

Madison County Bicycle & Pedestrian Master Plan



City of Berea

City of Richmond

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Section 1: Executive Summary and Significance of Plan

Vision and Purpose

The purpose of the Madison County Bicycle & Pedestrian Master Plan (the Plan) is to provide a framework that will improve the public health and safety of the people in Madison County through guiding improvement of the built environment and other community-specific aspects of transportation in Madison County over time. This will be accomplished through a combination of long-term community input and support, and expert planning. The Plan was developed using input and active involvement from community organizations and elected officials, with support from regional and state transportation personnel. Improving the health and wellbeing of an entire county through built environment planning and improvement will take many years, but the long-term effectiveness of the Plan will be determined by how effectively it helps guide Madison County transportation planning and how much it helps improve bicycling and pedestrian infrastructure, safety, and connectivity in Madison County.

Benefits of Walking, Biking, and Physical Activity

Regular physical activity can help reduce obesity, reduce the risk of developing cardiovascular disease, type 2 diabetes, and some cancers, improve mental health, strengthen bone and muscle, reduce hypertension, prevent strokes, help to prevent falls, increase overall life expectancy, and improve overall quality of life ("Physical Activity and Health," 2017).

Residents of walkable communities have been shown to perform roughly 35-45 additional minutes of physical activity per week, and are significantly less likely to be overweight or obese than comparable people living in less walkable neighborhoods (Sallis et al., 2009). They are also 65% more likely to walk in neighborhoods and along streets with sidewalks (Giles-Corti & Donovan, 2002). Given that only 16.6% of Kentuckians meet the recommended physical activity guidelines of 150 minutes of moderate physical activity per week and 29.8% of Kentuckians have not exercised at all in a given month, Madison County strongly believes we have a responsibility to our community and our constituents to do all in our power to increase access to a built environment conducive to safe and regular walking (CDC, 2018; US Department of Health and Human Services, 2008).

Current State of Health in Madison County

Madison County suffers from high rates of chronic disease compounded by low rates of physical activity, which is an issue that is common across Kentucky. The leading causes of death in Madison County are cancer, heart disease, and chronic lower respiratory diseases. Physical activity has been shown to help prevent these illnesses. Madison County ranks near the average for most health markers in Kentucky, but it still lags behind the national average, notably in markers related to physical activity.

In the 2014 Madison County Health and Safety survey, 59.6% of survey respondents said they believed Obesity/Physical Inactivity to be one of the greatest health problems in Madison County; second only to Alcohol/Drug Abuse (Madison County Health Department, 2018). Data supports the assertion of the survey respondents, as Adult Overweight and Obesity in Madison County is indeed a significant concern as 68% of Madison County adults are overweight and 32% of adults are obese ("Health Rankings," 2017). Madison County is also comparable to Kentucky average in terms of adolescent overweight and obesity, and 15.4% of adolescents statewide are overweight, and 18% of adolescents are obese (Centers for Disease Control and Prevention, 2016). As 21.1% of Madison County residents are 18 years of age or younger and 13.1% of residents are 65 years of age and older, nearly 35% of Madison County residents are in age brackets that would benefit significantly from increased access to safe walking and biking infrastructure ("Health Rankings, 2017).

Indicator	Madison	Kentucky	Top US Performers (Top
			10%)
Adults reporting fair or poor	20%	21%	12%
health			
Adult Obesity	32%	33%	26%
Diabetes Prevalence	11%	12%	8%
Physical Inactivity	28%	28%	19%
Access to Exercise	72%	70%	91%
Opportunities			

Walking and Bicycling in Madison County

There are few reliable counts of pedestrians or cyclists in Madison County. Observational and anecdotal evidence strongly suggests many people in Madison County do walk, run, and bike regularly. Observational evidence and general reasoning suggest pedestrians and cyclists are more common in the more densely populated areas of the county, the City of Berea and the City of Richmond. In particular, Berea's Kentucky Trail Town designation and the four different bicycle routes/trails that pass through the city attract residents from throughout Madison County and the region, as well as adventure bicyclists from around the world (see http://krta.ky.gov/docs/3-ApplicationProcess.pdf for more information about the Kentucky Trail Town designation).

One numerical count of cyclists/pedestrians in Madison County comes from Berea, who tracks trail use using cameras. In the first year of a three year study, Berea found that nearly 8,000 people used the trails in Berea for an average of four miles (Richmond Register, 2018).



Automobile Crash Statistics in Madison County

Eight pedestrian fatalities out of 58 total automobile-related fatalities occurred from February 2013 – February 2018 in Madison County (crashinformation.org). With improved transportation planning and built infrastructure designed with greater safety in mind, both types of fatalities could be reduced. It should be noted that several of the pedestrian fatalities were on I-75 and it is unlikely that county transportation and built environment improvement would reduce pedestrian fatalities on an interstate highway (crashinformationky.org).

Significance of Plan

- Why does the Plan matter?
 - It is important for the residents of Madison County to know the Madison County Fiscal Court and other governing bodies take their health and their ability to exercise safely and efficiently seriously.
 - Having a formal walkability plan in place opens up additional built environment and infrastructure improvement opportunities for Madison County through various federal, regional, and state funding sources.
 - It provides a formal document based on public feedback that supports bicycle and pedestrian-friendly infrastructure planning within Madison County
 - Over time it will improve public health within Madison County by helping to decrease the burden of obesity and chronic disease, increase the safety of pedestrians, bikers, and car occupants, and help decrease the barriers for people in Madison County to be more physically active.

Goals

- Provide a formal document that advocates for including pedestrian and biking planning in all future infrastructure, construction, road building/repair, projects, policies, and any other planning that occurs in Madison County
 - a. Provide a list of desired improvements
- Compile guidelines and legal requirements for pedestrian and bicycling facility design, construction, and maintenance if applicable
- Improve public health in Madison County by safely increasing regular physical activity of people in Madison County through improved infrastructure/built environment, connectivity, and equitable accessibility
- Support and promote economic development in Madison County through increased recreational and adventure tourism, improved signage, and improved connectivity between destinations

Section 2: Design Standards

General Standards

The Kentucky Transportation Cabinet (KYTC) published a statewide Pedestrian & Bicycle Travel Policy in 2002, which can be found here: <u>https://transportation.ky.gov/BikeWalk/Documents/KYTC%20Pedestrian%20and%20Bic</u>

ycle%20Travel%20Policy%20%202002.pdf.

This document provides general guidance and recommended guidelines for incorporating pedestrian and bicycle infrastructure into transportation and construction planning. It also supports considering pedestrian and bicycle interests in all forms of transportation planning. It also establishes the circumstances under which the KYTC can support counties and communities with adding or retrofitting of pedestrian and bicycle infrastructure.

Madison County, the City of Richmond, and the City of Berea desire KYTC District 7, the transportation planners, and the road departments of each jurisdiction to incorporate sidewalks, bicycle-friendly shoulders, high-visibility crosswalks, and multimodal bike/ped facilities into their transportation planning whenever feasible. This includes both new transportation construction along with retrofitting these facilities when repairs are made, if possible. In the more rural areas of Madison County, wider shoulder bikeways or other forms of widened roadways should also be included in the planning process and constructed or retrofitted whenever feasible.

Pedestrian facilities should always be constructed to Americans with Disabilities Act Accessibility Guidelines (ADAAG) guidelines. Repairs or expansion to existing pedestrian facilities should also be constructed to comply with ADAAG guidelines. This document can be found here:

https://www.ada.gov/regs2010/2010ADAStandards/2010ADAStandards_prt.pdf.

Appropriate signage should be utilized to designate bicycle and pedestrian infrastructure and roadways in general to improve safety, along with wayfinding signage when suitable. Project planning managers can refer to the Manual of Uniform Traffic Control Devices and consult KYTC for assistance when planning to place signage. The Manual can be found here:

http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/mutcd09r1r2editionhl.pdf.

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Madison County Design Standards

Madison County has minimum design standards for most new construction in the county, as do both the City of Richmond and the City of Berea. The relevant Madison County ordinances are found in the Subdivision and Development Regulations¹:

308.2 Walkways

If sidewalks are provided they shall meet the following requirements and shall be the responsibility of the developer and shall be completed throughout the entire development prior to the county accepting maintenance responsibility of the road system and rights of way. Any letter of credit or other financial instrument securing the improvements required in a subdivision shall not be released until such time as the sidewalks are constructed pursuant to the following guidelines.

Standards for Accessible Design

In accordance with the provisions of the Federal Department of Justice, "28 CFR Part 37, ADA Standards for Accessible Design" Chapter 3, "Pedestrian Accessibility" all sidewalks shall be designed and installed to be accessible to the physically disabled. The guidelines are made a part of this regulation by reference. It shall be the responsibility of the developer of his/her designee to become familiar with these regulations and ensure the strict compliance as prescribed in the referenced documents. Details of accessible sidewalks and curb cuts shall be provided on the plat where sidewalks are required.

308.21 Residential Subdivisions

In residential areas, sidewalks shall be provided on both sides of the street where the predominant lot width is less than one hundred (100) feet. Sidewalks shall be required on one side of the street where the predominant lot width is less than two hundred (200) feet. Sidewalks will not normally be required where the predominant lot width is over two hundred (200) feet. Where a resident block exceeds nine hundred (900) feet in length, a through sidewalk in a ten (10) foot easement may be required by the Planning Commission. When the street is a cul-de-sac and sidewalks are required on one (1) side of the street only, the sidewalk shall be extended around the cul-de-sac to include all lots that front on the cul-de-sac.

¹ Madison County Subdivision and Development Regulations. Retrieved 9 January 2018. <u>https://madisoncountyky.us/phocadownload/Plannning/Official%20Copy%20Subd%20Regs%20Jan</u> <u>%202014.pdf</u>.

308.22 Commercial Development

Sidewalks shall be required by the Fiscal Court for all commercial lots.

308.23 Standards

Sidewalks shall be constructed of concrete, at least four (4) inches thick and four (4) feet wide, poured over a compacted four (4) inch dense grade gravel sub-base.

308.24 Maintenance of Walkway

It shall be the responsibility of the owner or person(s) entitled to possession of any house or other building within Madison County which abuts or borders upon any street, road, highway or public place to maintain the sidewalks abutting property in good repair and free of any physical conditions that may cause accident or injury. It shall be the reasonability of the owner of person(s) entitled to possession of any house or other building within Madison County which abuts or borders upon any street, road, highway or public place to remove or cause to be removed, all snow and ice from the sidewalk in front of or adjacent to such premises to the full paved width of said walk within 24 hours after such snow or ice shall have fallen or accumulated thereon. Whenever any sidewalks are repaired, renewed or re-constructed, said work shall conform to the Madison County Subdivision Regulations Section 308.2 and shall be in compliance with the applicable standards of the Federal Government's American's with Disabilities Act.

City of Berea Design Standards

Berea utilizes Madison County design standards as a minimum, and adds several stricter design standards for new construction:

§ 81.103 DESIGN GUIDELINES

(5) Pedestrian flows.

(a) Intent. Pedestrian accessibility opens auto-oriented developments to the neighborhood, thereby reducing traffic impacts and enabling the development to project a friendlier, more inviting image. This section sets forth standards for public sidewalks and internal pedestrian circulation systems that can provide user-friendly pedestrian access as well as pedestrian safety, shelter, and convenience within the center grounds.

(b) Guideline.

1. Sidewalks at least six (6) feet in width shall be provided along all sides of the lot that abut a public or private right-of-way. The planning commission may waive this requirement as part of the development plan.

2. Continuous internal pedestrian walkways, no less than five (5) feet in width, shall be provided from the public sidewalk or right-of-way to the principal customer entrance of all principal buildings on the site. At a minimum, walkways shall connect focal points of pedestrian activity, such as, but not limited to, transit stops, street crossings, building and store entry points, and shall feature adjoining landscaped areas that include trees, shrubs, benches, flower beds, ground covers, or other such materials for no less than fifty (50) percent of their length.

3. Sidewalks, no less than five (5) feet in width, shall be provided along the full length of the building along any facade featuring a customer entrance, and along any facade abutting public parking areas. Such sidewalks shall be located at least six (6) feet from the facade of the building to provide planting beds foundation landscaping, except where features such as arcades or entryways are part of the facade.

Internal pedestrian walkways provided in conformance with division (C) (5)2.
 above shall provide weather protection features such as awnings or arcades within thirty (30) feet of all customer entrances, constructed parallel to the facade of the building. This is not intended to extend into the driving aisles or parking areas.

5. All internal pedestrian walkways shall be distinguished from driving surfaces through the use of durable, low maintenance surface materials such as pavers, bricks, or scored concrete to enhance pedestrian safety and comfort, as well as the attractiveness of the walkways. Signs shall be installed to designate pedestrian walkways.²

City of Richmond Design Standards

The City of Richmond's Development Ordinance also contains additional relevant ordinances, including:

513.8 Pedestrian Walkways

2. Responsibility- Sidewalks are the responsibility of the developer and are to be provided all residential subdivisions on both sides of the street. Pedestrian walkways

² City of Berea, Kentucky Code of Ordinances, Chapter 81, Article 1 (2009).

shall be required for all commercial and industrial lots as determined by the Planning Commission.

513.9 Bikeways

1. A bikeway may be substituted for a sidewalk in areas where schools, parks, or other public facilities exist and may cause a high volume of bicycle traffic, in order to insure the safety of cyclists and encourage greater use of the bicycle as an alternate means of transportation.

2. There are three different types of bikeway facilities:

Bicycle Paths- Shall include only those bicycle facilities whereby a separate right-of-way is set aside for the specific use of cyclists to the exclusion of motor vehicles and

pedestrians. One-way bike paths shall be at least four (4) feet wide and paved with concrete or bituminous paving material.

Two-way bike Paths shall be at least eight (8) feet wide.

Bicycle Lanes- Shall include those bicycle facilities where a portion of a street is designated by a raised curb or painted lane stripe, for the exclusive use of



cyclists. Bike lanes shall be prominently marked as such and shall be one-way in direction on each side of the street. Bike lanes shall be a minimum of four (4) feet in width.

Bicycle Routes- Shall include those existing or proposed streets that are determined by specific analysis to be suitable for the safe operation of bicycles. Bike routes do not provide for the exclusive use of bicycles but require sharing the street with other vehicles and are designated by an official "Bike Route" sign.³

³ City of Richmond, Kentucky Development Ordinance. Accessed 9 January 2018. <u>http://richmond.ky.us/images/planning/files/DO_April_9_2013_MASTER.pdf</u>.

Section 3: Existing Conditions

Inventory of Bicycle/Pedestrian Facilities

There are 196.78 total miles of existing bike/ped facilities in Madison County. Of this mileage, the City of Richmond contains 127.19 miles of bike/ped facilities: 1.56 miles are considered crosswalks, while 125.59 miles are sidewalks. The City of Berea contains 69.83 miles of bike/ped facilities, with 0.49 miles of crosswalks, 3.73 miles of multi-use paths, and the remaining 65.62 miles are sidewalks (KYTC, 2018). Appendix A and Appendix B contain GIS



maps of mapped pedestrian and cycling routes in Madison County, respectively.

Madison County owns four parks and Wilgreen Lake. Two of these parks have significant walking trails; Battlefield Park contains 1.95 miles of walking trails and White Hall Park contains 2.50 miles of walking trails (Madison County GIS, 2018). Berea has four city-owned parks and has been designated a Trail Town, containing 19.41 miles of existing official trails, 11.17 miles of proposed trails, with eight additional trails of 15.04 miles total planned. There are nearly 100 miles of unofficial bike trails in Berea as well, not including the mileage of the Boone Trace Trail. As a Kentucky Trail Town Berea has made extensive efforts to designate and sign their trails, creating an interconnected network of trails. The City of Berea is currently incorporating Boone Trace into their trail planning; as an example the 9.1 mile-long John B. Stevenson shared use path in Berea follows the original Boone Trace trail route along Brushy Fork Creek and is a focal point of the trail network in Berea.

Richmond has seven city-owned parks, including approximately 3.7 miles of trails (including a 1.20 mile paved walking/running trail at the Lake Reba Recreation complex, the largest Richmond park), and Richmond also has contains several of the Madison-county owned trails. A 0.3-mile paved walking trail also exists off Duncannon Lane, close to the Boone Trace trail route.

Other facilities include the intersection of three major bike trails: the TransAmerica Trail, the Midland Kentucky Bike Tour, and the Bluegrass Bike Tour. Figures #1 and #2 show the Bicycle Comfort Index compiled in Madison County in 2015 by KYTC. A new bike route called USBR 21 that combines parts of the historic Boone Trace Trail with the existing Bluegrass Bike Tour is also in development. Once completed, USBR 21 will run from Atlanta, Georgia in the south to Cleveland, Ohio in the north.

The rapid industrial and residential expansion of Madison County has led to pockets of residences and businesses in geographic areas that at one time, were isolated from development that are now within walking or bicycling distance. This has led to a disconnected feeling in terms of pedestrian and bicycle travel within the county, as well as poor equity in terms of safe bike/ped facility access in Madison County. Thus improved pedestrian and bicycle connectivity, particularly along US 25x and KY 52 within the US 25/KY 876 bypass are priorities for Richmond and Madison County. Connecting downtown Richmond with the physical activity facilities at Lake Reba Park would also help to improve equitable access to bike/ped facilities in Madison County, as reaching Lake Reba Park by bike or on foot is not as safe as it could be.

The discontent with existing bike/ped connectivity is supported by existing community dissatisfaction with the total amount of existing sidewalks. 41.9% of survey respondents of the 2014 Madison County Health & Safety Survey believed that "Not enough sidewalks" was one of the top safety problems in Madison County. 59% of survey respondents of the same survey believed that sidewalks are one of the most needed physical activity opportunities in Madison County (Madison County Health Department, 2018).

The condition of existing bicycle and pedestrian facilities is fair to poor in many areas, as maintaining sidewalks is the responsibility of the owner of a property. The joint Eastern Kentucky University, Berea College, and Madison County Health Department Walkability Survey was administered in 2017 to investigate sidewalks, roads, and street crossings around Madison county, as well as overall perception of walkability. The survey found that slightly more than half of the respondents found their walk pleasant (53.58%), 42.16% of respondents thought it was easy to cross streets, and 47.58% of respondents said they had enough room to walk (Eastern Kentucky University, 2017).

The findings of the survey indicate that there are improvements to be made, and reinforced the existing perception that sidewalks in Madison County are poor in general. Addressing this issue, whether through enforcement or assisting landowners with sidewalk repair, could greatly improve community perception of walkability in Richmond and Berea, in particular.

Destinations

Destinations in Madison County include retail centers, schools, churches, parks, and places of employment. Retail centers are concentrated near the urban areas of Berea and Richmond. Madison County contains 35 school facilities, including post-secondary education facilities Eastern Kentucky University in Richmond and Berea College in Berea. Places of worship are common destinations' there are 87 places of worship in Madison County. There are 12 public parks in Madison County: four in Berea, seven in Richmond, and one owned by Madison County. There are two golf courses in Madison County: Gibson Bay Golf Course and Battlefield Golf Club. Madison County also contains the Central Kentucky Wildlife Management Area, a wildlife preserve, and the historic Whitehall site and Fort Boonesborough are popular tourist destinations. The Bluegrass Army Depot is also located slightly southeast of Richmond. All of these destinations are potential pedestrian and cyclist destinations (Richmond-Berea Small Urban Area Study, 2016).

The Boone Trace trail bisects Madison County, and runs through Berea and Richmond. Places of interest related to Boone Trace include Twitty's Fort, the Boone Gap Historical site, and Fort Boonesborough, as mentioned above.

Regional Connections

Madison County is bisected from north to south by I-75, which provides a significant regional connection, and significantly increases traffic throughout Madison County. US 52 connects to Estill County in the east, and Garrard County in the west once US 52 becomes US 1295. US 421 connects Madison County to Rockcastle County and Jackson County in the southeast. Every major roadway and regional connection aside from I-75 originates from US 25, making it the principle arterial (transportation.ky.gov).

The Boone Trace Trail provides regional trail connections to Rockcastle County in the south, and connects to Laurel, Knox, and Bell counties towards the south and southeast.



Figure #1: 2015 Bicycle Comfort Index (Richmond)



Figure #2: 2015 Bicycle Comfort Index (Berea)

Figure #3: National and Regional Bike Trails in Berea

(USBR21 is not labeled on this map, nor is Boone Trace/Boone Trace Bike Trail)



Section 4: Current Condition and Needs of Facilities

Gaps, Safety, and Connectivity Needs of Facilities

Madison County has experienced consistent economic development over time, which has led to a corresponding increase in residential development and increase in population. Throughout the non-urban areas of the county, every development is isolated from the surrounding areas due to the rural nature of the major roadways and arterials that are commonplace in Madison County. A lack of connectivity and a lack of infrastructure provisions for biking and walking along these roads greatly limits how many people use them for physical activity or for their non-vehicular commute. Pedestrian safety is an issue, particularly on the less-developed rural roads outside of the immediate Berea and Richmond city centers as there are many two lane roads without any shoulder or other bicycle or pedestrian accommodations. The Plan proposes to address these issues with a combination of adopting a trail plan that consists of adding signage and making bicycle and pedestrian modifications to existing roads combined with new infrastructure designed with bicycle and pedestrian connectivity and safety in mind.

Proposed Bikeway/Greenway Trail Plan

In 2007, Dr. Alice Jones' EKU Environmental Land Use Planning class performed a detailed analysis of the how walkable and bikeable the roads of Madison County were. Based on the findings, the class proposed a county-wide Bikeway/Greenway Trail Plan that runs the entirety of Madison County, north to south and east to west. The four factors they attempted to address with their plan were high use areas, businesses, water access/recreational use, and links to other bike plans. The plan proposed incorporating existing roads using signage and expanded shoulders, but it would require significant lengths of new trails to be constructed (see map on the following page). As the efforts to preserve Boone Trace had not yet begun in 2007, the trail is absent. Once the Boone Trace trail is added to this plan, this would be an excellent model for a comprehensive and integrated bike/ped network in Madison County.



The north-south portion of the plan would consist of a trail from Boonesborough State Park along the Kentucky River, connecting to the Old Wilderness Trail, then continuing on US 25 to Berea. The east-west portion of the plan would consist of a trail running from Clay's Ferry to Tates Creek Road, then following the old Riney B trail bed to Irvine

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near the Estill County line. The circular components of the trail near the more densely populated areas consist primarily of the Robert Martin Bypass and the proposed Berea Bypass, incorporating existing trails wherever possible ("Madison County Bikeways and Greenways Plan: Environmental Land Use Planning Service Learning Project", 2007).

The cost of constructing new trails and trailheads for this plan would be significant but adding expanded shoulders and bicycle/pedestrian signage to the existing roadways included in the plan is more feasible, albeit rather extensive in terms of overall mileage. Simply designating these roadways parts of a dedicated Madison County Greenway Plan would not be particularly expensive and could in many cases simply be done by adding signage.

List of Needs Maps

The map below highlights the primary areas of concern for pedestrian and bicycle safety for the city of Richmond (Richmond Pedestrian Master Plan, 2014).



Figure #5: Focus Areas for Madison County

(In Green)

Focus on Improving Safety, Connectivity, and Equitable Accessibility





Figure #6: Route of the Boone Trace Trail through Madison County

Acquiring permanent signage and any other trail conservation efforts to preserve the Boone Trace Trail, both overall and in Madison County should be considered a significant priority. This includes the hiking trail, the motorized trail using existing paved roads, and the bicycle trail (a modified version of the motorized trail emphasizing safety).

Section 5: List of Recommendations by Priority

Two types of projects will be listed in this section, along with general improvement recommendations. It will include existing, unfunded transportation projects along with trail projects that will involve modifying existing roads by expanding shoulders, adding signage designating the road as a Bike/Ped trail, or constructing the trail outright. Many of the transportation projects have been proposed as part of the Richmond-Berea Small Urban Area Study (2016), so they will be focused on the more developed areas of the county, Richmond and Berea. The trails will attempt to improve access and connectivity, with the goal of connecting the entire county in a way that it is safe to bike and walk from border to border starting from any cardinal direction.

General Recommendations

The majority of Madison County roadways were not constructed with bike or pedestrian use in mind. Whenever possible, adding widened shoulders, bike lanes, bicycle friendly grates, wide curb lanes, sidewalks, or comparable accommodations for pedestrians should be retrofitted or added in new transportation construction planning. High-visibility, or piano key crosswalks should be painted whenever crosswalks are added. New subdivision plans should include sidewalks and be constructed to allow connection to future sidewalks where applicable. Cyclists and pedestrians use the roads in Madison County regardless of safety conditions regularly, so expanding bike/ped accommodations should always be considered a community priority, as should adding or preserving additional trail mileage and signage of both new and existing trails. Chosen language on signage or in future ordinances should be as inclusive of cyclists and pedestrians of varying levels of skill and frequency of use as possible (casual walkers as well as wheelchair users, or people who bike occasionally for fun as well as serious road cyclists, for example). The following is a sample list of roads on which expanded bicycle and pedestrian accommodations should be considered when possible, with the goal of connecting Madison County for cyclists and pedestrians in every direction:

State Primary Roads: 59.320 Miles

• US 25, from the intersection with KY 21 westbound in Berea, via Chestnut Street to the intersection with KY 21 eastbound (Prospect Street). Also, from the intersection with KY 876 in Richmond, via Dr. Robert H. Martin Bypass to the

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intersection with the I-75 overpass, 5.760 miles. (MP 2.863 to MP 3.810) (MP 15.442 to MP 20.255)

- US 421, from the Rockcastle County Line extending north to the intersection with KY 21 westbound at Bighill, 2.442 miles. (MP 0.000 to MP 2.442)
- KY 21, from the intersection with KY 954 to the junction with US 25. Also, from the junction with US 25 in Berea, via Prospect Street and Bighill Road to the junction with US 421 at Bighill, 8.020 miles. (MP 6.176 to MP 9.115) (MP 9.115 to MP 14.196)
- KY 52, from the intersection with US 25, via Reeds Crossing and Elliston to the Estill County Line, 9.899 miles. (MP 12.970 to MP 22.869)
- KY 627, from the junction with KY 3055/US 25 to the Clark County Line, a distance of 6.074 miles. (MP 0.000 to MP 6.074)
- KY 876, from the I-75 bridge, east to the junction with US 25, 2.830 miles. (MP 7.129 to MP 9.959)

State Secondary Roads: 94.418 Miles

- US 25, from the Rockcastle County Line via Slate Lick to the intersection with KY 21 westbound in Berea. Also, from the intersection with KY 21 eastbound in Berea, via Terrill to the intersection with KY 876 in Richmond. Also, from the intersection with the I-75 overpass, north of Richmond to junction with KY 2884, 22.401 miles. (MP 0.000 to MP 2.863)(MP 3.810 to MP 15.442)(MP 20.255 to MP 28.161)
- US 25X (Business), from the junction with US 25-KY876, southeast of Richmond, via Big Hill Avenue, Main Street, and Lexington Road to the junction with US 25, north of Richmond, 3.654 miles. (MP 0.000 to MP 3.654)
- US 421, from the intersection with KY 21 westbound at Bighill extending north via Bobtown and Kingston to then junction with US 25 at Terrill, 10.129 miles. (MP 2.442 to MP 12.571)
- KY 21, from the junction with KY 52, via Wallaceton to the intersection with KY 954, 6.176 miles. (MP 0.000 to MP 6.176)
- KY 52, from the Garrard County Line via Happy Landing, Silver Creek, Caleast, and via Lancaster Road in Richmond to the junction with US 25X (Business) (West Main Street). Also, from another junction with US 25X (Business) (East

Main Street), via East Main Street to the intersection with US 25, 12.970 miles. (MP 0.000 to MP 11.896)(MP 11.896 to MP 12.970)

- KY 169, from US 25X (Business) (West Main Street) in Richmond, via Million, Stringtown, and Valley View to the approach to the end of state maintenance at the Valley View ferry on the south side of the Kentucky River, 12.449 miles. (MP 0.000 to MP 12.449)
- KY 169, from US 25X (Business) (West Main Street) in Richmond, via Million, Stringtown, and Valley View to the approach to the end of state maintenance at the Valley View ferry on the south side of the Kentucky River, 12.449 miles. (MP 0.000 to MP 12.449)
- KY 388, from US 25X (Business) (Main Street) in Richmond, via Redhouse to the junction with KY 627 near Boonesborough, 12.937 miles. (MP 0.000 to MP 12.937)
- KY 595, from the intersection with KY 21, via Walnut Meadow Road in Berea to the intersection with Guynn Road, west of I-75, 3.043 miles. (MP 2.321 to MP 5.364)
- KY 954, from the Garrard County Line to the junction with KY 21, 0.139 mile. (MP 0.000 to MP 0.139)
- KY 956, from the junction with KY 595 to the junction with US 25, 1.383 miles. (0.000 to MP 1.383)
- KY 1295, from the Garrard County Line to the junction with KY 52, southwest of Caleast, 4.529 miles. (MP 0.000 to MP 4.529)
- KY 1986, from the junction with US 25 (Richmond Bypass) to the intersection with KY 388, 0.337 mile. (MP 0.000 to MP 0.337)
- KY 2872 (Duncannon Lane), from the junction with KY 2881 to the junction with US 25, 4.271 miles. (MP 0.000 to MP 4.271)

Rural (State) Secondary Roads: 122.205 Miles

KY 374, from the junction with KY 499 at Speedwell to the junction with KY 52 near Moberly. Also, from another junction with KY 52, west of Moberly, via Charlie Norris Road to the junction with KY 1986 at Union City, 9.140 miles. (MP 0.000 to MP 4.806)(MP 4.806 to MP 9.140) KY 499, from the junction with

- US 25, via Crooksville Road to the junction with US 421, north of Kingston. Also, from another junction with US 421, via Speedwell, Brassfield, and Panola to the Estill County Line, 10.992 miles. (MP 0.000 to MP 1.449)(MP 1.449 to MP 10.992)
- KY 594, from the junction with US 421, via Duluth to the Estill County Line,
 6.382 miles. (MP 0.000 to MP 6.382)
- KY 595, from the junction with KY 1617, via Scaffold Cane Road to the intersection with KY 21. Also, from the intersection with Guynn Road, west of I-75, via Buggytown to the junction with KY 52. Also, from another junction with KY 52, via Kirksville, Round Hill, and Cottonburg to the intersection with New Road at Edenton, 19.218 miles. (MP 0.000 to MP 2.321)(MP 5.364 to MP 10.785)(MP 10.785 to MP 22.261)
- KY 876, from the junction with KY 595 north of Round Hill to the intersection with the I-75 overpass, 7.129 miles. (MP 0.000 to MP 7.129)
- KY 938, from the beginning of state maintenance at Brassfield Road to the end of state maintenance, north of Cruse Lane, 2.935 miles. (MP 0.000 to MP 2.935)
- KY 977, from the junction with KY 52 near Waco, via Waco and College Hill to the end of state maintenance at College Hill Road, southwest of the Kentucky River, 10.294 miles. (MP 0.000 to MP 10.294)
- KY 1016, from the junction with US 25 (Estill Street) in Berea to the junction with US 421 at Bobtown, 4.246 miles. (MP 0.000 to MP 4.246)
- KY 1156, from the junction with US 25 to the junction with KY 169 near Valley View, 9.376 miles. (MP 0.000 to MP 9.376)
- KY 1617, from the Rockcastle County Line to the intersection with KY 21, 3.766 miles. (MP 0.000 to MP 3.766)
- KY 1983, from the junction with KY 595 in Berea to the southeast limits of the bridge over the CSX Railroad at Farristown. Also, from the northwest limits of the bridge over the CSX Railroad, via Menelaus Road and White Station Road to the junction with US 25, 5.222 miles. (MP 0.000 to MP 2.454)(MP 2.469 to MP 5.237)

- KY 1984, from the beginning of state maintenance at Maple Grove Road near Newby to the junction with KY 169 at Million, 2.060 miles. (MP 0.000 to MP 2.060)
- KY 1985, from the beginning of state maintenance at Whitlock Road near Baldwin to the junction with KY 169, 1.499 miles. (MP 0.000 to MP 1.499)
- KY 1986, from the junction with KY 388, via Union City to the end of state maintenance at Doylesville Road, 10.127 miles. (MP 0.337 to MP 10.464)
- KY 2881, from the junction with KY 1983 northwest of Berea, via Caleast Road to the junction with KY 52 at Caleast, 4.361 miles. (MP 0.000 to MP 4.361)
- KY 3376, from the junction with KY 1016 in Berea, via Old US 25 Hwy North, to a junction with US 421 near Kingston. Also, from another junction with US 421, via Dreyfus to the Estill County Line, 12.605 miles. (MP 0.000 to MP 4.679)(MP 4.679 to MP 12.605)
- KY 3377, from the junction with KY 627, via Lost Fork Road to the junction with KY 388 at Redhouse, 2.854 miles. (MP 0.000 to MP 2.854)

Existing Project Proposals

Cost Estimates Include Design, Right-of-Way, Utilities, and Construction Goggins Lane / KY 169 to KY 876 – Project L M-B

Goggins Lane is a three lane road that serves multiple neighborhoods and is in close proximity to Kit Carson Elementary School, which is not connected by sidewalk. This project would repair the existing sidewalk on Goggins Lane, and add a sidewalk to Kit Carson Elementary School on KY 169.

Project Cost Estimate (2016 Dollars): \$500,000

Project Priority: High



Pedestrian Access to Lake Reba Park / KY 52 at US 25 - Project L R-C

There are currently no pedestrian facilities to access Lake Reba from either KY 52 or US 25, so pedestrians must walk along the shoulder on roads with 55 mile per hour speed limits. This project would install sidewalks along KY 52 beginning at the intersection with US 25.

Project Cost Estimate (2016 Dollars): \$949,000

Project Priority: High



KY 876 Corridor (MP 8.146 – 9.959) from KY 52 (Lancaster) to US 25- Project LT

R-D

Would extend the sidewalk along KY 876 from the EKU football stadium to the Baptist Health driveway. Also allows for funding to coordinate with CSX Railroad about pedestrian crossing needs regarding the railway underpass, as well.

Project Cost Estimate (2016 Dollars): \$1,234,000

Project Priority: Medium



KY 52 Corridor (MP 12.173 –12.970) from Oakland Ave to US 25 – LT R-H

This project would extend the sidewalk along both sides of KY 52 to US 25 Bypass.

Project Cost Estimate (2016 Dollars): \$2,114,000

Project Priority: Medium



US 421 Corridor (MP 9.250 –9.741) from KY 3376 (Old US 25) to KY 3376 – Project LT M-D

This proposal would expand US 421 to a typical three lane road and connect Kings Trace Drive and Kingston Elementary School with new sidewalks.

Project Cost Estimate (2016 Dollars): \$1,662,000

Project Priority: Medium



<u>KY 876 Corridor (MP 6.175 –8.146) from Hager Dr. to KY 52 (Lancaster) – Project</u> <u>LT R-C</u>

Would provide sidewalks along the northern side of KY 876 from Hager Dr. to

Richmond Centre and KY 52. It would also install or repair pedestrian push buttons and ensure that the sidewalks and the buttons are ADA compliant.

Project Cost Estimate (2016 Dollars): \$3,160,000

Project Priority: Medium



Boone Trace Recommendations

The Boone Trace trail is of historical significance, both to the founding of Kentucky and westward American expansion. It was the first road into what is now Kentucky, and bisects Madison County, ending at Fort Boonesborough in the north of the county. Every feasible effort to formally preserve and add signage designating the trail route should be made, including the hiking trail, the motorized trail using existing paved roads, and the bicycle trail (a modified, safer version of the motorized trail). It presents a tremendous opportunity for Madison County to expand trail mileage and promote safe physical activity as well as economic development, given the economic benefits of adventure tourism destinations. As preservation efforts continue, the trail will help improve bike/ped connectivity in Madison County as well as regional connectivity to Rockcastle, Laurel, Knox, and Bell counties (www.boonetrace1775.com).

A "Boone Trace Health Walk" is in the planning stages in Berea, which will incorporate the existing shared use path and have road paint and signage designating the route. A second Boone Trace Health Walk is very feasible as the Duncannon Walking Trail could also be developed into a circular dirt trail with an offshoot towards Twitty's Fort in Richmond.

Potential Focus Areas

Survey respondents in the previously mentioned joint EKU/Berea College walkability survey identified specific areas or intersections repeatedly. In Berea, survey respondents repeatedly mentioned Main Street, Ellipse Street, Chestnut Street, and Estill Street as areas that could be improved from a bike/pedestrian perspective. The most mentioned area suggested for improvement in Berea was Chestnut Street at the I-75 intersection where Walmart is. Additional high-visibility crosswalks and pedestrian crossing timers would significantly improve pedestrian safety and access to this area. The primary safety concerns voiced in Richmond were crossings and lack of sidewalks along US52 and KY876 in relation to EKU students walking to and from businesses near the EKU campus.

Section 6: Plan Implementation

Next Steps

- 1. Adoption of the Plan: For this plan to be effective, the final draft of The Plan must be voted on and officially adopted by the Madison County Fiscal Court, then it must be posted on Madison County's public website. After it has been voted on, adopted, and publicly posted, The Plan will be submitted to KYTC, at which point it should be considered active. The Plan should be reviewed and updated at least every five years following adoption.
- 2. **Publication of the Plan:** Following adoption of The Plan, it will be presented to the public in digital format on the Madison County Health Department website and will be offered to any other elected or appointed body digitally should they desire to link to it or post in on their website as well. Madison County Health Department will also promote the plan on social media platforms, including Facebook and Twitter. Print copies shall be provided to any elected or appointed body that expresses interest in the plan.
- 3. **Identify Potential Funding Sources:** Depending on the project or goal decided upon, there are a variety of funding sources available for a given project. These can include:
 - Recreational Trails Program (RTP)
 - Transportation Enhancement (TE)
 - Scenic Highways and Byways
 - Hazard Elimination Safety (HES) grants
 - University of Kentucky/ CHAT grants
 - International Mountain Bike Association grants
 - Bell Helmets grant
 - Safe Routes to School
 - Rails-to-Trails
 - American Hiking Society National Trails Fund
 - PeopleforBikes Community Grant Program
 - Land and Water Conservation grants
 - Fish & Wildlife grants

- Transportation Community and System Preservation (TCSP) grants
- TIGER grants
- Local public and private funding (Powell County Bike/Ped Plan, 2015)
- 4. Project Development, Planning, and Construction: The goals, projects, and projected costs that The Plan contains are estimations based on available costs in early 2018, and do not incorporate the cost of obtaining right of way or any other permission for land use, or any formal engineering plans required to actually construct new infrastructure or trails. Once fundraising has begun to occur, far more detailed planning will need to be done to begin to implement any of the major improvements/modifications contained in the plan. Elected and appointed officials should ask for community input in as much of the planning process as possible.
- 5. Project Development: The projects or ideas listed in this plan are intended to serve as an outline of the transportation future of Madison County. Civil engineering professionals will need to perform the detailed cost analysis and planning of any bike/ped projects that have strong community and/or local and county government support. This bike/ped plan is intended to be used as a framework.

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Appendix A: Pedestrian Trails in Madison County

Pink Boa 5k Route (Battlefield Park)



(From: http://www.madisonlibrary.org/pinkboa.pdf)



Brushy Fork Creek – Berea Cross Country Trail

(From: <u>http://www.madisonlibrary.org/brushy.pdf</u>)

Berea City Park



(From: http://www.madisonlibrary.org/bttcityparkgeo.pdf)

EKU Trails



(From: http://www.madisonlibrary.org/ekutrails.pdf)

Lake Reba Trail Route



(From: http://www.madisonlibrary.org/c25kreba.pdf)



Pinnacles at Indian Fort Theater (in Berea)

(From: http://www.madisonlibrary.org/pinnacles.pdf)

Couch to 5k Training Route in Berea



(From: http://www.madisonlibrary.org/c25kberea.pdf)

Berea Shared Use Trails



(From: http://www.madisonlibrary.org/shareduse.pdf)

White Hall Trail



(From: http://www.madisonlibrary.org/c25kwhitehall.pdf)

Appendix B: Bike Trails in Madison County

Cycling Trails in Berea



(From: http://www.madisonlibrary.org/bttcycling.pdf)



African American Heritage Loop Trail (Berea)

(From: http://www.madisonlibrary.org/africanamericanloop.pdf)

Anglin Falls-Scaffold Cane Bike Trail (Berea)

(Partially in Madison County)



(From: http://www.madisonlibrary.org/anglinfallsbike.pdf)

Madison County Airport Loop Trail



(From: http://www.madisonlibrary.org/airportloop.pdf)

Red Lick Valley Artisan Loop Trail

Partially in Madison County



(From: http://www.madisonlibrary.org/redlick.pdf)

Scaffold Cane – Wildie Loop Trail

Partially in Madison County



(From: http://www.madisonlibrary.org/wildiescaffoldcane.pdf)

Trans America Historic Trail

Partially in Madison County



(From: http://www.madisonlibrary.org/transamerica.pdf)

CITY OF RICHMOND

P.O. Box 250 – 239 W. Main St. Richmond, KY 40476 www.richmond.ky.us

May 02, 2018

To Madison County Judge Executive Regan Taylor,

On behalf of the City of Richmond, Kentucky, I would like to express our support of the proposed Madison County Bicycle & Pedestrian Master Plan that has been submitted to the Madison County Fiscal Court for adoption.

The City of Richmond is committed to providing a high quality of life for its citizens, so we fully support expanding bicycle and pedestrian facilities that will help promote healthy, active lifestyles with regular physical activity in our community. We recognize the importance of taking bicycle and pedestrian access and safety into account in transportation planning and resolve to include consideration for alternative modes of transportation in future transportation projects when possible.

The City of Richmond is excited to support the Madison County Bicycle & Pedestrian Master Plan and looks forward to cooperating with community and government partners in future to improve equitable access to safe, expanded bicycle and pedestrian facilities in Richmond and in Madison County.

Sincerely,

Jim Barnes Mayor

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RESOLUTION 18-21

A RESOLUTION OF THE MADISON COUNTY FISCAL COURT, MADISON COUNTY, KENTUCKY TO SUPPORT ADOPTION OF THE MADISON COUNTY BICYCLE & PEDESTRIAN PLAN

Whereas, The Fiscal Court of Madison County recognizes the value of pedestrian and bicycle opportunities for the Health, Safety, and Economic Development of our community; and

Whereas, the citizens of Madison County understand the importance of incorporating and planning for all modes of transportation and have invested interest in bicycling and pedestrian through the creation of a countywide bicycle and pedestrian planning document. The planning document incorporates best practice, policies and projects within the County; and

Whereas, numerous benefits result from the active bicycle and pedestrian use, including and alternate, non-motorized transportation option, and by enhancing the health, well-being and quality of life for our citizens and promoting community investment, economic growth and development through increased tourism; and

Whereas, the Plan will be present to Fiscal Court for adoption at the August 28, 2018, Fiscal Court meeting.

Therefore, Be It Resolved, that we support the adoption of the Madison County Bicycle and Pedestrian Plan, along with its related appendices and recommended projects, programs and policy updates.

Adopted the 28 day of 4.9.5+ 2018

Signed:

Reagan Taylor Madison County Judge Executive

Attest:

BCC

Kenhý Barger Madison County County Clerk