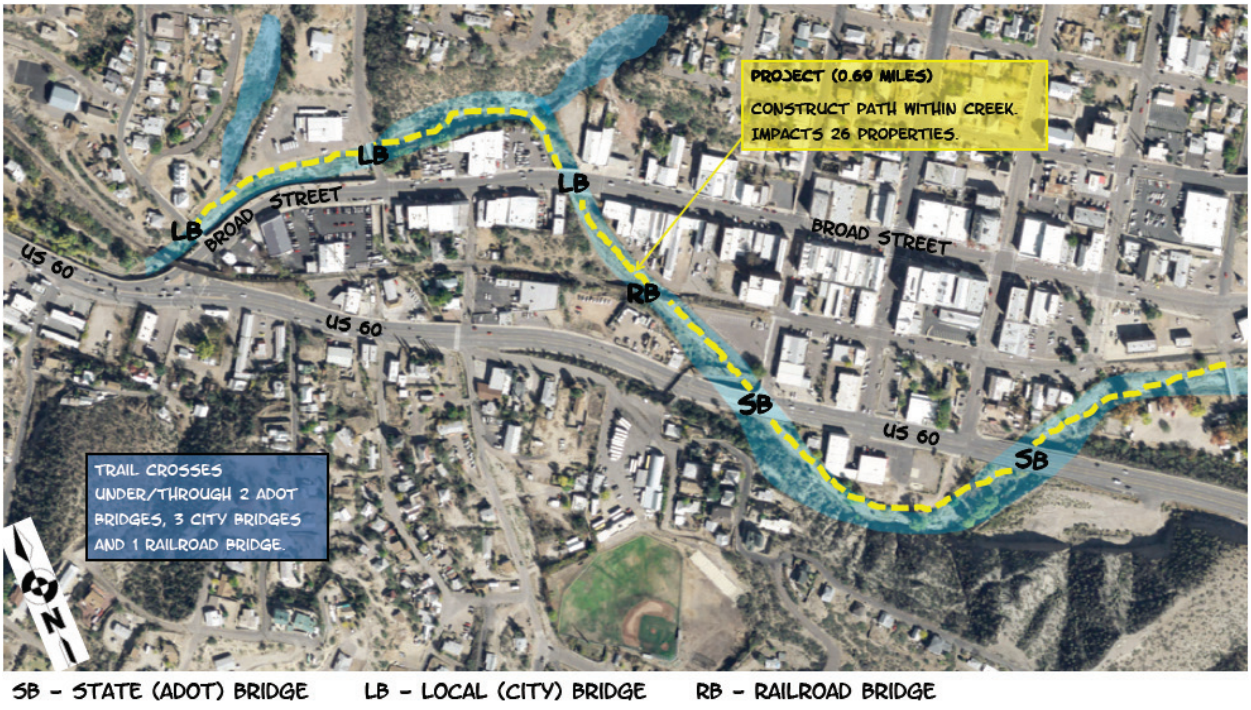
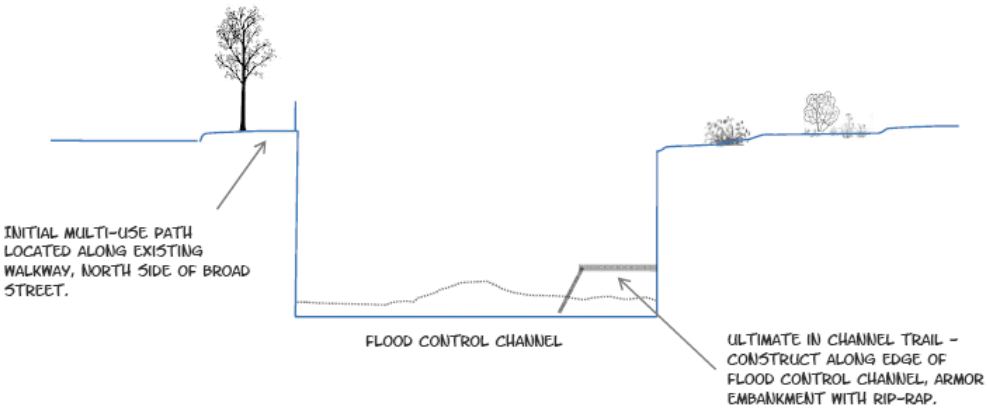


FIGURE 6.17: PHASE 9 CONCEPTUAL CROSS-SECTION



Phase 10 (US 60 to Haskins)

Figure 6.18 provides a graphic representation of Phase 10. The final recommended trail construction, Phase 10, is though a narrow portion of the Pinal Creek with steep side slopes that crosses under US 60 twice. There will be a creek crossing and careful design will be required to connect to the existing path due to the topography. This section is susceptible to flood damage and should be constructed to withstand the majority events. Construction of Phase 10 is difficult due to the configuration of the channel and two box culvert crossings. In addition, due to the topography of the path, careful design will be required to connect to the Phase 5 trail. Figure 6.19 illustrates the extensive construction required to complete this section of trail.

FIGURE 6.18: PHASE 10 TRAIL PROJECT

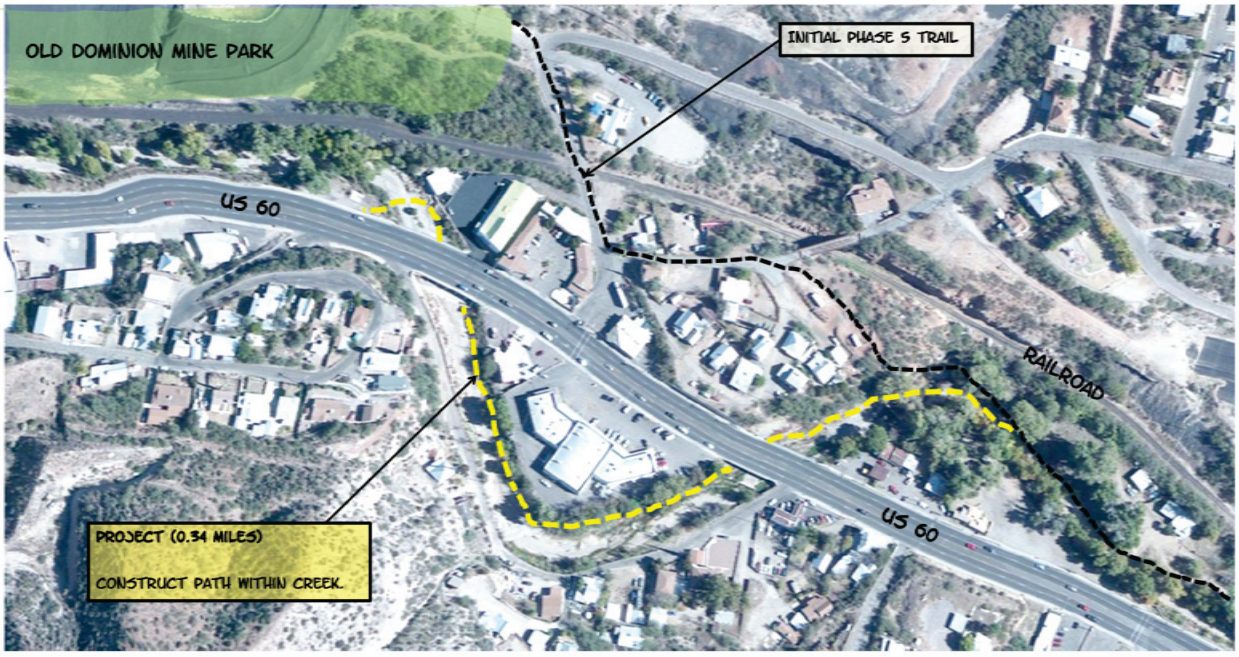
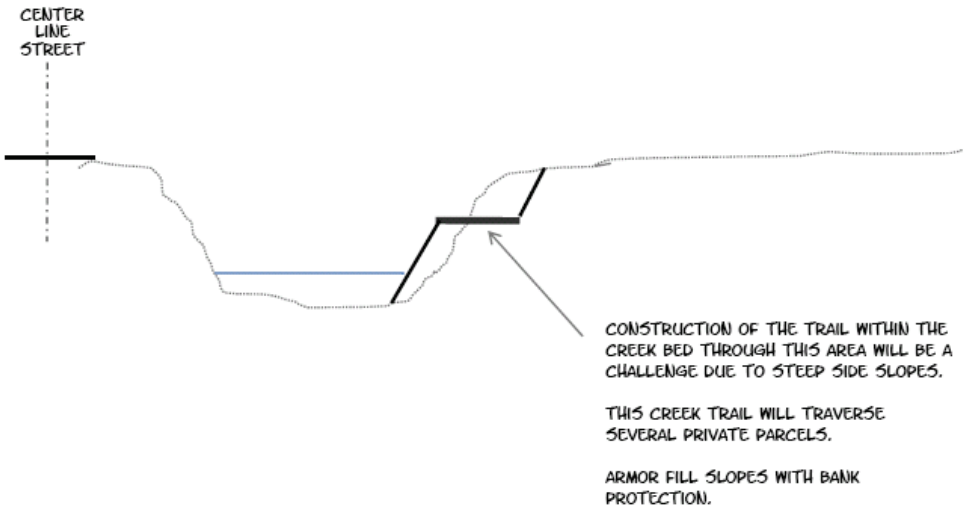


FIGURE 6.19: PHASE 10 CONCEPTUAL CROSS-SECTION



7.0 POTENTIAL FUNDING OPTIONS

Securing funding for the project will be a key element in the successful implementation of the corridor. In addition to completing portions of the construction through the City and/or volunteer resources, there are several sources for governmental funding available. Below are several potential funding sources that should be reviewed to obtain funding for the construction of the Pinal Creek Trail projects. As identified during the design workshop, a trail champion needs to be designated and support obtained by the Globe Downtown Association, the My Own Backyard committee and the Globe City Council. Since a portion of the trail is located within the jurisdiction of Gila County, they could also assist in finding potential funding sources to complete the project.

7.1 Funding Options

Funding for the Pinal Creek Trail may come from various sources, including federal appropriations, state funds, grants, and private donations. Regardless of funding source, most trails are founded on public-private partnerships and include some form of cost-sharing or leveraging, including volunteer and local government support. Some funding opportunities are discuss below other sources may be sought independently by the government sponsor.

Federal Appropriations

Congress directs funding for trails on federal lands. Funding comes from many different accounts within the agencies including the National Park Service's operations budget, the Forest Service's Recreation Management and Capital Improvement accounts, and the BLM's Recreation Management account, among others.

MAP-21

The U.S. Department of Transportation's Federal Highway Administration is the nation's largest single source of funding for multiple use trails and related projects. The comprehensive federal surface transportation, MAP-21, includes significant funding for trails through programs including Transportation Enhancements and the Recreational Trails Program.

Land and Water Conservation Fund (LWCF)

The LWCF has been a cornerstone of conservation and recreation for more than 30 years. Federal and state land managers use the fund to buy land to preserve wilderness, create parks, and protect trails.

National Park Service Challenge Cost-Share Program

The Challenge Cost Share Program is a matching fund program that increases participation by qualified partners in the preservation and improvement of National Park Service natural, cultural, and recreational resources, including trails.

River Trails and Conservation Assistance Program (RTCA)

RTCA is the community assistance arm of the National Park Service. RTCA staff provides technical assistance to community groups and local, State, and federal government agencies so they can conserve rivers, preserve open space, and develop trails and greenways.

Recreational Trails Program

The Recreational Trails Program (RTP) provides funds to the States to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. Examples of trail uses include hiking, bicycling, in-line skating, equestrian use, cross-country skiing, snowmobiling, off-road motorcycling, all-terrain vehicle riding, four-wheel driving, or using other off-road motorized vehicles.

State Funding

Arizona like many State agencies offer a variety of conservation or recreation funding programs that may benefit trails. Arizona State Park's has a grant program. Other sources of potential funding options are summarized in section 8.2 below.

National Trails Fund

American Hiking's National Trails Fund (NTF) is the only privately supported national grants program for hiking trails.

Grants

There are many public and private grant funding opportunities available for trail projects. In the Globe area, mining companies have sponsored environmentally conscious improvement projects and would be a potential source for partnership funding.

8.0 RESOURCES

The following resource materials have been used in the preparation of this report:

- *Greenways: A Guide to Planning, Design and Development* Published by Island Press, 1993 Authors: Charles A. Flink and Robert Searns.
- Trails *for the Twenty-First Century,* Published by Island Press, 2001Authors: Charles A. Flink, Robert Searns and Kristine Olka.

8.1 Design Guideline References

The following design guides should be followed when designing the multi-use pathway.

- Updated in 2000 by the American Association of State Highway Transportation Officials AASHTO)
- Americans with Disabilities Act (ADA)
- Manual on Uniform Traffic Control Devices (MUTCD) Published by the U.S. Department of Transportation, Washington, DC
- Universal Access to Outdoor Recreation: A Design Guide Published by PLAE, Inc., Berkeley, CA, 1993
- Designing Sidewalks and Trails for Access: Part Two - Best Practices Design Guide published by the U.S. Department of Transportation, Washington, DC, 2001

8.2 Website References

Other useful web sites for information include:

- Rails-to-Trails Conservancy - www.railtrails.org
- National Park Service - www.nps.org U.S. Department of Transportation - www.walkinginfo.org and www.bicyclinginfo.org
- U.S. Department of Transportation - Federal Highway Administration - Bicycle and Pedestrian Program - www.fhwa.dot.gov/environment/bikeped/index.htm
- American Trails Funding Resources - http://www.americantrails.org/resources/funding/index.html
- Trails and Greenways Clearinghouse - www.trailsandgreenways.org
- Pedestrian and Bicycle Information Center - www.pedbikeinfo.org
- Arizona State Park's Grant Program - http://azstateparks.com/grants/index.html
- American Trails - Arizona Trail Resources - http://www.americantrails.org/resources/statetrails/AZstate.html