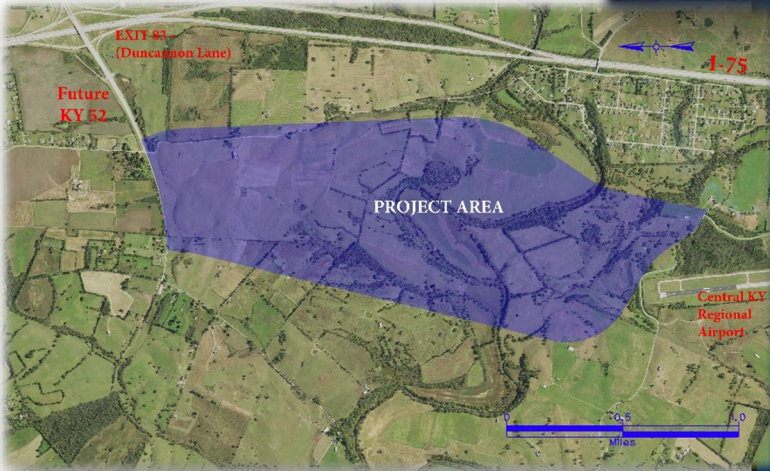
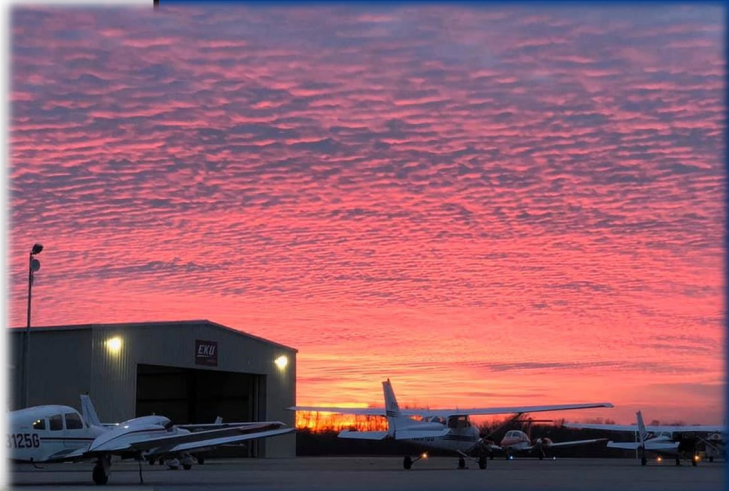


**D**ata

**N**eeds

**A**nalysis



## Scoping Study



Madison County  
New Route from KY 52 to  
Madison Regional Airport  
Item No. 7-8853.00

Prepared by the KYTC  
Division of Planning and  
KYTC District 7

December 2021



**I. PRELIMINARY PROJECT INFORMATION**

<b>County:</b>	Madison	<b>Item No.:</b>	7 - 8853.00
<b>Route Number(s):*</b>	NEW ROUTE	<b>Road Name:</b>	NEW ROUTE
<b>Program No.:</b>	1046501D	<b>UPN:</b>	FD04 076 NEW ROUTE
<b>Federal Project No.:</b>	STP 9031026	<b>Type of Work:</b>	New Construction

**2020 Highway Plan Project Description:**

PROPOSED ROADWAY IMPROVEMENTS FROM DUNCANNON RD TO THE MADISON CO AIRPORT TO INCLUDE CALEST RD (KY 2881 MP.783-MP 2.780), JOHN BALLARD RD (KY 2877 MP0-MP.806 & CR 1236 MP0-MP.429) FROM MENELAUS TO AIRPORT RD, & A NEW BRIDGE OVER SILVER CR.(14CCN)(16CCR)

<b>Beginning MP:</b>		<b>Ending MP:</b>		<b>Project Length:</b>	
<b>In TIP:</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<a href="#">Reconcile Project Information in Clearview</a>			
<b>State Class.:</b>	<input type="checkbox"/> Primary <input checked="" type="checkbox"/> Secondary	<b>Route is on:</b>	<input type="checkbox"/> NHS <input type="checkbox"/> NN <input type="checkbox"/> Ext Wt		
<b>Functional Class.:</b>	<input type="checkbox"/> Urban <input checked="" type="checkbox"/> Rural <input type="text" value="Collector"/>	<b>Truck Class.:</b>	<input type="text"/>	<b>% Trucks:</b>	
<b>MPO Area:</b>	Not Applicable	<b>Terrain:</b>	Rolling		
<b>ADT (current):</b>	<u>1,030</u> 2019				
<b>Access Control:</b>	<input type="checkbox"/> None <input checked="" type="checkbox"/> Permit <input type="checkbox"/> Fully Controlled <input type="checkbox"/> Partial Spacing: <input type="text"/>				
<b>Median Type:</b>	<input checked="" type="checkbox"/> Undivided <input type="checkbox"/> Divided (Type): <input type="text"/>				
<b>Existing Bike Accommodations:</b>	<input type="text"/>	<b>Ped:</b>	<input type="checkbox"/> Sidewalk		
<b>Posted Speed:</b>	<input type="checkbox"/> 35 mph <input type="checkbox"/> 45 mph <input checked="" type="checkbox"/> 55 mph <input type="checkbox"/> Other (Specify): <input type="text"/>				
<b>KYTC Guidelines Preliminarily Based on :</b>	45 MPH Proposed Design Speed				

	<u>EXISTING</u>	<u>COMMON GEOMETRIC PRACTICES**</u>	
<b>Roadway Data:</b>	<b>(Calest Road)</b>		
No. of Lanes	<u>2</u>	<u>2</u>	<a href="#">Existing Rdwy. Plans available?</a>
Lane Width	<u>8' to 9'</u>	<u>11'</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Shoulder Width	<u>None to 2'</u>	<u>6'</u>	Year of Plans: <input type="text"/>
Max. Superelevation***	<u>No Data Available</u>	<u>8%</u>	<input checked="" type="checkbox"/> <a href="#">Traffic Forecast Requested</a>
Minimum Radius***	<u>395'</u>	<u>660'</u>	Date Requested: <u>Dec. 2021</u>
Maximum Grade	<u>No Data Available</u>	<u>8%</u>	<input type="checkbox"/> Mapping/Survey Requested
Minimum Sight Dist.	<u>No Data Available</u>	<u>360'</u>	Date Requested: <input type="text"/>
Sidewalk Width(urban)	<u>N/A</u>	<u>N/A</u>	Type: <input type="text"/>
Clear-zone <sup>†</sup>	<u>None</u>	<u>24'</u>	
<b>Project Notes/Design Exceptions?</b>	Common Geometric Practices assumes over 2000 ADT		

<b>Bridge No.:#</b>	<u>076B00088N</u>	<u>(Bridge #2)</u>	
Sufficiency Rating	<u>80.4</u>		<a href="#">Existing Geotech Data Available?</a>
Total Length	<u>159</u>		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Width, curb to curb	<u>24</u>		
Span Lengths	<u>50'-50'-50'</u>		
Year Built	<u>1960</u>		
Posted Weight Limit	<u>None</u>		Detour Length(s): <u>6.8</u>
Structurally Deficient?	<u>Not Deficient</u>		
Functionally Obsolete?	<u>Not Obsolete</u>		
Existing Bridge Type	<u>Concrete T-Beam</u>		

\*If more than one road is included in the project, include additional sheets.

\*\*Based on proposed Design Speed

\*\*\*AASHTO's A Policy on Geometric Design of Highways and Streets

+AASHTO's Roadside Design Guide

‡If more than two bridges are located on the project, include additional sheets.

**II. PROJECT PURPOSE AND NEED**

**A. Legislation**

This project first appeared in the 2016 Enacted Highway Plan as Item No. 7-8853.00 with all phases programmed as SPP. Since then the project has been programmed with State funding. The 2020 Enacted Highway Plan shows all phases as SPP with only the design phase programmed in the current biennium. Project stakeholders include State and Local Officials, the Madison County Fiscal Court, and Eastern Kentucky University's (EKU) Aviation Department. Item number 7-8853.00 is on the 2020 Highway Plan to promote improvements in access to the Central Kentucky Regional Airport from the Interstate and Richmond.	<i>Funding</i>	<i>Phase</i>	<i>Year</i>	<i>Amount</i>
	SPP	D	2022	\$900,000
	SPP	R	2023	\$2,210,000
	SPP	U	2024	\$730,000
	SPP	C	2025	\$11,030,000

**B. Project Status**

Currently, design funding is authorized under Item No. 7-8853.00 on July 2, 2021. TC-10 Authorization No. 10465. Funding provided through SPP State Funds. This project was introduced in 2014 and currently active. In SHIFT 2020, the project description was updated to "Improve access to Central Kentucky Regional Airport from proposed KY 52" (CHAF ID 20190155). The project was sponsored, scored, but not boosted due to other priorities in Madison County. Final score was 14.0. In SHIFT 2022, the project was sponsored, scored, and was double boosted, provided by the Highway District Office and the Bluegrass Area Development District.

**C. System Linkage**

Interstate 75 is the dominant North/South route passing through Madison County. Major routes include KY 21, KY 52, KY 595, and KY 876. The intent of this project is to improve access to and from the Central Kentucky Regional Airport (Airport) from Duncannon Road, which has access to I-75 at Exit 83. Duncannon Road will also become KY 52 in a separate project (Item No. 7-235.00). Caleast Road (KY 2881) is the current route to access the Airport. KY 2881 is classified as a Minor Rural Collector and runs parallel to I-75. Per the 2015 Madison County Comprehensive Plan (2015 Comprehensive Plan), the County has adopted an "Access Management Ordinance", which identified transportation corridors on major highways and collector roads and better control future road access points, distances between signalized intersections, and a provision for parallel service roads.

**D. Modal Interrelationships**

The project's primary objective is to establish a safe and efficient route to the Airport from Duncannon Road. There currently is no bicycle-pedestrian accommodations, active railways, city bus service, or water ports along the KY 2881 corridor. The 2015 Comprehensive Plan prioritizes improvements on State and Federal Highways as well as to make investments to improve the Airport. The proposed project aims to achieve both by providing the Airport with improved accessibility from the Interstate. The Airport hosts the EKU's Aviation Program, which is expected to continuously grow as one of the "Nation's first FAA-approved 1,000 hour Restricted Airline Transport Pilot Institution". The Airport is not used for commercial air travel and can only accommodate small aircraft.

**E. Social Demands & Economic Development**

Per the 2015 Comprehensive Plan, the County's economy has changed from being agricultural-oriented to an industrial trades and service economy. Madison County has historically seen rapid population growth between 1960 and 2000 (66%). Per the 2020 Census the population was 92,701, approximately 12% growth from 2010. Madison County Schools is the second largest employer, tied with the Blue Grass Army Depot. In the County, development is encouraged to take place within urban corridors, rural corridors, or rural community areas which have a community need for infrastructure that can support the development. The project area is located on the fringe of the "Urban Development Corridor". Per the Future Land Use Map in the 2021 Richmond Comprehensive Plan, the future growth in the project area is identified as commercial/mixed use. Adjacent to the project limits, 1,414 acres of commercial/mixed use land (known as the Begley Industrial Site) is currently listed for sale by the Richmond Industrial Development Corp. Per the 2015 Comprehensive Plan, improvements to the Airport, and working with educational institutions to further economic growth was listed as a priority. Recently in 2021, the Appalachian Regional Commission awarded over \$1 million to the City of Berea to extend wastewater collection to the Airport, which currently cannot handle the projected amount of growth the Airport is expected to experience. In late September 2021, EKU began a \$1.4 million expansion of the Airport, which will soon be the location of EKU's new School of Aviation Mechanics.

**II. PROJECT PURPOSE AND NEED (cont.)**

**F. Transportation Demand**

The 2015 Comprehensive Plan identifies the Airport as a potential growth area. Recent traffic counts on KY 2881 show an AADT of 1,030 in 2019. This count station does not include classification counts. The 2017 Richmond and Berea SUA Study (2017 SUA Study) forecasts the 2040 AADT to be 7,890 on KY 2881. This was calculated to be a level of service of D. Traffic demand and impacts are mainly due to future land development of commercial lots (Begley Industrial Site) and anticipated growth of the Airport. Recommended traffic system improvements for Madison County are based on the analysis of projected land use, traffic demands, programmed improvements, and cost analysis.

**G. Capacity**

Per the 2017 SUA Study the 2015 ADT was 1,270. This provided an LOS better than C. In the same report, this is projected to increase to 7,890 by 2040 with a calculated LOS of D. Another traffic forecast was completed in 2014 for an adjacent project, Item No. 7 - 235.00. This project is to realign KY 52 from Paint Lick to Exit 83 (Duncannon Road) at I-75. The forecast indicates the newly built KY 52 to have an ADT of 3,000. This is projected to reach 4,300 by 2040 with an anticipated 10% being truck traffic. The truck weight classification on KY 2881 and KY 2877 is A (44,000 lbs limit)

**H. Safety**

Per the 2015 Comprehensive Plan, the primary safety concerns in the roadway system include winding roads, speeding, and congestion. The current route to the Airport from I-75 is through a series of narrow, rural secondary roads. These roads include KY 2881 (Caleast Road) and KY 2877 (John Ballard Road). Per the 2017 SUA Study, a crash rate analysis on KY 2881 and KY 2877 indicated a Critical Rate Factor of less than 1, however was greater than the Statewide average. In an initial 5 year crash analysis of the route, there were a total of 24 collisions resulting in 1 fatality, 5 injuries, and 20 property damage only. No collisions involved a commercial vehicle. Many of the collisions that involved 2 or more vehicles were sideswipes with a vehicle coming in the opposite direction. A considerable number of those collisions are located between mileposts 1.74 and 2.24. This may be a result in a quick change in roadway geometry and curvature. This section of Caleast Road also has fully grown trees located just off the edge of pavement. The lone fatality on Caleast Road was a single vehicle collision involving a fixed object at MP 2.24. This may indicate the need to evaluate on whether providing adequate clear zone will be necessary.

**I. Roadway Deficiencies**

The potentially impacted sections of KY 2881 and 2877 has not been upgraded with exceptions of resurfacings and maintenance work. Much of the roadway surface has been resurfaced in 1989 and are showing some signs of needed improvement. On KY 2881, there exists some horizontal curve and clear zone issues especially between MP 1.74 and 2.24, which has seen the greatest amount of both single and multi vehicle collisions. Some of these deficiencies are contributing to sight distance and narrow roadway width issues. This project is located on the fringe of the Urban Development Corridor and the traffic demand from the projected growth and development in the area is likely to exceed the existing capacity and level of service.

**III. PRELIMINARY ENVIRONMENTAL OVERVIEW**

**A. Air Quality**

Project is in:  Attainment area  Nonattainment or Maintenance Area  PM 2.5 County

STIP Pg.#: [Redacted]

TIP Pg.#: [Redacted]

No air quality impacts are anticipated.

**B. Archeology/Historic Resources**

Known Archeological or Historic Resources are present

Known sites are present, and archaeological and/or historic impacts are likely

**C. Threatened and Endangered Species**

Potential impacts to T & E species.

**D. Hazardous Materials**

Potentially Contaminated Sites are present  Potential Bridge or Structure Demolition

Nearby airport

**E. Permitting**

Check all that may apply:  Waters of the US  MS4 area  Floodplain Impacts  Navigable Waters of the US Impacts

Are 401/404 Permits likely to be required?  Yes  No Impacts to:  Wetlands  Stream/Lake/Pond

ACE LON  ACE NW  ACE IP  DOW IWQC  Special Use Waters

Possible Waters of the US impacts (stream, wetlands, and ponds).

**F. Noise**

Are existing or planned noise sensitive receptors adjacent to the proposed project?  Yes  No

Is this considered a "Type I Project" according to [KYTC Noise Analysis and Abatement Policy?](#)  Yes  No

No noise impacts are anticipated.

**G. Socioeconomic**

Check all that may apply:  Low Income/Minority Populations  Relocations  Local Land Use Plan available

No relocations anticipated.

**H. Section 4(f) or 6(f) Resources**

The following are present on the project:  Section 4(f) Resources  Section 6(f) Resources

No Section 4(f) or 6(f) impacts are anticipated.

Anticipated Environmental Document:

CE Level 3 

**IV. PROJECT NEED, PURPOSE & SCOPE**

**A. Need:**

Currently, the existing route between Duncannon Road and the Central Kentucky Regional Airport is via KY 2881 (Caleast Road) and KY 2877 (John Ballard Road). These roadways are narrow rural secondary routes with little to no shoulder and inadequate sight distance in spots. There have been several collisions, particularly on KY 2881, that appear to be a result of narrow lane widths and a lack of clear zone. Based on an initial 5 year analysis there have been 24 reported collisions resulting in 1 fatality, 5 injuries, and 20 property only collision. Traffic forecasts from the 2017 SUA Study show a significant increase of traffic due to investments to the Airport in an effort to expand EKU's Aviation Program, and potential commercial and multi-use development in the area. By 2040, the traffic projections show an ADT of 7,890 on KY 2881, which has a calculated LOS of D.

**B. Purpose:**

The purpose of this project is to provide feasible, efficient, and safe solution to improve the connectivity between the Central Kentucky Regional Airport and Duncannon Road while minimizing the impacts to the surrounding environment.

**C. Scope:**

Caleast Road (KY 2881) and John Ballard Road (KY 2877) is the existing route to the Airport from Interstate 75 and Richmond. The Airport houses EKU's Aviation Program which is expected to expand. In addition to the local traffic that utilize these routes, they will also be used by students of EKU who may be unfamiliar with the roadway and the traffic on it. With anticipated growth in development in the area as well as the Airport, it is anticipated that the traffic demand will exceed the capacity of the existing roads. The scope of the project is to examine an efficient connection between Duncannon and Central Kentucky Regional Airport that will provide a positive impact to the traffic mobility and may also function as an expansion of existing roadway network.

**V. PROJECT ESTIMATE & METHODOLOGY**

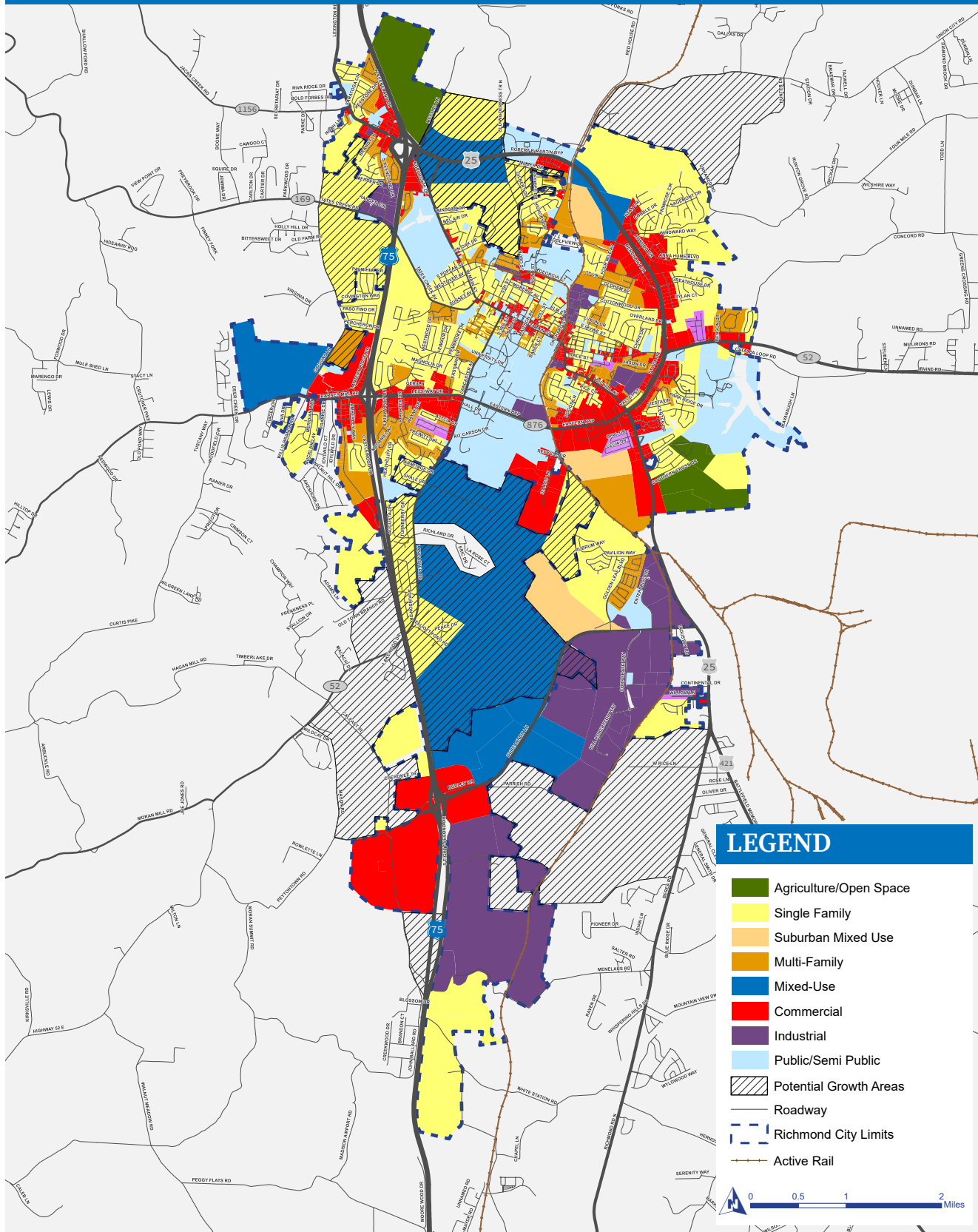
<b>Estimate Methodology:</b>	<b>Current Estimate</b>	
All funding phases are listed in the 2020 Enacted Highway Plan which were derived from planning level estimates and escalated based on the fiscal year listed. Design funding has been authorized.	<u>Phase</u>	<u>Estimate</u>
	Planning	
	Design	(2022) \$900,000
	R/W	(2023) \$2,210,000
	Utilities	(2024) \$730,000
	Const	(2025) \$11,030,000
	<b>Total</b>	<b>\$14,870,000</b>

**VI. UTILITIES POTENTIALLY AFFECTED - CONTACT INFORMATION**

Company Name -	Kentucky Utilities
Contact -	Caroline Justice
Phone No. -	502-627-3708
Company Name -	Bluegrass Energy
Contact -	Tony Smith
Phone No. -	859-885-2134
Company Name -	Windstream
Contact -	Steve Johnson
Phone No. -	859-357-6209
Company Name -	AT&T KY
Contact -	Frank Ambrose
Phone No. -	502-867-8240
Company Name -	Delta Gas
Contact -	Brian Sidwell
Phone No. -	859-744-6171
Company Name -	Spectrum
Contact -	Kelly Oram
Phone No. -	859-519-3434
Company Name -	Southern Madison Water District
Contact -	Tommy Bussell
Phone No. -	859-986-9031
Company Name -	Madison County Utilities District
Contact -	John Clark
Phone No. -	859-624-1735
Company Name -	Kirksville Water Association, inc
Contact -	Mike Agee
Phone No. -	859-624-7135

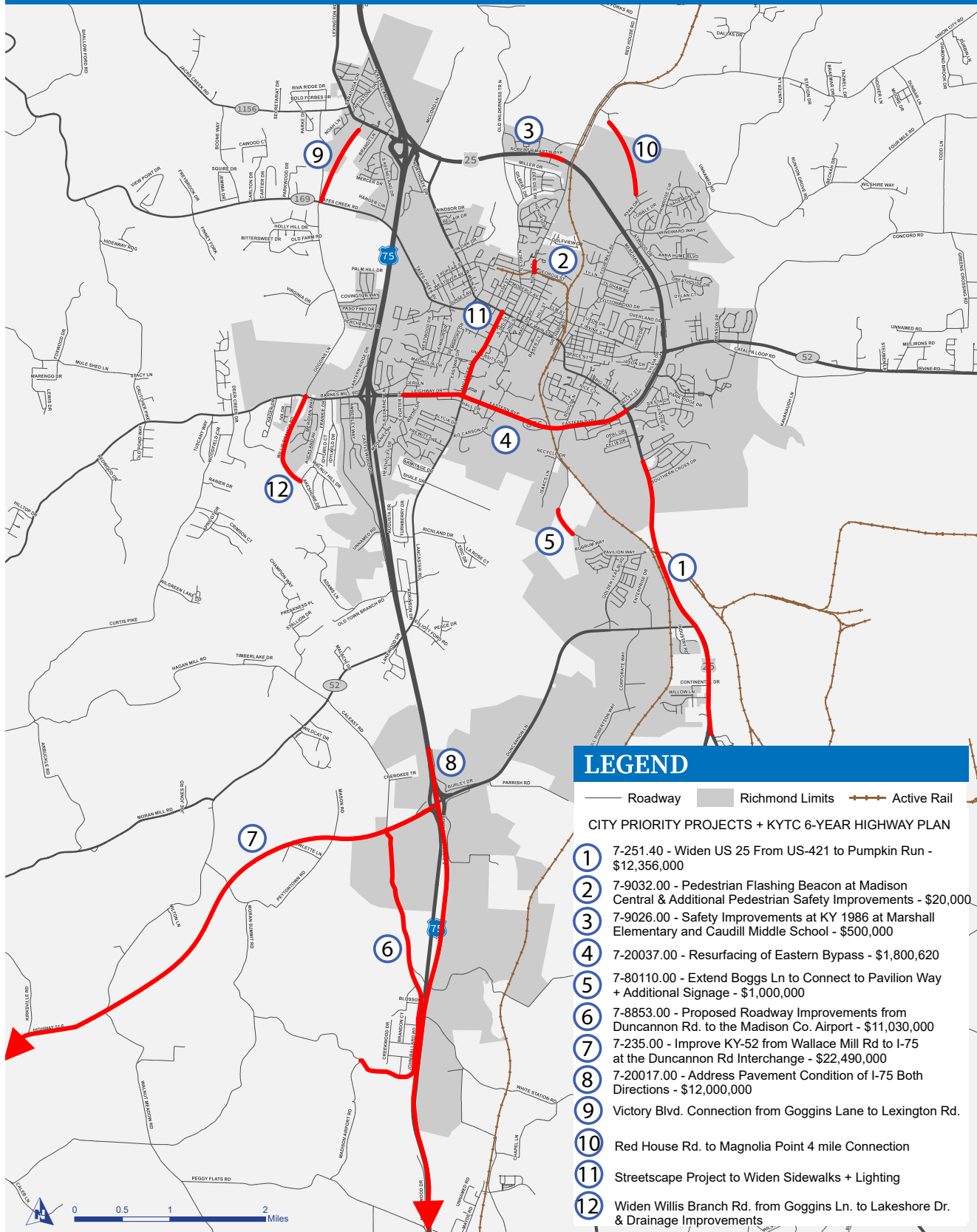
## FUTURE LAND USE MAP

vision 2040  
RICHMOND



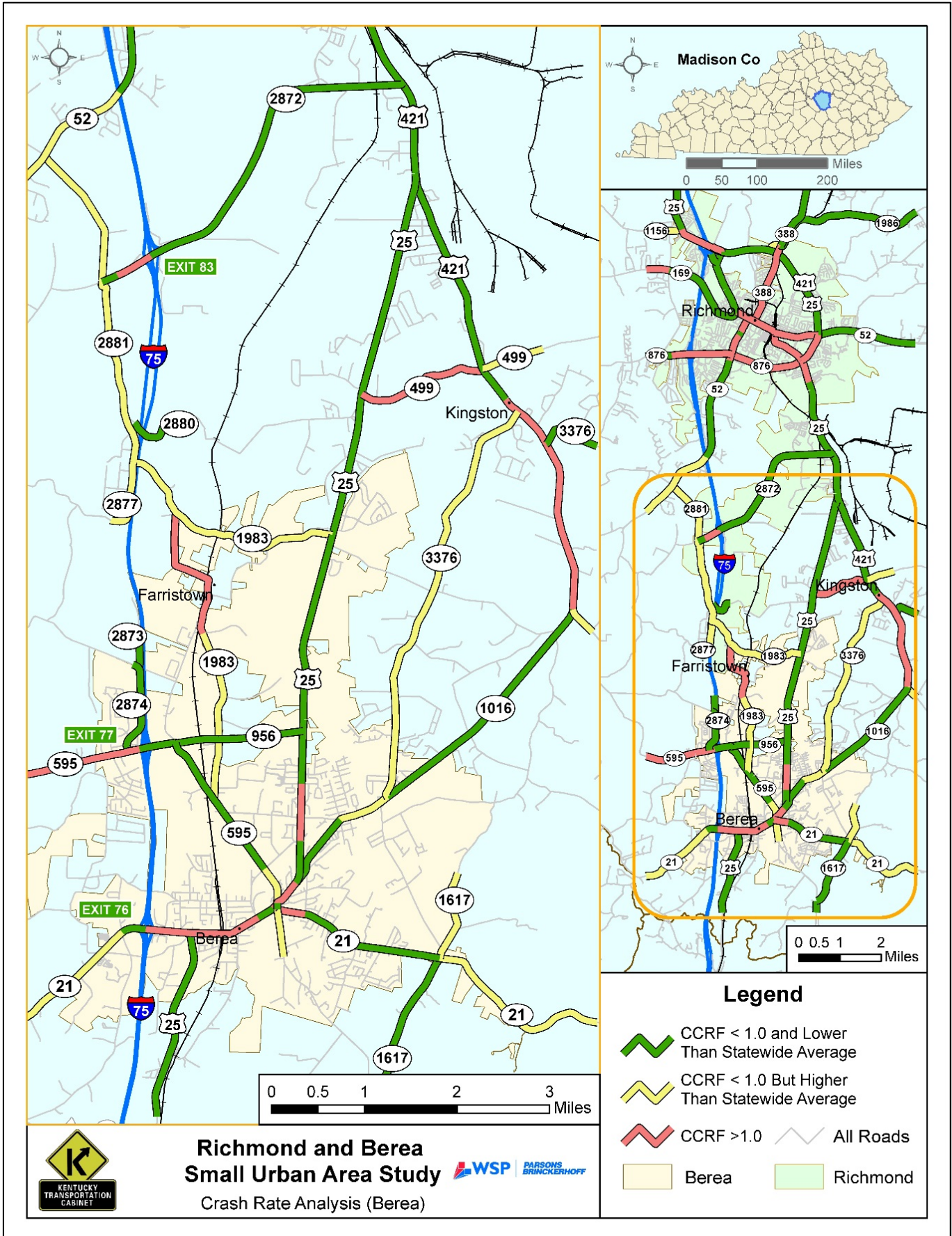


## FUTURE TRANSPORTATION IMPROVEMENTS



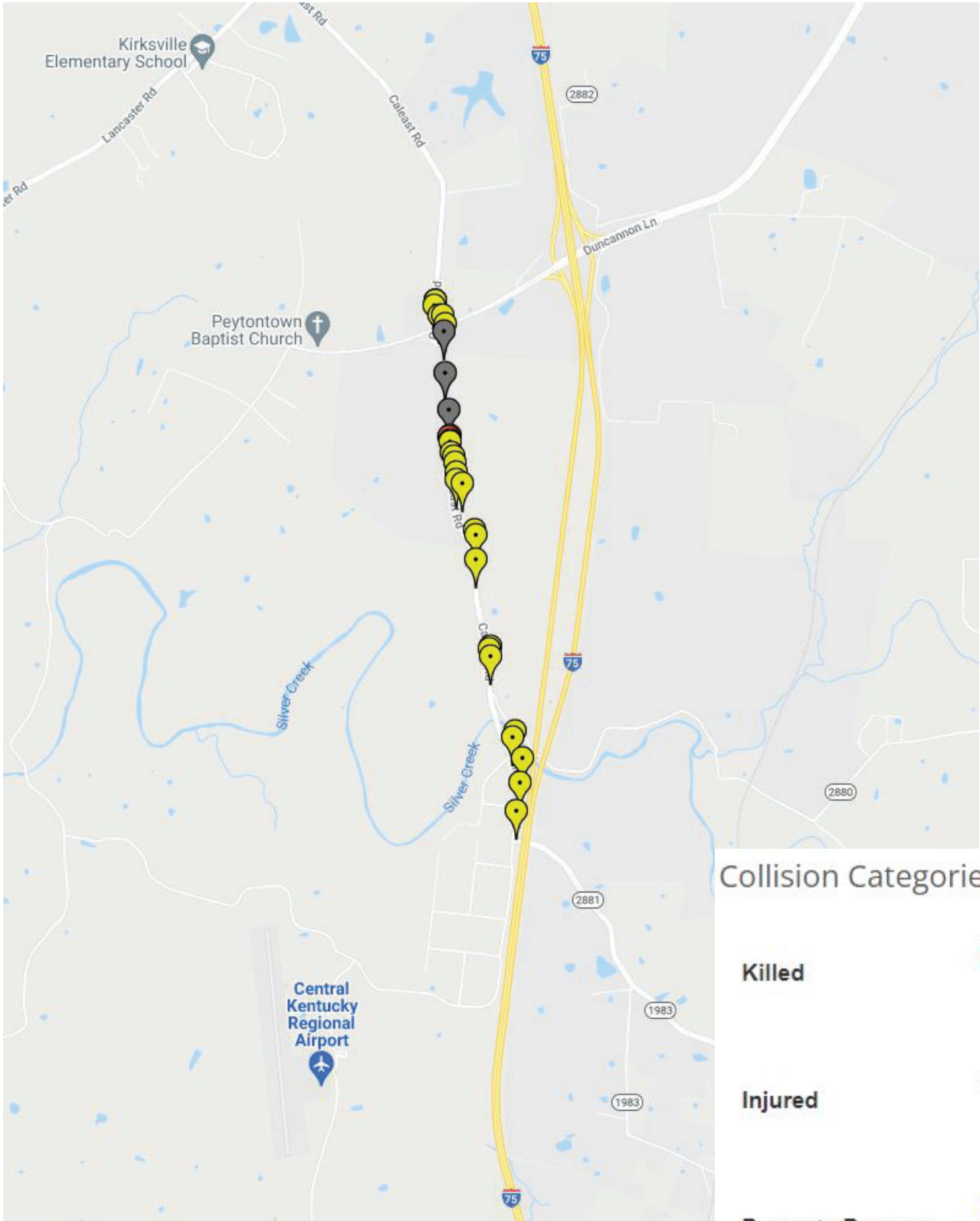
# EXHIBIT 3

## CRASH RATES ANALYSIS (BEREA)



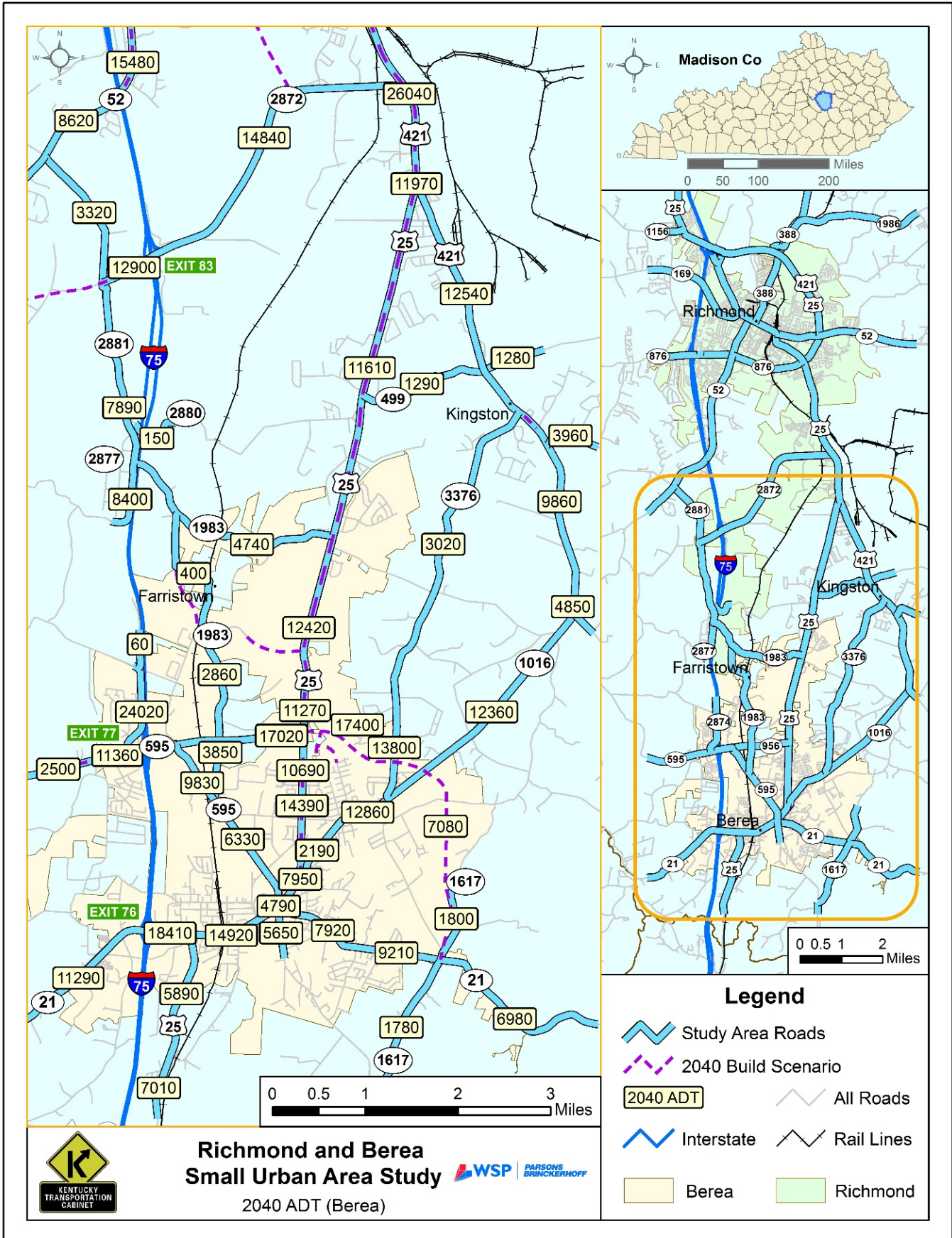
# EXHIBIT 4

## 5 Year Collision Analysis Map



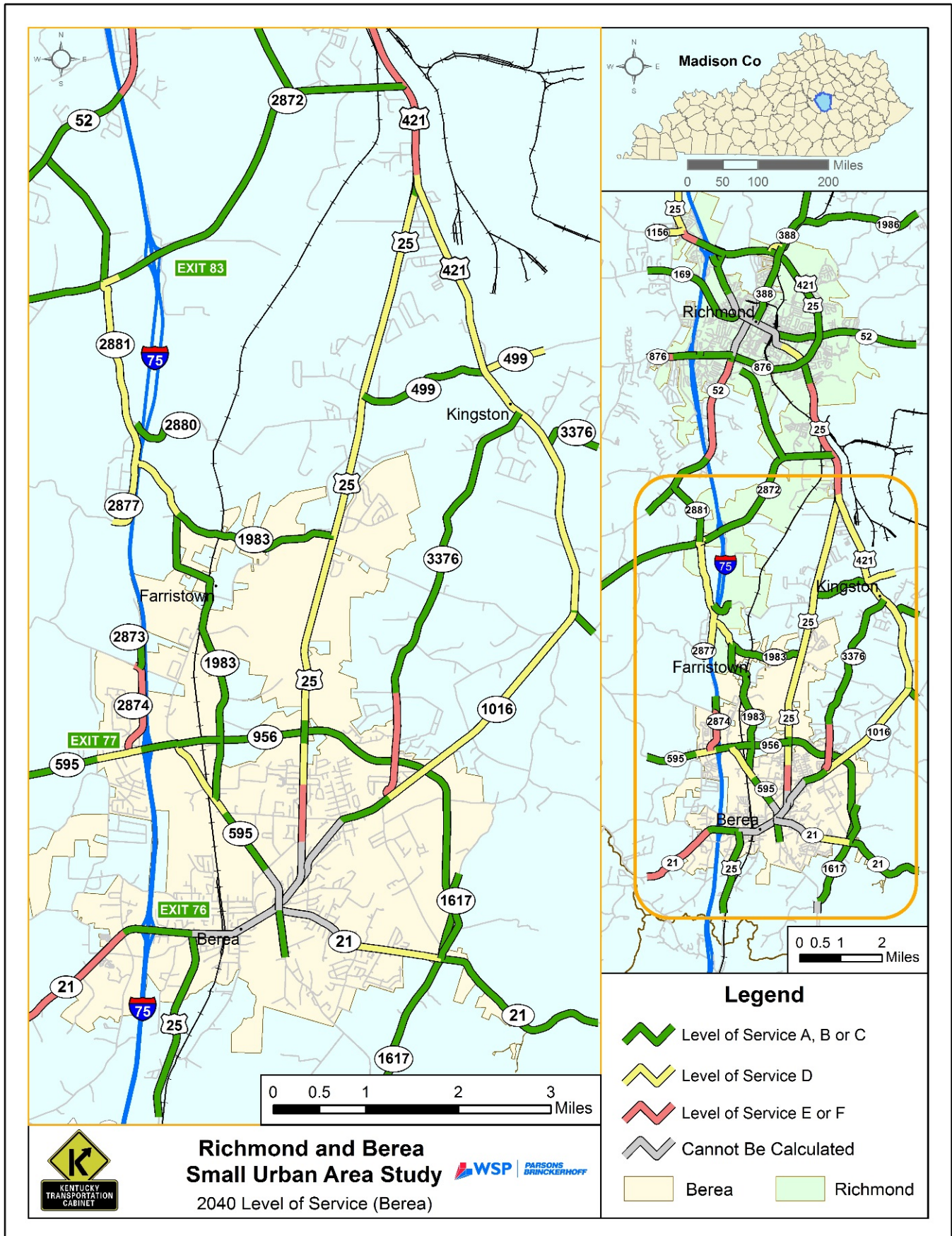
# EXHIBIT 5

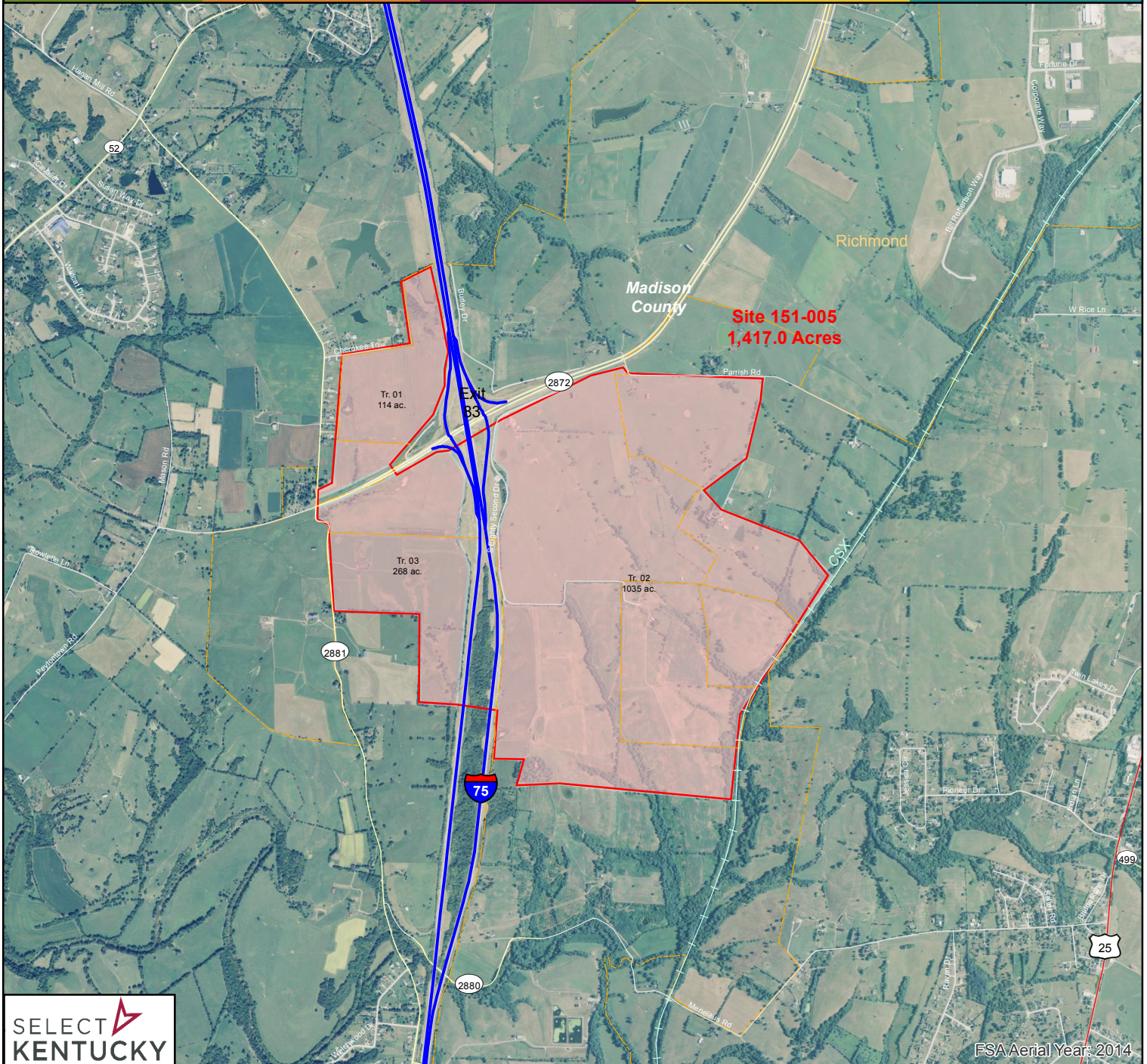
## 2040 AVERAGE DAILY TRAFFIC (BEREA)



# EXHIBIT 6

## 2040 LEVEL OF SERVICE (BEREA)



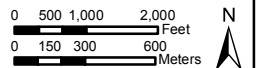


FSA Aerial Year: 2014

- Rail
- Interstate
- US Highway
- State Road
- Local Road
- Shovel Ready Site Boundary
- Municipal Boundary
- Vacant Tract

**SITE ID/NAME:** Site 151-005, Richmond -- Begley Site 151-005  
**SITE SIZE:** 1,417.0 Acres, 573.4599 hectares  
**LOCATION:** Within city limits of Richmond  
**ZONING:** Commercial/Mixed Use  
**HIGHWAY ACCESS:** Site is directly adjacent to Exit 83 of Interstate 75. KY 2872/Duncannon Ln provides access to site.  
**NEAREST AIRPORT:** Blue Grass Airport (Lexington, KY) 37 miles north of site  
**RAIL:** CSX Corporation Adjacent  
**WATER:** Richmond Utilities  
**SEWER:** Richmond Utilities  
**ELECTRIC:** Kentucky Utilities (a PPL company); Blue Grass Energy Cooperative Corp  
**GAS:** Richmond Utilities  
**BROADBAND:** Cable: tw telecom; DSL: Alltel, AT&T  
**FLOOD DATA:** Not in 100-year flood plain  
**OWNER:** Private  
**PRICE PER ACRE:** \$10,000 - \$20,000/ac depending on location on property.  
**DATASHEET:** <http://www.thinkkentucky.com/edis/Sites/SiteProfile.aspx?SiteID=151-005>  
**LAT/LONG:** 37.66880, -84.30502

Map Date: 3/14/2016



All information regarding property is from sources deemed reliable, but no warranty or representation is made by the Commonwealth of Kentucky or any of its agencies as to its accuracy. It is subject to errors, omissions, change of price, prior sale, lease, or withdrawal without our knowledge. Further, no warranty or representation is made as to the environmental suitability or condition of the property.