



# ***EXECUTIVE SUMMARY***

## **RICHMOND – BEREA**

## **SMALL URBAN AREA STUDY**

Prepared for:



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# Richmond – Berea Small Urban Area Study

## Executive Summary

The Kentucky Transportation Cabinet (KYTC) initiated the Richmond – Berea Small Urban Area (SUA) study in Madison County. The purpose of the study is to identify and examine transportation issues within the study area related to safety, operations, and congestion along state-maintained (US and KY) routes in the Cities of Richmond and Berea. The study's primary goal was to propose a prioritized list of both short- and long-term project recommendations that could be used for further project development decisions by the KYTC, City of Richmond, City of Berea, Madison County, and/or private developers.

The SUA study area includes the incorporated Cities of Richmond and Berea, along with portions of Madison County surrounding and connecting the incorporated areas, including the Madison County airport. The KYTC District 7 recommended the study, as the last SUA study of the area was completed in 2004. This SUA study was funded using Kentucky's State Planning and Research (SPR) funds.

Tasks accomplished under this study include the following:

- Analysis of existing conditions, environmental resources, and crash history;
- Estimation of future capacity needs;
- Involvement of Local Officials / Stakeholders (LO/S) and the Project Team to identify transportation issues and priorities; and
- Produce a recommended and prioritized list of improvement options to address short- and long-term concerns.

The Richmond – Berea SUA Study Project Team included staff from the KYTC District 7, KYTC Central Office Division of Planning, BGADD, LAMPO, and the study consultant, WSP | Parsons Brinckerhoff (WSP | PB).

The first LO/S meeting was held on January 19, 2016, in Richmond. The meeting discussed existing conditions and identified needs related to safety, operations, and congestion. In addition, bicycle and pedestrian connectivity, access to tourist sites, and flooding issues were discussed. The LO/S attendees completed a survey to identify locations with transportation issues.

Transportation issues were identified from a technical analysis of existing conditions, the future travel demand, and the results of LO/S surveys. The study project needs were further refined to focus on safety, capacity, roadway deficiencies (drainage), and modal interrelationships (multi-modal).

Project alternatives were developed after field visits and sorted into implementation categories, as follows:

- **Short-term:** Projects that are typically easy to implement without further project development. These types of projects may use existing KYTC resources, or could be individually funded with safety, traffic, or maintenance funds.

- **Long-term:** More complicated projects with a higher cost, and would require further project development. These projects could be considered for inclusion in the KYTC Highway Plan.
- **Local:** Projects not located on the state-maintained system; would need to be funded by the Cities of Richmond or Berea, Madison County, quasi-public agencies, or developers.

On May 24, 2016, the second LO/S meeting was held in Richmond. During this meeting, participants were asked to score projects by assigning points among two or more projects in each implementation category. The scoring process was further separated by jurisdiction with officials from Richmond and Berea scoring their own projects to set local priorities. Representatives of agencies and organizations that covered the entire study area could choose to rank projects in all of the scoring sheets.

Each project was assigned an initial priority of high, medium, or low based on results from the LO/S scoring. A technical ranking was prepared for each project based on analysis results, field reviews, input received, and engineering judgment. KYTC then reviewed and established a final ranking of high, medium, or low priority for each short- and long-term project. Local project priorities remained consistent with the LO/S scoring results.

The prioritization effort led to the development of 60 improvement projects for implementation or future project development. These projects are consistent with the purpose of the study to identify and examine transportation issues related to safety, operations, and congestion along state-maintained routes in Madison County as well as the Cities of Richmond and Berea. Project cost estimates were developed based on fiscal year 2016 dollars.

Final study recommendations include 24 short-term, 26 long-term, and 10 local projects. These projects were prioritized as 13 high, 23 medium, and 24 low priority projects. Recommended projects sorted by jurisdictional boundaries include 30 Richmond, 19 Madison County, and 11 Berea projects.

Short-term project locations are found in **Figure ES-1**. Long-term projects in Richmond, Madison County, and Berea are shown in **Figures ES-2, ES-3, and ES-4**, respectively. **Figure ES-5** shows the locations of local projects. Projects identified as high, medium, and low priorities are listed in **Tables ES-1, ES-2, and ES-3**, respectively.

Project recommendations were differentiated with a project identification standard consisting of the project category, project location, and assigned project letter. Projects were categorized as short-term (**ST**), long-term (**LT**), or local (**L**). Next, a jurisdictional area identifier was added: Richmond (**R**), Madison County (**M**), or Berea (**B**). Every project within a jurisdictional area was further assigned a unique letter. An alphabetical lettering system was chosen to identify individual projects instead of a numerical listing that may indicate preferences or a hierarchy. As examples in the use of the project identification standard, the project identified as "**ST R-C**" refers to a short-term (**ST**) project in Richmond (**R**), and can be found as the third (**C**) project sheet of the short-term project listings for Richmond. The project identified as "**LT M-A**" refers to a long-term (**LT**) project in Madison County (**M**), and can be found as the first (**A**) project sheet in the long-term project listings for Madison County.



FIGURE ES-1: RECOMMENDED SHORT-TERM PROJECTS

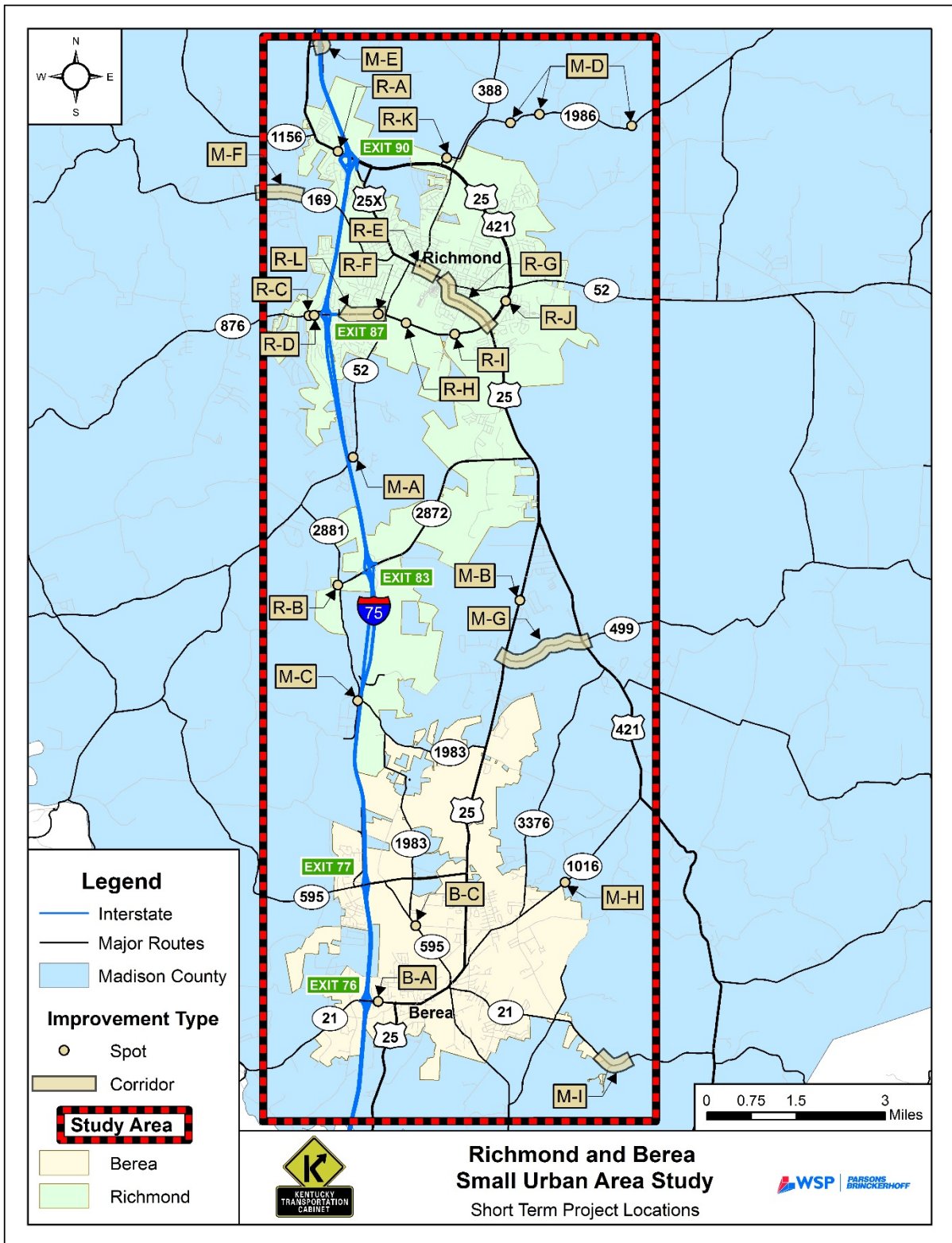


FIGURE ES-2: RECOMMENDED LONG-TERM PROJECTS IN RICHMOND

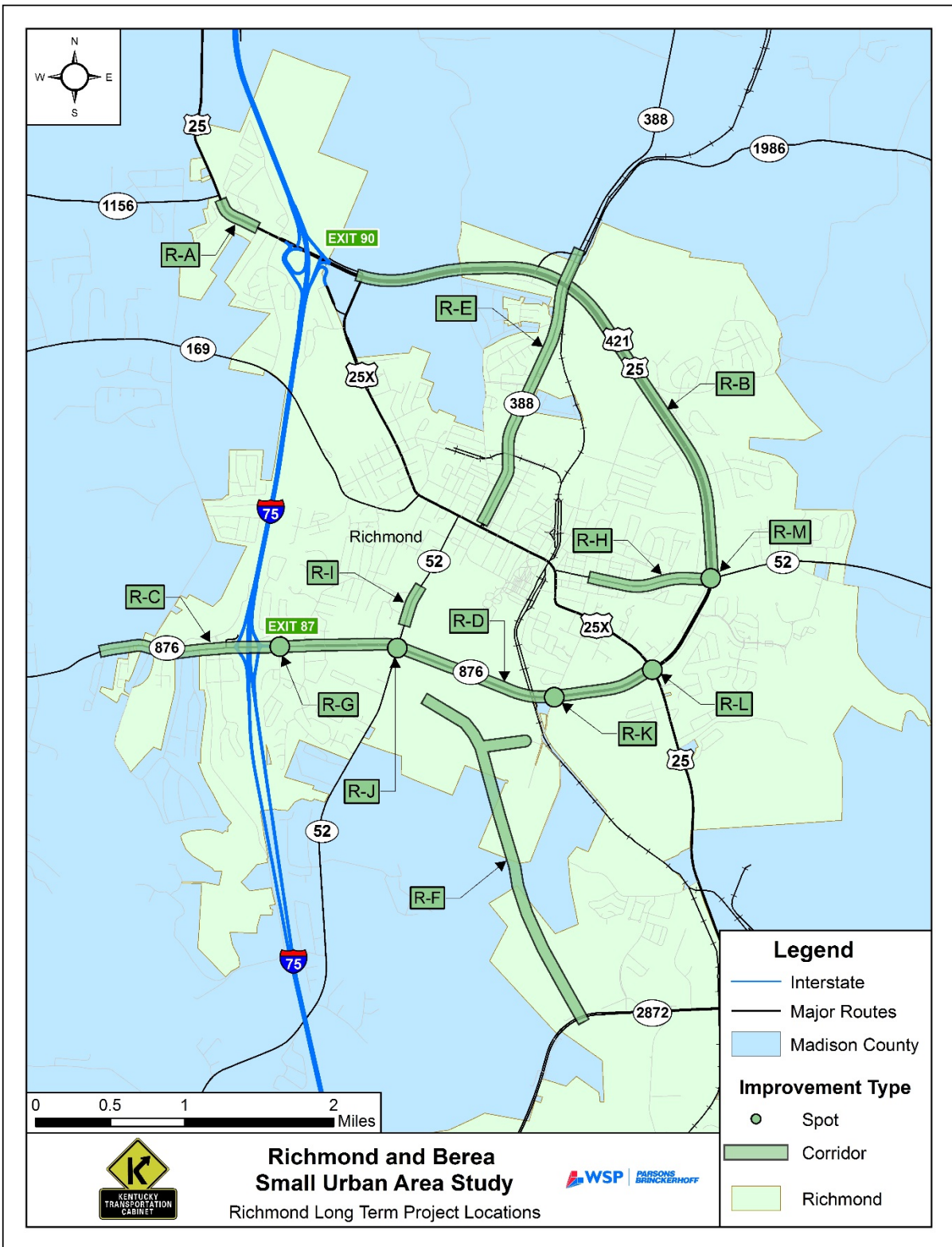


FIGURE ES-3: RECOMMENDED LONG-TERM PROJECTS IN MADISON COUNTY

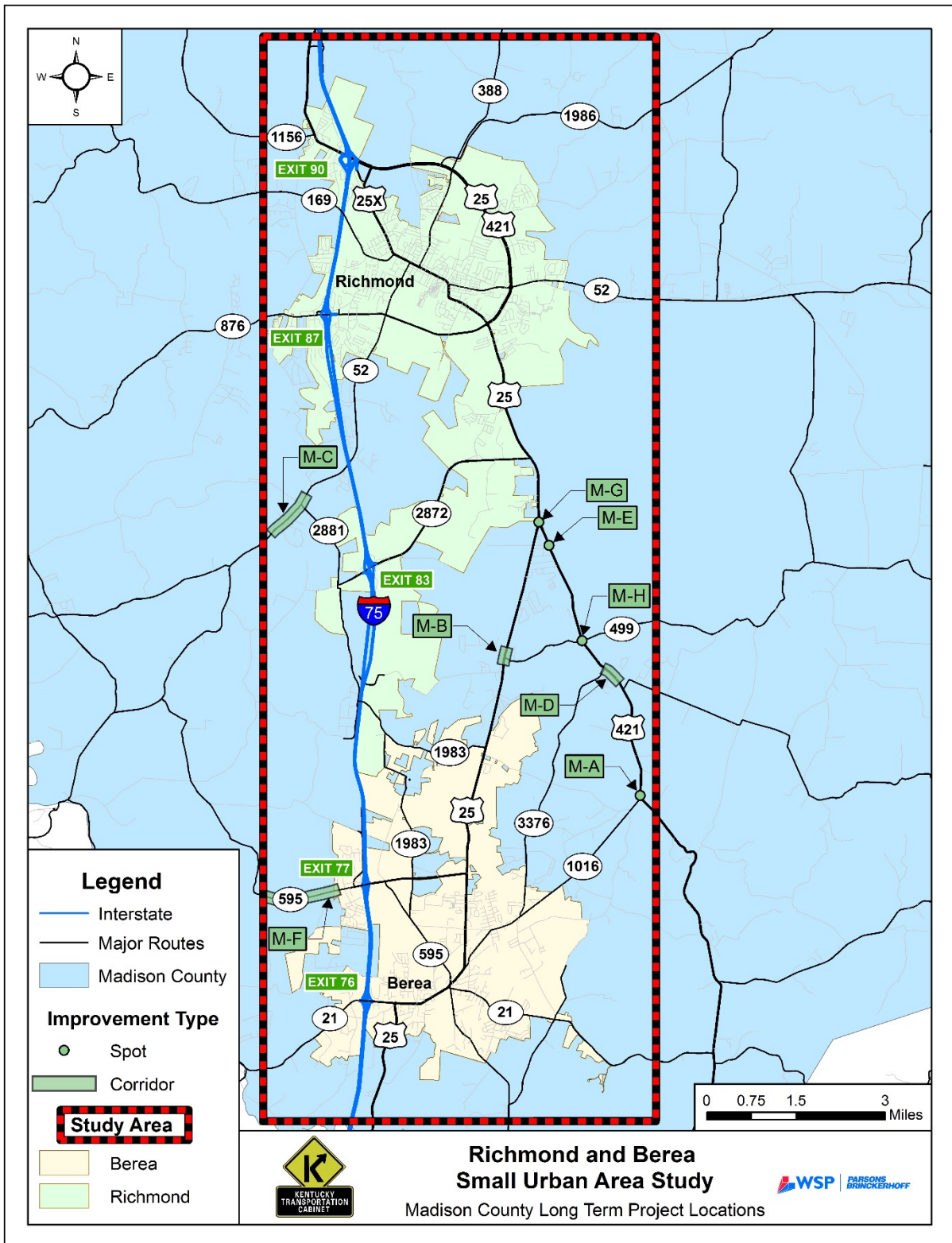
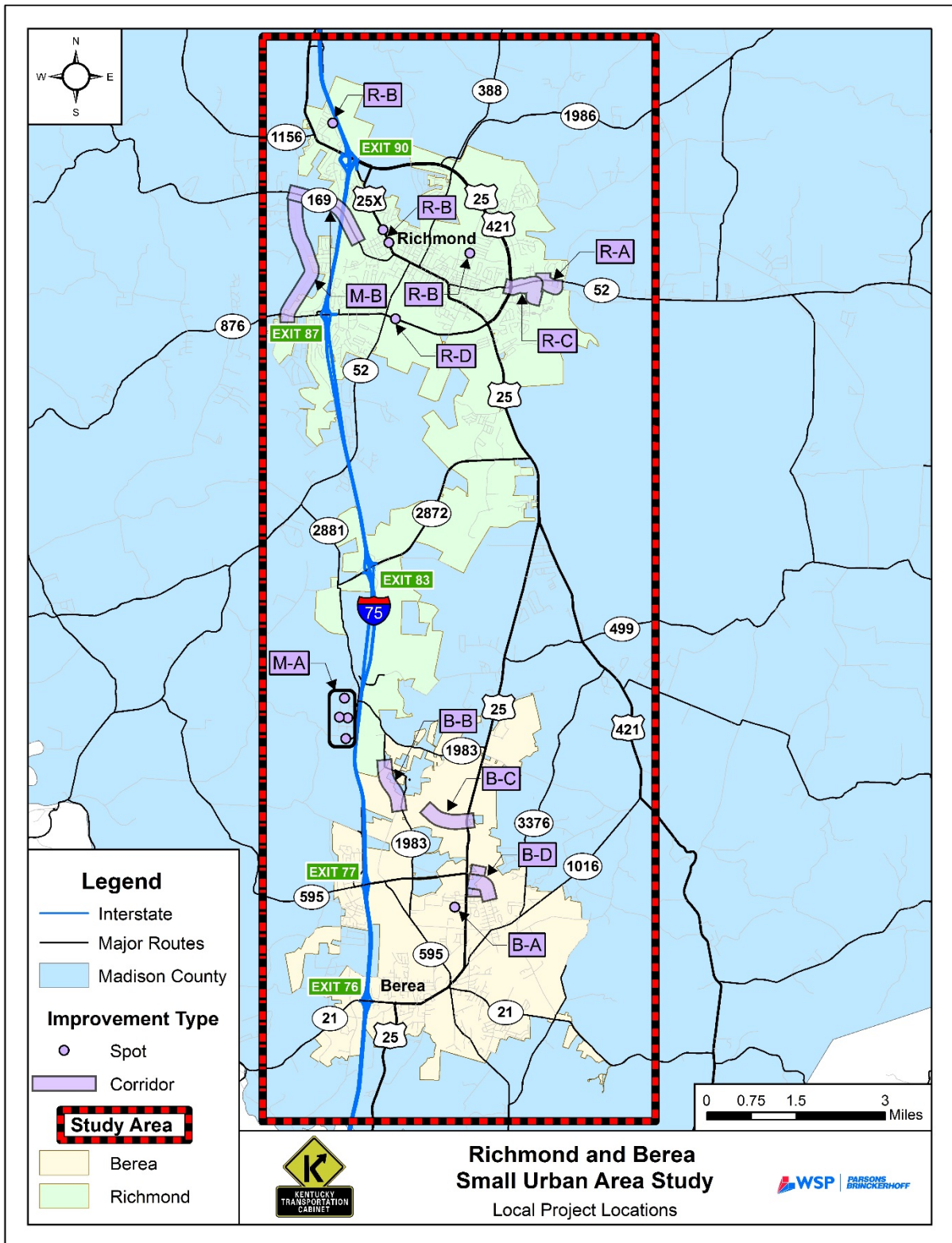




FIGURE ES-4: RECOMMENDED LONG-TERM PROJECTS IN BERA



FIGURE ES-5: RECOMMENDED LOCAL PROJECTS





**TABLE ES-1: RECOMMENDED HIGH PRIORITY PROJECTS**

Project Priority	Project Type	Project ID	Project Description	Cost Estimate
High	Short-Term	ST M-B	<u>US 25 at General Nelson Drive:</u> Address reverse crown issue at low point to eliminate standing water	\$66,000
		ST M-E	<u>KY 2878 Corridor from I-75 Underpass to Northridge Way:</u> Assess need for curve warning signs and high friction surface treatment	\$46,000
		ST R-A	<u>US 25 at Keeneland Dr Intersection:</u> Consider phase change to allow flashing yellow arrow; Modify striping	\$88,000
	Long-Term	LT M-A	<u>US 421 at KY 1016 Intersection:</u> Re-align intersection and reduce speeds	\$1,034,000
		LT M-G	<u>US 421 at US 25 Intersection:</u> Re-align intersection and reduce speeds	\$1,206,000
		LT B-E	<u>US 25, KY 21, KY 595 Intersection:</u> Ongoing Berea College study will provide recommendations for improvements	NA
		LT R-A	<u>US 25 Corridor from Taco Bell Driveway to Michelle Dr:</u> Improve cross-section - 2 12' lanes and center two-way left-turn lane	\$2,273,000
		LT R-E	<u>KY 388 Corridor from US 25X to KY 1986:</u> Improve cross-section - 2 12' lanes and center two-way left-turn lane with sidewalks; Signal warrant analysis	\$10,732,000
		LT R-G	<u>KY 876 at Killarney Ln Intersection:</u> Consider phase change for flashing yellow arrow; Install island for channelized right turns; Add ramps for pedestrian crossings; Limit access through gas station	\$258,000
		LT R-M	<u>US 25 at KY 52 (Irvine St) Intersection:</u> Add capacity through lane additions and extended storage	\$1,036,000
	Local	L B-B	<u>New Corridor - Farristown to KY 1983:</u> New connection from KY 1983 to Mayde Road	\$4,860,000
		L M-B	<u>Goggins Ln / KY 169 to KY 876 Corridor:</u> Repair existing sidewalk and provide connection to Kit Carson Elementary	\$500,000
		L R-A	<u>Catalpa Loop Rd / Old Irvine Rd at KY 52:</u> Realign intersection approach and improve drainage	\$684,000

Note: Projects in each project type are not listed in order of preference.

TABLE ES-2: RECOMMENDED MEDIUM PRIORITY PROJECTS

Project Priority	Project Type	Project ID	Project Description	Cost Estimate
Medium	Short-Term	ST M-D	<u>KY 1986 Corridor:</u> Improve bridge and culvert capacity (cost per structure)	\$175,000
		ST M-I	<u>KY 21 Corridor near KY 1617 to Bear Mountain Rd:</u> Assess need to increase culvert capacity (cost per structure) and prioritize corridor resurfacing schedule	\$175,000
		ST R-C	<u>KY 876 at Hampton Way Intersection:</u> Add dedicated right turn lane to Hampton Way and make Hampton Way right-in/right-out	\$7,000
		ST R-H	<u>KY 876 at Kit Carson Dr Intersection:</u> Consider phase change for flashing yellow arrow and removal of split phasing on side street; Extend KY 876 left turn lane storage; Add wayfinding signage	\$142,000
		ST R-I	<u>KY 876 at Walmart Intersection:</u> Eliminate left turns from side streets	\$118,000
		ST R-J	<u>US 25 at Gibson Bay Dr Intersection:</u> Consider phase change to eliminate split phasing; Provide dedicated left, through, and right turn lanes on to US 25; Extend sidewalk to north side of Gibson Bay Drive	\$162,000
	Long-Term	LT M-C	<u>KY 52 Corridor from Cavalier Ct to KY 2881:</u> Improve cross-section - 2 12' lanes and center two-way left-turn lane	\$1,388,000
		LT M-D	<u>US 421 Corridor from KY 3376 (Old US 25) to KY 3376:</u> Improve cross-section - 2 12' lanes and center two-way left-turn lane; Install sidewalk	\$1,662,000
		LT M-H	<u>US 421 at KY 499 Intersection:</u> Paint stop bars and lane lines on KY 499; re-align intersection	\$1,373,000
		LT B-A	<u>KY 1016 and KY 3376 Corridors:</u> Add left-turn lanes and provide pedestrian accomodations from school	\$4,873,000
		LT B-C	<u>KY 21 at US 25 Intersection:</u> Re-align US 25 to connect with KY 21 at Estridge Court	\$1,797,000
		LT R-B	<u>US 25 / US 421 Corridor from KY 52 to US 25X:</u> Multi-use path; Offset left turns; Signal warrant analysis	\$2,118,000
		LT R-C	<u>KY 876 Corridor from Hager Dr to KY 52 (Lancaster):</u> Add sidewalks; pedestrian connectivity improvements	\$3,160,000
		LT R-D	<u>KY 876 Corridor from KY 52 (Lancaster) to US 25:</u> Extend sidewalk	\$1,234,000
		LT R-F	<u>New Corridor from KY 876 (Via Kit Carson Dr) to KY 2872:</u> New corridor from KY 876 via Kit Carson Drive to KY 2872; Extend Cycle Drive to connect with new corridor	\$22,278,000
		LT R-H	<u>KY 52 Corridor from Oakland Ave to US 25:</u> Continue sidewalk along KY 52 to US 25 Bypass	\$2,114,000
		LT R-I	<u>KY 52 Corridor from Hycliff Dr to Barnes Mill Rd:</u> Add turn lanes and extended storage through restriping existing pavement; Extend sidewalks along Barnes Mill Rd EB and KY 52 NB to Park Drive	\$369,000
		LT R-J	<u>KY 876 at KY 52 Intersection:</u> Consider phase change for flashing yellow arrow; Add capacity through turn lanes and channelization; Install sidewalks	\$873,000
		LT R-L	<u>KY 876 at US 25 Intersection:</u> Add right turn lanes; Make Commercial Drive right-in/right-out only	\$394,000
	Local	L B-C	<u>New Corridor - Farristown Industrial Dr to US 25:</u> Provide a direct connection to Farristown Middle School and US 25	\$5,600,000
		L R-B	<u>Multiple Locations in Richmond:</u> Improve drainage	NA
		L R-C	<u>KY 52 at US 25 Pedestrian Access to Lake Reba:</u> Install sidewalk from KY 52 to park	\$949,000
		L M-A	<u>Neighborhood off KY 2881 and KY 2877:</u> Pavement treatment assessment and multi-modal connectivity	\$33,000

Note: Projects in each project type are not listed in order of preference.

TABLE ES-3: RECOMMENDED LOW PRIORITY PROJECTS

Project Priority	Project Type	Project ID	Project Description	Cost Estimate
Low	Short-Term	ST M-A	<u>KY 52 at Elliott Ford Rd Intersection:</u> Cut back slope and trim trees	\$70,000
		ST M-C	<u>KY 2881 at KY 2877 Intersection:</u> Evaluate control devices and apply new pavement markings	\$10,000
		ST M-F	<u>KY 169 Corridor from Goggins Ln to Cartier Dr:</u> Enhanced driver awareness of signal ahead; maintenance to improve sight distance	\$104,000
		ST M-G	<u>KY 499 Corridor from US 25 to US 421:</u> Curve warning signs; maintenance to improve sight distance	\$104,000
		ST M-H	<u>KY 1016 near Moonlight Dr Intersection to Barker Ln:</u> Assess need to increase culvert capacity (cost per structure)	\$175,000
		ST B-A	<u>KY 21 from McKinney St to Knights Inn Entrance:</u> Pedestrian connectivity	\$149,000
		ST B-C	<u>KY 595 at Glades Rd Intersection:</u> Conduct traffic signal warrant analysis	\$5,000
		ST R-B	<u>KY 2881 at KY 2872 Intersection:</u> Pavement treatment assessment	\$58,000
		ST R-D	<u>KY 876 at Amberly Way Intersection:</u> Consider phase change to remove split phasing on side street; Extend WB left turn lanes on KY 876; Restripe Amberly Way NB left turn lane	\$28,000
		ST R-E	<u>US 25X Corridor from Collins St to 3rd St:</u> Conduct study to eliminate left turns on US 25X utilizing parallel streets	\$200,000
		ST R-F	<u>KY 876 at Dwight Dr Intersection:</u> Prohibit left turns from side streets; Add right turn pocket on KY 876	\$98,000
		ST R-G	<u>US 25X Corridor from US 25 / KY 876 to Collins St:</u> Conduct study to assess need for access management strategy	\$100,000
		ST R-K	<u>KY 1986 at Caudill Dr Intersection:</u> Improve curve radius for bus traffic entering Caudill Middle School	\$39,000
		ST R-L	<u>KY 876 Corridor from I-75 to KY 52:</u> Conduct a study to evaluate frontage road solutions to improve traffic progression	\$150,000
		ST R-M	<u>Corridor Signal Retiming Bypass (KY 876, US 25 and Downtown):</u> Reevaluate signal timing and coordination of traffic signals of three corridors	\$175,000
		ST B-B	THIS PROJECT HAS BEEN REMOVED	
	Long-Term	LT M-B	<u>US 25 Corridor from KY 499 to Pioneer Dr:</u> Add two-way left-turn lane	\$529,000
		LT M-E	<u>US 421 at Bluegrass Army Depot Intersection:</u> Conduct traffic signal warrant analysis; if warranted, re-align intersection	\$642,000
		LT M-F	<u>KY 595 Corridor from Guynn Rd to 1.099 miles west of Ogg Cemetery Rd:</u> Move utility poles	\$6,660,000
		LT B-B	<u>KY 21 Corridor:</u> Access management strategies and re-align Old KY 21 / entrance to Rite Aid intersection	\$347,000
		LT B-D	<u>KY 21 Corridor from west of Neely St to O'Donnell Ln:</u> Construct 6' paved shoulders	\$476,000
		LT R-K	<u>KY 876 at Boggs Ln Intersection:</u> Extend EB KY 876 left turn lane; Add or extend right turn lanes on all approaches	\$406,000
	Local	L B-A	<u>Baugh St at Oakwood Dr Intersection:</u> Close Baugh Street at Oakwood Drive and create pedestrian access only to school	\$22,000
		L R-D	<u>KY 876 at Veterans Blvd Intersection:</u> Add sidewalk along Veterans Boulevard	\$17,300
		L B-D	<u>Extension East of KY 956 at US 25 Intersection:</u> Extend Pine Street and Kenway Street to access new KY 956 bypass	\$1,780,000

Note: Projects in each project type are not listed in order of preference.