Trails and Greenways

City of Fort Smith Trails and Greenways Master Plan

Prepared for the City of Fort Smith
October 20, 2004

LANDPLAN CONSULTANTS INCORPORATED

City of Fort Smith Trails and Greenways Master Plan

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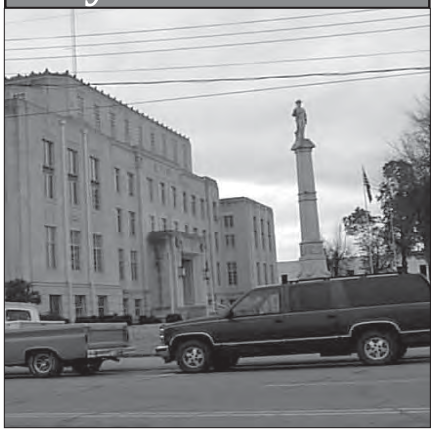


Trails and Greenways

Acknowledgments

From the very beginning, the overriding goal of this master planning endeavor has been to facilitate the actual construction of as many trails and greenways in Fort Smith as possible; to ensure those corridors are safe and located where they are needed and will be used; and to connect the major destinations within the city. This was a tall order from the start, and could not have been accomplished without the support, cooperation, hard work, and enthusiasm for the citywide trails concept that we received throughout the development of the Fort Smith Trails and Greenways Master Plan. The enthusiasm for the project did not come from just one group or entity. It received across the board support from citizens and city representatives, so many in fact, that it will be difficult to single out all the individuals whose extra effort and involvement fanned the flame to give the concept its wide spread support and momentum.

The 4 advisory committee workshops, 2 public workshops and the presentations to the Parks and Recreation Commission and City Board of Directors were attended by over 250 citizens throughout Fort Smith. We would like to express our appreciation to these people who contributed their insight, ideas, and suggestions. Community input is the backbone of the plan and has provided the impetus and vision that will make these planned trails a reality, improving the quality of life for all concerned.

Another thank you goes to the 10 member advisory committee, whose clear understanding of the needs of the diverse trail user groups was invaluable to the direction and development of the trails and greenways master plan. Many of these members spent time well beyond the scheduled meetings to further the cause of safe trail development within Fort Smith.

We must applaud the City of Fort Smith and its exceptionally talented staff who worked closely with the consultant throughout the master planning process. This group provided a thorough evaluation of the our work during the planning process helping to ensure the final result was a realistic plan.

Two outstanding citizens and advisory committee members that have made a commitment to improving the quality of life in Fort Smith deserve special

recognition. Mike Smets and Dan Reikes shared their enthusiasm and insight into the citywide trail and greenway system with the advisory committee and the public. These dedicated public servants offered advice and input at critical phases during the master planning process and receive our special thanks for their contributions.

Finally, for his outstanding contribution to the project, we would like to thank Mike Alsup, Director of Parks and Recreation. His efforts were above and beyond the call of duty. He attended the meetings conducted in the planning process, provided final editing on all written material, reviewed master plan maps, coordinated the many meetings and provided the consultant with all the information we requested in a timely fashion. Mike's commitment and dedication to this project helped ensure the master plan will become a living document.

City of Fort Smith

Trails and Greenways

Table of Contents

Table of Contents

Chapter 8
Operations, Maintenance & Management 73

Map Index

City of Fort Smith

Trails and Greenways

Executive Summary

Overview

The Fort Smith Trails and Greenways Master Plan paves the way to fulfulling the policy set forth within the Fort Smith Comprehensive Plan to "develop greenways and trails that serve to connect the city". This Master Plan offers recommendations for improving community access to outdoor resources by identifying and preserving greenway corridors and building a network of off-road multi-purpose paved trails. The purpose of this Master Plan is to address the trail/greenway needs of community residents related to recreation, transportation, and economic pursuits. The plan addresses policies, programs, and physical improvements that should be implemented to improve access to recreation resources and improve transportation efficiency throughout the community. It identifies 22 corridors throughout the City of Fort Smith. The Trails and Greenways Master Plan was developed by Fort Smith in association with an advisory committee of citizens, a trail/greenway planning consultant, and residents of the area. It responds to specific needs that were defined by residents through a series of public workshops. This executive summary describes the process that was used to prepare the Fort Smith Trails and Greenways Master Plan, as well as the major findings and recommendations of the plan.

How This Plan Was Developed

In September 2003, the City of Fort Smith employed a trail/greenway planning consultant, *LandPlan Consultants, Inc.* of Tulsa, Oklahoma, to begin work with an advisory committee to prepare the Fort Smith Trails and Greenways Master Plan. The work of the consultant was funded by the City of Fort Smith. The consultant began work with an extensive field analysis and evaluation of existing physical features, economic factors, and social issues that served to define both opportunities and constraints for trail/greenway development throughout the City of Fort Smith. Of special interest in the planning process were the number of "attractors" or destinations that could be accessed and served through trail/greenway facility development. The consultant closely examined a variety of corridors of land that extend throughout the City of Fort Smith including streams and rivers, abandoned railroads, electrical transmis-

sion lines, and roadways. Of particular interest to local residents was the issue of safety, especially as it applies to trail/greenway uses on trails that parallel roadways.

Involving Fort Smith Residents

The consultant worked very closely with the Fort Smith Trails and Greenways Advisory Committee during the past nine months in preparing this master plan. The consultant has also conducted public workshops, public meetings, and has worked very closely with Fort Smith to ensure the proposed trail/greenway system enhances the quality of life for city residents.

In November 2003, the first of two public workshops was facilitated by the consultant to invite the public to participate in the planning process. Meetings were held in the Creekmore Park Community Center. At these meetings, residents defined appropriate goals, objectives and policies for improving access to outdoor resources throughout the city. Participants were asked to describe issues and concerns related to trail/greenway development. They were also provided with an opportunity to define, on maps of the city, specific areas where they currently walk, ride a bike, hike, and rollerblade, as well as areas where they would like to see trail/greenway improvements made. The results of this workshop and the consultant's efforts were summarized in a series of reports termed "Draft Chapters" and provided to Fort Smith and the advisory committee for review and comment. Results were also described in a series of newsletters that were published by the consultant and widely distributed throughout the City of Fort Smith.

In January 2004, a second public workshop was conducted to present the results of the November meeting. The consultant also presented a draft network of trail/greenway corridors that would serve as the basis for a city-wide trails/greenways system. Workshop participants were asked to comment on the results of the prior meeting and carefully critique the initial network of trail/greenway corridors. In addition, a draft phasing plan was also presented for review and comment. The results of these workshops were again summarized in "Draft Chapters".

On October 12, 2004, a final public presentation was made to the Fort Smith Board for an overview of the public workshops to date. The Board and the public were asked to review and comment on the draft trail/greenway route plan, draft phasing plan, design guidelines, and operations and maintenance of the citywide trails system. The City Board adopted the Trails and Greenways Master Plan on October 19, 2004.

Defining the Fort Smith Trails and Greenways System

Using the information gathered during the public workshops and other available information, the consultant worked for four months to define a comprehensive

citywide system of trail/greenway corridors that would support a variety of trail/greenway uses and meet the needs that were described by residents. A draft of this Proposed Trail System Plan was presented in May 2004 to the advisory committee for initial review and comment. Drafts of the plans and chapters were also reviewed by Fort Smith staff. From the comments received, the consultant revised aspects of the initial draft Trails and Greenways System Plan, and produced a final implementation plan and this executive summary.

Key Components of this Plan

The "draft chapters" produced by the consultant during the past nine months make up the eight chapters of this Plan. Chapter One, *The Benefits of Trails and Greenways*, defines the wide range of benefits to the City of Fort Smith that would come as a result of implementing the trails/greenways plan. Chapter Two, *Evaluation of Existing Conditions*, defines the background data collected by the consultant. Chapter Three, *Vision, Goals and Objectives*, reflects the input of city residents and establishes the basis for many of the recommendations provided within the Plan. Chapter Four, *Design Guidelines*, offers development criteria for building various types of trail/greenway facilities recommended throughout the Plan. Chapter Five, *Description of Proposed Trail System*, describes the corridors that make up the Fort Smith Trails and Greenways System. Chapter Six, *Funding Resources*, describes a variety of local, state and federal sources of funding for developing bicycle and pedestrian facilities. Chapter Seven, *Implementation Plan*, recommends how the Fort Smith Trails and Greenways System should be developed. Chapter Eight, *Operations and Management*, describes the needed elements to successfully manage and maintain the Fort Smith Trails and Greenways system.

Key Recommendations of the Plan

This Plan recommends the implementation of a 87.59 mile network of off-road multi-purpose trails throughout City of Fort Smith as depicted on the Trails and Greenways Route Plan (Map ES.1). The system is extensive and comprehensive, and at the same time provides a realistic program for satisfying the needs of local residents regarding access to outdoor resources and linkage to popular destinations. Building the system will take many years. The overall system is divided into three phases as depicted in the Trail Phasing Plan (Map ES.2). In the Near-Term phase (0-5 years), it is envisioned that local government agencies will work in partnership with neighborhoods and private sector organizations to develop an estimated 27.46 miles of trail/greenway projects. Near-Term projects would begin development in Calendar Year 2005. During the Mid-Term phase (5-10 years), an additional 37.76 miles of trail/greenway projects would be developed, and the Long-Term (10-15 years) phase envisions that the remaining 22.37 miles of trail/greenway projects would be implemented.

How Much Will It Cost to Develop the Trails and Greenways System

Near-Term trail projects are estimated to cost somewhere between $6.8 - $8.2 million to fully develop. Projects included in the near-term phase are shown below in the following tables. Each of these projects will require a more detailed corridor alignment/design development study to determine the availability of land, location of trail facilities, and the public and financial resources that are available to support project development. These conceptual planning studies should begin right away, beginning in 2005 with the highest priority project corridors.

A generalized unit cost estimate for the development of each corridor is provided in Chapter Seven. Chapter Six lists sources of funding that have been used locally, throughout the State of Arkansas, and nationally, to build and maintain trail/linkage corridor projects.

Trails Cost

The following cost estimates for trail facilities are general in nature and based on State of Arkansas averages for multi-use trails constructed over the last five years. More detailed cost estimates should be prepared as site specific plans are developed for each corridor.

Near Term Trails Cost

Rank	ID	NAME	LENGTH (mi)	FACTOR	LOW COST	HIGH COST
1	7	Old Railroad Trail	4.16	1.00	$ 1,040,000.00	$ 1,248,000.00
2	1	West River Front Trail *	6.43	1.00	$ 1,607,500.00	$ 1,929,000.00
3	12	Massard Road North Trail *	1.68	1.00	$ 420,000.00	$ 504,000.00
4	19	Fort Chaffee West Trail	7.25	1.00	$ 1,812,500.00	$ 2,175,000.00
5	5	Ben Geren Trail	2.41	1.00	$ 602,500.00	$ 723,000.00
6	8	Mill Creek North Trail *	5.53	1.00	$ 1,382,500.00	$ 1,659,000.00
		TOTAL NEAR TERM CORRIDORS	**27.46**		**$ 6,865,000.00**	**$ 8,238,000.00**

All costs based on 2004 dollars.

Mid Term Trails Cost

Rank	ID	NAME	LENGTH (mi)	FACTOR	LOW COST	HIGH COST
7	9	Mill Creek South Trail	2.07	1.00	$ 517,500.00	$ 621,000.00
8	11	Zero Street Trail *	3.82	1.00	$ 955,000.00	$ 1,146,000.00
9	10	Old Greenwood Trail *	3.82	1.00	$ 955,000.00	$ 1,146,000.00
10	14	Massard Road South Trail	2.83	1.00	$ 707,500.00	$ 849,000.00
11	3	East River Front Trail	7.37	1.00	$ 1,842,500.00	$ 2,211,000.00
12	20	Fort Chaffee East Trail	6.54	1.00	$ 1,635,000.00	$ 1,962,000.00
13	16	Highway 253 Trail	1.60	1.00	$ 400,000.00	$ 480,000.00
14	18	Landfill Loop	4.71	1.00	$ 1,177,500.00	$ 1,413,000.00
15	2	Softball Complex Trail	5.00	1.00	$ 1,250,000.00	$ 1,500,000.00
		TOTAL MID TERM CORRIDORS	**37.76**		**$ 9,440,000.00**	**$ 11,328,000.00**

All costs based on 2004 dollars.

Long Term Trails Cost

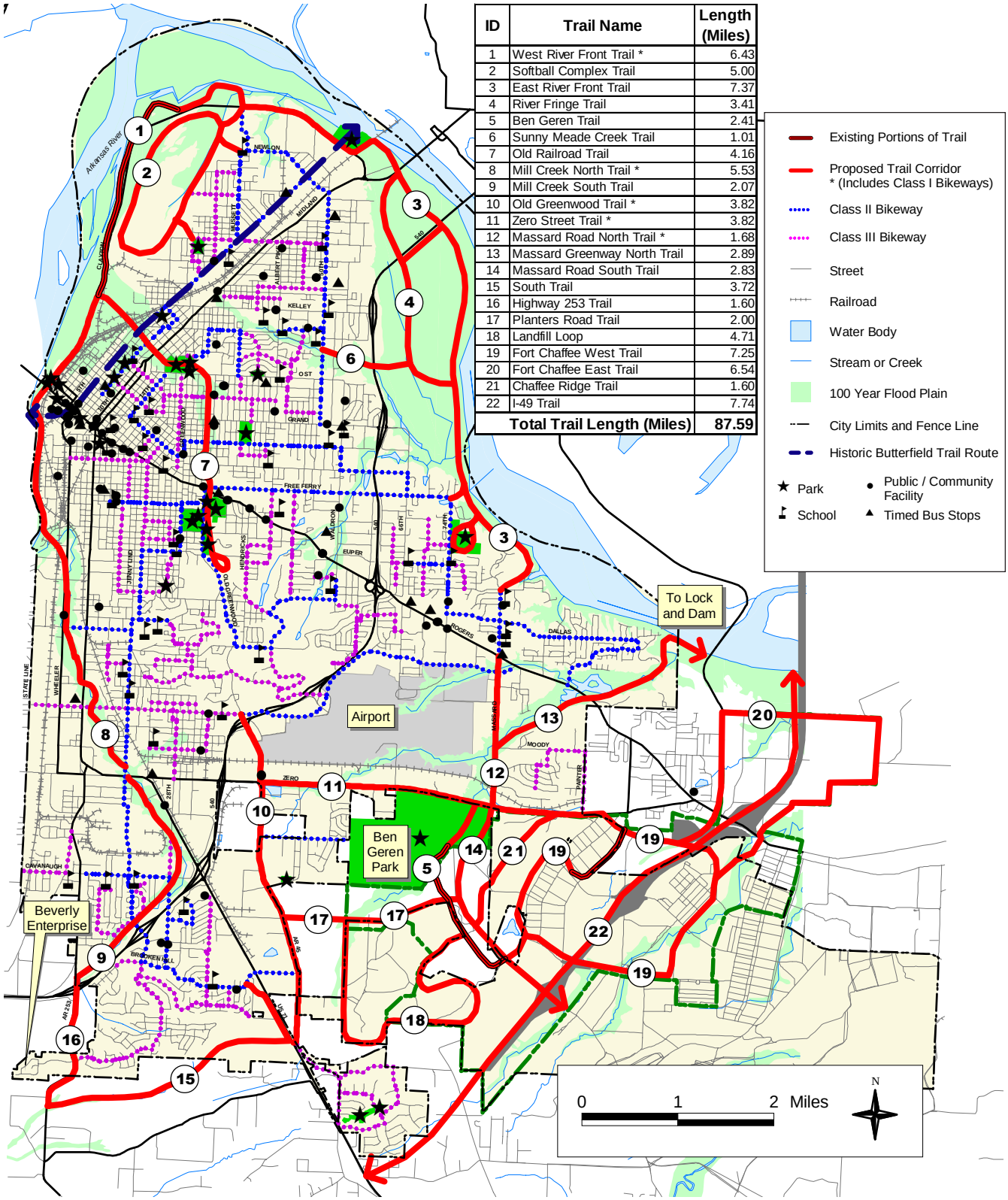
Rank	ID	NAME	LENGTH (mi)	FACTOR	LOW COST	HIGH COST
16	21	Chaffee Ridge Trail	1.60	1.00	$ 400,000.00	$ 480,000.00
17	6	Sunny Meade Creek Trail	1.01	1.00	$ 252,500.00	$ 303,000.00
18	13	Massard Greenway North Trail	2.89	1.00	$ 722,500.00	$ 867,000.00
19	15	South Trail	3.72	1.00	$ 930,000.00	$ 1,116,000.00
20	17	Planters Road Trail	2.00	1.00	$ 500,000.00	$ 600,000.00
21	4	River Fringe Trail	3.41	1.00	$ 852,500.00	$ 1,023,000.00
22	22	I-49 Trail	7.74	1.00	$ 1,935,000.00	$ 2,322,000.00
		TOTAL LONG TERM CORRIDORS	**22.37**		**$ 5,592,500.00**	**$ 6,711,000.00**

All costs based on 2004 dollars.

What's the Next Step in the Process

This master plan will be reviewed and approved by the Fort Smith Park and Recreation Commission, Planning Commission, and Fort Smith Board of Directors. Once it becomes an official component of the Comprehensive Plan, the projects that are defined herein will be eligible for development. Fort Smith encourages local governments, private businesses and residents to become partners in the development of the Fort Smith Trails and Greenways System.

You can show your support for this Plan by encouraging the implementation of specific trail/greenway segments. For further information on how you can become involved, you can contact the Fort Smith Parks Department, the Fort Smith Planning Department, your local public officials, running club, walking club, or cycling club.



ID	Trail Name	Length (Miles)
1	West River Front Trail *	6.43
2	Softball Complex Trail	5.00
3	East River Front Trail	7.37
4	River Fringe Trail	3.41
5	Ben Geren Trail	2.41
6	Sunny Meade Creek Trail	1.01
7	Old Railroad Trail	4.16
8	Mill Creek North Trail *	5.53
9	Mill Creek South Trail	2.07
10	Old Greenwood Trail *	3.82
11	Zero Street Trail *	3.82
12	Massard Road North Trail *	1.68
13	Massard Greenway North Trail	2.89
14	Massard Road South Trail	2.83
15	South Trail	3.72
16	Highway 253 Trail	1.60
17	Planters Road Trail	2.00
18	Landfill Loop	4.71
19	Fort Chaffee West Trail	7.25
20	Fort Chaffee East Trail	6.54
21	Chaffee Ridge Trail	1.60
22	I-49 Trail	7.74
	Total Trail Length (Miles)	**87.59**

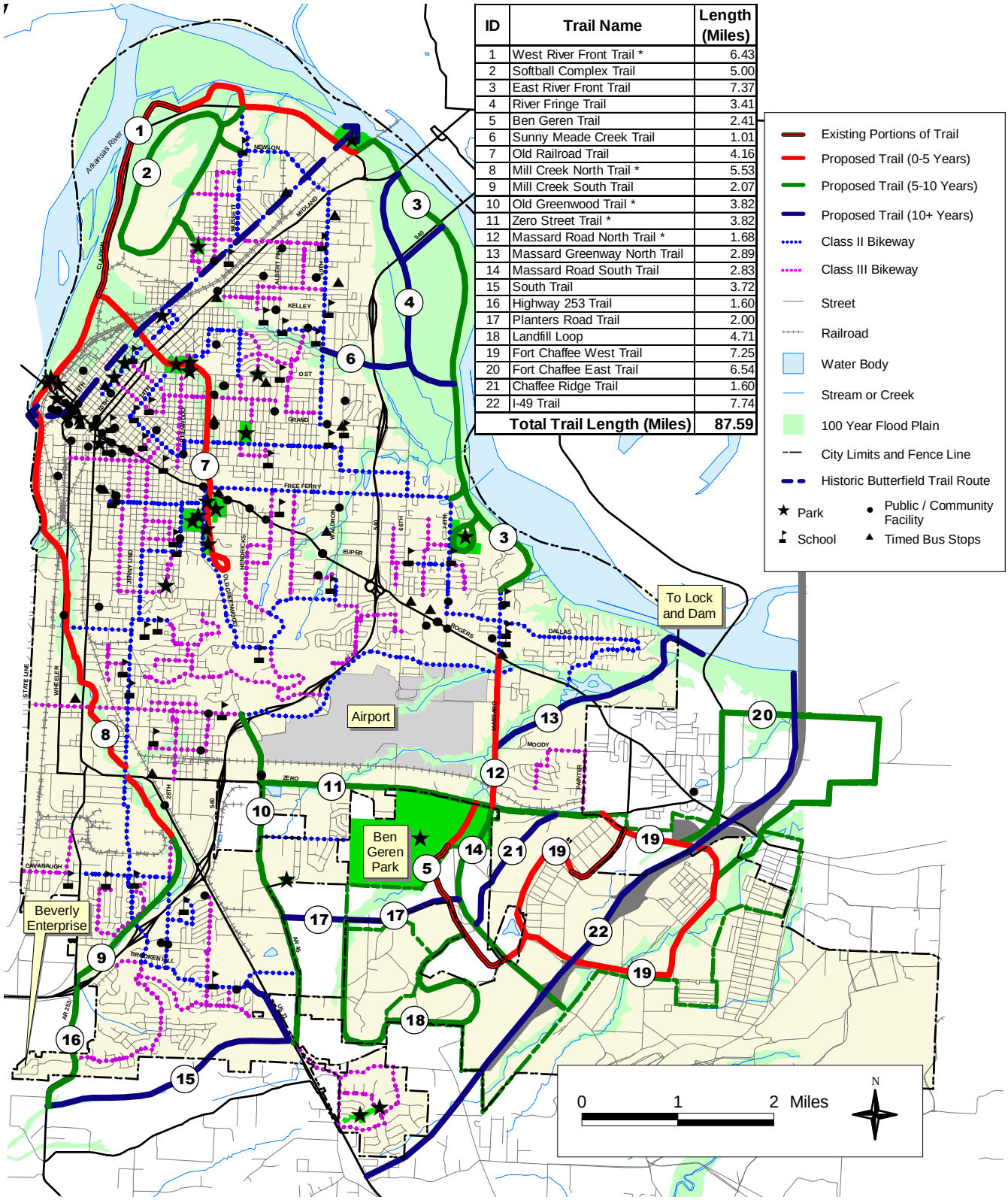
Fort Smith Trails and Greenways Plan

LANDPLAN CONSULTANTS INCORPORATED

prepared for
City of Fort Smith, Arkansas
5/10/04

Trails and Greenways Route Plan

Map ES.1



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20	Fort Chaffee East Trail	6.54
21	Chaffee Ridge Trail	1.60
22	I-49 Trail	7.74
	Total Trail Length (Miles)	**87.59**

- Existing Portions of Trail
- Proposed Trail (0-5 Years)
- Proposed Trail (5-10 Years)
- Proposed Trail (10+ Years)
- Class II Bikeway
- Class III Bikeway
- Street
- Railroad
- Water Body
- Stream or Creek
- 100 Year Flood Plain
- City Limits and Fence Line
- Historic Butterfield Trail Route
- Park
- Public / Community Facility
- School
- Timed Bus Stops

Fort Smith Trails and Greenways Plan

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prepared for
City of Fort Smith, Arkansas
5/10/04

Trail Phasing Plan

Map ES.2

Chapter 1

Trails and Greenways

The Benefits of Trails and Greenways

Introduction

A multi-objective trail and greenway system for Fort Smith can address and resolve many community issues that affect the future environmental and economic health of the area. Trails and greenways have been implemented by other communities to provide recreation and alternative transportation, control flooding, improve water quality, protect wetlands, conserve habitat for wildlife, and buffer adjacent land uses. Greenways typically incorporate varying types and intensities of human use, including trails for recreation and alternative transportation. Trails and greenways have also been shown to increase the value of adjacent private properties as an amenity to residential and commercial developments. These, and other benefits of a Fort Smith trail and greenway network are described in the following text.

Transportation Benefits

In past years, most American communities have grown in a sprawling, suburban form as a result of dependence upon the automobile as the sole means of transportation. Americans have abandoned some traditional forms of transportation (such as passenger train service), and have been slow to improve other forms of transportation (bicycle and pedestrian networks, bus systems, local train service). In order to provide relief from congested streets and highways in Fort Smith, and air quality problems associated with congestion, future transportation planning and development should focus on providing a choice in the mode of travel to local residents. These mode choices should offer the same benefits and appeal currently offered by the automobile: efficiency, safety, comfort, reliability and flexibility.

Bicycling and walking can take the place of short automobile trips to work as well as other destinations such as ATMs.

Multi-use trail corridors via greenways throughout Fort Smith can serve as extensions of the roadway network, offering realistic and viable connections between origins and destinations such as offices, schools, libraries, parks, shopping areas, and tourist attractions. Off-road trail facilities are most effective for certain travel distances. National surveys by the Federal Highway Administration have shown that Americans are willing to walk as far as two miles to a destination, and bike as far as five miles. It is easily conceivable that destinations can be linked to multiple origins throughout the region through a system of greenways and off-road trails.

Air Quality Benefits

Ozone Alert for Tulsa County July 15, 1998

Trails as alternative transportation along greenway corridors could serve to reduce traffic congestion, helping to improve local air quality. Since the majority of automobile trips are less than two miles in length, offering viable, alternative transportation choices through a trail/greenway system would encourage people to bicycle and walk more often, especially on short trips, thereby reducing traffic congestion and automobile emissions. Although Fort Smith is able to meet air quality standards at present, the region could have problems with high ozone levels at some point in the future. The development of alternative transportation facilities will help ensure the continuation of "attainment" status by improving air quality.

Health & Recreation Benefits

Trails provide a place for family outings as well as personal fitness training.

Trails and greenways encourage more people to walk or bike to short distance destinations, which improves the health of residents. Studies have shown that as little as 30 minutes a day of moderate-intensity exercise (such as bicycling, walking, in-line skating or cross-country skiing) can significantly improve a person's mental and physical health and prevent certain diseases. Providing opportunities for participation in these outdoor activities, close to where people live and work, is an important component of promoting healthy lifestyles for residents of Fort Smith.

In 1987, the President's Commission on Americans Outdoors released a report that profiled the modern pursuit of leisure and defined the current quality of life for many Americans. Limited access to outdoor resources was cited as a growing problem throughout the nation. The Commission recommended that a national system of greenways could provide all Americans with access to linear open space resources.

Economic Benefits

Trails often serve to increase property values for adjacent land owners.

Trails and greenways offer numerous economic benefits to Fort Smith, including higher property values, increased tourism and recreation related revenues, and cost savings for public services. Trails and greenways have been shown to raise the value of immediately adjacent properties by as much as 5 to 20 percent. Many home buyers and corporations are seeking real estate that provides direct access to public and private trail and greenway systems. Trails and greenways are viewed as amenities by residential, commercial and office park developers who, in turn, are realizing higher rental values and profits. Additionally, greenways in the Fort Smith area can also save local tax dollars by utilizing resource-based strategies for managing community stormwater and hazard mitigation, thus placing into productive use landscapes that would not normally be developable in a conventional manner.

The development of trails along greenways could work to enhance the tourism industry in Fort Smith. Tourism is currently ranked as the number one economic force in the world. In several states, regional areas, and localities throughout the

nation, greenways have been specifically created to capture the tourism potential of a regional landscape or cultural destination. The State of Missouri, for example, spent $6 million to create the 200-mile KATY Trail, which, in its first full year of operation, generated travel and tourism expenditures of more than $6 million.

Water Quality & Water Quantity Benefits

Trails corridors, by protecting linear open space, can improve water quality and reduce the impacts of flooding down stream.

Greenway trail corridors often preserve wooded open spaces along creeks and streams which absorb flood waters and filter pollutants from stormwater. Flooding has historically been a problem in many parts of Fort Smith. In some instances, buildings and other land uses have encroached into flood prone areas. By designating floodplains as greenways, these encroachments can be better managed, and in some cases, replaced with linear open space that serves as an amenity to local residents and businesses whose property lies adjacent to the greenway, as well as providing important flood water storage capacity.

As a flood control measure, greenway corridors serve as primary storage zones during periods of heavy rainfall. The protected floodplain can also be used during non-flood periods for other activities, including recreation and alternative transportation. In conjunction with existing stormwater management policies and programs implemented in the area, greenway lands can be established as development occurs.

Greenway trail corridors also serve to improve the surface water quality of local rivers and creeks. The floodplain forests and wetlands contained within greenway corridors filter pollutants from stormwater. These pollutants are not removed if stormwater is collected in pipes and discharged directly into local streams and rivers. Improving surface water quality in streams not only benefits local residents, but also numerous forms of wildlife that depend on streams for their habitat.

Plant & Animal Benefits

Greenway trail corridors can protect important plant and animal habitat.

Greenway trail corridors can serve as viable habitat for many species of plants and wildlife. Greenways can provide essential food sources and, most importantly, access to water that is required by all wildlife. Additionally, greenway trail corridors in Fort Smith could become primary migratory corridors for terrestrial wildlife, serving to help maintain the integrity of many plant and animal gene pools. Some wildlife biologists have extolled greenways as future “gene-ways” and determined that migration routes are essential to maintaining healthy wildlife populations. Greenways can also serve as “gene-ways” for plant species, which migrate with changes in climate and habitat. These “gene-ways” often follow river and stream corridors that have long served as transportation routes for animals and humans. Greenways in Fort Smith can be targeted as a primary habitat for many species of plants and animals. Programs can be established to not only protect the valuable existing forested and wetland areas of the area, but also to reclaim and restore streams to support higher quality habitat.

Quality of Life Benefits

Trails can serve as community gathering places for organized events

Communities with trail and greenway facilities and high levels of walking and bicycling are rated as some of the best places to live in America. Residents enjoy an increased quality of life defined by a greener, safer, and more interactive community. Successful trail and greenway projects across the United States have served as new "main streets," where neighbors meet, children play, and community groups gather to celebrate. For cities and towns large and small, these trails have become a cultural asset and focal point for community activities. Some communities sponsor "trail days" to celebrate the outdoors and local traditions. Various walking and running events are also held on trails to support charity or extend traditional sporting events. Additionally, many civic groups adopt segments of trails and greenways for cleanup, litter removal and environmental awareness programs.

Safety Benefits

Trails can serve as classrooms for children of all ages.

Many Americans are concerned with crime. Some of the most successful deterrents to criminal activity have involved increased neighborhood awareness by citizens and participation in community watch programs. Trails and greenways have proven to be an effective tool to encourage local residents to participate in neighborhood watch programs. Some trails and greenways have even been developed as part of efforts to deter criminal activity in a neighborhood. Crime statistics and reports from law enforcement officials have shown that parks and greenway trails are typically land uses with the lowest incident of reported criminal activity. As a recreation resource, alternative transportation corridor, or area where fitness activities can take place, most trails and greenways provide a much safer and more user-friendly resource than other linear corridors, such as local roads. Trails and greenways typically attract local residents, who use the facility frequently, creating an environment that is virtually self-policing.

Education Benefits

A trails and greenways system could enhance and protect many of the natural and cultural resources in Fort Smith. Interpretive displays and outdoor classrooms along trails and greenways can provide information to people of all ages on such topics as hydrology, history, ecology and the use of recycled materials. These educational elements of trails and greenways will serve to increase awareness and appreciation of important local resources. Opportunities exist for local schools to educate students about the natural environment along greenway trail corridors.

Chapter 2

Trails and Greenways

Evaluation of Existing Conditions

Introduction

This chapter of the Fort Smith Trails and Greenways Master Plan inventories and evaluates the environmental and cultural features, and attractions of the city. This evaluation will serve as a basis in identifying greenway corridors and developing a system of pedestrian and bicycle trails that meet the recreation, transportation, and economic needs of the local residents. By evaluating the existing conditions, trail and greenway corridors and destinations can be defined and later preserved through future city planning policies.

Description of the Study Area

In 2000, Fort Smith originally encompassed an area of approximately 53.4 square miles. However, due to a revised city limit boundary as of 2004, Fort Smith now encompasses approximately 66.0 square miles (see Existing Conditions Map 2.1). Located 159 miles west of Little Rock and 145 miles southeast of Tulsa, the city enjoys its own community identity.

As of 2000, Fort Smith had grown to include a total population of approximately 80,268 people exhibiting a wide economic range. As of July 1, 2002, the Census Bureau estimated the population of Fort Smith to be 81,519 residents. Like most areas, dependence on the automobile for transportation has influenced growth trends and patterns. Strip shopping centers, fast food restaurants, and other automobile oriented land uses have emerged along the main thoroughfares. Opportunities for choosing a mode of transportation other than the automobile have decreased due to longer distances between origins and destinations, a lack of facilities that support alternative modes of transportation, and barriers to walking and biking such as wide arterial roadways and highways.

With a growing population, Fort Smith has begun to lose open space and the rural character that defines portions of the city (see Land Use Map 2.2). The Fort Smith Trails and Greenways Master Plan will examine ways to preserve corridors of land that provide outdoor recreational resources and transportation alternatives close to where people live and work. These corridors can link neighborhoods to the larger environmental outdoor resources as well as to primary everyday destinations.

Railroad Bridge

Fort Smith's most identifiable environmental features include the Arkansas River and Poteau River and streams and creeks such as the Central Mall Branch, Hardscrabble Branch, Little Creek, Little Massard Creek, Massard Creek, Mill Creek, Sunnymead Stream and their adjacent floodplains (see Existing Conditions Map 2.1). These rivers, creeks and streams are natural greenways within Fort Smith due to restricted development along the floodplains. Although rivers and creeks generally create barriers for bicycle and pedestrian travel, these features alone often preserve many acres of potential locations for bicycle and pedestrian trails. Fort Smith's relatively mild winters and warm summers make most of these areas potentially accessible year round.

Many easements of large scale features that cross Fort Smith's landscape including railroads and highways could be identified as man-made greenways. Fort Smith's railroad networks through the city from the northeast corner, along the western edge, and through the southern portion. At least one spur from this network penetrates the center of the city. Railroads that make runs to and through the Fort Smith railroad network include the Arkansas-Missouri, the Fort Smith Railroad, and the Kansas City Southern.

Major interstates and highways that traverse the Fort Smith landscape include Interstate 540 which crosses Fort Smith from southwest to northeast, State Highways 71 which crosses Fort Smith north to south, and State Highway 255 which appears to encircle the city.

Existing Attractors

The following is a list of public and private origins and destinations that are most likely to attract people who might choose to walk or ride a bicycle to accomplish a task. These destinations, or attractors, are divided into several categories.

Lakes and Rivers

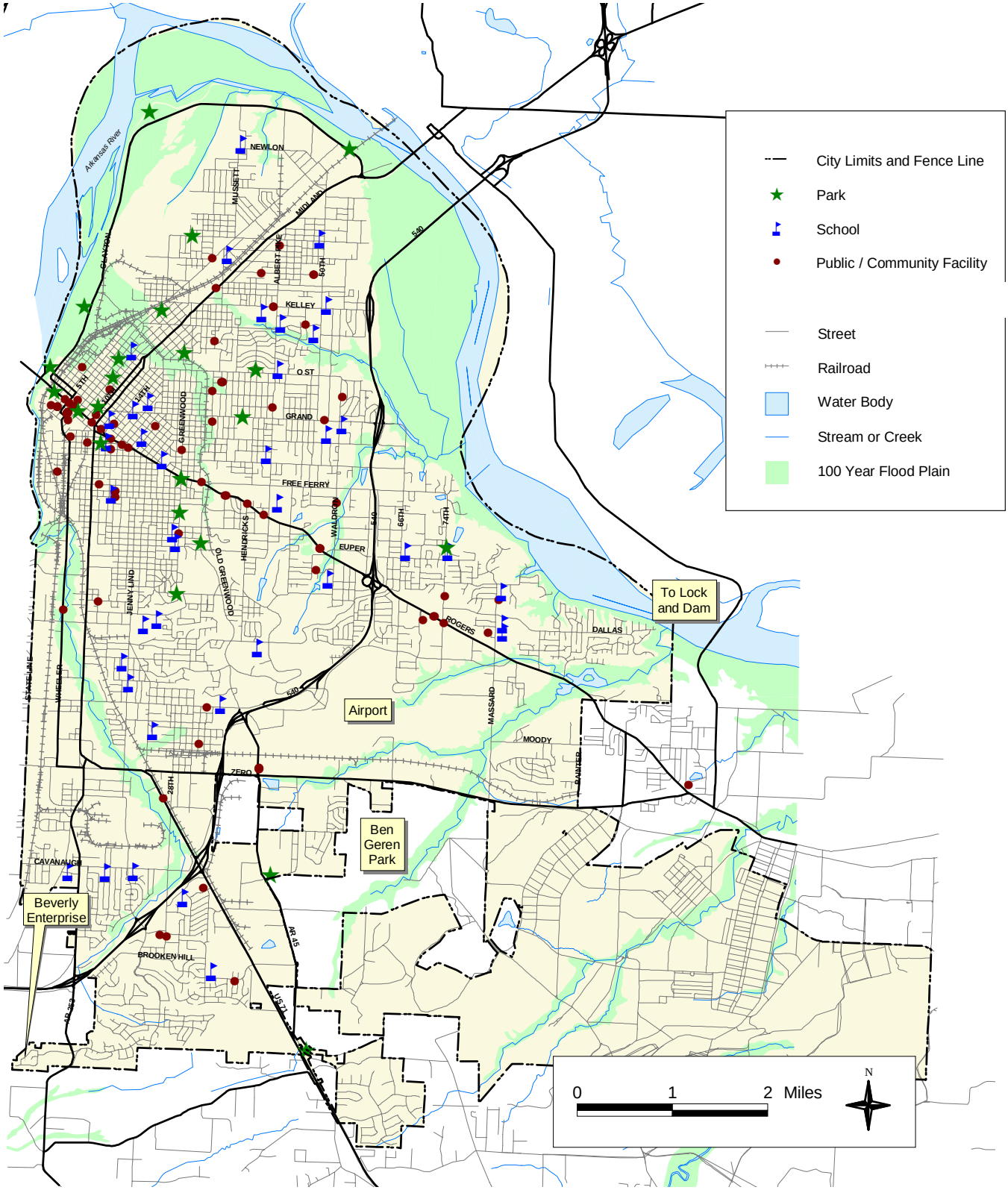
Fort Smith has the benefit of being located near the Arkansas and Poteau Rivers. Located on the Arkansas River, the Port of Fort Smith is part of the 450-mile McClellan-Kerr Arkansas River Navigation System that connects Fort Smith with America's entire inland waterway system.

Fort Smith also contains numerous small lakes and ponds which provide opportunities for birdwatching, fishing, and/or other various passive recreation activities. These include the Central Mall Pond, Central Mall Pond 2, Cranes Pond, Echols Pond, Hard Scrabble Lake, Jeffery Pond, Lee Creek, Pal Joey Pond, Patterson Lake, Randall Pond, Stephens Lake, Sunnymead Lake, and the Wildcat Mountain Lake.

Garrison Avenue (Downtown)

Historic Downtown

Fort Smith's downtown serves as an attraction that provides tourists as well as the community many unique places to visit and shop within a main street environment.



Fort Smith Trails and Greenways Plan

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2/16/04

Existing Conditions

Map 2.1

Towson Avenue (Urban Activity Corridor)

Several recent projects within the downtown area include a newly expanded Convention Center and Riverfront Development, streetscape improvements along Garrison Avenue, and on-going improvements to the Belle Grove Historic District. Connection to the greenway system and travel by bicycle through these areas should be encouraged as well as pedestrian/bicycle access to the downtown from surrounding areas.

Urban Activity Corridors

Fort Smith has several urban activity corridors within its boundary. Along these corridors reside strip shopping centers, a variety of restaurants, retail centers, and strip business centers. Urban activity corridors generally do not accommodate walking or bicycling due to the high speed, heavy automobile traffic and lack of sidewalks. However, these corridors provide a majority of desired goods and services to both residents and tourists. Off-road pedestrian/bicycle routes via a greenway system would be one solution to accessing these corridors in a safe manner.

"Links" Residential Community

Residential Neighborhoods

Residential neighborhoods within Fort Smith are located throughout the city radiating from the downtown area (see Land Use Map 2.2 and 2000 Population Density Map 2.3). New residential neighborhoods in Muskogee appear to already be pushing towards the outskirts of the city. In order for a trail and greenway system to best serve the people of Fort Smith, access to and from residential neighborhoods must be provided. This can be accomplished by providing off-road trails through and between neighborhoods, along a greenway system which uses creeks and public right-of-ways. Older residential neighborhoods and historic neighborhoods can serve as destinations to many tourists as well as citizens.

Community/Neighborhood Parks

Local parks typically serve as primary destinations for many residents in Fort Smith although pedestrian and bicycle access to these areas is generally limited to sidewalks (see Existing Conditions Map 2.1). The following is a list of parks within Fort Smith. Any of these parks would be greatly enhanced by incorporating them into the greenway system and providing pedestrian/bicycle trails to connect and possibly wind through the park:

Creekmore Park

Creekmore Park
Fort Smith Park
Harley A. Wilson Park
Harry E. Kelly Park
Hillcrest Park
Kelley Park
Martin Luther King Jr. Park
Massard Prairie Battlefield
Oak Cemetery
Rice Carden Walking Trail
Riley Farm
RiverPark
Ross E. Pendergraft Park
Ruth Armstrong Nature
Spradling Park
Tilles Park
Victory Park
Woodlawn Park

County Courthouse

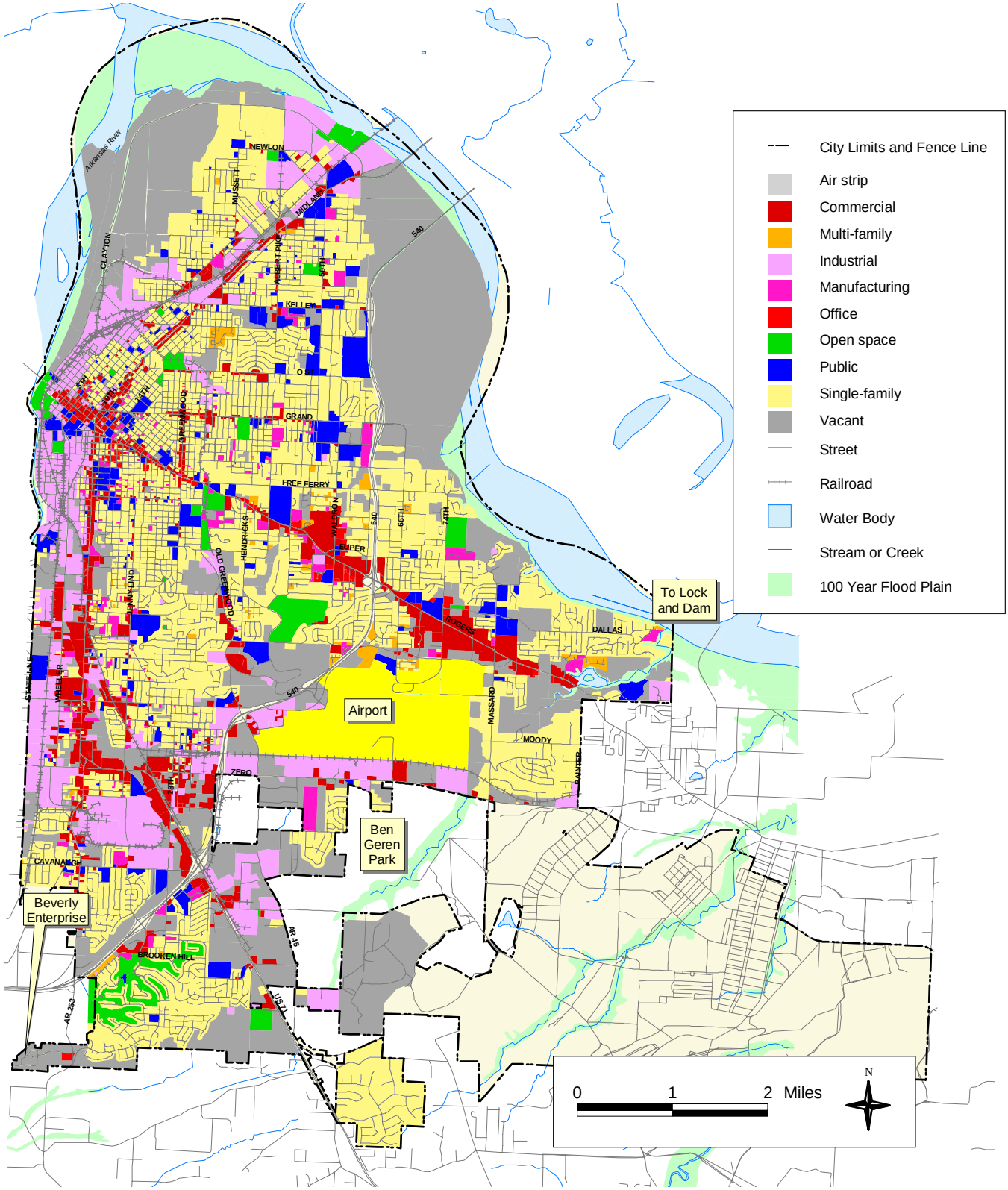
Other Public/Private Facilities, Special Use Areas, and Attractions

There are many public buildings and facilities and special use areas in Fort Smith. They are scattered throughout the area and are currently accessed primarily by automobile. Making connections to the pedestrian/bicycle and greenway system will provide residents and tourists with an alternative way of accessing the following facilities:

River Front Amphitheater

Fort Smith Police Station

Abilities Unlimited
Abundant Life Counseling
Action Now Inc
American Red Cross
Arc For The River Valley
Area Agency On Aging
Arkansas Department-Human Services
Arkansas Valley Habitat For Humanity
Baker Senior Citizens Center
Behavioral Science Clinic
Boy Scouts Of America
Briarwood Head Start Center
Cancer Support Foundation
Solution-Focused Counseling
Children & Family Services Division
Children's Emergency Shelter
Circuit Clerk-Child Support
City of Bonanza
City of Fort Smith
City of Fort Smith Sanitation
Clearinghouse Community Service
Community Mission Inc
Comprehensive Juvenile Services
Counseling Center-Fort Smith
Creekmore Park Center
Crisis Center For Women
Darby Foundation
Day Care Licensing
Developmental Disabilities
Driver Service Office
Emergency Services
Employment Security Department
Environmental Quality Department
Family Service Association
Field Audit Office
Fort Smith Animal Control
Fort Smith Board Of Directors
Fort Smith Building Department
Fort Smith City Administrator
Fort Smith City Clerk
Fort Smith Collection License
Fort Smith Community Development
Fort Smith Convention Center
Fort Smith Customer Service
Fort Smith Engineering
Fort Smith Finance Department
Fort Smith National Historic
Fort Smith Operations Division
Fort Smith Personnel Department
Fort Smith Planning
Fort Smith Public Libraries
Fort Smith Transportation Department
Fort Smith Water & Sewer
Game & Fish Commission
Gateway House
Habitat For Humanity
Hagemeier Family Counsel
Harbor House
Head Start Child & Family Services
Health Point Pho
Human Services Department
Life Counseling Services
March of Dimes
Mid Town Senior Citizens Center
Mine Inspection Division
Northwest Arkansas Food Bank
Oil & Gas Commission
Pollution Control & Ecology
Pregnancy Help Center
Professional Counseling Services



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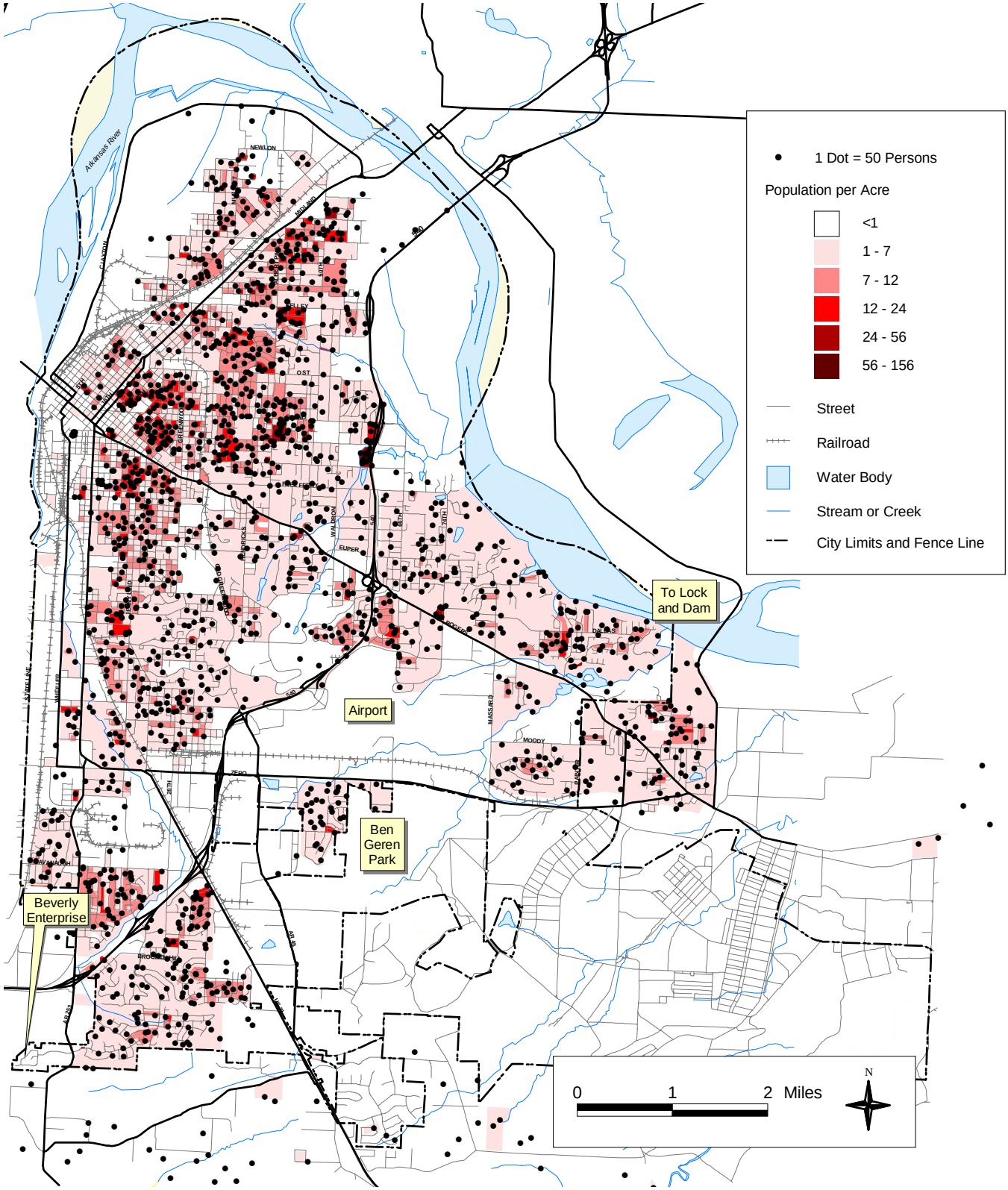
Land Use

Map 2.2



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2/16/04

2000 Population Density

Map 2.3

Fort Smith Senior Activity Center

Project Compassion Inc
Regional Health Sciences Library
Revenue Department
Reynolds Cancer Support House
Salvation Army
Salvation Army Thrift Store
Sebastian County Assessor
Sebastian County Circuit Clerk
Sebastian County Clerk
Sebastian County Collector
Sebastian County Coroner's Office
Sebastian County Deliquent Tax
Sebastian County Financial Administration
Sebastian County Health Department
Sebastian County Juvenile Detention
Sebastian County Juvenile Department
Sebastian County Law Library
Sebastian County Prosecuting
Sebastian County Public Housing
Sebastian County Records Department
Sebastian County Treasurer
State Mine Office
United Way
US Consolidated Farm Service Agency
US Court Security
US Financial Department
US General Service Administration
US Geological Survey
US Labor Department Wage & Hour Division
US Post Offices
US Social Security Administration
US Weatherization Department
USDA Rural Development
Vista Health
Western Arkansas Planning & Development District
Workers Compensation

Southside High School

Schools, Colleges, and Vocational Schools

Schools serve as primary destinations for a large portion of Fort Smith's population, from children to adults. A pedestrian/bicycle trail and greenway system could create a safer environment for children and adults who wish to walk or bike to the following schools:

1st Presb. Church
7th Day Adv. Church School
Ballman Elementary
Beard Elementary
Belle Point Elementary
Bonneville Elementary
Bost
Carnall Elementary
Cavanaugh Elementary
Chaffin Junior High
Christ the King
Cook Elementary
Darby Junior High
Euper Lane Elementary
Fairview Elementary
First Lutheran
Ft. Smith Christian
Harvest Time
Howard Elementary
Immaculate Conception
Kimmons Junior High
Montessorl
Morrison Elementary
Northside Christian Academy
Northside High
Orr Elementary
Our Redeemer Lutheran
Pike Elementary
Ramsey Junior High
River Valley Christian School
Southside High
Spradling Elementary
St. Boniface
Sunnymede Elementary
Sutton Elementary
Tilles Elementary
Trinity Junior High
Trusty Elementary
University of Arkansas Fort Smith
Woods Elementary

Beard Elementary

Sparks Hospital

Shopping Centers

Shopping centers in Fort Smith are generally oriented towards the automobile. Large parking lots with little or no space for walking or for storing a bike deter walking or bicycling to the facilities. These places serve as major destinations for many people. Providing pedestrian/bicycle facilities via a greenway system might encourage the customer who would like to walk or bike to Fort Smith shopping centers. Below is a partial list of locations:

Downtown Fort Smith
Central Mall
Phoenix Village Mall
Eastpointe Shopping Center
Brooken Hill Shopping Center

Hospitals and Medical Centers

Many hospitals and medical centers provide little or no pedestrian/bicycle access to the facilities. Medical workers and patients could benefit from the development of an adjacent trail and greenway system for exercise and transportation to hospitals and medical centers:

Beverly Enterprises

Harbor View Mercy Hospital
Vista Health Fort Smith
Sparks Health System
St Edward Mercy Medical Center
Cooper Clinic

Major Employers

Employers serve as destinations everyday to Fort Smith's residents. A pedestrian/bicycle trail and greenway system could allow employees to walk or ride to work, which would improve their health and the air quality. Employers could provide bicycle parking and shower facilities to encourage pedestrian and bicycle commuting. Employers would then benefit from a more alert and healthy work force. The following is a list of major employers within Fort Smith:

Air Systems, Inc.
Area Agency on Aging
Arkansas Best Corporation
Baldor Electric
Beverly Enterprises
Bost Human Development Services
City of Fort Smith
Cooper Clinic
Fort Smith Public Schools
GNB Technologies
Georgia-Pacific
Gerber Products
Macsteel
OK Industries
Rheem Manufacturing Company
Riverside Furniture Corporation
Sparks Health System
St. Edward Mercy Medical Center
The Trane Company
University Of Arkansas-Fort Smith
Weldon, Williams & Lick, Inc.
Whirlpool Corporation

Whirlpool Headquarters

Transportation System

With the improvement and addition of existing and new roadways, the opportunity exists to preserve greenways and include bicycle and pedestrian facilities within the rights of way from the preliminary phase. By implementing them into the design and construction of the roadways, the bicycle and pedestrian facilities and greenways will become an integrated amenity rather than an after thought and may be constructed at a significantly lower cost.

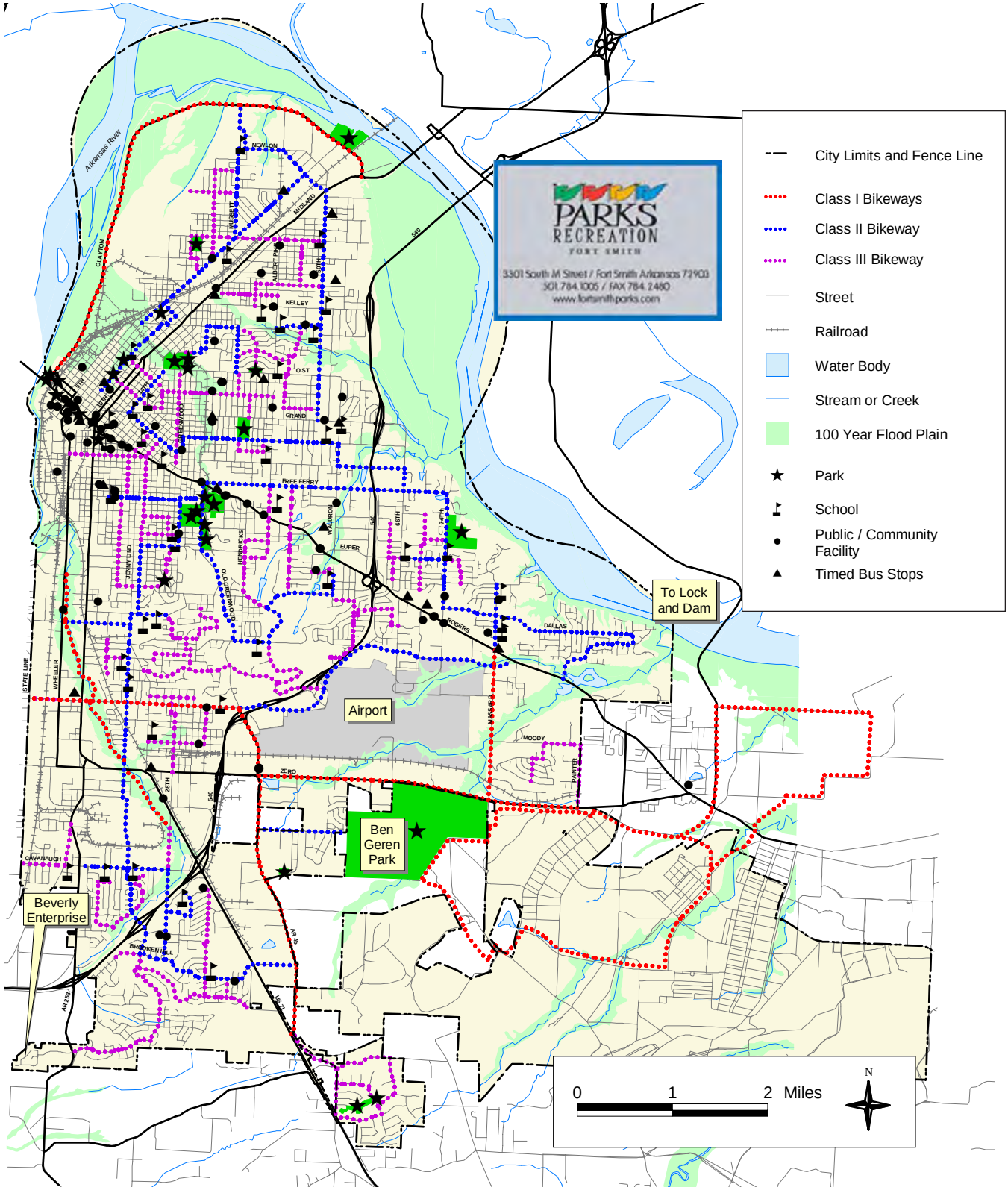
Pipeline Systems

Since access to pipelines must be maintained at all times, the easements are typically not developable for general construction. However, it is possible that in some cases, if a public use easement could be obtained, these corridors might be incorporated into the greenway system and used for bicycle/pedestrian trails.

Existing Trails and Bicycle Facilities

Currently, the existing Fort Smith Bikeway System (on-street routes) aims to connect users to parks, libraries, schools and universities, and to transit system bus stops along signed roadways (See Fort Smith Bikeway Map 2.4). By connecting the bikeway to a greenway system and network of off-road multiuse trails, the entire bike and trail system will be able to serve a greater number of users with a diverse range skills.

Existing Creekmore Park Walking Trail



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Existing Fort Smith Bikeway Plan

Map 2.4

Chapter 3

Trails and Greenways

Vision, Goals & Objectives

Introduction

The following is the vision statement crafted for Fort Smith as an overall guide to developing the proposed trail and greenway system. Goals which support this vision, and a series of objectives that would be implemented to achieve each goal, are also presented. The vision, goals and objectives were publicly discussed and refined to reflect the needs and desires of local residents. This was accomplished through a public workshop which took place on November 6, 2003. More than 30 local residents attended this meeting in Fort Smith.

Vision

Fort Smith's trail and greenway system will aim to preserve natural and man-made environmental resources as well as provide safe and convenient facilities for walkers, joggers, bicyclists, in-line skaters, and wheelchair users. It will connect residential areas to significant outdoor recreation areas such as area lakes, parks and schools. The system will offer citizens an enhanced alternative to automobile travel, providing routes to popular destinations, including employment centers, retail establishments, tourist attractions, medical facilities, universities and schools. Since trails and greenways promote nonpolluting forms of transportation, the system will improve air quality and reduce congestion in the area. Greenway corridors will also improve water quality and reduce the impacts of flooding by preserving floodplain lands and streamside buffers. The local economy will also benefit from trail and greenway development through increased tourism revenues, property values and business attraction. In all, the Fort Smith Trails and Greenways System will make the region a cleaner, greener and better place to live, work and play for generations to come.

Goals & Objectives

The following goals and objectives serve to support the vision statement. Goal categories are representative of the benefits outlined in the previous chapter. Goals are not listed in order of priority.

Workshop participants review maps prior to presentation

Safety

Goal: Trails and greenways will be designed and managed so as to maximize safety and security of users.

Objectives:

- Minimize use conflicts
- Make trail wide enough to accommodate multiple uses
- Light appropriate trails for use after dark, especially winter
- Provide a hard surface trail
- Provide good visual access to trails, especially at night for security purposes
- Encourage users to carry cell phones in case of emergency

Recreation/Fitness

Goal: Trail and greenway corridors will improve opportunities for safe, close-to-home recreation in Fort Smith.

Objectives:

- Provide trail head parking
- Provide drinking fountains
- Provide distance markers on the trail
- Provide benches, bike racks and other amenities
- Increase citizen wellness by encouraging more exercise

Maintenance & Management

Goal: Trails and greenways in Fort Smith will be properly managed and maintained to increase user safety and enhance the quality of facilities.

Objectives:

- Provide consistent maintenance throughout the entire trail and greenway system
- Encourage "adopt a trail" by local organizations to reduce the city's maintenance expense
- Define which city entity(s) will be maintaining the trails and greenways
- Find sources of funding for proper maintenance of the trail and greenway system

Workshop participants review maps and discuss trails master plan

Economic

Goal: Trails and greenways in Fort Smith will improve the economic health of the area by increasing property values and potentially providing tourism revenue.

Objectives:

- Educate public about the business opportunities by increasing the quality of life in Ft. Smith through trails and greenways
- Seek outside funding sources for construction of the trails
- Connect to retail and commercial facilities
- Build trails to attract desirable development
- Construct trails at Fort Chaffee to guide development
- Reduce cost in health insurance as citizens become more fit

Education

Goal: Trail and greenway corridors will highlight and enhance significant historical and natural resources in the area. Trail users and potential supporters will be made aware of the trail and greenway system and its rules and benefits.

Objectives:

- Educate users about trail etiquette
- Educate drivers on share the road bicycle facilities
- Educate public that bicycles still have right to road once trails are built
- Educate public about natural resources and history in the Fort Smith area
- Educate public about the benefit of trails for public support
- Educate public about wetlands and greenways
- Educate public about the Arkansas River and navigation system/lock and dam

Transportation

Goal: Trail and greenway corridors will provide more opportunities for alternative transportation facilities for residents and visitors to the City of Fort Smith.

Objectives:

- Connect to the Fort Smith Bikeway System
- Provide opportunities for commuting to work by trail
- Connect to schools
- Connect to parks
- Connect to employment centers/businesses
- Connect to Fort Chaffee
- Provide wheelchair access
- Provide connections to transit system
- Connect to libraries
- Link to community facilities

Environment

Goal: Greenway trail corridors will enhance the local environment by improving air and water quality, conserving floodplain ecosystems, restoring landscapes and protecting wildlife habitat.

Objectives:

- Improve the visual quality of the city through the planting of native trees and other indigenous plant materials
- Improve air quality and reduce noise levels by promoting non-motorized forms of transportation
- Align trails to minimize the impact on the environment
- Promote the preservation establishment of greenbelt areas to reduce erosion and improve water quality
- Promote environmental awareness through the Adopt-A-Trail program
- Protect environmentally sensitive lands to support plant and animal habitat

Chapter 4

Trails and Greenways

Design Guidelines

Introduction

This chapter provides guidelines to both public and private entities for the development of trail and greenway facilities throughout Fort Smith. The regional guidelines herein are based on the best practices in use throughout the United States, as well as accepted national standards for trail and greenway facilities.

Bollards mark the entrance to a trail in Bixby, Oklahoma

The general attributes of the Fort Smith trail and greenway system have been determined through the master planning process. These attributes include, but are not limited to: 10' wide (minimum) paved trails with a center line stripe, a comprehensive signage system, grade separated crossings where feasible, safe at grade crossings where necessary, and trail heads with drinking fountains, benches, and landscaping at appropriate intervals. Some trails may have phased construction, being built initially with limestone screenings as the surface with asphalt or concrete being installed later as the permanent surface.

The guidelines should be used with the understanding that each trail and greenway project is unique, and that design adjustments may be necessary in certain situations in order to achieve the best results. Such projects should be evaluated on a case-by-case basis, in consultation with local or state bicycle and pedestrian coordinators, a qualified landscape architect, and/or an engineer.

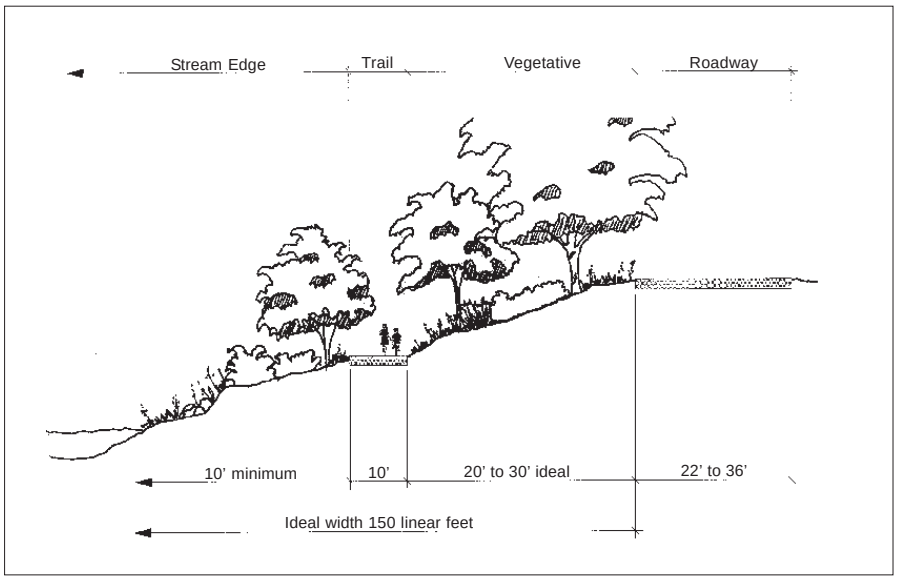
Trail and Greenway Development Corridors

There are several different corridor types that can potentially serve as trail and greenway development corridors. These include floodways, utility easements, drainage easements, abandoned railroad corridors, existing railroad corridors, and expressway rights-of-way. Trail and greenway development planning in each of these corridor types must consider the unique set of variables that each type presents. The following section contains information on trail and greenway development within different corridors.

Floodway Trail/Greenway with Buffer Zone

The design of trails developed within floodplains must consider the preservation of buffer zones adjacent to streams. These vegetated buffers are important in preserving water quality and wildlife habitat. These vegetative zones work to filter

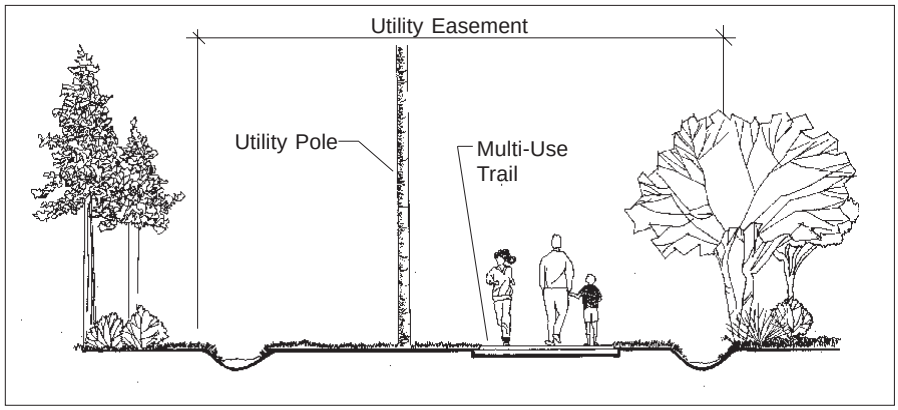
pollutants from stormwater runoff before it reaches streams or rivers. Preserving these buffers also serves wildlife by providing important habitat adjacent to streams and rivers. This habitat preservation is especially important in urban settings where habitats are threatened. The accompanying graphic illustrates how trails and greenways should be developed within floodprone areas, including minimum width requirements.



Typical Cross Section: Trail Within A Floodway

Utility Easement Trail/ Greenway

Utility corridors, similar to railroad corridors, can be utilized for multi-use trail development. Trails can be successfully implemented within overhead electric, sewer, fiber optic, cable and gas line easements. Typically, the utility line is placed under, or parallel to, the trail tread. These utility easements can accommodate both paved and unpaved trail treads and can serve a variety of users. Like all multi-use trails, there should be a 2-foot minimum (3-foot preferred) shoulder separating the trail tread from any utility structure. These trails need to be designed to withstand the weight of maintenance vehicles used to service the utility line.

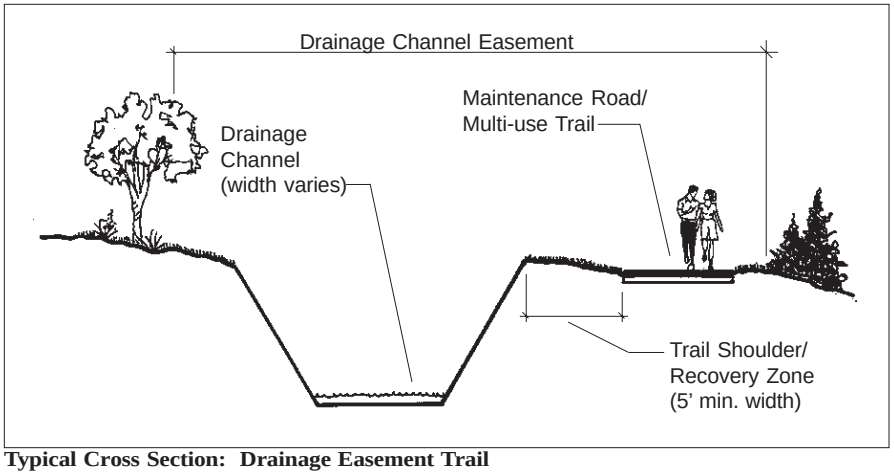


Typical Cross Section: Utility Easement Trail

Drainage Easement Trail/ Greenway

Networks of drainage ways present a unique opportunity for trail development. Many drainage ways have an existing adjacent unpaved pathway or road that serves as maintenance vehicle access. Often these maintenance roads can double as multi-use trails with little or no improvements, while others may require more development. While some drainage ways have no existing maintenance road, there is often adequate easement width to accommodate multi-use trails.

Trails utilizing drainage easements should be placed as far away (5' suggested min.) from the channel as the easement allows. This will provide a recovery zone between trail users and the channel if a cyclist should lose control on the trail.



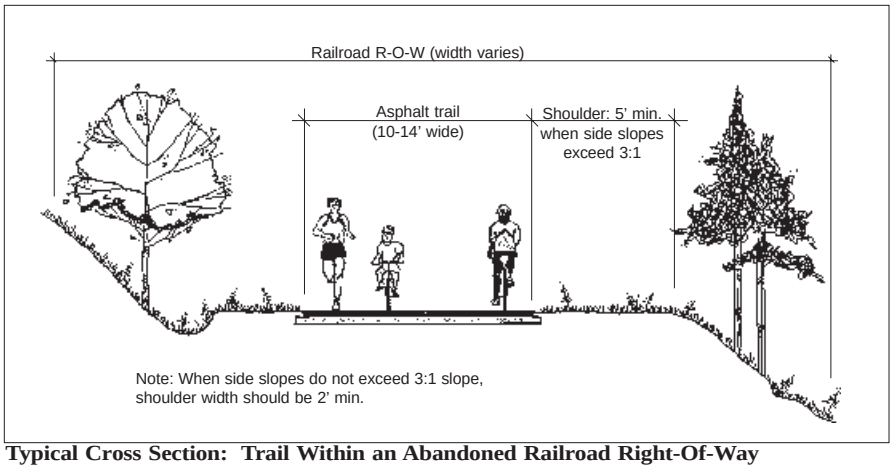
Typical Cross Section: Drainage Easement Trail

Drainage easement trails that are part of the regional network should be paved. In some instances, an unpaved trail can be developed as Phase I of trail development, and paved at a later date.

These trails should be developed in close coordination with the Public Works Department in order to establish a safe and user friendly trail environment without obstructing maintenance access to the channel. These trails should be built to withstand the periodic use of heavy trucks and maintenance vehicles.

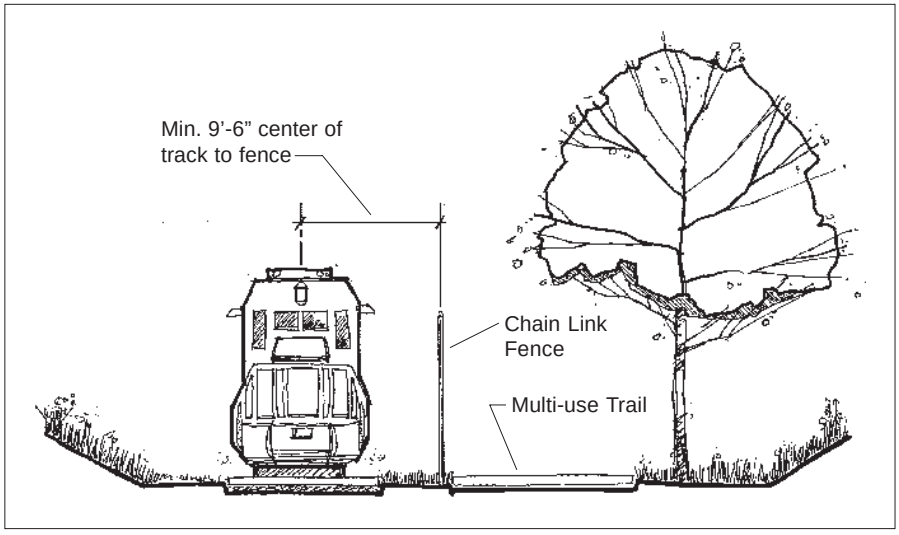
Abandoned Railroad R-O-W

One popular movement in this country is the conversion of abandoned railroad corridors into multi-use trails. These corridors can be ideal for recreation and transportation facilities, as the grades required for railroad use provide slopes that are well within range for ADA accessible, transportation-oriented trails. They can also be excellent locations for paved and unpaved trails due to the existence of a continuous linear right-of-way. Additionally, railroad structures, such as trestles and historic depots, along the corridor can be adapted for trail use as bridges, concession stands and information centers.



Typical Cross Section: Trail Within an Abandoned Railroad Right-Of-Way

A design issue that may especially affect rail trails is that of side slopes, due to the drainage swales that are typically found along many railroad routes. As with any multi-use trail, proper slopes must be developed adjacent to the trail to ensure the safety of users. A minimum 2-foot wide shoulder (3 feet is preferred) should be in place between the edge of trail and top of bank when the slope is less than 3:1. If the slope is greater than 3:1, there must be a 5-foot wide shoulder between the edge of trail and top of bank. If this is not possible, a railing must be installed that is at least 2 feet away from the edge of trail. This railing, according to current AASHTO standards, should be 54 inches in height. However, the AASHTO guidelines that are soon to be released indicate a minimum railing height of 42 inches.



Cross Section: Minimum Rail-With-Trail Clearances per American Railway Engineering Association (AREA) standards

Trails and Active Railroad Corridors

Another method of utilizing railroad corridors for trail development is rails-with-trails—installing a trail within a railroad right-of-way, adjacent to active tracks. This strategy has been successfully employed in many communities. Proper design is key to developing a safe facility for trail users and minimizing liability risks for the railroad. According to a study of 37 rail-with-trails completed by the Rails-to-Trails Conservancy, these facilities typically include the following design features:

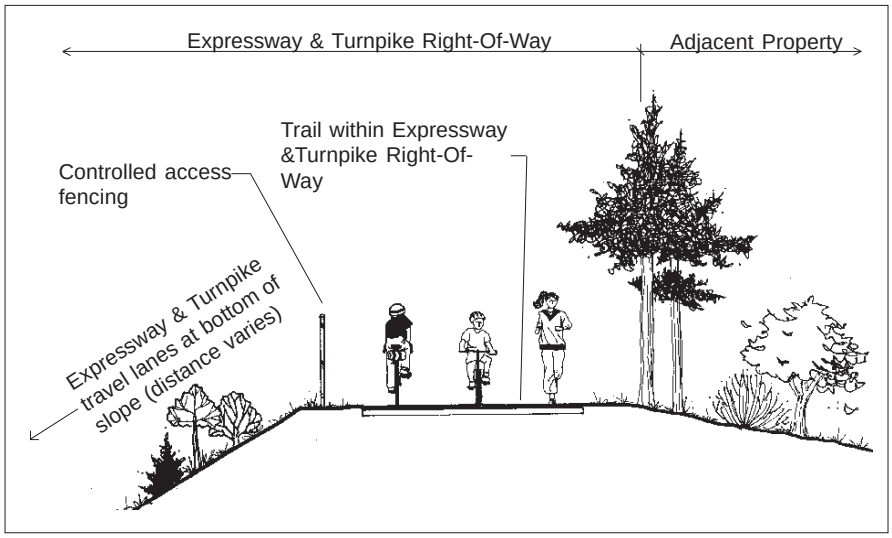
- Grade separation which isolates the active track from the trail;
- A buffer between the tracks and trail;
- Few at-grade trail/track crossings;
- Fencing or vegetative screening which serves as an attractive barrier; and
- Warning and explanatory signs posted

Trail within Turnpike R-O-W

Expressway R-O-W Trail

Expressway rights-of-way are excellent trail corridor resources because they are linear, well separated from the roadway, and intersect with relatively few driveways and cross streets.

The Oklahoma Turnpike Authority (OTA) has supported the concept of trails utilizing the right-of-way space located outside controlled access fencing. For example, the recently constructed 3.5 mile Creek Turnpike Trail in Tulsa, Oklahoma is located within the turnpike/expressway corridor. This trail is separated from the turnpike/expressway by controlled access fencing. In addition, the Oklahoma Department of Transportation has agreed to consider the placement of a paved multi-use trail within the US 169 corridor in Tulsa, Oklahoma.



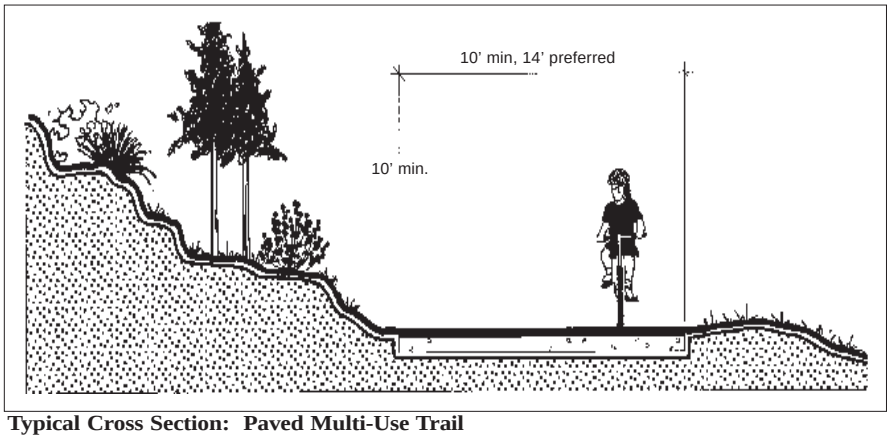
Typical Cross Section: Expressway & Turnpike R-O-W Trail

Regional Trail Types

Each of the aforementioned trail development corridors can be host to one of many different trail types. Some of these trail types include, but are not limited to: hiking trails, unpaved or paved multi-use trails, boardwalk trails, and multiple tread trails. These trail types are described in the following section.

Paved Multi-use Trails

Typical pavement design for paved, off-road multi-use trails should be based upon the specific loading and soil conditions for each project. These trails, typically composed of asphalt or concrete, should be designed to withstand the loading requirements of occasional maintenance and emergency vehicles. In areas prone to frequent flooding, it is recommended that concrete be used for its excellent durability.



Typical Cross Section: Paved Multi-Use Trail

One important concern for asphalt multi-use trails is the deterioration of trail edges. Installation of a geotextile fabric beneath a layer of aggregate base course (ABC) can help to maintain the edge of a trail. It is also important to provide a 2' wide graded shoulder to prevent trail edges from crumbling.

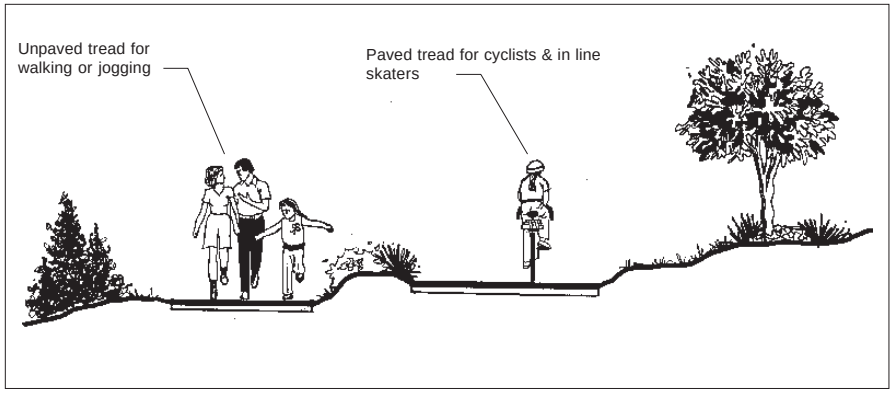
The minimum width for two-directional trails is 10', however 14' widths are preferred where heavy traffic is expected. Centerline stripes should be considered for paths that generate substantial amounts of pedestrian traffic. Possible conflicts between user groups must be considered during the design phase, as cyclists often travel at a faster speed than other users.

Asphalt concrete is a hard surface material that is popular for a variety of rural, suburban and urban trails. It is composed of asphalt cement and graded aggregate stone. It is a flexible pavement and can be installed on virtually any slope.

Concrete surfaces are capable of withstanding the most powerful environmental forces. They hold up well against the erosive action of water, root intrusion and subgrade deficiencies such as soft soils. Most often, concrete is used for intensive urban applications. Of all surface types, it is the strongest and has the lowest maintenance requirement if it is properly installed.

Dual Tread Trail

On trail corridors where anticipated usage is high, or user conflict is a concern, dual or multiple trail treads may be desired. Multiple treads allow for multiple use within the same right-of-way but on separate treads. This generally requires a wider right-of-way to accommodate the diversity of users. For example, a hard



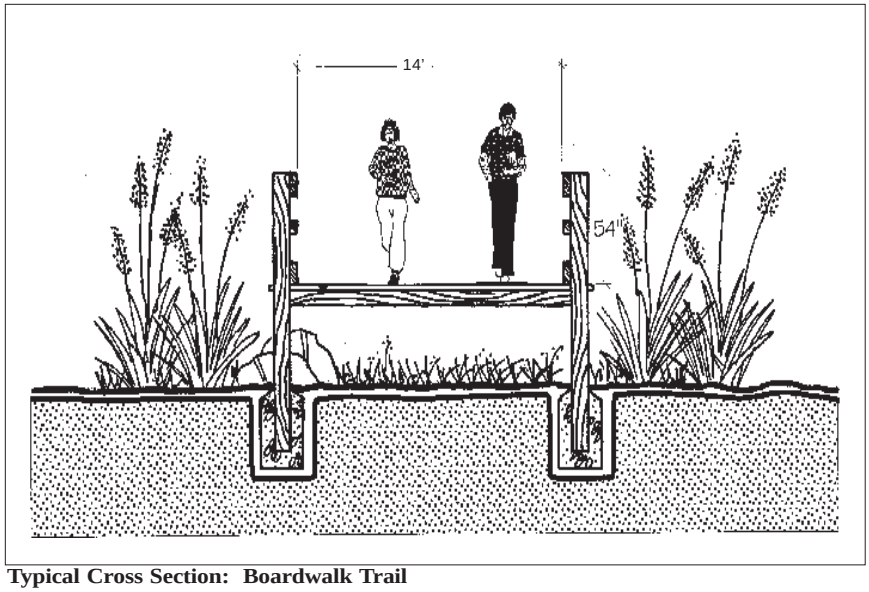
Typical Cross Section: Dual Tread Trail Corridor

surfaced trail could be developed for bicycle use, a walking or jogging path could meander along an unsurfaced earth trail, and a boardwalk could be extended into riparian areas. With proper signage to direct trail users, all of these trail treads could be developed parallel to one another within a given corridor.

For example, Lake Hefner Trail in Oklahoma City has dual treads on the eastern side of the lake. Its high usage and frequent user conflict problems have been alleviated through dual tread development. Dual trail treads provide one tread exclusively for wheeled users and leave one for pedestrians and joggers, therefore eliminating user conflicts between these trail user groups.

Boardwalk Trails

Boardwalks, or wood surface trails, are typically required when crossing wetlands or poorly drained areas. While boardwalks can be considered multi-use trails, the surface tends to be slippery when wet, and so is not well suited for wheeled users. Boardwalks intended for use by bikes, pedestrians, in-line skaters, etc. should be a minimum of 14' wide. However, boardwalk trails limited to pedestrian use can be as narrow as 8'.

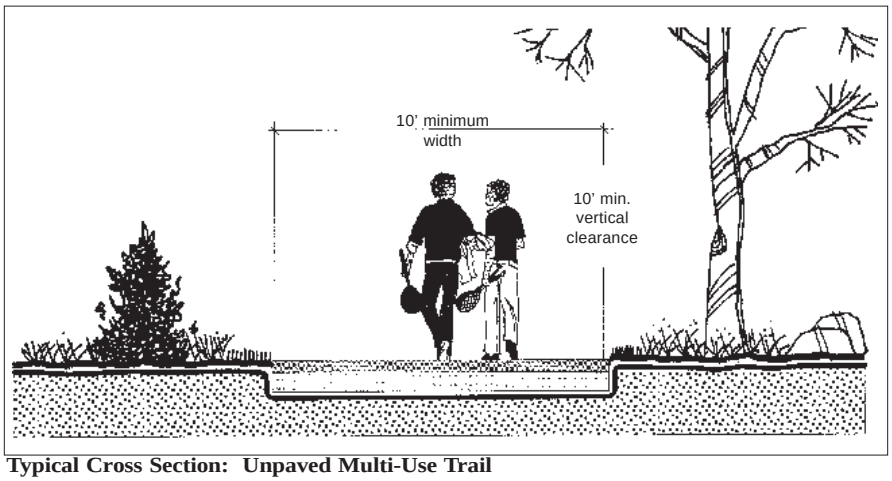


Typical Cross Section: Boardwalk Trail

Wood surfaced trails are usually composed of wooden planks or lumber that forms the top layer of a bridge, boardwalk or deck. The most commonly used woods for trail surfacing are exposure- and decay- resistant species such as pine, redwood, fir, larch, cedar, hemlock and spruce. Wood is a preferred surface type for special applications because of its strength and comparative weight, its aesthetic appeal and versatility. Synthetic wood, manufactured from recycled plastics, is now available for use as a substitute in conventional outdoor wood construction. While these products are more expensive than wood lumber, recycled plastic lumber lasts much longer, does not splinter or warp and will not discolor.

Unpaved Multi-Use Trail

The unpaved multiuse path is intended to accommodate a variety of users, including walkers, joggers, bicyclists, and others. These pathways, intended for use in upland environments, do not withstand the effects of flooding well. While cheaper to install, unpaved trails typically have higher maintenance costs than paved trails and require more frequent repairs. Careful consideration should be given to the amount of traffic the specific trail will generate, as these surfaces tend to deteriorate with excessive use. These trails should also meet all other standards within this manual, and within AASHTO's Guide for the Development of Bicycle Facilities (1991).



Typical Cross Section: Unpaved Multi-Use Trail

Materials that can be used to surface a trail include natural materials, soil cement, graded aggregate stone, granular stone, and shredded wood fiber. The soft surface materials are less expensive to install and compatible with the natural environment, however, they do not accommodate certain users, such as in line skaters and disabled persons. Soft surface trails are preferred, however, by some runners and mountain bicyclists. Soil cement will support most user groups, though bicyclists and horseback riders should only have restricted use. Soil cement surfaces last longer if installed on top of a properly prepared subgrade and subbase.

Graded aggregate stone material suitable for trail surfacing includes colored rock, pea gravel, river rock, washed stone and coarse sand. This surface will often need to be kept in place with wood or metal edging. Because it is a loose, uncompacted surface, graded aggregate stone is limited in application to flatter slopes.

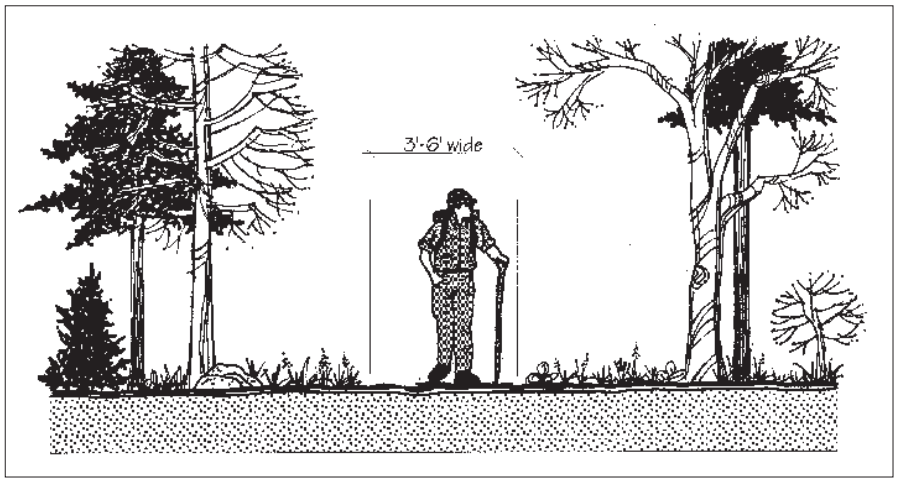
Granular stone includes a broad range of aggregate stone, such as limestone, sandstone, crushed rock, pit gravel, chat, cinders, sand and fine gravel. This is one of the best surface types for greenway trails because it can be densely compacted and is compatible with the natural environment. If properly constructed, granular stone can support bicycle and wheelchair accessible trail development. This type of trail surface serves well as a base for future paving.

Shredded wood fiber is usually composed of mechanically shredded hardwood and softwood pulp, pine bark chips or nuggets, chipped wood pieces, or other by-products of tree trunks and limbs. This type of surface is favored by joggers and runners, equestrians and walkers because it is soft and blends with the natural

environment. However, shredded wood fiber decays rapidly and must be installed on flat subgrades.

Footpath/Hiking Trail

Footpaths or hiking trails are designed to accommodate pedestrians and are not intended for cyclists or other wheeled users. These natural surface trails typically make use of dirt, rock, soil, forest litter, snow, ice, pine mulch, leaf mulch and other native materials for the trail surface. Preparation varies from machine-worked surfaces to those worn only by usage. This is the most appropriate surface for ecologically sensitive areas.



Typical Cross Section: Footpath/Hiking

These pathways, often very narrow, sometimes follow strenuous routes and may limit access to all but skilled users. Some hiking trails may permit equestrian use. Construction of these trails mainly consists of providing positive drainage for the trail tread and should not involve extensive removal of existing vegetation. These trails vary in width from 3' to 6' and vertical clearance should be maintained at 9' (12' when equestrian use is allowed).

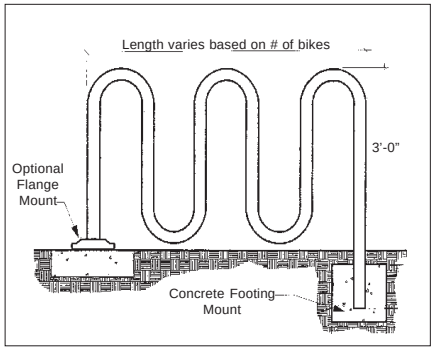
Trail/Greenway Components

In addition to trail width and surface type, there are many other trail components that should be considered during facility design to ensure safe, well designed trails and greenways. The following design guidelines address features such as bike racks, site furnishings, landscaping, lighting, and signage. While these components will not be required on all trail facilities, they should be considered in the design of each facility.

Bike Racks

It is important to choose a bicycle rack design that is simple to operate. Bicycle racks should be designed to allow use of a variety of lock types. It may be difficult initially to determine the number of bicycle parking spaces needed. Bicycle racks should be situated on-site so that more racks can be added if bicycle usage increases.

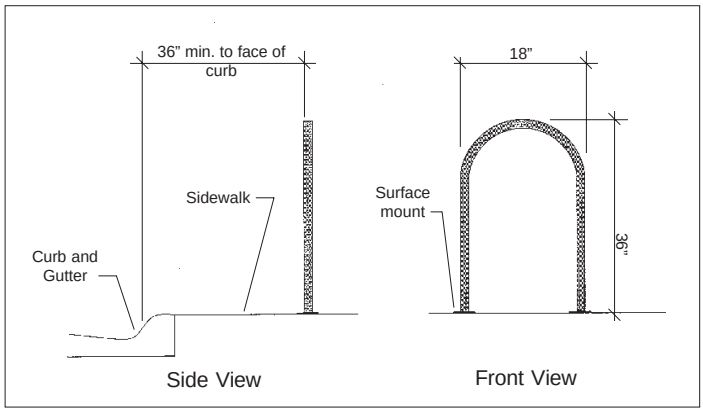
The designs shown have proven popular and effective in numerous communities. They are inexpensive to fabricate locally, easy to install, vandal resistant, and work well with the popular high-security locks. In addition, they can be installed as a single unit on a sidewalk, or in quantity, as at a major recreation center.



Typical "Loop" Bike Rack Design

The location criteria included below are a mix of those developed by the cities of Denver and Seattle for siting bicycle racks, and are recommended for Fort Smith:

- Racks should be located within 50' of building entrances (where bicyclists would naturally transition into pedestrian mode).
- Racks should be installed in a public area within easy viewing distance from a main pedestrian walkway, usually on a wide sidewalk with five or more feet of clear sidewalk space remaining (a minimum of 24" clear space from a parallel wall, and 30" from a perpendicular wall).

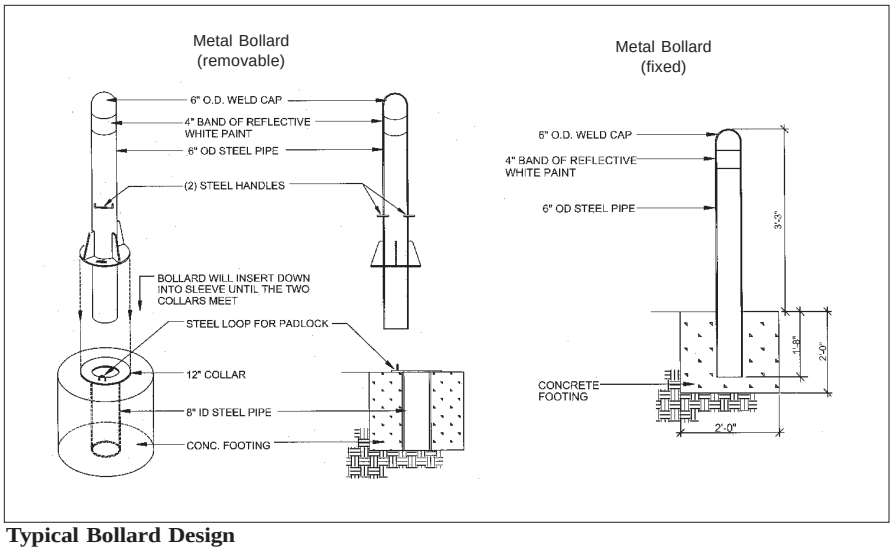


Typical "Inverted U" Bike Rack Design

- Racks should be placed to avoid conflicts with pedestrians. They are usually installed near the curb and at a reasonable distance from building entrances and crosswalks.
- Racks can be installed at bus stops or loading zones (only if they do not interfere with boarding or loading patterns and there are no alternative sites). Many communities across the Country including Phoenix, AZ, Portland, ME and Denver, CO, have installed racks on their buses to facilitate bike-on-transit travel.

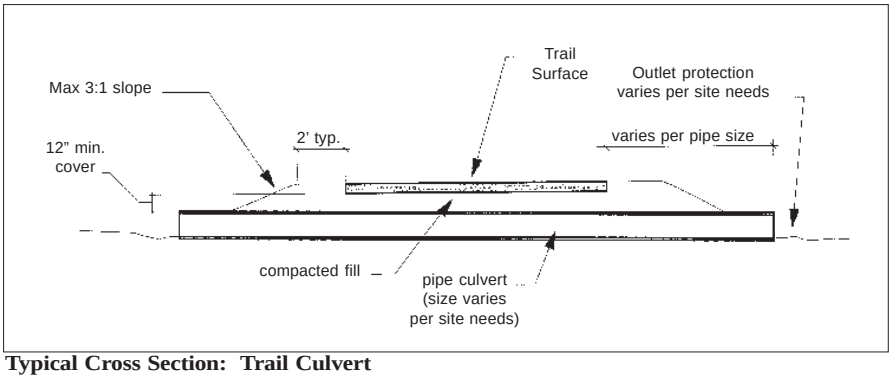
Bollards

Bollards are intended to provide separation between vehicles and trail users, and are typically used at trail/roadway intersections. They are available in a variety of shapes, sizes, and colors and come with a variety of features. Lighted bollards are intended to provide visitors with minimum levels of safety and security along trails which are open after dark. Bollards should be chosen according to the specific needs of the site and should be similar in style to the surrounding elements. The graphic illustrates a typical bollard often used in Oklahoma.

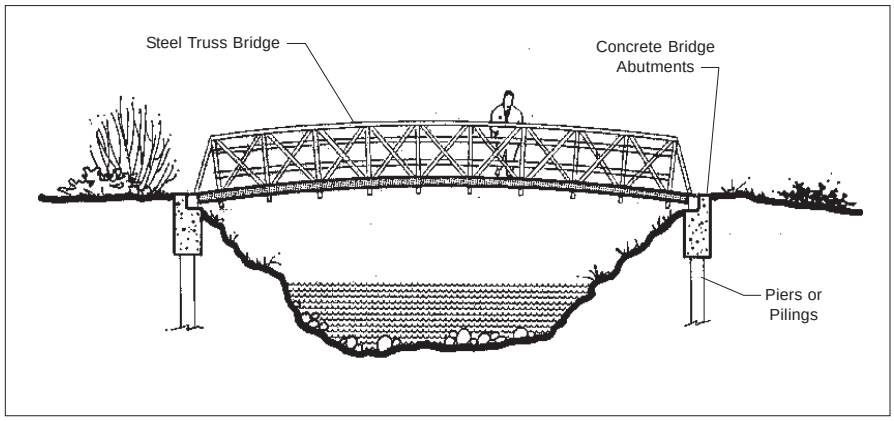


Typical Bollard Design

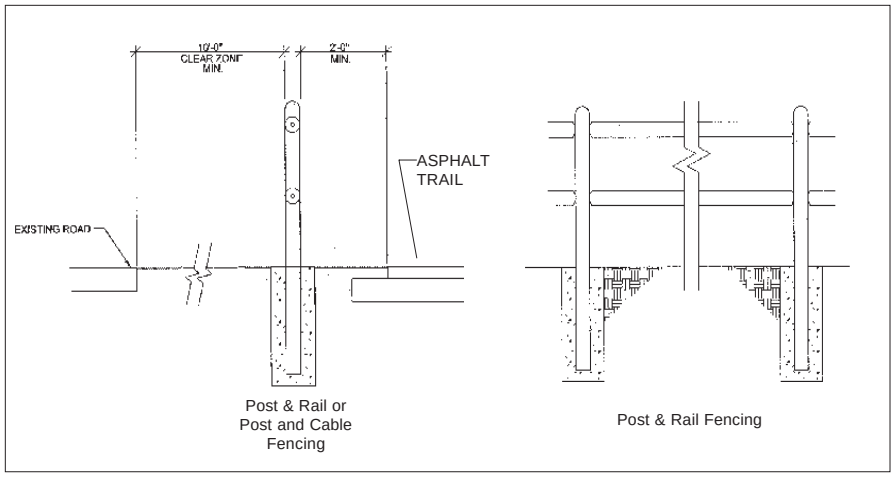
The contractor is to provide proper footings and anchors for bollard installation, according to manufacturers specifications. Typical construction materials for bollards include painted steel or aluminum, with halogen or metal halide lights in weather tight casings. Removable bollards can be installed to provide trail access for emergency and maintenance vehicles.



Typical Cross Section: Trail Culvert



Typical Prefabricated Steel Span Bridge



Typical trail Fencing

Trail Culverts

Installation of trail culverts is important to insure proper stormwater drainage, trail user safety, and longevity of the trail surface. Pipe length, diameter, and material specifications will vary depending on specific site needs. Two materials typically used for trail culverts are reinforced concrete pipe (typically required when the trail is within roadway or utility easements), and High Density Polyethylene (HDPE) recycled plastic pipe. Plastic pipes are typically less expensive on a per foot basis. The included graphic outlines proper installation parameters for trail culverts.

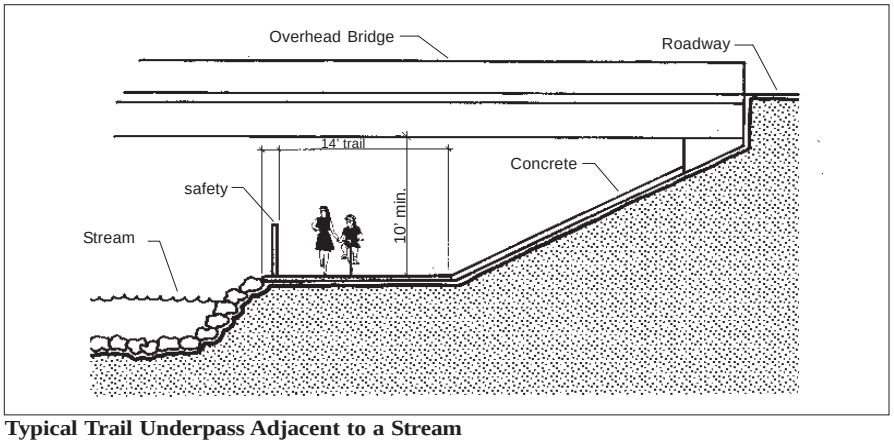
Bridges

Bridges are an important element of almost every trail project. They are required at crossings of larger drainage or water ways and can sometimes be used to cross roadways. The type and size of bridges can vary widely depending on the trail type and specific site requirements. Some bridge types often used for multi-use trails include suspension bridges, prefabricated span bridges (illustrated), and concrete bridges. When determining a bridge design for multi-use trails, it will be important to consider the issue of emergency vehicle access. Trail bridges intended for occasional vehicular use must be designed to handle such loads safely.

Fencing

Fencing and railings are often needed on trail projects for safety purposes or to serve as barriers. They can consist of many different materials and, depending on the specific site needs, can be a variety of heights. Many different fence types, including post and rail, chain link, post and cable, and lumber privacy fences, can be used to create a barrier between the trail and adjacent properties. Safety railings often consist of pipe railings, or treated

lumber rails. The need for fencing or safety railings on trail projects will vary and should be determined on a site by site basis. Some locations where fencing or railings may be needed include: along elevated pathways or boardwalks, along expressway trails, along trails with steep side slopes, and trails in close proximity to parking lots or roadways. Aesthetics should be carefully considered when determining a type of fence or railing. The materials used should blend with those used in the surrounding area.



Typical Trail Underpass Adjacent to a Stream

Trail Underpasses

Trail underpasses can be used to avoid undesirable at-grade intersections of trails and roadways. These underpasses typically utilize existing overhead roadway bridges or culverts under the roadway that are large enough to accommodate trail users. There are several key issues that must be addressed in the design of a roadway underpass:

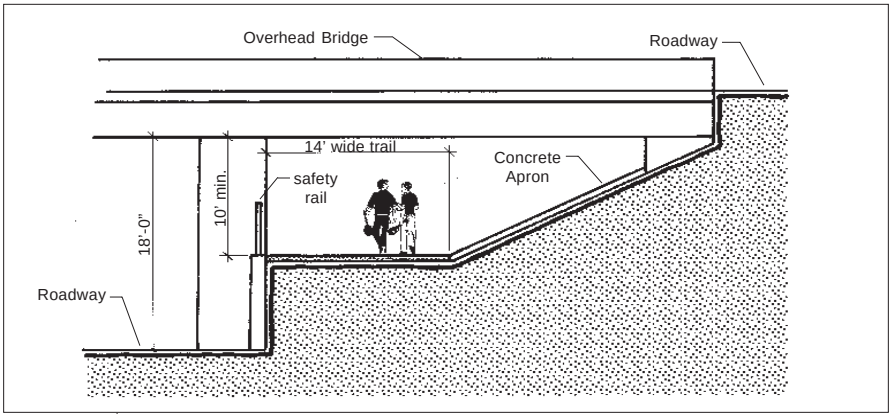
Trail Underpass with Railing

1. The vertical clearance of the underpass must be at least 10';
2. The width of the underpass must be at least 12';
3. Proper drainage must be established to avoid pooling of stormwater inside the underpass; and
4. It is recommended that underpasses be lighted for safety.

Roadway underpasses that utilize box culverts can sometimes be installed as part of a roadway improvement or construction project at greatly reduced cost.

Trail/Roadway Intersections

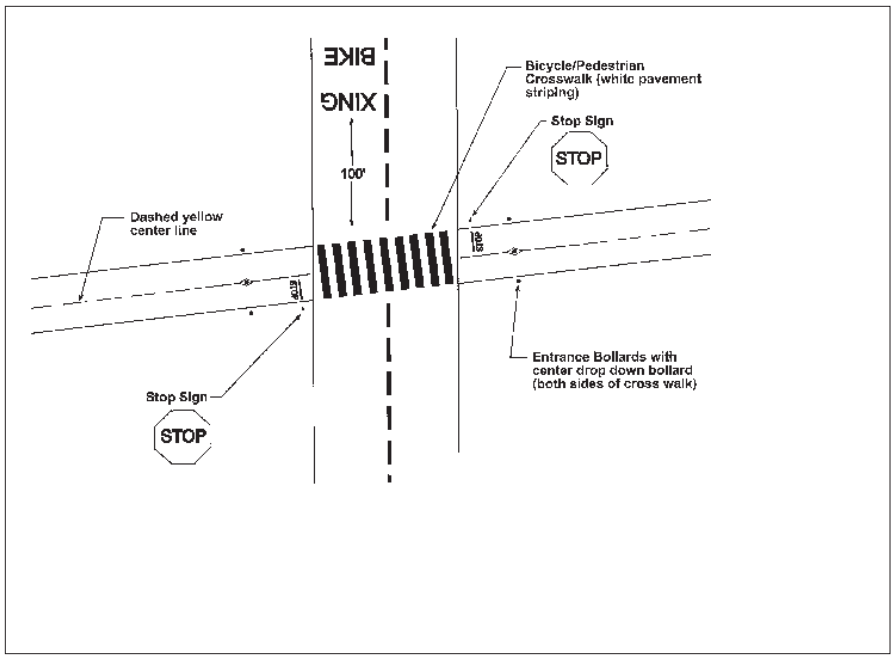
Trail/Roadway intersections can be dangerous conflict areas if not carefully designed. For at-grade intersections, there are several primary design objectives:



Typical Trail Underpass Adjacent to a Roadway

1. Site the crossing area at a logical and visible location;
2. Warn motorists of the upcoming crossing;
3. Inform trail users of the upcoming intersection; and
4. Maintain visibility between trail users and motorists.

Intersections and approaches should be on relatively flat grades. In particular,



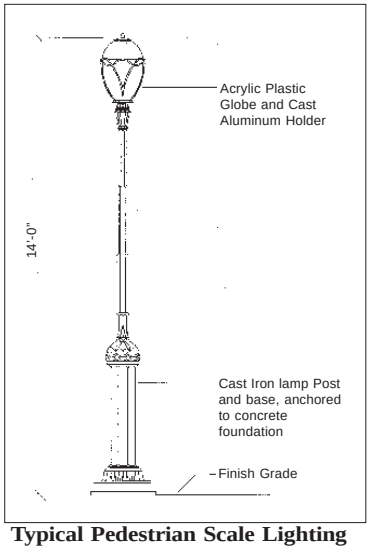
Typical At-Grade Trail/Roadway Intersection

cyclists should not be required to stop at the bottom of a hill. If the intersection is more than 75 feet from curb to curb, it is preferable to provide a center median refuge area, per ADA (Americans with Disabilities Act) or ANSI (American National Standards Institute) standards. If crossing traffic is expected to be heavy, it may be necessary to provide a traffic signal that can be pedestrian/cyclist activated.

The accompanying graphic illustrates a typical trail/roadway intersection and shows the proper placement of signage, bollards, and pavement markings.

Trail Lighting

Particularly during winter months, when trips to and from work are made in the dark, adequate lighting can make the difference in a person's choice to bicycle or walk. However, due to liability and security concerns, many off-road bicycle paths are closed at night, and therefore unlit. Lighting for multi-use trails should be considered on a case-by-case basis, with full consideration of the maintenance commitment lighting requires. Included here is an example of a popular pedestrian-scale light fixture that could be used in a trail environment.



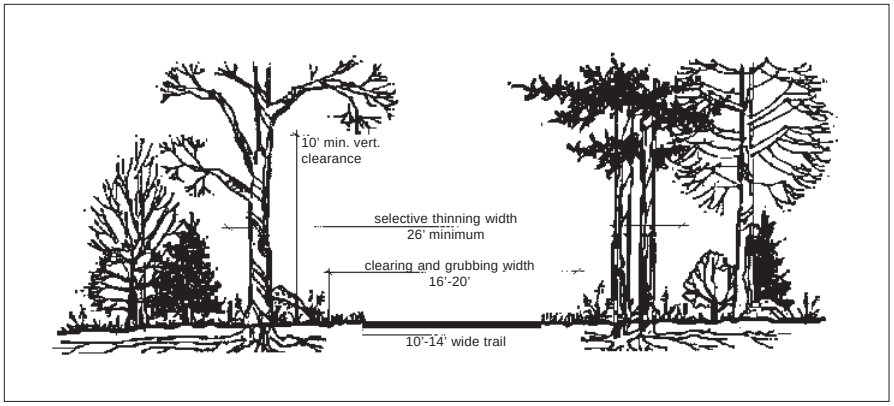
Typical Pedestrian Scale Lighting

In Fort Smith, the city has a lighting lease program which has proven very popular and cost effective within its Parks System. The city will design a system to illuminate the trail with either cobra type or post top fixtures. General spacing for the cobra heads is approximately 150 feet between fixtures, but will vary depending on site conditions. The spacing for the post top fixtures is generally closer than the cobras, but both provide an average of 0.5 footcandles on the trail.

The city will lay the conduit, wire the trench (provided by the owner), and install the poles and fixtures. The owner pays a set monthly price per fixture with the City providing all maintenance for the fixtures.

Vegetative Clearing

Vegetative clearing refers to the amount of vegetation removal that is required for various levels of trail development. The amount of vegetative clearing required for any one trail will depend on the type of trail being developed. While footpaths or hiking trails require little or no vegetation removal, paved pathways may require more.



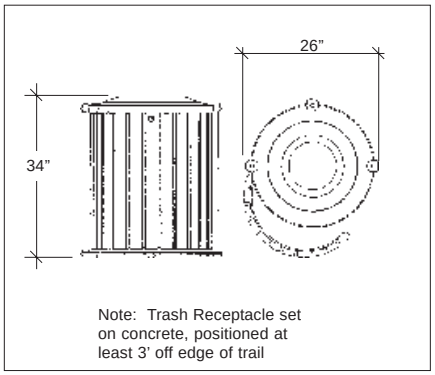
Typical Vegetative Clearing Dimensions

Single-tread, multi-use trails are the most common type of trail in the nation. These trails vary in width, can accommodate a wide variety of users, and are especially popular in suburban and urban areas. While the vegetative clearing needed for these trails varies with the width of the trail, the graphic outlines typical requirements.

Landscape Plantings

The amount of landscaping needed for trails will vary from project to project. While some projects will require little or no plantings, others may require it for vegetative screening, habitat restoration, erosion control or aesthetics.

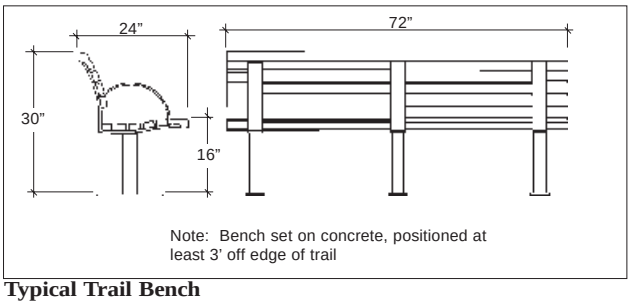
Trees and shrubs are important to greenways and trails for both aesthetic and environmental reasons. Not only do they contribute to the appearance of a trail, their shade cools the environment for trail users and provides habitat for wildlife. When choosing trees and shrubs for use in greenway corridors, it is recommended that indigenous and well adapted species be used. This will reduce the need for chemical and water applications as a part of long term maintenance. Generally, most indigenous and ornamental trees are acceptable for planting near a trail. The use of certain trees that drop debris and have aggressive surface roots should be avoided in close proximity to the trail.



Typical Trail Trash Receptacles

Site Furnishings

Trash containers are recommended along most trails. They can be attractive as well as functional and should be selected based on the amount of trash expected, overall maintenance program of the trail, and types of users. Trash cans need to be accessible to both trail users and maintenance personnel. At a minimum, 22-gallon or 32 gallon containers should be located at each entranceway and at each bench seating area. They should be set back three feet from the edge of the trail. The location of additional trash cans will depend upon the location of concessions, facilities adjacent to the trail and areas where trail users tend to congregate.



Typical Trail Bench

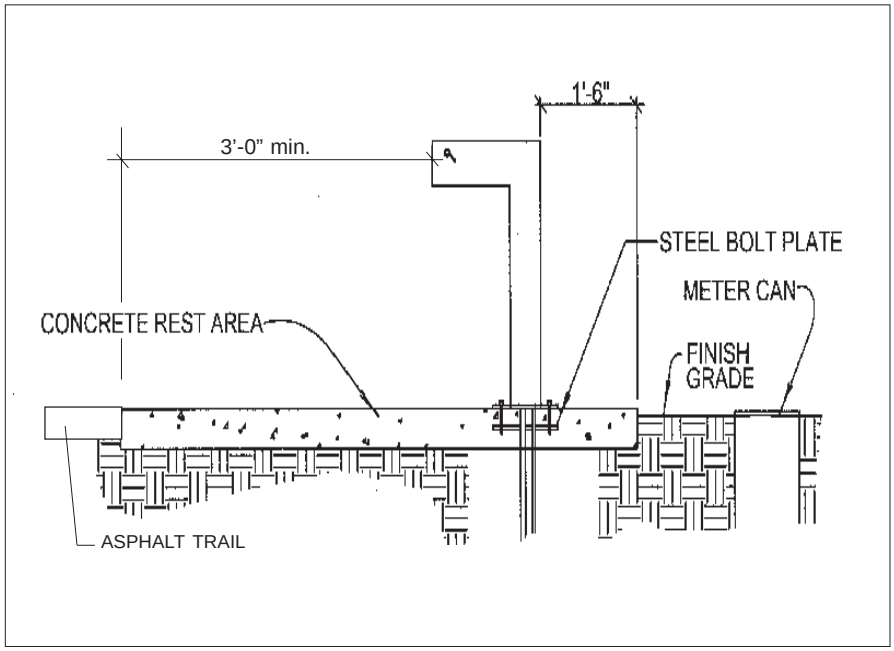
Benches along trails allow users to rest, congregate or contemplate. Trail benches should comfortably accommodate the average adult. They should be located at the primary and secondary entrances to the trail and at regular intervals, and should be set back three feet from the trail edge on a concrete pad.

The included graphics illustrate a bench and trash receptacle that are manufactured using recycled plastic lumber instead of conventional treated wood lumber. Prefabricated furnishings may

also use painted or vinyl coated metal. These prefabricated units cost more initially but last longer and require little or no maintenance.

Drinking Fountains

Drinking fountains are important amenities for this trail system, given the hot summer seasons in Fort Smith. Fountains are typically located at major trail heads and trail entrances, and at regular intervals (approximately 1-1.5 miles on heavily used trails, and 3-5 miles on more remote trails) along the trail.

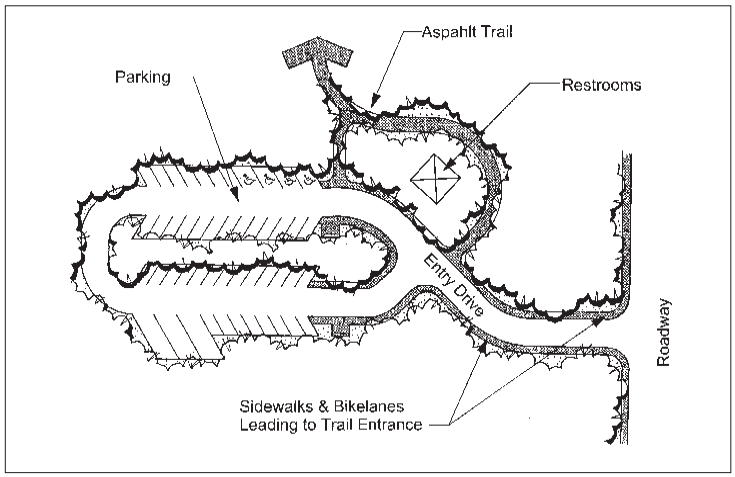


Typical Drinking Fountain

Drinking fountains should be set back at least 3' from the trail edge, and should be wheelchair accessible. They should also be designed and installed to be freeze proof. Drinking fountains with water bottle fillers are also desirable.

Trail Heads

Trail heads will be required throughout the trails system to provide easy access to the trails. Typically trail heads fall into two categories: primary and secondary. Primary trail heads usually provide a wide range of amenities including: parking, restrooms, drinking fountains, picnic areas, benches, trash receptacles, lighting, all types of signage, and bike racks. Restroom buildings at primary trail heads can often serve a dual purpose and provide storage space for supplies and maintenance equipment needed to service the trail. Primary trail heads are typically found at key destination points or trail endpoints but can also be incorporated into existing municipal parks when trail routing is suitable. Along heavily used trails in densely populated areas, primary trail heads should be provided every five miles.



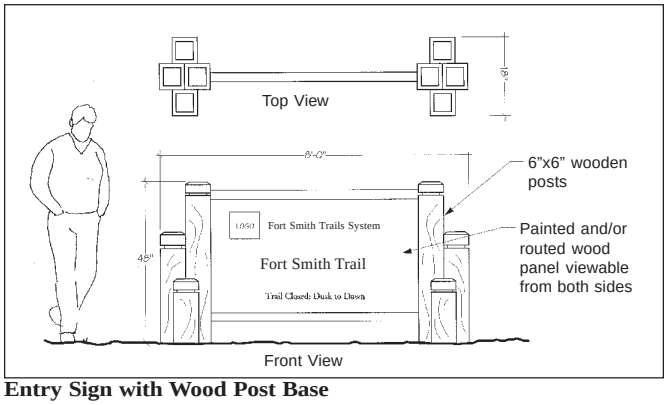
Typical Primary Trail Head Layout

Secondary trail heads are needed more frequently than primary trail heads, and do not provide as wide a variety of amenities. Typically, secondary trail heads are characterized as rest stops located

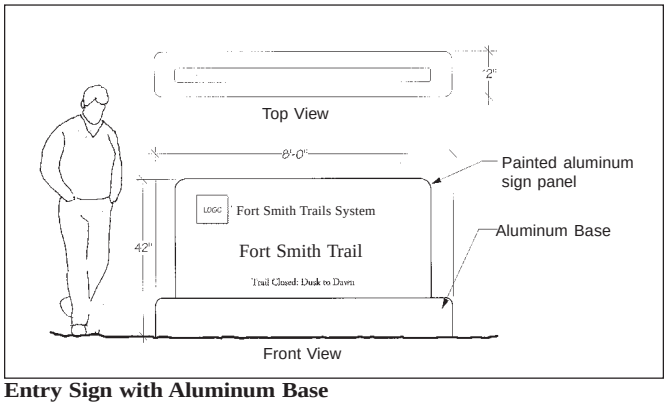
between major destination points and can include such amenities as: signage, benches, trash receptacles, picnic tables, and sometimes parking. These trail heads are often placed at or near major roadway intersections, or periodically along longer trail segments. On more popular trails, secondary trail heads should be provided every 1-2 miles.

Signage

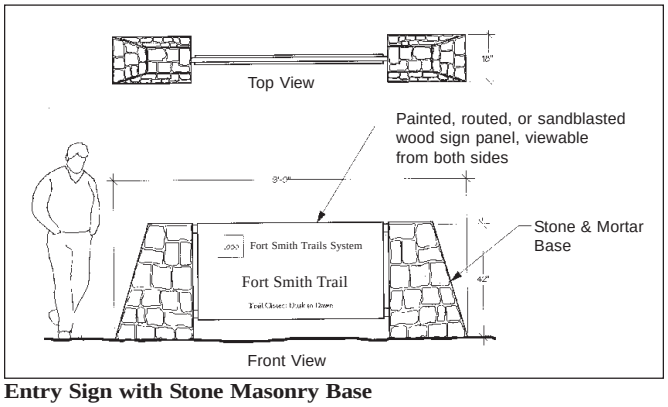
A comprehensive signage plan throughout the trail and greenway system will be needed to insure that information is provided to trail users regarding the safe and appropriate use of all facilities. Trail and greenway signage is typically divided into information signs, directional signs, regulatory signs, and warning signs. Trail and greenway signage should be developed to conform to the Manual on Uniform Traffic Control Devices (MUTCD) and the American Association of State Highway Transportation Officials (AASHTO) manual.



Entry Sign with Wood Post Base



Entry Sign with Aluminum Base



Entry Sign with Stone Masonry Base

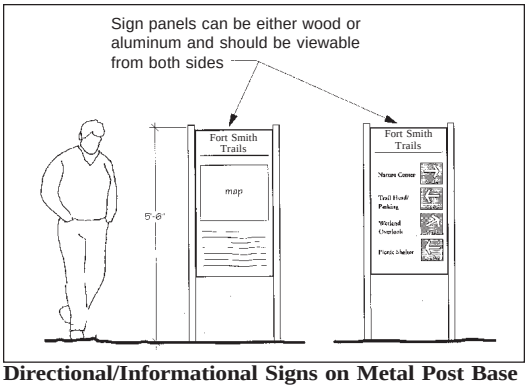
Included in this section are graphics that illustrate some typical trail signage types. The different signage types can be constructed using one of several different base designs. Shown here are three different sign base types including: wood posts, stone, and aluminum. Each of these bases can be adapted for use with each sign type, including entry signs, informations signs, directional signs, etc. This will allow different communities to choose different sign base types while the actual signage panels will remain uniform throughout the region.

Major Entry Signage

Major entry signage is typically placed at trail heads and trail/roadway intersections. These signs are typically the largest of all signage types, and designed to be seen from a vehicle as well as by trail users. These signs typically include the trail name and often include a map of the trail and the surrounding area.

Directional/Informational Signage

Directional and informational signage is typically found at trail heads, as well as trail/trail and trail/roadway

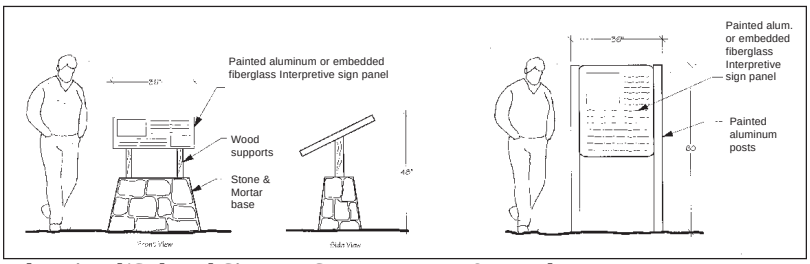


Directional/Informational Signs on Metal Post Base

intersections. This type of signage is typically built at a pedestrian scale and is no more than 40" high. The information often provided on these signs includes: maps, trail rules and regulations, trail etiquette, mileage to destinations, directions to destinations, and directions to amenities such as restrooms or water fountains. The included graphic shows a directional/informational sign mounted on metal posts. The same panel will also work well mounted on wood posts or a stone base.

Educational/Cultural Signage

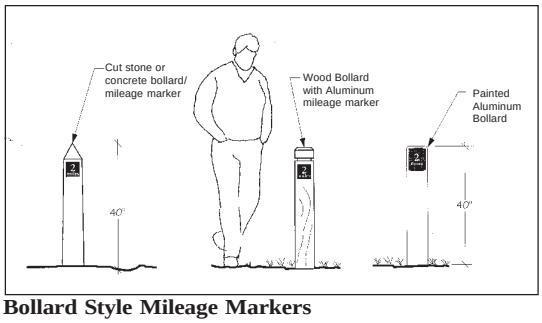
Educational or cultural signage is used when an element or feature with educational or cultural merit exists within or in close proximity to a trail corridor. These elements may include but are not limited to wetland or other environmental features, and historical structures or locations. These signs are designed to be viewed by pedestrians, can be mounted either vertically or angled, and may include photos, maps, and text information.



Educational/Cultural Signs on Stone Masonry & Metal Post Bases

Distance Markers

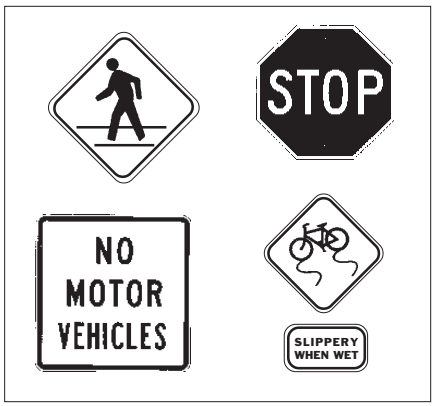
Distance markers typically consist of a post or a pavement marking displaying the distance from the beginning of the trail to the mileage marker. These are usually placed in 1/2 mile and 1 kilometer increments to indicate to the trail user how far they have traveled. The standard for the Fort Smith Trail System is 1/2 mile posts and kilometer pavement markings. The graphic to the left illustrates bollard style mileage markers using three different construction materials including concrete, wood, and metal.



Bollard Style Mileage Markers

Regulatory & Warning Signage

Regulatory and warning signs display rules, regulations and warnings regarding trail use and include standard signs such as stop, yield, sharp turn, etc. Like all trail signage, these signs should conform to the Manual on Uniform Traffic Control Devices (MUTCD). These signs are typically mounted on either wood or metal posts.



Regulatory and Warning Signs

Additional Guideline Sources

Facility design is a broad topic that covers many issues. This chapter provides guidelines for design development, and is not a substitute for standards. For more in-depth information and design development standards, the following publications should be consulted:

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, 1993. Edited by Karen-Lee Ryan, Rails-to-Trails Conservancy

Guide to the Development of Bicycle Facilities. Updated in 1991 by the American Association of State Highway Transportation Officials (AASHTO). Available from FHWA or AASHTO.

Manual on Uniform Traffic Control Devices (MUTCD). Published by the U. S. Department of Transportation, Washington, DC

Mountain Bike Trails: Techniques for Design, Construction and Maintenance. Published by Bike-Centennial, Missoula, MT

Construction and Maintenance of Horse Trails. Published by Arkansas State Parks

Universal Access to Outdoor Recreation: A Design Guide. Published by PLAE, Inc., Berkeley, CA, 1993

In all cases, the recommended guidelines in this report meet or exceed national standards. Should these national standards be revised in the future and result in discrepancies with this chapter, the national standards should prevail for all design decisions.

Chapter 5

Trails and Greenways

Description of Proposed Trail and Greenway System

Introduction

This chapter provides descriptions of specific trail/greenway corridors identified as part of the Fort Smith Trails and Greenways Master Plan. These corridors were selected based on their potential to accommodate bicycle and pedestrian facilities, as well as their location as part of the overall trail and greenway system. The proposed trail and greenway system which totals over 90 miles integrates with the existing Fort Smith Bikeway Plan to provide access to many of Fort Smith's schools, parks, neighborhoods, retail, employment and recreation areas.

The Trail Coverage Plan (Map 5.2) shows a 0.50 mile buffer around each trail. Approximately forty-seven percent of the population within Fort Smith will be served by a trail within 0.50 miles of their home. The existing Fort Smith Bikeway Plan provides additional coverage for the rest of the population.

Proposed Trails and Greenways

Twenty-two trail/greenway corridors have been identified as part of the Fort Smith Trails and Greenways Master Plan. Two of these trails contain existing paved trail sections and one contains a gravel trail bed which is currently being used for recreational purposes. The proposed trails would be aligned along roadways with ample rights-of-way, along the edges of creeks within the floodplain, or within existing utility or railroad rights-of-way that would accommodate a bicycle/pedestrian trail. The trail corridors identified in this plan should be considered the spine of the trail and greenway system and should accommodate bicycles, in line skaters, and joggers, as well as pedestrians. Additional trails, such as nature trails or trails with alternative surfaces for horseback riding, jogging, or mountain biking, are considered secondary to the overall trail/greenway system and may be identified in the future. In addition, feeder trails providing connections to the main trail and greenway system or serving a particular destination such as a trail around a park or neighborhood would also be identified in the future. The destinations identified in the following descriptions are located within a quarter of a mile (1,320') of the trails. Trail/greenway corridors are not listed in priority order and are shown graphically on the Trails and Greenways Route Plan (Map 5.1).

Existing gravel trail along West River Front Trail corridor

1. West River Front Trail is a proposed trail in west and north Fort Smith between the Arkansas River and Clayton Expressway. It begins at Garrison Avenue and the *Mill Creek North Trail* and extends north along the Clayton Expressway right of way and the Arkansas River floodplain. The trail then curves east where it connects to the *Softball Complex Trail* and the bikeway on Williams Lane before it ends at the railroad. This trail contains 2.5 miles of existing gravel trail currently used for recreation. Destinations served include River Park Pavilion, Ross Pendergraft Park, River Park, Harry E Kelley Park, Fort Smith Park, and Community Commission, Inc.

2. Softball Complex Trail is a proposed trail in north Fort Smith encircling the softball complex and connecting to *West River Front Trail,* and bikeways on Williams Lane, Newlon and Mussett Roads, Walnut Street, and Spradling Avenue and 27th Street. Destinations served include Spradling Park and Morrison Elementary.

3. East River Front Trail is a proposed trail in northeast Fort Smith. It extends south within the Arkansas River floodplain from where the *West River Front Trail* leaves off at the railroad and connects to *River Fringe Trail*, *Interstate 540 Trail*, the bikeways on Free Ferry Road and 74th Street, and ands at the bikeway on Yorktown Road. Destinations served include Fort Smith Park, Carol Ann Cross Park, First Lutheran School, Bost, and Solution-Focused Counseling.

Sunny Meade Creek Trail corridor at Interstate 540

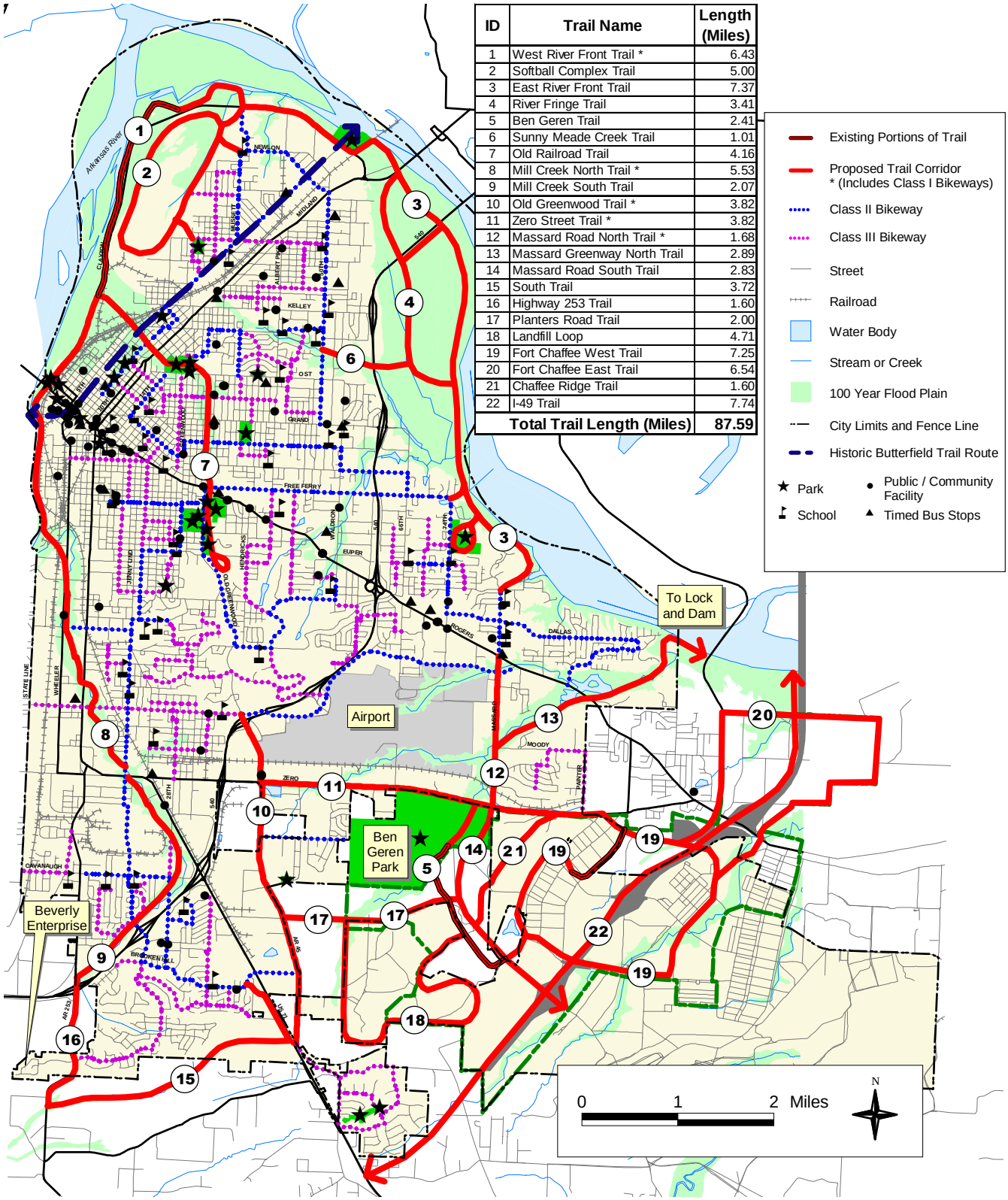
4. River Fringe Trail is a proposed trail in northeast Fort Smith that connects to *East River Front Trail* just south of Midland Boulevard. It extends south along Overflow Ditch 1 connecting to *Sunny Meade Creek Trail*, and reconnects at another point along the *East River Front Trail*. The trail also includes a spur extending northeast within the Interstate 540 right of way to the *East River Front Trail*.

5. Ben Geren Trail is a proposed trail in south Fort Smith that begins at Zero Street Trail near Massard Creek. It extends south along Massard Creek intersecting Planters Road Trail and connecting to Landfill Loop, and ends at *Massard Road South Trail* and *Fort Chaffee West Trail*. This trail contains 1.8 miles of existing paved trail. Destinations include Ben Geren Regional Park.

Old Railroad Trail corridor at Park Avenue

6. Sunny Meade Creek Trail is another short proposed trail in northwest Fort Smith that begins at the *River Fringe Trail* and extends west eventually following Sunny Meade Creek to the bikeway on 50th Street. Destinations include Kimmins Junior High.

7. Old Railroad Trail is a proposed trail in west central Fort Smith that begins at *West River Front Trail* at "P" Street. It extends southeast along "P" Street and the aligning railroad corridor to a point just south of "S" Street where it ends with a loop. The trail intersects bikeways on 8th Street, "L" Street, Kinkead Avenue, and Free Ferry Road. Destinations include Creekmore Park,



ID	Trail Name	Length (Miles)
1	West River Front Trail *	6.43
2	Softball Complex Trail	5.00
3	East River Front Trail	7.37
4	River Fringe Trail	3.41
5	Ben Geren Trail	2.41
6	Sunny Meade Creek Trail	1.01
7	Old Railroad Trail	4.16
8	Mill Creek North Trail *	5.53
9	Mill Creek South Trail	2.07
10	Old Greenwood Trail *	3.82
11	Zero Street Trail *	3.82
12	Massard Road North Trail *	1.68
13	Massard Greenway North Trail	2.89
14	Massard Road South Trail	2.83
15	South Trail	3.72
16	Highway 253 Trail	1.60
17	Planters Road Trail	2.00
18	Landfill Loop	4.71
19	Fort Chaffee West Trail	7.25
20	Fort Chaffee East Trail	6.54
21	Chaffee Ridge Trail	1.60
22	I-49 Trail	7.74
	Total Trail Length (Miles)	**87.59**

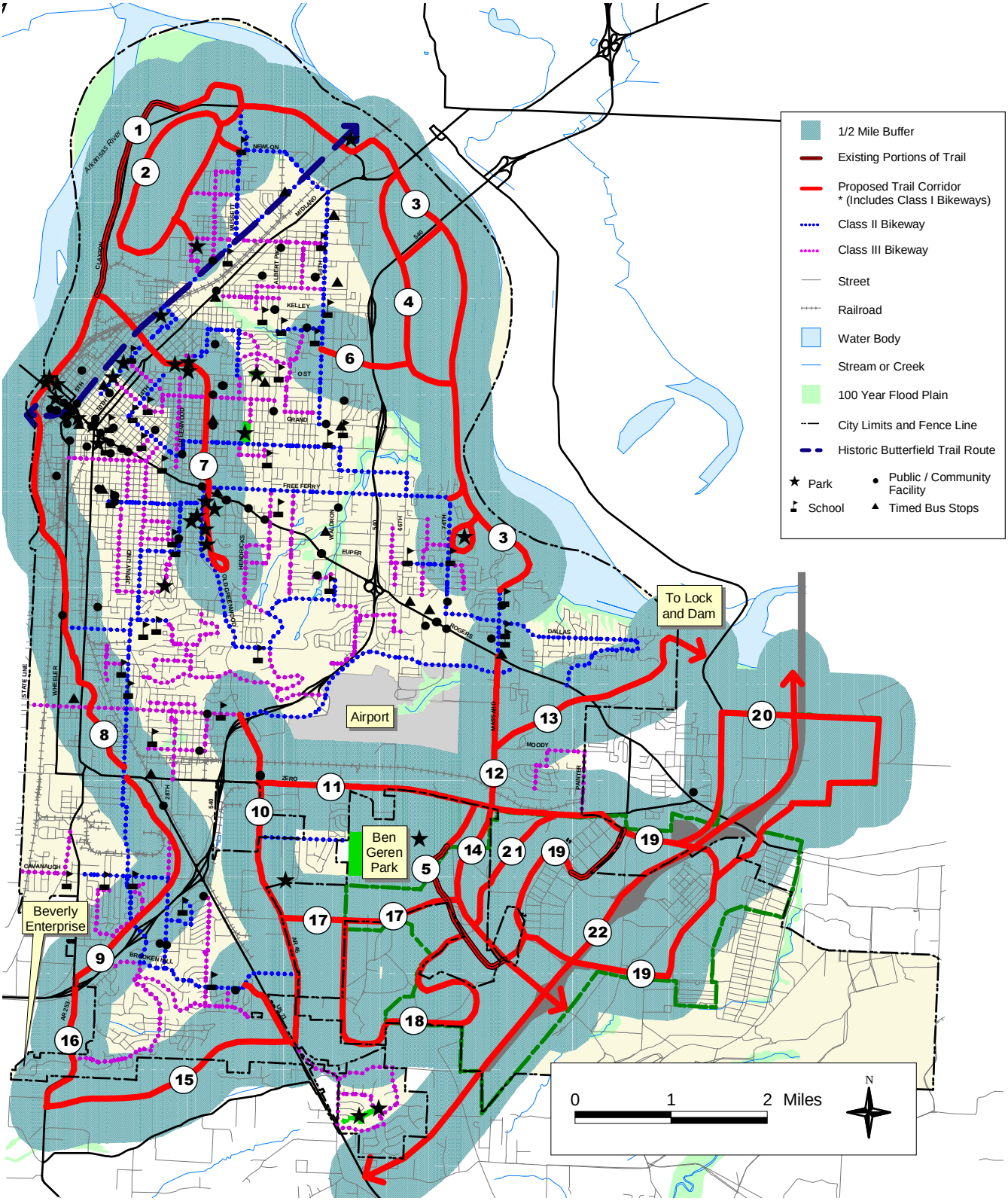
Fort Smith Trails and Greenways Plan

LANDPLAN CONSULTANTS INCORPORATED

prepared for
City of Fort Smith, Arkansas
5/10/04

Trails and Greenways Route Plan

Map 5.1



Fort Smith Trails and Greenways Plan

LANDPLAN CONSULTANTS INCORPORATED

prepared for
City of Fort Smith, Arkansas
5/10/04

Trail Coverage Plan

Map 5.2

Mill Creek North Trail corridor near Fresno Street

Hunts Park, Oak Cemetery Park, Kelley Park, Martin Luther King Jr Park, Howard Elementary, and the Northwest Arkansas Food Bank.

8. Mill Creek North Trail is a proposed trail in west Fort Smith beginning at Garrison Avenue and the *West River Front Trail*. It extends south along Mill Creek where it connects to the bikeway on Fresno Street, intersects the bikeways on Phoenix Avenue and Jenny Lind Road, and ends at *Mill Creek South Trail* and the bikeway on 28th Street. Destinations include River Park Pavilion, Ross Pendergraft Park, River Park, Harry E Kelley Park, Fort Smith National Historic Foundation, Fort Smith Transportation Department, Circuit Clerk-Child Support, Emergency Services, Sebastian County Records Department, Action Now Inc, and Arkansas Valley Habitat For Humanity.

9. Mill Creek South Trail is a proposed trail in southwest Fort Smith that begins at the *Mill Creek North Trail* and the bikeway on 28th Street, extends south along Mill Creek intersecting the bikeways on 28th Street and Jenny Lind Road, and ends at *Highway 253 Trail* near Commerce Court.

Mill Creek South Trail corridor near Cavanaugh

10. Old Greenwood Trail is a proposed trail in south Fort Smith that begins at *Kelley Trail* and the bikeway on Phoenix Avenue. It extends south along Old Greenwood Road/State Highway 45 connecting to *Zero Street Trail*, the bikeway on Geren Road, *Planters Road Trail*, and the bikeway on Burrough Road, and ends at *South Trail* and the bikeway on Old US Highway 71. Destinations include Massard Prairie Battlefield, Orr Elementary, US Social Security Administration, Fort Smith Counseling Center, USDA Rural Development, and the US Labor Department Wage and Hour Division.

11. Zero Street Trail is a proposed trail in south Fort Smith beginning at *Old Greenwood Trail*, extending east along the Zero Street right of way where it intersects *Massard Greenway North Trail* and connects to *Massard Road North Trail, Massard Road South Trail*, and *Chaffee Ridge Trail*. The trail ends at *Fort Chaffee West Trail* near Fort Smith Boulevard. Destinations include Ben Geren Regional Park, US Social Security Administration, Fort Smith Counseling Center, USDA Rural Development, and the US Labor Department Wage and Hour Division.

Zero Street Trail corridor near 58th Street

12. Massard Road North Trail is a proposed trail in southeast Fort Smith that begins at Rogers Avenue and the bikeway on Massard Road and extends south to *Zero Street Trail* and *Massard Road South Trail,* intersecting the bikeway on Phoenix Avenue and Massard Greenway North Trail along the way. Destinations include Ben Geren Regional Park, Woods Elementary and Fort Smith Public Library.

13. Massard Greenway North Trail is a proposed trail in southeast Fort Smith that begins at *Massard Road North Trail* and extends northeast following Massard Creek to the Arkansas River and beyond.

Massard Greenway North Trail corridor at Rogers Avenue

14. Massard Road South Trail is a proposed trail in southeast Fort Smith that begins at *Zero Street Trail* and *Massard Road North Trail* and extends south connecting to *Planters Road Trail*, *Chaffee Ridge Trail*, *Massard Greenway North Trail*, and *Fort Chaffee West Trail* to Little Vache Grasse Creek and beyond. Destinations include Ben Geren Regional Park.

15. South Trail is a proposed trail in southwest Fort Smith beginning at Highway 253 Trail just south of Durham Avenue and extending east to US Highway 71 where it turns northwest along the highway right of way to the bikeway on Brooken Hill Drive. Destinations include US Consolidated Farm Service Agency.

16. Highway 253 Trail is a proposed trail in southwest Fort Smith that begins at *Mill Creek South Trail* near Commerce Court, extends south along the Highway 253 right of way connecting to the bikeway on Fianna Way, and ends at *South Trail* just south of Durham Avenue.

Highway 253 Trail corridor south of Interstate 540

17. Planters Road Trail is a proposed trail in south Fort Smith that begins at *Old Greenwood Trail*, extends east along Planters Road connecting to the *Landfill Loop* and intersecting *Massard Greenway North Trail*, and ends at *Massard Road South Trail*.

18. Landfill Loop is a proposed trail in south Fort Smith that begins at *Planters Road Trail* and extends south and southeast around and through the landfill area to Massard Greenway North Trail.

19. Fort Chaffee West Trail is a proposed trail in southeast Fort Smith that loops through and around the western portion of Fort Chaffee connecting to *Zero Street Trail* at Fort Smith Boulevard, *Fort Chaffee East Trail* and *Massard Road South Trail*. This trail contains 0.9 miles of existing paved trail.

20. Fort Chaffee East Trail is a proposed trail in southeast Fort Smith that begins at *Fort Chaffee West Trail* and extends around the perimeter of the eastern portion of the Fort Chaffee area reconnecting to *Fort Chaffee West Trail* at a different location.

Landfill Loop corridor

21. Chaffee Ridge Trail is a proposed trail in southeast Fort Smith beginning at *Zero Street Trail* and extending southwest to *Massard Road South Trail*.

22. Interstate 49 Trail is a proposed trail in southeast Fort Smith beginning at US Highway 71 and extending northeast along the future right of way of I-49. The trail intersects Massard Road South Trail, Fort Chaffee West Trail, and Fort Chaffee East Trail along the way.

Chapter 6

Trails and Greenways

Funding Sources

Introduction

The most successful method of funding trails is to combine private sector funds with funds from local, state and federal sources. Many communities involved with trail implementation will seek to leverage local money with outside funding sources to increase resources available for trail acquisition and development. To implement trails in Fort Smith, local advocates and government staff should pursue a variety of funding sources. Local governments and project sponsors should review available sources to determine the best funding for specific projects based on availability, application deadlines, and probability of success. The funding sources listed in this chapter represent some of the trail funding opportunities that have typically been pursued by other communities.

Federal Public Funding Sources

Several federal programs offer financial aid for projects that aim to improve community infrastructure, transportation, housing, and recreation programs. Some of the federal programs that can be used to fund trails in Fort Smith include:

Transportation Equity Act for the 21st Century (TEA21)

The primary source of federal funding for trails is through the Transportation Equity Act of 1998 (TEA21), formerly the Intermodal Surface Transportation Efficiency Act (ISTEA). ISTEA provided millions of dollars in funding for bicycle and pedestrian transportation projects across the country and will provide millions more as TEA21.

There are many sections of TEA21 that support the development of bicycle and pedestrian transportation corridors. The Arkansas State Highway and Transportation Department (AHTD) can utilize funding from many of these subsets of TEA21. Those sections that apply to the creation of trails and greenways include:

Surface Transportation Program (STP) funds

These funds can be used for bicycle and pedestrian facility construction or non-construction projects such as brochures, public service announcements, and route maps. The projects must be related to bicycle and pedestrian transportation and must be part of the Long Range Transportation Plan.

Two primary subsets of these funds are Statewide STP funds and the Urbanized Area STP funds. AHTD is responsible for programming the Statewide STP funds which total approximately $65-70 million a year. AHTD programs most of these funds for the state highway system. Additionally, TEA21 expanded the use of STP Safety set-aside funds to include bicycle improvements. Hazard Elimination (part of this set-aside) funds can also now be used for pedestrian and bicyclist public pathways and trails and facilities.

National Highway System (NHS)

A state may spend NHS funds on "construction of bicycle transportation facilities on land adjacent to any highway on the National Highway System (other than the Interstate System)". Arkansas receives approximately $50-55 million per year for the NHS program. Two types of projects are covered by this source. First, trail facilities can be constructed as an incidental part of a larger NHS project, such as the trail facilities built along I-70 in Colorado. These facilities are constructed at the same time as the larger project. Second, facilities that are constructed adjacent to an NHS route, but are built as an independent project, are also eligible.

Transportation Enhancements Program

Ten percent of Arkansas' annual STP funds (approximately $6-7 million per year) are available for Transportation Enhancements, which include projects such as trails, greenways, sidewalks, signage, bikeways, safety education and wildlife undercrossings. A portion of the funds is available to all cities and counties in the State of Arkansas. Types of projects eligible to receive these funds include the following:

1. Bicycle and Pedestrian Facilities
2. Safety and Educational Activities for Pedestrians and Bicyclists
3. Acquisition of Scenic Easements and Historic Sites
4. Scenic or Historic Highway Programs (including the provision of tourist and welcome center facilities)
5. Landscaping and Other Scenic Beautification
6. Historic Preservation

7. Rehabilitation and Operation of Historic Transportation Buildings, Structures, or Facilities (including historic railroad facilities and canals)

8. Preservation of Abandoned Railway Corridors (including the conversion and use thereof for pedestrian and bicycle trails)

9. Control and Removal of Outdoor Advertising

10. Archeological Planning and Research

11. Environmental Mitigation to Address Water Pollution Due to Highway Runoff or to Reduce Vehiclecaused Wildlife Mortality While Maintaining Habitat Connectivity

12. Establishment of Transportation Museums

Application deadlines are typically set biannually (every two years) by AHTD. Currently, AHTD is waiting on TEA21 reauthorization from congress. The next round of applications are anticipated to be accepted in 2005 or 2006. Contact Scott Bennet at (501) 569-2201 for more information.

National Recreational Trails Fund Act (NRTFA)

A component of ISTEA and TEA21, the NRTFA is a funding source to assist with the development of non-motorized and motorized trails. The Act uses funds paid into the Highway Trust Fund from fees on non-highway recreation fuel used by off-road vehicles and camping equipment. This money can be spent on the acquisition of easements and fee simple title to property, trail development, construction and maintenance.

Through state agencies, "Symms Act" grants are available to private and public sector organizations. NRTFA projects are 80 percent federally funded, and grant recipients must provide a 20 percent match. Federal agency project sponsors or other federal programs may provide additional federal share up to 95 percent. Local matches can be in the form of donations of services, materials or land. Projects funded must be consistent with the Statewide Comprehensive Outdoor Recreation Plan. (See Arkansas Recreational Trails Fund Program under "state funding sources" later in the chapter.)

Congestion Mitigation and Air Quality Improvement Program (CMAQ)

The CMAQ program was created to reduce traffic congestion and improve air quality. Funds are available to communities designated as "non-attainment" areas for air quality, meaning the air is more polluted than federal standards allow. Funds are also available to "maintenance" areas, former non-attainment areas that are now in compliance. Funds are distributed to states based on population and the severity of air quality problems. A 20 percent local match is required. AHTD receives approximately $5-6 million per year of CMAQ funds from the Federal Highway Administration.

Community Development Block Grant Program

The U.S. Department of Housing and Urban Development (HUD) offers financial grants to communities for neighborhood revitalization, economic development, and improvements to community facilities and services, especially in low and moderate-income areas. Approximately $22 million per year is appropriated to the Arkansas State Program for which cities and counties compete for funding.

Land and Water Conservation Fund (LWCF) Grants

This federal funding source was established in 1965 to provide park and recreation opportunities to residents throughout the United States. Money for the fund comes from the sale or lease of nonrenewable resources, primarily federal offshore oil and gas leases and surplus federal land sales. LWCF funds are used by federal agencies to acquire additions to National Parks, Forests, and Wildlife Refuges. In the past, Congress has also appropriated LWCF moneys for so-called "state-side" projects. These "state-side" LWCF grants can be used by communities to acquire and build a variety of park and recreation facilities, including trails and greenways. Projects funded must be consistent with the Statewide Comprehensive Outdoor Recreation Plan (SCORP).

"State-side" LWCF funds are annually distributed by the National Park Service through the Arkansas Department of Parks and Tourism's Outdoor Recreation Grants Program (501-682-1523). Communities must match LWCF grants with 50 percent of the local project costs through in-kind services or cash. All projects funded by LWCF grants must be used exclusively for recreation purposes, in perpetuity. Funding for this program has not been available for several years, although funds could be allocated in the future.

Watershed Protection and Flood Prevention (Small Watersheds) Grants

The USDA Natural Resource Conservation Service (NRCS) provides funding to state and local agencies or nonprofit organizations authorized to carry out, maintain and operate watershed improvements involving less than 250,000 acres. The NRCS provides financial and technical assistance to eligible projects to improve watershed protection, flood prevention, sedimentation control, public water-based fish and wildlife enhancements, and recreation planning. The NRCS requires a 50 percent local match for public recreation, and fish and wildlife projects. For more information, contact Kalven Trice at (501) 301-3100.

Urban and Community Forestry Assistance Program

The USDA provides small grants of up to $10,000 to communities for the purchase of trees to plant along city streets and for trails and parks. To qualify for this program, a community must pledge to develop a street tree inventory; a municipal tree ordinance; a tree commission, committee or department; and an urban forestry-management plan. Contact Doug Akin at (501) 296-1865 for more information.

State Public Funding Sources

The State of Arkansas has two primary sources of trail funding. Both the TEA21 and Recreational Trails Fund Program are funded through federal initiatives, but distributed by the State of Arkansas.

Arkansas State Highway and Transportation Department

See TEA21 text above.

Arkansas Recreational Trails Fund Program

The Arkansas Recreational Trails Fund Program was created to expand moneys funded by the National Recreational Trails Fund Act (NRTFA). This act was part of TEA21 (see above text).

The NRTFA is a state administered federal aid program managed through the Federal Highway Administration in consultation with the Department of the Interior. Half of the funds available to states are allocated equally among eligible states. The other half of the funds are allocated in proportion to the amount of non-highway recreational fuel use in each eligible state. The state can grant these funds (approximately $500,000 per year) to both private and public sector organizations. In Arkansas, NRTFA projects are 80 percent federally funded, and grant recipients must provide a 20 percent match. Projects funded must be consistent with the Statewide Comprehensive Outdoor Recreation Plan (SCORP). For more information, contact Steve Weston, Transportation Study Coordinator with the Arkansas State Highway and Transportation Department at (501) 569-2020.

Local Sources of Public Funding

Many local governments have obtained funding for trail projects through local initiatives. Public support for projects is essential to the success of local public funding sources. Therefore, information on the benefits of a proposed trail system should be distributed prior to implementing such initiatives.

Local Sales Taxes

Local sales taxes have been a successful means of raising funds for a variety of capital improvement projects in cities across the country. In the City of Tulsa, every five years, voters decide whether to renew the 3rd penny sales tax which generates more than $60 million per year. In 1996, Tulsa voters approved the most recent sales tax extension, which included $2.4 million for trail development to the year 2001. Other cities across the country have implemented similar programs.

Impact Fees

Impact fees are monetary one-time charges levied by a local government on new development. Unlike required dedications, impact fees can be applied to finance greenway facilities located outside the boundary of development The purpose of impact fees is not to raise general revenue, but to ensure that adequate capital facilities will be provided to serve and protect the public. They can be levied through the subdivision or building permit process.

Bond Referendums

Communities across the country have successfully placed propositions on local ballots to support trail development. In 1989 the City of Tulsa issued $600,000 of G. O. bond funds which were used as a match for ISTEA funds. This resulted in more than $2.5 million for the design and construction of trails in Tulsa. The Charlotte-Mecklenburg County, NC, area passed four consecutive referendums that generated more than $3 million for greenways. Guilford County, NC also passed a referendum that appropriated $1.6 million for development of the Bicentennial Trail. Since bond funding relies on the support of the voting population, an aggressive education and awareness program will need to be implemented prior to any referendum vote.

Local Capital Improvements Program

Some local governments have initiated a yearly appropriation for greenway and trail development in the capital improvements program. In Raleigh, NC, greenways continue to be built and maintained, year after year, due to a dedicated source of annual funding, that has ranged from $100,000 to $500,000, administered through the Parks and Recreation Department.

Park Land Dedication Funds

Park land dedication funds could be used to secure land for trail building or greenway preservation. The Fayetteville Park Land Dedication Ordinance, adopted in 1981, was developed as a way to fund park land to Fayetteville citizens as the population increases. The concept behind the Park Land Dedication Ordinance is to require developers to make a reasonable dedication of land for public park facilities, or to make an equivalent monetary dedication in lieu of land for all new residential developments.

Utility Franchise Fees

Cities in Arkansas can collect a percentage of fees collected by local utility companies in return for their use of utility line corridors that are owned by the City. Street rights-of-way are good examples of a corridor used by many utilities to place their service overhead or underground. For example, the City of Fayetteville currently collects fees from local utilities at varying percentage amounts. Collecting and/or increasing franchise fees to the maximum allowed by state is one more avenue of increased funding opportunities for trail improvements.

Additional Local Funding Ideas

The American Trails website, www.americantrails.org lists many additional solutions and creative ideas for funding trail projects used by cities across the country.

Local Private Funding Sources

Many communities have solicited trail funding from a variety of private sources, including corporations and other conservation-minded benefactors. As a general rule, local businesses and individuals will have a greater interest in and will be more likely to fund local projects. These local sources should be approached first, before seeking funds outside the community.

Local Businesses

Local industries and private businesses may agree to provide support for development of trails in Fort Smith through:

- donations of cash for a specific trail segment or trail head facility;
- donations of services by corporations to reduce the cost of trail implementation, including equipment and labor to construct and install elements of a trail;
- reductions in the cost of materials purchased from local businesses which support trail implementation and can supply essential products for facility development.

This method of raising funds requires a great deal of staff coordination. One example of a successful endeavor of this type is the Swift Creek Recycled Greenway in Cary, NC. A total of $40,000 in donated construction materials and labor made this trail an award-winning demonstration project. (Some materials used in the “recycled trail” were considered waste materials by local industries!)

Trail Sponsors

A sponsorship program for trail amenities allows for smaller donations to be received both from individuals and businesses. The program must be well planned and organized, with design standards and associated costs established for each amenity. Project elements which may be funded can include wayside exhibits, benches, trash receptacles, entry signage, and picnic areas. Usually, plaques recognizing the individual contributors are placed on the constructed amenities or at a prominent entry point to the trail.

Volunteer Work

Community volunteers may help with trail construction, as well as fund raising. Potential sources of volunteer labor in Fort Smith could include high school or college students, user groups (running, walking and cycling clubs), local historical groups, neighborhood associations, local churches, conservation groups, school groups, local civic clubs such as Kiwanis, Rotary and Lions Clubs, and United Way Day of Caring.

A good example of a volunteer greenway program is Cheyenne, Wyoming, which generated an impressive amount of community support and volunteer work. The program has the unusual problem of having to insist that volunteers wait to begin landscaping trails until construction is completed. A manual for greenway volunteers was developed in 1994 to guide and regulate volunteer work. The manual includes a description of appropriate volunteer efforts, request forms, waiver and release forms, and a completion form (volunteers are asked to summarize their accomplishments). Written guidelines are also provided for volunteer work in 100-year floodplains.

To better organize volunteer activity, Cheyenne developed an "Adopt-a-Spot" program. Participants who adopt a segment of trail are responsible for periodic trash pick-up, but can also install landscaping, prune trail-side vegetation, develop wildlife enhancement projects, and install site amenities. All improvements must be consistent with the Greenway Development Plan and must be approved by the local Greenway Coordinator. Adopt-a-Spot volunteers are allowed to display their names on a small sign along the adopted section of trail.

"Buy-a-Foot" Programs

"Buy-a-Foot" programs have been successful in raising funds and awareness for trail projects across the country. Under local initiatives, citizens are encouraged to purchase one linear foot of the trail by donating the cost of construction. An excellent example of a successful endeavor is the High Point Greenway "Buy-a-Foot" campaign, in which linear greenway "feet" were sold at a cost of $25 per foot. Those who donated were given a greenway T-shirt and a certificate. This project provided an estimated $5,000 in funds.

Foundations

Communities can leverage public and other private dollars with grants from foundations. The following is a parital listing of foundations which have the potential to fund trail and greenway projects.

American Greenways DuPont Awards

The Conservation Fund's American Greenways Program has teamed with the DuPont Corporation and the National Geographic Society to award small grants ($250 to $2,000) to stimulate the planning, design and development of greenways. These grants can be used for activities such as mapping, conducting ecological assessments, surveying land, holding conferences, developing brochures, producing interpretive displays, incorporating land trusts, building trails, and other creative projects. Grants cannot be used for academic research, institutional support, lobbying or political activities. For more information, contact the Conservation Fund at (703) 525-6300.

REI Environmental Grants

REI (Recreational Equipment Incorporated) awards grants to organizations in protecting and enhancing natural resources for outdoor recreation. Grants of up to $2,000 are available through this program and can be used for:

1. Preservation of wildlands and open space;
2. Advocacy-oriented education for the general public on conservation issues;
3. Building the membership base of a conservation organization;
4. Direct citizen action (lobbying) campaigns for public land and water recreation issues; and
5. Projects that serve to organize a trails constituency or enhance the effectiveness of a trail organization's work as an advocate.

Grants cannot be used for trail construction and maintenance. For more information, call REI's Grantline at (253) 395-7100.

Trust for Public Land

The Trust for Public Land is a nonprofit organization that works nationwide to conserve land for people. Founded in 1972, TPL specializes in conservation real estate, applying its expertise in negotiations, finance, and law to protect land for public use. Usually TPL steps in to negotiate the purchase of real estate and holds the land until a public agency can acquire it. Working this way, TPL has helped to protect more than 1,400 special places nationwide for parks, greenways, recreation areas, historic landmarks, forests, watersheds, and wilderness. Contact the TPL National Office at (415) 495-4014 for more information.

Henry M. Jackson Foundation

The foundation seeks to support innovative land use and metropolitan growth management programs that have a national or multi-state impact and foster the development of sound public policy in this field. The foundation aims to support efforts that promote a balance between environmental protection and economic development, facilitate effective and informed leadership and strategies to limit sprawl, and illuminate the intersection of land use with related quality of life issues. Specifically, the foundation strives to inform policymakers at the local, state and national levels through case studies, research reports and guidebooks; convene stakeholders to develop long-term strategies that integrate the preservation of open space, economic development, energy needs, transportation options, community revitalization and species protection; and increase awareness of and access to information about growth. Contact Ms. Lara Iglitzin, Executive Director at (206) 682-8565.

The Kodak American Greenways Awards Program

The Kodak American Greenways Awards Program, a partnership project of the Eastman Kodak Company, the Conservation Fund and the National Geographic Society, provides small grants to stimulate the planning and design of greenways in communities throughout America. The organization is interested in funding activities such as mapping, eco-logical assessments, surveying, conferences and design activities; developing brochures, interpretative displays, audio-visual productions or public opinion surveys; hiring consultants; incorporating land trusts; and/or building footbridges, planning bike paths or other creative projects. Contact the American Greenways Program Coordinator at (703) 525-6300.

Bikes Belong

Bikes Belong Coalition is sponsored by members of the American Bicycle Industry. The grant program is a national discretionary program with a small budget, to help communities build TEA-21-funded projects. They like to fund high-profile projects and like regional coalitions. An application must be supported by the local bicycle dealers (letters of support should be attached). Bikes Belong also offers advice and information on how to get more people on bikes. Government and non-profit agencies are eligible and no match is required. The maximum amount for a grant proposal is $10,000. Applications may be submitted at any time and are reviewed as they are received. Contact Tim Baldwin at (617) 426-9222.

Chapter 7

Trails and Greenways

Implementation Plan

Overview

The Fort Smith Trails and Greenways System offers tremendous potential to improve the quality of life for community residents. The trails/greenways system will improve access to outdoor resources, link people to their favorite destinations, stimulate economic growth, expand opportunities for education, and shape community growth into the 21st Century. All of this is possible as the trail system is successfully developed during the coming years. The key to this success is implementation. This chapter describes a strategic plan for building, managing, and operating the Fort Smith Trails and Greenways System.

Building the Fort Smith Trails and Greenways System

Preparation of this Master Plan is only the initial step in the future development of the Fort Smith Trails and Greenways System. More detailed design work is required before actual trail tread is constructed and residents are able to use the trail corridors. Therefore, the continued involvement of citizens, businesses, and neighborhoods is vital to the ongoing development of a successful design. This section of the chapter and Chapter 4, Design Guidelines are intended to provide a step-by-step process for building segments of the Fort Smith Trails and Greenways System.

Each trail corridor and/or segments of each corridor will require a more detailed site design to determine the appropriate alignment of the actual trail tread. Additionally, the location of trail amenities, such as trail furniture, landscaping, drinking fountains, parking, and lighting need to be defined and located throughout the corridor.

This Master Plan proposes the development of an interconnected system of asphalt/concrete paved trails within each of the 23 corridors defined in Chapter 5, Description of Proposed Trail and Greenway System. Detailed site plans and design development documents should be prepared for all trail segments. Staff resources and/or professional design consultants with previous experience in trail design and construction should be employed to prepare the necessary detailed design documents for each of the corridors.

Phasing Strategy for the Fort Smith Trails and Greenways System

With limited trail resources and almost 89 miles of proposed multiuse trails, it is important to determine a logical order for the implementation of the trails. In an effort to evaluate each corridor objectively, criteria were developed to assist in determining the order of multiuse trail development for the next 10 to 15 years. The consultant worked closely with the Fort Smith Trails and Greenways Master Plan Steering Committee to identify and utilize the most critical evaluation factors for future development of corridors. The Steering Committee devoted a substantial amount of time and effort toward the development of these criteria and reached a consensus regarding the relative importance of each. The following section defines the terminology utilized in the evaluation of the proposed corridors.

Right of Way Availability: *the availability of rights of way or easements to construct trails is a critical cost and timing factor. If rights of way or easements cannot be secured voluntarily to construct a trail within a corridor, the trail cannot be built unless rights can be purchased. Purchasing rights of way can be very expensive and in many cases can make constructing a trail cost prohibitive. Corridors which have necessary rights of way in the public domain have the highest ranking.*

Recreation/Destinations Served: *trails which connect major parks and recreation destinations can offer the public a safe opportunity to access these facilities and they can serve as trail heads. The higher the number of parks and recreation destinations served by a trail corridor the higher the ranking.*

Timeliness and Opportunity: *in some instances the trail corridors identified are the same corridors in which other public improvements will be or have been built, such as a street, highway, expressway, turnpike, waterline, or drainage channel, etc. In cases where a trail can be constructed in conjunction with these types of projects, the trail construction will be expedited and great costs savings can result. In some cases, if a trail is not designed in conjunction with the public improvement, it can be very difficult and expensive to try to construct a trail at a later date. Corridors in which future public improvements are funded or planned receive higher ranking than those corridors without such public improvements.*

Total Population Served: *one of the best indicators of how many people will utilize the trail is the number of people living in close proximity to the trail along its entire length. For this evaluation the population within one-quarter mile of the trail corridor was used.*

Average Population Served: *Another method of looking at the potential number of trail users is the average population served per mile of trail. Again, the population within one-quarter mile of the trail corridor was used. Shorter trails within densely populated areas rank highest.*

Schools Served: *trails which connect schools offer the communities a safe opportunity for children to walk or ride their bikes and can serve as logical trail heads. The higher the number of schools served by a trail corridor the higher the ranking.*

Connectivity: *trails which provide a connection to existing trail and bike routes and have the potential for higher utilization by trail users will provide greater benefit to the community. The more connections made the higher the ranking.*

Near Term Phase: *is used to describe those corridors for which the design can be started within two years and constructed within a period of 5 years. Most trails in this category have high scores in the first three evaluation criteria.*

Mid Term Phase: *is used to describe those corridors for which design can commence within the next five years and constructed within 10 years.*

Long Term Phase: *is used to describe those corridors for which design can commence within the next 10 years and constructed within 15 years.*

Trail Phasing

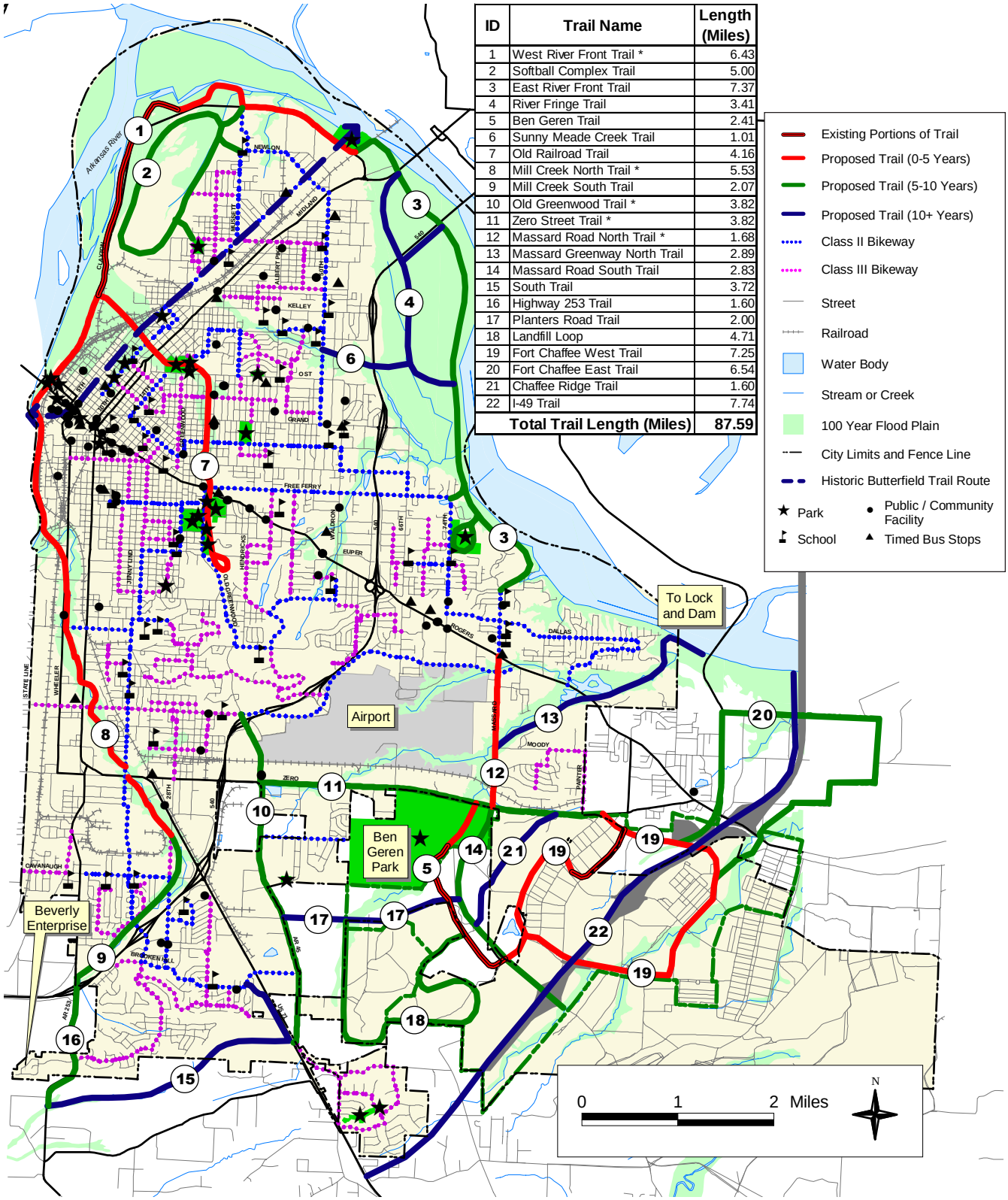
With almost 89 miles of proposed trails within Fort Smith, the first question is inevitably, "Which trail gets built first?" The following "Trail Phasing Evaluation Matrix" applies the above criteria to each of the 18 proposed trail corridors. Each corridor is objectively compared to all other corridors with the resulting ranking order established for all trails. The various phases described in the following matrix are meant to provide a relative time frame only and are not absolute. The process of implementing trails within the city will be dynamic, and as opportunities arise and conditions change corridors may be developed in a different order than indicated in the phasing matrix (see also Trail Phasing Map 7.1).

Trail Phasing Evaluation Matrix

RANK	ID	NAME	PORTION EXISTING OR FUNDED	ROW AVAILABILITY	RECREATION DESTINATION SCORE	TIMELINESS AND OPPORTUNITY	AVE. POP. PER MILE SCORE	TOTAL POP. SCORE	TOTAL SCHOOL SCORE	CONNECTIVITY	TOTAL SCORE	PHASE
1	7	Old Railroad Trail	0	18	22	12	14	12	0	10	**88**	**Near Term**
2	1	West River Front Trail *	24	18	17	16	4	3	0	6	**87**	
3	12	Massard Road North Trail *	12	24	5.5	16	10.5	6	0	4	**78**	
4	19	Fort Chaffee West Trail	24	24	0	0	3.5	3	0	6	**61**	
5	5	Ben Geren Trail	24	24	6	0	0	3	0	2	**59**	
6	8	Mill Creek North Trail *	0	18	17	0	7	9	0	8	**59**	
7	9	Mill Creek South Trail	0	18	0	0	14	9	0	6	**47**	**Mid Term**
8	11	Zero Street Trail *	0	24	5.5	0	7	6	0	2	**45**	
9	10	Old Greenwood Trail *	0	24	0	0	4	3	0	8	**39**	
10	14	Massard Road South Trail	0	24	5.5	0	3.5	3	0	2	**38**	
11	3	East River Front Trail	0	0	11	0	7	9	7	4	**38**	
12	20	Fort Chaffee East Trail	0	24	0	0	7	6	0	0	**37**	
13	16	Highway 253 Trail	0	24	0	0	7	3	0	2	**36**	
14	18	Landfill Loop	0	24	0	0	3.5	3	0	4	**35**	
15	2	Softball Complex Trail	0	6	6	0	7	6	4	6	**34**	
16	21	Chaffee Ridge Trail	0	24	0	0	3.5	3	0	0	**31**	**Long Term**
17	6	Sunny Meade Creek Trail	0	0	0	0	14	6	0	2	**22**	
18	13	Massard Greenway North Trail	0	0	0	0	10.5	9	0	0	**20**	
19	15	South Trail	0	0	0	0	7	6	0	2	**15**	
20	17	Planters Road Trail	0	0	0	0	3.5	3	0	2	**9**	
21	4	River Fringe Trail	0	0	0	0	4	3	0	0	**7**	
22	22	I-49 Trail	0	0	0	0	3.5	3	0	0	**7**	

Estimated Costs for Facility Development

The consultant has prepared cost estimates for all of the corridors defined within this Master Plan. The cost estimates are general in nature and are based on national industry or State of Arkansas averages. A listing of the industry averages that were used to determine “low” or “high” estimates are provided on the following pages. The purpose of these cost estimates is to provide general guidance for the purpose of budgeting and developing trail segments. The estimates are reliable to the extent that a general expectation can be derived from their use. Specific site development factors unique to each corridor will influence final design development costs. More detailed costs should be developed as a part of corridor specific conceptual plans. Final construction cost estimates should be based on final design plans.



ID	Trail Name	Length (Miles)
1	West River Front Trail *	6.43
2	Softball Complex Trail	5.00
3	East River Front Trail	7.37
4	River Fringe Trail	3.41
5	Ben Geren Trail	2.41
6	Sunny Meade Creek Trail	1.01
7	Old Railroad Trail	4.16
8	Mill Creek North Trail *	5.53
9	Mill Creek South Trail	2.07
10	Old Greenwood Trail *	3.82
11	Zero Street Trail *	3.82
12	Massard Road North Trail *	1.68
13	Massard Greenway North Trail	2.89
14	Massard Road South Trail	2.83
15	South Trail	3.72
16	Highway 253 Trail	1.60
17	Planters Road Trail	2.00
18	Landfill Loop	4.71
19	Fort Chaffee West Trail	7.25
20	Fort Chaffee East Trail	6.54
21	Chaffee Ridge Trail	1.60
22	I-49 Trail	7.74
	Total Trail Length (Miles)	**87.59**

Fort Smith Trails and Greenways Plan

LANDPLAN CONSULTANTS INCORPORATED

prepared for
City of Fort Smith, Arkansas
5/26/04

Trail Phasing Plan

Map 7.1

Typical Costs for Off-Road Trail Facilities

Preliminary construction cost budgets are provided in tabular form on pages 64 and 65 of this Chapter for the Near-Term, Mid-Term and Long-Term trail and linkage projects. The unit costs defined below and on the following pages are provided for budgeting purposes only. Adjustments will have to be made to these costs on a project-by-project basis to compensate for changes in unit price trends over time.

Category/Description of Facility	Unit	Unit Costs
Trail Treads		
6-foot Bare Earth Hike/Mtn. Bike Trail	linear feet	$5.00
8-foot Bare Earth Equestrian Trail	linear feet	$7.50
8-foot Woodchip Pedestrian Trail	linear feet	$10.00
10-foot Soil-Cement Trail	linear feet	$12.00
10-foot Aggregate/Stone Trail	linear feet	$15.00
10-foot Asphalt Multi-Purpose Trail	linear feet	$35.00
10-foot Concrete Multi-Purpose Trail	linear feet	$45.00
10-foot Wood Deck/Boardwalk Trail	linear feet	$250.00
Signage		
Information Signs	each	$1,000.00
Direction Signs	each	$200.00
Warning Signs	each	$200.00
Mile/Kilometer Markers	each	$250.00
Furniture/Furnishings		
Benches	each	$600.00
Trash Receptacles	each	$400.00
Removable Bollards	each	$600.00
Bicycle Racks	each	$500.00
Fencing (Board-on-Board)	linear feet	$20.00
Gates	each	$750.00
Emergency Phones	each	$1,000.00
Drinking Fountains	each	$2,500.00
Restrooms	each	$60-90,000.00
Landscaping	per mile	$25,000.00

Parking Lots	Unit	Gravel Lot*	Asphalt Lot
10 cars	each	$7,500.00	$14,000.00
20 cars	each	$15,000.00	$28,000.00
40 cars	each	$30,000.00	$56,000.00

*Gravel lots are prohibited in some jurisdictions

Developing the Trails and Greenways Master Plan

If the momentum generated by the Fort Smith Trails and Greenways Master Plan is sustained over the next 15 years, the opportunity exists to implement almost total of 53 miles of multiuse trails and on-street linkages (includes existing and funded trails). The phased development for proposed trails and linkages breaks down as follows: Near-Term projects consisting of 12.0 miles of multiuse trails and 8.4 miles of on-street linkages; Mid-Term projects consisting of 11.9 miles of multiuse trails and 14.9 miles of on-street linkages; and the Long-Term projects totaling 15.7 miles of multiuse trails.

Trails Cost

The following cost estimates for trail facilities are general in nature and based on State of Arkansas averages for multiuse trails constructed over the last five years. More detailed cost estimates should be prepared as site specific plans are developed for each corridor.

Near Term Trails Cost

Rank	ID	NAME	LENGTH (mi)	FACTOR	LOW COST	HIGH COST
1	7	Old Railroad Trail	4.16	1.00	$ 1,040,000.00	$ 1,248,000.00
2	1	West River Front Trail *	6.43	1.00	$ 1,607,500.00	$ 1,929,000.00
3	12	Massard Road North Trail *	1.68	1.00	$ 420,000.00	$ 504,000.00
4	19	Fort Chaffee West Trail	7.25	1.00	$ 1,812,500.00	$ 2,175,000.00
5	5	Ben Geren Trail	2.41	1.00	$ 602,500.00	$ 723,000.00
6	8	Mill Creek North Trail *	5.53	1.00	$ 1,382,500.00	$ 1,659,000.00
		TOTAL NEAR TERM CORRIDORS	**27.46**		**$ 6,865,000.00**	**$ 8,238,000.00**

All costs based on 2004 dollars.

Mid Term Trails Cost

Rank	ID	NAME	LENGTH (mi)	FACTOR	LOW COST	HIGH COST
7	9	Mill Creek South Trail	2.07	1.00	$ 517,500.00	$ 621,000.00
8	11	Zero Street Trail *	3.82	1.00	$ 955,000.00	$ 1,146,000.00
9	10	Old Greenwood Trail *	3.82	1.00	$ 955,000.00	$ 1,146,000.00
10	14	Massard Road South Trail	2.83	1.00	$ 707,500.00	$ 849,000.00
11	3	East River Front Trail	7.37	1.00	$ 1,842,500.00	$ 2,211,000.00
12	20	Fort Chaffee East Trail	6.54	1.00	$ 1,635,000.00	$ 1,962,000.00
13	16	Highway 253 Trail	1.60	1.00	$ 400,000.00	$ 480,000.00
14	18	Landfill Loop	4.71	1.00	$ 1,177,500.00	$ 1,413,000.00
15	2	Softball Complex Trail	5.00	1.00	$ 1,250,000.00	$ 1,500,000.00
		TOTAL MID TERM CORRIDORS	**37.76**		**$ 9,440,000.00**	**$ 11,328,000.00**

All costs based on 2004 dollars.

Long Term Trails Cost

Rank	ID	NAME	LENGTH (mi)	FACTOR	LOW COST	HIGH COST
16	21	Chaffee Ridge Trail	1.60	1.00	$ 400,000.00	$ 480,000.00
17	6	Sunny Meade Creek Trail	1.01	1.00	$ 252,500.00	$ 303,000.00
18	13	Massard Greenway North Trail	2.89	1.00	$ 722,500.00	$ 867,000.00
19	15	South Trail	3.72	1.00	$ 930,000.00	$ 1,116,000.00
20	17	Planters Road Trail	2.00	1.00	$ 500,000.00	$ 600,000.00
21	4	River Fringe Trail	3.41	1.00	$ 852,500.00	$ 1,023,000.00
22	22	I-49 Trail	7.74	1.00	$ 1,935,000.00	$ 2,322,000.00
		TOTAL LONG TERM CORRIDORS	**22.37**		**$ 5,592,500.00**	**$ 6,711,000.00**

All costs based on 2004 dollars.

Operations and Management

Operating, maintaining and managing the Fort Smith Trails and Greenways System will require a coordinated effort among city departments, private sector organizations and individuals. Key elements of the operation and management program include trail access easements, trail facility operational policies, land management, safety and security, trail rules and regulation, an emergency response plan, and a risk management plan. This information is defined in greater detail in Chapter 8 of this report.

Maintenance and management of all trail segments will be the responsibility of Fort Smith and its partners. It is anticipated that these maintenance and management duties can be shared among trail supporters in the public and private sectors.

Maintenance and management of the Fort Smith Trails and Greenways System will require the City to establish an operations budget for that purpose. The following maintenance and management costs are provided as a guide to establishing a budget for the operation, maintenance and management of trail segments within the Fort Smith Trails and Greenways System. It may be possible to substantially lower the cost of maintaining one mile of paved trail through the development of an Adopt-a-Trail Program. Volunteers have been proven effective in performing some of the routine maintenance activities that are listed below. Savings of 50% of the estimated cost per mile defined below are possible through a coordinated and well run Adopt-a-Trail Program, and some of these costs are already being covered along highways, roads, parks and other areas. A pilot Adopt-a-Trail Program is recommended to be implemented by the Fort Smith Parks Department to determine local effectiveness.

Typical Maintenance Costs (For a 1-Mile Paved Trail)

Drainage and storm channel maintenance (4 x/year)	$700.00
Sweeping/blowing debris off trail tread (24 x/year)	$1,600.00
Pick-up and removal of trash (24 x/year)	$1,600.00
Weed control and vegetation management (10 x/year)	$1,350.00
Mowing of 3-ft grass safe zone along trail (24 x/year)	$1,750.00
Minor repairs to trail furniture/safety features	$500.00
Maintenance supplies for work crews	$300.00
Equipment fuel and repairs	$800.00
Estimated Maintenance Costs Per Mile of Paved Trail	**$8,600.00**

Re-Surfacing

Re-Surfacing of Asphalt Trail Tread (10 year cycle)	$50,000-60,000/mile

Fort Smith Trails and Greenways Trust Fund

A Fort Smith Trails and Greenways Trust Fund should be established to help pay for some of the costs for maintenance and management of Fort Smith trail

segments. The Fund would be established by soliciting funds from both public and private sector sources. The principal balance of the fund would provide two benefits: 1) the interest generated from the fund would be used to aid in the funding of annual maintenance activities; 2) in the event of expensive short term maintenance needs, the principal balance could be tapped to support these activities.

Fort Smith Trails and Greenways System Governance Structure

Implementing the Fort Smith Trails and Greenways System will require a coordinated effort among city departments and private sector groups, organizations and agencies. The Plan presented in this report is ambitious, yet it is very achievable. Other communities have accomplished similar efforts. The following chart summarizes the trails systems of other communities and defines the current management structure.

As illustrated by the following chart, the trails/greenways system proposed within Fort Smith is smaller in size to some other systems in operation in other American communities. One thing that all successful systems have in common, however is a lead authority with the responsibility for implementing, operating and maintaining their system. The Fort Smith Parks Department should be the lead authority assisted by the Fort Smith Parks and Recreation Commission, which supports the development and operation of the trails/ greenways system. This commission will support the cooperation and coordination of activities, resources and development objectives. A management structure is important to guide the process of implementation.

Name of Metro Area	Size of System	Lead Developer/Manager
Chicago Greenway System	676-mile system in 6 counties	Public-private partnership led by Chicago Open Lands Project, non-profit group supported by local governments
Denver Metro Greenway System	250-mile system in 4 counties	Public-private partnership, South Suburban Foundation, where both sectors serve as developers and managers of metro system
Chattanooga Greenway System	75-mile system in 8 counties	Private-public partnership led by RiverValley Partners, Inc., a for-profit development group. Management is by public agencies.
Oklahoma City Metro Trails	208-mile system in 1 county	Establishing a Metro Trails organization that will be a public-private partnership
Portland (OR) Metro Greenways	150-mile system in 4 counties	Public-agency partnership, Metro Trails and Greenways, that has issued bonds to support development and management
Minneapolis Metro Greenways	200-mile system in 7 counties	Administered by public-sector partnership, managed by Metro Council of Governments

Public Private Partnerships

The Fort Smith Trails and Greenways System will require the services of the local agency and non-governmental staff in order to be successful. However, in order to successfully keep pace with the multitude of development, operation and management requirements of this trail system, the private sector will be called upon to share the burden and participate in the development and stewardship of the trails/greenways system where appropriate. The following are some suggestions for how the City and the private sector can assist with the implementation of the Fort Smith Trails and Greenways System.

Role of the City

Fort Smith should assist with the detailed planning, design and development of the Fort Smith trails/greenways system. The Parks Department should assist the Fort Smith Parks and Recreation Commission with the staffing and operations during its term of existence. The Parks Department can also assist the advisory board with information, coordination, communication, implementation and management services. The City can take on the responsibility for completing detailed design development plans for individual segments of the trail system and can review detailed design plans prepared by private developers for compliance to the approved design guidelines. They can also implement management plans for each trail segment, in partnership with private sector groups. The City should make applications for funding in accordance with the recommendations defined in Chapter Six of this Plan and aggressively pursue local, public, foundation and federal funding sources including the Enhancement Program.

Role of the Private Sector

The private sector has a vital role to play in the design, development, management, operations and maintenance of the Fort Smith Trails and Greenways System. The private sector includes developers, businesses, merchants, corporations, civic organizations and individuals. The private sector has a wealth of resources to offer toward the implementation of the Fort Smith Trails and Greenways System and will be the primary beneficiaries of a successfully developed and managed system. The following defines three specific private sector roles, and then suggests generic roles that other organizations and groups might have in the development of the Fort Smith Trails and Greenways System.

Private developers should be required to construct the trails and linkages identified on the Trails and Greenways Route Map when a segment is within their proposed development. The trail design should be in conformance with the design guidelines iterated in Chapter 4 of this report to ensure a consistent level of service is maintained throughout the system. The responsibility of operations and maintenance should be negotiated on a case by case basis,

Chapter 8

Trails and Greenways

Operations, Maintenance & Management

Overview

Over the course of time a variety of operational and management issues will be encountered that are important to the successful management and operation of the Fort Smith Trails and Greenways System. The following policies are defined to assist the City and the Fort Smith Parks and Recreation Commission in responding to typical trail/greenway implementation issues. More specific problems and issues may arise during the long-term development of the trail/greenway system that result in additional policies being considered and adopted.

Fort Smith Trails and Greenways System Map Policy

The official Fort Smith Trails and Greenways System Plan, as prepared by LandPlan Consultants, Inc. of Tulsa, OK was approved by the Fort Smith Trails and Greenways Master Plan Steering Committee on May 7, 2004, the Fort Smith Board of Directors on Month Day, 2004 and is on display at the Parks Department and the City Planning Department. The Parks Department is vested with the responsibility of keeping the map current with respect to completed trail segments, and additions or deletions to the overall system. The official map illustrates two important aspects of the Fort Smith Trails and Greenways System: One, trail/greenway corridors that warrant further study for early implementation; and two, trail/greenway corridors that are part of the longer term phased development strategy.

Public Access Easement Policy

A good portion of land that is included within the Fort Smith Trails and Greenways System corridors is currently owned by the city, but some land is owned by private individuals. For those lands that are in private ownership and developed, Fort Smith will negotiate with the property owner(s) for the use of their land for trail/greenway purposes. For planned trail/greenway corridors within the limits of proposed subdivisions, the City should require that trail/greenway easements are provided by the developer during the platting process. For planned trails/greenways through those properties which are

platted and currently undeveloped, the City will require a public access easement as a part of the site plan review process. The City of Fort Smith or certain non-profit organizations can accept donation of public access easements for the Fort Smith Trails and Greenways System that is contained within the corridors defined on the official Trails and Greenways System Map in accordance with existing policies and codes pertaining to the acquisition of parkland, transportation corridors and land for water and wastewater facilities. The City should consider requiring public access provisions in all new easements.

Private Construction of Trails Policy

Construction of planned trails within all new development should be considered the responsibility of the developer. In the same way that a developer is required to construct utilities to his site, he should be responsible for the construction of the trails through his development which are a part of the Fort Smith Trails and Greenways System. The developer should be required to conform to trail design standards as iterated in Chapter 4 “Design Guidelines”.

Right of Public Access and Use of Trail/ Greenway Lands Policy

All access and use is governed by existing local city policies and shall also be governed by the Fort Smith Trail/Greenway Policy. The use of all trails/ greenways is limited to non-motorized uses (except maintenance vehicles), including hiking, bicycling, running, jogging, wheelchair use, skateboarding, rollerblading, mountain biking, and other uses that are determined to be compatible with Fort Smith Trails and Greenways.

Trail Naming Policy

The majority of trails within the Fort Smith Trails and Greenways System will be named for the significant natural or cultural features that are found within the trail/greenway corridor. Trails can be named in accordance with the trail naming policy.

Fencing and Vegetative Screening Policy

The City should work with landowners on an individual basis to determine if fencing and screening is required and appropriate. The City may agree to fund the installation of a fence or vegetative screen, however, it shall be the responsibility of the adjacent property owner to maintain the fence or vegetative screen in perpetuity, including the full replacement of such fence or screen in the event of failure or deterioration due to any circumstances.

Adopt-a-Trail Program Policy

An Adopt-a-Trail Program should be established by the Fort Smith Parks and Recreation Commission to encourage community groups, families, businesses, school groups, civic clubs and other organizations to join in managing the Fort Smith Trails and Greenways System. The Fort Smith Parks and Recreation Commission will need to work closely with the Parks Department to ensure that all Adopt-a-Trail Program groups manage and maintain trails/greenways in a manner that is consistent with other land use objectives. The Fort Smith Parks and Recreation Commission should develop written agreements for each Adopt-a-Trail entity and keep a current record of this agreement on file with the City. Adopt-a-Trail entities will be assigned a specific section of the Fort Smith Trails and Greenways System, defined by location or milepost. The activities of each organization shall be monitored by the City. Agreements for management can be amended or terminated at any time by either party, giving 30 days written notice.

Management Agreements

Management Agreements should be established between the City and private organizations wishing to assist with the management of designated segments of the Fort Smith Trails and Greenways System. The objective of these agreements is to define areas of management that are compatible with existing land management activities, especially where the Fort Smith Trails and Greenways System intersects with public or private properties and/or rights-of-way. Management agreements spell out specific duties, responsibilities and activities of the City and any public or private organization that wishes to assist the City with management activities. They can be amended or terminated at any time by either party, giving 30 days written notice.

Cross Access Agreements Policy

The City can use cross access agreements to permit private landowners that have property on both sides of a trail/greenway corridor access to and use of a trail/greenway corridor to facilitate operation and land use activities. Adjacent landowners generally have the right to use the access at any time. However, access cannot block the right-of-way for trail/greenway users other than for temporary measures such as permitting livestock to cross, or transporting equipment. Adjacent landowners are responsible for acts or omissions which would cause injury to a third party using the trail/greenway. If a landowner must move products, materials, livestock or equipment across the trail/greenway on a regular basis, appropriate signage will be installed to warn users of the trail/greenway to yield for such activities.

Crossing of abandoned or active rail lines, utility corridors and/or roads and highways will require the execution of agreements with companies, local, state or federal agencies and organizations that own the rights-of-way. These crossings must provide clearly controlled, recognized, and defined intersections in which the user will be warned of the location. In accordance with the Ameri-

can Association of State Highway Transportation Officials (AASHTO) and the Manual on Uniform Traffic Control Devices (MUTCD), the crossing will be signed with appropriate regulatory, warning and information signs.

Land Management

Trail/greenway facilities should be maintained in a manner that promotes safe use. All trail/greenway facilities shall be managed by the Fort Smith Parks Department. Trail heads, points of public access, rest areas and other activity areas should be maintained in a clean and usable condition at all times. The primary concern regarding maintenance should always be public safety. Trail/Greenway maintenance should include the removal of debris, trash, litter, obnoxious and unsafe man-made structures, and other foreign matter so as to be safe for public use. Removal of native vegetation should be done with discretion, removal of exotic species should be accomplished in a systematic and thorough manner. The objective in controlling the growth of vegetation should be to maintain clear and open lines of sight along the edge of the trail, and eliminate potential hazards that could occur due to natural growth, severe weather or other unacceptable conditions.

All trail surfaces should be maintained in a safe and usable manner at all times. Rough edges, severe bumps or depression, cracked or uneven pavement, gullies, rills and washed out treads shall be repaired immediately. Volunteer vegetation occurring in the tread of the trail should be removed in such a manner so that the trail surface is maintained as a continuous, even and clean surface. The Parks Department shall strive to minimize the number of areas where ponding water occurs, however they cannot be held liable for public use through areas of casual or ponded water.

Property owned or used by the City for the Fort Smith Trails and Greenways System should be maintained in a condition that promotes safety and security for trail/greenway users and adjacent property owners. To the extent possible, the property should also be maintained in a manner that enables the trail/greenway corridor to fulfill multiple functions (i.e. passive recreation, alternative transportation, stormwater management and habitat for wildlife). Vegetation within each trail/greenway corridor should be managed to promote safety, serve as wildlife habitat, buffer public trail/greenway use from adjacent private property (where applicable), protect water quality, and preserve the unique aesthetic values of the natural landscape. To promote safe use of the trail/greenway system, all vegetation should be clear cut to a minimum distance of three (3) feet from each edge of a trail. Selective clearing of vegetation should be conducted within a zone that is defined as being between three (3) to ten (10) feet from each edge of a trail. At any point along a trail, a user should have a clear, unobstructed view, along the centerline of a trail, 300 feet ahead and behind his/her position. The only exception to this policy should be where terrain or curves in a trail serve as the limiting factor. The City or its designated agents shall be responsible for the cutting and removal

of vegetation. Removal of vegetation by an individual or entity other than the City or its designees should be deemed unlawful and subject to fines and/or prosecution.

Safety and Security

Safety is a duty and obligation of all public facilities. In order to provide a standard of care that offers reasonable and ordinary safety measure, the City should develop and implement a Safety and Security Program for all segments of the Fort Smith Trails and Greenways System. This program should consist of well defined safety and security policies: the identification of trail/greenway management, law enforcement, emergency and fire protection agencies; the proper posting, notification and education of the trail/greenway user policies; and a system that offers timely response to the public for issues or problems that are related to safety and security. Safety and security of the Fort Smith Trails and Greenways System will need to be coordinated with local law enforcement officials, local neighborhood watch associations, and Adopt-a-Trail organizations.

Important components of the safety and security program should include:

1) Work with law enforcement agencies in the City to establish a Fort Smith Trails/Greenways Safety and Security Committee that can meet regularly to discuss management of the trail/greenway system.
2) Prepare a Trail/Greenway Safety Manual and distribute this to management agencies and post it at all major trail heads.
3) Post User Rules and Regulations at all public access points to the trail/greenway.
4) Work with the management agencies to develop Trail/Greenway Emergency Procedures.
5) Prepare a Safety Checklist for the trail/greenway system, and utilize it monthly during field inspection of trail/greenway facilities.
6) Prepare a Trail/Greenway User Response Form for complaints and compliments and provide copies at all trail heads.
7) Work with management agencies to develop a system for accident reporting analysis.
8) Conduct a regular Maintenance and Inspection Program, and share the results of these investigations with all management agencies.
9) Institute a Site Design and Facility Development Review Panel, made up of city departments so that all design development recommendations can be reviewed prior to installation.
10) Coordinate other Public Information Programs that provide information about trail/greenway events and activities in which city residents can participate.
11) Conduct an ongoing evaluation of trail/greenway program objectives. It would be best to have this evaluation conducted by Fort Smith Parks and Recreation Commission and local trail/greenway user groups.

Trail/Greenway Rules and Operation Regulations

The Fort Smith Trails and Greenways System will be open 365 days a year to any person wishing to use the facility for transportation or recreation purposes — subject to the terms of the Fort Smith Trail/Greenway Ordinance that governs all use. No organization shall be permitted to use any portion of the Fort Smith Trails and Greenways System for a commercial purpose unless written permission has been obtained from the Parks Department The City should always discourage the general public from using any segment of a trail that is under construction. Trail segments shall not be considered officially opened for public use until such time as a formal dedication ceremony and official opening has been completed. Individuals who use trail segments that are under construction, without written permission from the City shall be deemed in violation of this access and use policy and treated as a trespasser.

The Fort Smith Trails and Greenways System shall be operated like all other parks within the local jurisdiction, open for public use from sunrise to sunset, 365 days a year, except as specifically designated. Individuals who are found to be using unlighted facilities after dusk and before dawn should be deemed in violation of these hours of operation and treated as trespassers. Where trails are lighted for nighttime use, the rules established within the Trail/ Greenway Ordinance shall govern permitted uses and activities.

Trail/Greenway Ordinance

Multiuse conflict is a national problem for community and regional trail/ greenway systems. Typically, conflicts are caused by overuse of a trail/ greenway, however, other factors may be problematic including poorly designed and engineered trail alignments, inappropriate user behavior, or inadequate facility capacity. The most effective conflict resolution plan is a well conceived safety program that provides the individual user with a Code of Conduct for the trail/greenway, sometimes called a Trail/Greenway Ordinance. Several communities across the United States have adopted progressive trail/greenway ordinances to govern public use and keep trails/greenways safe for all users. The following Rules and Regulations shall be implemented for the Fort Smith Trails and Greenways System. These rules should be displayed both on brochures and information signs throughout the Trails and Greenways System.

1) Be Courteous: All Trail/Greenway users, including bicyclist, joggers, walkers, wheelchairs, skateboarders and skaters, should be respectful of other users regardless of their mode of travel, speed, or level of skill. Do not feed or harass animals; this can be dangerous for you and other users. Respect the privacy of adjacent landowners!
2) Keep Right: Always stay to the right as you use the Trail, or stay in the lane that has been designated for your user group. The exception to this rule occurs when you need to pass another user.

3) Pass on the Left: Pass others going in your direction on their left. Look ahead and behind to make sure that your lane is clear before you pull out and around the other user. Pass with ample separation. Do not move back to the right until you have safely gained distance and speed on the other user. Faster traffic should always yield to slower on-coming traffic.
4) Give Audible Signal When Passing: All users should give a clear warning signal before passing. This signal may be produced by voice, bell or soft horn. Voice signals might include "Passing on your left!" or "Cyclist on your left!" Always be courteous when providing the audible signal - profanity is unwarranted and unappreciated.
5) Be Predictable: Travel in a consistent and predictable manner. Always look behind before changing position on the Trail, regardless of your mode of travel.
6) Control Your Bicycle: Lack of attention, even for a second, can cause disaster - always stay alert! Maintain a safe and legal speed at all times.
7) Do Not Block the Trail: When in a group, including your pets, use no more than half the trail, so as not to block the flow of other users. If your group is approached by users from both directions, form a single line or stop and move to the far right edge of the Trail to allow safe passage by these users.
8) Yield when Entering or Crossing Trails: When entering or crossing the Trail at uncontrolled intersection, yield to traffic already using the other trail.
9) The Use of Lights: (where permitted) When using the Trail/Greenway after dawn or before dusk be equipped with proper light. Cyclists should have a white light that is visible from five hundred feet to the front, and a red or amber light that is visible from five hundred feet to the rear. Other Trail/Greenway users should use white lights (bright flashlights) visible two hundred fifty feet to the front, and wear light or reflective clothing.
10) Do not Use this Trail Under the Influence of Alcohol or Drugs: It is illegal to use this Trail if you have consumed alcohol in excess of the statutory limits, or if you have consumed illegal drugs. Persons who use a prescribed medication should check with their doctor or pharmacist to ensure that it will not impair their ability to safely operate a bicycle or other wheeled vehicle.
11) Clean-up Your Litter: Please keep this Trail/Greenway clean and neat for other users to enjoy. Do not leave glass, paper, cans or any other debris on or near the Trail/Greenway. Pack out what you bring in - and remember to always recycle your trash.
12) Be a responsible pet owner: Please clean up after your pets.
13) Keep Pets on Leashes: All pets must be kept on secure and tethered leashes. Keep pets off of adjacent private property. Failure to do so will result in a fine.
14) Prohibition on Camp Fires: Fires, for any purpose, are prohibited within the Trails and Greenways System. Any person caught lighting a fire for any purpose will be prosecuted to the fullest extent of the law.

Emergency Response Plan

In order to effectively patrol the Fort Smith Trails and Greenways System and respond to the potential for fire, floods and other natural or human-caused disasters, Fort Smith will adopt a trails emergency response plan. This plan defines a cooperative law enforcement strategy for the trail based on services required and those that are typically provided by police, sheriff, fire and EMS agencies. Specifically, all trails shall be provided with an address system that denotes specific locations along the length of a trail corridor. A site plan that illustrates points of access to each trail corridor shall be produced and kept on file. Each trail shall be designed to permit access for law enforcement, fire and EMS agencies and vehicles that are not in excess of 6.5 tons gross vehicle weight.

The emergency response plan shall also define the agencies that should respond to 911 calls, and provide easy to understand routing plans and access points for emergency vehicles. Local hospitals should be notified of these routes so that they may also be familiar with the size and scope of the project. The entire Trails and Greenways System shall be designed and developed to support a minimum gross vehicle weight of 6.5 tons.

Risk Management Plan

The purpose of a Risk Management Plan is to increase safety for the users of the Fort Smith Trails and Greenways System and reduce the potential for accidents to occur within the system or on lands adjacent to the system. While it is impossible to guarantee that all risk will be eliminated by the completion of a Risk Management Plan, implementation of a plan is in fact a critical step that is necessary to reduce liability and improve safety. A Risk Management Plan establishes a methodology for trail management that is based on current tort liability and case law in the United States related to the development, operation and management of public use trail lands and facilities.

The ultimate responsibility for managing the Fort Smith Trails and Greenways System, as defined within this Plan, rests with Fort Smith. Fort Smith is considered the Risk Management Coordinator for the trail/greenway system. A Risk Management Plan has as its major goals:

1) Risk Identification: determining where risk (threat to safety or potential loss) exists within the corridor.
2) Risk Evaluation: conducting appropriate examination of areas defined as a risk and determining the factors that contribute to risk.
3) Risk Treatment: defining and implementing an appropriate solution to the area of risk in accordance with one of the four options:
    a) risk avoidance–prohibiting use of a risk area.
    b) risk reduction–limit use of area and repair risk area immediately.
    c) risk retention–obtain waivers from all potential users of the risk area.
    d) risk transfer–transfer risk area (property) to an agency better suited to manage the area.

The following sixteen step plan should be considered for implementation by Fort Smith in establishing Risk Management Plans for the Fort Smith Trails and Greenways System.

1) Develop a policy statement about risk management
2) Conduct a needs assessment of Fort Smith as an organization.
3) Determine goals and objectives for risk management - what is acceptable and not acceptable management levels.
4) Develop specifications for site and facility development.
5) Establish a clear and concise program for risk management.
6) Define supervision and responsibility for risk management.
7) Define appropriate rules and regulations that govern the use of the trail/greenway system.
8) Conduct routine/systematic inspections and investigations of the trail/greenway system.
9) Develop an accident reporting and analysis system.
10) Establish procedures for handling emergencies.
11) Develop appropriate releases, waivers and agreements for use and management.
12) Identify best methods for insuring against risk.
13) Develop a comprehensive in-service training program for employees of Fort Smith.
14) Implement a public relations program that can effectively describe the risk management program and activities.
15) Conduct periodic reviews of the Risk Management Plan by outside agents to ensure that the plan is up to date.
16) Maintain good legal and insurance representation.

Risk Management

The design, development, management, and operation of the Fort Smith Trails and Greenways System must be carefully and accurately executed in order to provide a resource that protects the health and welfare of the public. Harm may occur when a facility has been underdesigned to handle its intended volume of use, when management of the facility is poor, or when accidents occur. To reduce the possibility and exposure to harm, the City should have in operation the following measures prior to opening the first segment of the trail:

1) a thorough Maintenance Program that provides the appropriate duty or level of care to greenway users;
2) a Risk Management Plan that appropriately covers all aspects of the trail/greenway system, and as necessary adjacent landowners.

Fort Smith should exercise reasonable care in the design and construction of all trail/greenway facilities to reduce hazardous, public nuisance and life threatening situations. Recreational Use Statutes in Arkansas serve to reduce

the exposure to liability that adjacent landowners might expect to realize from the proximity of the trail/greenway to private property. In fact, it is very difficult to find any case law in the United States where an adjacent property owner has been sued because a trail/greenway user strayed onto the adjacent private property and fell victim to an accident that was caused by the adjacent landowner. Some landowners have claimed that their insurance rates would go up because of the presence of a trail abutting their property. Once again, there is no case history among insurance companies to support this claim — provided the landowner has not gone out of their way to create an attractive nuisance and lure trail users onto their property.

It is also important that the City not charge a fee to use any portion of the Fort Smith Trails and Greenways System facility, because typically this may impact the way in which the recreational use statutes in Arkansas apply to the use of the system. A voluntary donation applied to the trail/greenway system, will generally not affect the recreational use statute.