

Hikeit.Bikeit.Calvert.



Calvert City Bicycle and Pedestrian Master Plan



This opportunity is supported by Cooperative Agreement number NU58DP006497, funded by the Centers for Disease Control and Prevention. Funding is awarded to the Kentucky Department for Public Health to implement the project "Kentucky State Physical Activity & Nutrition Program."

TABLE OF CONTENTS

INTRODUCTION

Purpose of the Plan	3
Benefits of Walking and Bicycling.....	3
Vision and Goals of the Plan.....	5
Socioeconomic Analysis of Calvert City.....	5
Policy Framework and Previous Work.....	7
Factors that Influence Walking and Bicycling in Calvert City	11
Public Input	12

DESIGN STANDARDS AND GUIDELINES

Signage and Mapping	13
Bicycle Parking	19
Definitions.....	20

EXISTING CONDITIONS AND ANALYSIS

Existing Pedestrian Activity	22
Existing Bicycle Activity	22
Existing Facilities	23

PROPOSED FACILITIES AND NETWORK

Future Sidewalks	25
Future Bicycle and/or Shared Use Facilities	26
Future Mountain Bike Facilities.....	34
List of Future Projects	35

RECOMMENDATIONS

Recommendations	36
-----------------------	----

APPENDICES

Appendix A: Calvert City Strategic Plan 2020-2025	37
Appendix B: Trail Network Feasibility Study	38
Appendix C: Resources	39

INTRODUCTION

This Bicycle and Pedestrian Master Plan was developed to address health, safety, tourism, and economic issues in Calvert City in Marshall County, Kentucky. This plan focuses on bicycle and pedestrian needs and facilities in this area. According to Kentucky's Vision for Access to Physical Activity Report, active transportation, such as walking or bicycling, allows residents to get physical activity while performing daily routines, such as commuting to work or school. Walking is one of the most popular forms of physical exercise for adults because it does not require special skills or expensive equipment.

PURPOSE OF THE PLAN

The purpose of the Master Plan is to identify, design, and construct needed walkways and bikeways that connect neighborhoods, business centers, parks, and schools. It sets forth ideas and strategies for making Calvert City an inviting place to bike and walk. The Master Plan is a road map to guide local and state governments, developers, road builders, citizens, and bicycle and walking advocates when planning and developing projects in the community.

BENEFITS OF BICYCLING AND WALKING

Bicycling and walking generate a wide array of important benefits to the environment and to society at large including the following:

Environmental Benefits

Leaving your vehicle at home cuts down on greenhouse emissions and global climate change by reducing air pollutants. Additionally, it reduces noise pollution and congestion that arises due to vehicular traffic. It reduces the need for new parking lots and roadways and therefore preserves valuable green space by protecting it from development.

Improved Mobility Benefits

Accommodations for walking and bicycling as an alternative means of travel appeal to a broader range of individuals within the community. Children and seniors in particular benefit from having multi-modal choices (non-motorized transportation options) for daily travel and activity. By planning and providing more connections and greater access to all parts of the community, Calvert City can increase the ability to meet their complete transportation needs.

Social/Safety Benefits

A better environment for walking and biking provides social and safety benefits that improve the quality of life of a community. Safe and accommodating walking and biking facilities within the community create more opportunities for social interactions. A walkable and bike-able community has positive economic advantages over other communities, such as having higher property values, being more attractive to new businesses, being more inviting for new home buyers, and having more to offer tourists. By planning for future bicycle and pedestrian facilities and accommodations, Calvert City can additionally benefit and become an even more thriving community within the region.

Improved Public Health Benefits

One of the most important benefits of cycling and walking is improved health. In 2018, Kentucky was ranked the 45th healthiest state in the nation. Marshall County ranks 111th in Health Outcomes and 77th for Health Factors out of 120 Kentucky Counties. The following Health Outcome Table displays how Marshall County compares to the Commonwealth of Kentucky on several key indicators of health:

Health Outcome Table

Key Indicators of Health Outcomes	Marshall	Kentucky
Premature Death (years lost per 100,000 population) 2014-2018¹ <small>Years of Potential Life Lost prior to age 75 is a measure of premature mortality that is calculated over the age range from birth to 75 years of age.</small>	9,840	9,034
Total Mortality (per 100,000 population) 2014-2018¹ <small>Age-adjusted rate of deaths (from all causes) per year.</small>	965	919
Prevalence of Diabetes (percent adults) 2016-2018²	12%	13%
Prevalence of Hypertension (percent adults) 2005-2009²	41%	39%
Heart Disease Deaths (per 100,000 population) 2014-2018¹ <small>Age-adjusted rate of deaths (due to heart disease) per year.</small>	229	195
Stroke Deaths (per 100,000 population) 2014-2018¹ <small>Age-adjusted rate of deaths (due to stroke) per year.</small>	50	39
Lack of Physical Activity (percent adults) 2016-2018² <small>Percent of adults who did not participate in any physical activity or exercise during the past month.</small>	33%	32%
Prevalence of Smoking (percent adults) 2004-2006² <small>Percent of adults who are current smokers.</small>	26%	24%
¹ Kentucky State Data Center – Vital Statistics ² CDC/Behavioral Risk Factor Surveillance System Data (BRFSS)		

It is widely recognized that regular daily physical activity including biking and walking can improve posture/balance, lower blood pressure, increase energy, increase flexibility and muscle strength, and lower stress levels. This activity serves to reduce the risk of depression, heart disease, obesity, diabetes, osteoporosis, and high blood pressure. By increasing the amount of public space for convenient and safe recreation and active transportation, Calvert City can increase the overall health of the community.

VISION AND GOALS OF THE PLAN

The overall goals of the Bicycle and Pedestrian Master Plan will guide the city as it moves forward with plan implementation. A summary of the goals is provided below:

Bicycle and Pedestrian Network and Support Facilities

Develop a network that allows for safe and convenient movement throughout the city and to the regional network.

Safety, Security, and Equity

Provide safe and accommodating connections between neighborhoods, business centers, parks, recreation facilities and schools. Modal considerations should be made for all residents, especially those who do not have access to private motorized vehicles.

Transportation and Land Use

Consider all uses for adjacent land within the right-of-way of roadways, near commercial areas, and government owned properties. These areas have valuable potential for providing non-motorized travel accommodations where walking and cycling improvements are most needed.

Education and Awareness

Open the lines of communication so that all users of the transportation network have improved awareness of the need to share the roadways and trails and recognize and observe traffic safety laws.

Maintenance and Operations

Ensure that biking and walking facilities are kept in good condition and work well for the intended users.

SOCIOECONOMIC ANALYSIS OF CALVERT CITY

Calvert City, Kentucky, is located in Marshall County in far western Kentucky. It is located directly off I-24 on the Tennessee River directly below Kentucky Lake. With a 2019 estimated population of 2,513 residents, it is the 124th largest city in Kentucky. At about 18 square miles, its land area is fairly large in comparison to its population. Calvert City has 11 industrial plants that are a key source of employment for western Kentucky. The majority are chemical manufacturers with some steel and metallurgical plants and industrial service firms. Calvert City is a hub for surface transportation. The city is skirted on the south by Interstates 24 and 69 linking Calvert City to Nashville, Evansville, St. Louis, Memphis and Louisville and Lexington via the I-69/Western Kentucky Parkway. The city has rail access through the Paducah and Louisville Railway main line and is a commercial port on the Tennessee River. There is no bus service or other mass transit.

Ethnicity

The following table shows the ethnic profile of Calvert City:

Calvert City Ethnic Profile

Ethnicity ¹	Population	Percentage
Total population	2,513	100%
Hispanic or Latino	107	4.3%
Not Hispanic or Latino	2,406	95.7%
White alone	2,390	95.1%
African American alone	0	0.0%
American Indian alone	13	0.5%
Asian alone	0	0.0%
Native Hawaii/Pacific Isle	0	0.0%
Some other race	0	0.0%
Two or more races	3	0.1%

¹ACS 5-year Estimate (2015-2019)

Income

The total median household income is \$52,446 for residents of Calvert City. The percentage of residents in Calvert City below the poverty level is 15.4%.

Commuting

The ACS also determined that the mean travel time to work in minutes for 2019 was 19.2 minutes. The following table shows Calvert City's commuting profile:

Calvert City Commuting Profile

Commuting ¹	Population	Percentage
Workers 16 years and over	997	100%
Place of Work		
In county of residence	490	49.1%
Out of county of residence	507	50.9%
Travel Time to Work		
Less than 10 minutes	191	19.2%
10 to 14 minutes	204	20.5%
15 to 19 minutes	89	8.9%
20 to 24 minutes	107	10.7%
25 to 29 minutes	136	13.6%
30 or more minutes	270	27.1%

¹ACS 5-year Estimate (2015-2019)

POLICY FRAMEWORK

It is hoped that by adopting this Master Plan, momentum can be developed which could lead into adoption of complimentary municipal policies and ordinances, to finally require consideration, planning, and implementation of adequate bicycle and pedestrian facilities with all new development and major reconstructions.

Calvert City Comprehensive Plan

Calvert City completed a Comprehensive Plan in 2007 with revisions in 2014. The plan is designed to provide policy direction for Calvert City on the issues of growth, development, and preservation based on the values of the community. Several goals and objectives are mentioned that could be supported with bicycle and pedestrian facilities. These goals and objectives are summarized below:

Goal: Economic Development

Foster a strong and diverse economy which provides a full range of employment and economic choices for individuals and families in all parts of the city.

Urban Development and Revitalization

Encourage investment in the development, redevelopment, rehabilitation and adaptive reuse of urban land and buildings for employment and housing opportunities.

Objectives

- Encourage sufficient inventories of commercially and industrially zoned, buildable land supplied with adequate levels of public and transportation services.
- Retain industrial zones and maximize use of infrastructure and intermodal transportation
- Linkages within these areas.
- Define and develop Calvert City's cultural, recreational, educational and environmental assets as important marketing and image-building tools of the city's business districts and neighborhoods.
- Recognize and support environmental conservation and enhancement activities for their contribution to the local economy and quality of life for residents, workers and wildlife in the city.

Business Development

Sustain and support business development activities to retain, expand and recruit businesses in commercial and industrial areas.

Objectives

- Work to create and promote a variety of tourism initiatives, and to develop mutually supporting businesses as well.
- Advocate with the other cities within Marshall County and the county government itself to consider economic concerns in their land use and transportation planning activities.

Infrastructure Development

Promote public and private investments in public infrastructure to foster economic development.

Objectives

- Work with the Kentucky Transportation Cabinet to encourage that highway planning reflects the needs of the community. Advocate for all highway and road improvements vital to the community.
- Facilitate the development of attractions that will generate new investment, spending and tourism.

Tourism-Related Development

Expand and enhance tourism-related infrastructure.

Objectives

- Develop an overall strategy to get the most out of economic impact from tourist visits into the city.
- Develop a way-finding system a series of signs that are used to direct visitors around the city.
- Continually update the website to provide tourism opportunities and schedules of events.

Goal: Quality of Life

Preserve, enhance, and promote small town character and appearance.

City Growth

Land use should reflect emerging development patterns of the city and be compatible with existing physical conditions.

Objectives

- Encourage nontraditional styles of development, such as multi-use development and conservation subdivisions, in order to foster efficient use of land, respect the physical environment, and transportation facilities.
- Promote and plan for Complete Street concepts to include pedestrian traffic, off-road vehicle access, walkability and reasonable connections throughout the city. Devise structure to include safety and enforcement guidelines for ongoing development and increased use.

Community Appearance

Create more appealing city gateways and corridors as well as improve the overall appearance of the city.

Objectives

- Encourage public/private participation and cooperation in beautification efforts. Explore assistance that may be available from private/volunteer groups to contribute to urban design-related projects and to help maintain enhanced public areas (e.g., street medians, small landscaped areas, trails, sidewalks, and pedestrian areas).

Goal: Land Use Planning

Encourage the most desirable and efficient use of land while enhancing the physical and economic environment of Calvert City.

Land Use Principles

Create more appealing city gateways and corridors as well as improve the overall appearance of the city.

Objectives

- Encourage new residential development to incorporate pedestrian access through the new development and to adjacent areas, wherever applicable.

Goal: Environment

To protect and enhance the quality of the natural environment in Calvert City.

Urban Environment

Minimize negative impact of urban development.

Objectives

- Control the impacts of noise, odor, light, litter, graffiti, junk cars, trash, and refuse in order to protect human health and the livability of the urban environment.

Goal: Transportation

Maintain a safe and efficient transportation network and provide a range of transportation alternatives.

Streets and Roads

Minimize negative impact of urban development.

Objectives

- Work closely with the Kentucky Transportation Cabinet and other governments in Marshall County to encourage the vital improvements to state roads are included in the state's Six-Year Road Plan.
- Rights-of-way in new developments should be dedicated to the city for public use.
- Encourage Complete Street concepts where appropriate. Complete Streets are roadways designed to provide safe access for all users, including walkers, bicyclists, and motorists.

Alternative Modes of Transportation

Provide a safe and inviting alternative to driving.

Objectives

- Support the designation of pedestrian trails and alternative modes of transportation where feasible in the city as a means of recreation and a healthy lifestyle, in addition to providing alternative modes of transportation and tourism promotion.

- Encourage and support a trail plan throughout the city.

Goal: Community Facilities

To plan and provide for quality community facilities and services to effectively meet the municipal, social, educational and other service needs of Calvert City’s residents and businesses in an efficient manner.

Objectives

- Encourage public health and safety of local residents. Rights-of-way in new developments should be dedicated to the city for public use.
- Encourage and plan for new development to include alternate transportation options such as pedestrian, bicycle, and off-road vehicles.

Goal: Parks & Recreation

Continue to provide for the development of a comprehensive system of parks, trails, and open spaces that meet the needs of all age groups within Calvert City.

Objectives

- Encourage the expansion of the citywide trail system to connect parks, neighborhoods, municipal facilities, and schools, thereby creating a more pedestrian-friendly community.
- Encourage new residential development to incorporate pedestrian and off-road vehicle access through the new development and to adjacent areas, wherever applicable.
- Encourage continued exploration of new recreational and social opportunities for all age groups, especially for the younger age groups within Calvert City.
- Continue preparation and adjustment of long-range plans for recreation and park development throughout the city and county in locations suited to the demands of projected population growth.
- Support and encourage private participation and volunteer organizations to collaborate in the development of parks, trails, bike paths and other recreational venues that improve the health and wellness of the residents.

Purchase Area Development District

The Purchase Area Development District, which includes both Calvert City and Marshall County, does not have an active Pedestrian/Bicycle Master Plan, but has published their Goals and Objectives. One goal is to “Maintain and improve existing infrastructure within the region while including all appropriate modes of transportation.” This goal includes two objectives which relate to Pedestrian/Bicycle Facilities:

- Pursue the incorporation of providing greenways, bicycle, pedestrian, and multi-purpose trails into project planning.
- Encourage participation from individuals representing these modes of transportation on the PADD’s Regional Transportation Committee.

Kentucky Transportation Cabinet Bicycle and Pedestrian Plan

The state of Kentucky adopted a Pedestrian and Bicycle Policy in 2002, in response to a U.S. Department of Transportation publication encouraging the accommodation and/or consideration of bicycle and pedestrian facilities in roadway projects. KYTC will consider bicycle accommodations if the roadway project meets one or more of the following criteria:

- A bicycle facility already exists on the current roadway.
- The recommended roadway cross section is urban (curb and gutter). In urban roadway cross sections (curb and gutter), accommodations to assist bicyclists include a range of measures from signage, bicycle-friendly grates, and wide curb lanes, to bicycle lanes.
- Project limits are adjacent to an existing residential, commercial, office, industrial, institutional, public or semi-public use area or adjacent to an area planned to develop into one of these uses within the next 20 years. Planned development may be determined by a local comprehensive plan or the public-involvement process.
- A state, locally, or regionally adopted bicycle plan has designated bicycle improvements or a bikeway in the area of the specific roadway project or for that classification of roadway.
- A KYTC Small Urban Transportation Study has specific bicycle improvements recommended for the roadway project.
- Bicycle traffic exists along the current roadway: This may be determined by the observation of bicycle traffic or by the public-involvement process.
- Public interest in and demand for bicycle accommodations are determined at the planning and preliminary engineering public-involvement stages.

The Calvert City Bike and Pedestrian Master Plan is intended to strengthen the consideration and inclusion of bicycle and pedestrian facilities in KYTC plans and to provide guidance for making those considerations as early in the transportation project development process as possible. A copy of this plan will be provided to KYTC Central Office, KYTC Highway District Office 1, and to local officials to ensure that this analysis can be used to help develop projects in the area.

FACTORS THAT INFLUENCE WALKING AND BICYCLING IN CALVERT CITY

Destinations

Some places within the community are major attractors for walking and cycling. These include retail clusters, schools, parks, medical facilities, and places of employment. It is important to provide safe and accommodating options for all modes of transportation, other than just for motorized travel.

Time and Distance

It is easier and more accommodating to walk and bike to destinations within the urbanized downtown area than in the rural portions of the County. Research shows that the average walking trip is less than a mile and bike trips are less than five, with some “recreational” or “exercise” emphasis trips tending to be longer for each. People are more likely to choose walking or bicycling if it is safe and accommodating to do so.

Demographics

Those who are too young/old to drive, unable to drive due to medical or economic reasons, or don't have a drivers' license due to traffic violations rely on walking and cycling for transportation. It is important to plan for the needs of all residents of Calvert City. Furthermore, the city should be sure to include residents of all abilities.

Environment

Weather and traffic play an important role in how frequently people within the community walk or bike for transportation. Hot and humid summer conditions and cold and wet winter conditions as well as narrow, curvy roads with fast moving traffic can create significant barriers to walking and biking throughout the city and county.

Community Attitudes

The perception of what is the socially acceptable norm can play a vital role in how frequently people choose walking or cycling for transportation or recreation. As more people choose walking and biking for recreation and transportation, perceptions toward those activities change in a positive manner.

PUBLIC INPUT

See Appendix A for community survey results/comments.

DESIGN STANDARDS AND GUIDELINES

The Kentucky Transportation Cabinet (KYTC) has published Statewide Pedestrian & Bicycle Travel Policy which provides guidance on planning for and accommodating pedestrians and cyclists in our state's transportation system. It is available at the following address:

<https://transportation.ky.gov/BikeWalk/Pages/Laws-and-Policy.aspx>

In conjunction with KYTC District 1, Calvert City's planning activities should always include sidewalks and bicycle facilities (where feasible) within city limits. Rural area roadways should consider including wide paved shoulders (5 feet or wider) when and where feasible to further accommodate non-motorized transportation.

Pedestrian facilities should always be constructed to be compliant with the Americans with Disabilities Act Accessibility Guidelines (ADAAG) to accommodate all people who live in or visit Calvert City. They are available at the following address:

https://www.ada.gov/2010ADASTandards_index.htm.

Paved roadway shoulders should include bicycle gaps within the rumble strips/stripes (10' gaps space every 50') to allow cyclists to exit either the shoulder or the roadway at reasonable intervals. The shoulder rumbles should not extend continuously onto side roads. Shoulder rumbles that are deemed necessary within the urban boundaries should be the rolled type, as opposed to the more aggressive milled type.

SIGNAGE AND MAPPING

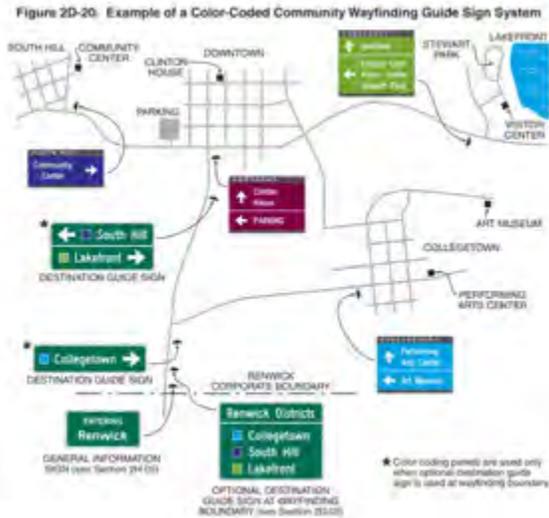
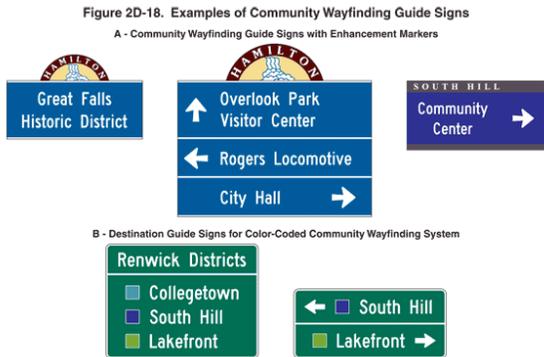
Project planners should refer to the Manual of Uniform Traffic Control Devices (MUTCD) and consult with KYTC for all signage associated with roadways, bicycle, and pedestrian facilities before recommending or installing. The MUTCD Manual can be found here:

https://mutcd.fhwa.dot.gov/kno_2009r1r2.htm.

It is recommended that a citywide bicycle and pedestrian travel and facility map be developed and produced for current and future facilities.

Appropriate bicycling and pedestrian facility wayfinding signage should be considered in conjunction with a citywide navigational map to aid non-motorized travelers with navigation around the city. Appropriate warning signs should be considered and placed in advance of all bicycling and pedestrian facilities when deemed necessary. These signs should be part of the consideration with all new transportation projects.

Wayfinding Signs

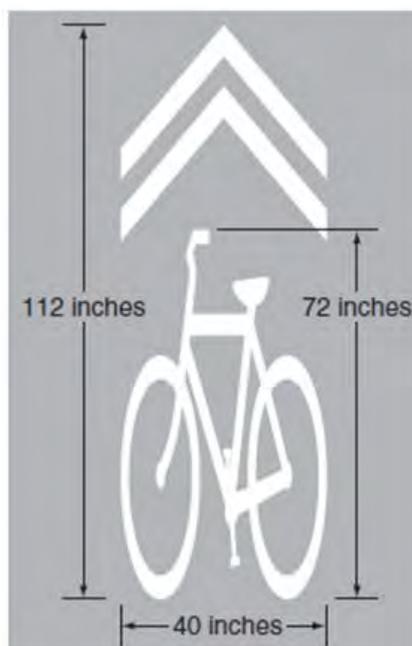


SHARED LANE MARKING (SHARROW)

The Shared Lane Marking shown below may be used to:

- Assist bicyclists with lateral positioning in a shared lane with on-street parallel parking in order to reduce the chance of a bicyclist's impacting the open door of a parked vehicle,
- Assist bicyclists with lateral positioning in lanes that are too narrow for a motor vehicle and a bicycle to travel side by side within the same traffic lane,
- Alert road users of the lateral location bicyclists are likely to occupy within the traveled way,
- Encourage safe passing of bicyclists by motorists, and
- Reduce the incidence of wrong-way bicycling.

MUTCD Shared Lane Marking



The Shared Lane Marking should not be placed on roadways that have a speed limit above 35 mph.

Shared Lane Markings shall not be used on shoulders or in designated bicycle lanes.

If used in a shared lane with on-street parallel parking, Shared Lane Markings should be placed so that the centers of the markings are at least 11 feet from the face of the curb, or from the edge of the pavement where there is no curb.

If used on a street without on-street parking that has an outside travel lane that is less than 14 feet wide, the centers of the Shared Lane Markings should be at least 4 feet from the face of the curb, or from the edge of the pavement where there is no curb.

If used, the Shared Lane Marking should be placed immediately after an intersection and spaced at intervals not greater than 250 feet thereafter.

WORD, SYMBOL, AND ARROW PAVEMENT MARKINGS

Other options for marking bicycle lanes are shown (Figure 9C-3) on the next page. This figure illustrates three examples of word, symbol, and arrow pavement markings for bicycle lanes, labeled A, B, and C.

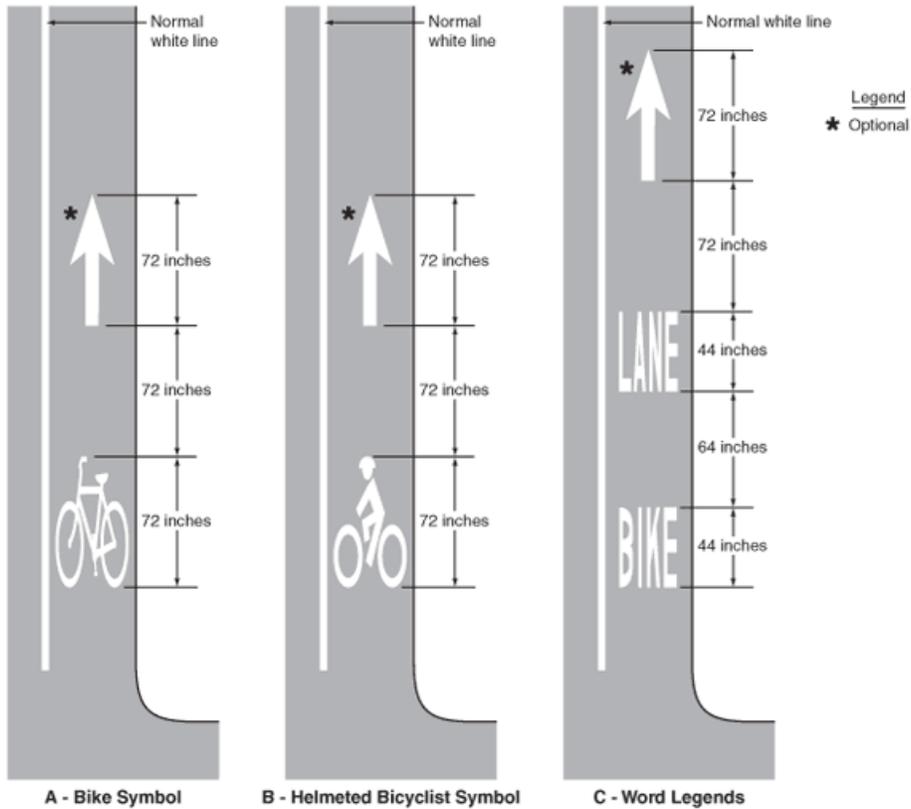
A is labeled "Bike Symbol." It shows a vertical section of a roadway just beyond an intersection with a horizontal roadway to the right. A vertical solid normal white line is shown beginning about one-fifth up from the bottom of the figure. The white line is shown separating two adjacent lanes of traffic. In the rightmost of these two lanes, a white symbol of a bicycle is shown marked in the center of the lane in advance of a white forward-pointing vertical arrow shown marked in the center of the lane. The arrow is denoted as optional. The overall length of the bicycle symbol is shown as a dimension of 72 inches. The distance from the top of the bicycle symbol to the bottom of the arrow is shown as a dimension of 72 inches. The overall length of the arrow is shown as a dimension of 72 inches.

B is labeled "Helmeted Bicyclist Symbol." It shows the same figure and dimensions as "A" but with a symbol of a person wearing a helmet riding the bicycle.

C is labeled "Word Legends." It shows the same vertical section of a roadway as "A" with the same vertical solid normal white line. In the rightmost of the two lanes, the word "BIKE" is shown marked in the center of the lane in advance of the word "LANE." The word "LANE" is in advance of a white forward-pointing vertical arrow shown marked in the center of the lane. The arrow is denoted as optional. The overall length of the word "BIKE" is shown as a dimension of 44 inches. The distance from the top of the word "BIKE" to the bottom of the word "LANE" is shown as a dimension of 64 inches. The overall length of the word "LANE" is shown as a dimension of 44 inches. The distance from the top of the word "LANE" to the bottom of the arrow is shown as a dimension of 72 inches. The overall length of the arrow is shown as a dimension of 72 inches.

MUTCD Word, Symbol, and Arrow Pavement Markings for Bicycle Lanes

Figure 9C-3. Word, Symbol, and Arrow Pavement Markings for Bicycle Lanes



FULL LANE SIGN

The Bicycles May Use Full Lane (MUTCD R4-11) sign (shown below) may be used on roadways where no bicycle lanes or adjacent shoulders usable by bicyclists are present and where travel lanes are too narrow for bicyclists and motor vehicles to operate side by side.

The Bicycles May Use Full Lane sign may be used in locations where it is important to inform road users that bicyclists might occupy the travel lane.

MUTCD Sign R4-11



Procedure for Signing On-Road Bicycle Routes

This procedure applies to all state maintained conventional highways/roadways or where bicycle travel routes are known, proposed, or have AASHTO approved United States Bike Routes. Appropriate signage may be installed on portions of roadways where a significant volume of bicycle use exists or is anticipated. Because Bicycle Route Guide Signs (or other similar Guide Signs) and Share the Road signing imply a degree of comfort and safety, their use must be in strict conformance with the following procedures:

Overview: The guide signs mentioned in this document primarily address signing on conventional highways, unless otherwise specified. The term conventional highway refers to state highways (except interstates, parkways, toll roads or roadways with an Average daily Traffic (ADT) of less than 3000).

Data needed for evaluation:

- Documentation of significant bicycling demand for the route.
- Identification of the portions of roadway requested for signing (includes documentation of ADT, Heavy Truck %, portions of roadway with 5' or wider shoulder, posted speed limits, and other data associated used with the KYTC Bicyclists Comfort Index (BCI) located at: <https://transportation.ky.gov/BikeWalk/Documents/BCI%20Metadata%20Page%20Updated%202018.pdf>).
- Identification of a contiguous route and/or a physical destination (include maps).

Bicycle Route signs will only be installed if the following conditions are met:

1. Adherence to guidance for bicycle routes in accordance with AASHTO and MUTCD (from Guide for the Development of Bicycle Facilities, AASHTO Fourth Edition and Manual on Uniform Traffic Control Devices (MUTCD), FHWA latest version).
2. Roadway design in accordance with FHWA desirable standards (from Selecting Roadway Design Treatments to Accommodate Bicycles, FHWA-RD-92-073 Tables 4, 5, 6 latest versions). When truck, bus and RV volumes exceed 10% or over 150 ADT, use the appropriate table values.
3. Smooth, paved surfaces for the bicycle path of travel (with "bicycle safe" cascade drainage gates).
4. Desirable sight distances (measured from expected bicycle path of travel).
5. Consistent treatment (path of travel, signing, safety measures, etc.) throughout the signed corridor.
6. Connection to a contiguous bikeway system (roadways legally open to bicycle travel operation), or a specified destination at each end of the signed roadway route.
7. Designated roadway crossings (crosswalks, signs, signals, etc.) where required, in accordance with MUTCD.
8. Potential conflict with motor vehicles should be minimized.

All State Maintained Highways:

For installation of Bicycle Route Guide Signs, absolute conformity with the criteria in this procedure is required; no waiver or exception process is available. If absolute conformity is not provided, KYTC will consider installation of Share the Road or other appropriate signage. These signs will be used on designate roadways which a significant number of bicyclists travel demand has been documented.

The route must be reviewed, assessed, and documented using the Kentucky Transportation Cabinet (KYTC) Bicycle Comfort Index (BCI) analysis (or an equivalent assessment of the roadway segments).

For bicycle travel routes to be included or made official as part of the U.S. Bicycle Route System:

These routes must be submitted through the AASHTO/ACA bicycle route process and approved by the AASHTO bicycle route committee (cross state or cross country routes).

Bicycle Route Guide Signs

Bicycle Route Guide (D11-1) signs (shown below) shall be installed on any highway that has been designated as a local, statewide, or national bicycle route, unless Bicycle Route Markers (Numbered US Bike Route signs/ MUTCD M1-8 or M1-9) are more appropriate.

MUTCD Sign D11-1



The signs should be installed at intervals frequent enough (5 mile intervals if on the same continuous route) to keep bicyclists informed of changes in route direction and to ensure that bicyclists entering from side streets know they are on a bicycle route.

To verify the eligibility of a highway, the district should contact the coordinator for the Bicycle and Pedestrian Travel Program in the Division of Planning, 502-782-5060.

Where KYTC determines that neither Bicycle Route Guide Signs nor Share the Road signs are permitted under this procedure, bicyclists shall still continue to use all roadways where bicycles are not legally prohibited (Interstates, Parkways, Toll Roads, and all other limited access roadways).

BICYCLE PARKING

Calvert City should seek to encourage and incentivize businesses and organizations that provide secure and accessible bike parking that is convenient for users.

In general, bicycle racks should be located in a highly visible area to prevent theft, be unobstructed, nor cause any obstruction to other traffic, and be mounted solidly to the ground or building in such a way that it cannot be easily removed. There should be a minimum clearance of 48" around the bike parking area and 72" should be allowed for a single bike lengthwise unless the rack allows vertical mounting. When feasible and possible bike parking should be covered to protect cyclists and their bikes from the weather.

Please refer to the *Association of Pedestrian and Bicycle Professionals Bicycle Parking Guidelines* for more details at http://www.apbp.org/?page=Bike_Parking.

DEFINITIONS

Bicycle Boulevard

Motorists and bicyclists share the roadway but it is modified to be desirable for bicycle travel via traffic calming and speed reduction techniques, signage and pavement markings, and intersection crossing treatments. Bicycle boulevards typically provide for the through movements of cyclists while discouraging through trips by motorists (except those directly accessing properties along the route). Bicycle boulevards are typically planned and installed on low-volume, low speed shared streets that run parallel to a major vehicular corridor that is less desirable for bicycling.

Bicycle Gap

A recurring short gap in continuous shoulder rumble strips designed to allow for ease of movement of bicyclists from one side of the rumble to the other. A typical pattern is gaps of 10 to 12 feet between groups of the milled-in elements at 40 to 60 feet.

Bike Lane

A portion of the roadway is designated by striping, signage, and pavement markings for the preferential or exclusive use of bicyclists. Bike lanes can increase bicyclist comfort and safety, promote proper riding, discourage sidewalk riding, and increase awareness and visibility of cyclists to motorists. Bike lanes may also be paired with a painted buffer space to create a “buffered bike lane” which further separates the bicycle lane from adjacent motor vehicles lanes or parking lanes. Bike lanes may also be physically separated from motor vehicle traffic by grade or a barrier, such as a median, curb, or parking lane. These “cycle tracks” can increase the comfort of less skilled cyclists; however, they are currently classified as ‘experimental’ in the U.S. and require a detailed design/approval process.

Bicycle Rack

Bike racks are basic infrastructure for a bicycle-friendly community. Bicyclists need a secure location to park their bike just as motorists need a place to park their car.

Bicycle Route

Bicycle Route

Bicycle route signage is installed along shared roadways to provide wayfinding and to connect facilities and destinations. For instance, a bike route might be signed along a residential street that connects two trails. It may also identify a preferred route to a destination or through an area of town. The signage also provides a visual clue to motorists that they are driving along a bicycle corridor and should use caution.

Bikeway

Any road, path, or way which in some manner is specifically designated as being open to bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes.

Crosswalk

A marked lane for passage of pedestrians, bicycles, etc., traffic across a road.

Curb Cut

A solid (usually concrete) ramp graded down from the top surface of a sidewalk to the surface of an adjoining street. It is designed for pedestrian uses and commonly found in urban areas where pedestrian activity is expected.

Multi-Use Path

Shared use paths are designed for multiple users, including pedestrians, wheelchairs, bicyclists, and inline skaters. They are physically separated from motorized vehicular traffic by an open space or barrier. They are either within the roadway right-of-way, or within an independent right-of-way, often along stream corridors or abandoned rail lines.

Paved Shoulder

At least 4 feet of smooth riding surface, exclusive of rumble strips, is provided for use by cyclists and pedestrians and for disabled motor vehicles.

Rumble Strip

A shoulder rumble strip is a longitudinal safety feature installed on a paved roadway shoulder near the outside edge of the travel lane. It is made of a series of milled or raised elements intended to alert inattentive drivers (through vibration and sound) that their vehicles have left the travel lane. An edge line rumble strip is a special type of shoulder rumble strip placed directly at the edge of the travel lane with the edge line pavement marking placed through the line of rumble strips.

Sharrows

Bicyclists and motorists share the travel lane, but it is marked with Shared Lane Markings (SLM) or sharrows to help position bicyclists within the shared lane and to encourage safe passing.

Share the Road

Share the Road warning signage may be installed along shared roadways to alert motorists of the presence of bicyclists along high-use bicycle corridors. For instance, signage might be installed along a popular bicycle commuter route through a neighborhood or along a recreational route regularly used by cyclists in a rural area.

Sidewalk

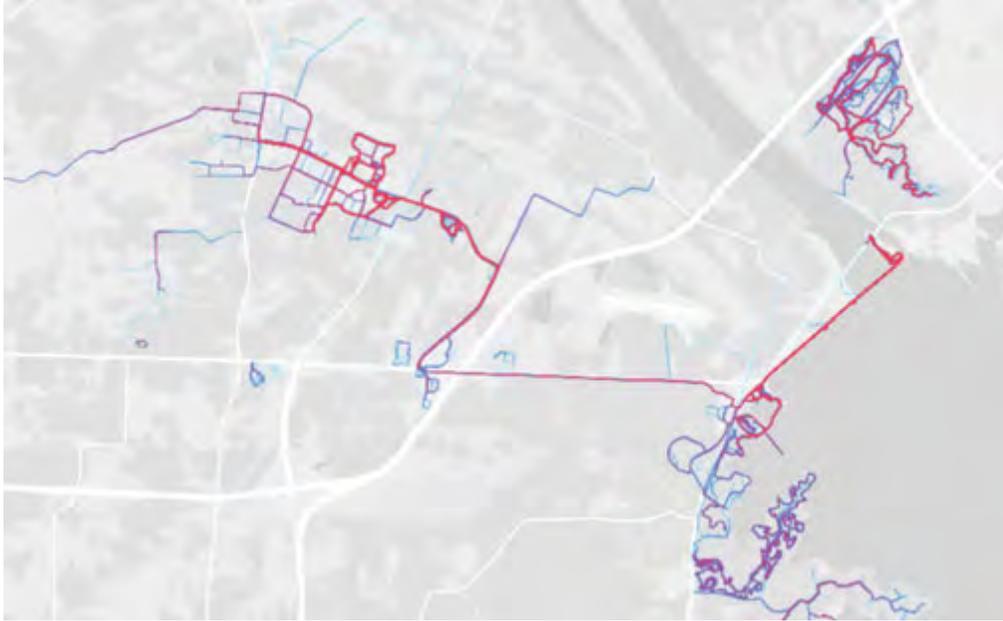
A walkway separated from the roadway with a curb, constructed of a durable, hard and smooth surface, designed for preferential or exclusive use by pedestrians.

EXISTING CONDITIONS AND ANALYSIS

EXISTING PEDESTRIAN ACTIVITY

The following is a heat map (Strava) of existing pedestrian activity in the Calvert City area:

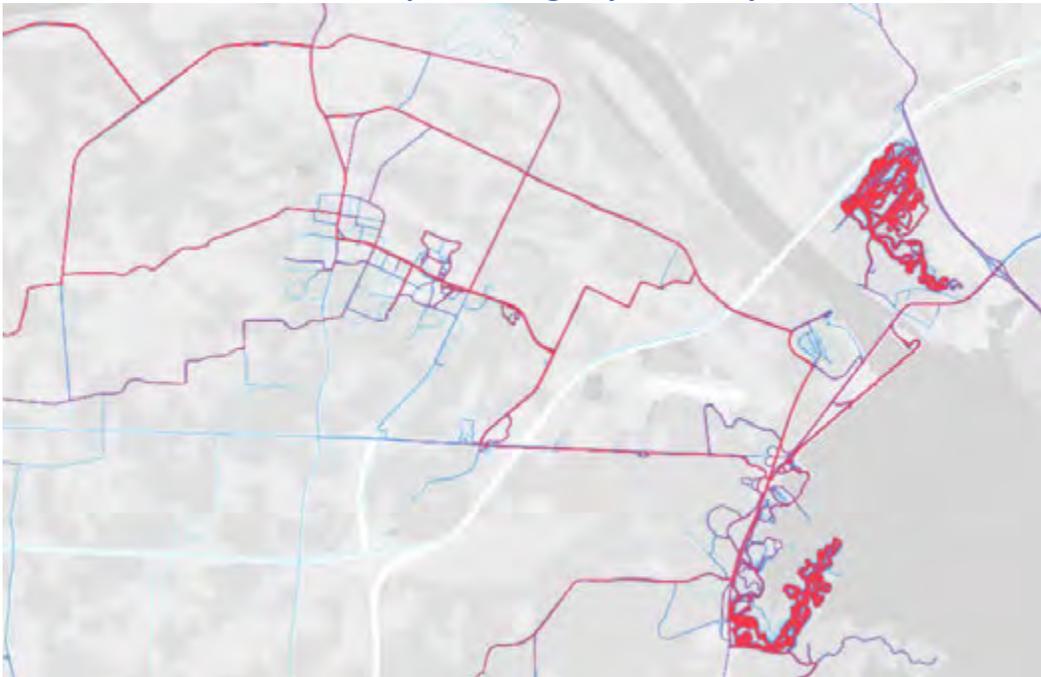
Heat Map of Existing Pedestrian Activity



EXISTING BICYCLE ACTIVITY

The following is a heat map (Strava) of existing bicycle activity in the Calvert City area:

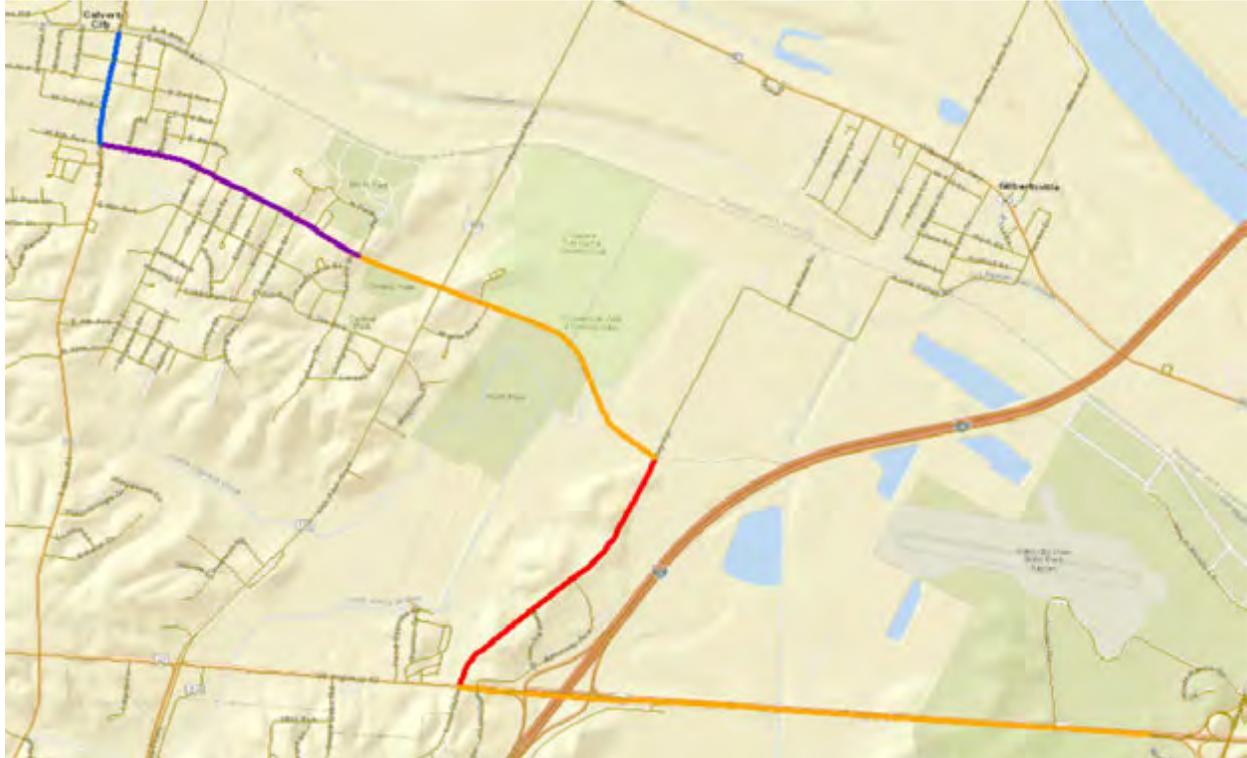
Heat Map of Existing Bicycle Activity



EXISTING FACILITIES

The following map shows the existing facilities including sidewalks (in brown), in roadway right-of-way multi-use paths (in black), and out of roadway right of way multi-use paths (in blue).

Existing Facilities Map
Blue Line is Sidewalk
Purple Line is Shared Lanes (with sharrows) and Sidewalk
Orange Lines are Multiuse Paths
Red Line is Shared Lanes (with sharrows)



Existing Shared Use Path Along US 62



See Appendix B, Trail Network Feasibility Study, page 2 for a list of existing recreation facilities and trails.

Cover Page of Trail Network Feasibility Study



PROPOSED FACILITIES AND NETWORK

FUTURE SIDEWALKS

The following list of streets/locations are considered the highest priority and need for new sidewalks on both sides of the roadway:

- 6th Avenue SE: MP 0.0-.85
- 7th Avenue E: MP 0.0-.052
- Evergreen Street: MP 0.0-.52
- Cedar Street: MP 0.0-0.89

New Sidewalks (streets shown in purple) Needed on Both Sides of Roadway

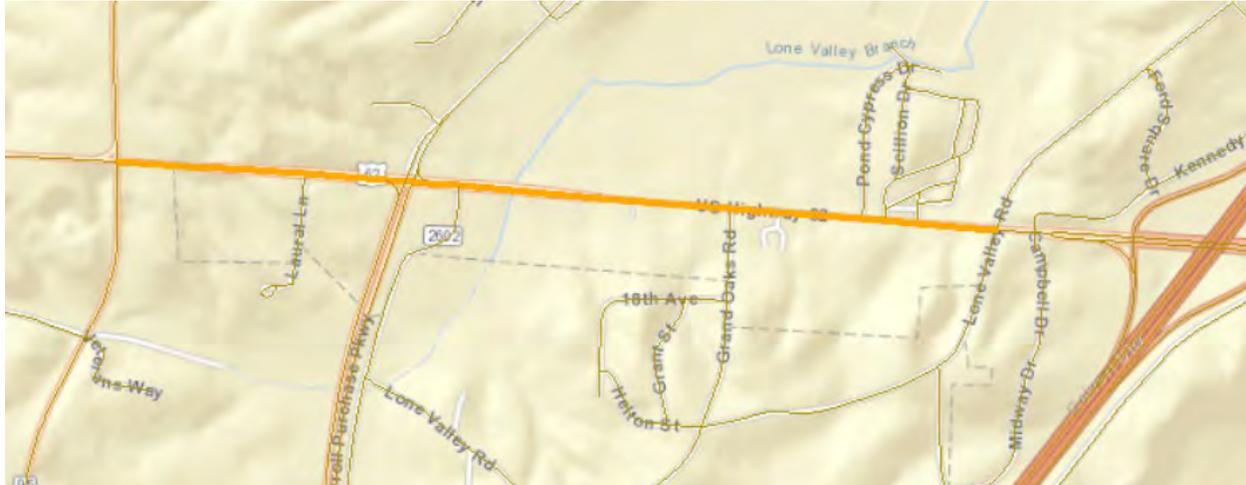


FUTURE BICYCLE AND/OR SHARED USE FACILITIES

The following list of roadways are considered the highest priority and feasibility for bicycle and/or shared-use facilities:

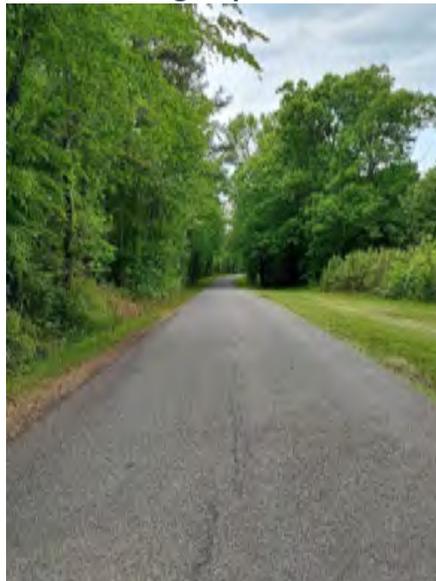
- US 62 (MP 7.2-8.5):
KYTC project to widen US 62 from KY-95 to Lone Valley Road and add a multiuse path.

Proposed Widening of US 62 including Multiuse Path



- Airport Road (079-PV-1002 -000) (MP 0.0-0.95):
 - a. Average Daily Traffic (ADT) is estimated to be less than 500
 - b. Heavy Truck Annual Average Daily Traffic (AADT) is estimated to be less than 25
 - c. Posted speed limit is 35 miles per hour (mph)
 - d. No paved shoulders
 - e. Rural cross section
 - f. Existing bike/ped activity is currently low
 - g. The Bicycle Comfort Index (BCI) is a B rating

Existing Airport Road



Phase 1 accommodation/treatment plan is for the placement of pavement Sharrow markings on both sides of the roadway. May also include installation of green and white “Bike Route” signs (MUTCD #D11-1) or “Bicycles May Use Full Lane” signs (MUTCD #R4-11).

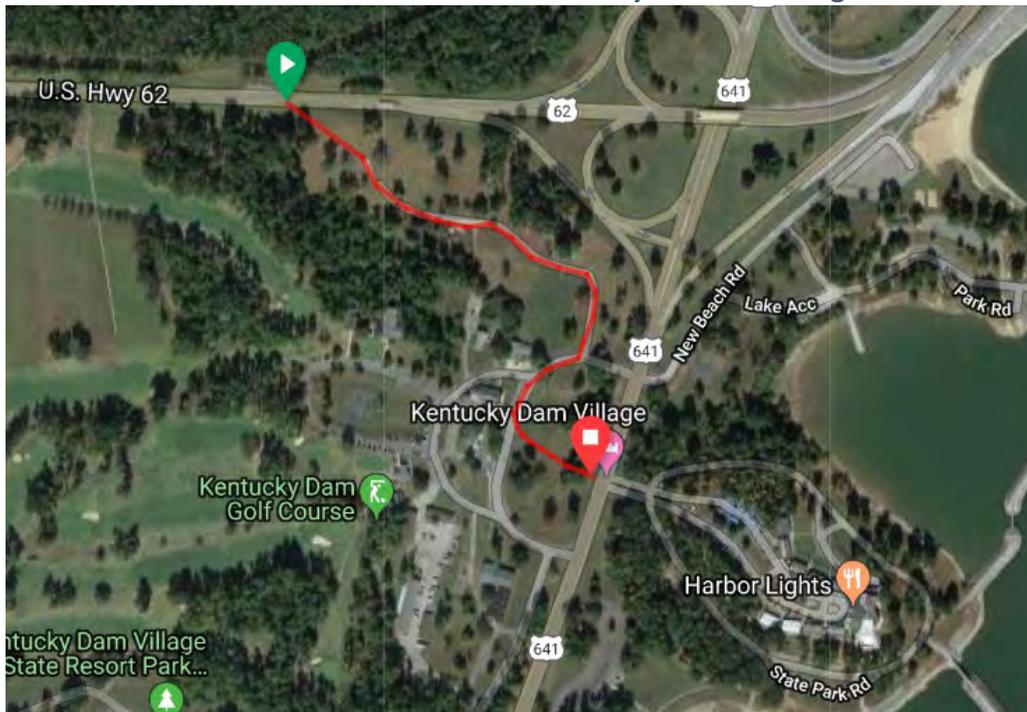
Phase 1 Airport Road



- Shared Use Path to Kentucky Dam State Park Lodge:
 - a. ADT / no motorized traffic allowed
 - b. No posted speed limit at this time (suggest 11 MPH for bicycle traffic in the future)
 - c. Rural cross section
 - d. Bike/ped activity anticipated to be moderate to high
 - e. The Bicycle Comfort index (BCI) rating is a level A

This shared use path is near complete. The only section that remains is from the Kentucky Dam Village Golf Course pro shop parking lot east to the entrance to the lodge.

Future Shared Use Path to Kentucky Dam Park Lodge



- KY-282 (Gilbertsville Road):
 - a. ADT range is 1170-1520
 - b. Heavy Truck AADT is 10% (117-152)
 - c. Posted speed limit is 35 MPH (MP 2.593-3.443) and 55 MPH (from MP 0.0-2.593 & 3.443-5.467)
 - d. No paved shoulders
 - e. Rural cross section
 - f. Existing bike activity is mid-high, and pedestrian activity is low
 - g. The Bicycle Comfort index (BCI) is a level B

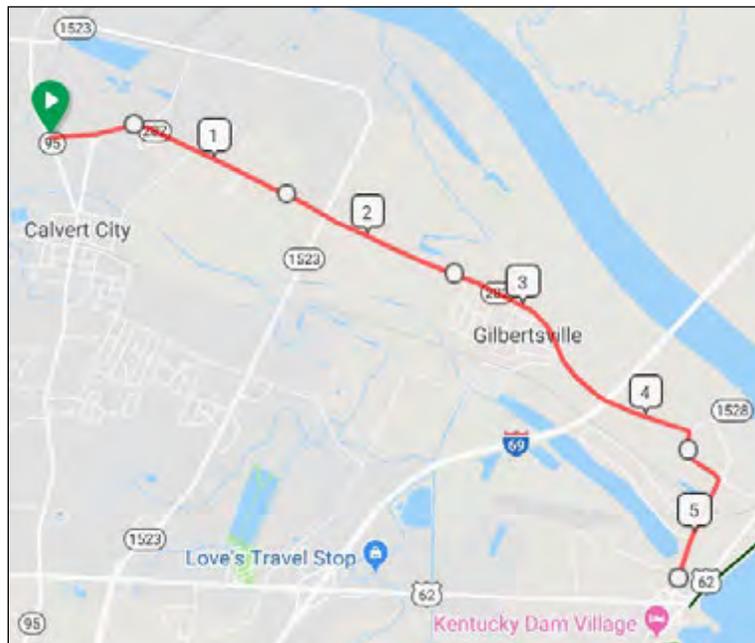
Existing KY-282



KY-282 (Gilbertsville Road) provides connectivity to Kentucky Dam Park campgrounds, The City of Gilbertsville, northern Calvert City, residential areas, and the northern portion of the Calvert City bike network.

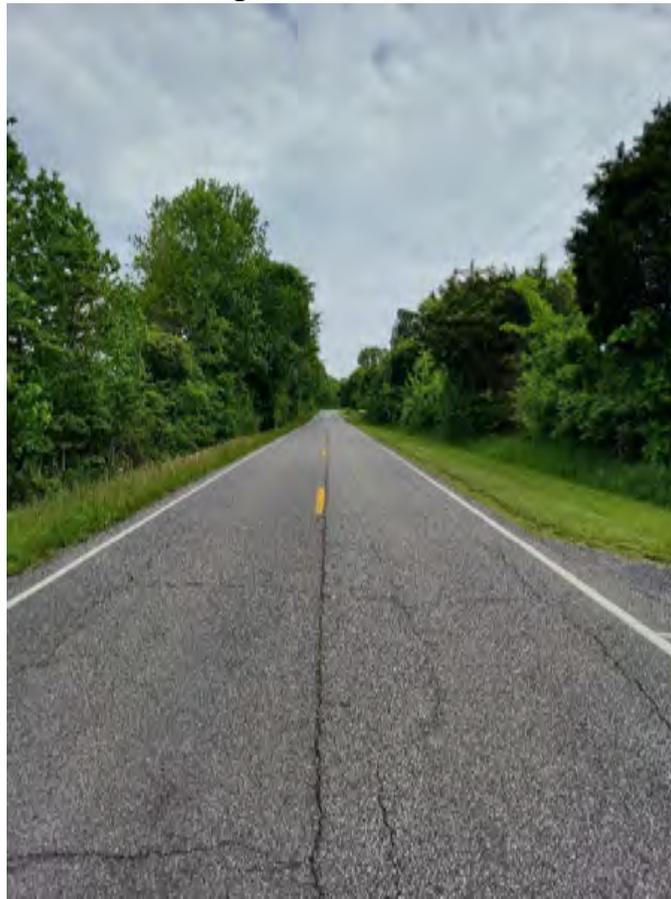
Phase 1 plan is for green and white Bike Route Signs (MUTCD D11-1) to be placed along KY-282 (MP 0.0-5.288) to start/terminate at Sheriffs Ranch Road. This route is currently used by bicyclists. Phase 2 plan is for the construction of a 10' wide multi-use path along the cardinal direction of KY-282 (MP 0.0-5.288) to start/terminate at Sheriffs Ranch Road. Some segments may be located out of the roadway right-of-way as property situations, utilities, and other factors may dictate.

Future KY-282 Bike Route and Shared Use Path

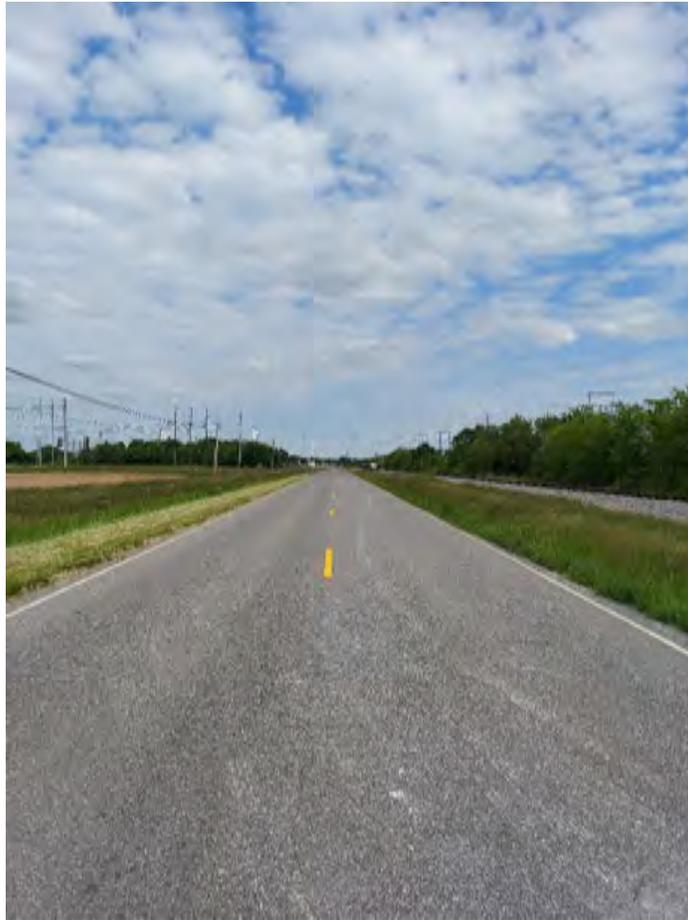


- KY-1523 (Industrial Parkway & Oak Park Boulevard)
 - a. ADT range is 1450-4500
 - b. Heavy Truck AADT is 6-17% (190-280)
 - c. Posted speed limit is 55 MPH
 - d. No paved shoulders
 - e. Rural cross section
 - f. Existing bicycle activity is moderate, and pedestrian activity is low
 - g. The Bicycle Comfort index (BCI) rating is a level D

Existing KY-1523 Rural Section



Existing KY-1523 Industrial Area Section

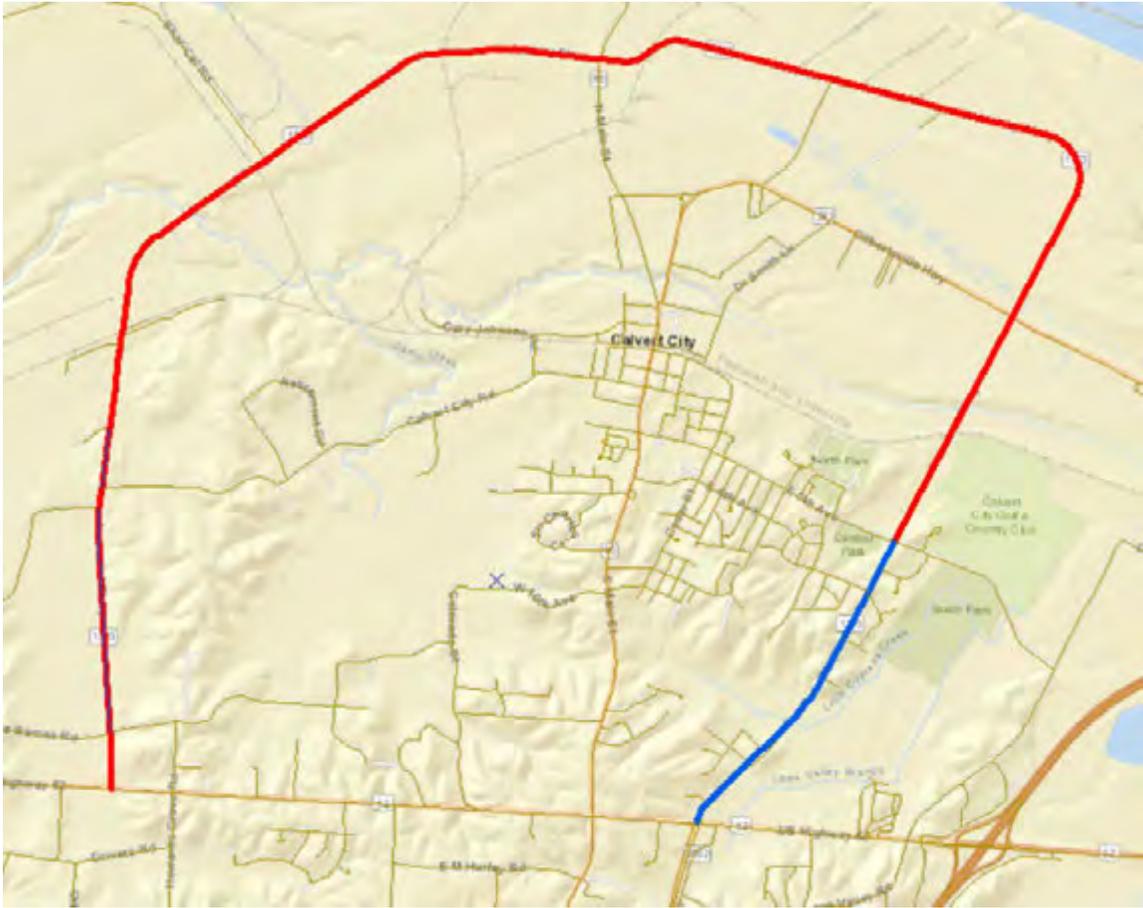


The planned shared-use path provides connectivity to existing shared-use-path along US-62 (MP 7.62) & 5th Avenue SE (MP 1.15), residential development (existing and future), commercial/ industrial businesses, library, and city park.

Phase 1 plan is to install Share the Road bicycle warning signs (MUTCD # W11-1 & W16-1) along KY-1523 (MP 0.0-8.196). The city wishes to have a 6' or wider shoulder constructed along this roadway in the future (with gaps in the rubber strips to better accommodate bicycle travel). This route is currently used by bicyclists.

Phase 2 plan is to construct a 10' wide shared-use-path along the cardinal direction of KY-1523 (MP 8.498-9.617).

Future KY-1523 Share the Road (Red) and Shared Use Path (Blue)



- KY-95 (Main Street) (MP 4.107-7.532):
 - a. ADT range is 600-6500
 - b. Heavy Truck AADT range is 4-10% (112-680)
 - c. Posted speed limit is 35 mph (MP 5.685-7.532), 45 mph (MP 5.369-5.681), and 55 mph (MP 0.0-5.685)
 - d. No paved shoulders
 - e. Rural cross section / mix of residential & business
 - f. Bike/ped activity is moderate to high
 - g. The Bicycle Comfort index (BCI) average rating is C

Existing KY-95



Phase 1 plan is for bike lanes (4' minimum) from MP 5.497-5.99. Suggest lowering the posted speed limit from 45 mph to 35 mph (MP 5.369-5.681). Green and white bike routes signs installed from MP 4.089-6.166 (suggested sign placement at MP 4.090 in the cardinal direction and MP 6.164 in the non-cardinal direction).

Phase 2 plan is for placement of Sharrow symbols on perpendicular cross streets to the marked bike route (to include 2nd Ave E & W, 5th Ave E & W, E 6th Ave, E 9th Ave), and on adjacent Evergreen and Cedar Streets.

Future KY-95 (Main Street)
4' Bike Lanes in Blue
Share the Road in Red



FUTURE MOUNTAIN BIKE FACILITIES

See Appendix B, Trail Network Feasibility Study, for an assessment of the feasibility of developing mountain bike facilities throughout Calvert City.

LIST OF FUTURE PROJECTS

Sidewalk Projects

Street	Milepoints
6th Avenue SE	0.0 – 0.85
7th Avenue E	0.0 – 0.052
Evergreen Street	0.0 – 0.52
Cedar Street	0.0 – 0.89

Bicycle and/or Shared Use Path Projects

Street	Milepoints
US 62	7.2 – 8.5 KY 95 to Lone Valley Road
Airport Road	0.0 – 0.95
To Kentucky Dam State Park Lodge	N/A
KY 282 Gilbertsville Road	0.0 – 5.467
KY 1523	0.0 – 9.617
KY 95 Main Street	4.107 – 7.532

RECOMMENDATIONS

- Form a committee of five (5) to nine (9) people to manage implementation of the plan
- Prioritize the list of projects and programs
- Provide incentives for organizations to provide bike racks
- Coordinate educational training programs with local organizations such as schools, library and civic organizations
- Provide ongoing funding
- Develop data collection procedures to measure pedestrian/bicycle usage
- Develop comprehensive map of routes/trails
- Increase enforcement of traffic laws related to pedestrians/bicyclists
- Coordinate with other local governments/agencies where necessary
- Complete engineering study/plans for priority projects to determine cost estimate and any additional crosswalks/traffic control measures
- Create interactive map for website
- Identify/pursue potential funding sources for projects such as:
 - Bonds
 - Coordination with other projects (transportation, utility, maintenance, etc.)
 - Federal funds (Transportation Alternatives Program-TAP and Recreational Trails Program-RTP)
 - General funds
 - Property taxes
 - Fees
- Major update plan every 10 years

APPENDIX A

Calvert City Strategic Plan 2020-2025 (begins next page).



STRATEGIC PLAN

2020-2025