bell engineering

SOMERSET BICYCLE & PEDESTRIAN MASTER PLAN

CITY OF SOMERSET KENTUCKY
CITY OF THE THIRD CLASS
1888

AUGUST 2015

Acknowledgements

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Eddie Girdler - Mayor, Somerset

Alex Godsey - City Engineer, Somerset

Nick Bradley – City Clerk, Somerset

Somerset City Council Members:

Linda Stringer
Jerry Wheeldon
Jimmy Eastham
Jerry Girdler
Mike New
Donna Hunley
John Minton
Jim Mitchell
Pat Bourne
Jerry Burnett
David Burdine
Tom Eastham

Bell Engineering Team:

Josh Karrick

Jonathan Rehner

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Executive Summary

The Bicycle and Pedestrian Master Plan (Master Plan) is a planning effort to make the City of Somerset, herein referred to as The City, a more bicycle- and pedestrian-friendly place. This plan is a blueprint for developing and expanding The City's alternative transportation systems over the next decades into a more inviting, safe and efficient way to travel to school, to work, to shop, to play and to stay fit.

Some of the many issues that affect bicyclists and pedestrians are street type, safety concerns, existing sidewalks and bike facilities, land use patterns and connections to key destinations. This Master Plan provides means for non-motorized traffic such as signed routes, shared lanes, bike lanes, separated trails/shared use paths, as well as simultaneously expounding on the existing network of sidewalks.

City of Somerset Bicycle and Pedestrian Master Plan Goals

Having an achievable set of goals is crucial for a plan to be valuable to a community. The City's goals and objectives in this Master Plan can be broken down into five categories: Connectivity, Community, Education, Funding, and Maintenance.

Connectivity

The City desires to create a vast network of bicycle and walking routes. It intends to create connections between locations with high pedestrian counts. Such as neighborhoods, shopping areas, schools, parks, work places, etc. Providing alternate modes of transportation and routes enables access and accommodation for people of all ages while alongside reducing the number of vehicular traffic, thus lowering traffic and improving the overall quality of life.

Community

The City currently has a strong presence of bicyclists, walkers and runners. Some people are aware of the limited existing bicycle paths and walkways, but a large majority of the community is unaware of the facilities available. In order to fully take advantage of the bicycle and pedestrian network, it is important that the community knows what all is at their disposal. Many communities promoting similar plans have had success by connecting local government groups, local advocacy organizations, local business and citizens together. All these entities need work together and get involved in providing resources and training opportunities to increase awareness of this Master Plan.

Education

Safety is a key concern for all citizens in the community. The City will work to increase and promote bicycle and pedestrian safety by working hand in hand with the community. Continual education on bicycle and pedestrian safety though schools, local organizations, police departments, churches, local businesses and many more will benefit cyclists and pedestrians. Education efforts will not only increase the safety, but will play a vital role in increasing the popularity of bicycling and walking in the community.

Maintenance

The City strives to ensure that the bicycling and pedestrian facilities will last for generations to come by creating a long term maintenance plan for these facilities. This plan includes the replacing of appropriate signage, resurfacing and alterations (as needed) to paths, ensuring that trails are clear of vegetation, and much more.

Funding

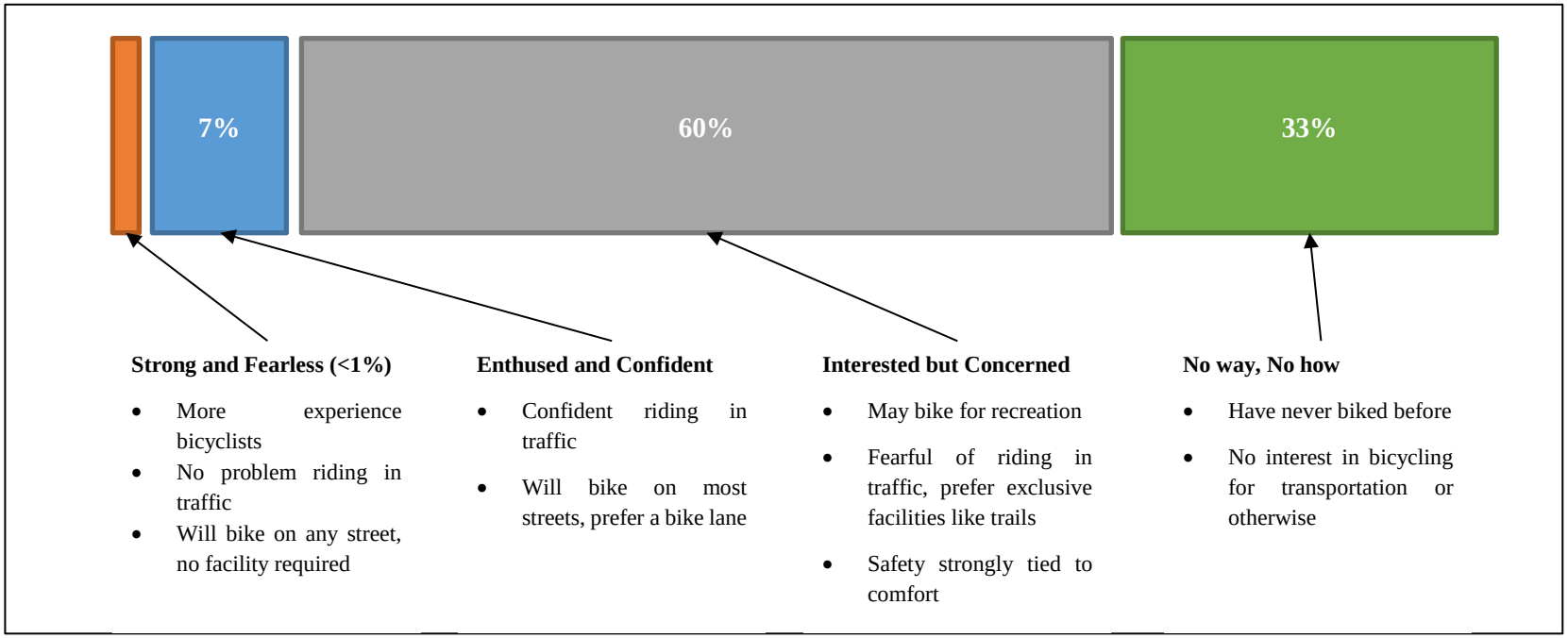
The City will utilize multiple funding sources to construct a network of bicycle and pedestrian facilities in a timely manner. Funding a bicycle and pedestrian network can be an extensive and costly task. Potential funding sources include:

- Federal programs for transportation, community development, and conservation
- State programs for recreation, transportation, conservation and water quality
- Local taxes, impact fees, bond referendums, capital improvement programs
- Private participation through land use trusts, foundations, local businesses, and volunteers.

Research and Planning

Bike User Types

The Portland Bureau of Transportation developed a demographic spectrum known as the Four Types of Transportation Cyclists. Based on surveys and research, the chart illustrates an estimate of who uses bikes for transportation and who does not.

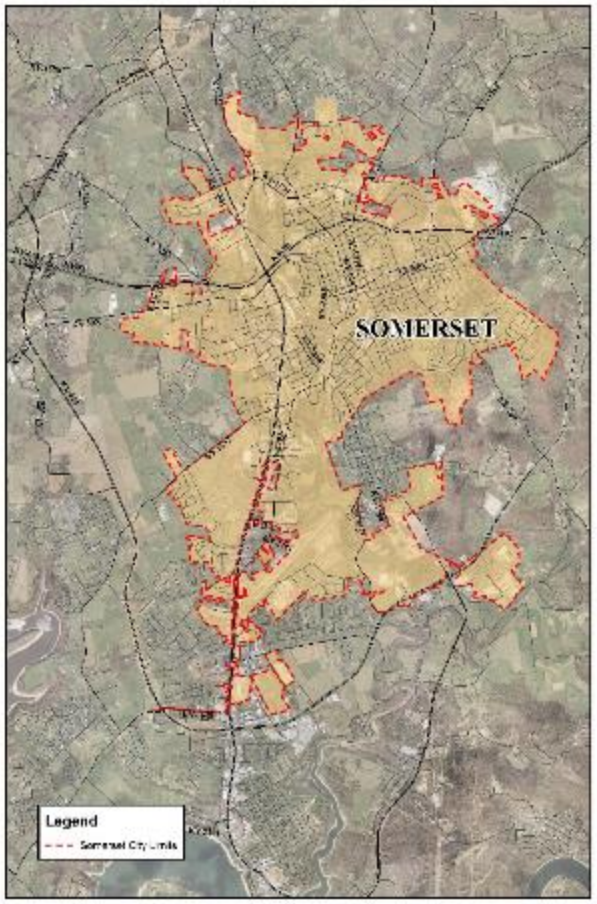


Geller, Roger. The Four Types of Transportation Cyclists. Portland Bureau of Transportation. 2007

The "strong and fearless" tend to be the experienced bicyclist that will ride on any street regardless of any facilities. "Enthused and confident" riders may be newer to bicycling as a means of transportation but are confident riding in traffic though they prefer a bike lane or other facilities. The "Interested but concerned" may ride on trails for recreation, but currently are fearful of riding on streets with traffic. It is important to notice that this is the largest population who are open to the possibility of riding more frequently but simply have reservations about doing so. The City is targeting this large group through this Master Plan. The final group, the "No way, no how" group, have never been interested in bicycling for transportation and never will.

Study Area

On July 31th, 2015, the City of Somerset held an open house for the public to solicit feedback on the proposed routes and to make additional improvements that may be needed. Meetings attendants were asked to identify Somerset's strengths, weaknesses, opportunities and potential threats regarding the existing bicycling and walking environment. Some of the discussed topics include:



Somerset city limits

Strengths:

- Pedestrian – In the last decade, the City of Somerset has been able to establish a vast sidewalk network in the city center
- Bicyclist – The amount of current bicyclists and positive attitude in the community is a testament of Somerset's active lifestyle

Weaknesses:

- Pedestrian – Lack of connections from the city center to the surrounding neighborhoods. Also, a lack of North/ South connections along routes such as US 27.
- Bicyclists – Lack of any existing bicycling facilities and the safety concern of bicyclists.

Open house held in Somerset

Opportunities:

- A more pedestrian and bicycling oriented city can boost the City's already high volume of visitors

Threats:

- Funding

These strengths, weaknesses, opportunities and threat, along with other comments voiced by City officials and the public, were used as the basis of the City of Somerset Bicycle and Pedestrian Master Plan.

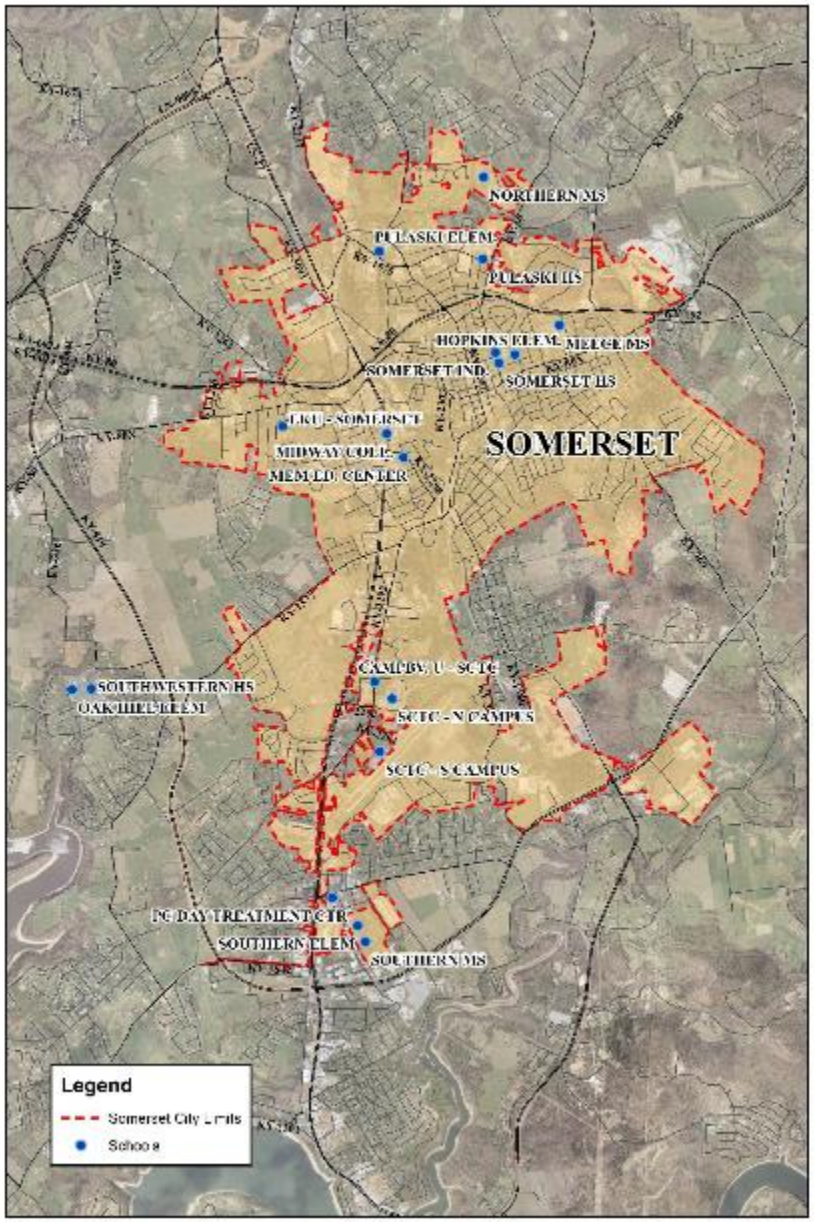
Points of Interest

Members of the community were asked to help identify points of interest within Somerset. These locations will help guide where improvements need to be focused or where new projects may need to be developed. The points of interest included schools, parks and recreational facilities of Somerset.

Schools

- Saint Mildreds School
- Pulaski Elementary School
- Oak Hill Elementary School
- Hopkins Elementary School
- OM Meece Middle School
- Pulaski County High School
- Somerset High School
- Southwestern High School
- Somerset Community College

Somerset Elementary School

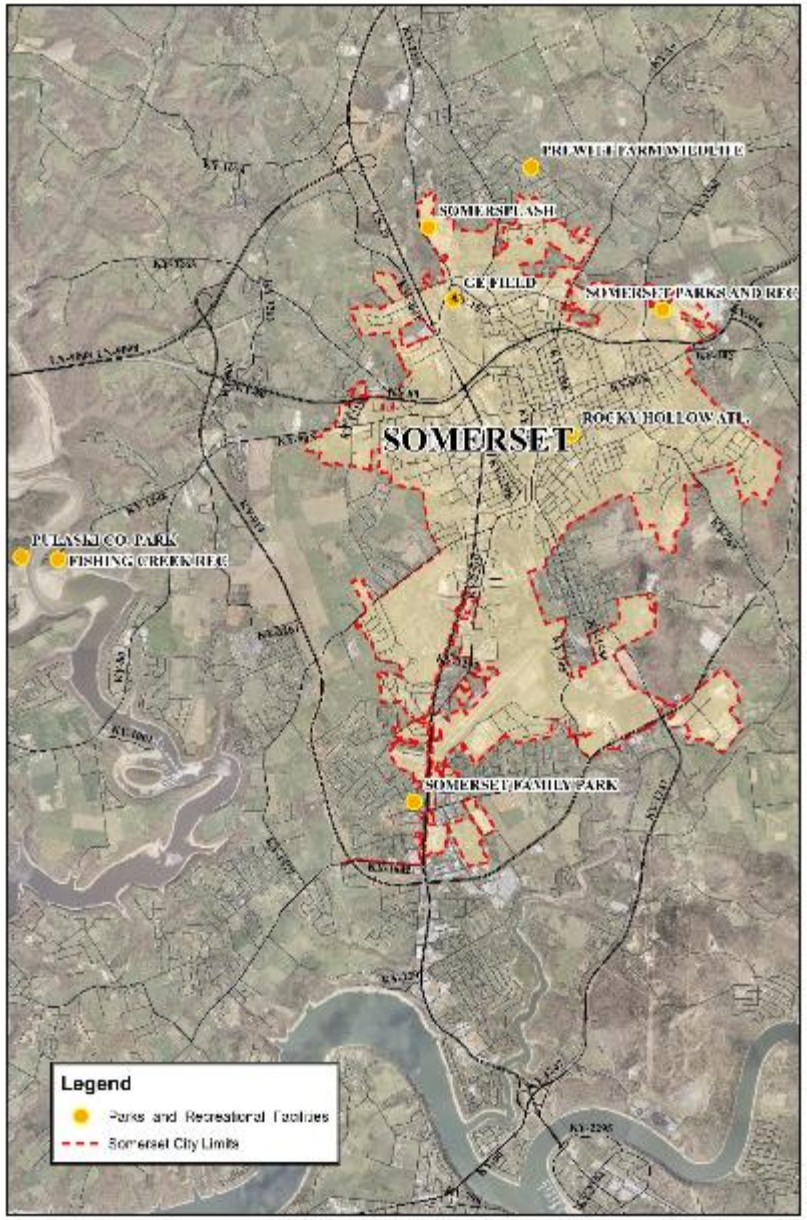


Schools in Somerset and surrounding areas

Parks and Recreation Facilities

- Somerset Parks and Recreation Complex
- GE Field
- Rocky Hollow Athletic Center
- Somerset Falls Family Park
- SomerSplash Waterpark
- Pulaski County Park
- Fishing Creek Recreation Area
- Prewitt Farm Wildlife Viewing Site

Aerial View of SomerSplash Waterpark



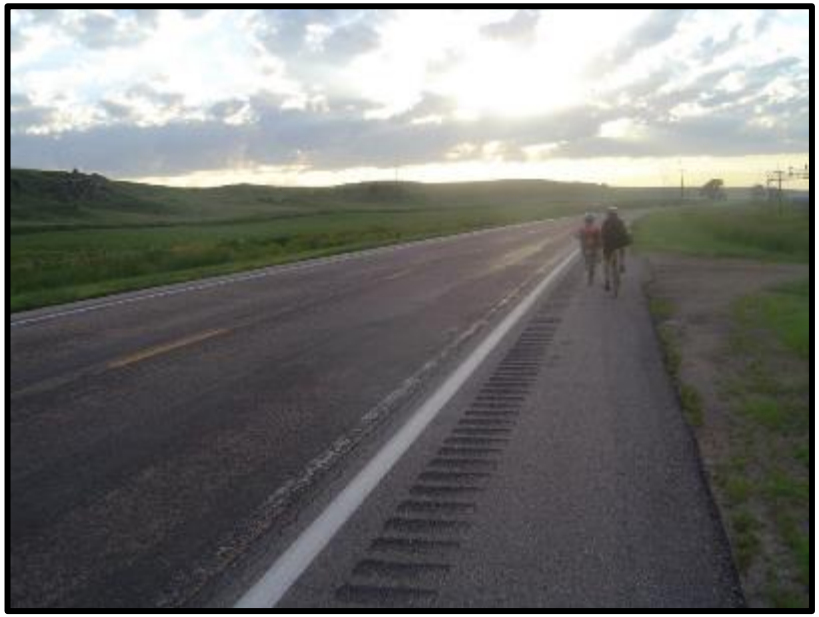
Parks and Recreational Facilities in Somerset and surrounding areas

Existing conditions

A complete assessment of the existing conditions, attitude, opportunities and constraints must be developed to ensure that recommendations are in complete context with the outcome of the study. Existing bikeways, walkways and sidewalks are integrated into the proposed Master Plan establishing a more complete network of non-motorized routes and paths.

Bicycle Facilities

Within the city limits, there are a limited amount of dedicated bicycle facilities. Currently, cyclists that live or visit the community use low volume roads, roadway shoulders and/or sidewalks for their travel and recreational purposes. The map below illustrates a bicycle travel heat map for Somerset. Information is collected and sorted from GPS data (via phone applications, GPS recording devices, and other sources) from bicyclists, runners, walkers, and hikers compiled on a travel source map. The brighter the colors on the map, the more bicyclist or pedestrian action occurs on the route.



Typical bike lane on paved shoulder

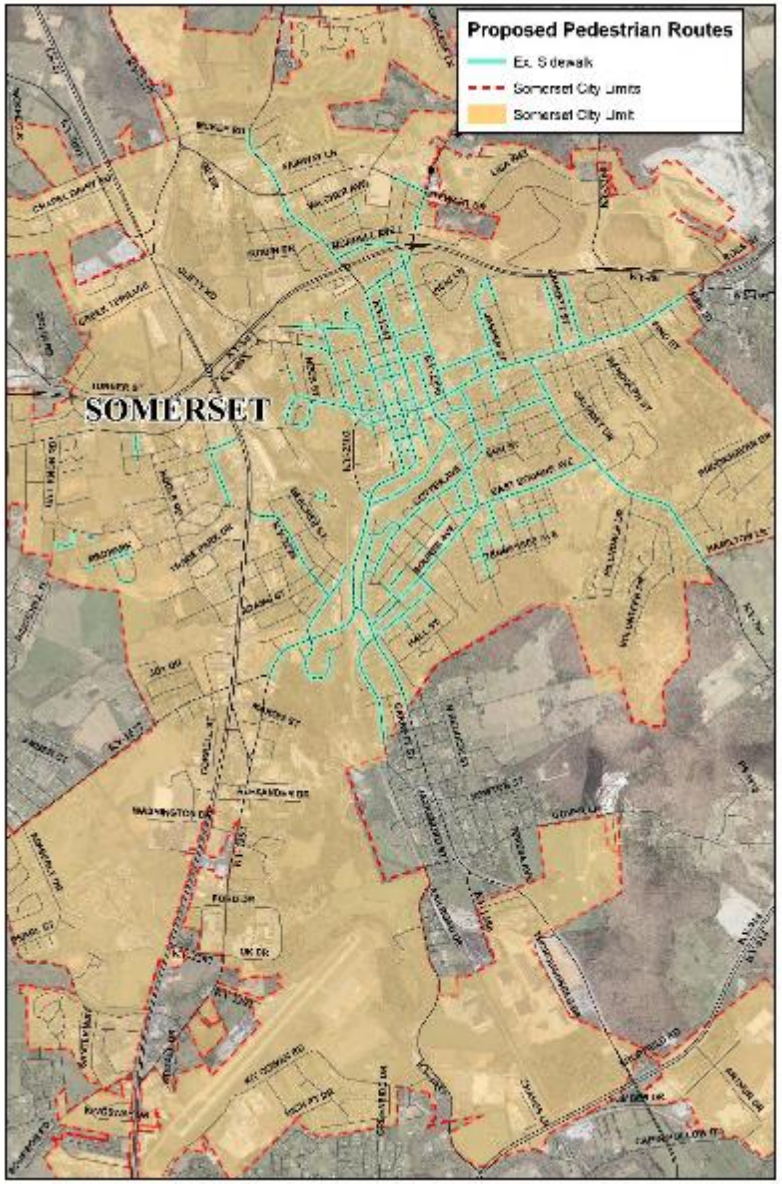
Somerset heat map provided by Strava

Pedestrian Facilities

The City of Somerset has over 30 miles of sidewalk (see figure below). Most sidewalks are located in the center of town branching out into neighborhoods. As identified on the map, you can see that there are a number of sidewalks that lack connectivity. Also, many of the sidewalks are in need of repair or in some cases full replacement. It is important to have a maintenance plan for these facilities in order to provide long term accommodations as well as to provide inviting facilities for pedestrians.

In the recent past, Rocky Hollow Trail was built as a separated path inside The City. The trail is just under a half of a mile and runs from S Central Ave to S Main St. This six foot wide trail was constructed solely for pedestrian traffic. Access to the trail is present on S Central Ave and S Main St.

Typical driveway apron and sidewalk



Existing Pedestrian Network

Bicycle and Pedestrian Safety

Safety is always a major concern for a community when designating bicycle and pedestrian ways. Securing the safety of bicyclists and pedestrians is a difficult task. Doing so requires that all roadway users make sound judgement, but accidents occur. Facilities should be designed with safety in mind, which will encourage users to make safe decisions.

The Kentucky State Police records all crashes reported each year and compiles them into a report. There is a big difference between the amount of collisions and fatalities between pedestrians and bicyclists. The table below shows how important it is to continue to work towards safer routes for bicyclists and pedestrians.

		2010	2011	2012	2013
Pedestrians	Collisions	1050	1051	1065	1066
	Fatalities	61	52	53	55
Bicyclists	Collisions	470	447	428	495
	Fatalities	7	2	6	7

Kentucky State Police Traffic Collision Facts 2010-2013

To improve safety awareness, The City has perform walkability checklists, provided by the US Department of Transportation, on a number of its sidewalks and continually encourages members of the community to participate. The goal of the walkability checklist is to identify segments of sidewalk that are conducive or not for pedestrians use.

One of the routes that was evaluated started at City Hall, as seen in the aerial to the right. The sidewalk followed along KY 80 and turned up towards Hopkins Elementary. The summary evaluation of this sidewalk resulted in a score of 25 out of 30. The local citizens who participated were very pleased with this evaluation. Local community members are often the most effective participants in identifying where there are safety concerns amongst other issues. The city plans to continue the evaluation process of these facilities to continuously rate sidewalks and improve their safety.

Path traveled for one of the walkability checklists performed

Bicycle Plan

A network of proposed bicycle routes has been identifies by incorporating ideas from The City, the public, and other organizations. While all streets (except limited access highways; such as parkways and interstates) are accessible by bicyclists, the majority of the time it is not economically feasible or practical to provide additional accommodations on all roadways. This Master Plan includes a network of selected roadways that are recommended for improvements that may better accommodate bicyclists. The streets selected were those that provided the best connections and or the highest safety/comfort factor. These routes provide connections to neighborhood, schools, parks, commercial areas as well as other high demand points of interests.

Specific facilities or treatment types options (shared lanes, signed routes, bike lanes, separated bike lanes and separated trails), whether it be on-street or off-street routes, are provided for each street/road selected. Additional studies may be needed before fully implementing the treatment option. These studies include looking at roadway features such as the width, traffic volume, and traffic speed.

Treatment Options

There are five types of treatment options proposed with this Master Plan:

1. Shared Lanes
2. Signed Routes
3. Bike Lanes
4. Separated Bike Lanes
5. Separated Trails/shared use paths

Shared Lanes

Shared lanes are normally found on roadways that carry low volumes, such as neighborhood streets or rural roads, or roadways that are not wide enough to accommodate bike lanes. Unlike bike lanes, shared lanes do not provide bicyclist with their own dedicated space. Shared lane markings, or "sharrows", help alert motorists to the presence of bicyclists and offer guidance to bicyclists.

Some of the benefits that shared lanes includes:

- Requires no additional street space.
- Reduces the incidence of wrong-way bicycling.
- Promotes the safe passing of automobiles.
- Placement of sharrows helps bicyclists visualize the appropriate lateral position.
- Indicates a preferred path for bicyclists through difficult or potentially hazardous situations, such as railroad tracks.

Typical sharrow on roadway

Signed Routes

Signed routes are very similar to shared lanes, without the dedication of space set aside for bicyclists. There are no sharrow markings, and therefor are typically used in rural areas with lower traffic counts. Roadways are signed with a bike route sign to alert motorist and are typically accompanied by wayfinding signage. Signed routes are a quick and inexpensive way to provide an extensive cycling network baseline.

Typical signed bike route

Bike Lanes

Bike lanes are used to create on-street, separated travel facilities for bicyclist. They provide bicyclists with a separate operational lane which in hand decreases the chance of motorists overtaking bicyclists, particularly in narrow, congested areas. Bike lanes are a means of traffic calming to visually narrow the roadway which encourages lower motor vehicle speeds.

Bike lanes enable bicyclists to travel at their preferred speed and facilitate predictable behavior and movements between bicyclists and motorists. Some of the benefits of bike lanes include:

- Increased bicyclist comfort and confidence on busy streets.
- A created separation between bicyclist and automobiles.
- Increased total capacities of street carrying mixed bicycle and motor vehicle traffic.
- A visual reminder to motorists of bicyclists' right to the street.

Roads with adequate shoulder space can be valuable to a bike network. Using shoulders striping is an inexpensive way to establish a dedicated bicycle facility. However, bike lanes do require some level of maintenance, such as providing smooth pavement for bikes, removing rumble strips at certain intervals, and keeping the shoulder free from debris need to be addressed.

Typical bike lane on roadway and sidewalk

Typical bike lane marking

Separated Bike Lanes

Separated bike lanes are exclusive facilities for bicyclists that are within or directly adjacent to the roadway that are physically separated from motor vehicle traffic. They differ from bike lanes by a vertical and/or horizontal buffer element. These buffers from adjacent roadways or sidewalks can be on-street parking, raised curbs or medians, bollards, landscaping, planter, amongst many others. These lanes can contribute to increased bicycling volumes in part by appealing to less confident riders resulting in a more diverse ridership across age, gender, and ability.

Typical separated bike lane with vertical buffer on roadway

Typical separated bike lane with grass strip buffer

Separated Trail/ Shared-Use paths

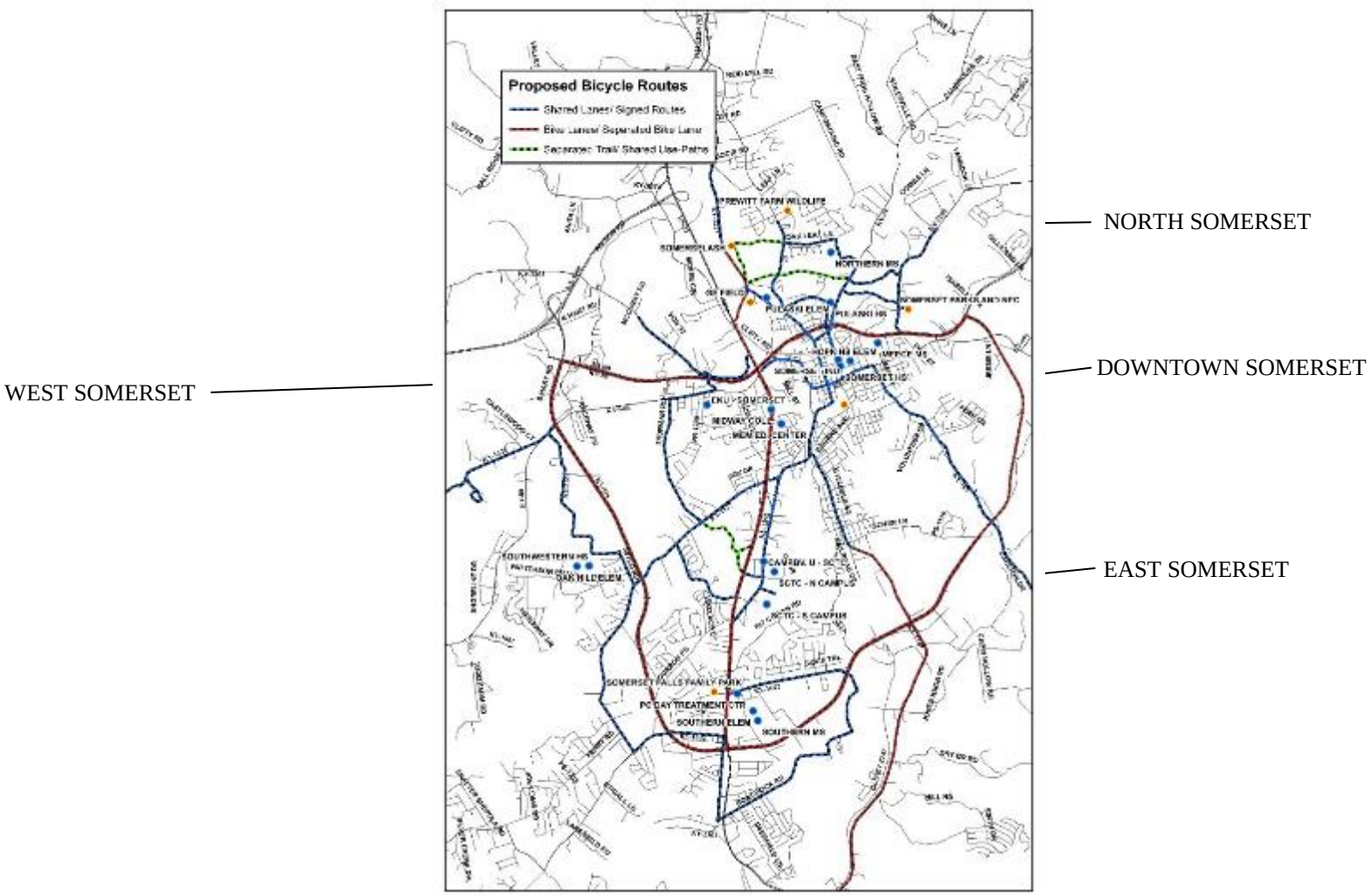
Separated trails are typically paved path, located along waterways, abandoned or active railroads, limited access highways or within parks and open space areas. Side paths may be safer and more desirable than sidewalks or bike lanes. Shared-use paths tend to attract bicyclists with a wide range of skill levels, including children. Special care must be taken in the planning and design of such paths to provide a satisfactory experience for bicyclists, and safe sharing of the facility with a variety of users of differing speeds and abilities.

Typical separated trail

Typical separated paved path

Recommended bike projects:

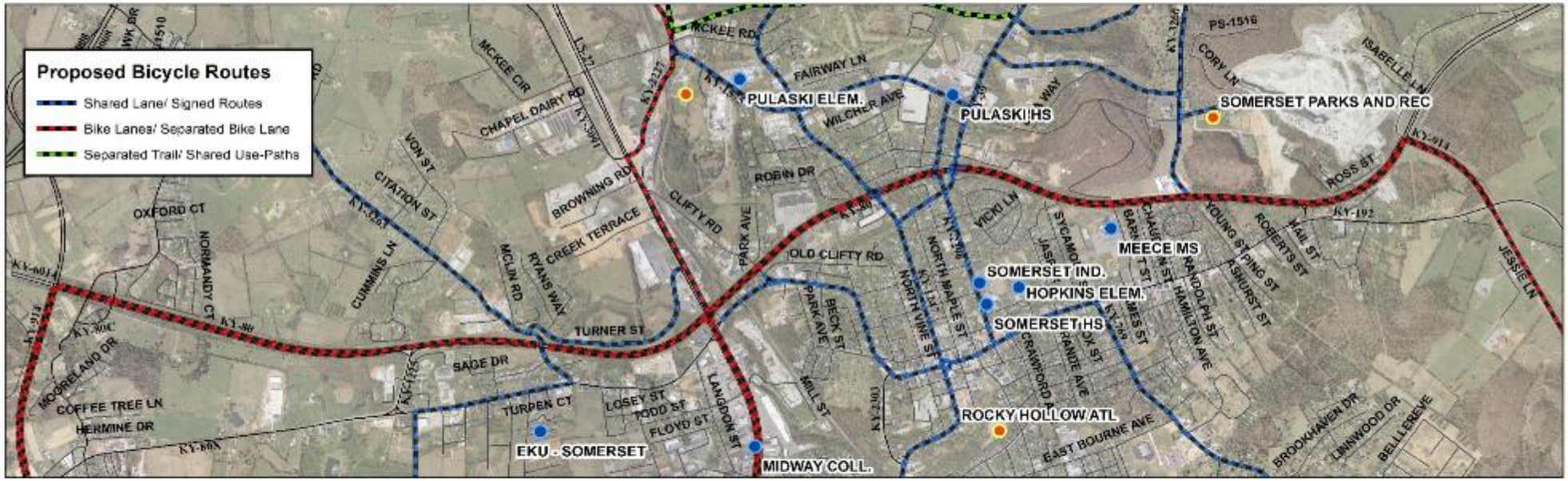
These proposed routes are intended to help residents connect with nearby amenities in a safer and a more accommodating manner. Treatment options are recommended for each route based on guidance from the Federal Highway Administration (FHWA) and The American Association of State Highway Traffic Officials (AASHTO); which includes factors such as street width, average daily traffic number, traffic patterns, and much more.



north on KY 2227 until Somerplash

The recommended separated trail/shared-use paths are:

- A continuation of Old Pumphouse road, along the Caney Fork to KY 2227.
- A continuation of Oak Leaf Lane to Somerplash.



The recommended bike lanes/separated bike lanes are:

- The bypass around Somerset, KY 80 and the shoulder along US 27

East Somerset

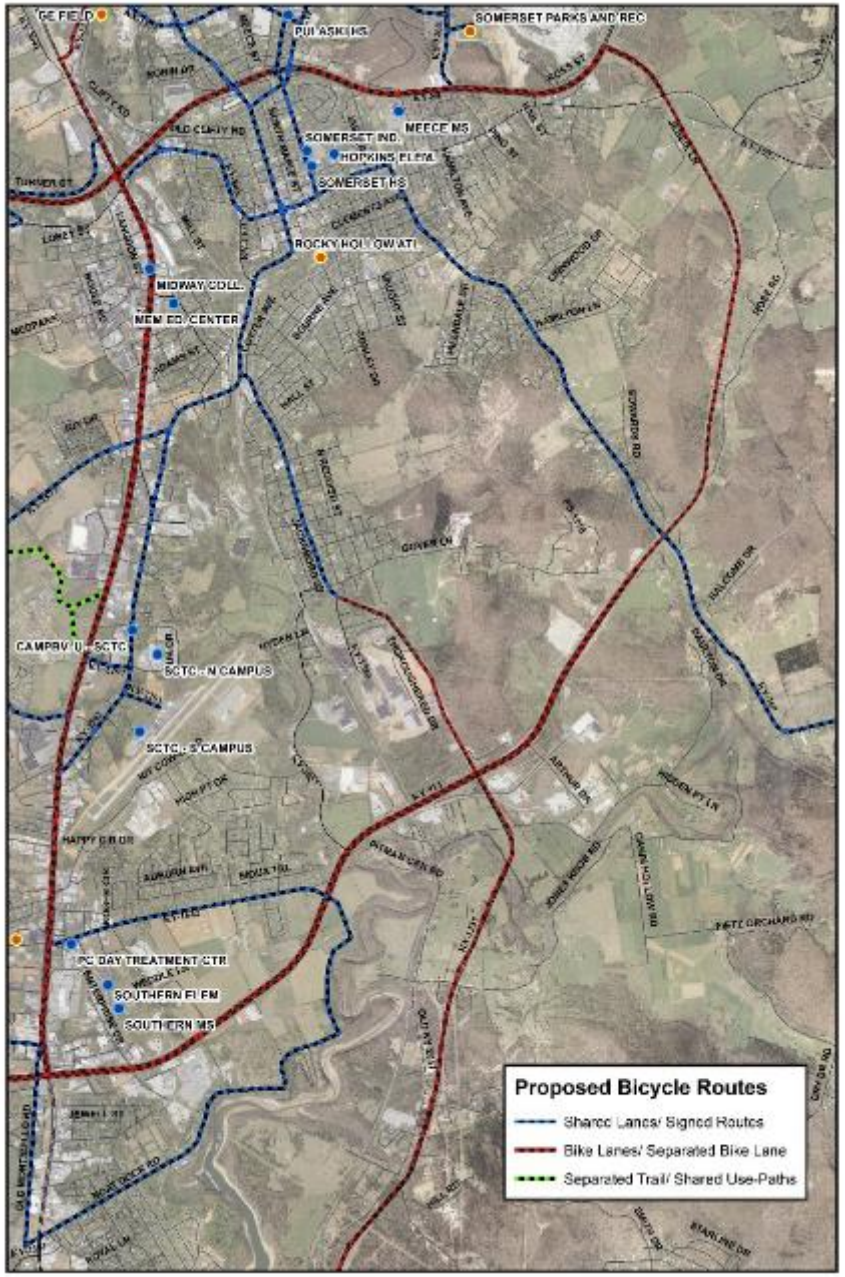
East Somerset contains two different types of bicycle facility options: shared lanes/ signed routes, and bike lanes/ separated bike lanes. Listed below are the selected routes.

The recommended shared lane/signed routes are:

- KY 1247 (MP: 6.4 to 5.2)
- KY 2292 (MP: 0 to 2.3)
- KY 1577 (MP: 4.4 and southwest)
- South on KY-769 (MP 9.7 into the country side)
- The loop of KY-1642 (MP 4.7 to 6.0), through the Bypass, down Boat Dock Road and up Old Monticello Road.

The recommended bike lanes/separated bike lanes are:

- The bypass around Somerset, KY 914
- Along KY 1247 (MP: 5.2 to 0).



West Somerset

The western section of the City of Somerset contains all three different types of bicycle facility options: shared lanes, bike lanes, and separated trails. Listed below are the selected routes.

The recommended shared lane/signed routes are:

- Along KY 1248 (MP: 0.6 to 1.5) towards the Fishing Creek Rec.
- Along KY 3261 (MP: 0 to 2.2)
- KY 1577 (MP: 0 to 4.4) to KY 1642 (MP: 3.5 to 4.6)
- Thurman Road
- A section of KY 80X, from Thurman Road to KY 3263
- Grand Central Blvd

The recommended bike lanes/separated bike lanes are:

- The bypass around Somerset, KY 914
- Along US 27

The recommended separated trail/ shared use paths are::

- An extension of Thurman road to US 27

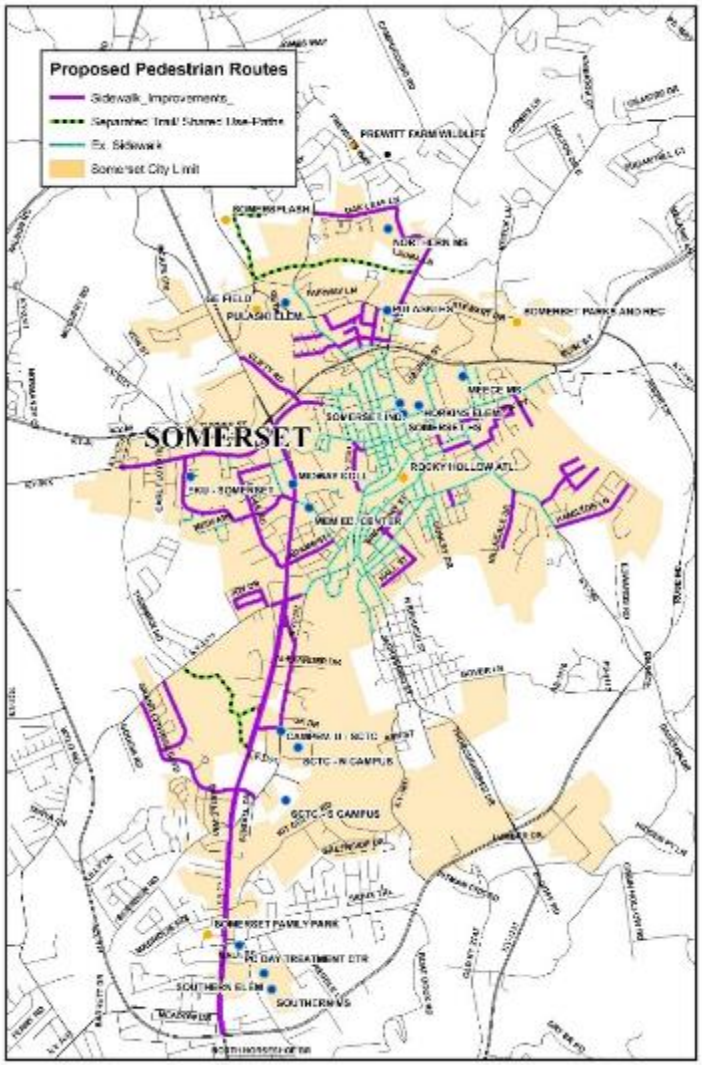
Pedestrian Plan

The term ‘Complete Street’ has come to define how a well-balanced transportation system is created. This concept involves accommodation for mode choice; providing bicycle, pedestrians, and transit facilities to make it just as appealing and reliable as motorized vehicular travel. A Complete Street concept should consider all travel mode choices when and where possible.

Although the City already has a number of existing sidewalks in the center of town it lacks the connectivity to and from surrounding neighborhood. Pedestrian do not feel safe walking in the shoulder of the roadway. Similarly, pedestrian do not feel safe when bicyclists use the sidewalk, unless there is a bike lane on the sidewalk. By providing the right facilities, pedestrians will be attracted to use the sidewalks once

The goals of the Master Plan for pedestrian facilities is to:

- Identify major collector and arterial streets to become complete streets
- Retrofit and maintain existing sidewalks to ADA standards
- Provide sidewalks were adequate on both sides of urban streets
- Provide a minimum sidewalk width of five feet, where feasible
- Provide sidewalks to surrounding neighborhoods and school in order to create a network throughout the city of pedestrian access
- Provide access for children, non-drivers and senior citizens to points of interest within the community



Sidewalk Recommendation

The map illustrates the proposed sidewalk expansions. The main corridor lacking any type of pedestrian facilities is along US-27. This roadway has a high daily traffic count and doesn’t accommodate for safe pedestrian use. The use of right of way along US-27 should provide space for sidewalks; providing safer accommodations for pedestrians and also providing increased benefits for business along this corridor.

Additional sidewalks should be added to the existing network to provide a more fluid and logical transition of pedestrian facilities. The current lack of continuity may force citizens to travel along busy roadways to reach another sidewalk.

Implementation

Plan of Action

Biking and walking have become increasingly popular forms of transportation and recreation in communities across the country; inclusive for all ages and gender. This Bicycle and Pedestrian Master Plan is a tool that the City of Somerset can use to promote and advocate to the community that Somerset has a great biking and walking environment. The recommendations have been broken into three suggested phases of implementation to help spread the funding responsibilities and to provide adequate time for proper planning and public involvement. However, this Master Plan is not a static document. The recommendations and proposed routes should open to change and adjustable to meet the needs and demands for additional facilities, routes and paths for the future of the community.

Phase 1:

Bicycle: Signage and pavement markings for bicycle routes. This phase is a low cost and effective way to promote awareness, educate the public, and provide accommodations.

Pedestrian: Improve roadway intersection and existing sidewalks to meet American with Disabilities Act (ADA) standards. This will also serve as a starter ADA transition plan.

Phase 2:

Bicycle: Bike lanes where appropriate and possible

Pedestrian: Plan, design, and construct new sidewalks near schools when and where possible.

Phase 3:

Additional bike lane, trail and shared use-paths recommended in this plan and sidewalks improvements that are needed

Funding sources for various projects/plans

Funding for the planning, design, and construction of a complete bicycle and pedestrian network can be an expensive endeavor. The City would work to secure funding opportunities available from private, local, state and federal agencies that support incorporating bike trails, shared-lane bike routes and sidewalks into communities.

One such funding opportunity is through the **Paula Nye Memorial Education Grant** (available from the sales of the Share the Road License Plate). This is administered by the Kentucky Bicycle and Bikeway Commission (KBBC). The grant program promotes to inform, educate and increase

awareness for all matters pertaining to bicycle and pedestrian safety and activity. This program encourages the development of curriculum, training aids and/or educational programs or projects that directly relate to bicycle and pedestrian safety.

The **Kentucky Renaissance/ Main Street Grant** is reserved for capital projects that contribute to downtown revitalization such as streetscape enhancements.

Safe Routes to School (SRTS) is set up to help communities engage local school planning and to incorporate bikeways to and from schools. Each year, millions of dollars in grants are allocated for SRTS.

Rails to Trails is another federally funded grant system that focuses on taking abandoned rail lines and transforming them into recreational walking and biking trail.

Another possible resource is the **Land and Water Conservation Fund**. This matching grant is provided to State and Local government for the acquisition and development of public outdoor recreation areas and facilities.

Under the MAP-21, the **Recreational Trails Program (RTP)** is continued at the current funding levels under the **Transportation Alternatives Program** (TAP). Some of the eligible project categories are as follows:

- Continue bicycle/pedestrian facilities and expand the definition of these projects
- Establish a category for safe routes for non-drivers, including children, older adults, and individuals with disabilities
- Retain conversion of abandoned railroad corridors for trails for pedestrians and bicyclists, or other non-motorized transportation users

Government, Public and Private Partnership can be a powerful tool for developing a more walkable and bicycle-friendly community. There are many organizations that have special abilities to help local governments achieve the goals outlined in this plan, while at the same time benefiting their own missions.