



# Conveniently Connected

## Pedestrian and Bicycle Master Plan



*Adopted by*

*Planning Commission  
September 2, 2010 (Resolution No. 2010-1)*

*Governing Body  
October 12, 2010 (Ordinance No. 1311)*

City of Tonganoxie, Kansas



# Conveniently Connected Pedestrian and Bicycle Master Plan

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# Conveniently Connected Pedestrian and Bicycle Master Plan

## Acknowledgements

Throughout the process and creation of the Pedestrian and Bicycle Master Plan, many members of the community participated in making this project successful. The City's Planning Commission contributed significantly to this process and served as the oversight committee for the project. An extended appreciation goes to all members of the community who spent many hours working to prepare this Plan.

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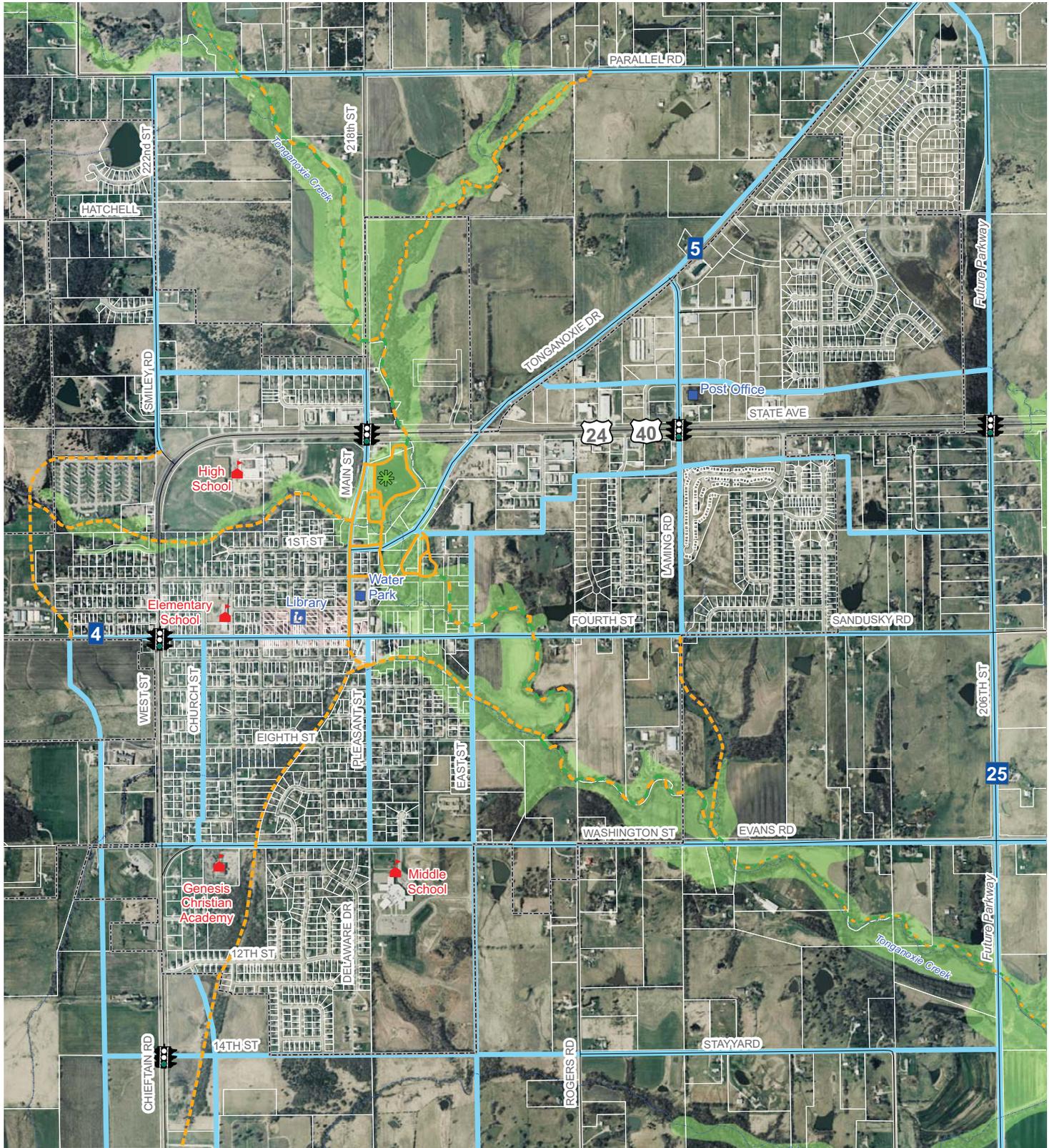
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### **Photos and Graphics**

A special "thank you" is given to several individuals and organizations who contributed to graphics used throughout the Master Plan including Cheryl Hanback, Dan Burden, and The Tonganoxie Mirror. In addition technical graphics were provided by the Trails KC Plan of Kansas City, MO and the Complete Streets Manual of Louisville, KY.

The *Conveniently Connected Pedestrian and Trails Master Plan* was adopted by the Planning Commission on September 2, 2010 (Resolution No. 2010-1) and adopted by the Governing Body as Appendix D of the Comprehensive Plan on October 12, 2010 (Ordinance No. 1311).





### Legend

- Multi-modal "Complete Street" Improvements
- Existing Trails
- Future Greenway Trails
- Metro Green Corridor
- Trailhead (proposed)
- Future Greenway Park
- Existing or Planned Signalized Intersection
- Historic Business District
- School
- Streams
- City Limits



NAD 83 State Plane Kansas North  
T:\2009-0022-Tonganoxie\PAS\01-PAS\Trails\2010 Trails Map Display.mxd



# Conveniently Connected Pedestrian and Bicycle Master Plan

## Introduction

In recent years the City of Tonganoxie has been actively planning for pedestrian and bicycle enhancements throughout the city. As a close knit community, most of our neighborhoods are within reasonable walking and biking distance of our schools, parks, downtown, and employment destinations. However, there are many existing barriers and challenges to safely walk and bike that can be addressed with the implementation of the citywide Pedestrian and Bicycle Master Plan.

This Master Plan is intended to provide the framework for an interconnected system of public and private open spaces, greenways, trails, and pedestrian linkages that connect together local centers of activity. In addition, the Plan identifies local connections to the future countywide and regional greenway network.

The Master Plan embraces downtown Tonganoxie as the heart of the community and the core pedestrian hub with a well connected grid of new or reconstructed sidewalks and multi-modal “complete streets” linking neighborhoods to local destinations. Chieftain Park is Tonganoxie’s primary recreation hub, and is the central trailhead for the local trail system. The park is also designated as a trailhead for the MetroGreen regional trail corridor along Tonganoxie Creek. A combination of “complete streets,” trails and sidewalk improvement corridors radiate outward from downtown and Chieftain Park to link with neighborhoods, schools, and employment areas throughout the city.

The **Pedestrian and Bicycle Master Plan** seeks to identify issues that impede active non-motorized transportation and strategically addresses these challenges by providing a comprehensive bicycle and pedestrian network reaching all neighborhoods in the city.

## Goals

The focus of the Master Plan is to develop a bicycle and pedestrian network that encourages a healthier environment and provides a more sustainable community. It is the model for place-based investment in the heart of the city while providing connectivity to developing areas around the city’s fringe. The goals of the Master Plan address the following:

- Improve the safety of walking and biking corridors in our neighborhoods and along our roadways for all residents of the community.
- Encourage non-motorized travel throughout the community, thus reducing use of carbon-based fuels and resulting in decreased levels of greenhouse gas emissions.
- Maintain the historic downtown and adjacent neighborhoods as the central core activity center of the community, with downtown and Chieftain Park serving as a regional trailhead.
- Provide linkages to each of the three public schools and one private school in Tonganoxie, as well as pedestrian and bicycle safety improvements around the schools.
- Improve designated corridors as multi-modal “complete streets” with a combination of sidewalks, off-street shared use paths, and on-street bike facilities.
- Implement the MetroGreen regional greenway corridor along Tonganoxie Creek and connect with the future regional trail along Stranger Creek east of the city.
- Implement the US 24/40 Hwy Study trail corridors and supporting transportation network.
- Integrate the use of alternative “green” infrastructure design approaches.
- Plan for future rights-of-way, easements, and funding sources needed to implement the network.

# Conveniently Connected Pedestrian and Bicycle Master Plan

## Users

This Plan provides a comprehensive network of sidewalks, shared-use trails, and on-street bicycle facilities distributed throughout the city. The Plan provides a compatible network balanced between bicyclists, pedestrians, and motorists. The specific design of pedestrian and bicycle facilities in Tonganoxie should incorporate features necessary to accommodate multiple user groups including:

- Pedestrians and joggers
- Bicyclists of all skill levels
- Recreational users and commuters
- Skaters and skateboarders
- Children on tricycles and in strollers
- People with disabilities
- Seniors



# Conveniently Connected Pedestrian and Bicycle Master Plan

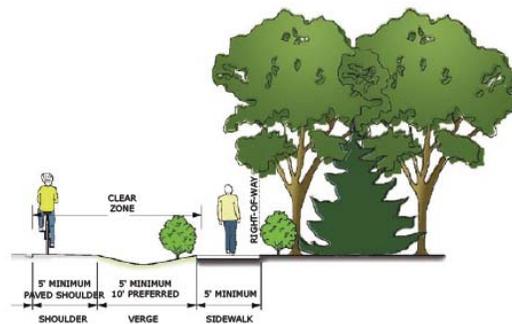
## **Complete Streets**

The Pedestrian and Bicycle Master Plan applies the concepts and principles of context sensitive solutions in the planning and design of thoroughfares for walkable communities. Recommended practices for these concepts and principles are described by the Institute of Transportation Engineers (ITE) in the 2010 manual *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach*.

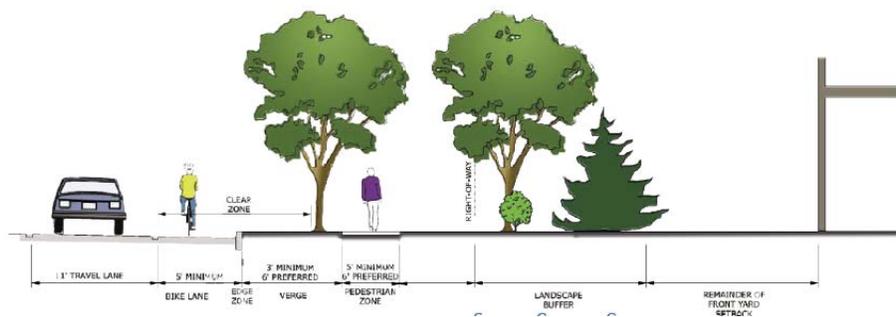
Complete streets are designed and operated to enable safe access for all users (pedestrians, bicyclists, and motorists) of all ages and abilities along and across the street. Throughout Tonganoxie, complete streets will incorporate any combination of off-street sidewalks and paths and on-street bicycle facilities. Much of Tonganoxie's future pedestrian and bicycle network will be accommodated by improvements to existing and planned roadways in accordance with complete street design principles. The design of a complete street is both an art and a science. Good design standards balance sound engineering judgment and user needs within the context or character of the environment.

- **User Needs** - Many of the facilities contained within the right-of-way are uniquely associated with motorists, pedestrians, school bus transit riders, and cyclists of varying ages and abilities.
- **Character** - the physical context in which the street resides influences the form and function of the roadway and its associated streetscape. The design of a complete street through downtown Tonganoxie will differ from the design of the street through a neighborhood.
- **Engineering Judgment** - Roadway design must clearly rely on professional knowledge and understanding of the elements associated with it. Travel speeds, volumes, horizontal/vertical alignments, and sight lines are a part of the complex variables that must be considered in roadway design.

## **Complete Street Concept – Green Solutions**



## **Complete Street Concept - Curb and Gutter**



Graphics courtesy of Louisville, KY Complete Streets Manual

# Conveniently Connected Pedestrian and Bicycle Master Plan

## System Facilities

Users of the Tonganoxie pedestrian and bicycle system have varying measures of confidence and abilities. Therefore, it is important to accommodate for the full range of user needs and capabilities. The following are the facilities accommodated in the citywide network. Additional details for various on-street and off-street facilities are provided on the following pages.

- Neighborhood Sidewalks – generally follows the system of local streets, ultimately connecting to a larger community trail.
- Multi-Use Wide Sidewalk– an upgraded walkway typically 8-10 feet in width alongside a street typically within the right-of-way.
- Multi-Use Trails – public, non-motorized, shared-use trails that connect neighborhoods to the destinations and to regional MetroGreen trails.
- Greenway - A linear open space or park typically along a natural corridor, such as a creek, providing pedestrian and bicycle facilities for public use.
- Bicycle Lane – a portion of a road striped and signed for one-way bicyclist use.
- Signed Shared Roadway (Bike Route) – designated by bike route signs, these roadways are the best routes for bikes to share the road with vehicles.
- Shared Roadway – no bikeway designation

# Conveniently Connected Pedestrian and Bicycle Master Plan

## Multi-Use Trail

### Purpose

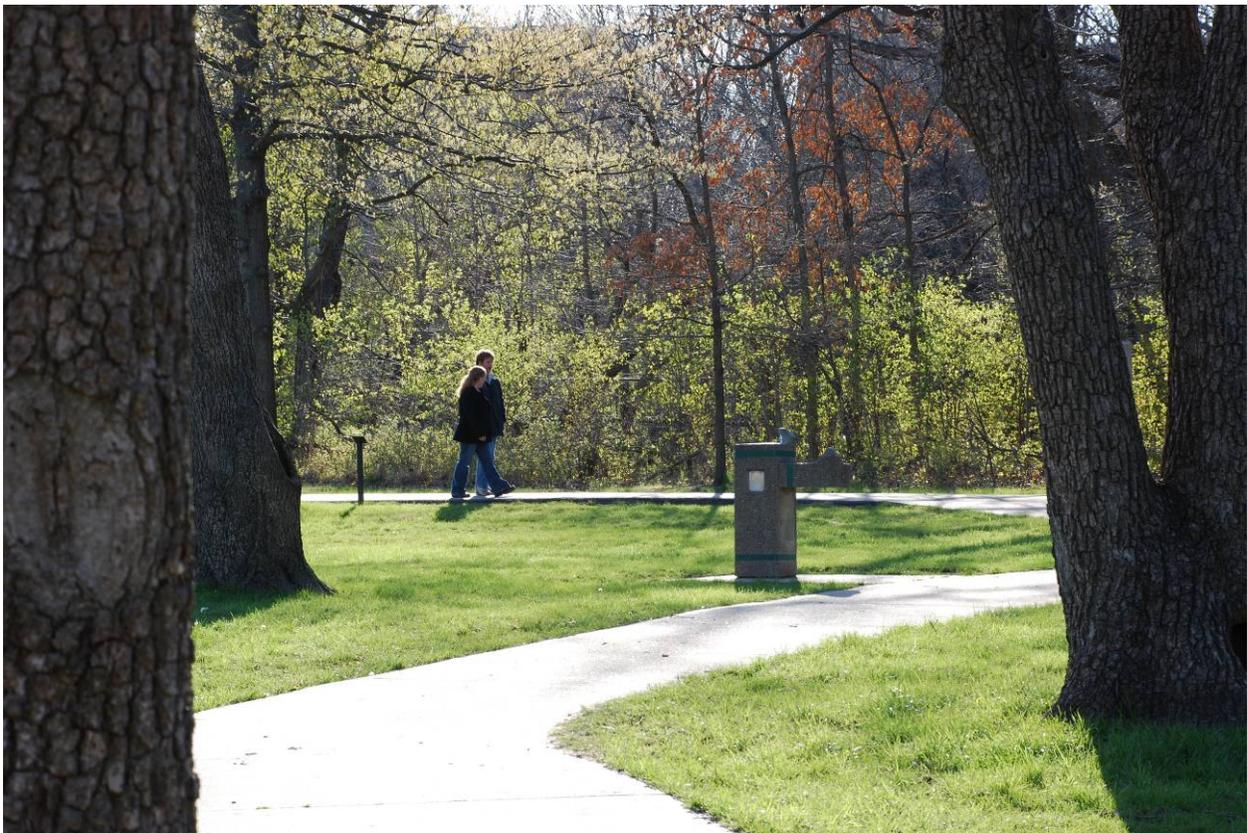
To accommodate a wide range of user groups, including walkers, joggers, bicyclists (both children and adults), wheelchair users and rollerbladers. Moderate to very high use is expected.

### Where to Use

The multi-use paved trail is appropriate for a variety of locations including parks, greenways and riparian corridors (streamside, floodway, floodplain and upland conditions), and as a multi-use wide sidewalk parallel to a roadway. It should not be located in environmentally sensitive areas due to the disruption caused by construction and a high number of users. These trails may be a multi-use wide sidewalk (minimum 10-feet in width) in places where inadequate roadway width is available for bicyclists and where the corridor is uninterrupted by driveways and intersections for long distances.

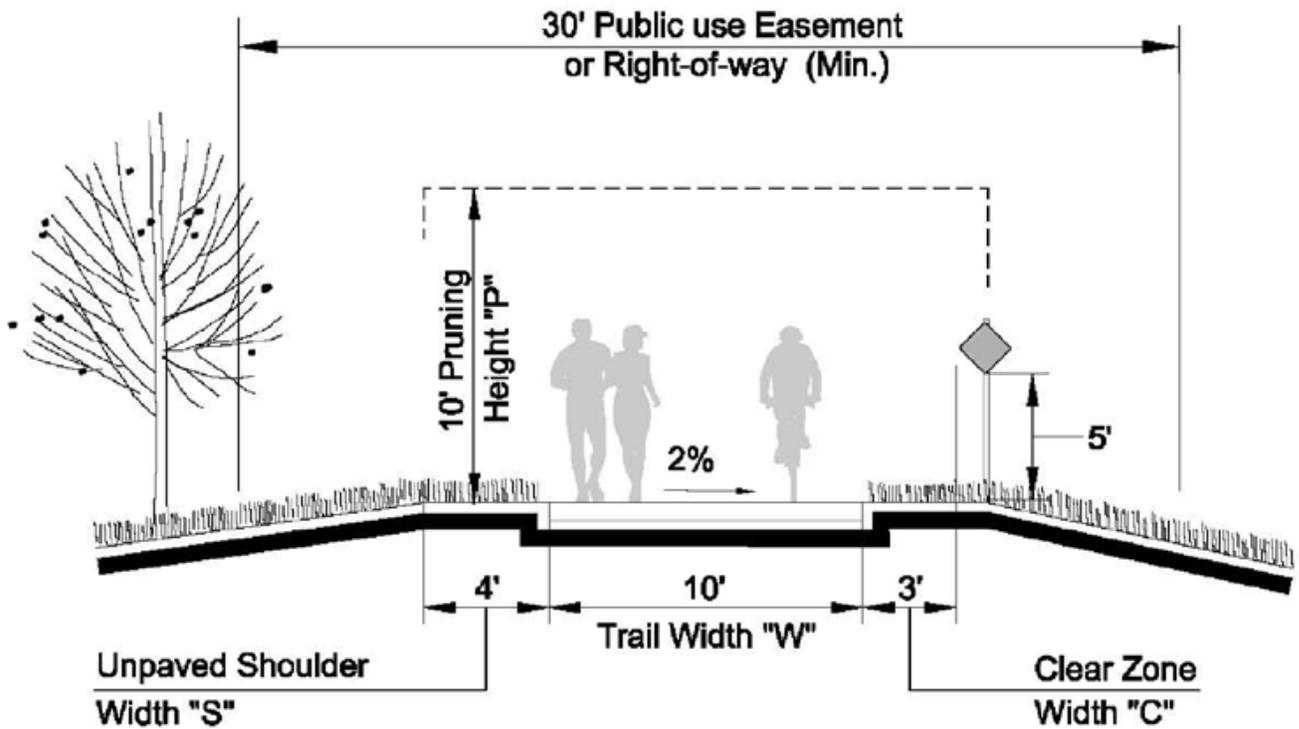
### Guidelines

- Trail Width: 10-14 feet (8-ft may be provided as neighborhood connectors)
- Right-of-way or Public Use Easement: 30-ft (min)
- Separation from Street Curb: 8-10 feet preferred

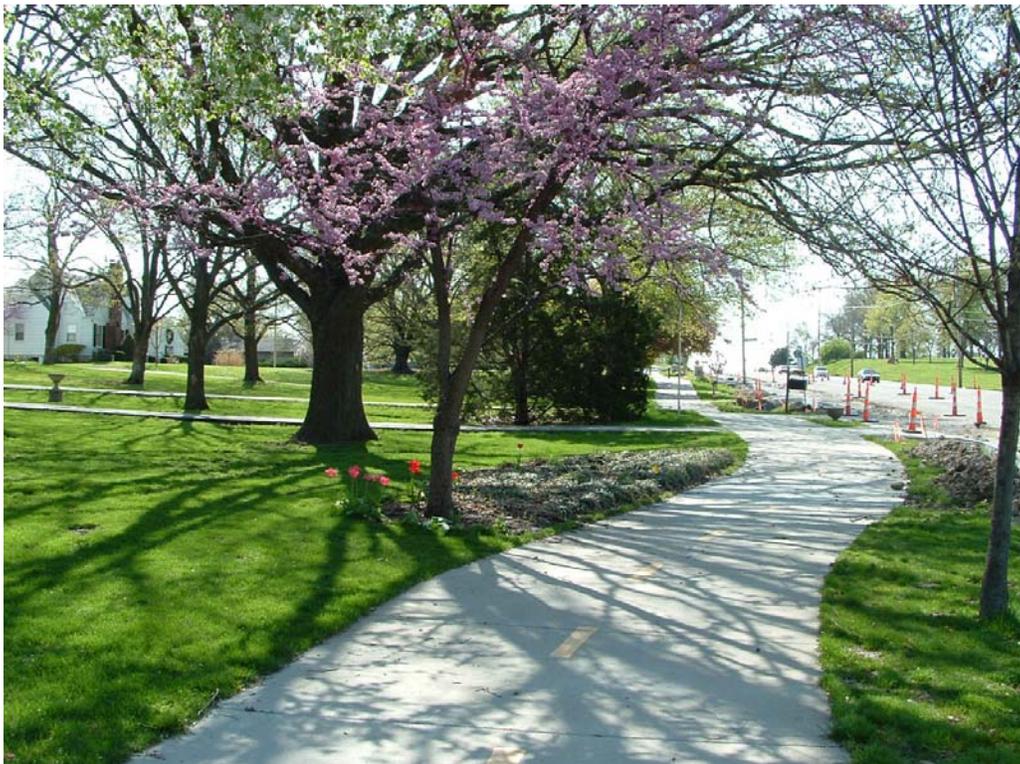


# Conveniently Connected Pedestrian and Bicycle Master Plan

## Multi-Use Paved Trail



*Graphic Courtesy of the Trails KC Plan*



# Conveniently Connected Pedestrian and Bicycle Master Plan

## **Bike Lanes**

### **Purpose**

To provide a specific segment of the roadway for the preferential or exclusive use of bicycles designated by striping, signing and pavement markings. Users of bike lanes are typically advanced or experienced cyclists who are comfortable riding with motor vehicle traffic.

### **Where to Use**

Bicycle lanes are appropriate for any classification of roadway, although they are rarely used on low volume residential streets.

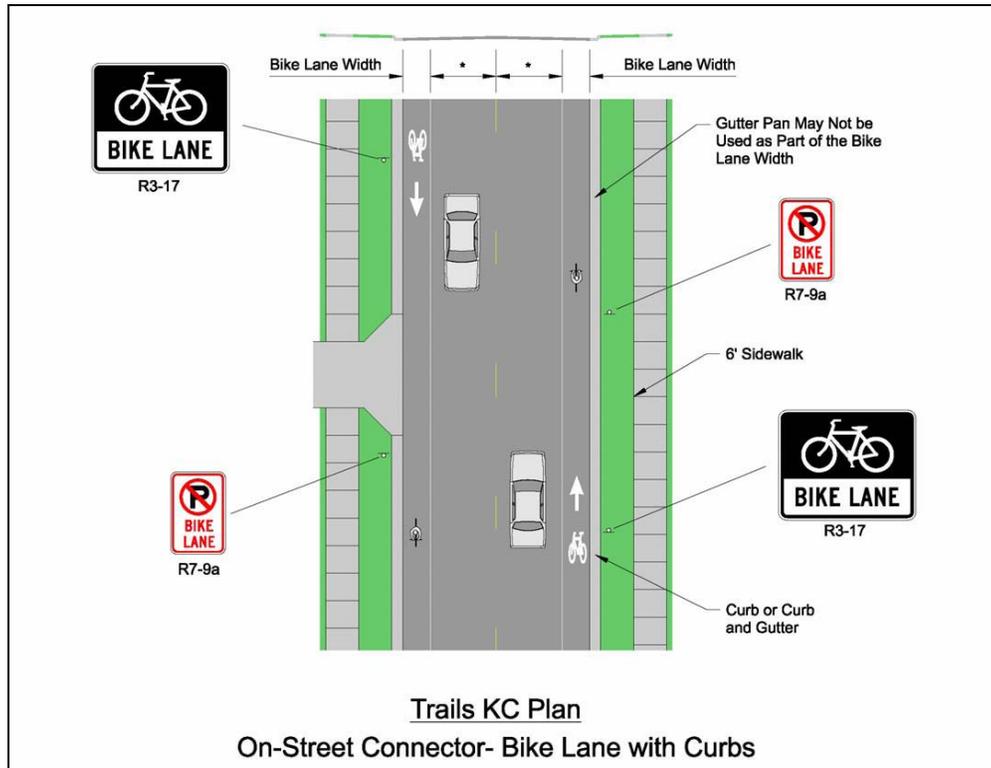
### **Guidelines/Considerations**

- Bicycle lanes are always located on both sides of the road (except where they are constructed on one-way streets) and direct bicycle traffic in the same direction as motor traffic.
- Bike lanes should be a minimum of 4-feet wide, exclusive of the gutter when the road is curbed. They should be 5-feet wide when adjacent to parallel parking.
- The Manual of Uniform Traffic Control Devices specifies standard signage for bicycle lanes.



# Conveniently Connected Pedestrian and Bicycle Master Plan

## Complete Street (Sidewalks and On-Street Bike Lanes)

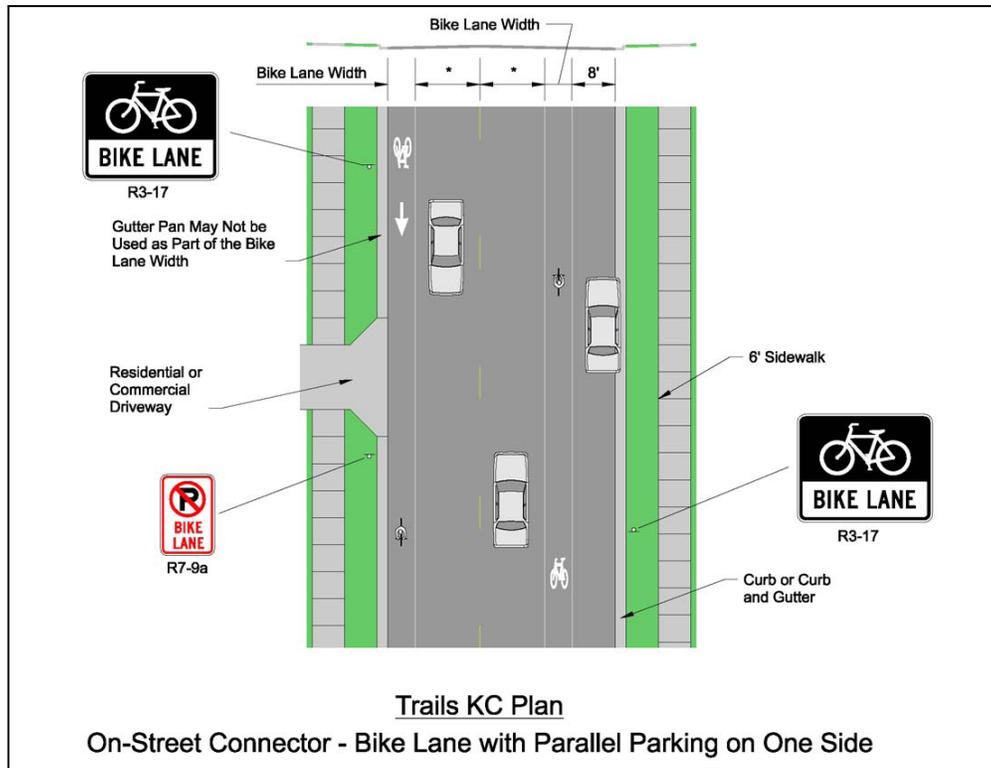


Graphic Courtesy of the Trails KC Plan



# Conveniently Connected Pedestrian and Bicycle Master Plan

## Complete Street with Parking (Sidewalks and On-Street Bike Lane)



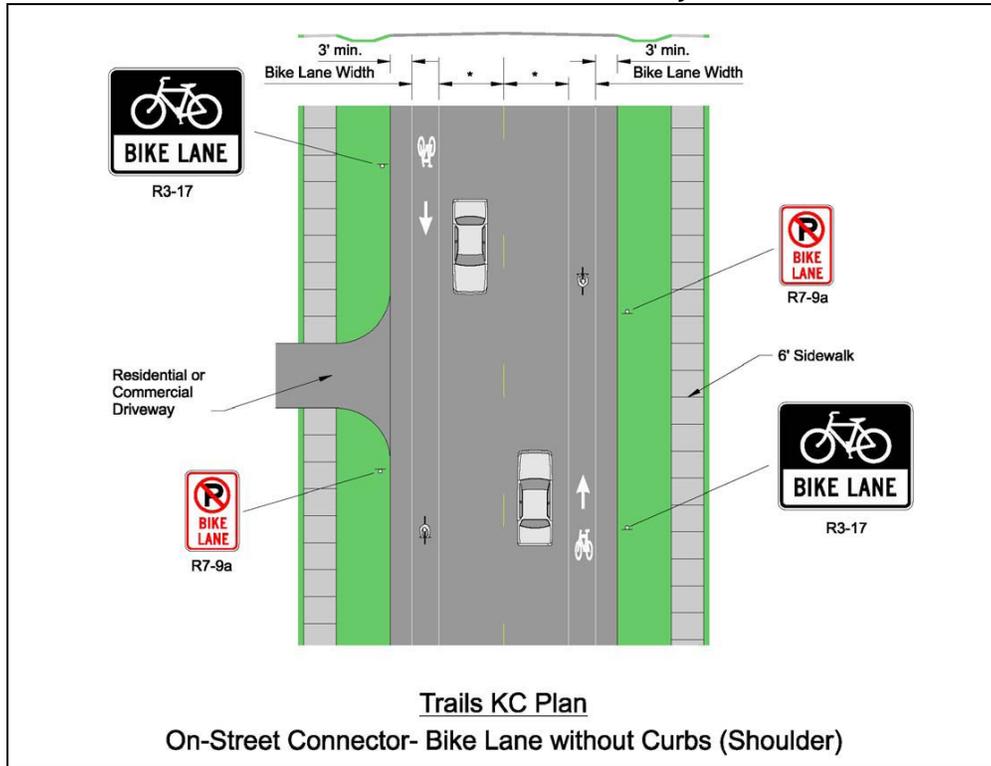
Graphic Courtesy of the Trails KC Plan



# Conveniently Connected Pedestrian and Bicycle Master Plan

## Complete Street – with no curbs ( Sidewalks and On-Street Bike Lanes)\*

\*Minimum 3-foot wide shoulder or clear zone adjacent to bike lane



Graphic Courtesy of the Trails KC Plan



Photo Courtesy of the Pedestrian and Bicycle Information Center

# Conveniently Connected Pedestrian and Bicycle Master Plan

## Bike Routes

### Purpose

To allow motorists and bicyclists to share the roadway by using widened curb lanes and paved shoulders. The wider roadways provide additional operating room for bicyclists and offers benefits to motorists, including better accommodating trucks, buses and other wide vehicles and assisting turning vehicles. Paved shoulders have advantages for both cyclists and vehicular traffic and pavement management. Typically advanced or experienced cyclists use bike routes in high traffic areas, while children and less confident adult cyclists use on-street bike routes on low traffic neighborhood environments.

### Where to Use

Wide curb lanes are used on roads that can either be widened with new construction or re-striped to provide a wider lane at the curb. Wide curb lanes best accommodate advanced cyclists who are more comfortable operating in the flow of traffic. Paved shoulders are most often used for complete streets without curbs.

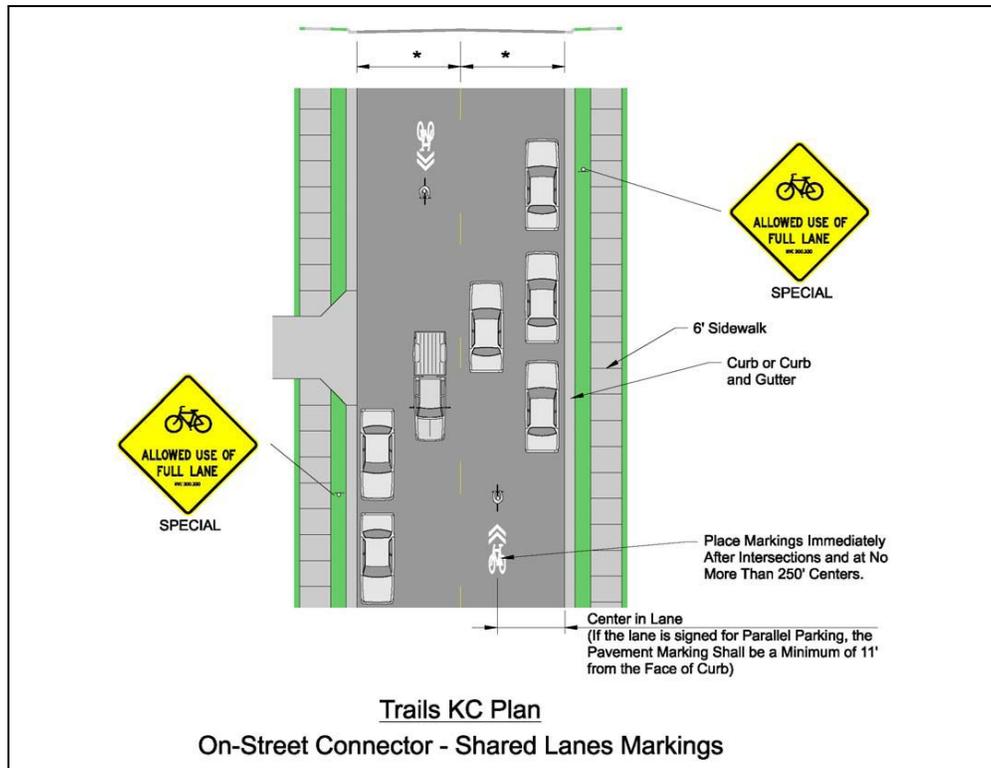
### Guidelines/Considerations

- Wide curb lanes should be a minimum of 14-feet wide; 13-foot wide lanes may be used where the existing roadway and ROW section is inadequate for a wider shared lane.
- The wide curb lane is always the outside, right-hand lane and is constructed with the same pavement section as the roadway.
- Wide curb lanes can be signed as “Share the Road”.
- Paved shoulders should be a minimum of 4-feet in width and wider on streets with high volumes of traffic.
- Ensure smooth pavement and bicycle friendly storm drain grates and do not use rumble strips.



# Conveniently Connected Pedestrian and Bicycle Master Plan

## Complete Street (Shared Lanes Markings and Sidewalks)



Graphic Courtesy of the Trails KC Plan



Photo Courtesy of Heather Bowden – Pedestrian and Bicycle Information Center

# Conveniently Connected Pedestrian and Bicycle Master Plan

## Funding Strategy

Implementation of the Master Plan will be a long-term infrastructure investment for the City. Many corridors will be improved as part of “complete street” road construction in developing areas as well as street and sidewalk improvement projects in existing developed areas of the community. Major costs to implement the Plan include planning/design, acquisition, construction, and maintenance.

Implementation projects to build the pedestrian and bicycle network will require a funding strategy using multiple funding sources, including grant funding programs, partnership opportunities, as well as innovative approaches such as those successfully used by other cities. Most federal funding opportunities are administered through the Kansas Department of Transportation (KDOT) and the Mid-America Regional Council (MARC). While funding opportunities through the state and federal agencies continues to evolve, they offer significant opportunity to supplement local funding sources for future implementation projects. Existing and potential funding opportunities are organized into three categories:

### **Existing Funding Resources – Currently Used by the City of Tonganoxie**

There are a variety of existing funds, impact fees, and sales tax revenue sources currently available in the City which could be allocated toward pedestrian and trails improvements. These resources are currently allocated to the city’s parks, but offer the potential to increase the funding level for implementation of the Pedestrian and Bicycle Master Plan

### **Existing Funding Resources – Not Currently Used by the City of Tonganoxie**

A variety funding sources may be available in the future that the City has either not pursued in the past or has not successfully leveraged. These resources offer significant opportunities for increasing the level of funding for Master Plan implementation.

### **New Funding Resources**

Other cities offer examples of the successful use of new and innovative approaches to secure funding for implementation of the Master Plan.

Existing Funding Sources Used by the City of Tonganoxie	
<b>Transportation Enhancements (TE)</b>	This program funds projects that serve transportation need and can be used to build a variety of pedestrian, bicycle, streetscape and other improvements that enhance the cultural, aesthetic, or environmental value of transportation systems.
<b>Traffic Engineering Assistance Program (TEAP)</b>	This program funded through KDOT consist of small traffic studies to address safety issues and have been successfully used by the City to study options to implement bicycle and pedestrian safety improvements.
<b>County Sales Tax (Capital Projects)</b>	The City’s share of the County sales tax dedicated to capital projects is available to use for pedestrian and trail projects. Historically this funding source has been used by the city for parks and other infrastructure projects.
<b>Special Parks &amp; Recreation Fund</b>	This city fund uses one-half of the local liquor tax, and to date it has been used for park maintenance purposes.
<b>Park Impact Fee</b>	While the city’s park impact fee has been adopted, it is currently unfunded at a \$0.00 rate. However if the impact fee level is increased it could be used for park and recreation land acquisition, pedestrian and trail improvements, and a variety of other recreation improvements.
<b>Safe Routes to School (SRTS)</b>	This competitive grant program funded through KDOT is a federal reimbursement program that provides funding for infrastructural projects and educational activities to enable children to walk or bicycle to school more safely. Opportunities to receive funds from this program in the future are uncertain.

# Conveniently Connected Pedestrian and Bicycle Master Plan

Funding Sources NOT Currently Used by the City of Tonganoxie	
<b>National Highway System (NHS)</b>	This program funds improvements to rural and urban roads that are part of the National Highway System (NHS). Bicycle and pedestrian facilities within NHS corridors are eligible activities for NHS funds.
<b>Highway Safety Improvement Program</b>	Funds projects designed to achieve significant reduction in traffic fatalities and serious injuries on all public roads and pedestrian / bike pathways.
<b>Land and Water Conservation Fund (LWCF)</b>	A federally funding program that provides matching grants to States and local governments for the acquisition and development of public outdoor recreation areas and facilities, including trails. In Kansas the fund is managed by the Kansas Department of Wildlife and Parks (KDWP).
<b>Recreational Trails Program (RTP)</b>	The RTP is an assistance program of the Department of Transportation's Federal Highway Administration. Administered by the Kansas State Parks Division of KDWP, the RTP provides funds to the States to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. These funds may be used for trails, but may not be used to provide shoulders or sidewalks along roads.
<b>Sunflower Trails Grants</b>	The Sunflower Foundation: Health Care for Kansans offers Sunflower Trails Grants intended to help increase access to physical activity by building community-based and school-based walking and multi-use trails.
<b>Rivers, Trails and Conservation Assistance (RTCA)</b>	The RTCA Program is a National Park Service program which provides technical assistance via direct staff involvement, to establish and restore greenways, rivers, trails, watersheds and open space. The program provides planning assistance – there are no implementation monies available.
<b>National Recreation Trail (NRT) Program</b>	NRTs are designated by the Secretary of Interior to recognize exemplary trails of local / regional significance. Through designation, trails are recognized as part of America's national system of trails. Designation brings various benefits including promotion, technical assistance, networking and access to funding.
<b>Federal Transit Administration (FTA)</b>	FTA funds is a possible source to implement various elements of the Master Plan, such as to secure right-of-way for transit/trail corridors.
<b>Transportation, Community and System Preservation Program</b>	This program provides federal funding for transit oriented development, traffic calming and other projects that improve the efficiency of the transportation system, reduce the impact on the environment, and provide efficient access to jobs, services, and trade centers. The program is intended to provide communities with the resources to explore the integration of their transportation system with community preservation and environmental activities.
<b>New Freedom Initiative</b>	SAFETEA-LU creates a formula grant program providing capital and operating costs for transportation and facility improvements that exceed those required by the American Disabilities Act.
<b>National Endowment for the Arts</b>	Funding through this program is available for development of design guidelines, artwork, signage, and landscaping
<b>On-System Bridges</b>	Bridges shown as structurally deficient or functionally obsolete are eligible for these funds, administered through the Mid-America Regional Council (MARC).
<b>General Funds</b>	To date, the City has not made a commitment to fund pedestrian and trails development through the use of general funds. An annual allocation of general funds could be used for: design and construction, equipment, material, property acquisition, and maintenance. The greatest opportunity may be in funding dedicated staff as in-house construction crews which may allow improvements to be constructed at a lower cost than if the projects are bid out.
<b>Dual-use Easements</b>	While obtaining public utility easements, a portion of the easement could be used for pedestrian and trail access.
<b>Local Foundations</b>	Local foundations in the greater Kansas City area aligned with sustainability, greenways, exercise, trails, or bicycling may be an opportunity to access private funds.
<b>American Greenways Program</b>	The Program provides funding for the planning and design of greenways, but generally is a limited source of funds by The Conservation Fund.

# Conveniently Connected Pedestrian and Bicycle Master Plan

New Funding Resources	
<b>Trails Dedication and In-lieu Fee Requirement</b>	Cities around the country require new development to pay its “fair share” of the cost of providing public facilities, including trails, to service the needs of new development. This requirement could help ensure as the city grows that adequate land and funds are secured to accommodate the new development’s demand for trail facilities. Future proceeds could also be bonded which could help expedite trails development and produce economy of scale.
<b>Trails Tax</b>	There are numerous taxing tools available for trail development that can be used individually or in combination: <ul style="list-style-type: none"> <li>▪ Sales tax</li> <li>▪ Property tax</li> <li>▪ Gas tax</li> </ul>
<b>Combined Tax</b>	A combined tax initiative is a potential to secure pedestrian and trails improvement funding while also addressing other city capital improvement projects. For example, funding for storm water management or street improvements could also include open space and pedestrian and trial improvements.
<b>Real-Estate Transfer Fee</b>	Such a fee could be charged for each real-estate transaction recorded within the city to generate trails funding. The amount generated, based on rates from other municipalities that have implemented a similar fee would not be significant, but could be used for specific funding needs.
<b>City - County Partnership</b>	Many pedestrian and trail improvement corridors are along roadways and drainage areas extending into the county. An interlocal partnership could help address right-of-way / easement acquisition and street improvements in designated corridors. The County should ensure appropriate right-way and easements are obtained for any plats or development projects within the City’s surrounding planning area to allow for future extension of the pedestrian and bicycle corridors.
<b>Land Trusts</b>	A land trust is an organization that works with landowners in order to protect/preserve land for a variety of conservation purposes. Land trusts employ various strategies to acquire land and easements. They are often successful at acquiring land through donations or at a reduced price as property owners are able to receive tax benefits from the donation/ reduced sales price. In addition, they are successful at raising funds that can be used for trail acquisition.
<b>Volunteer Groups</b>	Local community groups and organizations can provide assistance with the construction and maintenance of the pedestrian and bicycle facilities, such as recreational trails. The creation of an Adopt-a-Trail program could help offset on-going maintenance costs through neighborhood groups/companies that commit to keep sections of trail free of litter and debris. Boy Scout troops across the country are active in trail-building activities. The volunteer efforts of local homeowners associations, businesses, Girl Scouts, and philanthropic organizations could help offset on-going maintenance costs by committing to keep sections of trail free of litter and debris or to maintain landscape improvements.
<b>Community Service Groups</b>	Many jurisdictions utilize individuals fulfilling community service requirements and/or inmates on work detail to perform maintenance and other activities.
<b>Individual Sponsorships</b>	Individuals, businesses, or private parties may sponsor sections of trail or project elements, or provide grants and donations to assist in developing other types of park and recreation facilities. Support can come in the form of cash donations, donations of services, equipment, labor, discounted materials, and contribution of employee volunteer time. Naming rights, plaques or other forms of recognition could be placed on constructed pieces in the trail corridor or at a prominent entry point. Sponsorships could also fund trail amenities such as benches, trash receptacles, and interpretive areas.
<b>Other Grant Opportunities</b>	There are a variety of other state and federal grant opportunities for trails and related infrastructure. Many grants provide funds for various activities include planning, design, or construction.

