

RADCLIFF/ELIZABETHTOWN
METROPOLITAN PLANNING ORGANIZATION

BICYCLE FACILITIES STUDY



SEPTEMBER 2016



Planning for the transportation
needs of the region.

RADCLIFF/ELIZABETHTOWN MPO
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ELIZABETHTOWN, KENTUCKY 42702-0604

Chapter 1: Introduction

The Bicycle Facilities Plan for the Radcliff/Elizabethtown urbanized area provides an outline for developing a connected system of on-road and off-road facilities in Hardin and Meade counties. The Radcliff/Elizabethtown Metropolitan Planning Organization (MPO) was established in 2003 with the planning area that includes these two counties. The MPO is the transportation planning and decision making organization responsible for ensuring that the process is carried out in a comprehensive, cooperative, and continuing manner.

Since the early 1970's, Greenspace, Inc. has been developing a trail system in the Elizabethtown area with the ultimate goal of developing a complete greenbelt around the city. Saunders Springs is a 26-acre wooded area in Radcliff that includes hiking and walking trails. Meade County has trails along the Ohio River and Buttermilk Falls. Otter Creek Park also has trails for hiking, horseback riding, and mountain biking. Otter Creek Park is a recreation area of the Kentucky Department of Fish and Wildlife and a fee is required for entering the park.

While the cities and counties have developed trail systems over the years, an on-road system of bicycle facilities has been lacking. In 2013, Patriot Parkway (KY 361) opened to traffic and is the first roadway facility in either Hardin or Meade county to include a bike lane. The goals of this plan are to build upon these past successes and develop a fully integrated bicycle facility network in the MPO planning area.

Cycling Activity

It's very difficult to determine how much cycling activity is taking place in the MPO area. There is limited census data related to this type of activity. The 2010 decennial census does not detail bicycling activity as it relates to means of travel to work. The census data provides data for those who *walked* to work and has a category termed *other means*. The American Community Survey has data for those who bicycle to work for Elizabethtown and Radcliff. This data indicates that only 0.1 percent of the population bicycles to work.

The MPO conducted a survey for this study that indicate the majority of bicycling activity in the planning area is for recreational purposes. The survey does show that a little less than 5 percent (4.94%) bicycle for transportation

purposes. The survey also indicates that about 33 percent of the respondents would bike more on roadways if the proper facilities were available.

Purpose of Planning for Bicycle Facilities

The MPO's original Metropolitan Transportation Plan (MTP), completed in 2005, recommended that a study be conducted to determine the interest and need for bicycle facilities in the MPO area. Based on the survey results, the MPO has determined that it's very important that planning for bicycle facilities become an integral part of the process.

The purpose for developing this Bicycle Facilities Plan is to prepare a comprehensive system of bicycle facilities and serve as a guide for future bicycle facility improvements.

Health Data to Support Active Lifestyles (incl. Bicycle Facilities)

Many communities in the United States and around the world are implementing bicycle, pedestrian and other recreational facilities to encourage their citizen to become active. Statistics have revealed that sedentary lifestyles and obesity in children and adults have lead to increases in many health related issues. Statistics for Hardin and Meade counties, from the Robert Woods Johnson Foundation, show that roughly one-third of adults in these two counties are inactive. In Hardin County, the statistics show that 73% of the population has access to exercise opportunities, while 60% of residents in Meade County have access to similar activities. Also, approximately one-third of adults are considered obese in Hardin (32%) and Meade (36%) counties.

The full County Health Rankings data can be found in Appendix B.

Air Quality

While Hardin County is in attainment in terms of air quality as considered by the United States Environmental Protection Agency (EPA), the American Lung Association gives the county a grade of D for high ozone days. High ozone is particularly problematic during hot, dry days in the summertime. Facilitating and encouraging more opportunities for bicycling will help to reduce the amount of automobile emissions and maintain acceptable pollutant levels in the area. The American Lung Association does not provide data for Meade County.

Chapter 2: Process

Technical Advisory Committee

The MPO Technical Advisory Committee (TAC) has served as the steering committee for this study. The MPO TAC is comprised of staff members of Kentucky Transportation Cabinet representatives, local planning commissions, city and county engineers, public transportation representatives, local emergency services representatives, public transportation providers, a local airport board representative, and a Fort Knox representative. The TAC provided feedback on all aspects of this study including survey results, existing system information, and proposed improvements.

Bicycle Facilities Stakeholder Survey

A survey of stakeholders was conducted in September and October of 2015. The survey was distributed electronically via Survey Monkey and paper copy. A paper version of the survey was placed on display at all city halls and courthouses in the two counties. Information about the survey was also provided via email to local bicycle clubs. The local bicycle clubs assisted in getting word out about the survey.

A total of 84 responses were received. The survey results have been utilized to develop recommendations for bicycle facility improvements and connections. A compilation of survey results can be found in Appendix A.

Goals and Objectives

The following goals and objectives were developed by the MPO Technical Advisory Committee to provide guidance throughout the development of this plan.

GOAL 1: Develop a bicycle system that is integrated into the transportation network and is safe and convenient for all bicyclists.

Objectives

- A. Define a regional bicycling network that includes both on-street and trail facilities to adequately serve the transportation and recreation needs of bicyclists of all ages.

- B. Analyze currently proposed highway projects to determine where bicycle facilities and/or improvements can be incorporated.
- C. Ensure that all bicycle facility projects improve connectivity and enhance the safety of bicyclists, pedestrians, and other vehicular traffic.

GOAL 2: Identify and secure adequate funding for bicycle improvements in the MPO region.

Objectives

- A. Identify and pursue available local, state, and federal sources of funding for bicycle facilities and programs.
- B. Advise local governments of upcoming application deadlines for programs that fund bicycle facility improvements.
- C. Where possible, incorporate bicycle facilities into highway improvements identified through the MPO planning process.

GOAL 3: Promote, encourage, and support bicycle safety, education, and enforcement programs.

Objectives

- A. Promote and encourage bicycle safety programs, such as Safe Routes to School, for bicyclists, schools, law enforcement agencies, and motorists for sharing roadways and shared use paths.
- B. Partner with community agencies to promote bicycle and pedestrian safety education programs.

Chapter 3: Bicycle Facilities Network

Bicycle Facility Network

For the purposes of this study, both on-road and off-road facilities have been considered. There are several different types of facility types that can accommodate bicycles. The following are the various aspects of a bicycle facility network considered as part of this study:

- 1) Signage is a key component of a safe bicycle system. Proper signage is important to both the bicyclist and the motor vehicle operator. There are various types of signs that can be utilized depending on the type of roadway and the traveling conditions. *Share The Road* signs are intended to alert motorists that bicyclists may be encountered. Another sign that may be utilized is the *Bicycles May Use Full Lane* signs. These signs are typically used on roadways where travel lanes are too narrow for bicyclists and motorists to operate side by side within a lane.

Signs may also be used on roadways where bike lanes exist. These signs are normally placed at periodic intervals along a bike lane. In certain areas, such as downtown areas, signage may be used as guide signs/wayfinding signs for bicyclists.

According to the Guide to Bicycle Facilities, spacing of signs should be determined by engineering judgment based on prevailing speed of bicycle and other traffic, block length, distances from adjacent intersections, and other considerations.

Below are a few examples of signs for bicycle facilities the meet Manual of Uniform Traffic Control Device (MUTCD) standards ...



- 2) Shared-Use Paths are multi-use trails or other paths, physically separated from motorized vehicular traffic by an open space or barrier, either within a highway right-of-way or within an independent right-of-way, and usable for transportation purposes.

Shared use paths may be used by pedestrians, bicyclists, skaters, equestrians, and other non-motorized users.



- 3) Shared Roadways – A marked shared roadway is a general-purpose travel lane marked with shared lane markings (SLMs, also referred to as Sharrows) used to encourage bicycle travel and proper positioning within the lane. Sharrows are useful in locations where there is insufficient width to provide bike lanes. The marking also alerts road users to the lateral position bicyclists are likely to occupy within the traveled way, therefore encouraging safer passing practices.

In constrained conditions, the Sharrows are placed to discourage unsafe passing by motor vehicles. On a wide outside lane, the shared lane markings can be used to promote bicycle travel next to (to the right of) motor vehicles.

In all conditions, Sharrows should be placed outside of the door zone of parked cars. Sharrows are not appropriate on paved shoulders or in bike lanes, and should not be used on roadways that have a speed limit above 35 mph. In terms of spacing, sharrows should be placed immediately after an intersection and spaced at intervals not greater 250 feet.



- 4) Bicycle Lanes designate an exclusive space for bicyclists through the use of pavement markings and signage. The bike lane is located adjacent to motor vehicle travel lanes and flows in the same direction as motor vehicle traffic. Bike lanes are typically on the right side of the street, between the adjacent travel lane and curb, road edge, or parking lane.



- 5) Roadway Shoulders are the part of the roadway that is adjacent and contiguous to the regular travel lanes. This portion of the roadway can be used by bicyclists. Paved shoulders can be an appropriate bicycle facility along roadways that do not have curb and gutter but have open drainage.

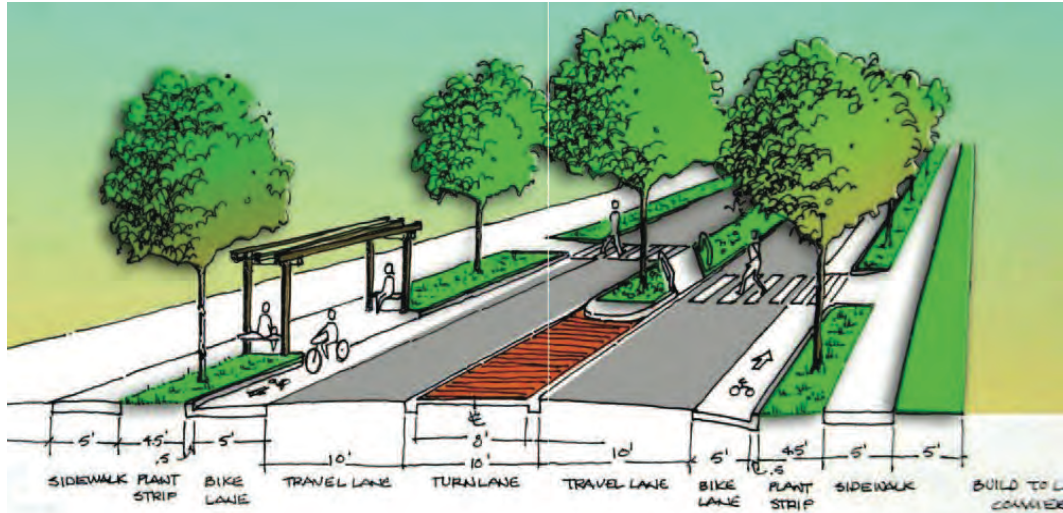


- 6) Trails are paths that are either dirt, gravel, or paved and accommodate the movement of people, mainly either by foot or bicycle. Some trails also allow horseback riding and access to all-terrain vehicles (ATV). Most unpaved trails are found in either local parks or part of greenway systems.



- 7) Complete streets are designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities. Complete streets make it easy to cross the street, walk to shops, bicycle to work, etc. While a policy of complete streets is beyond the scope of this plan, it does encourage the development of bicycle facility system that moves in the direction of making local streets safer for bicyclists. This plan can be utilized in the future should local jurisdictions feel it necessary to develop and adopt such a policy. A complete streets policy provides direction for planners and engineers to routinely design and operate the entire right of way to enable safe access for all users, regardless of age, ability, or mode of transportation.

Below is an example of a Complete Street ...



- 8) Every bicycle trip has two main components: the route selected by the bicyclist and the “end-of-trip” facilities at the destinations, such as safe and secure bicycle parking. The availability of secure and convenient parking is critical to bicyclists. The availability of short and long-term bicycle parking at key destinations such as parks, schools, community facilities, transit stations, and Centers is a vital part of a complete bicycle network.

Parking should be highly visible, accessible and easy to use. Facilities should be located in well-lit areas and covered where possible. They should not interfere with pedestrian flows.



Chapter 4: Recommendations

The Bicycle Facilities Plan for the Radcliff/Elizabethtown MPO specifically lays out physical improvements to the roadway and trail system to make bicycle travel more safe and feasible. This plan does not outline policy recommendations. It is, however, recommended that local units of government consider implementing policy recommendations for bicycle facilities into their respective comprehensive plans.

The following recommendations are broken down into phases (short-, mid-, and long-range). The short-term improvements are proposed to be completed in 1-5 years. The mid-term improvements are proposed to be completed in 6-10 years and the long-term are projects to be completed in 10 or more years.

The phases were selected based on relative feasibility in terms of expected cost, ability to be constructed or striped as a part of a roadway improvement or resurfacing project, and the potential for receiving funding.

The tables on the following pages outline the proposed bicycle facility improvements by local jurisdiction.

Radcliff/Elizabethtown MPO
Proposed Bike Routes

<u>Elizabethtown</u>	<u>Starting Point</u>	<u>End Point</u>	<u>Key Connection</u>	<u>Proposal</u>	<u>Lane Width</u>	<u>Right-of-Way</u>	<u>Speed Limit</u>	<u>Avg. Daily Traffic</u>	<u>Functional Class</u>
<u>Short-Term</u>									
South Wilson Road (KY 447)	WA Jenkins Rd	Hutcherson Ln	Residential/ Connector	Signage	10'		45	3,597	Urban Collector Street
Hutcherson Lane (KY 2802)	S. Wilson Rd	Ceciliana Drive	Residential/ Connector	Sharrows and/or Signage	9'	40'	35-45	1,185	Urban Local
Ceciliana Drive	Hutcherson Ln	Patriot Pkwy	Patriot Pkwy	Sharrows and/or Signage	12'	50'	20		Local
Pine Valley Drive	US 31W	End	Residential	Sharrows and/or Signage		60'	25		Local
Pear Orchard Road NW	US 31W	Pear Orchard Rd	Residential/ Connector	Sharrows and/or Signage		60'	25		Local
Pear Orchard Road	Ring Rd	Pear Orchard Rd NW	Residential/ Connector	Sharrows and/or Signage		60'	35-45		Local
Veteran's Way (CS 1683)	US 31W	Ring Road	Mall/Other Shopping	Signage	11'	150'+	45	7,711	Major Collector
Buford Lane	Ring Rd	Woodland Dr	Residential/ Connector	Sharrows and/or Signage		50'	25		Local
Towne Drive	Ring Rd	Around Towne Mall	Mall	Sharrows and/or Signage		50'	25		Local
Woodland Drive (CS 1193)	Ring Rd	US 31W	Medical	Sharrows and/or Signage	10'	60'	35	5,810	Major Collector
<u>Mid-Term</u>									
North Miles Street (KY 251)	Ring Rd	Pear Orchard Rd	Residential	Signage	12'		45	6,101	Urban Minor Arterial
Winchester Blvd	N Miles St	Yorkshire Dr	Residential	Sharrows and/or Signage		50'	25		Local
Yorkshire Drive	Winchester Blvd	Colony Dr	Residential	Sharrows and/or Signage		50'	25		Local

Colony Drive	Yorkshire Dr	Ring Road	Residential	Sharrows and/or Signage		50'	25		Local
Northridge Drive	Ring Rd	Dolphin Dr	Residential	Sharrows and/or Signage		50'	25		Local
Dolphin Drive	N Mulberry St	Northridge Dr	Shopping/Residential	Sharrows and/or Signage		60'	25		Local
North Mulberry Street (US 62)	Brook St	McCormack Ave	Business	Bike Lane	12'		35-45	23,255	Rural Major Collector
Nicholas Street	US 62 W	US 31W	Residential	Signage					Local

Long-Term

Pear Orchard Road	Ring Rd	Pear Orchard Rd NW	Residential/Connector	Shared Use Path		60'	35-45		Local
Dixie Highway (US 31W)	Woodland Dr	Lincoln Pkwy	Downtown	Bike Lane	10'		25-35	22,498	Urban Principal Arterial
St. John Road (KY 1357)	Ring Rd	US 31W Bypass	E'town Sports Park	Bike Lane/Shared Use Path	10'		35-45	9,870	Urban Minor Arterial
Ring Road (KY 3005)	Entire>>>	<<<Length	Freeman Lake & Nature Park Trails	Bike Lane/Shared Use Path	12'		35-55	21,607	Minor Arterial

Radcliff

Starting Point

End Point

Key Connection

Proposal

Lane Width

Right-of-Way

Speed Limit

Avg. Daily Traffic

Functional Class

Short-Term

Veterans Memorial Highway (KY 1646)	Bullion Blvd	N Logsdon Pkwy	Fort Knox	Signage	11'		45-55	4,417	Urban Minor Arterial
North Logsdon Parkway (KY 1646)	Veterans Mem Hwy	W Lincoln Trail	Fort Knox	Signage	11'		45	6,122	Urban Minor Arterial
South Logsdon Parkway (KY 1646)	W Lincoln Trail	Rodgersville Rd	Residential	Sharrows and/or Signage	12'		35-45	6,880	Urban Minor Arterial
Knox Blvd (CS 2405)	US 31W	N Wilson Rd	Fort Knox Wilson Gate	Sharrows and/or Signage	11'	80'	35	4,710	Urban Minor Arterial

North Wilson Road (CS 2255)	Knox Blvd	W Lincoln Trail	Saunders Springs/ Business	Sharrows and/or Signage	11'	60'	35	13,321	Urban Minor Arterial
South Wilson Road (CS 2440)	W Lincoln Trail	WA Jenkins Road	Business	Sharrows and/or Signage	10-11'	60'	35	6,480	Major Collector
Elm Road	N Wilson Rd	W Vine St	Residential	Sharrows and/or Signage	9'	60'	25		Local
Sunset Drive	N Logsdon Pkwy	Elm Rd	Residential	Sharrows and/or Signage	12'	40-60'	25		Local
Hillcrest Drive	Congress Dr	Kingswood Way	Residential	Sharrows and/or Signage	10'	50-60'	25		Local
Hill Street (CS 2256)	US 31W	W Lincoln Trail	Residential	Sharrows and/or Signage	9'	40-60'	25-35	2,339	Major Collector
North Woodland Drive	Cherokee Dr	W Lincoln Trail	Residential	Sharrows and/or Signage	10-12'	50-70'	25		Local
South Woodland Drive (CS 2014)	W Lincoln Trail	Joe Prather Hwy	Residential	Sharrows and/or Signage	10-12'	50-70'	15-25	2,587	Major Collector
Deering Lane	N Logsdon Pkwy	Cypress Dr	Residential	Sharrows and/or Signage		60'	25		Local
Cypress Drive	Deering Ln	Congress Dr	Residential	Sharrows and/or Signage		60'	25		Local
Congress Drive	Hill St	W Lincoln Trail	Residential	Sharrows and/or Signage		60'	25		Local
North Lorraine Street	W Lincoln Trail	Congress Dr	Residential	Sharrows and/or Signage	11'	60'	25		Local
Freedoms Way	W Lincoln Trail	End	City Hall/Community Center	Sharrows and/or Signage	12'	60'	NP		Local
West Vine Street (KY 144)	US 31W	Joe Prather Hwy	Residential	Sharrows and/or Signage	9-11'	60'	35-45	5,408	Urban Minor Arterial
Rogersville Road (KY 1500)	S Wilson Rd	Joe Prather Hwy	Residential	Sharrows and/or Signage	10-11'	60'	35	4,470	Urban Major Collector

Shelton Road	S Wilson Rd	Rogersville Rd	Residential	Sharrows and/or Signage	9'	60'			Local
W. A. Jenkins Road (KY 2802)	US 31W	S. Wilson Rd	Schools ?	Sharrows and/or Signage	12'		35	2,112	Urban Local

Mid-Term

West Lincoln Trail Blvd (KY 1815)	US 31W	Joe Prather Hwy	Business	Bike Lane	12'	120'	40-55	12,492	Urban Minor Arterial
East Lincoln Trail Blvd	US 31W	End	Business	Bike Lane	12'	120'			Local
Joe Prather Highway (KY 313)	US 31W	Bullion Blvd	Connector	Bike Lane	12'		55	17,046	Urban Minor Arterial

Long-Term

Bullion Blvd (KY 361)	Joe Prather Hwy	Fort Knox Main Gate	Fort Knox	Bike Lane/Shared Use Path	12'		55	-	Urban Collector Street
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<u>Vine Grove</u>	<u>Starting Point</u>	<u>End Point</u>	<u>Key Connection</u>	<u>Proposal</u>	<u>Lane Width</u>	<u>Right-of-Way</u>	<u>Speed Limit</u>	<u>Avg. Daily Traffic</u>	<u>Functional Class</u>
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Short-Term

Knox Avenue (KY 1500)	Bullion Blvd	W Main St	Residential	Sharrows and/or Signage	10'		35	3,128	Urban Collector Street
West Main Street (KY 144)	Knox Ave	Highland Ave	Downtown Area	Sharrows and/or Signage	9'		25	4,709	Urban Minor Arterial
East Main Street (KY 144)	Highland Ave	Joe Prather Hwy	Business	Sharrows and/or Signage	9-11'		35	4,034	Urban Minor Arterial
Highland Avenue (KY 144)	W Main St	Joe Prather Hwy	Business	Sharrows and/or Signage	11'		35	5,338	Urban Minor Arterial

<u>Meade County</u>	<u>Starting Point</u>	<u>End Point</u>	<u>Key Connection</u>	<u>Proposal</u>	<u>Lane Width</u>	<u>Right-of-Way</u>	<u>Speed Limit</u>	<u>Avg. Daily Traffic</u>	<u>Functional Class</u>
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Short-Term

KY 710	E Broadway	KY 1051	Schools	Sharrows and/or Signage	9-11'		35	2,629	Rural Minor Collector
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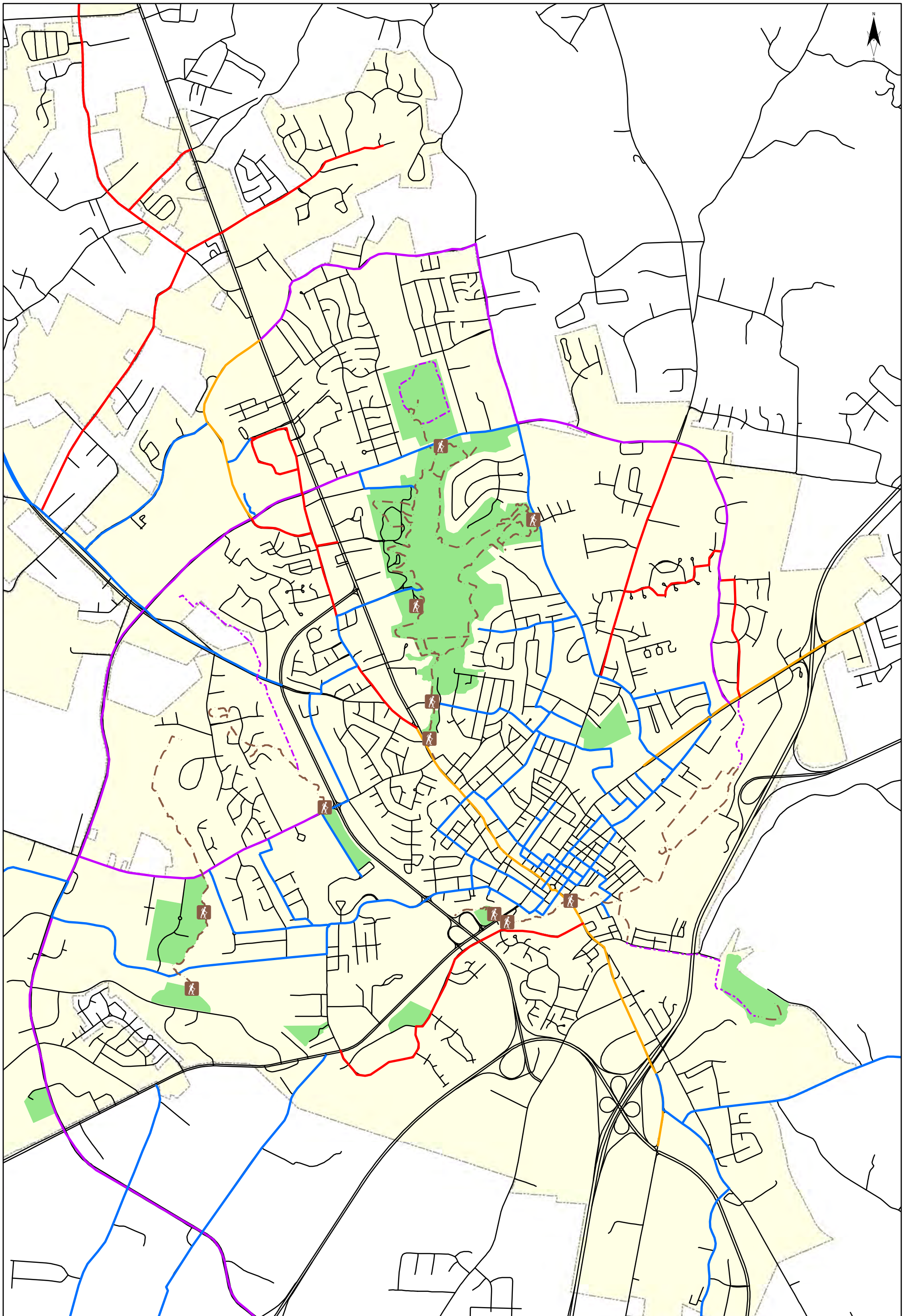
KY 448	W Broadway	KY 1051	Schools/Post Office	Sharrows and/or Signage	11-12'		25-45	5,757	Rural Major Collector
KY 1692	Hillcrest Drive	KY 1051	Government Offices	Sharrows and/or Signage	10'		35-45	1,679	Rural Minor Collector
KY 228	High Street	KY 79	Residential	Sharrows and/or Signage	9'		25-35	1,333	Rural Minor Collector
East Broadway	KY 1051	Lakeview Drive	Business	Sharrows and/or Signage					Local
West Broadway	Lakeview Drive	High Street	Business	Sharrows and/or Signage					Local
Main Street (KY 2204)	W Broadway	Lawrence St	Riverfront Park	Sharrows and/or Signage	11'		25	1,269	Local
Old Ekron Road	E Broadway	KY 1051	Library	Sharrows and/or Signage					Local
Olin Road	E Broadway	KY 933	Park	Sharrows and/or Signage					Local
Buttermilk Falls Road	Olin Rd	End	Trails	Sharrows and/or Signage					Local

Mid-Term

KY 933	KY 448	Dam near Long Branch Road	Trails	Signage	9-12'		55	1,138	Rural Minor Collector
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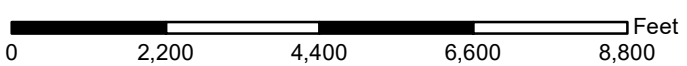
Long-Term

KY 313	Entire>>>	<<<Length	Connector/Business	Bike Lane	12'		45-55	8,202	Rural Minor Arterial
KY 1051	Entire>>>	<<<Length	Business	Bike Lane	12'		45-55	14,084	Rural Minor Arterial



City of Elizabethtown

Proposed Bikeway Connections



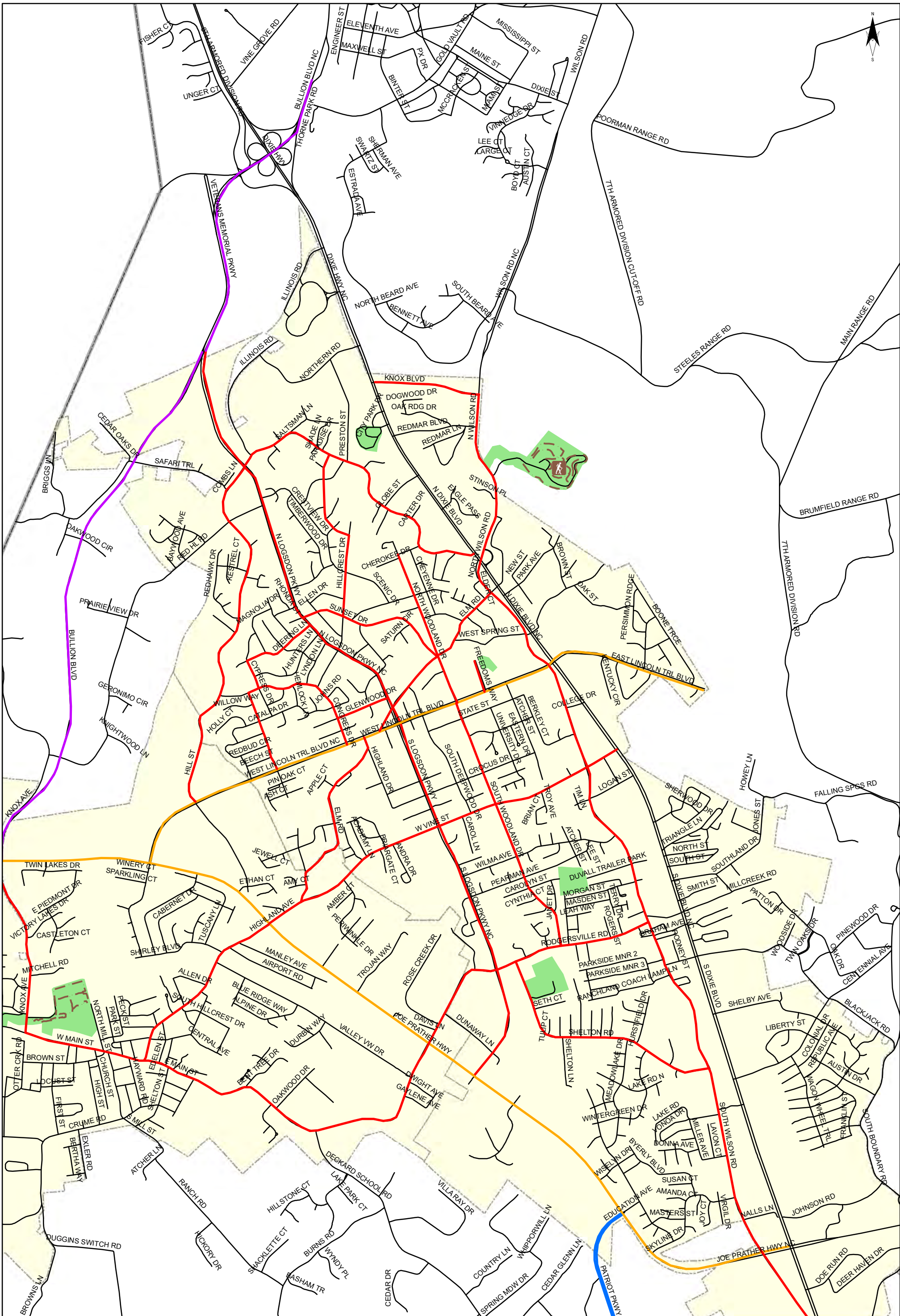
- Legend**
- Trail Head
 - Potential Trails
 - Local Trail
 - Existing Bikeroute
 - Roads
 - Local Park
 - Corporate Boundary
 - County Boundary
 - Potential Bikeroute TYPE**
 - BIKE LANE
 - SHARED-USE PATH
 - SIGNAGE/SHARROWS



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Prepared by: Lincoln Trail Area Development District, Community Development Department, 2014.



City of Radcliff

Proposed Bikeway Connections

0 1,900 3,800 5,700 7,600 Feet

Legend

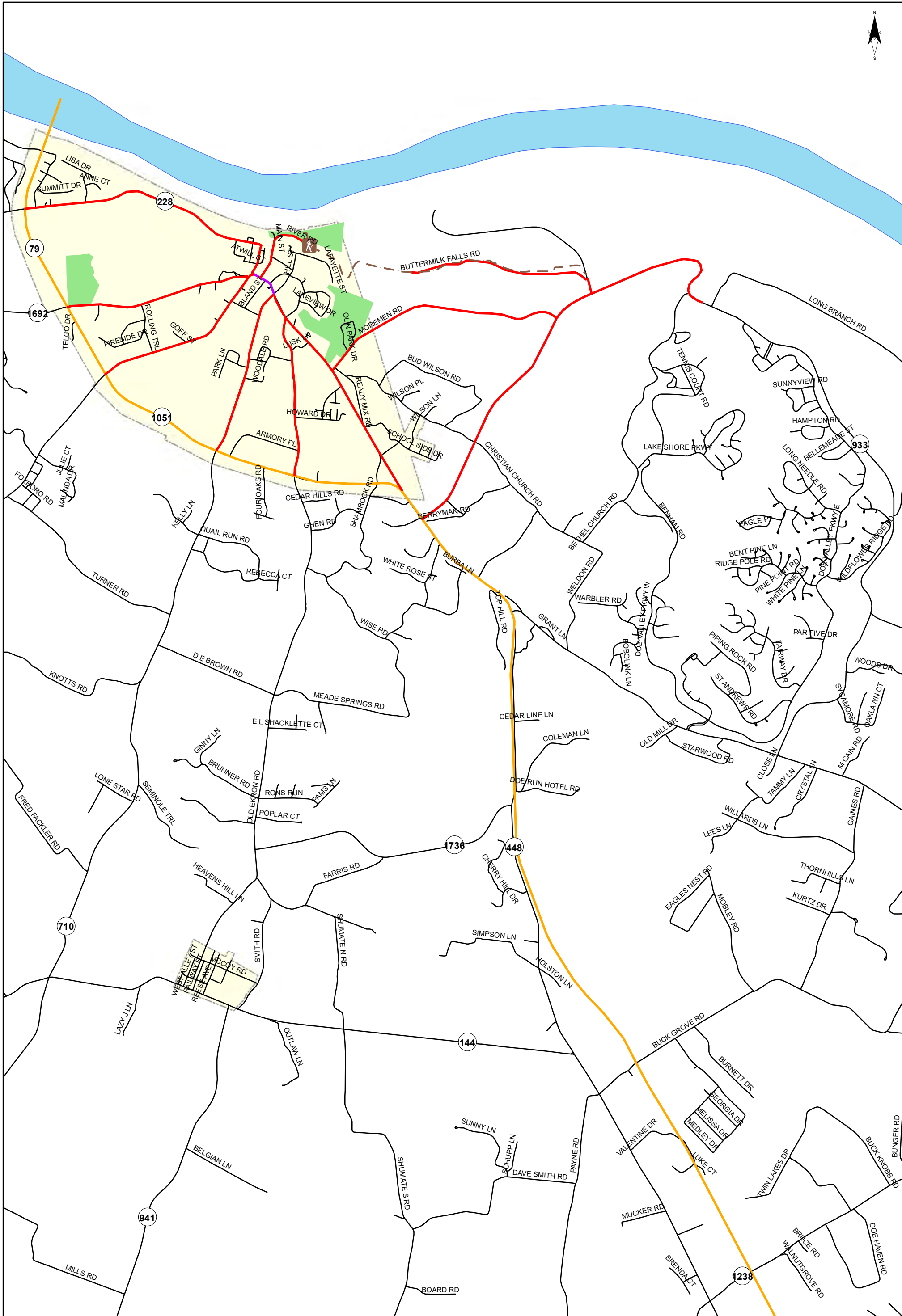
- TrailHead
- Local Trail
- Existing Bikeroute
- Roads
- Local Park
- Corporate Boundary
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- Potential Bikeroute TYPE**
- BIKE LANE
- SHARED-USE PATH
- SIGNAGE/SHARROWS



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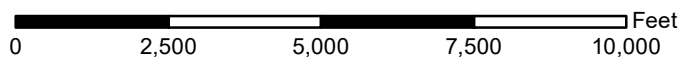
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Meade County

Proposed Bikeway Connections



Legend

-  TrailHead
-  LocalTrail
-  Existing Bikeroute
-  Roads
-  Ohio River
- LocalPark
- Corporate Boundary
-  County Boundary
- Potential Bikeroute TYPE**
-  BIKE LANE
-  SHARED-USE PATH
-  SIGNAGE/SHARROWS



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Prepared by: Lincoln Trail Area Development District, Community Development Department, 2016.

Chapter 5: Implementation

The implementation of the proposed bicycle facility improvements will be a shared responsibility amongst the various jurisdictions and agencies representing the Radcliff/Elizabethtown MPO. This chapter outlines the various methods that can be utilized to complete the bicycle facility improvements.

Highway Project Development

Bicycle facilities can best be implemented when a major construction project is planned for a specific roadway. During the project development and prioritization processes, bicycle facilities should be considered, where practical. The MPO, in conjunction with KYTC District 4, develop Project Identification Forms (PIFs) for all Unscheduled Needs List projects. This is the perfect time for bicycle facilities to be considered for future planned projects.

Road Resurfacing

Resurfacing of roadways are excellent opportunities to consider the implementation of recommendations for bicycle facilities. They can be implemented at a nominal additional cost to the project. These may include:

- Restriping of lanes to accommodate bicycles
- Adding Signage
- Adding Sharrows (Shared Lane Markings) at proper locations

This plan should be consulted with applicable resurfacing projects to coordinate the implementation of bicycle facilities.

Share the Road Signage

Share the road signs are intended to alert motorists that bicyclists may be encountered and that they should be mindful and respectful of bicyclists. These signs are not a substitute for appropriate geometric design measure that can improve the quality of service for bicyclists. The sign should not be used to address reported traffic operational issues, as the addition of this warning sign will not significantly improve bicycling conditions. Share the road signs can also be used in various other situations. Guidance should be consulted prior to installing these signs to ensure that proper use is followed.

The estimated cost of Share The Road signs are \$150 each if installed by Kentucky Transportation Cabinet forces or \$250 if installed by a contractor.

Sharrows (Shared Lane Markings)

In situations where it is desirable to provide a higher level of guidance to bicyclists and motorists, shared lanes may be marked with a pavement marking symbol known as a sharrow. This type of symbol is useful in locations where there is insufficient width to provide bike lanes. The marking also alerts road users to the lateral position bicyclists are likely to occupy within the traveled way, therefore encouraging safer passing practices.

The estimated cost of Sharrows is \$300 for each lane marking if installed by KYTC forces or \$400-\$500 if installed by a contractor.

Funding and Grants

A number of federal transportation grant programs are administered by the KY Transportation Cabinet and Governors Office for Local Development. Grant funds generally require that local governments provide funding for 20 to 50% of project costs. The following grant programs provide funding for bicycle and pedestrian projects:

- Transportation Alternatives Program (TAP)
- Recreational Trails Program (RTP)
- Land and Water Conservation Fund (LWCF)
- Hazard Elimination Safety (HES) Grants
- Congestion Mitigation & Air Quality (CMAQ) Improvement

It should be noted that the Radcliff/Elizabethtown MPO planning area is currently in air quality attainment and are not eligible for Congestion Mitigation & Air Quality (CMAQ) as of the time this plan was developed. However, should air quality conditions change, CMAQ could become a viable option for funding bicycle improvements.

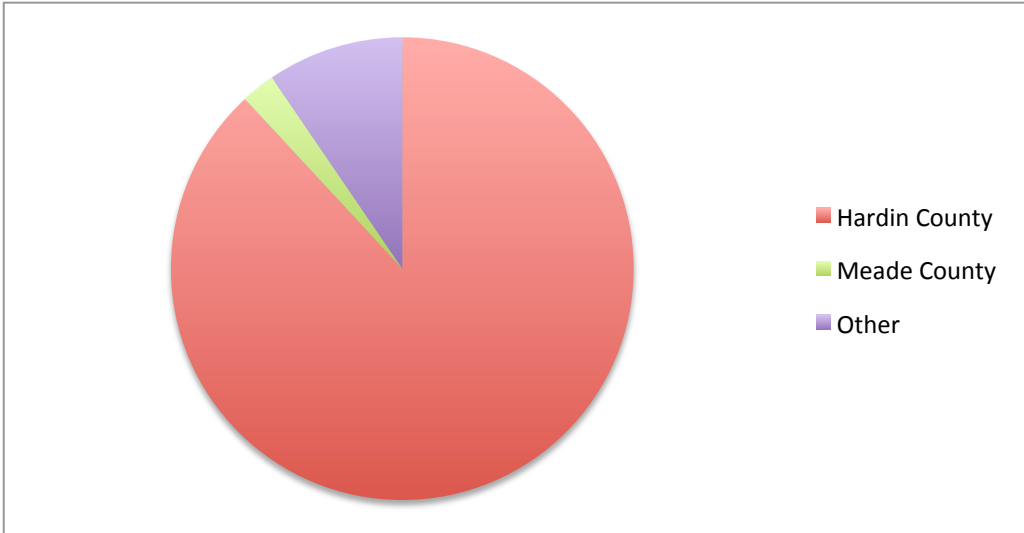
Appendix A
Bicycle Facilities Stakeholder Survey

Bicycle Facilities Stakeholder Survey

Total Responses: 84

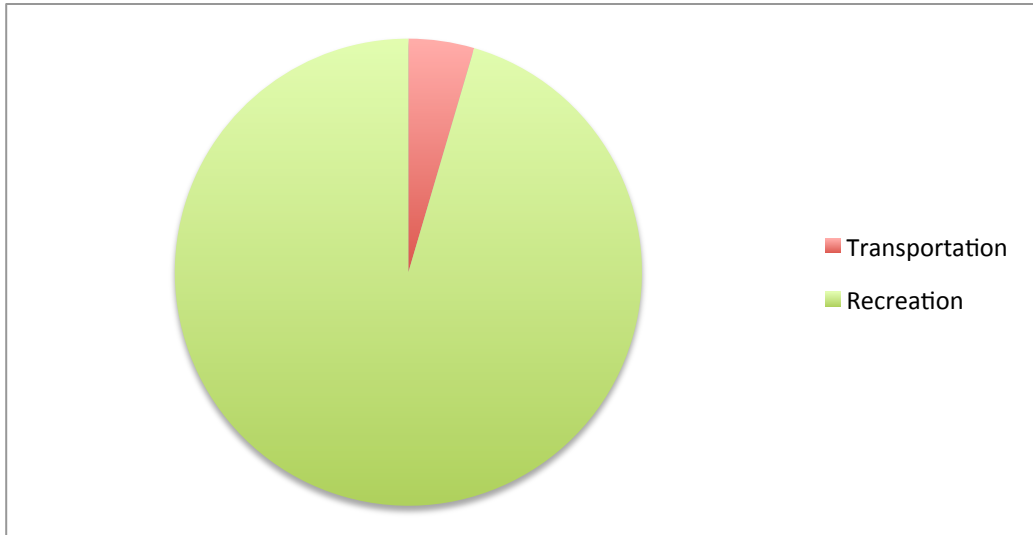
Q1. In which county do you reside?

Hardin County	74
Meade County	2
Other	8



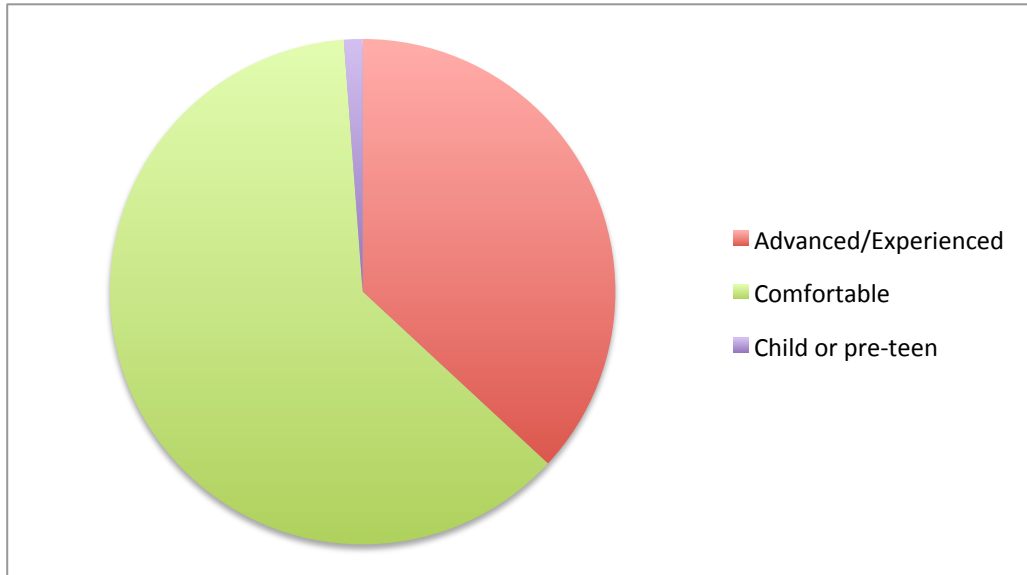
Q2. For which primary purpose do you bike?

Transportation	4	4.76%
Recreation	84	100%



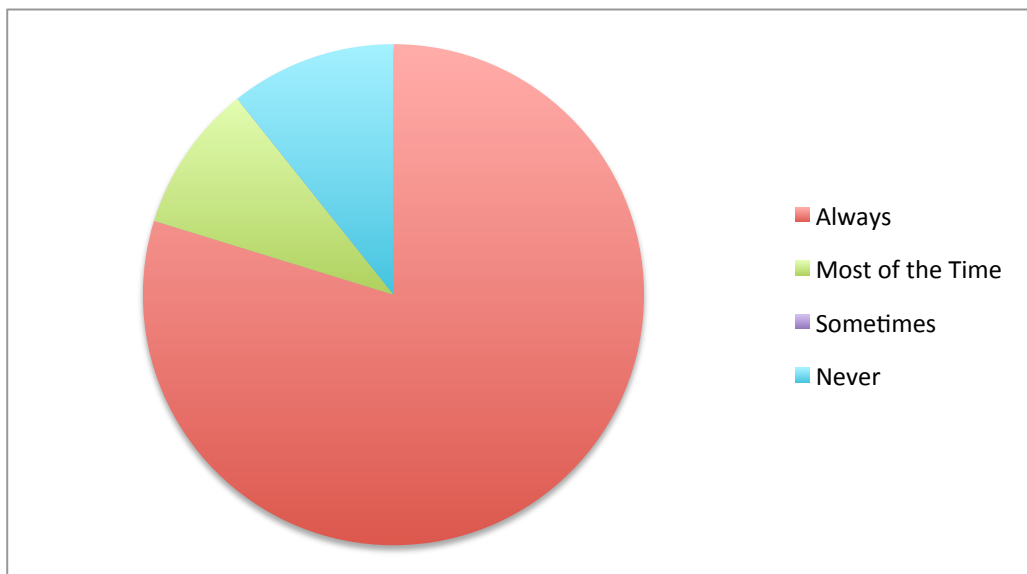
Q3. What skill level do you consider yourself as a bicyclist?

Advanced/Experienced	31
Comfortable	52
Child or pre-teen	1



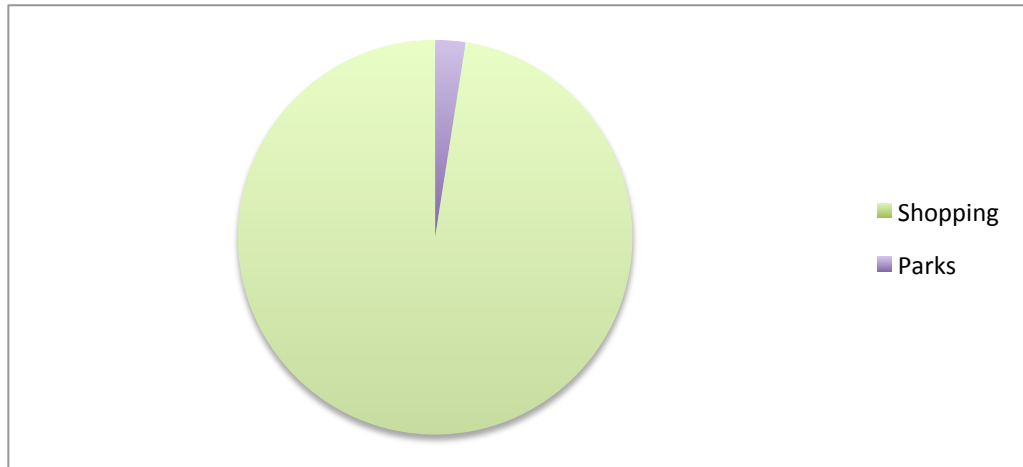
Q4. How often do you wear a helmet?

Always	67
Most of the Time	8
Sometimes	0
Never	9



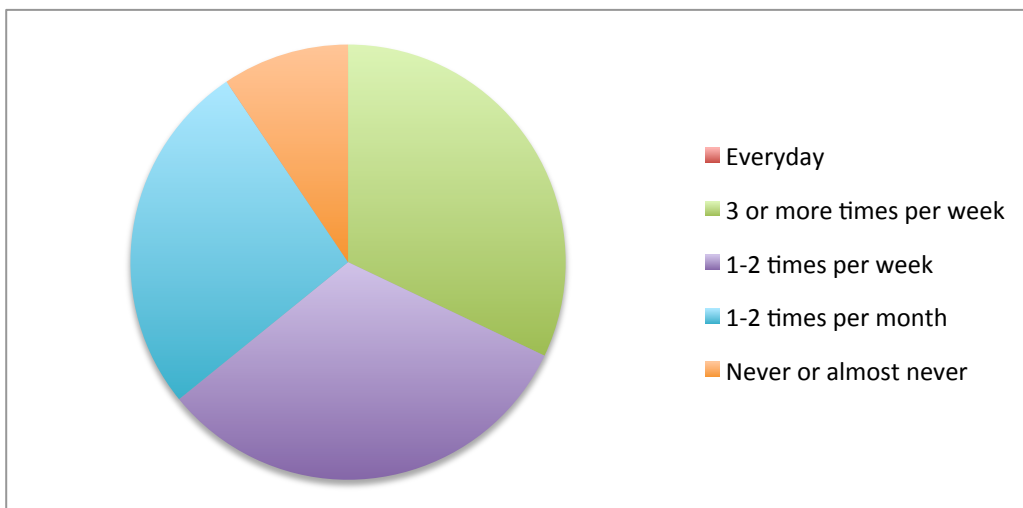
Q5. Where do you go when you bike?

Work	0
Shopping	0
Parks	2
School	0
Libraries	0
Rec or Comm Center	0
Family/Friend's Home	0
Recreational Purposes	79



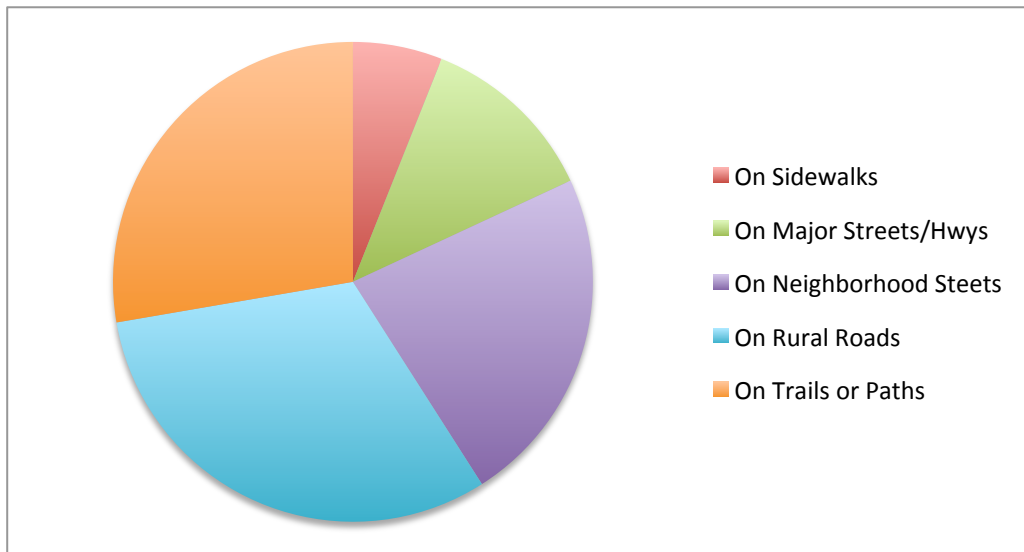
Q5 (2). How often do you bike to these locations?

Everyday	0
3 or more times per week	17
1-2 times per week	17
1-2 times per month	14
Never or almost never	5



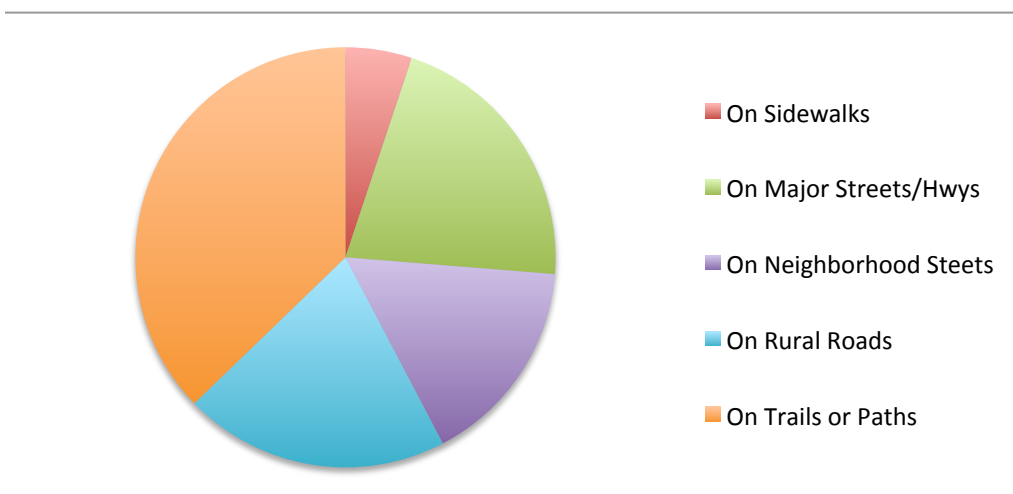
Q6. Where do you primarily bike?

On Sidewalks	5
On Major Streets/Hwys	10
On Neighborhood Steets	19
On Rural Roads	26
On Trails or Paths	23



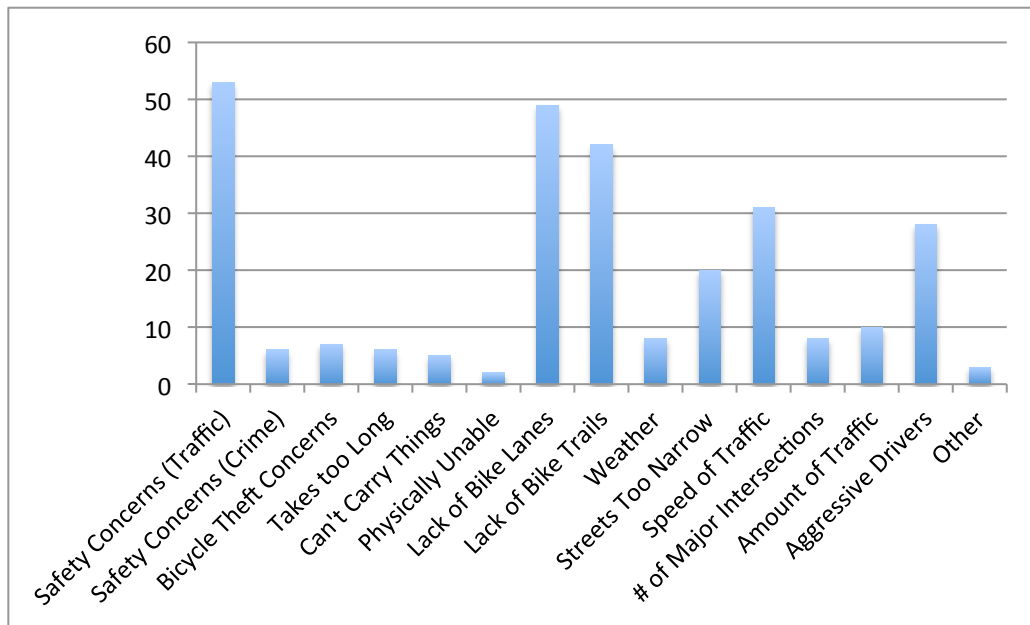
Q7. Where would like to bike more?

On Sidewalks	7
On Major Streets/Hwys	29
On Neighborhood Steets	22
On Rural Roads	28
On Trails or Paths	51



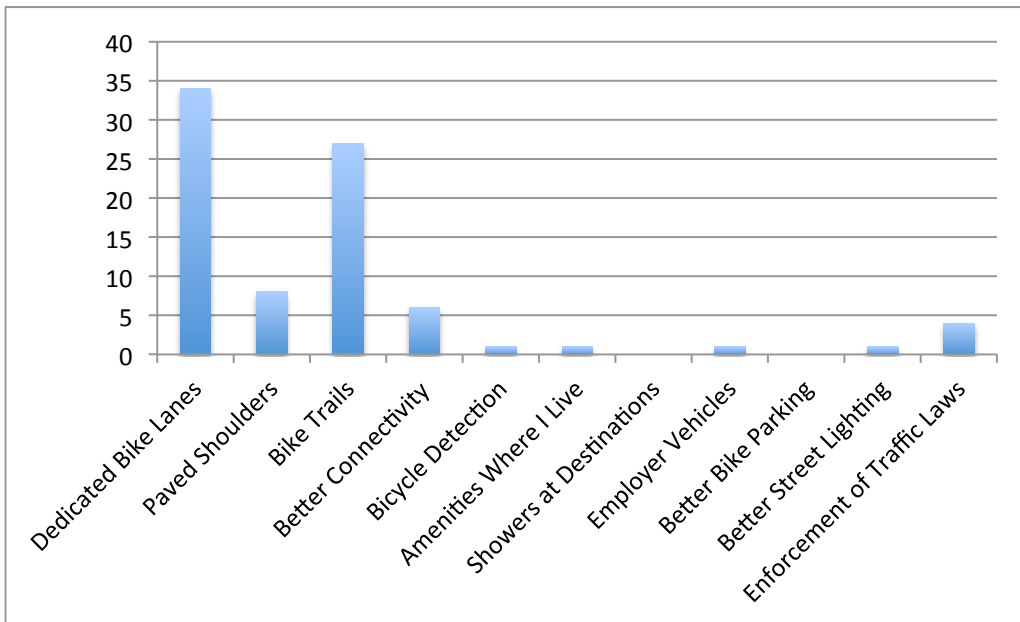
Q8. What prevents you from bicycling (or bicycling more) in your county?

Safety Concerns (Traffic)	53
Safety Concerns (Crime)	6
Bicycle Theft Concerns	7
Takes too Long	6
Can't Carry Things	5
Physically Unable	2
Lack of Bike Lanes	49
Lack of Bike Trails	42
Weather	8
Streets Too Narrow	20
Speed of Traffic	31
# of Major Intersections	8
Amount of Traffic	10
Aggressive Drivers	28
Other	3



Q9. What would encourage you to bike or to bike more?

Dedicated Bike Lanes	34
Paved Shoulders	8
Bike Trails	27
Better Connectivity	6
Bicycle Detection	1
Amenities Where I Live	1
Showers at Destinations	0
Employer Vehicles	1
Better Bike Parking	0
Better Street Lighting	1
Enforcement of Traffic Law	4



Q10. Written Comments

See below ...

Bicycle Facilities Stakeholder Survey (Written Responses)

Q10. Please tell us more ... On which roads/streets to you bike? Where are there missing links/connections between existing bicycle lanes, shoulders, and trails? Please also provide any additional comments you may have about bicycling in your community.

We recently moved back here from living in California. In California, we were fortunate to have a 38 mile bike trail and were able to ride back roads and around the city of Monterey. The weather was good enough to ride year round. We live off of 251 and would like to be able to ride into town at least 3 or more times a week. What ever could be done to make the ride safer would be greatly appreciated. 10/31/2015 7:24 AM

I bicycle around most of Elizabethtown. I frequently bicycle on Ring Road, the bypass, Dixie Highway and country roads. I like that the new road to Radcliff has bicycle lanes. I am concerned that drivers in Elizabethtown are not careful around bicyclists. 10/28/2015 5:18 PM

Existing bike lanes must be cleaned occasionally. "Rumble Strips" on the edge of lanes are very dangerous to cyclists! 10/26/2015 11:17 PM

Dedicated bike lanes are much needed in Radcliff to enable easy access to SSNP mountain bike trails. Need a dedicated pedestrian/bike over pass over 31W at the Ft Knox Main entrance to enable a safe alternative due to volume and speed of traffic . Doing so would enable me to commute to work safely on my bike. 10/25/2015 9:35 PM

I usually Bike at Saunders springs, mostly because it is the only place around to mountain bike. It is inconvenient though, since I live near Rineyville. I also have a road bike that I would love to ride, but the country roads around here are very narrow. I would suggest picking some roads and widening them a little if needed, then designating them as Bike routes- thanks. 10/24/2015 1:23 AM

I love to bicycle, but with today's crazy distracted drivers , I would much rather have designated bike trails and lanes to provide an avenue of transportation. I think if these were provided, you will be amazed how many people will utilize them. 10/23/2015 7:12 AM

Would like more bike trails built in Jefferson County and surround counties 10/21/2015 4:11 AM

I stay on major roads with wide shoulders-Patriot Pkwy, Joe Prather. Would love to ride more on back roads in and around Glendale, Cecilia, Rineyville, Flaherty, but the roads are narrow without an ample shoulder and I just don't feel safe. 10/20/2015 11:51 PM

A safe bike corridor or network of trails that would allow one to travel throughout the area to use for both transportation and recreation purposes. 10/20/2015 8:37 PM

1. I bike on Logsdon, because It's the only City 4 lane street. 2. Then I Bike on 361 toward highway 60 because its the only rural highway that has a descent shoulder. 3. Lately I been Biking on 361 toward E-Town, because of it being a four lane, and a bicycle lane. 10/20/2015 8:29 PM

Valley Creek, Glendale, Stephensburg, Cecilia, 31W, hodgenville road are the main areas where I ride. 10/20/2015 7:21 PM

I worry A LOT about distracted drivers. 10/20/2015 4:26 AM

Bicycle lanes 10/19/2015 9:10 PM

Dixie Hwy is the main road with access to everything, but with traffic bikers tend to stay off of there because of the drivers and there bad habbits. I drive Dixie everyday and anytime after lunch the avg speed of people is about 55 to 60 to include the 45 mph areas. Most of the drives are in such a hurry they are multi tasking and don't watch for bikes, walkers ect. I think the best thing to do for Dixie Hwy would be put a wide bike path/road on either side of Dixie hwy. 10/19/2015 8:42 PM

I primarily mountain bike. I live in Brandenburg and currently the closest trail cost \$10 per bike to ride(Otter Creek), so I travel to Radcliff to ride Saunder Springs. I also travel up an two hours to ride longer trails. There is talk to build trail systems in Brandenburg and neighboring counties. Please, please talk with local officials to bring trails to Meade county. 10/19/2015 8:34 PM

There is something wrong with the survey. You can only choose one answer for question 9. And question 5 seems to be a two parts but you can only choose one answer for both sections 10/19/2015 3:28 PM

Bike lanes are a waste as they get all the road debris and cause more flats on bikes. A middle lane is good to give motorists more room to pass, but there needs to be more communication on laws and expectations from motorists and cyclists 10/19/2015 2:18 PM

Not safe in neighborhood. Drivers speed through communities where children ride. It's hard to get them to slow down. 10/14/2015 7:57 PM

Morningside Dr 10/14/2015 7:41 PM

I mountain bike at Youngers Creek and Saunders Springs. I would bike more if there were more mountain bike trails in Hardin and Meade Co. I also help maintain these trails. Would appreciate no further logging by the County at Youngers Creek as this has destroyed several miles of trails. 10/14/2015 5:35 PM

#8 Distracted drivers (texting, eating, on the phone, etc..). Where was the bike path from Wilson Gate to Saunders Springs in Radcliff supposed to go. I see many people on the shoulder of 313 exercising. Are there any plans for a linear style park in the area? 10/14/2015 2:25 PM

I bike in my subdivision but would venture further if there were dedicated bike lanes and parking facilities, especially downtown. 10/14/2015 9:32 AM

We need dedicated multi-use trails in and throughout Elizabethtown. Our community

has and continues to grow, and so we need to embrace our natural resources and alternative forms of transportation (for all ages). Thanks for the opportunity to provide input! 10/12/2015 12:01 PM

I live on a dead end Grayson County road, which is primarily where I bike. I also go to Mammoth Cave park and ride on designated bike trails with my family.10/8/2015 2:37 PM

The drainage grates on S Dixie near the railroad tracks will swallow bicycle tires.
10/7/2015 9:24 PM

Ring road-would love designated lane. Would love a bike trail around freeman lake- not just for trail bikes. 10/7/2015 9:08 PM

I wish my community would get serious about alternative modes of transportation other than an automobile. Some people cannot afford an automobile or simply prefer to get around by either biking or walking. But there aren't many dedicated bike facilities and the sidewalks are in various states of disrepair or too inconsistent in coverage.
10/7/2015 8:56 PM

I bike occasionally from north side baptist to beef o Brady's or sim. I have to primarily bike on sidewalks, which I'm not supposed to do, but I do not trust traffic on ring road.
10/7/2015 6:28 PM

I live too far away for any of these to be relevant. 10/7/2015 2:58 PM

I ride my bike just about everyday. i ride to work 2 days a week (average), i road ride for fitness about 2-3 days a week. i also mountain bike ride at a local park a few days a week (and at night). I live it, I work it, I love it! 10/7/2015 2:02 PM

Appendix B

Public Health Data

Hardin (HR)

	Hardin County	Error Margin	Top U.S. Performers [^]	Kentucky	Rank (of 120)
Health Outcomes					13
Length of Life					14
Premature death	7,400	6,800-7,900	5,200	8,800	
Quality of Life					16
Poor or fair health**	20%	19-20%	12%	24%	
Poor physical health days**	4.5	4.4-4.7	2.9	5.0	
Poor mental health days**	4.0	3.8-4.1	2.8	4.6	
Low birthweight	7%	7-8%	6%	9%	
Health Factors					15
Health Behaviors					39
Adult smoking**	22%	21-23%	14%	26%	
Adult obesity	32%	28-35%	25%	32%	
Food environment index	6.8		8.3	7.1	
Physical inactivity	28%	25-31%	20%	29%	
Access to exercise opportunities	73%		91%	70%	
Excessive drinking**	13%	13-14%	12%	14%	
Alcohol-impaired driving deaths	21%	16-27%	14%	29%	
Sexually transmitted infections	490.5		134.1	391.2	
Teen births	48	46-51	19	47	
Clinical Care					12
Uninsured	15%	13-16%	11%	17%	
Primary care physicians	1,550:1		1,040:1	1,500:1	
Dentists	1,140:1		1,340:1	1,610:1	
Mental health providers	330:1		370:1	560:1	
Preventable hospital stays	87	81-93	38	85	
Diabetic monitoring	85%	81-90%	90%	86%	
Mammography screening	59%	54-64%	71%	58%	
Social & Economic Factors					19
High school graduation	90%		93%	88%	
Some college	64%	61-68%	72%	59%	
Unemployment	6.2%		3.5%	6.5%	
Children in poverty	22%	17-27%	13%	26%	
Income inequality	4.2	3.8-4.6	3.7	5.1	
Children in single-parent households	35%	31-40%	21%	34%	
Social associations	10.4		22.1	10.8	
Violent crime	159		59	235	
Injury deaths	64	57-71	51	82	
Physical Environment					18
Air pollution - particulate matter	13.6		9.5	13.5	
Drinking water violations	No		No		
Severe housing problems	11%	10-13%	9%	14%	
Driving alone to work	80%	79-82%	71%	82%	
Long commute - driving alone	26%	23-28%	15%	28%	

[^] 10th/90th percentile, i.e., only 10% are better.

Note: Blank values reflect unreliable or missing data

** Data should not be compared with prior years due to changes in definition/methods

2016

Meade (MD)

	Meade County	Error Margin	Top U.S. Performers [^]	Kentucky	Rank (of 120)
Health Outcomes					14
Length of Life					13
Premature death	7,300	6,300-8,400	5,200	8,800	
Quality of Life					20
Poor or fair health**	20%	19-21%	12%	24%	
Poor physical health days**	4.6	4.4-4.8	2.9	5.0	
Poor mental health days**	4.0	3.9-4.2	2.8	4.6	
Low birthweight	8%	6-9%	6%	9%	
Health Factors					49
Health Behaviors					78
Adult smoking**	25%	24-26%	14%	26%	
Adult obesity	36%	30-41%	25%	32%	
Food environment index	7.0		8.3	7.1	
Physical inactivity	29%	24-35%	20%	29%	
Access to exercise opportunities	60%		91%	70%	
Excessive drinking**	13%	13-14%	12%	14%	
Alcohol-impaired driving deaths	31%	21-41%	14%	29%	
Sexually transmitted infections	126.6		134.1	391.2	
Teen births	38	34-43	19	47	
Clinical Care					56
Uninsured	17%	15-19%	11%	17%	
Primary care physicians	4,870:1		1,040:1	1,500:1	
Dentists	4,160:1		1,340:1	1,610:1	
Mental health providers	1,000:1		370:1	560:1	
Preventable hospital stays	90	79-101	38	85	
Diabetic monitoring	86%	78-94%	90%	86%	
Mammography screening	57%	48-65%	71%	58%	
Social & Economic Factors					18
High school graduation	94%		93%	88%	
Some college	58%	52-64%	72%	59%	
Unemployment	7.0%		3.5%	6.5%	
Children in poverty	21%	15-27%	13%	26%	
Income inequality	4.4	3.7-5.1	3.7	5.1	
Children in single-parent households	29%	22-35%	21%	34%	
Social associations	6.8		22.1	10.8	
Violent crime	56		59	235	
Injury deaths	72	59-86	51	82	
Physical Environment					90
Air pollution - particulate matter	13.7		9.5	13.5	
Drinking water violations	No		No		
Severe housing problems	11%	9-14%	9%	14%	
Driving alone to work	88%	87-88%	71%	82%	
Long commute - driving alone	44%	38-49%	15%	28%	

[^] 10th/90th percentile, i.e., only 10% are better.

Note: Blank values reflect unreliable or missing data

** Data should not be compared with prior years due to changes in definition/methods

2016