

## FINAL REPORT



US 68 Scoping Study  
Green and Metcalfe County  
KYTC Item No. 3-203.00

Prepared for:



Kentucky Transportation Cabinet  
District 3 – Bowling Green  
District 4 - Elizabethtown  
Division of Planning

Prepared by:



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## **US 68 Scoping Study**

### **KYTC Item No. 3-203.00**

### **Executive Summary**

The Kentucky Transportation Cabinet (KYTC) initiated two different studies affecting US 68 in Metcalfe County and Green County. The US 68 Corridor Project examines the need for and types of improvements necessary along the route between the Cumberland Parkway and Greensburg. The US 68 Greensburg Connector Project investigates alternatives to better connect US 68 through or around Greensburg. The current studies serve as the first step in establishing project goals, identifying environmental concerns, and evaluating preliminary alternatives.

### **Purpose and Need**

The purpose of the US 68 Corridor Project is to provide a safer, more efficient connection between Greensburg and the Cumberland Parkway by improving substandard geometrics along the corridor. The existing alignment is characterized by horizontal and vertical curvature that does not satisfy current geometric design guidelines. Over the three-year period between January 2011 and December 2013, there were 67 crashes reported between the Parkway and the KY 61 intersection south of Greensburg. Of these crashes, 50 (75 percent) were single vehicle collisions. With a new interchange under construction at the Parkway, the demand for travel along the US 68 corridor is expected to increase. Addressing the substandard geometrics will extend previously implemented improvements along US 68 and provide a better connection between Greensburg, southern Green County, and northern Metcalfe County to the Cumberland Parkway.

The purpose of the US 68 Greensburg Connector Project is to improve safety, connectivity, and mobility in and through Greensburg. The US 68 Corridor provides the only connection for areas east and west of Greensburg and is one of only two crossings of the Green River in the area (the other being KY 417 (Legion Park Road)). Over the three-year period between January 2011 and December 2013, there were 71 crashes between the KY 61 intersection south of Greensburg and KY 61/KY 3535 (Industrial Park Road) to the north. Providing a new or improved connection through or around Greensburg will better accommodate existing and future traffic volumes, provide a new or improved Green River crossing, and offer a better connection for regional traffic including commercial vehicles.

### **Project Development**

Community outreach helped guide the US 68 Scoping Study, particularly in identifying potential issues and developing alternatives. A two-step process was used that involved early meetings with project stakeholders and local officials, followed by meetings with the general public.

At the first round of public meetings in February 2014, an overwhelming majority of survey respondents indicated both the US 68 Corridor and US 68 Greensburg Connector Project were needed. The public identified five general segments for reconstruction and/or realignment.

Together these locations and the spot improvements identified by the local officials served as the starting point for the development of conceptual improvements for the US 68 Corridor Project.

Following the first round of public meetings, a second Project Team meeting was held in March 2014. The Project Team decided that the new route alternatives for the US 68 Greensburg Connector Project should focus on providing an at-grade intersection with KY 61, balancing the earthwork, and minimizing costs. Two alternatives meet this requirement. In addition to the new routes, an additional alternative was carried forward which included replacing the bridge over the Green River and providing shoulder improvements along existing portions of the route south of downtown.

Following the development of the revised concepts, the Project Team again met with stakeholders and interested members of the public in July 2014. At these coordination points, alternatives were presented; each group was asked to provide feedback regarding their concerns and/or preferences. The survey results for the US 68 Corridor Project indicate spot improvements 4, 11, 12 and 13 are considered the public's highest priorities and spot improvements 5 and 6 would be medium priority if considered on their own. The survey results for the US 68 Greensburg Connector Project were split on their preference for both the Green alternative and the Yellow alternative.

## **Recommendations**

The recommendations for the US 68 Corridor Project and the US 68 Greensburg Connector Project are based on their ability to meet the purpose and need, the input received, and the alternative development process.

The final study recommendation for the US 68 Corridor Project is to improve the corridor using a number of spot improvements. It was determined that the complete reconstruction of the US 68 corridor was not viable because of the high cost. Instead, it is recommended that Spot Improvements #4, #5, and #6 in Metcalfe County and Spot Improvements #11, #12, and #13 in Green County move forward as a high priority. **Figure ES-1** and **Table ES-1** summarize the US 68 Corridor recommendations. The estimated construction costs are reflective of estimated earthwork, drainage, structures and pavement. Right-of-way relocations and construction costs are based on a two-lane roadway design with 11-foot lanes and 4-foot shoulders. The structure lengths were determined based upon the estimated limits of the floodplains, resulting in a conservative approach that should be revisited during subsequent project phases.

The final study recommendation for the US 68 Greensburg Connector Project is shown on **Figure ES-2** and **Table ES-2** and includes two conceptual alternatives for consideration in the next phase of the project. The green alternative would include minor improvements along existing US 68 and replacing the existing bridge over the Green River. The existing bridge has a sufficiency rating of 52.3. When the sufficiency rating drops below 50.0, the bridge will be eligible for Federal bridge replacement funds. The yellow alternative is a new connector around Greensburg starting on US 68 at the Vaughn Curve, crossing KY 61 about ¼ mile north of Patterson Road, crossing the Green River and ending at KY 3535 in northern Greensburg.

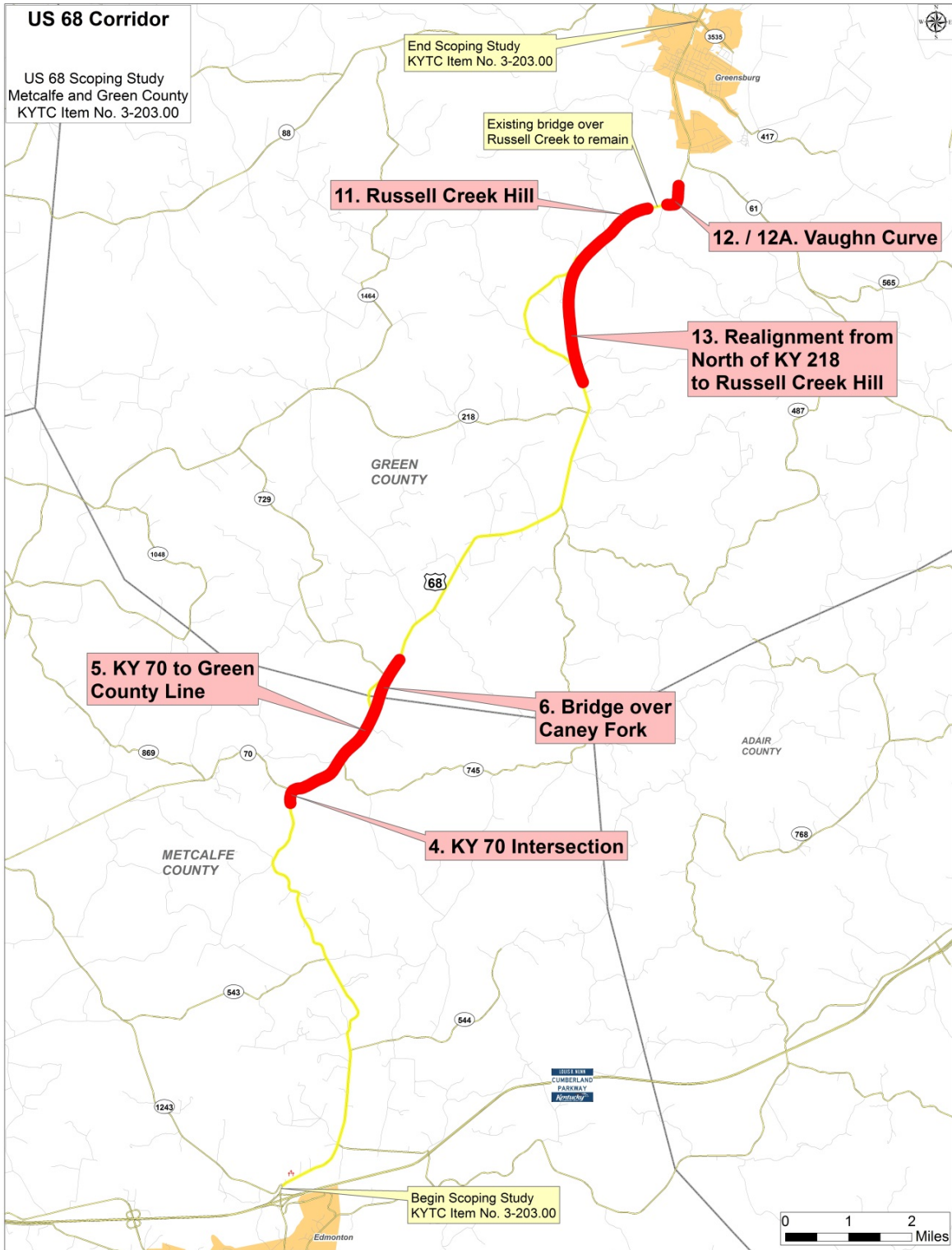


Figure ES-1: US 68 Corridor Project Recommendations



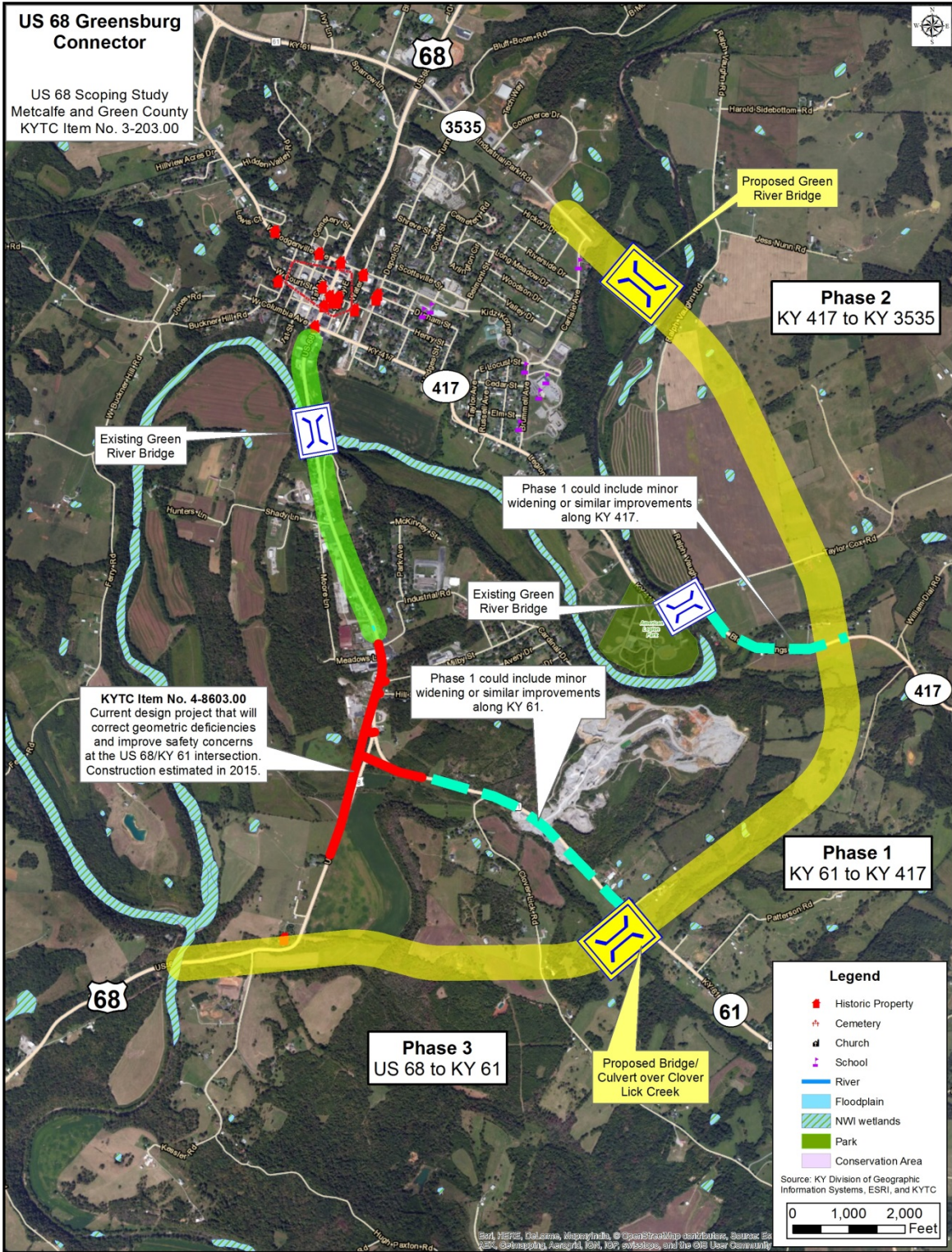


Figure ES-2: US 68 Greensburg Connector Project Recommendations

Spot #	#4	#5	#6	#11	#12	#13
Location	KY 70 Intersection	KY 70 to South of the Green County line	Bridge over Caney Fork & Realignment	Russell Creek Hill	Vaughn Curve	Realignment between KY 218 and Russell Creek Hill
Total Length (miles)	0.5	0.9	0.9	0.5	0.5	2.5
Design	\$1,750,000			\$2,090,000		
Right-of-way	\$375,000	\$475,000	\$550,000	\$365,000	\$335,000	\$1,850,000
Utilities	\$300,000	<b>\$450,000</b>	<b>\$450,000</b>	\$340,000	\$365,000	\$1,580,000
Construction	\$2,600,000	\$6,200,000	\$8,700,000	\$1,700,000	\$2,800,000	\$16,400,000
Total	\$21,850,000			\$27,825,000		

Table ES-1: US 68 Corridor Project Spot Improvement Recommendations

Alternative Corridor	Length (miles)	Project Phase	Total for all Phases	Phase 1	Phase 2	Phase 3
			(\$ Millions, unless noted)	(KY 61 to KY 417)	(KY 417 to KY 3535)	(US 68 to KY 61)
Green	1.6	Right-of-way	\$700,000	N/A		
		Utilities	\$1.72			
		Construction	\$9.7-12.0			
		<b>Total</b>	<b>\$12.1 to \$14.4</b>			
Yellow	4.6	Right-of-way	\$5	\$1.20	\$1.70	\$1.60
		Utilities	\$3.10	\$845,000	\$1.20	\$1.10
		Construction	\$25.90	\$6.70	\$10.10	\$9.10
		<b>Total</b>	<b>\$33.50</b>	<b>\$8.70</b>	<b>\$13.00</b>	<b>\$11.80</b>

Table ES-2: US 68 Greensburg Connector Cost Estimates

# 1.0 INTRODUCTION

The US 68 Scoping Study, KYTC Item No. 3-203.00, was initiated by the Kentucky Transportation Cabinet (KYTC) to evaluate the need for and impacts of transportation improvements along US 68 in Green County and Metcalfe County. The study includes two independent yet related projects. The first, referred to as the US 68 Corridor Project, includes an examination of the route between the US 68 interchange currently under construction at the Cumberland (Louie B. Nunn) Parkway in Metcalfe County and “Vaughn Curve” just south of Greensburg in Green County. The second component is the US 68 Greensburg Connector Project from “Vaughn Curve” just south of Greensburg to the KY 61/KY 3535 intersection on the north side of Greensburg. The study area for both projects is shown in **Figure 1**.

The project item numbers and descriptions from Kentucky’s FY 2014-FY 2020 Highway Plan, also referred to as the Six Year Highway Plan or the 2014 Enacted Highway Plan, and are shown in **Table 1**. The Green County portion of the US 68 Corridor and the US 68 Greensburg Connector were originally listed in the 2014 Highway Plan with item numbers suggesting they were located in KYTC District 8. However, the item numbers were changed prior to the completion of the study to reflect their actual location in KYTC District 4.

Project	KYTC Item Number	Description	Project Phase	Estimated Cost	Funding Code	Fiscal Year
US 68 Corridor	3-8706.00 Metcalfe County	Scoping Study and design on US 68 from the Cumberland Parkway to Green/Metcalfe County line	Design	\$2,500,000	Surface Transportation Program (STP)	2015
	4-397.00 (8-8710.00) Green County	Scoping Study and design for US 68 from Metcalfe County to the KY 61/US 68 intersection	Design	\$2,000,000	Surface Transportation Program (STP)	2014
US 68 Greensburg Connector	4-398.00 (8-8711.00) Green County	Construct New Connector from Vaughn Curve on US 68 Bypass east of Greensburg, crossing KY 61 and KY 417 and connecting with KY 3535 north of Greensburg	Design	\$2,600,000	State Priority Project (SPP)	2016
			Right-of-Way	\$3,000,000		2017
			Utilities	\$900,000		2018
			Construction	\$25,000,000		2019

**Table 1: KYTC Item Numbers for US 68 Projects in the US 68 Scoping Study**





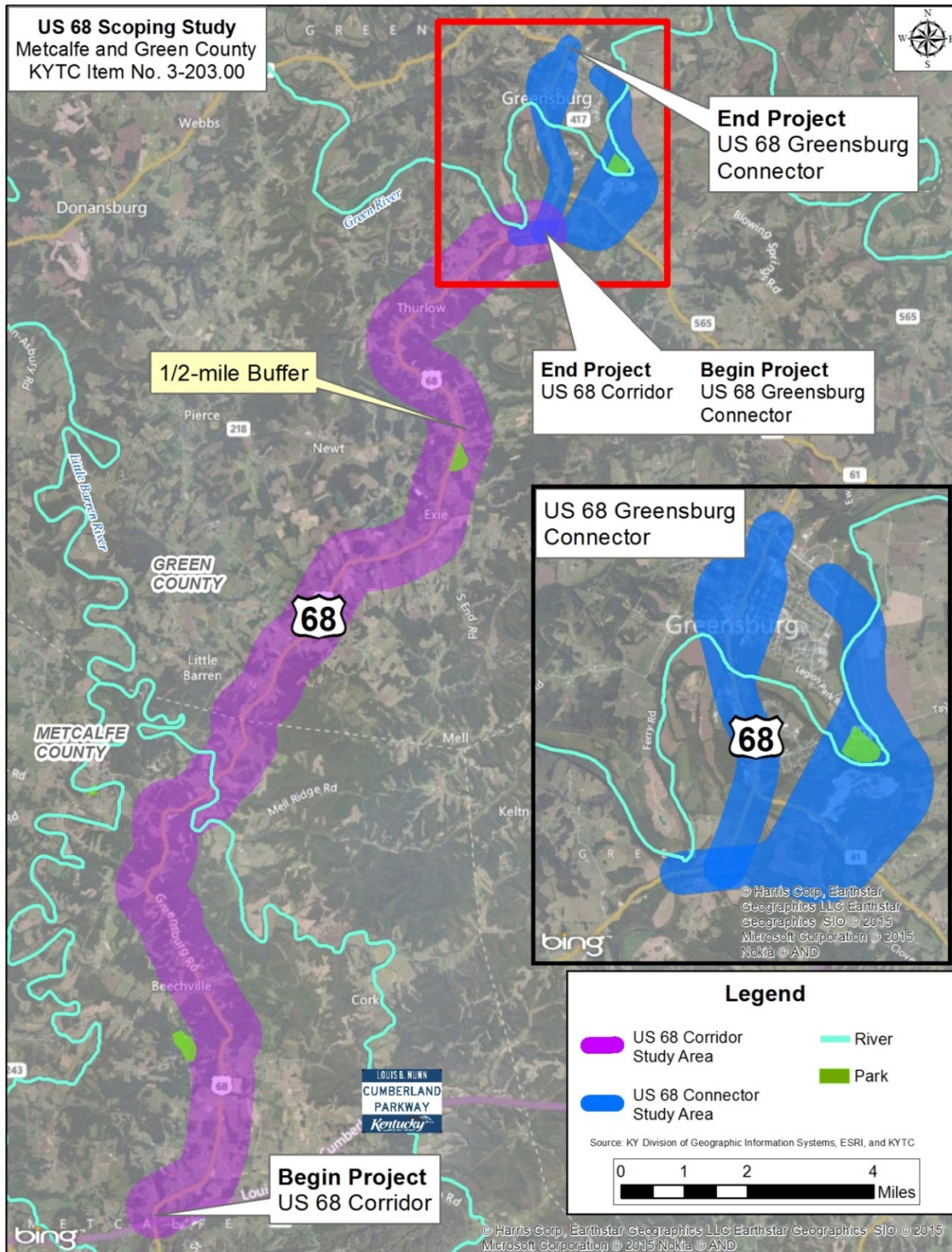


Figure 1: Study Area – US 68 Scoping Study

The US 68 Corridor Project is listed under two item numbers as it is located in both KYTC District 3 and District 4. The 2014 Highway Plan includes \$2,500,000 in Federal Surface Transportation Program (STP) funds for the design phase in Metcalfe County (KYTC Item No. 3-8706.00) and \$2,000,000 in STP funds for the design phase in Green County (KYTC Item No. 4-397.00). The design for both item numbers is scheduled for Fiscal Year 2014 and no additional project phases are included in the Highway Plan. The US 68 Greensburg Connector (KYTC Item No. 4-398.00) has State Priority Project (SPP) Funds appropriated in the 2014 Highway Plan for all phases, with \$2,600,000 included for design in Fiscal Year 2016.

## 1.1 PURPOSE AND NEED STATEMENTS

US 68 stretches approximately 400 miles across Kentucky from Paducah to Maysville. Carrying between 900 and 9,100 vehicles per day through Metcalfe and Green counties, US 68 is a Rural Major Collector of 22 miles in length between the interchange under construction with the Cumberland (Nunn) Parkway north of Edmonton in Metcalfe County and the US 68/KY 61 intersection south of Greensburg in Green County. Through Greensburg, US 68 is a Rural Minor Arterial for 2.3 miles between the south KY 61 intersection and the north KY 61/KY 3535 (Industrial Park Road) intersection. There were 138 crashes reported in the three years between January 2011 and December 2013 along the entire 24.3 miles of US 68 under study. Past Improvements have been made to the US 68 corridor between Greensburg (through Campbellsville) and Lebanon. These have provided a safer and more reliable connection to the Bluegrass (Martha Layne Collins) Parkway north of Lebanon and Springfield via KY 55 and KY 555.

**The purpose of the US 68 Corridor Project is to provide a safer, more efficient connection between the Cumberland Parkway and Greensburg by improving substandard geometrics along the corridor.** The existing alignment is characterized by horizontal and vertical curvature that does not satisfy current geometric design guidelines. Over the three-year period between January 2011 and December 2013, there were 67 crashes reported between the Parkway and the KY 61 intersection south of Greensburg. Of these crashes, 50 (75 percent) were single-vehicle collisions. With a new interchange under construction at the Parkway, the demand for travel along the US 68 corridor is expected to increase. Addressing the substandard geometrics will extend previously implemented improvements along US 68 and provide a better connection between Greensburg, southern Green County, and northern Metcalfe County to the Cumberland Parkway.

**The purpose of the US 68 Greensburg Connector Project is to improve safety, connectivity, and mobility in and through Greensburg.** The US 68 Corridor provides the only connection for areas east and west of Greensburg and one of only two crossings of the Green River in the area (the other being KY 417, Legion Park Road). The nearest Green River crossing upstream of Greensburg is KY 55 in Taylor County, and a detour utilizing this route around Greensburg would be approximately 35 miles in length. The nearest downstream crossing is KY 88 in Green County, which would require a detour of approximately 19 miles. Through Greensburg, US 68 currently carries as many as 9,100 vehicles per day, eight percent (about 730) of which are trucks. Between January 2011 and December 2013, there were 71 crashes between the KY 61 intersection south of Greensburg and the KY 61/KY 3535 (Industrial Park Road) to the north.



Providing a new or improved connection through or around Greensburg will better accommodate existing and future traffic volumes, provide a new or improved Green River crossing, and offer a better connection for regional traffic and commercial vehicles.

## 1.2 STUDY AREA

The study area for the US 68 Corridor Study is a 1-mile wide buffer, highlighted in purple on **Figure 1**, centered along the existing alignment for US 68. The US 68 Corridor serves residential and limited commercial areas between Edmonton and Greensburg. The study area is bounded to the south by the Cumberland (Louie B. Nunn) Parkway. US 68 connects to the Cumberland (Nunn) Parkway west of Edmonton, Kentucky at Exit 27, but a new interchange (KYTC Item No. 3-8505.00) is currently under construction at the US 68 overpass near milepost 29.8 on the Parkway that will more directly serve Green County. The Cumberland (Nunn) Parkway is an east-west connector that travels from I-65 near Glasgow, Kentucky to Somerset, Kentucky.

The study area for the US 68 Greensburg Connector, highlighted in blue in **Figure 1**, includes the existing US 68 corridor through Greensburg between “Vaughn Curve” and the northern KY 61/KY 3535 intersection, as well as an area southeast of Greensburg.

## 1.3 COMMITTED PROJECTS

There are several other projects listed in the 2014 Highway Plan in Metcalfe County and Green County. In Metcalfe County, shown in **Figure 2**, the reconstruction of KY 163 (KYTC Item No. 3-8859.00) connects to the south side of the new Cumberland Parkway Interchange under construction with the KYTC Item No. 3-8505.00 project (not shown) and will provide improved connectivity between Edmonton and the Parkway. In Green County, shown in **Figure 3**, KYTC Item No. 4-8603.00 will improve the US 68/south KY 61 intersection by realigning the KY 61 approach and making US 68 the through movement. A general depiction of the proposed intersection, which is anticipated to be under construction in late 2015, is shown in **Figure 4**.

## 2.0 EXISTING CONDITIONS

Conditions of the study area’s existing transportation network are examined in the following section. The information compiled includes roadway facilities and geometrics, crash history, and traffic volumes within the study area. Data for this section were collected from the KYTC’s Highway Information System (HIS) database, aerial photography, as-built plans, and field review. A summary of the information contained within the KYTC HIS database is included in **Table 2**.

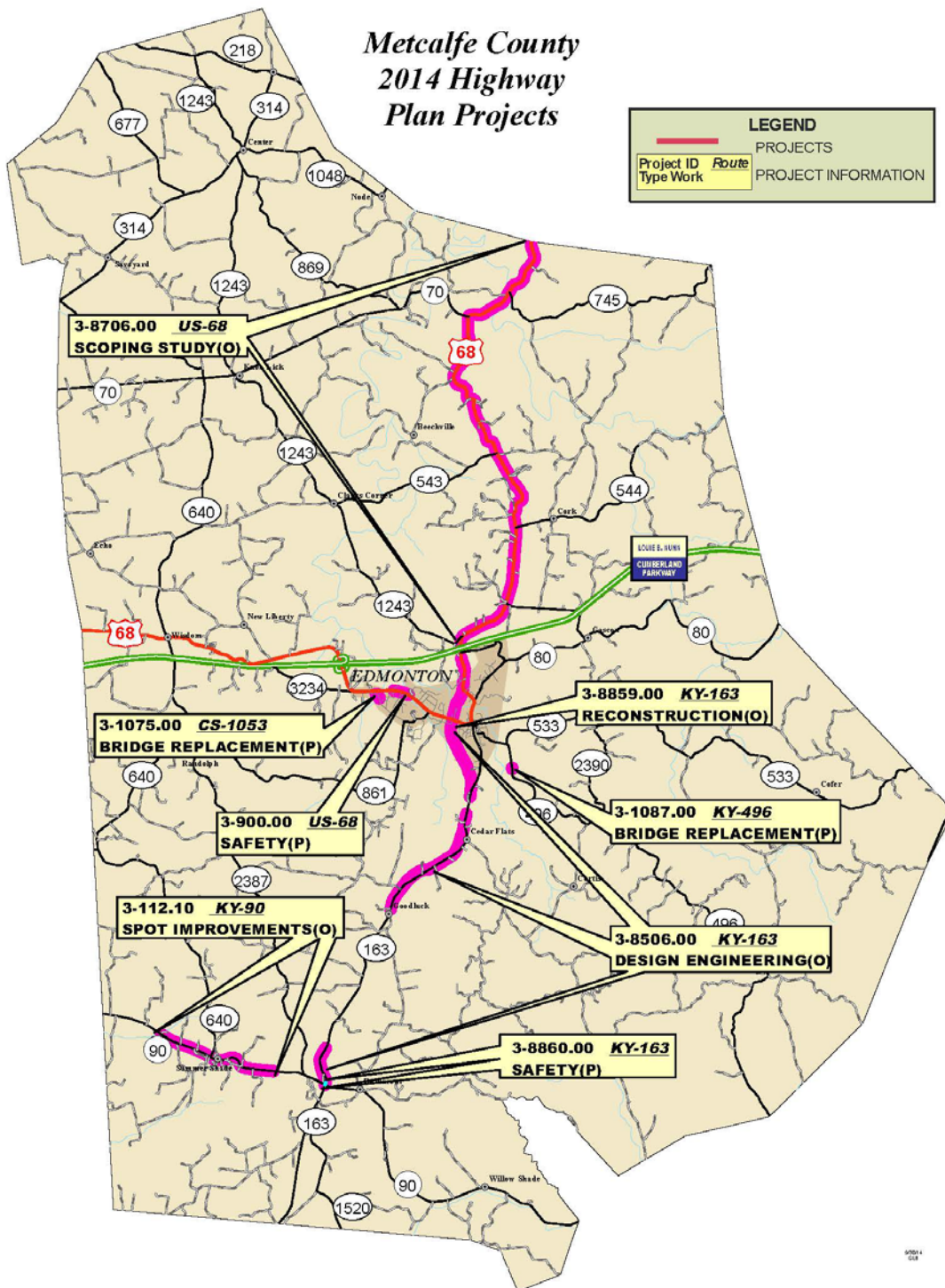


Figure 2: Metcalf County 2014 Highway Plan Projects  
 (Source: KYTC Division of Program Management)

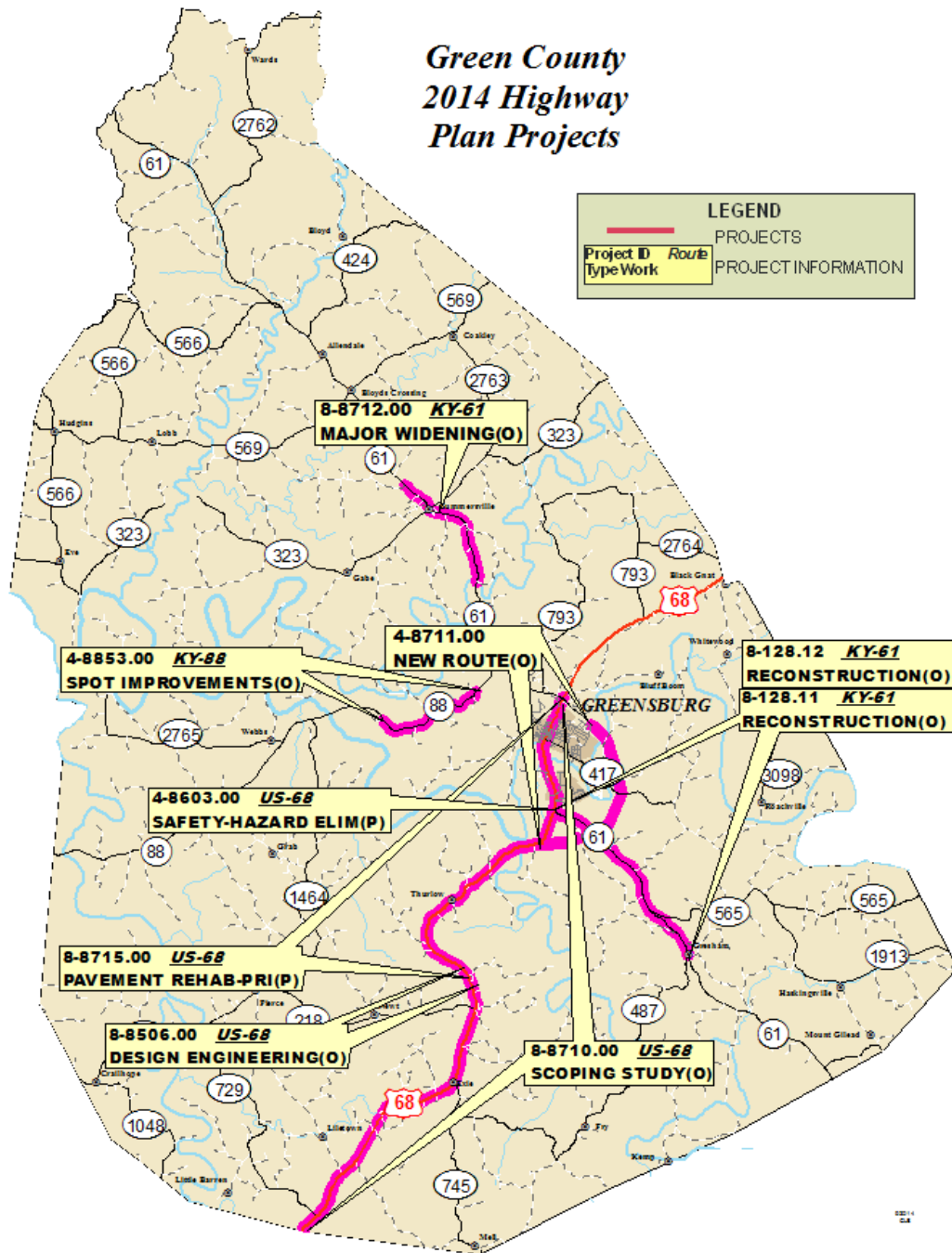


Figure 3: Green County 2014 Highway Plan Projects  
(Source: KYTC Division of Program Management)



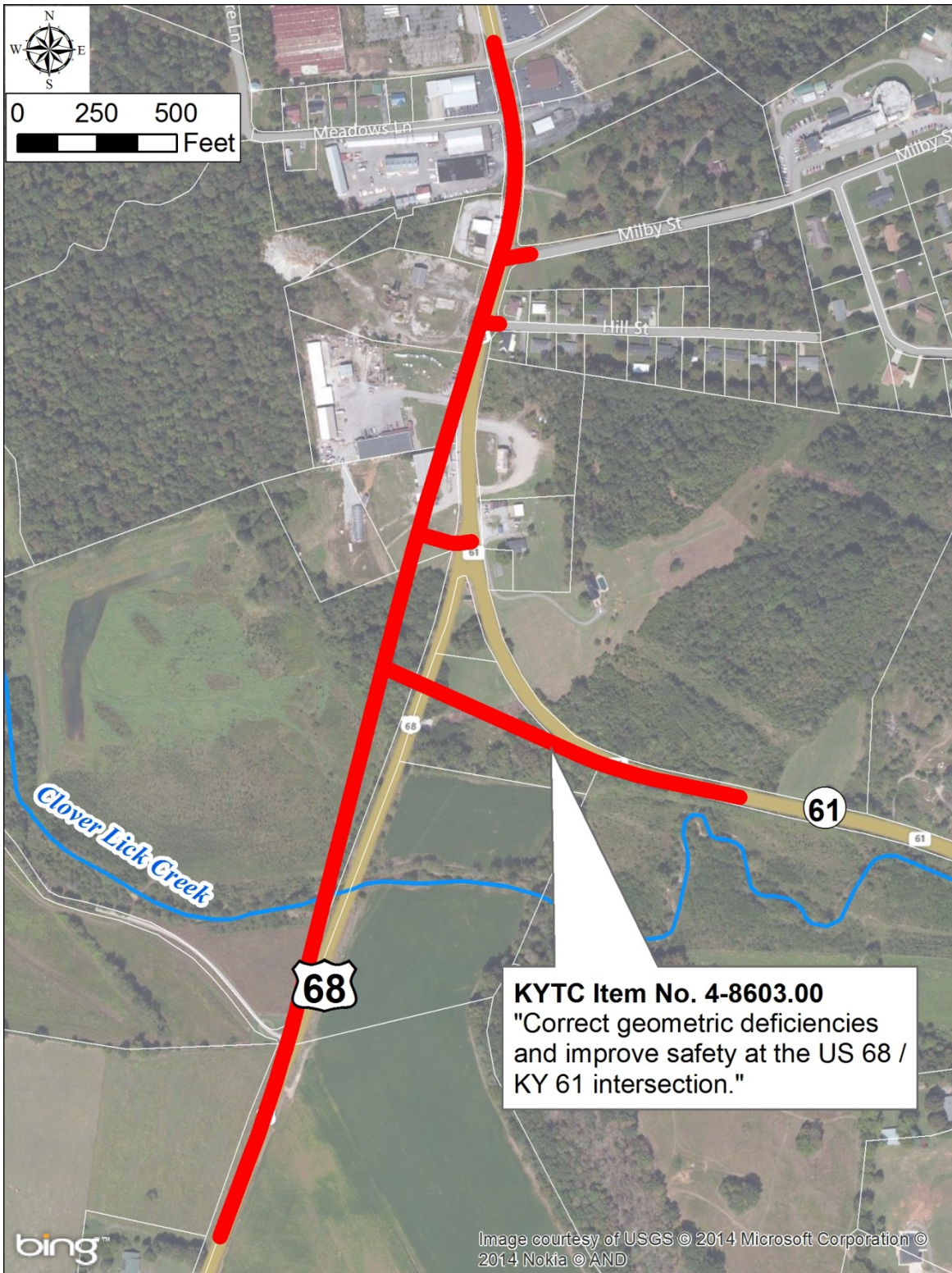


Figure 4: Proposed Improvement at US 68 and KY 61 (KYTC Item No. 4-8603.00)

County	Begin Segment	Begin MP	End Segment	End MP	Functional Classification	Count Station	Current Traffic Volume (vehicles per day)	Count Year	Level of Service (LOS)
<b>Metcalf</b>	KY 1243	10.350	KY 544	13.013	Rural Major Collector	85040	1,900	2011	B
	KY 544	13.013	KY 543	14.676		85030	1,200	2011	B
	KY 543	14.676	KY 70	17.845		85003	900	2013	B
	KY 70	17.845	Green Co. Line	20.026		85002	900	2011	B
	Metcalf Co. Line	0.000	KY 487	4.576	44511	990	2013	B	
	KY 487	4.576	KY 218	6.099	44251	1,500	2011	B	
	KY 218	6.099	West of Locust Grove Loop	6.615	Rural Major Collector	44251	2,400	2012	B
West of Locust Grove Loop	6.615	West of Whippoorwill Ln.	6.920						
West of Whippoorwill Ln.	6.920	Mt. Lebanon Church Rd.	7.860						
Mt. Lebanon Church Rd.	7.860	West of Russell Creek Brg.	10.500						
West of Russell Creek Brg.	10.500	East of Russell Creek Brg.	10.900						
<b>Green</b>	East of Russell Creek Brg.	10.900	KY 61 (South)	11.954	Rural Minor Arterial	044A39	5,700	2011	B
	KY 61 (South)	11.954	West of Hill Street	12.110					
	West of Hill Street	12.110	Industrial Road	12.291					
	Industrial Road	12.291	South of KY 417	13.273	044A17	044A35	7,900	2013	C
	South of KY 417	13.273	KY 417	13.385					
	KY 417	13.385	East Hodgenville St.	13.615	044A42	044A42	7,800	2011	A
	East Hodgenville St.	13.615	East of East Hodgenville St.	13.640					
	East of East Hodgenville St.	13.640	South of KY 61 (north)	14.110					
	South of KY 61 (north)	14.110	KY 61 (north)/KY 3505	14.287					

**Table 2A: US 68 Existing Conditions Summary**

County	Begin Segment	Begin MP	End Segment	End MP	Truck %	Truck Weight Class	Lanes	Shoulders	Speed Limit	
<b>Metcalle</b>	KY 1243	10.350	KY 544	13.013	8%	"AAA" (80,000 pounds)	2-10' wide	3' Combination	55 MPH	
	KY 544	13.013	KY 543	14.676						
	KY 543	14.676	KY 70	17.845						
	KY 70	17.845	Green Co. Line	20.026						
<b>Green</b>	Metcalle Co. Line	0.000	KY 487	4.576	14%	"AAA" (80,000 pounds)	2-9' wide	3' Combination	45 MPH*	
	KY 487	4.576	KY 218	6.099	10%		2-10' wide			
	KY 218	6.099	West of Locust Grove Loop	6.615	10%		2-11' wide			
	West of Locust Grove Loop	6.615	West of Whippoorwill Ln.	6.920			2-10' wide			
	West of Whippoorwill Ln.	6.920	Mt. Lebanon Church Rd.	7.860			2-11' wide			
	Mt. Lebanon Church Rd.	7.860	West of Russell Creek Brg.	10.500			2-10' wide			
	West of Russell Creek Brg.	10.500	East of Russell Creek Brg.	10.900	9%		2-11' wide	3' Combination		0'-8' Curbed
	East of Russell Creek Brg.	10.900	KY 61 (South)	11.954						
	KY 61 (South)	11.954	West of Hill Street	12.110	-		2-11' wide	3' Combination		10' Paved
	West of Hill Street	12.110	Industrial Road	12.291						
	Industrial Road	12.291	South of KY 417	13.273	8%		4-13' wide	35 MPH		
	South of KY 417	13.273	KY 417	13.385						
	KY 417	13.385	East Hodgenville St.	13.615	5%		4-12' wide	45 MPH		
	East Hodgenville St.	13.615	East of East Hodgenville St.	13.640						
East of East Hodgenville St.	13.640	South of KY 61 (north)	14.110							
South of KY 61 (north)	14.110	KY 61 (north)/KY 3505	14.287							

**Table 3B: US 68 Existing Conditions Summary**

## 2.1 ROADWAY SYSTEM

Functional classification is the grouping of roads, streets and highways into integrated systems ranked by the level of mobility for through movements and access to adjoining land. This grouping acknowledges that roads serve multiple functions and it provides a basis for comparing roads. Functional classification can be used for, but is not limited to, the following purposes:

- Provide a framework for highways serving mobility and connecting regions and cities within a state.
- Provide a basis for assigning jurisdictional responsibility according to the roadway's importance.
- Provide a basis for development of minimum design standards according to function.
- Provide a basis for evaluating present and future needs.
- Provide a basis for allocation of limited financial resources.

Figure 5 shows the functional classification of roadways within the study area.

There are two north-south roadways adjacent to the study area. Interstate 65 (I-65) is west of the study area and is the primary regional corridor that provides north-south regional connectivity for both commerce and the traveling public. KY 61 is the primary north-south connector east of the study area and travels through the city of Greensburg. In the northern portion of the study area, US 68 is a Rural Minor Arterial roadway that provides north-south connectivity between Greensburg and KY 61. US 68 is a north-south roadway between KY 61 and the Cumberland (Nunn) Parkway and is classified as a Rural Major Collector. In the southern section of the study area, the Cumberland (Nunn) Parkway is an east-west roadway that is classified as a Principal Arterial and provides a link between US 68 and I-65. The Cumberland (Nunn) Parkway interchange at I-65 provides large truck access to distribution centers in southern Kentucky along an east/west axis from I-65 to Somerset and then via KY 80 to I-75.

## 2.2 ROADWAY GEOMETRIC CHARACTERISTICS

As part of the project, a review of existing geometrics along the study area roadways was performed and compared against common geometric practices for Rural Collector Roads listed in Exhibit 700-02 and Rural Arterial Roads listed in Exhibit 700-03 of the 2006 KYTC Highway Design Manual<sup>1</sup>.

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<sup>1</sup> <http://transportation.ky.gov/Highway-Design/Highway%20Design%20Manual/Geometric%20Design%20Guidelines.pdf>



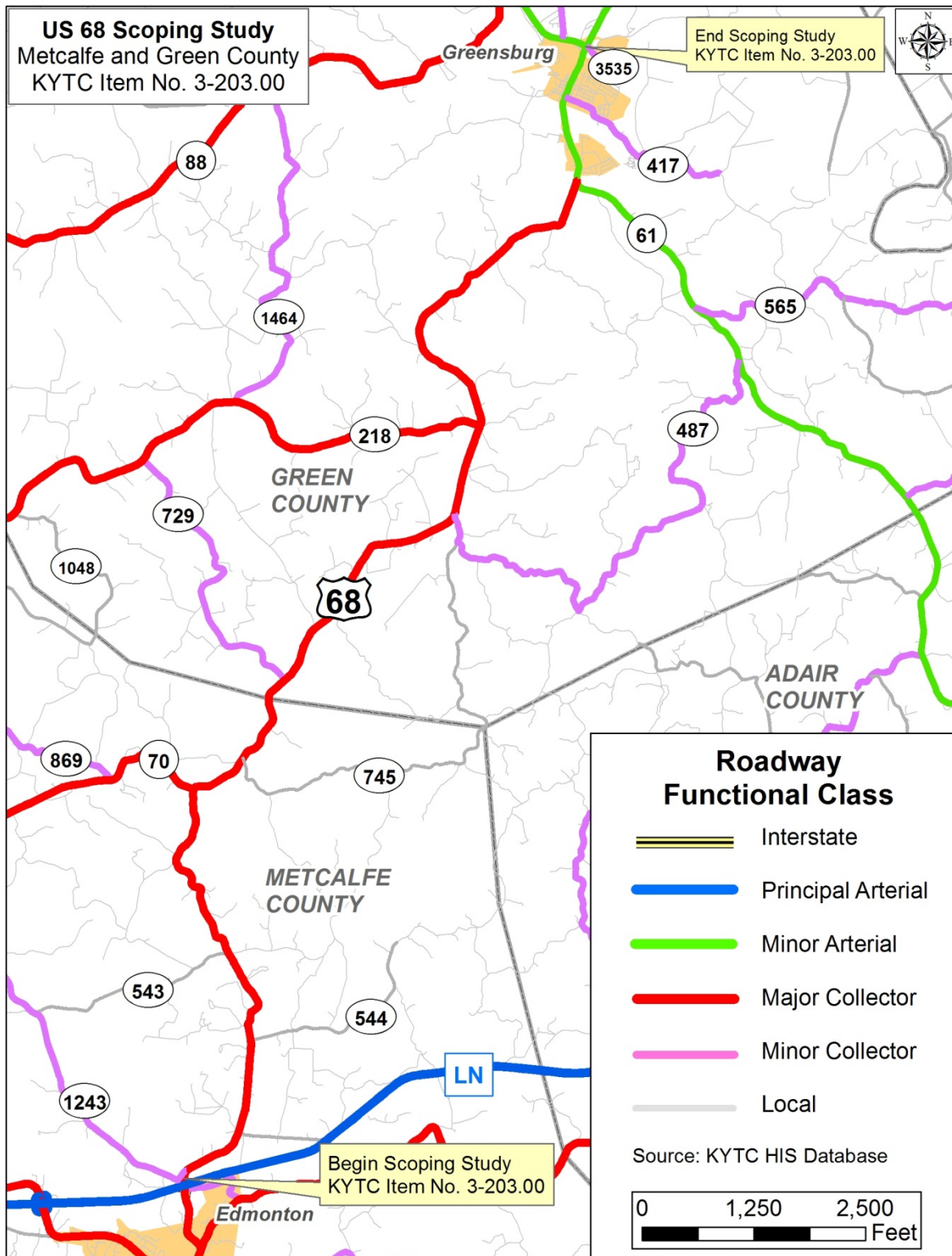


Figure 5: Functional Classification



The estimated lane widths along study area roadways are shown on **Figure 6**. Current KYTC design guidelines suggest a minimum of 11-foot wide lanes on arterial and collector roadways with an average daily traffic (ADT) between 1,500 and 2,000 vehicles per day (vpd) and a minimum of 12-foot lanes on arterial and collector roadways with an ADT greater than 2,000 vpd. Arterial roadways are recommended to have a minimum of 12-foot lanes if the ADT is greater than 1,500 and a design speed of 50 mph. Through Greensburg, US 68 has 11-foot lanes or wider, but most of the corridor south of Greensburg has lane widths of 10 feet or narrower.

Estimated shoulder widths are shown in **Figure 7**. Generally, US 68 in the study area has 3-foot shoulders, which is less than the recommended minimum of six feet for roadways with an ADT between 1,500 and 2,000 vpd and eight feet for roadways with an ADT greater than 2,000 vpd. The exceptions are two segments of US 68 between KY 61 and KY 218. These segments have been improved and have shoulders that are ten feet or greater in width.

Horizontal and vertical deficiencies are shown in **Figure 8** and **Figure 9**. There are frequent horizontal curves along most of US 68 that severely affect the speed and there are frequent grades without recommended sight distance. The portion of US 68 from just north of the Cumberland Parkway to the Green/Metcalf County line has some vertical grades without adequate sight distance.



From the National Bridge Inventory (NBI), existing bridge sufficiency ratings were identified. This rating assigns individual bridges with a measure of “sufficiency” in which to remain in service. A rating of 100 percent indicates a bridge is entirely satisfactory and a rating of zero percent indicates a bridge is completely deficient. Bridges are eligible for federal funding for rehabilitation if they have a sufficiency rating below 80 percent. If a bridge has a rating below 50 percent, it is considered eligible for replacement funding. Locations of all bridges and their sufficiency ratings are shown on **Figure 10**.

The principal crossing of the Green River, located on US 68 just south of downtown Greensburg, has a sufficiency rating of 53.5. The bridge over Greasy Creek in southern Green County has a sufficiency rating of 53. All other bridges in the study area have a sufficiency rating of at least 70.

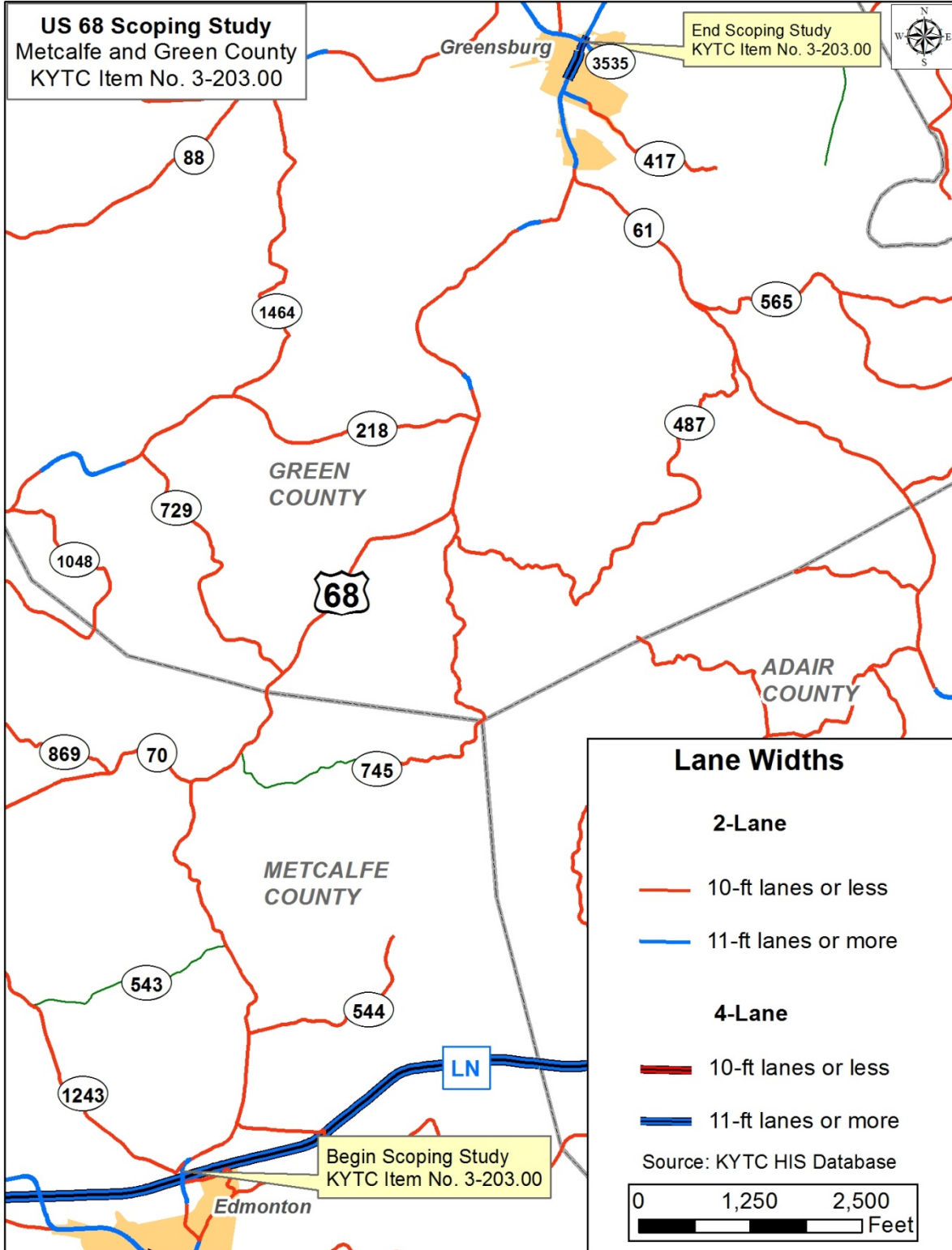


Figure 6: Lane Widths

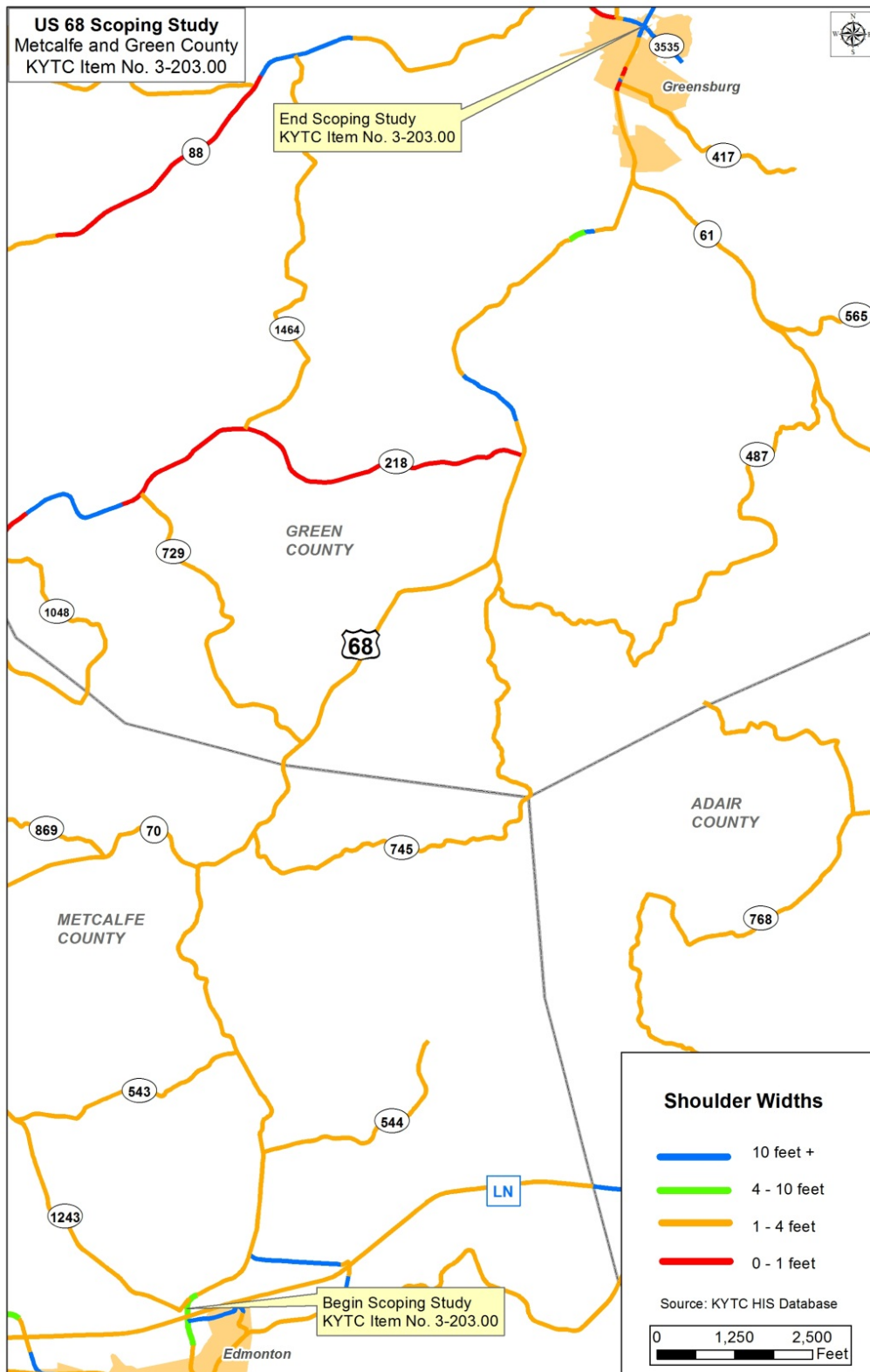


Figure 7: Shoulder Widths

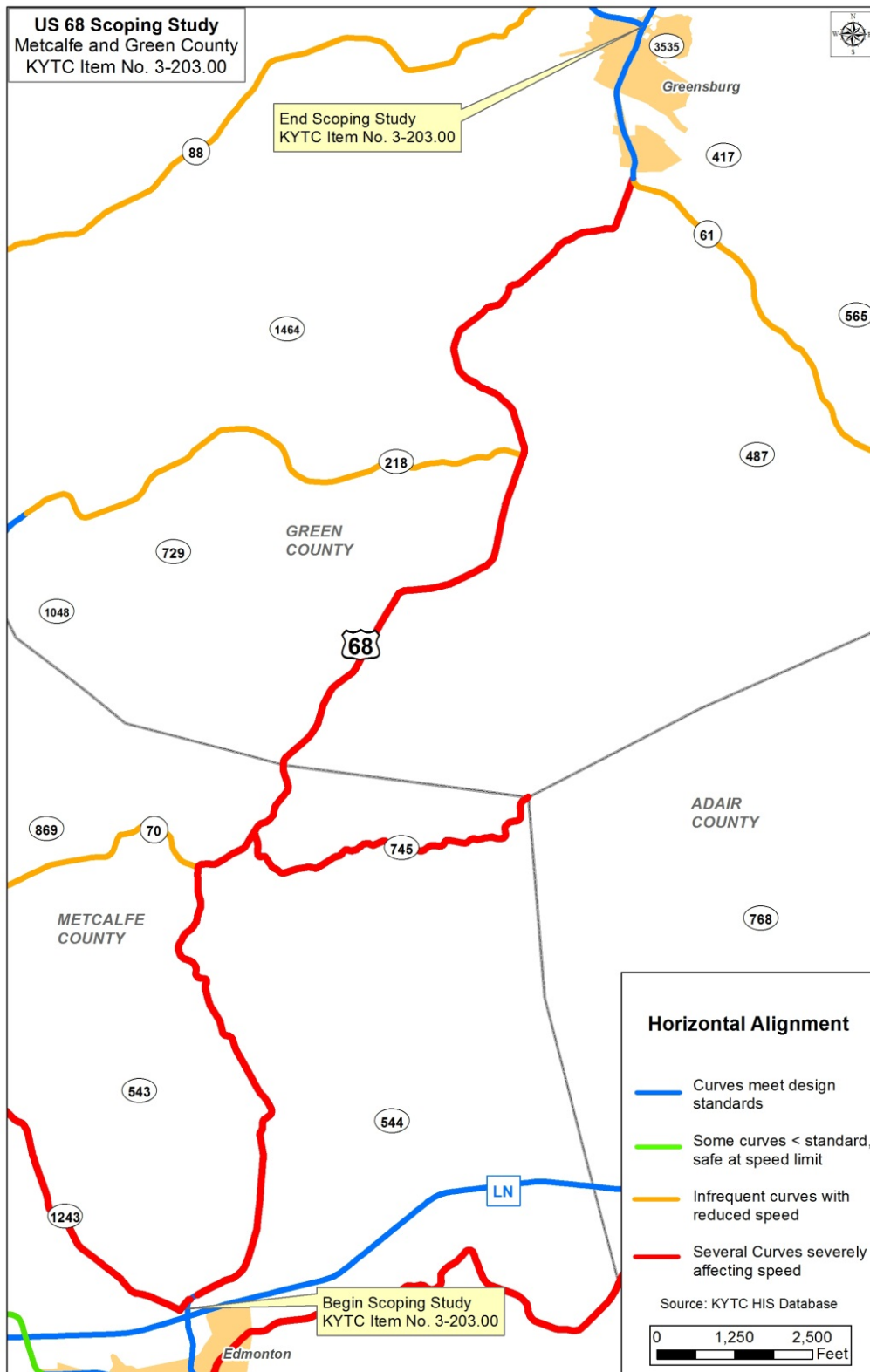


Figure 8: Horizontal Alignment

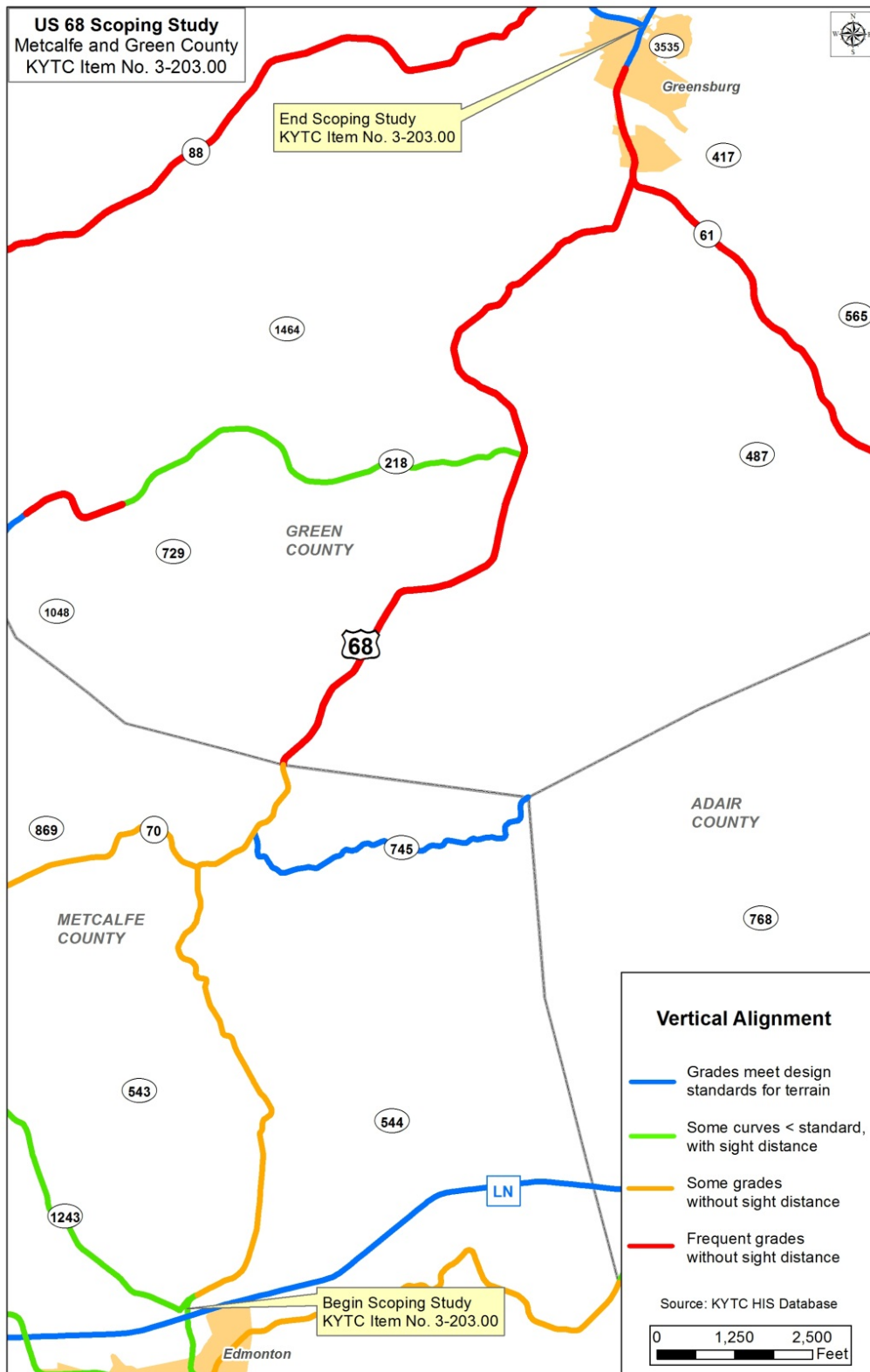


Figure 9: Vertical Alignment



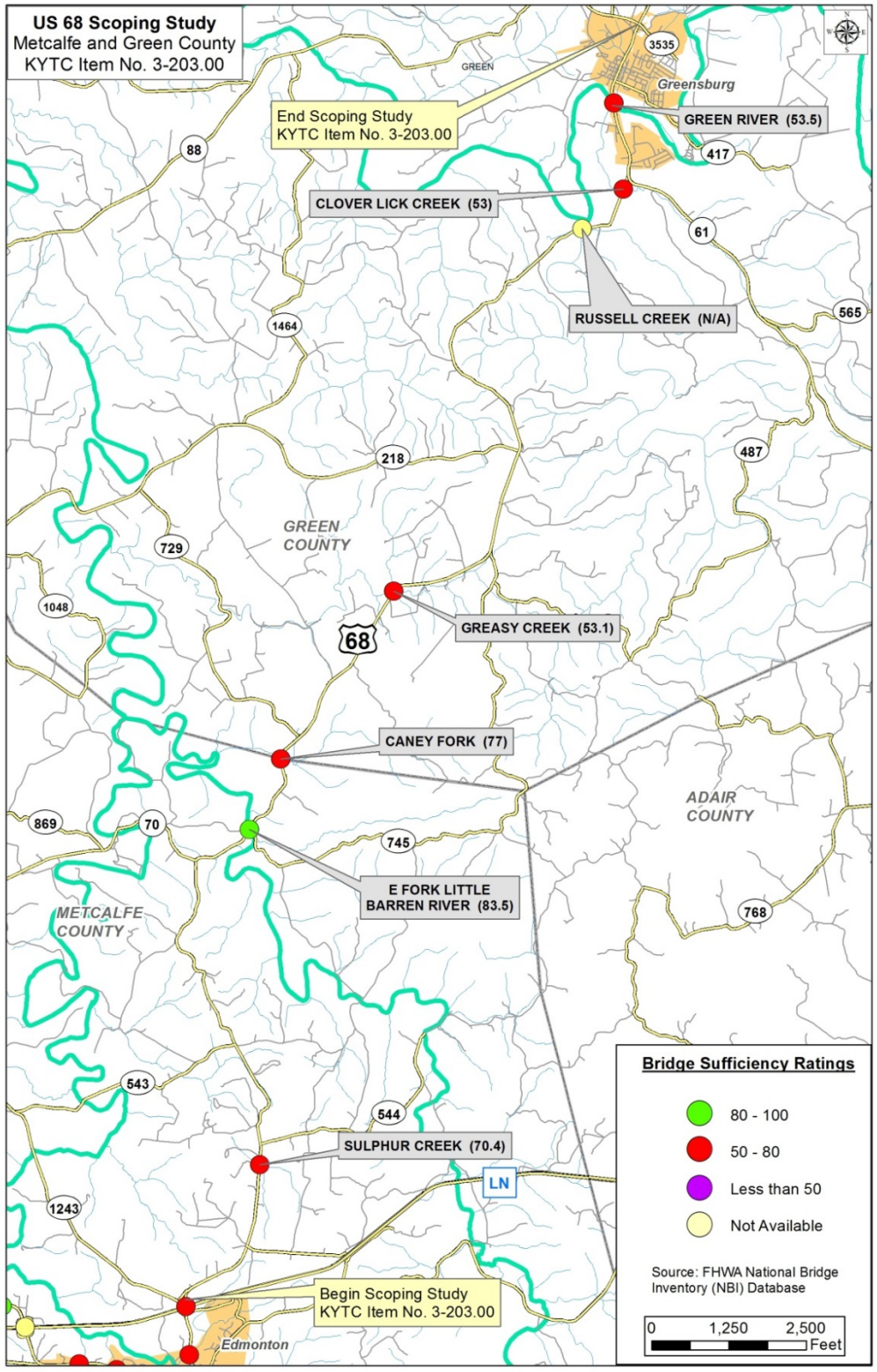


Figure 10: Bridge Locations and Sufficiency Ratings

## 2.3 EXISTING TRAFFIC VOLUMES

Current 2014 average daily traffic (ADT) volumes are shown on **Figure 11** for the study area. Current ADT volumes on US 68 range from 900 vehicles per day (vpd) to 8,700 vpd in Greensburg. Volume-to-Capacity (V/C) ratios were estimated based on the existing counts. The V/C ratio indicates where roadway segments approach or exceed the daily volume of traffic they can accommodate. In the case of US 68, all roadway segments operate at less than full capacity with a V/C less than 0.8 (or 80 percent of capacity).

Level of service (LOS) is a qualitative measure describing operational conditions within a traffic stream, based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience. There are six levels of service, having letter grades A through F. LOS A is associated with free-flow conditions, high freedom to maneuver, and little or no delay. Conditions at or near capacity typically are associated with LOS E. At LOS F, traffic conditions are oversaturated and beyond capacity, with low travel speeds, little or no freedom to maneuver, and high delays. In urban areas, LOS D or better is desirable. In rural areas, LOS C or better is desirable.

Levels of service for different facility types are based on service measures deemed most appropriate for describing operations. For two-lane highways, levels of service are determined based on two parameters – average travel speed and percent time spent following in a platoon. At the facility level, LOS can be computed using methods that involve detailed data and operational parameter input. After performing a LOS analysis using Highway Capacity Manual (HCM) procedures, all segments of US 68 within the study area were found to operate at LOS C or better.

## 2.4 CRASH HISTORY

Historical crash data were collected along existing roadways within the study area for a three-year period between January 1, 2011 and December 31, 2013. **Figure 12** presents a summary of all crashes reported within the Corridor Study area over that time period. Within the US 68 Corridor Study area, there were 67 crashes. Of these, 50 (75 percent) were single vehicle crashes. The crash records and locations are included in **Appendix A**.

A total of 71 crashes, summarized on **Figure 13**, were reported for the US 68 Greensburg Connector project area (between the KY 61 intersection south of Greensburg and the KY 61/KY 3535 intersection to the north) from 2011 to 2013. Angle crashes were the most commonly reported type (24 crashes, 34 percent) followed by rear-end crashes (19 crashes, 27 percent). The crash records and locations are included in **Appendix A**.

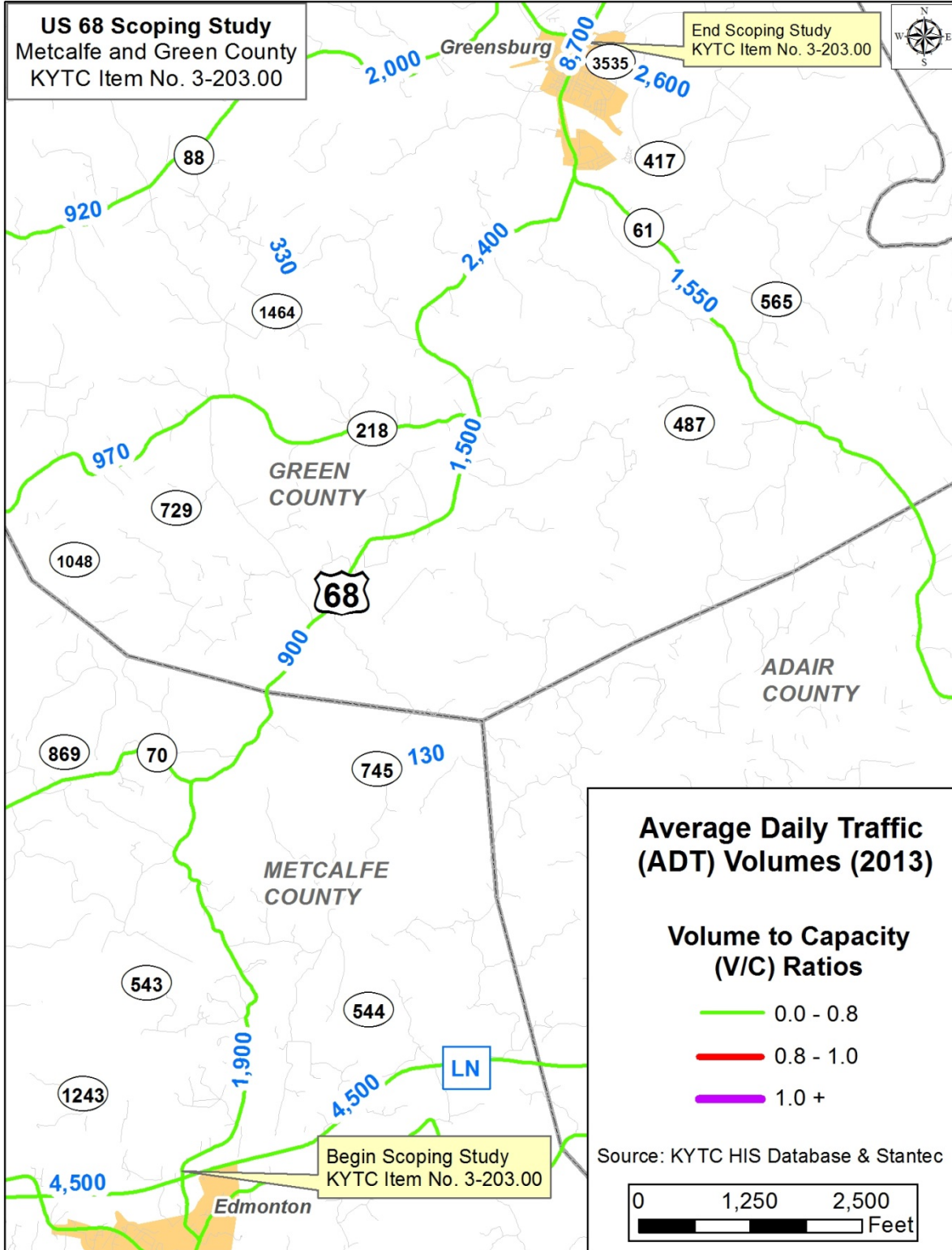


Figure 11: Current Average Daily Traffic (ADT) Volumes



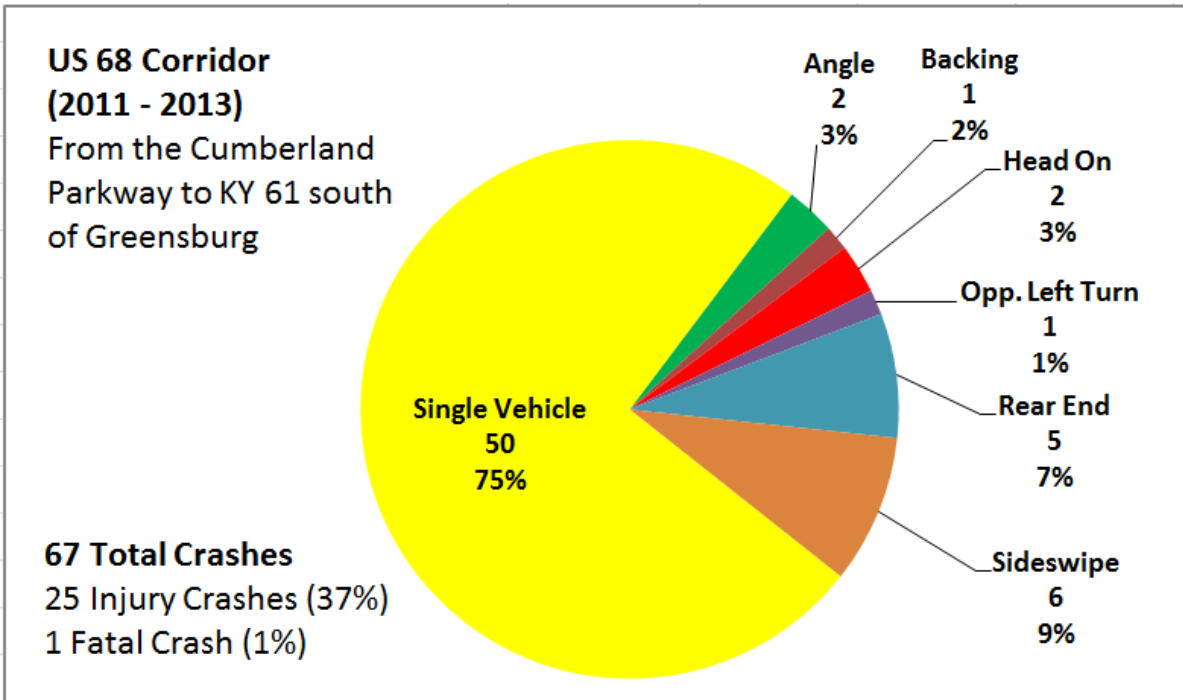


Figure 12: US 68 Corridor Crashes  
(January 2011- December 2013)

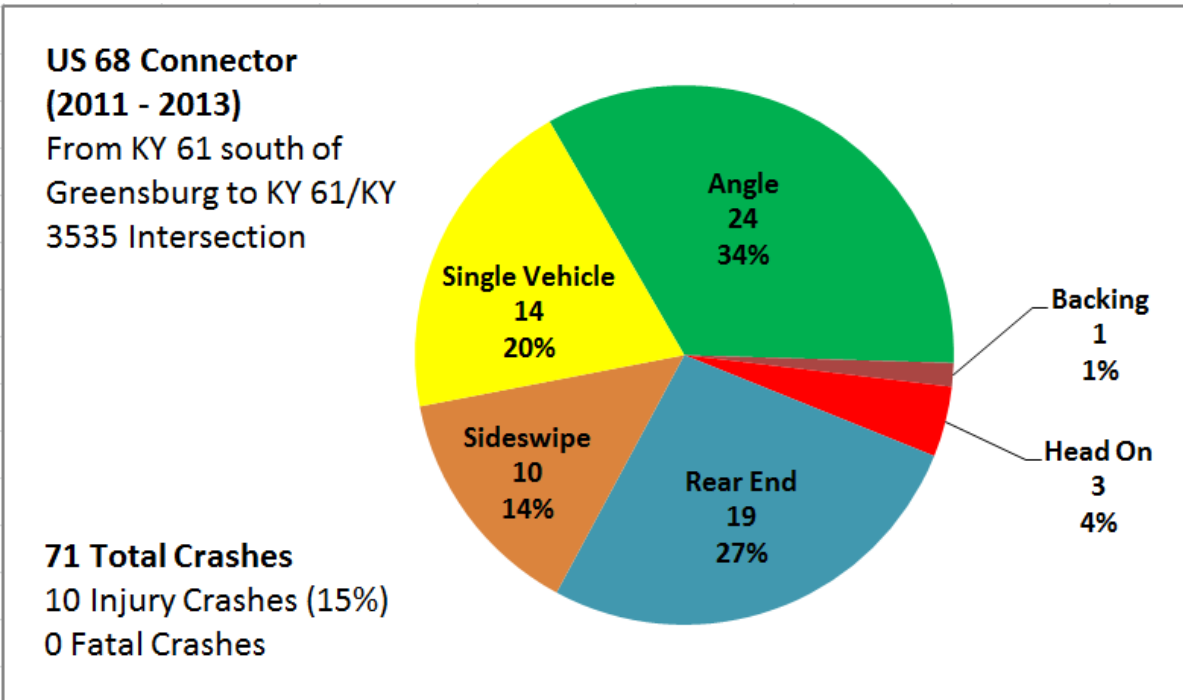


Figure 13: US 68 Greensburg Connector Crashes  
(January 2011- December 2013)

A contributing factor to the single-vehicle crashes could be the deficient horizontal alignment along spots of US 68. **Figure 14** shows the locations of three types of horizontal curves: 1) those that meet 55 mph design speed criteria; 2) those that don't meet 55 mph design speed criteria but do meet the criteria for a 45 mph design speed; and 3) those that do not meet 45 mph design speed criteria. As seen when compared with the left-hand side of the map, the majority of single-vehicle crashes are those curves where the design speed is less than 55 mph. These locations have posted advisory speeds, as they do not meet current design guidelines for 55 mph.

Crashes were geospatially referenced and compared to statewide data to identify locations experiencing above average crash rates. The methodology is defined in the Kentucky Transportation Center research report *Analysis of Traffic Crash Data in Kentucky* (Kentucky Transportation Center, 2013)<sup>2</sup>. As defined in the methodology, segments vary in length and are divided along roadways where geometry or traffic volumes change. For each segment, analysts looked at the number of crashes, traffic volume, rural/urban, number of lanes, and segment length to determine the critical rate factor (CRF). The CRF is one measure of the safety of a road, expressed as a ratio of the crash rate at the location compared to the average crash rate for roadways of the same functional classification throughout the state. CRF also takes into account traffic volume, area type (rural/urban), and the number of lanes. If the CRF is 1.00 or greater, it is assumed that crashes cannot be attributed to random occurrence. A spot analysis along the study routes was conducted also. Spots were defined by observing 0.1-mile sections where crashes were concentrated. Crashes were again geospatially referenced and compared to statewide data to identify locations experiencing above average crash rates. The CRF was again used as a measure of the safety of a particular spot. The CRF analysis is summarized on **Figure 15**.

There are two segments of US 68 that have CRF values that exceed 1.0 and four spots that exceed 1.0. One segment (through downtown Greensburg) and one spot (near the KY 417 intersection) are in the US 68 Greensburg Connector project area. The remaining segments and spots are within the US 68 Corridor project area in Metcalfe County. The section from KY 70 north to the Green County line includes two spots with CRF values over 1.0, and the overall segment also has a CRF over 1.0.

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<sup>2</sup> [http://www.ktc.uky.edu/files/2014/09/KTC\\_14\\_07\\_KSP2\\_13\\_1F\\_.pdf](http://www.ktc.uky.edu/files/2014/09/KTC_14_07_KSP2_13_1F_.pdf)

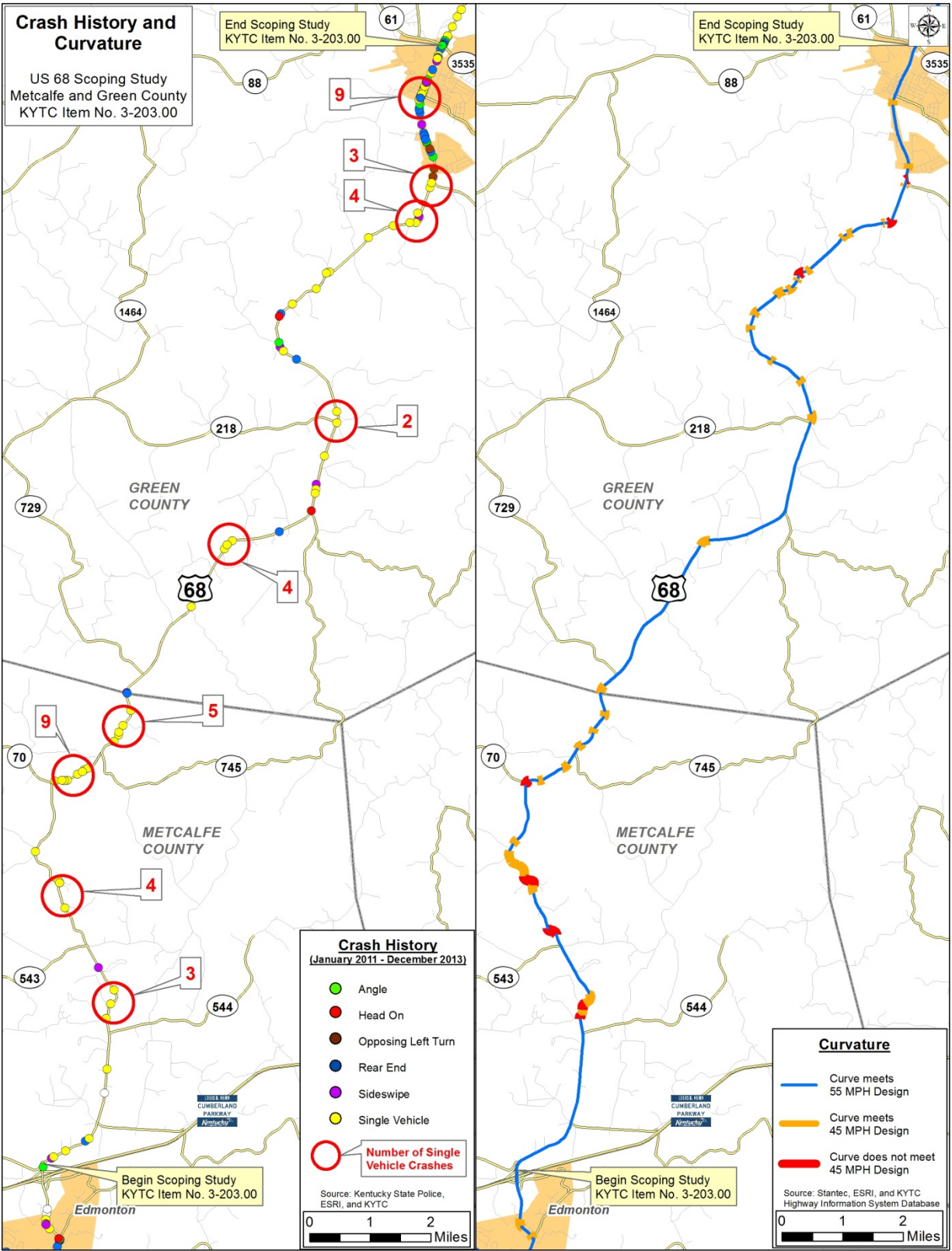


Figure 14: Horizontal Alignment versus Crash History

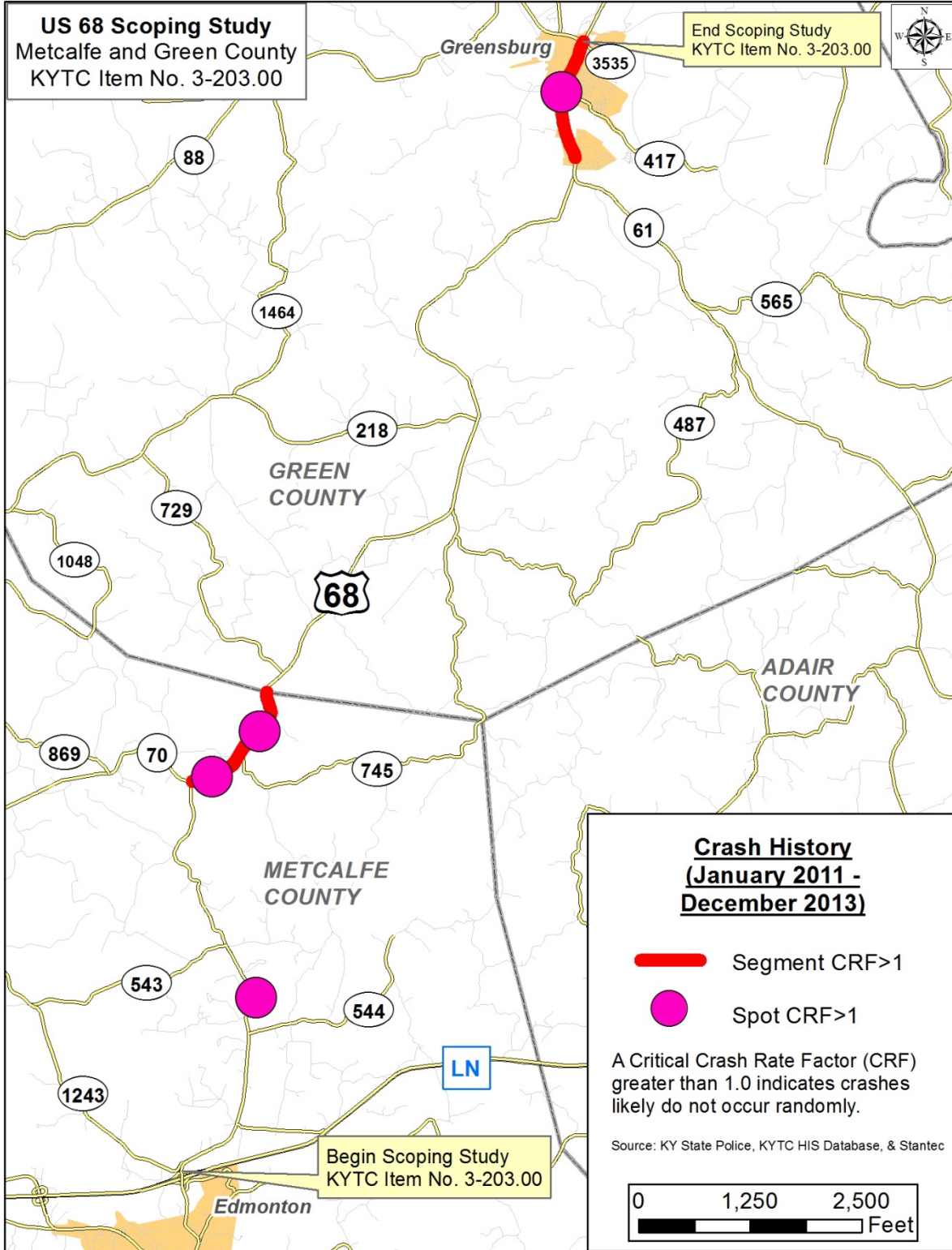


Figure 15: Crash History (2011-2013) and Critical Crash Rate Factors (CRF)

## 3.0 ENVIRONMENTAL OVERVIEW

An environmental overview was performed to determine potential impacts of the proposed project. The complete document is included in **Appendix B**. The following sections discuss both natural and human environment resources present within the study area. This information was assembled from readily available data sources and correspondence with resource agencies; additional, detailed investigations should be undertaken as part of any future project development phases.

### 3.1 NATURAL ENVIRONMENT

Natural environment resources located within the study area include: surface streams; floodplains; wetlands; ponds; groundwater; threatened, endangered and special concern species and habitat; and woodland and terrestrial areas. Information concerning each resource was obtained from publicly available secondary sources, such as maps and Geographic Information Systems (GIS) files, with limited on-site survey and verification. This study presents impacts to farmlands, floodplains, streams and tree habitat which include the Gray Bat.

#### 3.1.1 Public Parks – Section 4(f) and Section 6(f) facilities

Information concerning Public Parks, in particular Section 4(f) and Section 6(f) facilities, was obtained through the National Register of Historic Places and Land and Water Conservation Funds. Several terrestrial areas were identified. These include the Wyatt Jeffries Woods and American Legion Park.

### 3.2 HUMAN ENVIRONMENT

Through review of secondary source information and field reconnaissance, potentially sensitive resources were identified in the study area. These resources include potential relocation of residential and commercial properties as well as a loss of agricultural revenue for land owners. During construction, negative impacts to ambient air quality are not expected, but noise abatement measures may be necessary. Several hazardous material/underground storage tanks were identified and are listed in Appendix B.

#### 3.2.1 Archaeological and Cultural Historic Resources

The Environmental Overview identified numerous cultural historic resources that are currently listed or potentially eligible for listing in the National Register of Historic Places (NRHP). It is noted that a large portion of downtown Greensburg is listed as an historic district. Several archaeological sites have been recorded within the study area.

### 3.3 THREATENED AND ENDANGERED SPECIES

Information concerning federally endangered, threatened and special concern species and unique habitats in the project vicinity was obtained from the United States Fish and Wildlife



Service (USFWS). Several endangered species were identified. These include the Diamond Darter, mussel populations, Indiana Bat and Grey Bat.

### 3.4 GEOTECHNICAL OVERVIEW

The KYTC Division of Structural Design, Geotechnical Branch provided a Geotechnical Overview for the study area, a copy of which is found in **Appendix C**. The review noted the study area is well known for its rolling terrain and red clay soils. Its alluvial and limestone deposits are examples of Karst behavior. Available mapping indicates numerous sinkholes and springs within the study area.

Bridges in the study area are generally founded on shallow or deep foundations such as spread footings on bedrock or steel friction piles. The foundations in the study area are in Karst areas, which can cause problems for structures. Smaller structures such as retaining walls and box culverts are commonly founded on shallow foundations. Native soils in the area are generally suitable for embankment construction, accommodating embankments to a height of 60 feet with 2:1 side slopes if proper compaction methods are used. However, in no case should soil cuts be steeper than 2:1. California Bearing Ratio (CBR) values used in pavement design are generally low for subgrades in the area, ranging from two to five. Chemical modification of subgrade or the use of rock roadbed is sometimes used in the area but has been problematic due to the large cobbles and boulders in the soil.

### 3.5 ENVIRONMENTAL JUSTICE OVERVIEW

Issues pertaining to minority, elderly, disability and low income (persons living in poverty) populations in the Metcalfe County portion of the study area were evaluated and documented by the Barren River Area Development District (BRADD) in a report entitled *Environmental Justice Review – U.S. 68 Scoping Study from Louie B. Nunn Cumberland Parkway to Metcalfe/Green County Border*. A copy of the report is found in **Appendix D**.

The report concluded that, based on evaluation of data obtained from the U.S. Census Bureau for race, ethnicity, age, income and disability, the Environmental Justice (EJ) populations were elevated for those over the age of 65, those disabled and those below poverty level in Metcalfe County in Census Tract 9601. Also there were heavy concentrations of Hispanic or Latino (ethnic minorities) populations in this Census Tract.

One Census tract (9601) was noted as having an elevated percentage of ethnic minorities, elderly population, and disabled population compared to Metcalfe County as a whole and should receive additional consideration during subsequent project phases.

A second Environmental Justice review was completed by the *Lake Cumberland Area Development District (LCADD)* for populations in the Green County portion of the study area. Sensitive populations were evaluated and documented in a report entitled *Environmental Justice Review – U.S. 68 Scoping Study from Metcalfe/Green County Border to KY 61*. A copy of the report can also be found in **Appendix D**.

The report concluded that, based on evaluation of data obtained from the U.S. Census Bureau for race, ethnicity, age, income and disability, the Environmental Justice (EJ) populations were elevated for those over the age of 65, those disabled and those below poverty level in Green County. Also there were significant concentrations of Hispanic or Latino populations and should receive additional consideration during subsequent project phases. If applicable, a more detailed analysis will be required under the National Environmental Policy Act (NEPA).

### 3.6 RESOURCE AGENCY COORDINATION

Early in the project development process, the KYTC Division of Planning sent letters to several agencies asking for input and comments on the Scoping Study to address any concerns. Responses were received from 10 agencies and their comments are included in **Appendix E**. A summary of the responses, in the order they were received, follows:

- Kentucky Division of Water – Water and sewer lines are present in the study area and should be considered during design and construction. Additionally, local utilities should be contacted. An Individual Water Quality Certification (WQC) may be necessary. The KYTC should strive to reduce stream and wetland impacts.
- Education and Workforce Development Cabinet, Department of Education – No impacts are anticipated, but additional consultation with the Metcalfe County School District and the Green County School District is recommended.
- Metcalfe County Board of Education – The proposed project involves two locations that are critical to bus safety. One is Foundation Church Road and the other is the intersection of KY 70 and US 68.
- United States Fish and Wildlife Service – It is recommended that project plans be developed to avoid impacting wetland areas and/or streams. The United States Army Corps of Engineers (USACE) should be contacted to assist in determining if wetlands or other jurisdictional waters are present or if a permit is required. Federal-listed species may be present within the project area.
- Natural Resources Conservation Service (NRCS) – The planning study should consider impacts of the proposed highway on prime and unique farmland and state and locally important farmland.
- Kentucky Department of Fish and Wildlife Resources – The study area contains Grey Bat habitat areas as well as several mussel conservation areas. Impacts to these areas should be avoided to the extent practical. The proposed project crosses the Green River and Russell Creek which are an Outstanding State Resource Water and Exceptional Use Water respectively.

- Kentucky Department for Environmental Protection:
  - Division of Water – Assure that all appropriate floodplain, 401/404, and stormwater permits are obtained. The Green River and Russell Creek both are Outstanding State Resource Waters. Best management practices shall be utilized to reduce runoff into surface waters. If the widening or rerouting crosses any water or monitoring wells, a Kentucky certified driller will need to properly abandon the wells before construction proceeds.
  - Division of Air Quality – The Division offered suggestions on how this project can help maintain compliance with the National Ambient Air Quality Standards, including the use of alternatively fueled equipment, emission controls, and reduced idling time.
- Kentucky Heritage Council – No major concerns with the proposed project.
- Federal Aviation Administration – No impacts are anticipated.

## 4.0 INITIAL CONCEPT DEVELOPMENT

### 4.1 US 68 GREENSBURG CONNECTOR

Multiple constraints were revealed while exploring potential concepts for a new or improved connection through or around Greensburg, including the following:

- There are properties listed on the National Register of Historic Places (NRHP) as well as a historic district in downtown Greensburg which limit opportunities to improve the existing route or to construct alternatives through Greensburg.
- A water treatment plant is under design north of the Green River, near the south end of Depot Street in Greensburg, limiting the opportunity for an alternative east of the existing alignment.
- There is a cluster of schools east of downtown, near Carlisle Avenue and Brummel Avenue.

Initially, six preliminary build concepts were considered for the US 68 Greensburg Connector. Three concepts included construction of a new facility southeast of Greensburg, and three followed or paralleled the existing corridor near downtown. Early in the study, the Project Team eliminated a concept that would have provided a new alignment for US 68 east of downtown Greensburg (roughly in the Depot Street corridor) as impacts to historic properties on Depot Street and impacts to the proposed water treatment plant were unavoidable. The five remaining build concepts are displayed in **Figure 16** and described in **Table 3**. The five concepts include two alternatives along the existing corridor (Orange and Green) and three alternatives (Red, Purple, and Yellow) along a new route southeast of Greensburg.



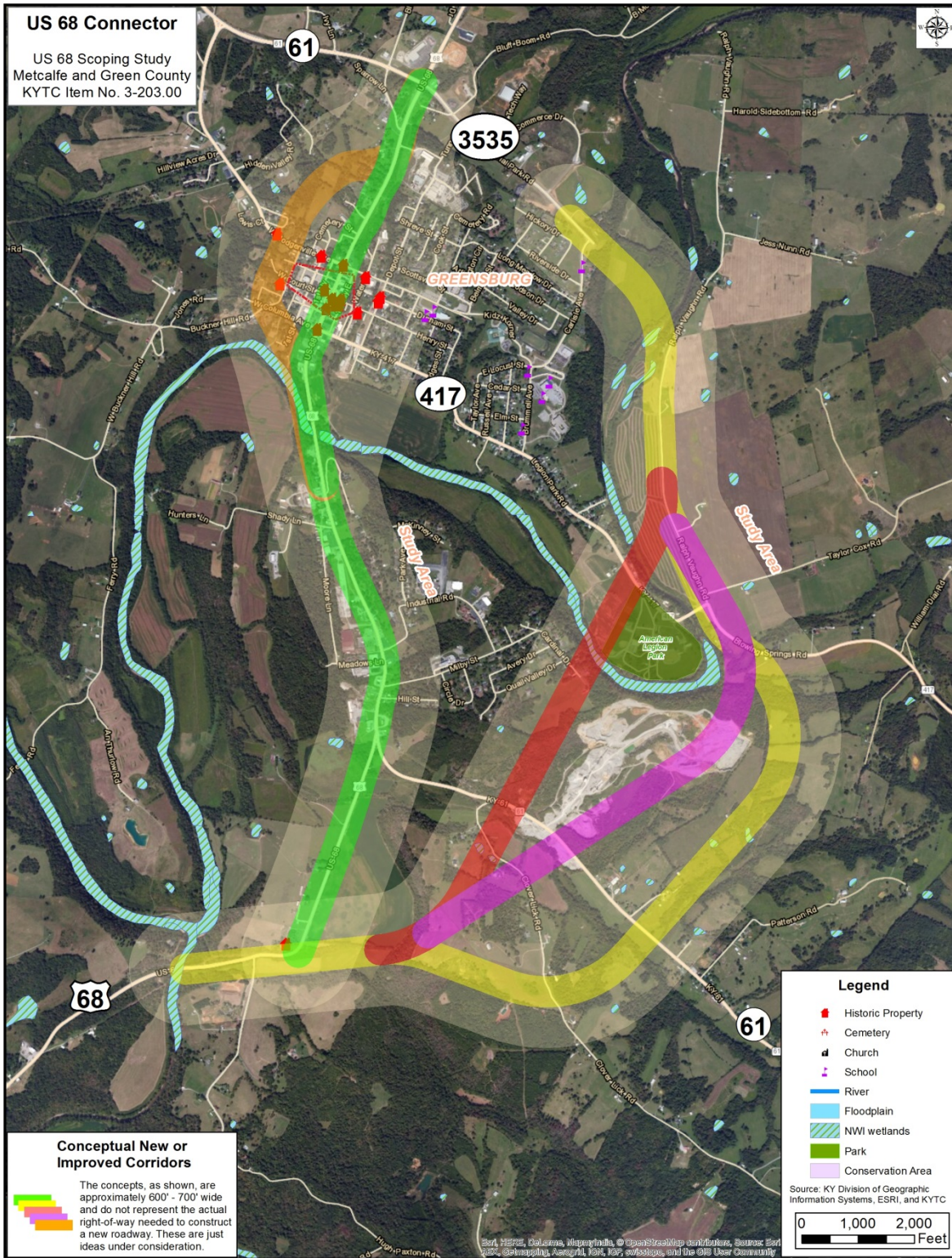


Figure 16: Preliminary US 68 Greensburg Connector Concepts

Alternative	Description	Length (miles)	Bridges
Orange	Minor improvements along existing US 68, including replacement bridge over the Green River. Includes a western detour around downtown Greensburg.	3.3	1-700' (Green River)
Green	Minor improvements along existing US 68, including replacement bridge over the Green River.	3.1	1-700' (Green River)
Red	New connector from Vaughn Curve crossing the Green River adjacent to American Legion Park and again southeast of Industrial Park Road (KY 3535).	3.6	1-200' (KY 61) 1-2,500' (Green River and Park) 1-450' (Green River)
Purple	New connector from the Vaughn Curve through the eastern portion of the Nally & Hayden Quarry and crossing the Green River southeast of Industrial Park Road (KY 3535).	3.9	1-200' (KY 61) 1-450' (Green River)
Yellow	New connector from Vaughn Curve crossing KY 61 about 1/4 mile north of Patterson Road and crossing the Green River southeast of Industrial Park Road (KY 3535).	4.5	1-200' (KY 61) 1-450' (Green River)

**Table 4: US 68 Greensburg Connector Preliminary Concepts**

The US 68 Greensburg Connector Project is unique as there is no true No-Build/Do Nothing alternative. The existing US 68 bridge over the Green River has a low sufficiency rating (53.5) and at some point in the near future will be eligible for federal replacement funds. Thus, it is assumed that even if no new construction is pursued with this project, the existing US 68 bridge still will require replacement. Both the Orange and Green alternatives include a new crossing over the Green River in the vicinity of the existing bridge (the new structure would be built while the existing is used to maintain traffic.) At this level, it is assumed the entire Green River floodplain width would be traversed on structure. The Red alternative would require two crossings of the Green River, one near Legion Park and one across KY 61. The Purple and Yellow alternatives require only one crossing of the Green River. At the preliminary stage, it was assumed that KY 61 would be crossed by a bridge, but this assumption was modified as discussed later in this report.

**4.2 US 68 CORRIDOR**

The Project Team decided that the focus of the US 68 Corridor Study should be improving the corridor using a number of spot improvements, but that complete reconstruction should be considered as an alternative and presented to the public for feedback. It was determined that the complete reconstruction of the 20 miles of the US 68 corridor was likely not viable because of the high cost of construction (exceeding \$100 Million) and the likely right-of-way impacts. Spot improvements generally include a selection of lower cost and “quick fix” improvements to



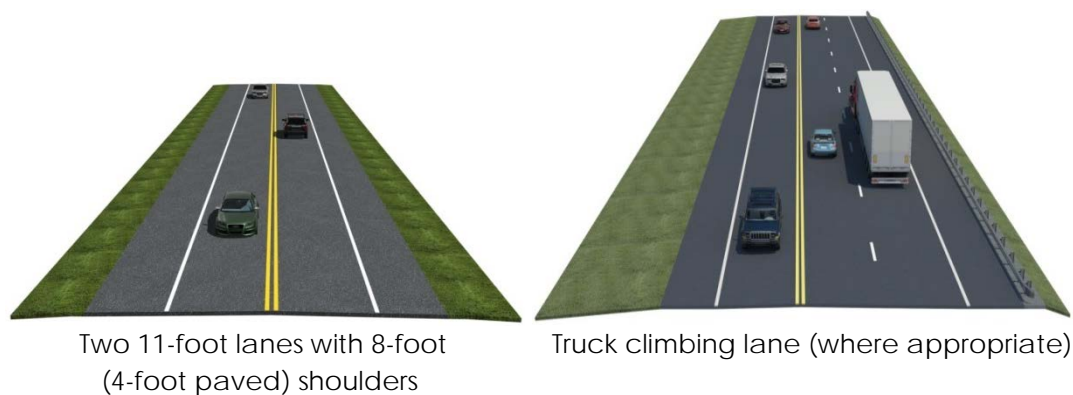


address existing issues related to both operations and safety that can be constructed as funding becomes available.

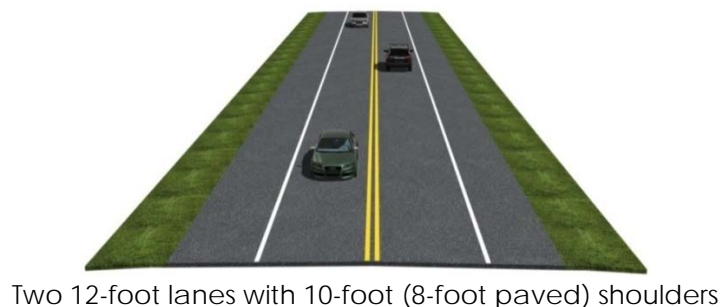
Before developing an initial set of spot improvement concepts, the Project Team first met with local officials and other public stakeholders to identify concerns and possible improvement locations. After a discussion of the existing conditions and some obvious concerns related to the corridor, spot improvements were identified where traffic or crash data suggest improvements are warranted as well as locations suggested by stakeholders or members of the public.

#### 4.2.1 TYPICAL SECTIONS

The Project Team considered several possible typical sections for both the US 68 Greensburg Connector and the US 68 Corridor Project, ultimately deciding to focus on options that would accommodate driver expectancy and better suit adjacent sections of roadway. The US 68 Corridor includes two options, shown in **Figure 17**. The first option, which would be considered in most spot improvement locations, is a two-lane section (one 11-foot lane per direction) with 8-foot-wide shoulders, four feet of which would be paved. The second option would consist of similar lane and shoulder widths but would include a truck climbing or passing lane where appropriate. The proposed typical section for the US 68 Greensburg Connector, shown in **Figure 18**, is based on the existing typical section for KY 3535. It is a two-lane section (one 12-foot wide lane per direction) with 10-foot (8-foot paved) outside shoulders.



**Figure 17: Conceptual Typical Sections for US 68 Corridor**



**Figure 18: Conceptual Typical Section for US 68 Greensburg Connector**

## 5.0 INITIAL PUBLIC & STAKEHOLDER COORDINATION

Community outreach helped guide the US 68 Scoping Study, particularly in identifying potential issues and developing alternatives. A two-step process was used that involved early meetings with project stakeholders and local officials, followed by meetings with the general public. Summaries for all project meetings, including Project Team meetings, are found in **Appendix F**.

### 5.1.1 Local Officials & Stakeholders' Meeting

A group consisting of project stakeholders and local officials was established to solicit feedback at critical stages of the study. **Table 4** includes a list of the stakeholders and local officials that attended meetings and participated in the study.

Committee Member	Title / Representing
Adam Abell	Nally & Haydon
Andrew Parson	Green County Magistrate
Barry D. Gilley	Metcalf County Attorney
Bill Durham	Green County Deputy Judge Executive
Charles Judd	Green County Magistrate
David Haydon	Nally & Haydon
David Thompson	Edmonton State Bank
Dean Rowe	Dile Realty
Donna Carman	Jane Todd Crawford Hospital
Greg Wilson	Metcalf County Judge Executive
Howard Dickson	City of Edmonton
Howard Garrett	Mayor of Edmonton
Jody Curry	Jody Curry Used Cars
John Haydon	Nally & Haydon
John Thompson	Edmonton State Bank
Lawrence Gupton	Greensburg - Green County Fire & Rescue
Lisle Cheatham	City of Greensburg
Mark A. Linkous	Edmonton - Metcalfe County Industrial Development Authority
Mike Close	Atmos Energy
Misty N. Edwards	Green County Judge Executive
Representative Bart Rowland	Kentucky 53rd District
Representative Terry Mills	Kentucky 24th District
Sean Curry	Green County PVA
Senator David P. Givens	Kentucky 9th District
Sharon B. Howard	Metcalf County Attorney
Terry O'Daniel	Nally & Hayden
Tim Darnell	Green County Magistrate
Rodney Robertson	Green County Foreman

**Table 5: US 68 Scoping Study Local Officials/Stakeholder Committee Members**

The purpose of this early round of meetings was to provide a brief overview of the study, to get feedback on needed improvements, and to share some of the information that would be presented at public meetings early in 2014. The first meeting was held the morning of December 19<sup>th</sup>, 2013 at the Metcalfe County Fiscal Court and the second was held later that afternoon in the Greensburg Baptist Church Christian Life Center. Excluding the Project Team, there were 13 and 16 individuals in attendance at each meeting, respectively. A questionnaire was provided to solicit input and completed questionnaires were submitted by a total of sixteen attendees. Each of the local officials groups felt both the US 68 Greensburg Connector and Corridor were needed projects. Some of the top transportation issues mentioned included sharp curves, narrow shoulders and lanes, and safety. Complete results are shown in **Appendix F**.

Over the course of the first two meetings, attendees identified ten potential spot improvements for the US 68 Corridor Project. **Figure 19** shows these locations in more detail.

### 5.1.2 Public Meetings

On February 10<sup>th</sup> and 11<sup>th</sup>, 2014, the Project Team held the first round of public meetings. The first was at Sulphur Well Community Center in Metcalfe County and the second was at Greensburg Baptist Church in Green County. The purpose of these meetings was to provide information about the study, discuss some very preliminary conceptual alternatives, and to solicit input from the public. The meetings were held in an open house format, with a formal presentation to explain the project and the information on display. Attendees were provided a project handout and questionnaire. The Project Team was available to answer questions and discuss issues. Over the course of the two evenings, 158 members of the public attended and 41 comment sheets were submitted. An online version of the public meeting questionnaire was made available until March 3, 2014. A total of 19 electronic surveys were submitted.

Meeting attendees suggested issues that need to be addressed which include sharp curves, a lack of passing opportunities, and safety of the roadway. An overwhelming majority of survey respondents indicated both the US 68 Corridor and US 68 Greensburg Connector Project are needed. More results from the survey are in **Appendix F**.

The public identified five general segments of US 68 for reconstruction and/or realignment, as shown in **Figure 20**. Together these locations and the spot improvements identified by the local officials served as the starting point for the development of conceptual improvements for the US 68 Corridor Project.



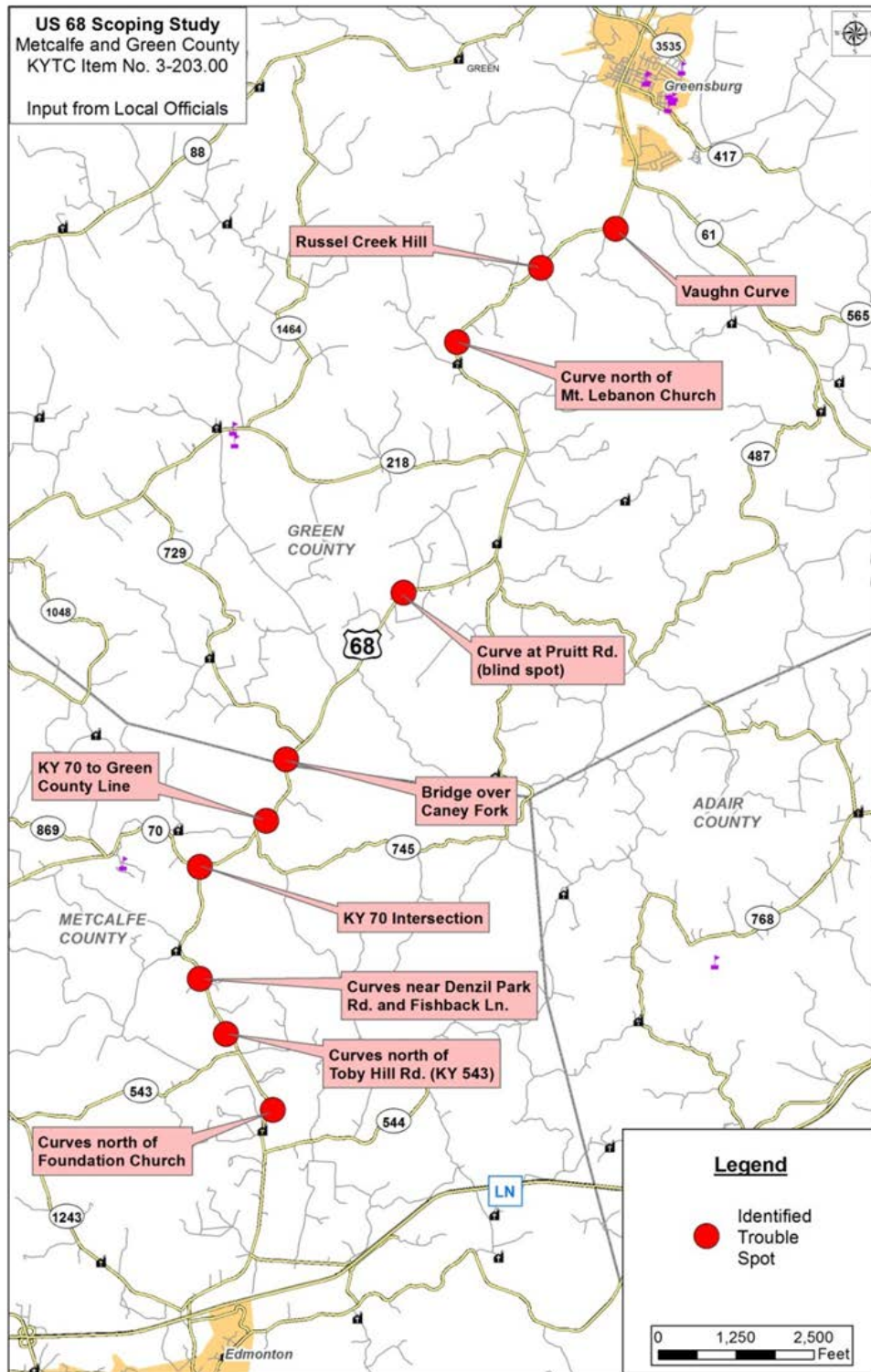


Figure 19: Spot Improvements Suggested by Local Officials

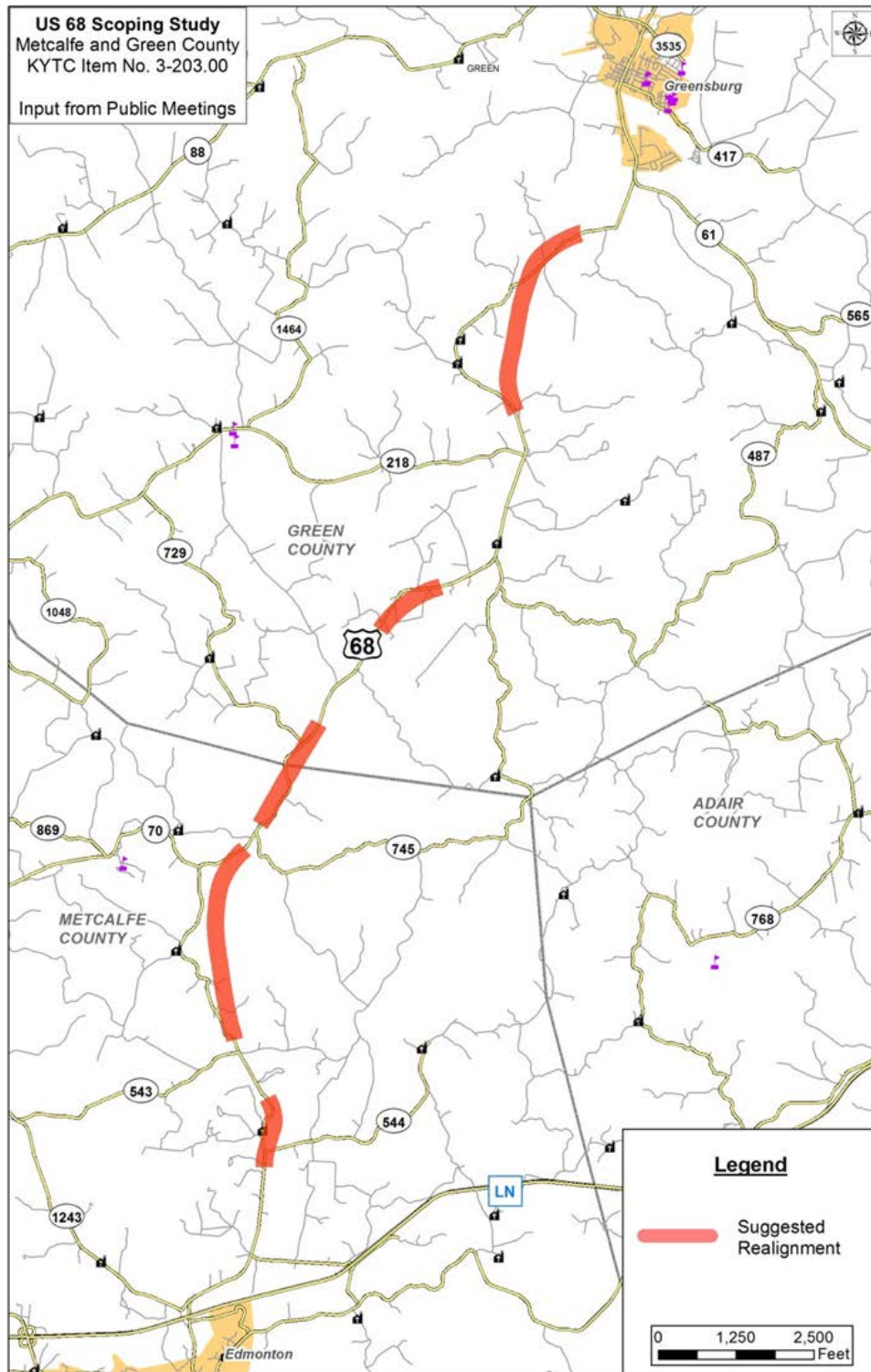


Figure 20: Input from First Public Meeting – US 68 Corridor REVISED CONCEPTS

## 5.2 US 68 GREENSBURG CONNECTOR

Following the first round of public meetings, a second Project Team meeting was held in March 2014. The Project Team eliminated the Orange alternative because impacts to historic properties near Greensburg could not be avoided with this concept. The Red alternative was also eliminated as it would require three crossings over the Green River, resulting in a significantly greater expense. The Project Team decided that the new route alternatives for the US 68 Greensburg Connector Project should focus on providing an at-grade intersection with KY 61, balancing the earthwork, and minimizing costs. The Yellow and Purple alternatives could provide this at-grade intersection with KY 61. The results of the second Project Team meeting, including the revised concepts, are described in more detail in **Table 5**.

Alternative	Description	Length (miles)	Bridges	Approx. Construction Cost (Millions \$)	Project Team Preliminary Recommendation
Orange	Minor improvements along existing US 68, including replacement bridge over the Green River. Includes a western detour around downtown Greensburg.	3.3	1 - 700' (Green River)	\$15 - \$20	Eliminate from further consideration
Green	Minor improvements along existing US 68, including replacement bridge over the Green River.	1.1	1 - 700' (Green River)	\$10 - \$15	Carry concept forward
Red	New connector from Vaughn Curve crossing the Green River adjacent to American Legion Park and again southeast of Industrial Park Road (KY 3535).	3.6	1 - 200' (KY 61) 1 - 2,500' (Green River and Park) 1 - 450' (Green River)	\$40 - \$45	Eliminate from further consideration
Purple	New connector from Vaughn Curve through the eastern portion of the Nally & Hayden Quarry and crossing the Green River southeast of Industrial Park Road (KY 3535).	3.9	1 - 200' (KY 61) 1 - 450' (Green River)	\$24 - \$28	Carry concept forward
Yellow	New connector from Vaughn Curve, crossing KY 61 about 1/4-mile north of Patterson Road and crossing the Green River southeast of Industrial Park Road (KY 3535).	4.5	1 - 100' (KY 61) 1 - 425' (Green River)	\$30	Carry concept forward

**Table 6: US 68 Greensburg Connector – Revised Concepts**

Once again, the Green alternative includes replacing the bridge over the Green River and providing shoulder improvements along portions of the route south of downtown. The initial concept was shortened so that improvements would not be implemented through the downtown historic district. The Purple and Yellow alternatives are the eastern-most concepts and would provide an at-grade intersection with KY 61.

The Project Team discussed the likelihood that should either the Purple or Yellow alternative be pursued, they would be constructed in three phases with the first phase between KY 61 and KY 417 (Legion Park Road). This is the only segment that could stand on its own as a segment of independent utility. It would satisfy a portion of the Purpose and Need for the project by improving connectivity and mobility in and through Greensburg by providing another crossing over the Green River that is completely on the state-maintained system. Phase 2 would be from KY 417 to KY 3535 and Phase 3 would be from US 68 near Vaughn Curve to KY 61. Option A, shown on **Figure 21**, displays all three phases and Option B, shown on **Figure 22**, includes only the first two phases. Construction of Phase 3 may not be warranted, as there are improvements under design to address issues affecting the operation and safety of the US 68 intersection with KY 61 under the KYTC Item No. 4- 8603.00 project.

**Table 6** displays the estimated costs for the US 68 Greensburg Connector alternatives. These costs are based on estimated earthwork and paving quantities developed using the best mapping available. This includes a combination of survey information available from the KYTC Item No. 4-8603.00 projects and from the United States Geological Survey (USGS) mapping. A 20 percent contingency is included to account for unknowns and drainage costs as a percentage of the overall construction cost. KYTC District 3 and District 4 staff provided the right-of-way and utility estimates.



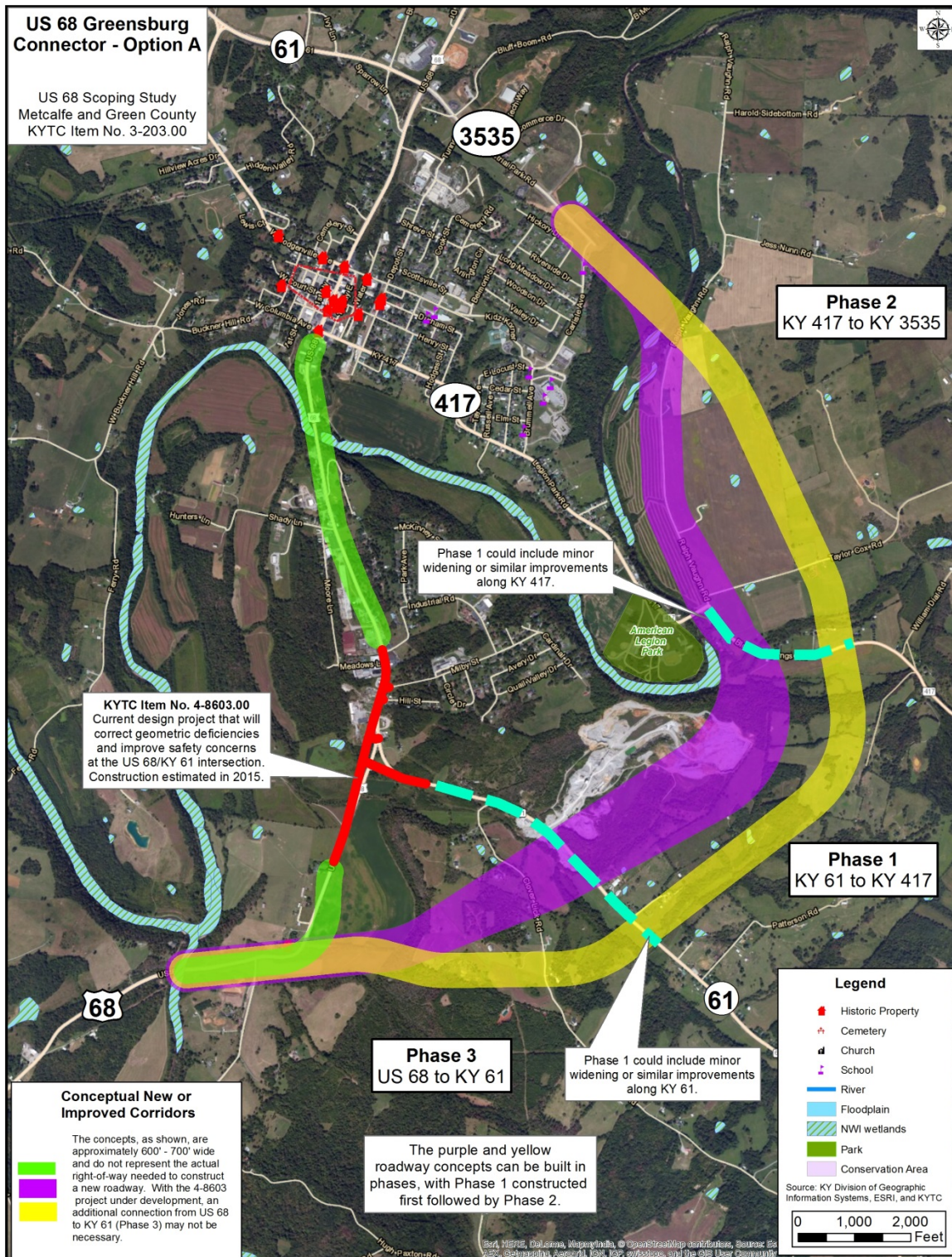


Figure 21: US 68 Greensburg Connector – Phasing Option A



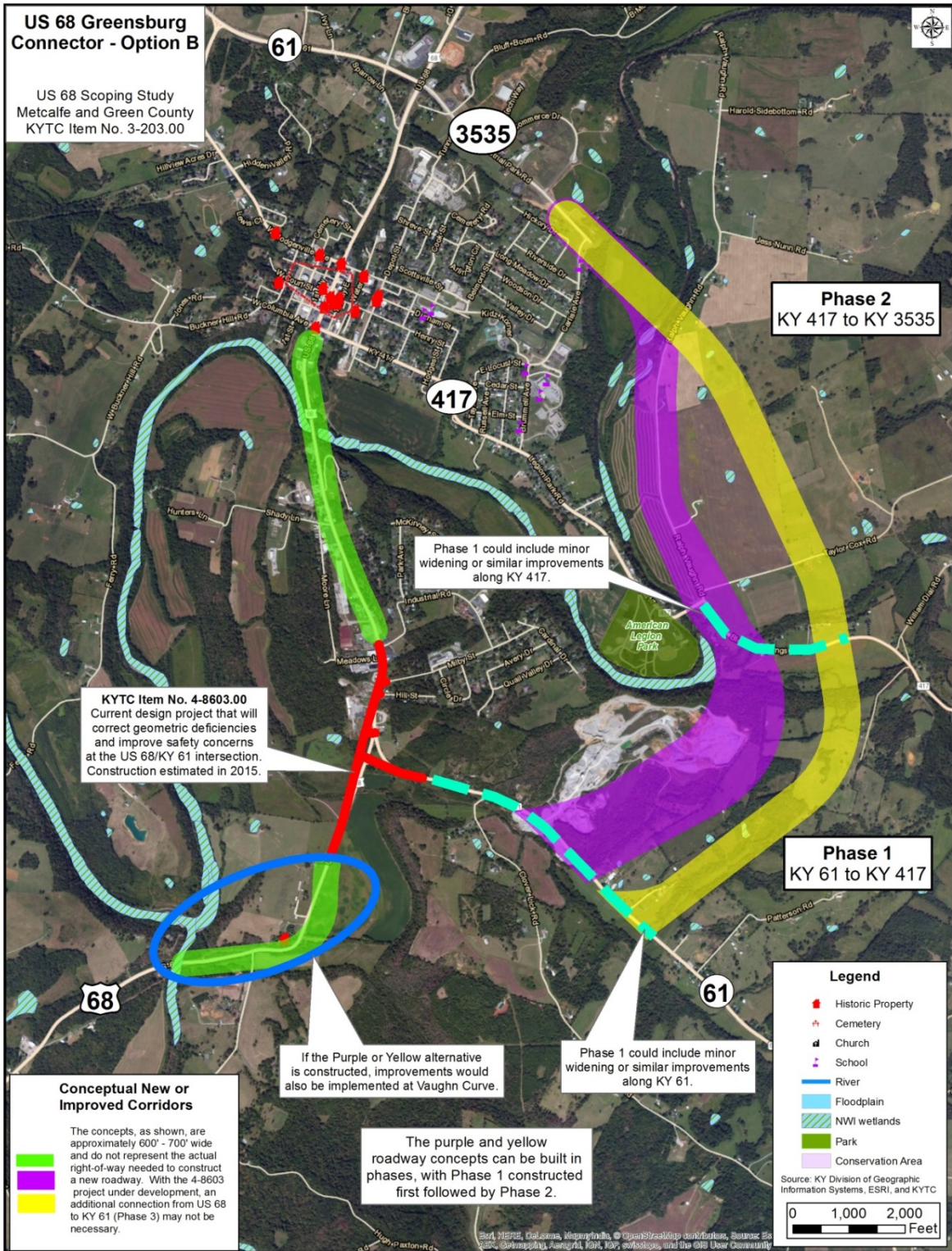


Figure 22: US 68 Greensburg Connector – Phasing Option B

Alternative Corridor	Length (miles)	Project Phase	Total for all Phases	Phase 1	Phase 2	Phase 3
			(\$ Millions, unless noted)	(KY 61 to KY 417)	(KY 417 to KY 3535)	(US 68 to KY 61)
Green	1.6	Right-of-way	\$700,000	N/A		
		Utilities	\$1.72			
		Construction	\$9.7-12.0			
		<b>Total</b>	<b>\$12.1 to \$14.4</b>			
Purple	4.6	Right-of-way	3.9-6.2	\$1.1 - \$3.1	\$1.5 - \$1.75	\$1.3
		Utilities	\$2.60	\$765,000	\$985,000	\$890,000
		Construction	\$26.2 - \$33.7	\$7.8 - \$10.3	\$11.4 - 13.9	\$7.0 - \$9.5
		<b>Total</b>	<b>\$32 to \$42.5</b>	<b>\$9.7 to \$14.2</b>	<b>\$13.9 to \$16.6</b>	<b>\$9.2 to \$11.7</b>
Yellow	4.6	Right-of-way	\$5	\$1.2	\$1.7	\$1.6
		Utilities	\$3.10	\$845,000	\$1.2	\$1.1
		Construction	\$25.90	\$6.7	\$10.1	\$9.1
		<b>Total</b>	<b>\$33.50</b>	<b>\$8.7</b>	<b>\$13.0</b>	<b>\$11.8</b>

Table 7: Estimated Costs for the US 68 Greensburg Connector Alternatives

### 5.3 US 68 CORRIDOR

The conceptual spot improvements for the US 68 Corridor, shown in **Figure 23**, were developed to address issues identified by the Project Team or at the suggestion of stakeholders or members of the public. The descriptions of each conceptual spot improvement with an explanation of the recommended improvements including cost estimates are shown in the following section.



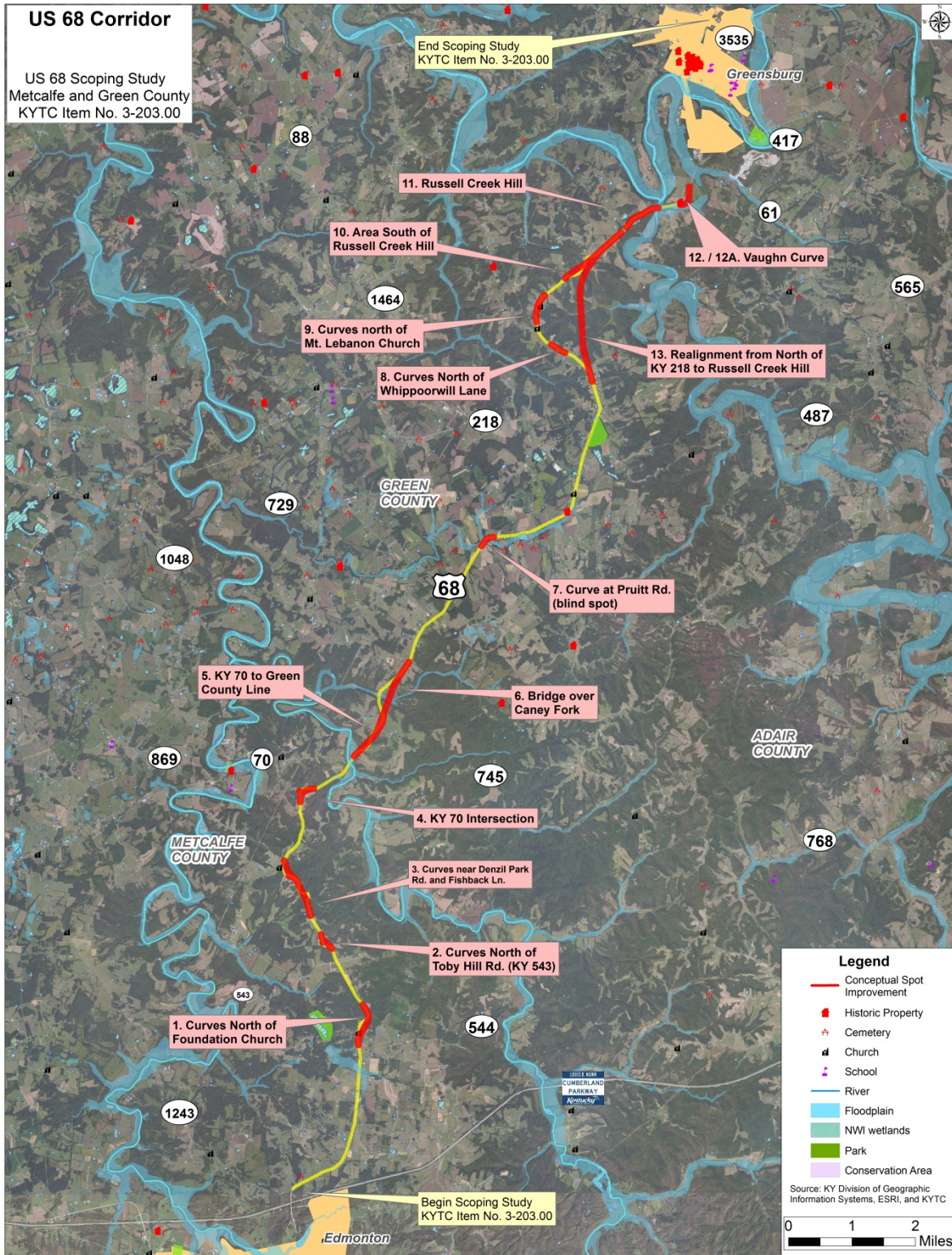


Figure 23: US 68 Corridor – Conceptual Spot Improvements

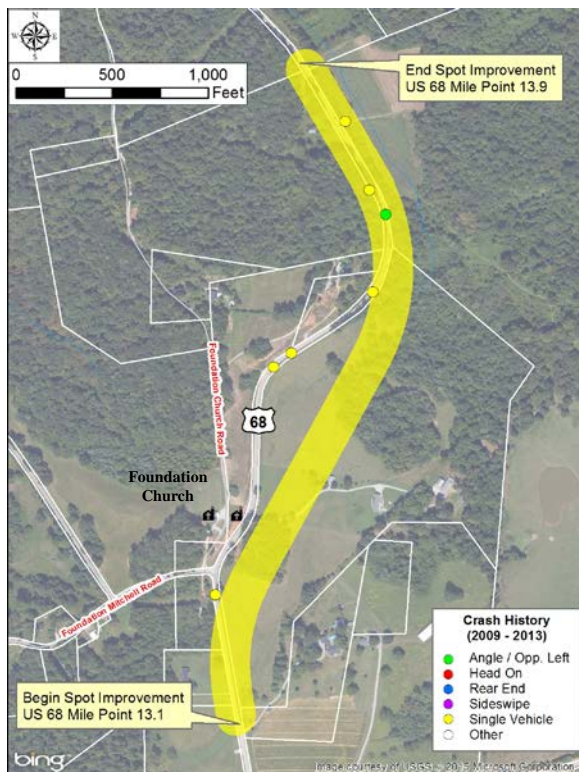


<b>1</b>	<b>LOCATION</b> US 68 North of Foundation Church (MP 13.1 – MP 13.9)	<b>PROJECT PRIORITY:</b>  <b>LOW</b>
<b>DESCRIPTION</b> Realign US 68 to the east through the curves near Foundation Church.		<b>COST ESTIMATE</b> Design: \$370,000 ROW: \$450,000 Utilities: \$425,000 Construction: \$3,700,000 <b>Total: \$4,945,000</b>

Currently, US 68 carries 1,900 vehicles per day at this location. Several horizontal curves through this segment do not meet a 45 mph design speed, and in some cases result in restricted sight distance as shown in the photo below. There have been seven crashes in the last five years (2009-2013) at this spot, which is considered a high crash spot with a critical rate factor greater than 1.0.

This spot improvement was identified during the initial round of public engagement with local officials and the public. Survey results from the second Public Meeting listed this spot improvement as a low priority.

The proposed concept shown below realigns US 68 to the east through the deficient horizontal curves near Foundation Church. The total length is 0.7 miles. A modified version would minimize right-of-way impacts of the adjacent land, including Foundation Church.



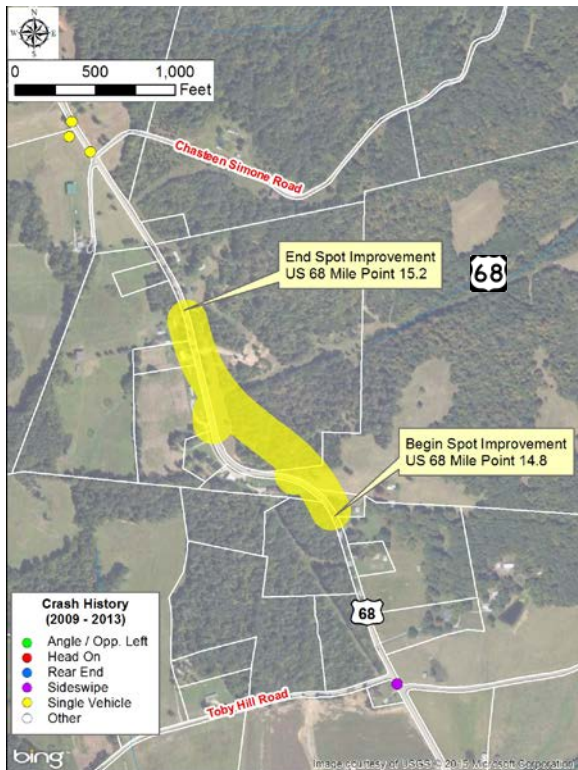
<b>2</b>	<b>LOCATION</b> US 68 North of Toby Hill Road (MP 14.5 – MP 15.2)	<b>PROJECT PRIORITY:</b>  <b>LOW</b>
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<b>DESCRIPTION</b> Realign US 68 to eliminate the 35 mph "S" curves north of Toby Hill Road.	<b>COST ESTIMATE</b> Design: \$230,000 ROW: \$300,000 Utilities: \$250,000 Construction: \$2,300,000 <b>Total: \$3,080,000</b>
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Currently, US 68 carries 1,900 vehicles per day at this location. A series of "S" curves is posted with an advisory speed of 35 mph. There have been no crashes in the last five years (2009-2013) at this spot.

This spot improvement was identified during the initial round of public engagement with local officials and the public. Survey results from the second Public Meeting listed this spot improvement as a low priority.

The proposed concept shown below eliminates the 35 mph "S" curves on US 68, provides improved grades and reduces crash potential. The total length is 0.4 miles.





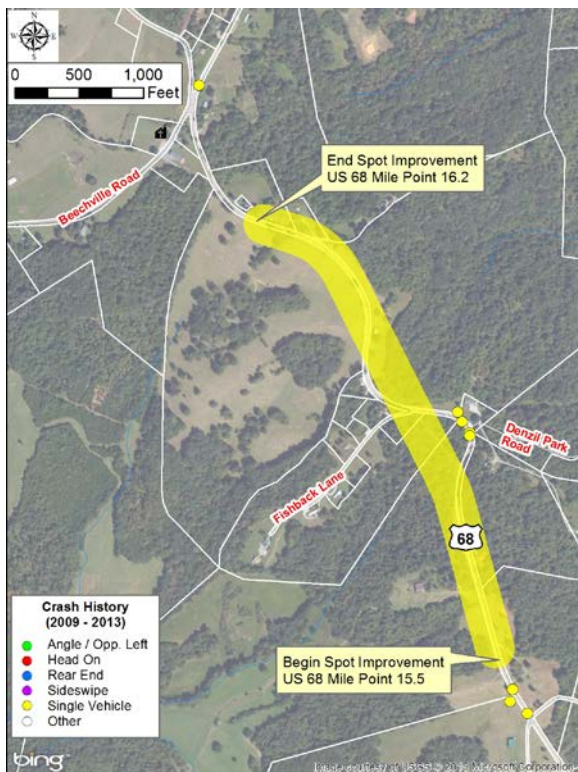
<b>3</b>	<b>LOCATION</b> US 68 near Fishback Lane (MP 15.5 – MP 16.2)	<b>PROJECT PRIORITY:</b>  <b>LOW</b>
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<b>DESCRIPTION</b> Realign US 68 to eliminate the 30 mph “S” curves near Denzil Park Road and Fishback Lane.	<b>COST ESTIMATE</b> Design: \$310,000 ROW: \$450,000 Utilities: \$420,000 Construction: \$3,100,000 <b>Total: \$4,280,000</b>
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Currently, US 68 carries 1,900 vehicles per day at this location. Several short horizontal curves through this segment do not meet a 45 mph design speed and are therefore posted with advisory speed signs, some as low as 30 mph. There have been four crashes in the last five years (2009-2013) at this spot.

This spot improvement was identified during the initial round of public engagement with local officials and the public. Survey results from the second Public Meeting listed this spot improvement as a low priority.

The proposed concept shown below improves the horizontal alignment along US 68. As shown, the total length for the proposed project is 0.7 miles. At the second public meeting, it was suggested that this project should be extended north to Pink Ridge Church and Beechville Road; such a modification could be pursued should the project move forward.

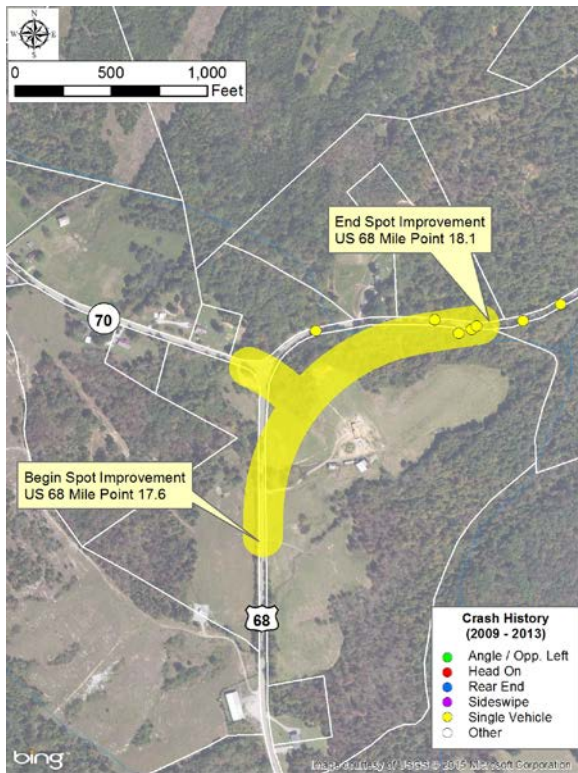


<b>4</b>	<b>LOCATION</b> US 68 Intersection with KY 70 (MP 17.6 – MP 18.1)	<b>PROJECT PRIORITY:</b>  <b>HIGH</b>
<b>DESCRIPTION</b> Realign US 68 to provide an improved intersection with KY 70.		<b>COST ESTIMATE</b> Design: \$260,000 ROW: \$375,000 Utilities: \$300,000 Construction: \$2,600,000 <b>Total: \$3,535,000</b>

Currently, US 68 carries 900 to 1,900 vehicles per day at this location. KY 70 is located west of US 68 and the intersection is located in a horizontal curve on a 6.8% percent grade that results in reduced sight distance. There have been seven crashes in the last five years (2009-2013) at this spot. The segment is considered a high crash segment with a critical rate factor greater than 1.0.

This spot improvement was identified during the initial round of public engagement with local officials and the public. Survey results from the second Public Meeting listed this spot improvement as a high priority.

The proposed concept shown below realigns US 68 to the east to provide an improved intersection with KY 70. The total length is 0.5 miles.

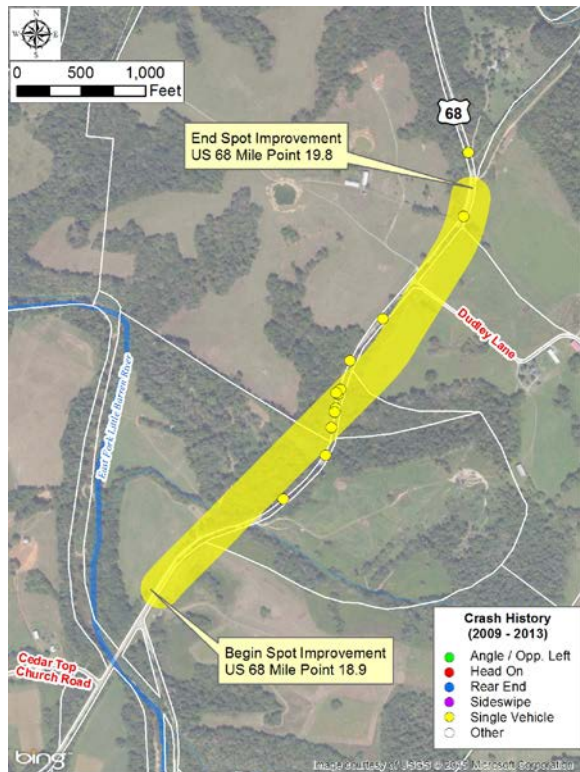


<b>5</b>	<b>LOCATION</b> US 68 North of KY 70 to South of the Green County Line (MP 18.9 – MP 19.8)	<b>PROJECT PRIORITY:</b>  <b>MEDIUM</b>
<b>DESCRIPTION</b> Add a truck climbing lane and realign US 68 to improve the horizontal curves and grades north of KY 70.		<b>COST ESTIMATE</b> Design: \$620,000 ROW: \$475,000 Utilities: \$450,000 Construction: \$6,200,000 <b>Total: \$7,745,000</b>

Currently, US 68 carries 900 vehicles per day at this location. This segment consists of horizontal curves and grades that do not satisfy a 55 mph design speed and there is minimal shoulder available, demonstrated in the photo below. There have been eleven crashes in the last five years (2009-2013) at this spot. The segment is considered a high crash segment with a critical rate factor greater than 1.0.

This spot improvement was identified during the initial round of public engagement with local officials and the public. Survey results from the second Public Meeting listed this spot improvement as a medium priority.

The proposed concept flattens the horizontal curves and reduces the grades by almost 2% while adding a truck climbing lane. The total length is 0.9 miles.



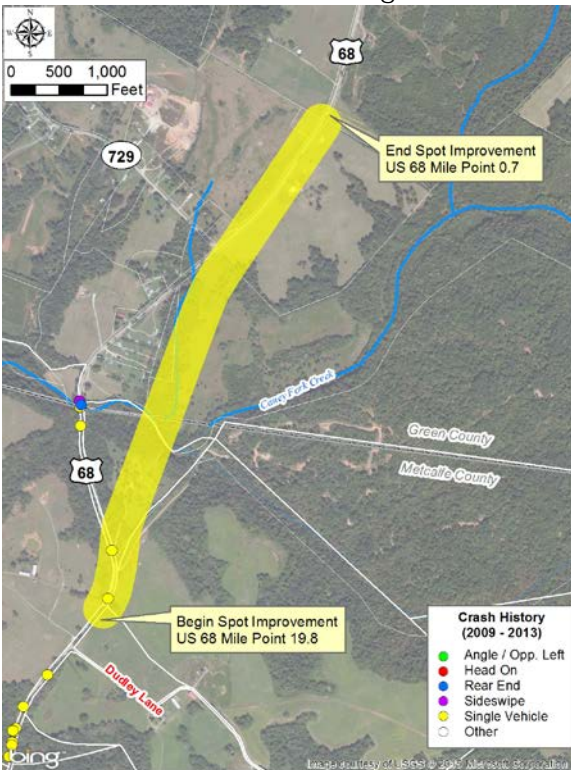


<h1>6</h1>	<b>LOCATION</b> US 68 Bridge over Caney Fork and Realignment (MP 19.8 – MP 20.026 Metcalfe County; MP 0.0 – 0.7 Green County)	<b>PROJECT PRIORITY:</b>  <h2 style="text-align: center;">MEDIUM</h2>
<b>DESCRIPTION</b> Realign US 68 and replace the existing sub-standard bridge over Caney Fork.		<b>COST ESTIMATE</b> Design: \$870,000 ROW: \$550,000 Utilities: \$450,000 Construction: \$8,700,000 <b>Total: \$10,570,000</b>

Currently, US 68 carries 900 vehicles per day at this location. The horizontal curves through this area approaching Caney Fork Bridge from the south do not meet a 55 mph design speed. There have been six crashes in the last five years (2009-2013) at this spot. The segment is considered a high crash segment with a critical rate factor greater than 1.0. The bridge over Caney Fork has a sufficiency rating of 77 but does not have shoulders; it also introduces a minor shift in the horizontal alignment of US 68. The combination of narrow lanes with no shoulders and the alignment shift reduces driver comfort.

This spot improvement was identified during the initial round of public engagement with local officials and the public. Survey results from the second Public Meeting listed this spot improvement as a medium priority.

The proposed concept replaces the existing sub-standard bridge over Caney Fork and realigns US 68 to the east. The total length is 0.9 miles.

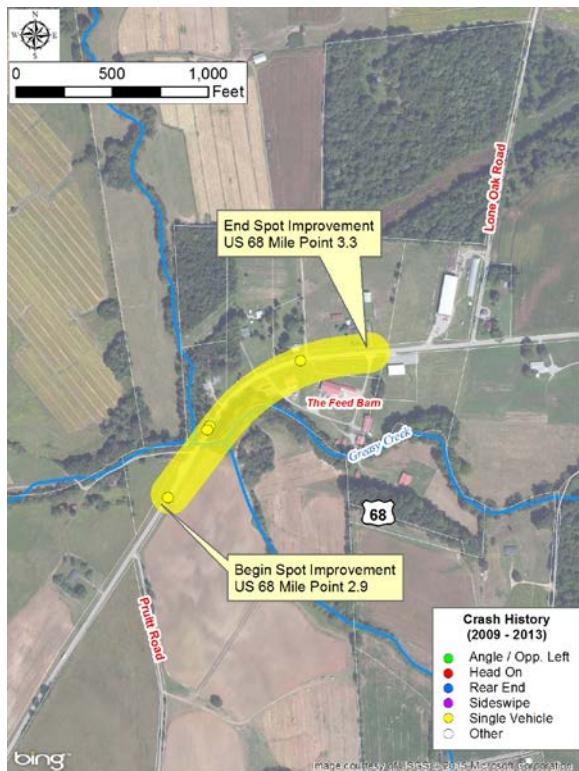


<b>7</b>	<b>LOCATION</b> US 68 Curve at Pruitt Road (MP 2.9 – MP 3.3)	<b>PROJECT PRIORITY:</b>  <h2 style="text-align: center;">LOW</h2>
<b>DESCRIPTION</b> Improve sight distance on US 68 by increasing horizontal curve radius north of Pruitt Road.		<b>COST ESTIMATE</b> Design: \$210,000 ROW: \$350,000 Utilities: \$255,000 Construction: \$2,100,000 <b>Total: \$2,915,000</b>

Currently, US 68 carries 990 vehicles per day at this location. The horizontal curve north of Pruitt Road does not meet a 55 mph design speed. Within this segment, the bridge over Greasy Creek (shown below) has a reduced weight rating and a sufficiency rating of 53.1 and its narrow width with no shoulders was suggested as an issue of concern in the area. There have been four crashes in the last five years (2009-2013) at this spot.

This spot improvement was identified during the initial round of public engagement with local officials and the public. Survey results from the second Public Meeting listed this spot improvement as a low priority.

The proposed concept shown below improves sight distance by increasing the horizontal curve radius north of Pruitt Road. The total length is 0.4 miles.



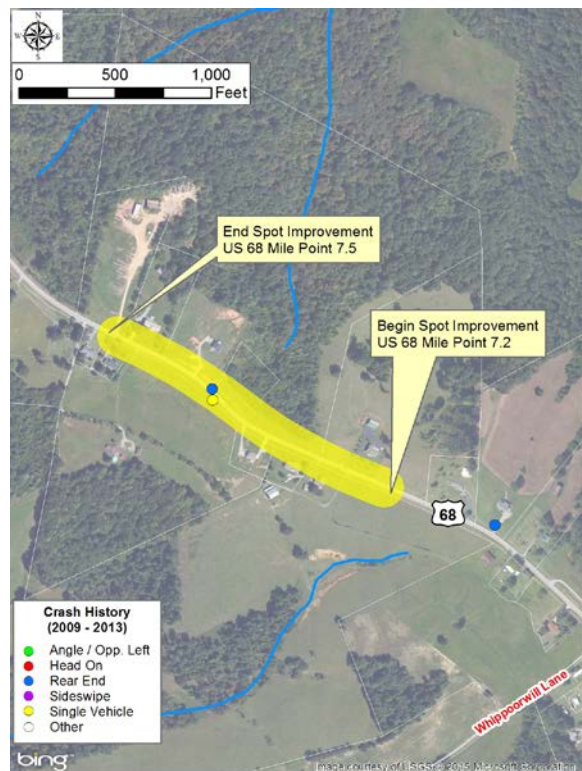


<b>8</b>	<b>LOCATION</b> US 68 North of Whippoorwill Lane (MP 7.2 – MP 7.5)	<b>PROJECT PRIORITY:</b>  <b>LOW</b>
<b>DESCRIPTION</b> Realign US 68 to improve two horizontal curves north of Whippoorwill Lane.		<b>COST ESTIMATE</b> Design: \$100,000 ROW: \$100,000 Utilities: \$155,000 Construction: \$950,000 <b>Total: \$1,305,000</b>

Currently, US 68 carries 2,400 vehicles per day at this location. There are two short horizontal curves in this segment that are adjacent to one another with little transition between; this results in less than desirable roadway geometrics that reduce driver comfort. There have been two crashes in the last five years (2009-2013) at this spot including a fatality.

Improvements to this section of US 68 were recommended by a local official after the initial round of public engagement. Survey results from the second Public Meeting listed this spot improvement as a low priority.

The proposed concept shown below will improve the two horizontal curves north of Whippoorwill Lane. The total length is 0.3 miles.

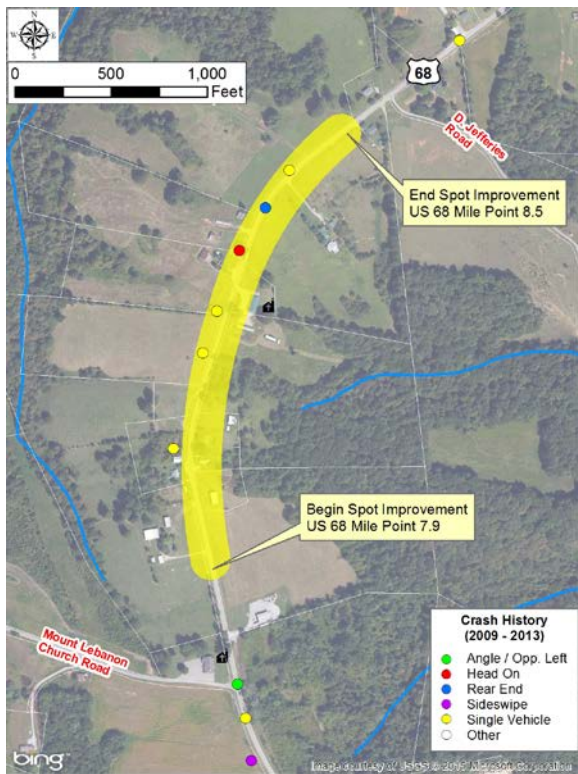


<h1>9</h1>	<b>LOCATION</b> US 68 North of Mt. Lebanon Church Rd (MP 7.9 – MP 8.5)	<b>PROJECT PRIORITY:</b>  <h2 style="text-align: center;">LOW</h2>
<b>DESCRIPTION</b> Realign US 68 to improve two horizontal curves north of Mt. Lebanon Church Rd.		<b>COST ESTIMATE</b> Design: \$220,000 ROW: \$550,000 Utilities: \$385,000 Construction: \$ 2,200,000 <b>Total: \$3,355,000</b>

Currently, US 68 carries 2,400 vehicles per day at this location. There are two horizontal curves within this segment that do not meet a 55 mph design speed. There have been six crashes in the last five years (2009-2013) at this spot.

This spot improvement was identified during the initial round of public engagement with local officials and the public. Survey results from the second Public Meeting listed this spot improvement as a low priority.

The proposed concept shown below will improve the two horizontal curves north of Mt. Lebanon Church. The total length is 0.6 miles.



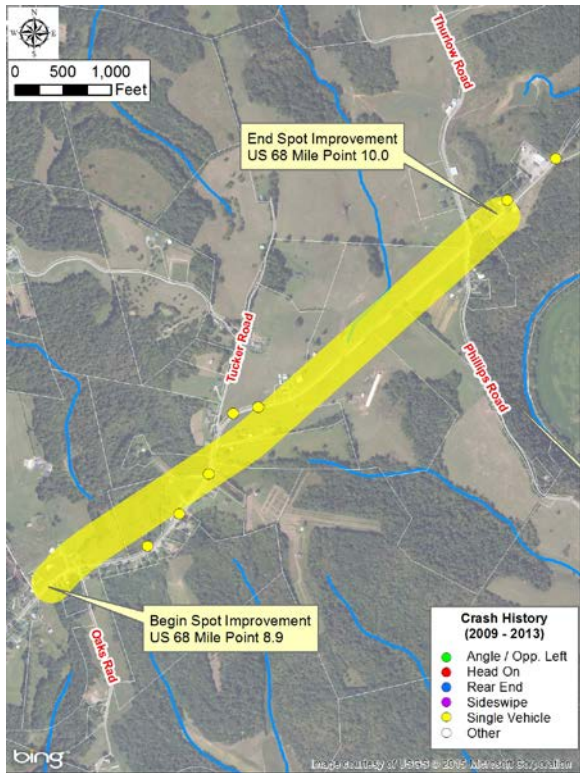
<h1>10</h1>	<b>LOCATION</b> US 68 South of Russell Creek Hill (MP 8.9 – MP 10.0)	<b>PROJECT PRIORITY:</b>  <h2>LOW</h2>
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<b>DESCRIPTION</b> Realign US 68 to eliminate some horizontal and vertical curves south of Russell Creek Hill.	<b>COST ESTIMATE</b> Design: \$410,000 ROW: \$800,000 Utilities: \$515,000 Construction: \$4,100,000 <b>Total: \$5,825,000</b>
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Currently, US 68 carries 2,400 vehicles per day at this location. The horizontal curves in the southern portion of the segment do not meet a 45 mph design speed and a series of short vertical curves in the central portion result in somewhat of a "roller-coaster" effect for drivers. There have been six crashes in the last five years (2009-2013) at this spot.

This spot improvement was identified by the project team and the public recommended realigning US 68 to the east at the first Public Meeting rather than correcting the deficiencies with the existing alignment. Survey results from the second Public Meeting listed this spot improvement as a low priority.

The proposed concept shown below realigns US 68 south of Russell Creek Hill to eliminate the deficient horizontal and vertical curves. The total length is 1.1 miles.





<h1>11</h1>	<b>LOCATION</b> US 68 at Russell Creek Hill (MP 10.1 – MP 10.6)	<b>PROJECT PRIORITY:</b>  <h2 style="text-align: center;">HIGH</h2>
<b>DESCRIPTION</b> Widen US 68 to include paved shoulders and a truck climbing lane at Russell Creek Hill.		<b>COST ESTIMATE</b> Design: \$170,000 ROW: \$365,000 Utilities: \$340,000 Construction: \$1,700,000 <b>Total: \$2,575,000</b>
<p>Currently, US 68 carries 2,400 vehicles per day at this location. Known locally as “Russell Creek Hill” because it is located immediately south of the creek, this segment is on a grade that exceeds seven percent, there is minimal shoulder and there are no passing opportunities. There have been five crashes in the last five years (2009-2013) at this spot.</p> <p>This spot improvement was identified during the initial round of public engagement with local officials and the public. Survey results from the second Public Meeting listed this spot improvement as a high priority.</p> <p>The proposed concept shown below includes minor widening of US 68, providing paved shoulders and a southbound truck climbing lane / passing lane through the area. The total length is 0.5 miles.</p> <div style="display: flex; justify-content: space-around;"> <div data-bbox="201 976 776 1738"> </div> <div data-bbox="797 1117 1422 1535"> </div> </div>		

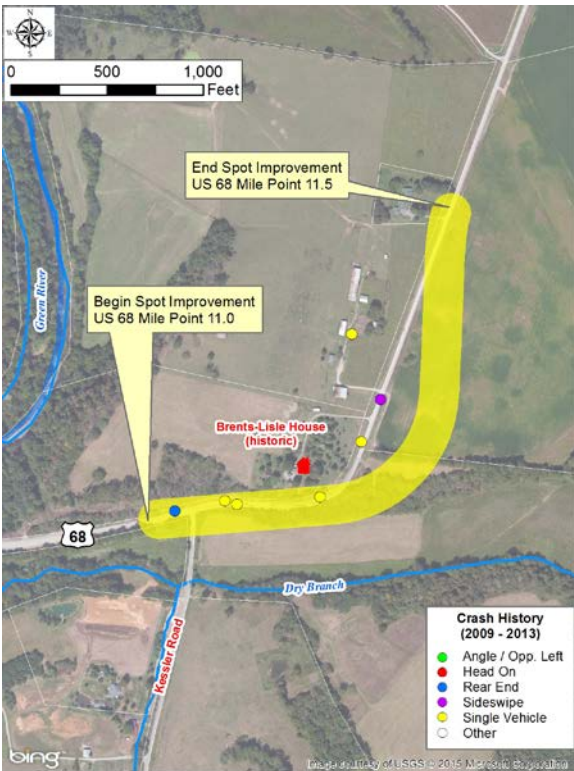


<h1>12/12A</h1>	<b>LOCATION</b> US 68 at "Vaughn Curve" (MP 11.0 - MP 11.5)	<b>PROJECT PRIORITY:</b>  <h2>HIGH</h2>
<b>DESCRIPTION</b> Realign US 68 to improve the horizontal curve referred to as "Vaughn Curve".		<b>COST ESTIMATE (12 / 12A)</b> Design: \$280,000/\$170,000 ROW: \$335,000/\$333,000 Utilities: \$365,000/\$365,000 Construction: \$2,800,000/\$1,700,000 <b>Total: \$3,780,000/\$2,568,000</b>

Currently, US 68 carries 2,400 vehicles per day at this location. "Vaughn Curve", as the area is referred to locally, includes a single horizontal curve that does not meet a 45 mph design speed (posted with advisory speed of 30 mph). There have been five crashes in the last five years (2009-2013) at this spot. The KYTC installed a skid resistant pavement surface through the curve as a crash countermeasure within the past few years and it was noted during project team discussions that the crash experience has decreased as a result.

This spot improvement was identified by the local officials and the public recommended realigning this segment of US 68 at the first Public Meeting. Survey results from the second Public Meeting listed this spot improvement as a high priority.

This concept includes two alternative improvements to "Vaughn Curve". Because there is a historic property listed on the National Register of Historic Properties inside the curve (Brent-Lisle House), any improvements that would require the acquisition of additional right-of-way must occur to the outside of the curve (to the east). Concept 12, shown below, includes realigning the curve to accommodate a 45 mph design speed. Concept #12A includes minor widening of the existing curve to provide wider lanes and paved shoulders. The total length is 0.5 miles.

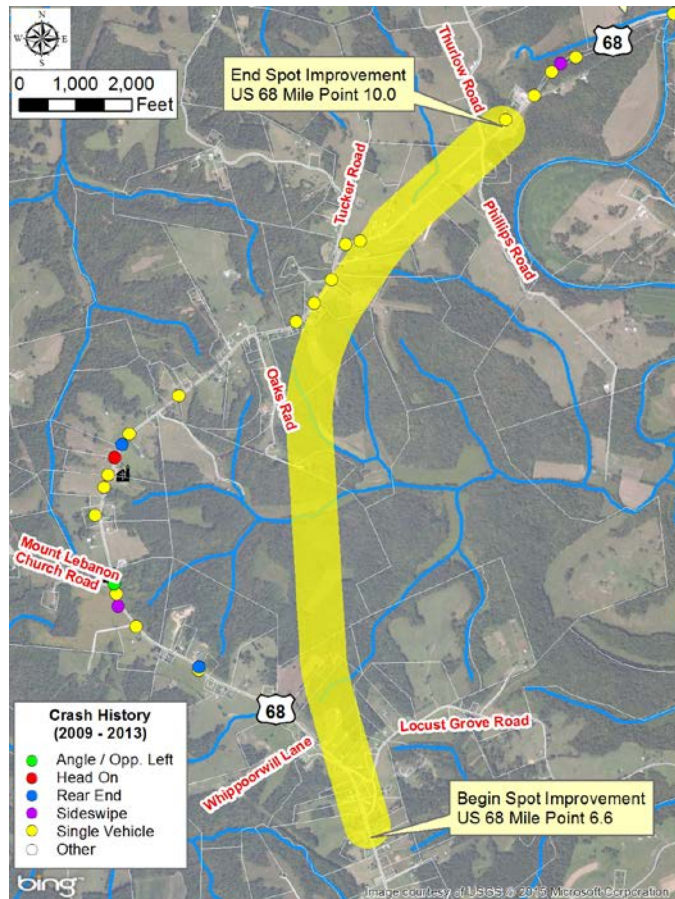


<h1>13</h1>	<b>LOCATION</b> US 68 between KY 218 and Russell Creek Hill (US 68 MP 6.6 – MP 10.0)	<b>PROJECT PRIORITY:</b>  <h2>HIGH</h2>
<b>DESCRIPTION</b> Realign US 68 north of KY 218 and south of Russell Creek Hill.		Design: \$1,640,000 ROW: \$1,850,000 Utilities: \$1,580,000 Construction: \$16,400,000 <b>Total: \$21,470,000</b>

Currently, US 68 carries 2,400 vehicles per day at this location. The existing alignment includes a series of horizontal curves that do not meet a 45 mph design speed, and three conceptual spot improvements were developed to address these locations (spot #8, #9, and #10). There have been nineteen crashes in the last five years (2009-2013) along US 68 through the area in question.

The public recommended realigning this segment of US 68 at the first Public Meeting. Survey results from the second Public Meeting listed this spot improvement as a high priority.

The concept shown to the right involves constructing a new alignment for US 68 from north of KY 218 to an area south of Russell Creek Hill. This is an alternative to reconstructing spots #8 through #10. The total length for the new alignment is 2.5 miles. It is assumed that if spot #13 is constructed, the existing US 68 would remain for local access and would become part of Green County's road system.

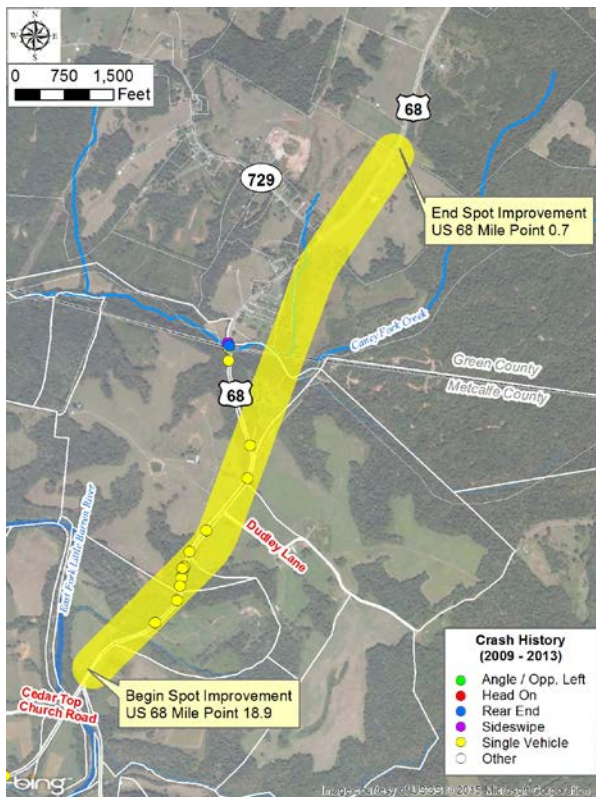


<h1>5 &amp; 6</h1>	<b>LOCATION</b> US 68 between KY 70 and north of Caney Fork (MP 18.9 – MP 20.026 Metcalfe County; MP 0.0 – 0.7 Green County)	<b>PROJECT PRIORITY:</b>  <h1>HIGH</h1>
<b>DESCRIPTION</b> Realign US 68 to improve the horizontal curves and grades north of KY 70 and replace the existing sub-standard bridge over Caney Fork.		Design: \$1,440,000 ROW: \$975,000 Utilities: \$900,000 Construction: \$14,400,000 <b>Total: \$17,715,000</b>

The project team evaluated two segments of US 68 in northern Metcalfe County and southern Green County independently as spot #5 and spot #6. At the second round of local officials and public meetings, an alternative was shown that would combine these two segments into a single project. Combined, there have been seventeen crashes in the last five years (2009-2013) within the area. The Metcalfe County portion is considered a high crash segment with a critical rate factor greater than 1.0.

Survey results from the second Public Meeting suggested that, individually, each of the spot improvements would be considered a medium priority, however, when combined they are considered a high priority.

The proposed concept shown below combines the proposed improvements from spot #5 and spot #6 into a single project, improving the horizontal curves, grades, adding a truck climbing lane and replacing the bridge over Caney Fork. The total length is 1.8 miles.





## 5.4 TRAFFIC FORECASTS

The traffic forecasts used to analyze current and future conditions and project alternatives were developed from the Kentucky Statewide Travel Model (KYSTM). A summary report detailing the methodologies and results is found in **Appendix G**. Project forecasts were developed for the year 2040, which is the horizon year for the KYSTM. Future model runs were developed for a No-Build scenario, US 68 corridor improvements only (Scenario 1), and for US 68 corridor improvements and the development of the Greensburg Connector around the eastern periphery of Greensburg (Scenario 2). **Figure 24** displays the traffic forecasts for each of the scenarios.

Future traffic volumes along US 68 throughout the US 68 Corridor Project area are not anticipated to exceed 5,000 vpd. Therefore, capacity should not be an issue in the future and two lanes will be able to accommodate the demand.

Future traffic volumes along the proposed US 68 Greensburg Connector vary from 1,500 vpd at the south end (between US 68 and KY 61) to about 4,400 vpd in the middle (from KY 61 to KY 417). Based on these forecasts, two lanes should be able to accommodate the demand for travel along the proposed connector.



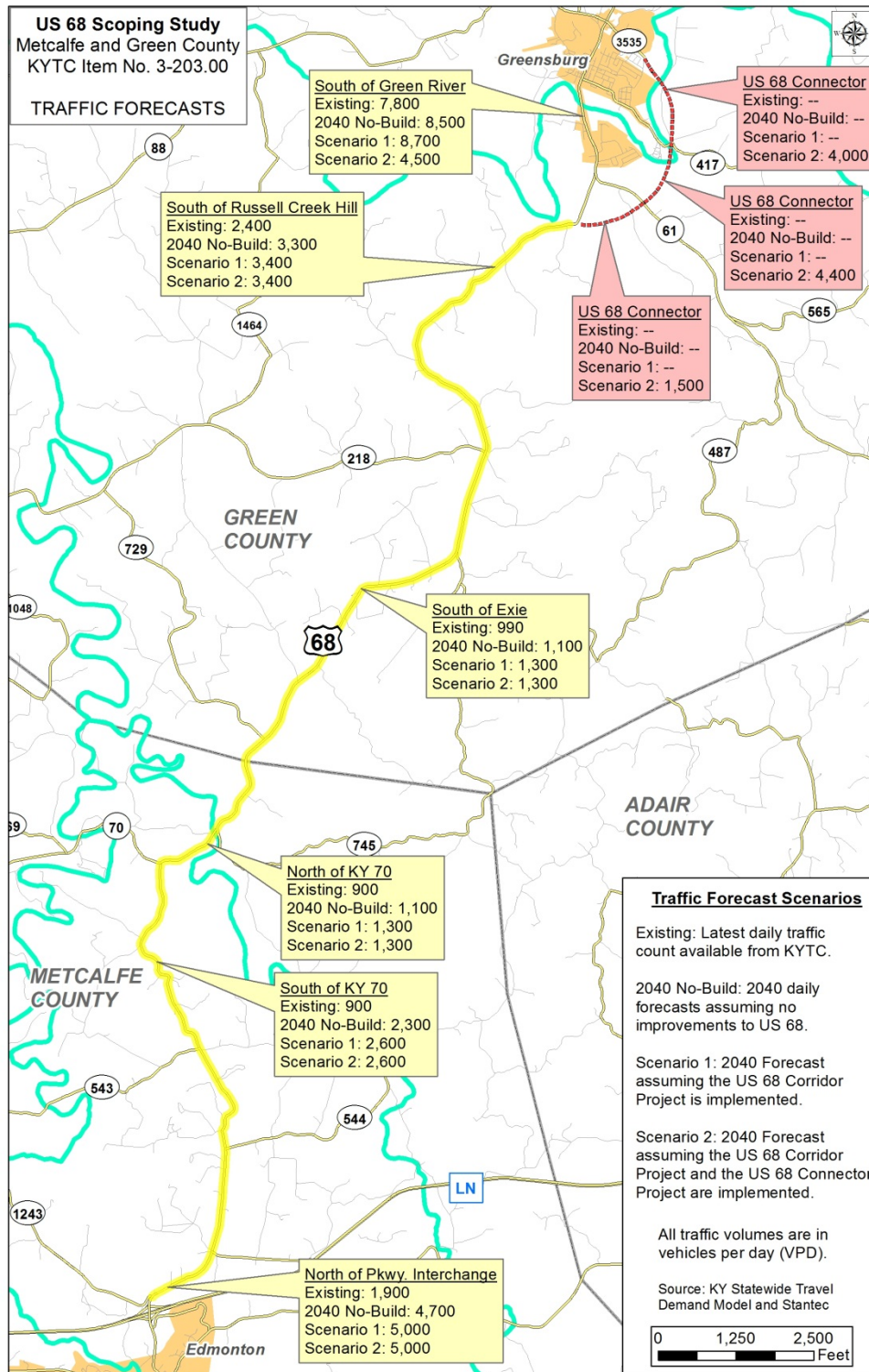


Figure 24: 2040 Traffic Forecasts

## 6.0 FINAL PUBLIC & STAKEHOLDER COORDINATION

Following the development of the revised concepts, the Project Team again met with stakeholders and interested members of the public. At these coordination points, alternatives were presented; each group was asked to provide feedback regarding their concerns and/or preferences.

### 6.1.1 Local Officials & Stakeholders

The second round of local official and stakeholder meetings was held on July 29<sup>th</sup>, 2014 at the Greensburg Baptist Church Christian Life Center and on July 31<sup>st</sup>, 2014 at the Sulphur Well Community Center. Excluding the Project Team, there were four and seven individuals in attendance at each meeting, respectively. The purpose of this meeting was to provide a brief overview of the study and to share some of the information that would be presented at public meetings later those evenings. Displays depicting conceptual alternatives for the US 68 Corridor Study and the US 68 Greensburg Connector Study were provided. Completed questionnaires were submitted by ten attendees. In both Green and Metcalfe counties, there was a preference for the Yellow alternative for the US 68 Greensburg Connector Project. Spot Improvements #4 and #6 were top selections followed by Spot Improvement #5, #11 and #12/12A. Complete results are shown in **Appendix F**.

### 6.1.2 Public Meetings

On July 29<sup>th</sup> and 31<sup>st</sup>, 2014, the Project Team held the second set of public meetings. The first was at Greensburg Baptist Church and the second was at Sulphur Well Community Center. The purpose of the meetings was to provide information about the study, discuss the conceptual alternatives, and to solicit input from the public. The meetings were held in an open house format that included a formal presentation to explain the project. Attendees were provided a project handout and questionnaire. The Project Team was available to answer questions and discuss issues. 132 members of the public attended these meetings and 55 comment sheets were submitted. An online version of the public meeting questionnaire was made available until August 25<sup>th</sup>, 2014. A total of 30 electronic surveys were received.

Public meeting attendees and online survey respondents were asked to state their preference for the alternatives under consideration for the US 68 Greensburg Connector Project. **Figure 25** shows a combined summary from the two public meetings and the online survey. Based on these combined survey findings, the public is split on its preference for both the Green alternative and the Yellow alternative.

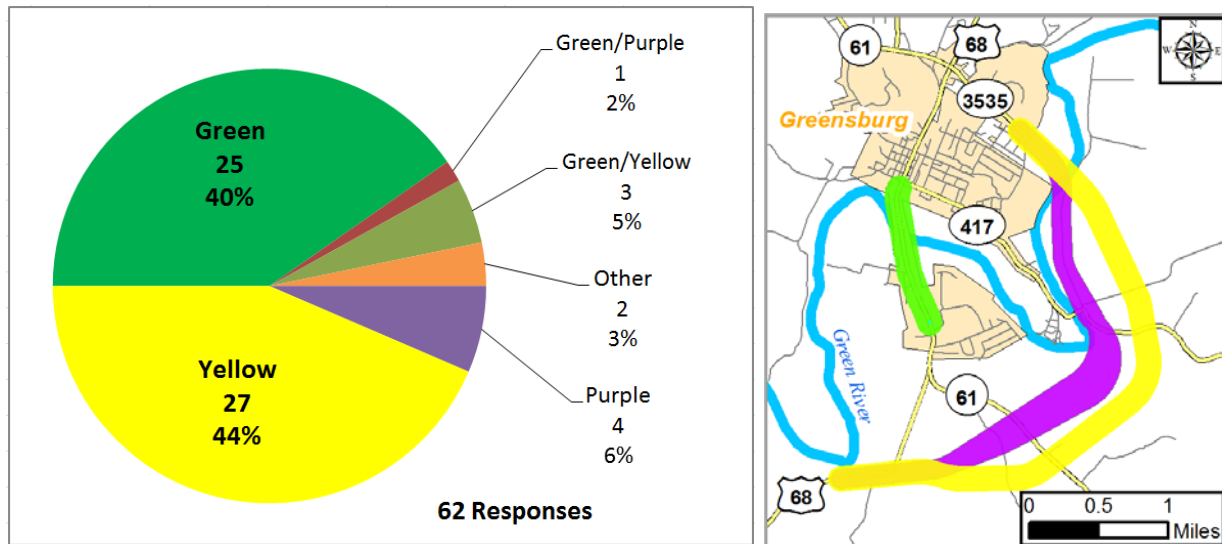


Figure 25: Combined Survey Results – US 68 Greensburg Connector

At each public meeting, attendees were asked to place stickers on exhibits to indicate which spot improvement projects should be considered as the highest priority for implementation with the US 68 Corridor Project. Each attendee was provided two red and two green stickers, and the red stickers were to be placed on the highest priority projects. The green stickers were to be placed on the next highest (medium) priority projects. A total of 344 stickers were placed on these boards, and priority point values were assigned to each sticker color. Red stickers were assigned 10 priority points and green stickers 5 priority points. The combined survey results for Spot Improvements from Green and Metcalfe counties are displayed on **Figure 26**.

The resulting values indicate spot improvements #4 (320 points), #11 (380 points), #12 (350 points) and #13 (540 points) are considered the public’s highest priorities. Spot improvements #5 (130 points) and #6 (130 points) would be medium priority if considered on their own. However, a combination of spots #5 and #6 was provided as an alternative, and if all the relevant scores were to be summed up, the combination of these two spots would be considered a high priority with 455 priority points.

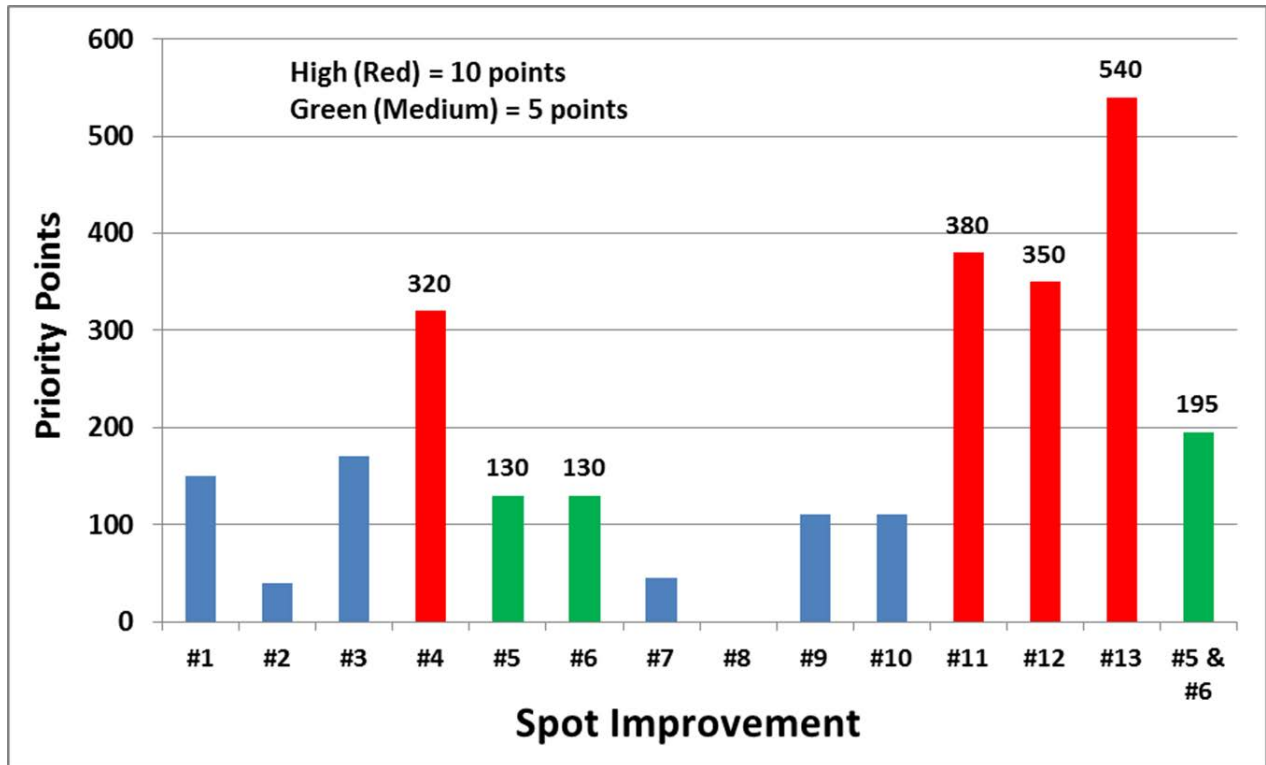


Figure 26: Combined Survey Results – US 68 Corridor

## 7.0 RECOMMENDATIONS

This section provides the recommendations for the US 68 Greensburg Study and the US 68 Corridor Study based on their ability to meet the purpose and need, the input received, and the alternative development process detailed in this report.

### 7.1 US 68 GREENSBURG CONNECTOR PROJECT

The final study recommendation for the US 68 Greensburg Connector Project includes two conceptual alternatives for consideration in the next phase of the project, as shown on **Figure 27**. Based upon input from the Project Team and the public as well as satisfying the Purpose and Need, the Green alternative and Yellow alternative were chosen as recommendations for the US 68 Greensburg Connector.



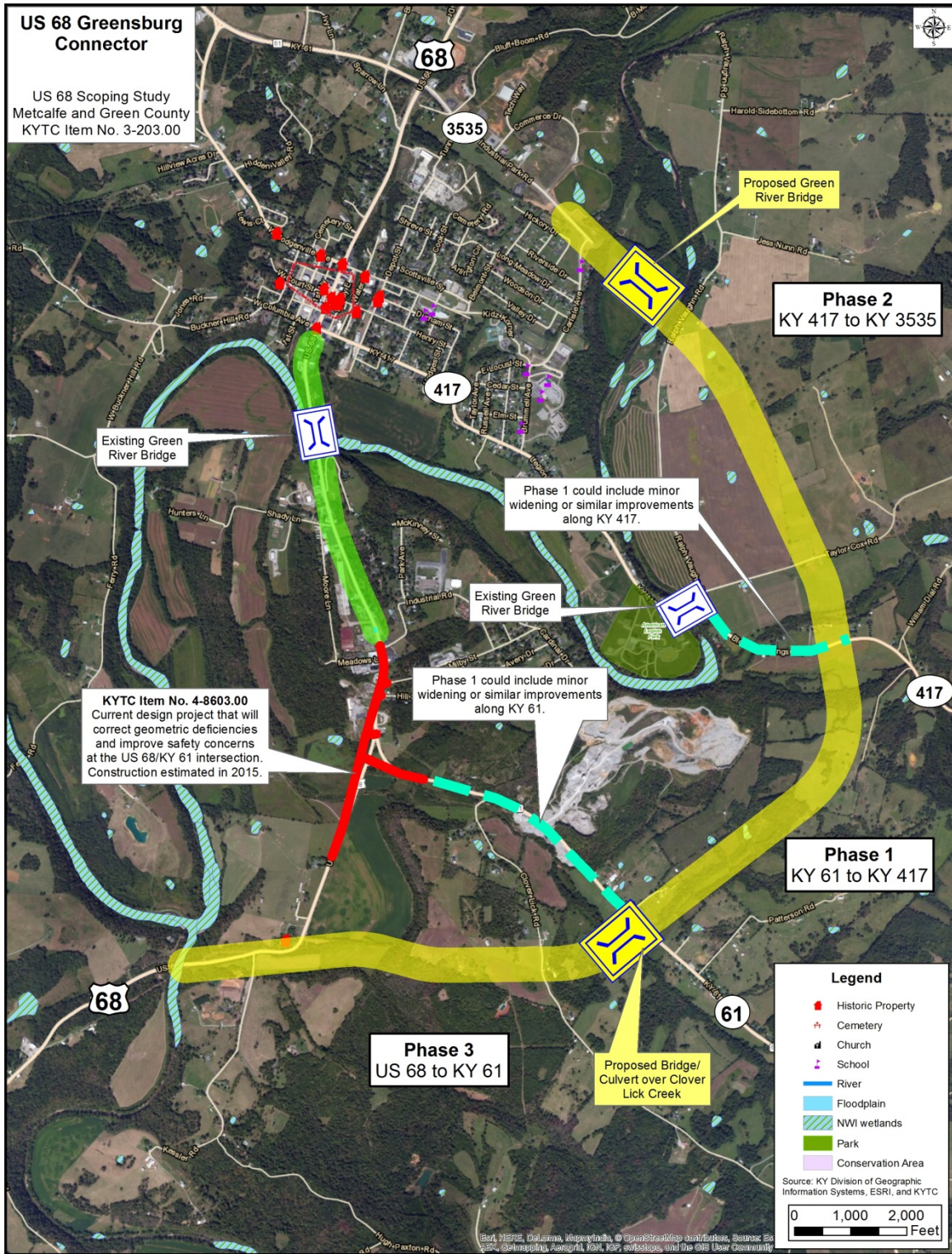


Figure 27: Recommended Alternatives for US 68 Greensburg Connector

Given the need to eventually replace the aging US 68 bridge over the Green River, there is not a true No-Build alternative for the US 68 Greensburg Connector Project. At such time federal funding is available for the replacement of the structure, the remaining improvements included in the Green alternative should be pursued. This would include minor improvements along US 68 and consideration for bicycle and pedestrian accommodations.

The Yellow alternative, a new connector southeast of Greensburg, should be advanced in stages. During the early design phases, consideration for the construction of all three Phases of the project must be taken into consideration to ensure compatibility. However, given the available funding for the project, only the construction of Phase 1 (KY 61 to KY 417) and Phase 2 (KY 417 to KY 3535, including a new bridge over the Green River) should be pursued at this time.

**Table 7** presents the US 68 Greensburg Connector cost estimates for the two recommended alternatives.

Alternative Corridor	Length (miles)	Project Phase	Total for all Phases	Phase 1	Phase 2	Phase 3
			(\$ Millions, unless noted)	(KY 61 to KY 417)	(KY 417 to KY 3535)	(US 68 to KY 61)
Green	1.6	Right-of-way	\$700,000	N/A		
		Utilities	\$1.72			
		Construction	\$9.7-12.0			
		<b>Total</b>	<b>\$12.1 to \$14.4</b>			
Yellow	4.6	Right-of-way	\$5.0	\$1.2	\$1.7	\$1.6
		Utilities	\$3.10	\$845,000	\$1.2	\$1.1
		Construction	\$25.90	\$6.7	\$10.1	\$9.1
		<b>Total</b>	<b>\$33.50</b>	<b>\$8.7</b>	<b>\$13.0</b>	<b>\$11.8</b>

**Table 8: US 68 Greensburg Connector Cost Estimates**

## 7.2 US 68 CORRIDOR PROJECT

The final study recommendation for the US 68 Corridor Study is to improve the corridor using a number of spot improvements based on safety, geometric or structural deficiencies, Project Team and public input. It was determined that the complete reconstruction of the US 68 corridor was not viable because of the high cost and impacts. Each of the 13 spot improvement concepts appears to be a feasible and beneficial project that should be pursued further.

However, based on the available design funding in the 2014 Highway Plan, the Project Team recommended the following projects should be pursued as a high priority:

- a. Metcalfe County
  - i. Spot 4: KY 70 Intersection
  - ii. Spot 5: North of KY 70 to south of the Green County line
  - iii. Spot 6: Bridge over Caney Fork and Realignment
- b. Green County
  - i. Spot 11: Russell Creek Hill
  - ii. Spot 12: Vaughn Curve
  - iii. Spot 13: Realignment between KY 218 and Russell Creek Hill

Table 8 and Figure 28 summarize the US 68 Corridor recommendations. The estimated construction costs include earthwork, drainage, structures and pavement. Right-of-way relocations and construction costs are based on a two-lane roadway design with 11-foot lanes and 8-foot (4-foot paved) shoulders. The structure lengths were based upon the estimated limits of the floodplains, resulting in a conservative approach that should be revisited during subsequent project phases.

US 68 Corridor - Recommended Spot Improvements						
Spot #	#4	#5	#6	#11	#12	#13
Location	KY 70 Intersection	KY 70 to South of the Green Co. Line	Bridge over Caney Fork & Realignment	Russell Creek Hill	Vaughn Curve	Realignment between KY 218 and Russell Creek Hill
Total Length (miles)	0.5	0.9	0.9	0.5	0.5	2.5
Design	\$1,750,000			\$2,090,000		
Right-of-Way	\$375,000	\$475,000	\$550,000	\$365,000	\$335,000	\$1,850,000
Utilities	\$300,000	\$450,000	\$450,000	\$340,000	\$365,000	\$1,580,000
Construction	\$2,600,000	\$6,200,000	\$8,700,000	\$1,700,000	\$2,800,000	\$16,400,000
TOTAL	\$21,850,000			\$27,825,000		

Table 9: US 68 Corridor Recommended High-Priority Spot Improvements



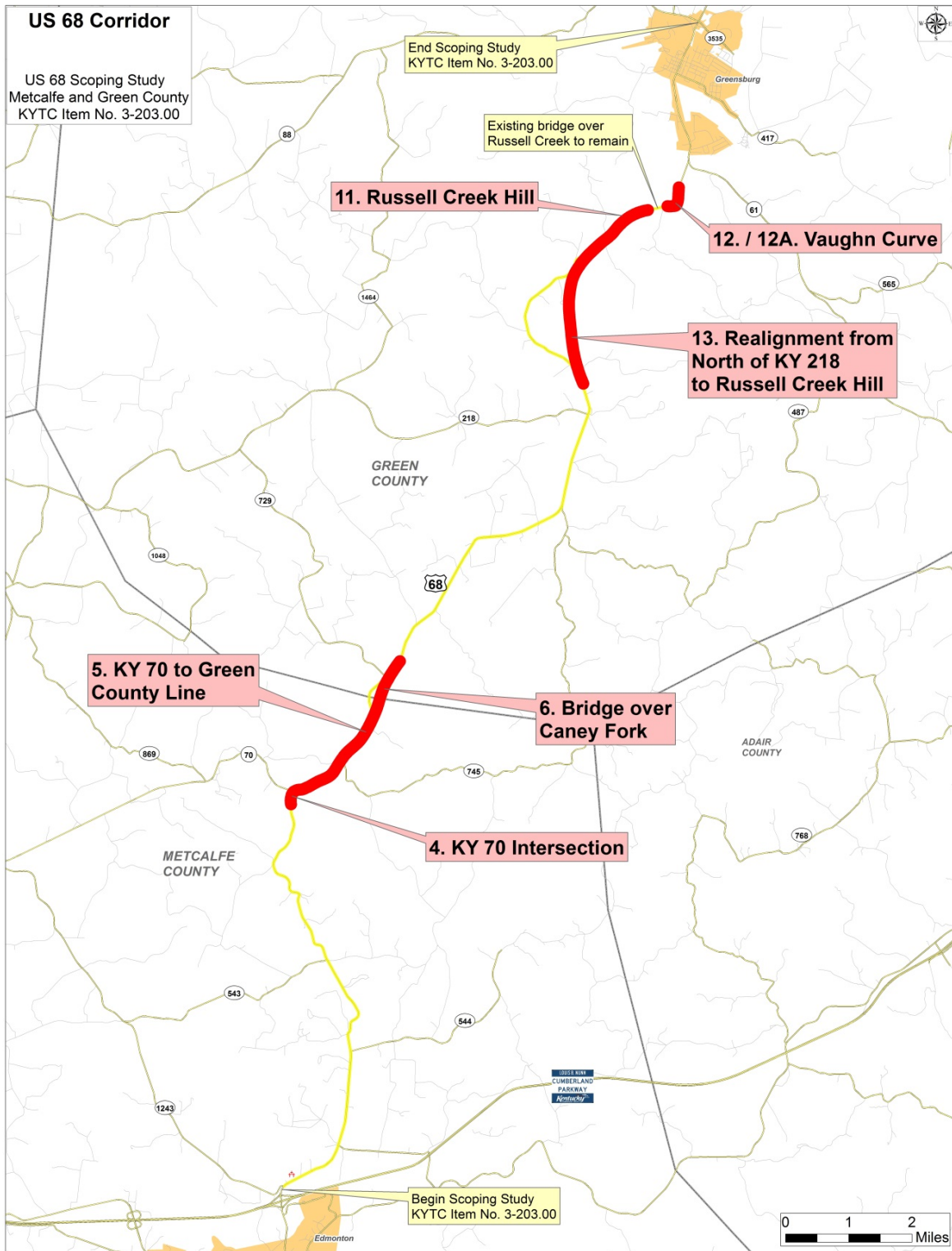


Figure 28: Recommended High-Priority Spot Improvements



### 7.3 NEXT STEPS

The next phase for either the US 68 Corridor or the US 68 Greensburg Connector Project would be Phase 1 Design (Preliminary Engineering and Environmental Analysis). As discussed previously, the US 68 Greensburg Connector has State Priority Project (SPP) Funds appropriated in the 2014-2020 KYTC Six Year Highway Plan Item No. 4-398.00 for all four phases: \$2.6 million for design, \$3.0 million for right-of-way, \$0.9 million for utilities, and \$25 million for construction.

The US 68 Corridor is listed in the 2014 Kentucky Highway Plan with \$2,000,000 in Federal STP funding for the design phase in Green County (KYTC Item No. 4-397.00) and \$2,500,000 for the design phase in Metcalfe County (KYTC Item No. 3-8706.00) for Fiscal Year 2015. Further funding for subsequent project phases would be necessary to advance the recommended spot improvements beyond the design phase.

## 8.0 CONTACTS/ADDITIONAL INFORMATION

Written requests for additional information should be sent to John Moore, Director, KYTC Division of Planning, 200 Mero Street, Frankfort, KY 40622. Additional information regarding this study can also be obtained from the KYTC District 4 Project Manager, Charlie Allen, at (270) 766-5066 (email at [CharlieA.Allen@ky.gov](mailto:CharlieA.Allen@ky.gov)) or KYTC District 3 Project Manager, Jeff Moore, at (270) 746-7898 (email at [Jeff.Moore@ky.gov](mailto:Jeff.Moore@ky.gov)).