

Bullitt County Transportation Study



Final Report

Submitted to:
Kentuckiana Regional Planning and
Development Agency (KIPDA)

Submitted by:
ENTRAN, PLC

April 2010



Preparation of this report has been financed through KIPDA, the U.S. Department of Transportation, and the Kentucky Transportation Cabinet. This financial assistance notwithstanding, the contents of this report do not necessarily reflect the official views or policies of the funding agencies. Accuracy of the information presented herein is the responsibility of ENTRAN.



Table of Contents

Executive Summary

1.0 Introduction

1.1 Study Area	1-1
1.2 Project Purpose and Need	1-2
1.3 Public Involvement	1-3

2.0 Existing Conditions

2.1 Demographics	2-1
2.2 Land Use and Zoning	2-2
2.3 Roadway Characteristics	2-4
2.4 Public Transportation	2-12
2.5 Commuting Patterns	2-13

3.0 Future Conditions

3.1 Demographic Forecasts	3-1
3.2 Future Land Use	3-4
3.3 Committed Transportation Improvements	3-5
3.4 Traffic Forecasts	3-7

4.0 Development of Alternatives

4.1 Stakeholder Input	4-1
4.2 Short-Term Improvement Alternatives	4-2
4.3 Long-Range Alternatives	4-7

5.0 Conclusions

5.1 Recommended Projects and Prioritization	5-1
5.2 Funding Sources	5-7
5.3 Other Transportation Strategies	5-7

Appendices

Appendix A – Meeting Summaries
Appendix B – Roadway Inventory
Appendix C – 2030 Traffic Forecasts

List of Figures

Figure ES-1: Bullitt County Transportation Study Recommendations.....	ES-2
Figure 1-1: Bullitt County.....	1-2
Figure 1-2: Current Issues Affecting Transportation in Bullitt County	1-4
Figure 1-3: Identification of Transportation Issues from Public Meeting #1.....	1-5
Figure 1-4: Bullitt County Transportation Study Website.....	1-6
Figure 2-1: 2000 Population Density in Bullitt County.....	2-1
Figure 2-2: Summary of Bullitt County Zoning	2-2
Figure 2-3: Functional Class for Bullitt County Roads	2-4
Figure 2-4: Average Daily Traffic (ADT) and Volume-to-Service Flow (VSF) Ratio	2-5
Figure 2-5: Crash History	2-7
Figure 2-6: Bridge Sufficiency Ratings.....	2-9
Figure 2-7: Existing Railroad Crossings	2-11
Figure 2-8: TARC Route 66x	2-12
Figure 2-9: Bullitt County Commute Data.....	2-13
Figure 3-1: Population Forecasts for Bullitt County	3-1
Figure 3-2: Forecasted Growth in Households in Bullitt County from 2000 to 2030.....	3-2
Figure 3-3: Forecasted Growth in Employment in Bullitt County from 2000 to 2030.....	3-3
Figure 3-4: 1997 Bullitt County Land Use Plan.....	3-5
Figure 3-5: Committed Transportation Improvements for Bullitt County.....	3-6
Figure 3-6: 2030 No-Build Traffic Forecasts	3-7
Figure 4-1: Preliminary Trouble Spots and Needed New Routes	4-1
Figure 4-2: Preliminary Short-Term Transportation Improvement Projects.....	4-3
Figure 4-3: Suggested Improvements to Existing Roadways	4-8
Figure 4-4: Preliminary New Highway Route Alternatives.....	4-9
Figure 5-1: Steering Committee Response to the Question, “How well does each route address the issues in the project Purpose and Need Statement?”	5-3
Figure 5-2: Traffic Forecasts Based on Recommended Long-Range Improvement Projects for Bullitt County.....	5-5

List of Tables

Table 2-1: Bullitt County Zoning by Area.....	2-3
Table 2-2: High Crash Rate Segments.....	2-8
Table 2-3: Bridges with Sufficiency Ratings of 50 or Below.....	2-10
Table 2-4: Railroad Crossing Inventory	2-11
Table 4-1: Cost Estimates	4-13
Table 4-2: 2030 Traffic Forecast Summary	4-14
Table 5-1: Recommended Prioritization of Short-term Projects.....	5-1
Table 5-2: Recommended Long-Range Projects and Priorities	5-4
Table 5-3: Estimated 2030 Average Daily Traffic Volume (ADT) at the Bullitt County /Jefferson County Line ...	5-6
Table 5-4: Cost Estimates for the Recommended Long-Range Projects	5-6

EXECUTIVE SUMMARY

Bullitt County and the Kentuckiana Regional Planning and Development Agency (KIPDA) conducted the Bullitt County Transportation Study to identify community concerns and evaluate transportation alternatives to improve county-wide mobility. The study sought improvement strategies for not only current transportation issues but also anticipated future transportation deficiencies. The study demonstrated the need for improvements to existing routes and the construction of new roadways to relieve traffic congestion in the northern portions of the county and to provide more efficient travel routes connecting Bullitt County to employment centers in Jefferson County.

One of the most critical issues affecting Bullitt County is the tremendous growth that has been experienced in the recent past. This growth has not been met with a proportionate increase in transportation improvements and unless new or significantly improved infrastructure is added, travel conditions will continue to deteriorate. Bullitt County is projected to be the ninth most populous county in Kentucky by 2030. Local residents are already experiencing the adverse effects of unmet growth, and without significant transportation improvements that situation will worsen dramatically. This study was intended to help define the location and purpose of needed transportation improvements and to assist Bullitt County, KIPDA, and the Kentucky Transportation Cabinet (KYTC) in developing a long-range transportation plan for Bullitt County.

The study team worked with a diverse array of local officials, interested individuals, and other stakeholders throughout the course of the study. This group, referred to as the study Steering Committee, assisted in defining project goals and issues and identifying both short term and long term improvement projects. Two public meetings were also held over the course of the study. The first public meeting was held in May 2009 to inform the public of the planning study and solicit input. The second public meeting was held in October 2009 to summarize the key findings from the study and to present the preliminary recommendations for short-term and long-range projects to be included in the transportation plan.

A number of improvement alternatives were developed and evaluated during the study. The currently committed roadway projects and recommended improvements are summarized on **Figure ES-1**. Committed projects, or projects that are in Kentucky's current Highway Plan, include widening KY 44 from I-65 to east of Mount Washington; widening KY 61 (Preston Highway) between Shepherdsville and the existing four-lane section near the Jefferson County line; widening portions of KY 480 (Cedar Grove Road) and KY 245 (Clermont Road) east of I-65; and realigning the northern portion of KY 1494 (Beech Grove Road) in Shepherdsville.

The short-term improvements include potential "spot" improvements, or projects that can provide much needed benefits at specific locations within the study area. Most of these projects are low-cost, safety oriented improvements that can be implemented in a relatively short time frame. The recommended projects were prioritized based on input from the study Steering Committee as well as the severity of the problem(s) being addressed and the current and future traffic volumes along the roadway segment to be improved. The prioritization represents the order in which projects should be pursued and is in terms of High, Medium, and Low. In other words, a low priority does not indicate a particular project should not be implemented but rather it should be implemented after the higher priority projects have been completed.

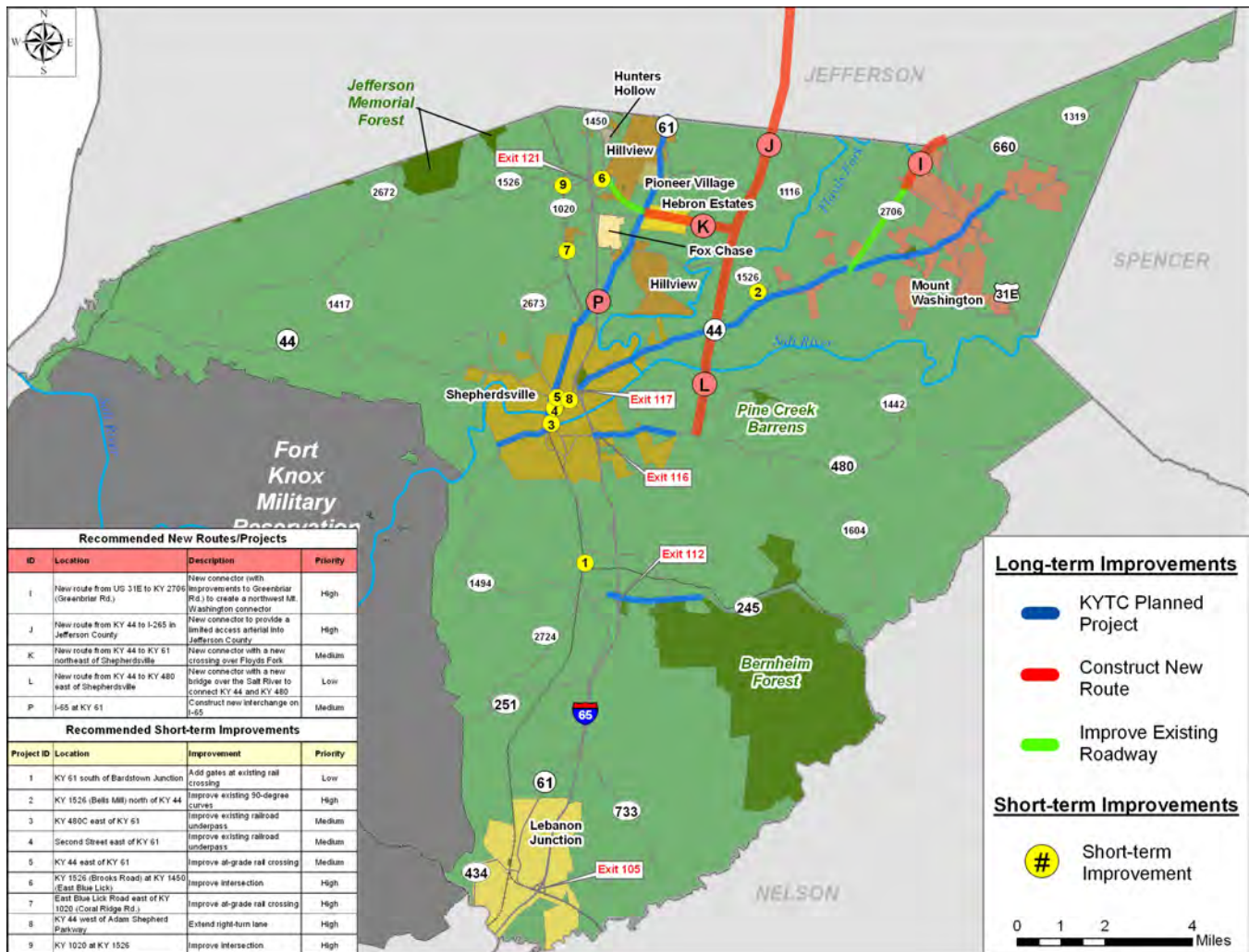


Figure ES-1: Bullitt County Transportation Study Recommendations

The recommended long-term improvements represent new roadways recommended for further consideration and significant improvements to existing roadways. There are five major roadway projects recommended. Route I is a new road north of Mount Washington to provide an improved connection between US 31E (Bardstown Road) and KY 44 west of the city. The route ties into the north end of existing KY 2706 (Greenbriar Road) which would likely require widening to accommodate future traffic demand. Route J would provide a much needed new connector between KY 44 and I-265 in Jefferson County as well as a new crossing of Floyd's Fork. Route K connects Route J to Preston Highway and I-65. The connection to I-65 would be enhanced further by widening KY 1526 (John Harper Highway) between I-65 and the west end of proposed Route K. Route L provides a new crossing over the Salt River and would connect the rapidly growing industrial areas off Cedar Grove Road to KY 44 and areas north. Finally, Project P includes a new interchange on I-65 at Preston Highway to serve northern Shepherdsville.

The recommended new routes were prioritized based on how the new routes relate to the existing transportation system and to one another and on input from the study Steering Committee. Similar to the short-term projects, high priority long-term projects should be pursued first, followed by the medium and low priority projects.

Other strategies discussed to assist Bullitt County in meeting the transportation needs of its citizens include considerations for bicycle and pedestrian accommodations, enhanced future inter-county (between Jefferson and Bullitt County) and intra-county public transportation, instituting access management principles along both new and existing routes, and implementing regulations requiring developers to improve existing routes where necessary to accommodate traffic generated by their developments. Implementing strategies such as these will extend the useful life of existing infrastructure, and coupled with the recommended roadway improvements, make future transportation safer and more efficient for Bullitt County's citizens.

1.0 INTRODUCTION

In December 2008, Bullitt County and the Kentuckiana Regional Planning and Development Agency (KIPDA) initiated a county-wide transportation study to identify needed transportation improvements over the next twenty years. Referred to as the Bullitt County Transportation Study, the primary purpose was to identify community concerns and evaluate potential alternatives to improve mobility and safety in Bullitt County through a comprehensive examination of existing and projected traffic conditions and alternative transportation modes. By working with local officials, agencies, and the public, the study was to help define the location and purpose of needed transportation improvements and to establish priorities for future projects. This report summarizes the process undertaken to complete the study as well as the study findings and recommendations.

1.1 Study Area

Bullitt County, shown in **Figure 1-1**, is located in north central Kentucky, just south of the city of Louisville. The county seat is Shepherdsville. With an estimated 2008 population of approximately 75,000, the county includes eight incorporated cities, listed below in order of their estimated 2008 population as reported by the Kentucky State Data Center (KSDC):

<u>City</u>	<u>2008 Population</u>
Mount Washington	11,980
Shepherdsville (county seat)	9,203
Hillview	7,572
Pioneer Village	2,712
Lebanon Junction	2,012
Hebron Estates	1,181
Fox Chase	515
Hunters Hollow	395

The Salt River crosses Bullitt County as it flows west to the Ohio River, and Floyds Fork connects to the Salt River on the east side of Shepherdsville. The roadway system within Bullitt County consists of three primary north-south routes and a single major east-west route. The north-south routes include I-65, KY 61 (Preston Highway), and US 31E (Bardstown Road), and KY 44 is the sole major east-west route connecting the two largest cities, Mount Washington and Shepherdsville. Other significant routes in the county include KY 245, which connects I-65 to the city of Bardstown in Nelson County, KY 480 (Cedar Grove Road) serving industrial areas east of I-65 in southern Shepherdsville, and KY 1526 (Brooks Hill Road/John Harper Highway) serving industrial areas west of I-65 at the north end of the county. I-65 is among the most heavily traveled interstates in Kentucky, and there are five interchanges located in Bullitt County. These interchanges are as follows:

<u>I-65 Exit</u>	<u>Location</u>
105	KY 61 in Lebanon Junction
112	KY 245 west of Clermont
116	KY 480 in Shepherdsville
117	KY 44 in Shepherdsville
121	KY 1526 at Brooks

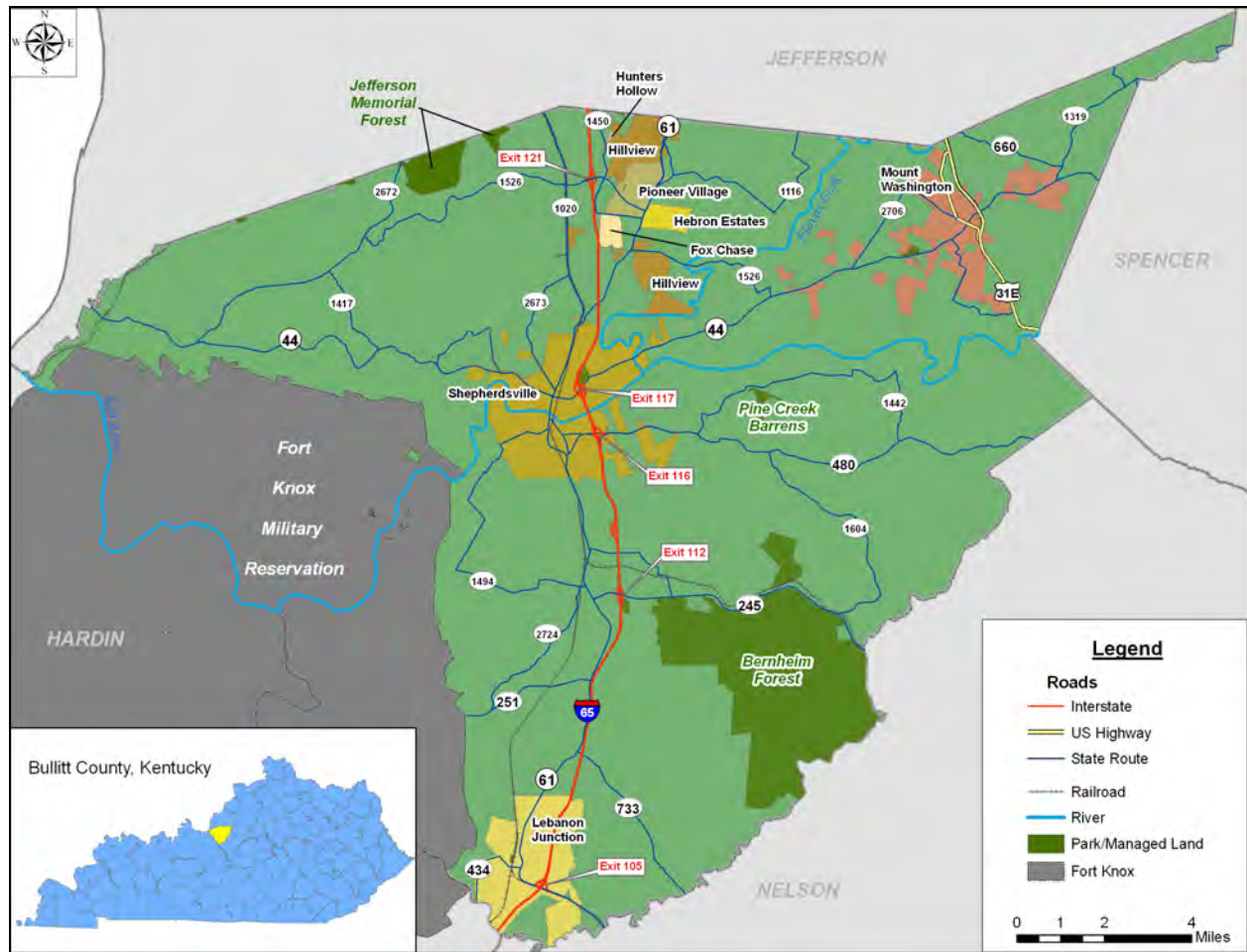


Figure 1-1: Bullitt County

1.2 Project Purpose and Need

The purpose of the Bullitt County Transportation Study was to identify community concerns and evaluate potential alternatives to improve mobility and safety in Bullitt County. The study was intended to help define the location and purpose of needed transportation improvements and to assist Bullitt County, KIPDA, and the Kentucky Transportation Cabinet (KYTC) in developing a long-range transportation plan for Bullitt County. Some of the issues are discussed below.

Rapid Growth - According to the U.S. Census Bureau and the Kentucky State Data Center, the county's population increased by over 22 percent between 2000 and 2008, from approximately 61,200 people to just over 75,000. This tremendous growth has not been met with a proportionate increase in transportation improvements, and local residents are experiencing the adverse effects of such unmet growth. Recent projections provided by the Kentucky State Data Center (KSDC) suggest Bullitt County's population will grow to nearly 114,000 by 2030.

Roadway Deficiencies - A number of Bullitt County roadways have existing capacity or safety deficiencies, and growth in the county will make travel conditions worse in the future. While many of Bullitt County's

roadways have been examined previously, this will be the first study to evaluate and make recommendations for the entire transportation system, including all modes of travel.

Long Commutes - As is the case with many of the counties surrounding Jefferson County, Bullitt County is largely known as a “bedroom” community for Louisville. In 2007, nearly 65 percent of Bullitt County workers traveled to their place of employment in Jefferson County each day, and the average commute time was approximately 28 minutes each way. Over the course of a year, that equals nearly ten days lost to commuting. About 88 percent of all Bullitt County commuters drove to work alone.

Travel Barriers – There are four bridges over the Salt River in Bullitt County (I-65, KY 61, US 31E, and Greenwell-Ford Road) and two over Floyds Fork (KY 44 and KY 1526). This relatively few number of crossings focuses north-south travel onto a limited number of roadways. The rail line paralleling I-65 also limits east-west travel opportunities.

Truck Traffic - A number of relatively new businesses have cropped up along I-65 near Brooks and Shepherdsville, many of which include light industrial and warehouse distribution centers. These types of businesses have resulted in significant growth in heavy truck traffic, and many of the routes used by those trucks were not intended to accommodate such vehicles. If truck drivers miss their route, opportunities to re-route are limited.

1.3 Public Involvement

A study Steering Committee was established to assist in defining project goals and issues and in developing improvement alternatives. The following individuals served on the Steering Committee:

Linda Belcher	State Representative
Ed Bleemel	Bullitt County Fiscal Court
Carrie Butler	TARC
Willie Byrd	Options Unlimited
Happy Cahoe	Bullitt County Economic Development
Joetta Calhoun	City of Mt. Washington
Dwayne Cummings	Shepherds Shelter
Bonnie J. Enlow	City of Shepherdsville
Robert Flaherty	Bullitt County Attorney’s Office
Martha Ferguson	Alternative Adult Day Care
Bob Fouts	Bullitt County Economic Development
Les Gerald	Rogers Group
Tom Hall	KYTC, District 5
Roanne Hammond	Bullitt County Planning and Zoning
John Lehenbauer	Divine Savior Lutheran
Brian Meade	KYTC, District 5
Melanie Roberts	Bullitt County Judge Executive
Nancy Snow	TARC
Jimmy Stivers	Bullitt County Road Department
Ken Stovall	City of Mt. Washington
Alice White	City of Fox Chase
Bud White	Bullitt County Chamber of Commerce
Angie Woodward	Leadership Bullitt County

Five Steering Committee meetings were held throughout the course of the study. Summaries for each of these meetings are found in **Appendix A**.

The first meeting held in January 2009 served as a kickoff to the Bullitt County Transportation Study and the attendees were asked to assist in identifying the critical issues affecting mobility within the county. Some of the key issues identified included rapid growth, long commuting times for Bullitt County residents, high levels of truck traffic, and known roadway capacity and safety deficiencies. Several members of the Committee expressed the need for public transportation improvements within Bullitt County. It was stated that the service currently provided by the Transit Authority of River City (TARC), the public transit agency for Louisville that provides express bus service to Bullitt County, only assists commuters to Jefferson County.

The attendees at the kickoff meeting were asked to rate seven transportation issues affecting Bullitt County. Using electronic keypads, they could rate each issue from “0” (suggesting the issue is not currently a problem) to “9” (indicating the issue is a very serious problem). **Figure 1-2** presents a summary of the results of this exercise, showing the percentage of ratings indicating an issue is “quite serious” or worse.

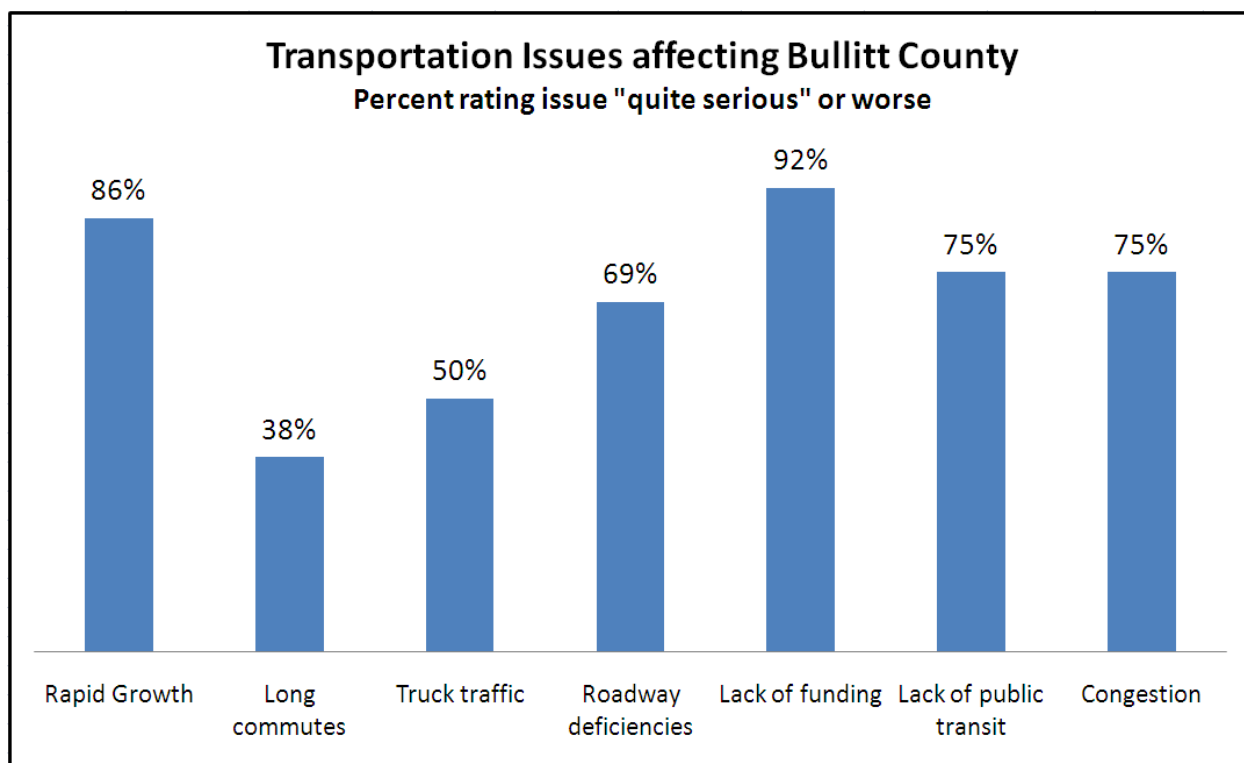


Figure 1-2: Current Issues Affecting Transportation in Bullitt County

Rapid growth and a lack of funding were found to be the two most significant issues affecting transportation in Bullitt County. Long commute times were the least significant of the issues raised.

Two public meetings were held over the course of the study. The first meeting was held on May 28, 2009 and the primary topics of discussion included the following:

- What is a Planning Study?
- Existing Conditions
- Planned & Committed Transportation Projects
- Conceptual Projects

A questionnaire was distributed to attendees soliciting input on current transportation issues and potential projects. An expanded list of transportation issues was provided on the comment form and attendees were asked to rate each issue from one (the issue is not a problem) to five (the issue is a serious problem). Of the nineteen individuals who attended the first public meeting, five submitted comment forms. **Figure 1-3** presents a summary of the transportation issue rating exercise.

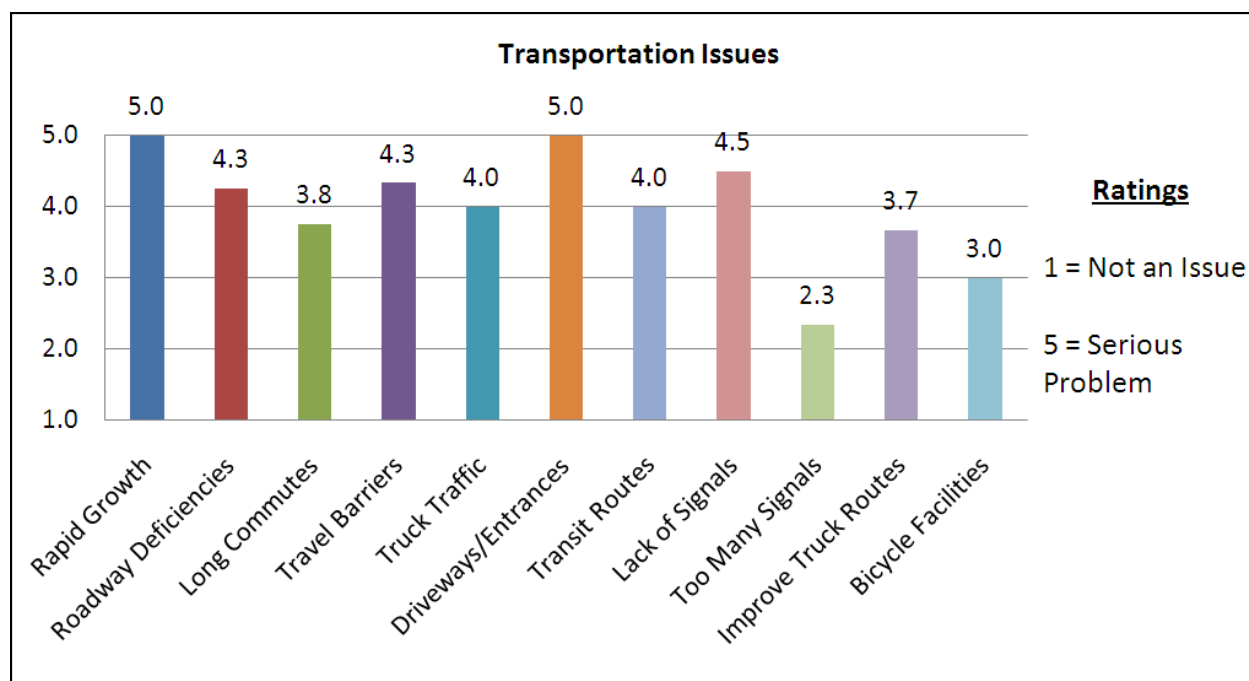


Figure 1-3: Identification of Transportation Issue from Public Meeting #1

Rapid growth and the presence of too many driveways and entrances received scores of five, indicating they are serious problems. The next highest scoring issue was a lack of traffic signals. A lack of bicycle facilities and too many traffic signals received the lowest scores indicating that these were not serious issues for this group.

The second public meeting was held on October 1, 2009. A draft of the long-range transportation plan for Bullitt County was presented and discussed at the meeting. Other topics of discussion included the status of and planned schedule for the KY 44 widening project between Shepherdsville and Mount Washington.

A project website (www.gobullitt.com) was created early in the study as a repository for study information. Launched in March 2009, the site received over 600 unique visits through the middle of December 2009. The website homepage is shown in **Figure 1-4**.



Figure 1-4: Bullitt County Transportation Study Website

2.0 EXISTING CONDITIONS

This chapter discusses the existing conditions within Bullitt County, focusing on areas related to land use and transportation. This information provides insight into current transportation needs and deficiencies.

2.1 Demographics

According to the Kentucky State Data Center, Bullitt County had a population of approximately 75,028 persons in 2008. This was an increase of 22.5 percent since the 2000 Census. **Figure 2-1** presents the 2000 population density based on Census block data.

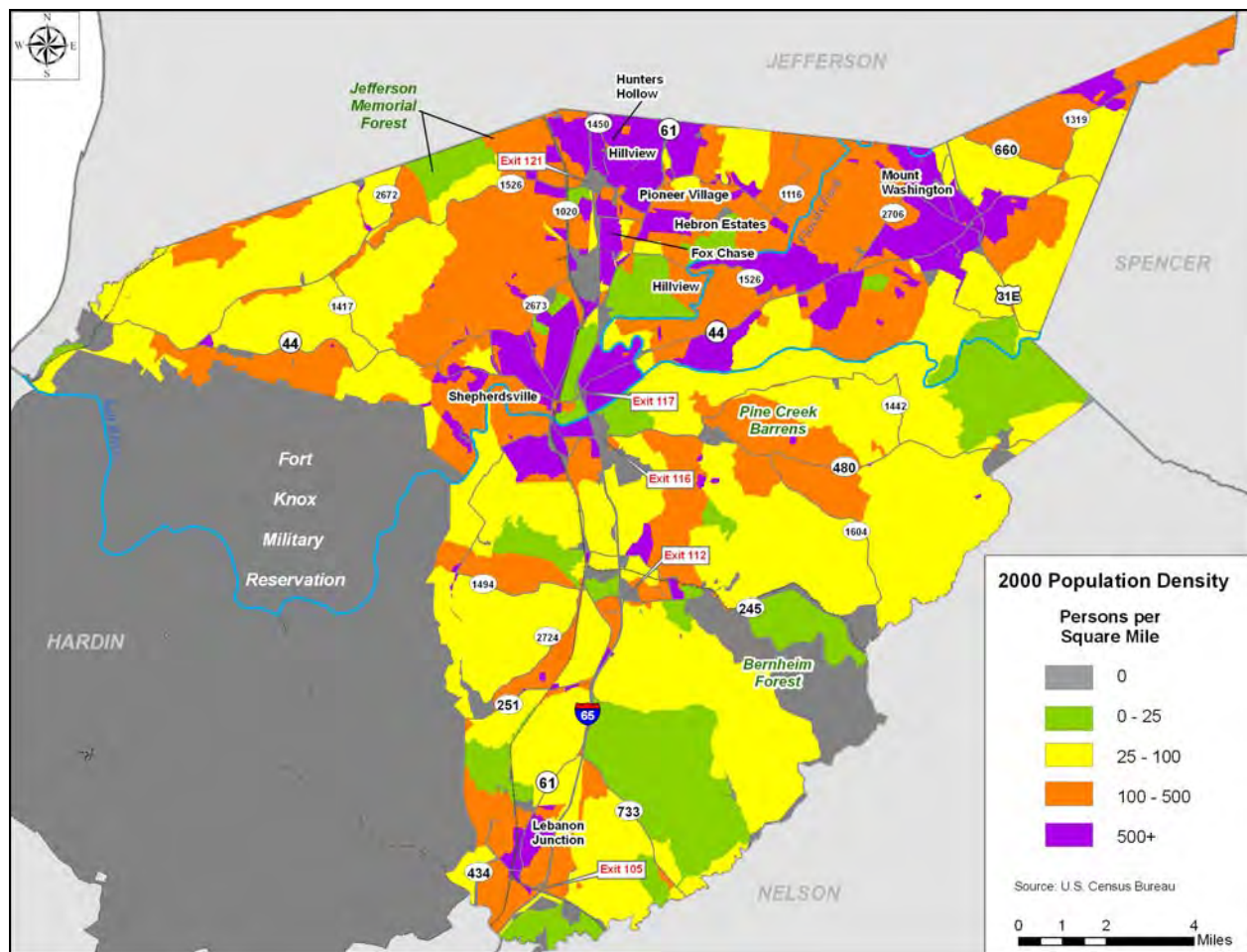


Figure 2-1: 2000 Population Density in Bullitt County

The county-wide average population density is approximately 205 persons per square mile. While residential land use can be found sporadically throughout Bullitt County, the highest concentration is located in the northern portions of the county, east of I-65 and north of the Salt River. Residential areas can be found along four major transportation corridors, three of which are major north-south roadways into Jefferson County. The first is located between and around I-65 and KY 61 (Preston Highway) within the municipalities of Hebron Estates, Pioneer Village, Fox Chase, Hillview, and Hunters Hollow. This area is also among the most densely

populated area in Bullitt County with a population of approximately 17,000 (as of the 2000 Census) and approximately 6,600 households. Another corridor with major residential land use is US 31E (Bardstown Road) in Mount Washington. The concentration of residential development in Mount Washington is primarily west of the Bardstown Road corridor or adjacent to KY 44 east of Bardstown Road. Mount Washington is the most populated city in Bullitt County with a population of approximately 8,400 and 3,290 households (as of the 2000 Census). KY 44 is also a corridor with major residential development. Residential development is found along the entire stretch of KY 44 between Mount Washington and Shepherdsville.

2.2 Land Use and Zoning

Bullitt County consists of a total land area of approximately 299 square miles. Currently, Bullitt County zoning is disaggregated into twelve classifications including Agriculture (A), Conservation (C), Stream Valley Reserve (SR), Residential (R1, R2, R3, and R4), Business (Highway Business ‘B1’ and Central Business ‘B2’), and Industrial (Light Industrial ‘IL’ and General Industrial ‘IG’). **Figure 2-2** summarizes the current zoning within the county. A breakdown of zoning by land area is presented in **Table 2-1**.

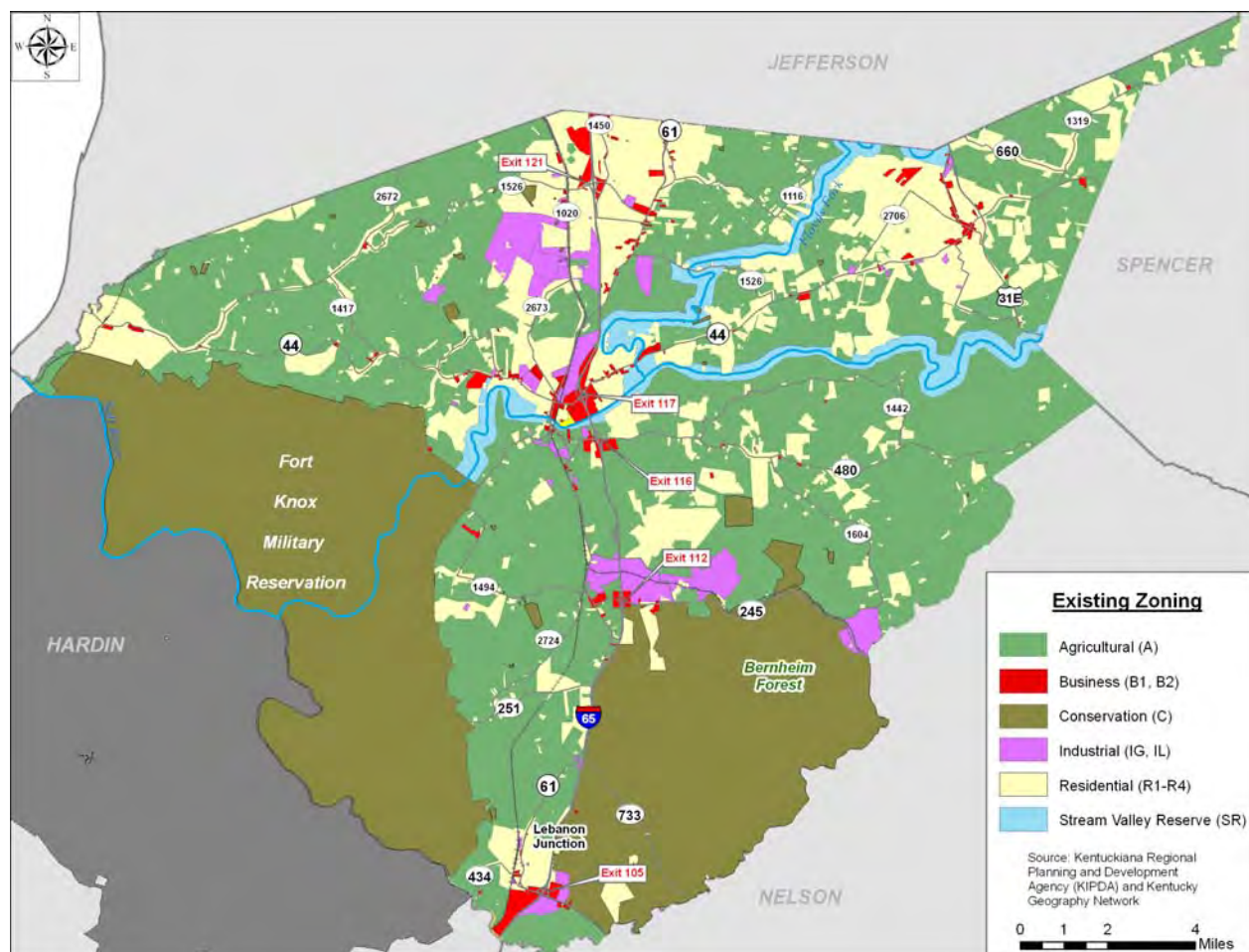


Figure 2-2: Summary of Bullitt County Zoning

Table 2-1: Bullitt County Zoning by Area

Use	Total Area (square miles)	Percent
Agriculture, 'A'	132	44.00%
Highway Business, 'B1'	3.5	1.20%
Central Business, 'B2'	0.79	0.20%
Conservation, 'C'	37.39	12.50%
General Industrial, 'IG'	3.81	1.30%
Light Industrial, 'IL'	4.08	1.40%
Residential, 'R1'	33.62	11.20%
Residential, 'R2'	9.59	3.20%
Residential, 'R3'	3.76	1.30%
Residential, 'R4'	5.12	1.70%
Stream Valley Reserve, 'SR'	10.12	3.40%
Fort Knox Military Reservation	55.94	18.60%

The most prominent land use within Bullitt County is zoned as Agricultural. Land use considered as Agricultural within Bullitt County includes areas zoned as Agricultural, 'A' as well as Conservation, 'C'. The largest distribution of these agricultural land uses is located in the southeastern portion of the county, east of Interstate 65 and south of the Salt River. Agricultural uses can also be found in the northwestern portion of the county as well as small pockets dispersed throughout.

The second-most prominent land use within Bullitt County is Residential. Given the proximity to the city of Louisville and Jefferson County, many suburban residential neighborhoods have been developed in the northern portions of Bullitt County.

Commercial uses are found scattered throughout Bullitt County, and a clear concentration exists within the city of Shepherdsville. Commercial development within Shepherdsville is found in the areas between KY 61 (Preston Highway) and I-65. Additional commercial development is also found near downtown Shepherdsville and along KY 44 east and west of Preston Highway. Elsewhere in Bullitt County, commercial development can be found along Preston Highway and US 31E (Bardstown Road) south of the Jefferson County line; in Mount Washington along Bardstown Road and KY 44; and around interchanges along Interstate 65 at KY 245 (exit 112) and Lebanon Junction (exit 105).

Industrial uses are present at the Brooks Hill Road and KY 1020 (Coral Ridge Road) intersection as well as the Kentucky Solite Corporation, approximately 1.5 miles south of this intersection. Additional industrial sites are located in Cedar Grove Industrial Park and Salt River Business Park immediately off I-65 exit 116, along KY 480 (Cedar Grove Road). KY 245 (Clermont Road) also houses a number of industrial sites. These include the Jim Beam Distillery (about two miles east of I-65) and the Four Roses Warehouse (on the Nelson County

border). Additional industrial sites within Bullitt County are located within the Settler's Point located off of Preston Highway, Lebanon Junction off I-65 at exit 105, and the Mount Washington Business Centre (off of Landis Lane).

2.3 Roadway Characteristics

Existing traffic characteristics for the study area were obtained through field investigations and data provided by local and state agencies. Detailed roadway information for state-maintained highways within the county is located in **Appendix B**, including Lane Data, Shoulder Width, Median Type, Horizontal Curvature Adequacy, Vertical Curvature Adequacy, Truck Weight Class, and Designated Truck Route maps.

Figure 2-3 shows the functional classification of the roadways within the county.

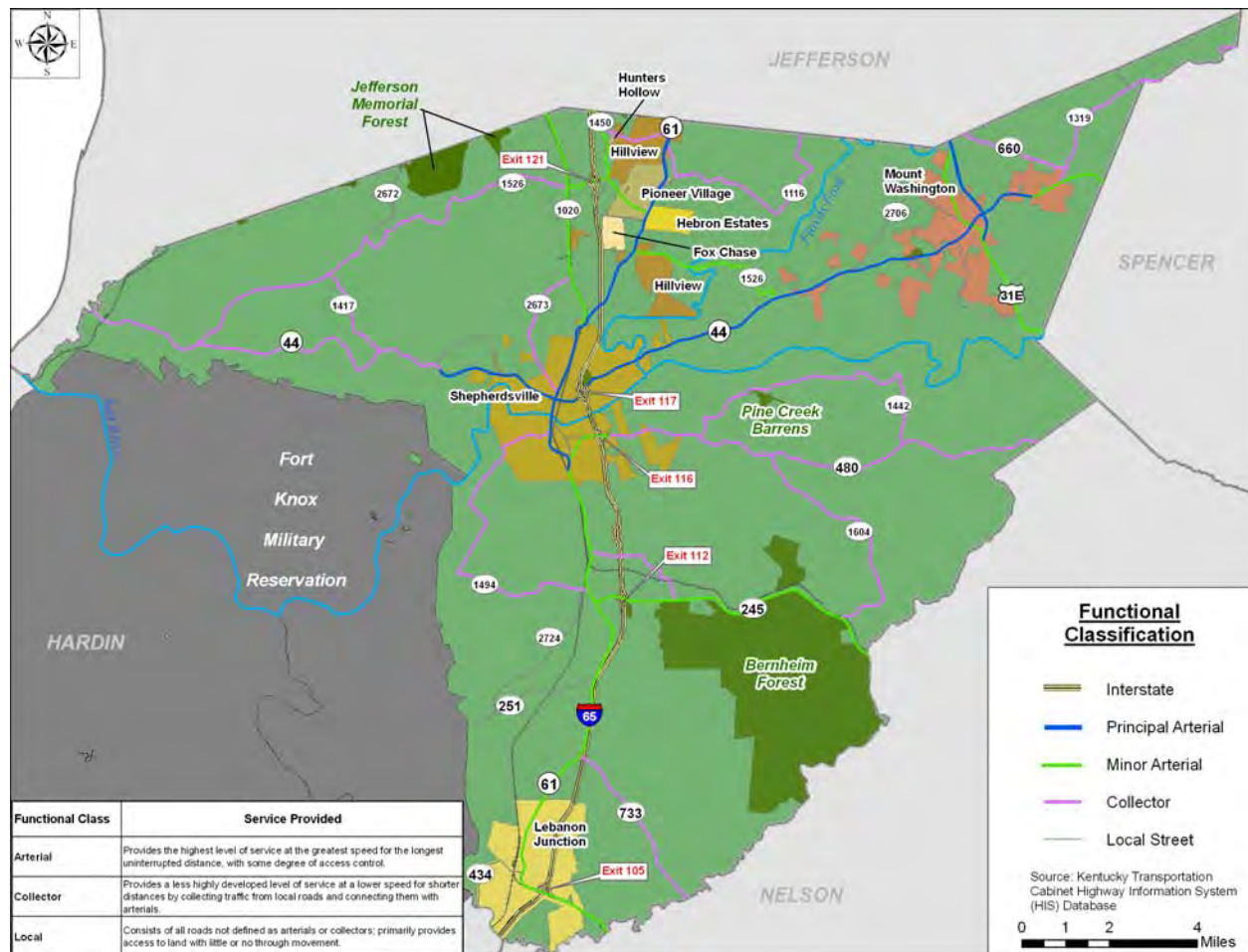


Figure 2-3: Functional Class for Bullitt County Roads

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 they provide. This grouping acknowledges that roads have different levels of importance and provides a basis for comparing roads fairly. 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.

I-65, an arterial with complete control of access, is the only interstate facility in Bullitt County. Principal arterials, which provide the highest level of mobility and least amount of access to adjacent parcels, include portions of US 31E, KY 44, and KY 61.

Estimated 2008 average daily traffic volumes (ADT) for the study area roadways were obtained from the Kentucky Transportation Cabinet's Highway Information System (HIS) Database. A summary of the ADT data as well as each roadway's volume-to-service flow (VSF) ratio is provided in **Figure 2-4**.

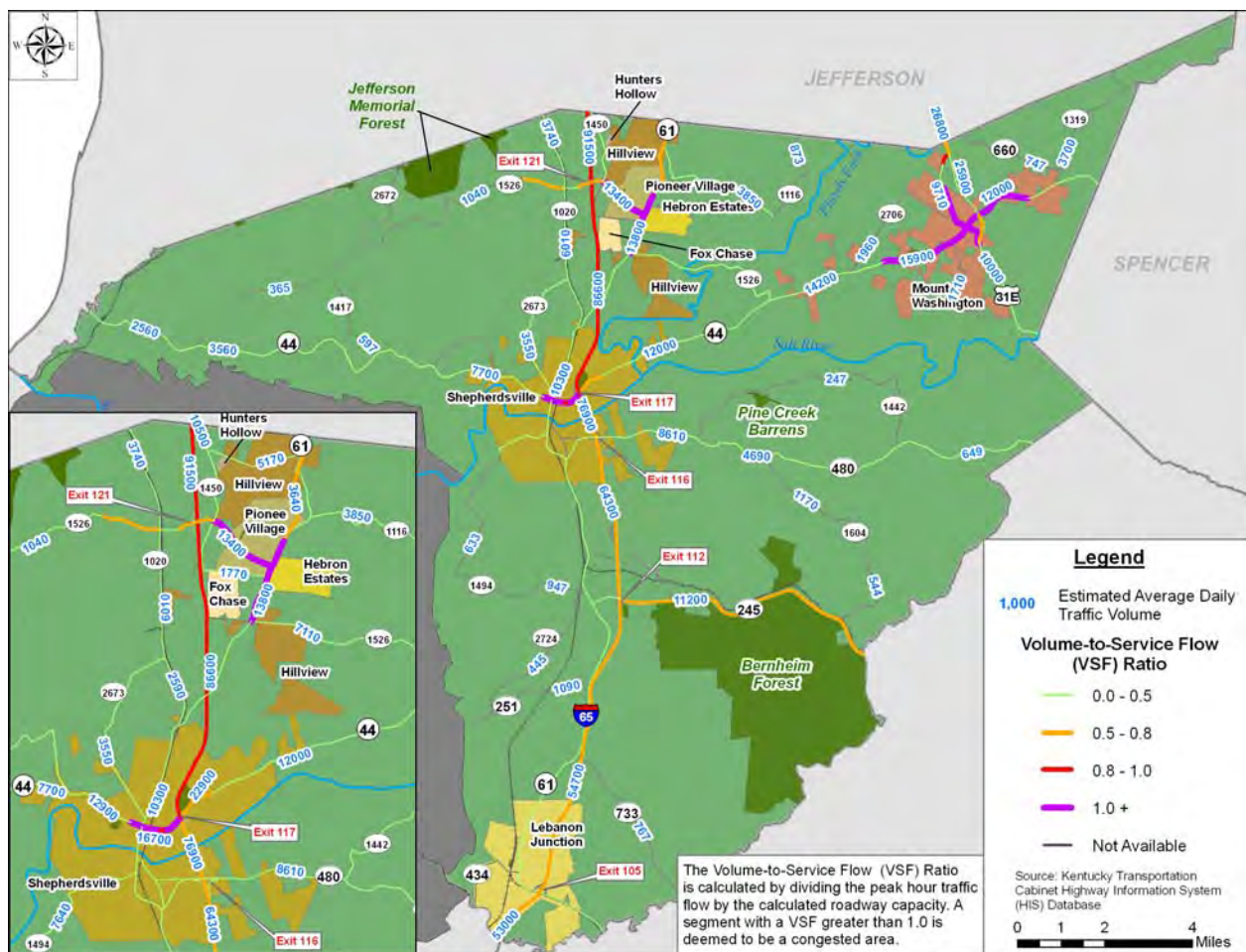


Figure 2-4: Average Daily Traffic (ADT) and Volume-to-Service Flow (VSF) Ratio

The VSF ratio is calculated as the actual peak hour volume of traffic along a roadway segment divided by the roadway's theoretical capacity. A VSF ratio over 1.0 indicates the roadway operates over capacity, and higher VSF ratios indicate more congested conditions. As illustrated, I-65 is the county's major north-south route and carries a relatively significant amount of traffic in the county. At the north end, the ADT is between 76,900 and 91,500; at the south, the ADT ranges from 53,000 to 64,300. KY 44 and KY 61 (Preston Highway) also carry high daily traffic volumes with maximum ADT at 15,100 and 14,200, respectively. Congested roadways are shown to be concentrated in the northeast portion of the county, primarily in the Mount Washington and Shepherdsville areas. Portions of KY 44, KY 61, KY 1526, I-65, and US 31EX are currently operating at or near capacity.

Crash data from January 1, 2006 through February 25, 2009 were obtained from the Kentucky Transportation Cabinet's Division of Highway Safety for the city- and State-maintained study area routes. These data provide some insight into the need for transportation improvements as segments with high overall crash rates or with a high occurrence of a particular crash type may suggest a particular deficiency. Roadway segments with high crash rates should be investigated for potential countermeasures and needed improvements.

In summary, a total of 5,033 crashes were reported during the 37-month period. Of the total crashes reported, 24.1 percent resulted in an injury, and 0.6 percent resulted in a fatality. The types of crashes most prevalent were rear-end crashes (32 percent) and single-vehicle crashes (28 percent). Rear-end crashes generally indicate congestion issues; while single-vehicle crashes suggest that excessive speeding and reckless driving habits are present along certain roadways. The roadway with the majority of reported crashes within the county was KY 44, accounting for 24.8 percent of all crashes. Two-hundred eighty-eight (288) of those crashes resulted in one or more injuries. KY 61 was the second-highest roadway with injury crashes, with 169 reported during the analysis period.

Another tool to analyze the crash data involves computing critical crash rate factors (CRF). These values are displayed in **Figure 2-5**. The CRF is a comparison of the calculated crash rate to a critical crash rate, where the critical crash rate is a statistically-determined value for similar-type facilities across Kentucky. These rates allow for a comparison of crash experiences along roadways or at intersections for different facility types and entering traffic volumes. A CRF value greater than 1.0 indicates a higher than expected crash rate and that crashes are not occurring at random. Those roadway sections and intersections determined to have exceptionally high crash experience, summarized in **Table 2-2**, are located primarily in the northern portion of the county. These roadway segments have CRF values greater than 1.50.

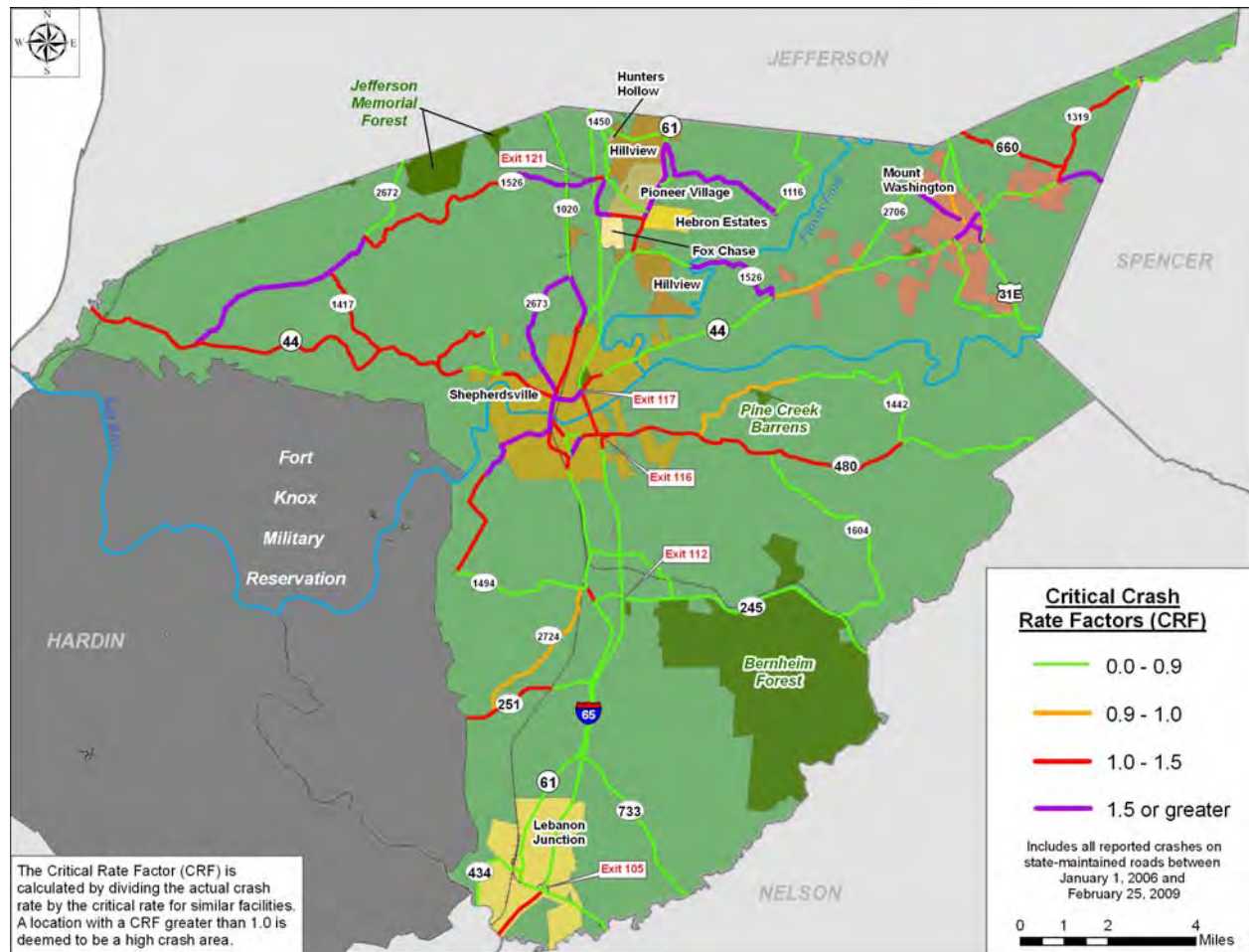


Figure 2-5: Crash History

Table 2-2: High Crash Rate Segments

Roadway	Begin MP	End MP	Segment Description	CRF
KY 44	12.22	12.94	KY-61 to I-65	4.8
	22.35	23.26	KY-2674 to Primrose Drive	1.7
	25.28	26.29	KY-1319 to Bullitt-Spencer County Line	1.7
KY 61	13.75	14.66	Old Beechgrove Road/KY-1494 to KY-2673	1.5
	19.20	21.07	East Hebron Lane/KY-1450 to KY-1116	3.2
KY 480	0.00	0.59	KY-61 to KY-480C	1.5
KY 1020	0.00	1.21	KY-61 to KY-2673	3.0
KY 1116	0.00	3.45	KY-61 to Floyds Fork Drive/Bates Lane	1.8
KY 1450	0.74	1.90	KY-61 to KY-1526	1.8
KY 1494	5.97	8.01	Long Lick Farm Road to KY-61	1.9
KY 1526	0.00	4.94	KY-44 to KY-2672	1.9
	9.39	11.44	Brooks Valley Road to I-65	2.4
	14.33	16.94	Floyds Fork Bridge (B00057) to KY-44	1.6
KY 2673	0.00	3.23	KY-61 to KY-1020	2.2
KY 2706	2.31	3.64	Flatlick Road/Pierce Ave to US-31EX	1.5
US 31EX	0.00	0.56	US-31E to KY-44	1.6

There are four bridges over the Salt River in Bullitt County (I-65, KY 61, US 31E, and Greenwell-Ford Road) and two over Floyds Fork (KY 44 and KY 1526). This relatively few number of crossings focuses north-south travel onto a limited number of roadways. From the KYTC's HIS database, existing bridge sufficiency ratings were identified in **Figure 2-6**. 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. **Table 2-3** summarizes all bridges in Bullitt County with a sufficiency rating of 50 or below.

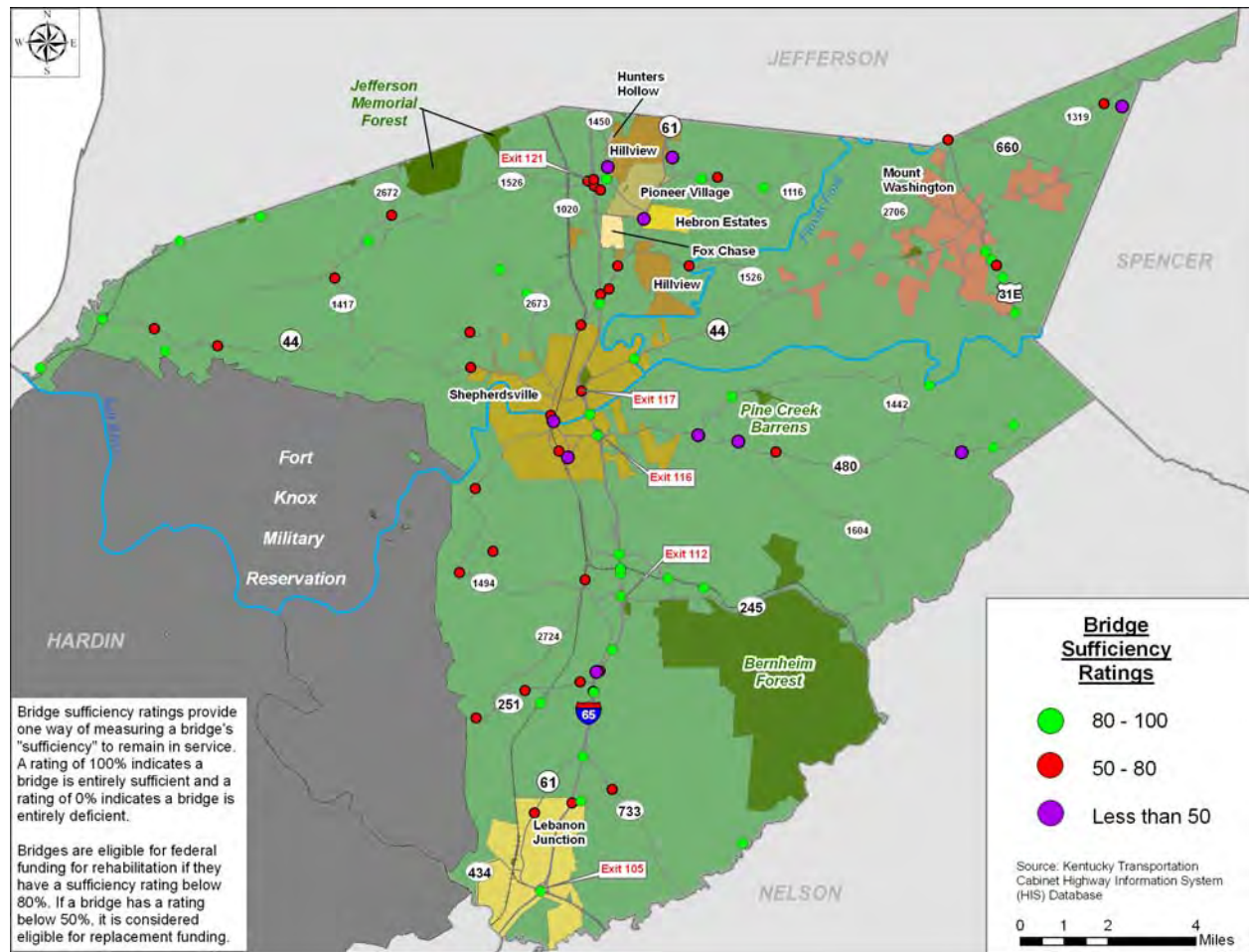


Figure 2-6: Bridge Sufficiency Ratings

Table 2-3: Bridges with Sufficiency Ratings of 50 or Below

Roadway	Bridge Number	Intersecting Feature	Location	Bridge Description	Sufficiency Rating
KY 1116	015B00002N	Tanyard Branch Cedar Creek	0.35 miles east of KY 61	27.89 Foot - 2 Span Concrete Slab	40.4
KY 61	015B00013N	Barley Creek	0.1 miles north of KY 1526	23.95 Foot - Single Span Concrete Tee Beam	49.0
KY 480	015B00028N	Dennison Creek	1.0 miles east of KY 1442	22.97 Foot - 2 Span Concrete Culvert (includes frame culverts)	50.0
KY 480	015B00032N	Rocky Run Branch Cedar Creek	1.4 miles east of KY 44	29.86 Foot - 2 Span Steel Slab	40.0
KY 1450	015B00038N	Brooks Run Creek	0.5 miles north of KY 1526	27.89 Foot - 2 Span Concrete Culvert (includes frame culverts)	44.7
KY 480	015B00096N	Buffalo Run	0.3 miles east of I-65	84 Foot - Single Span Prestressed concrete Box Beam or Girders - Multiple	0*
KY 1442	015B00097N	Lickskillet Creek	0.4 miles north of KY 480		0*
KY 1450	015B00098N	Brooks Run Creek	0.55 miles west of KY 61		0*
CR-1022F (Deacon Trace)	015C00032N	Brush Run Creek	0.35 miles east of KY 1319	29.86 Foot - Single Span Prestressed concrete Box Beam or Girders - Multip	37.9
KY 480C	015R00601N	CSX RR over KY 480C	East of KY 61	20.01 Foot - -1 Span Wood or Timber Stringer/Multi-beam or Girder	-2.0

* Bridges have been replaced and updated ratings are not yet available.

Figure 2-7 shows the location and type of each existing highway-rail crossing in Bullitt County. These crossings are also summarized in **Table 2-4**. There are a total of 39 railroad crossings in Bullitt County, 32 of which are at-grade, meaning the railroad and highway intersect at the same elevation. Of these “grade crossings”, all on State-maintained roadways have lights and/or crossing gates.

According to data provided by the Federal Railroad Administration (FRA), there were three crashes at railroad grade crossings in Bullitt County between 2006 and 2008. Two of those crashes occurred on East Blue Lick Road, at the CSX rail crossing east of KY 1020 (Coral Ridge Road) north of Shepherdsville, in 2008. Other incidents have occurred at this crossing and are discussed in more detail in Chapter 4, Section 4.2. The third crash occurred on Forest Hill Road, at the CSX rail crossing west of KY 61 south of Shepherdsville, in 2006.

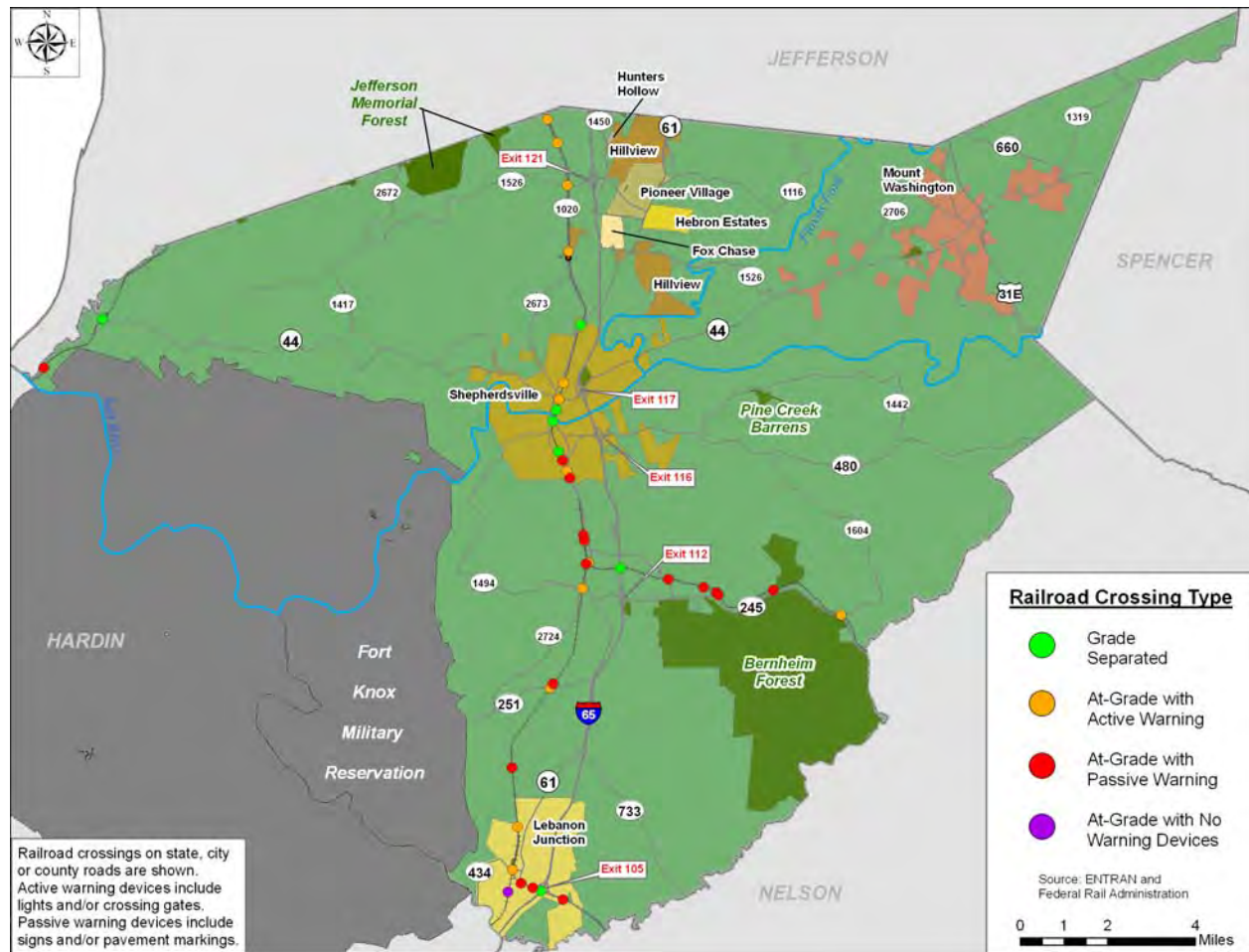


Figure 2-7: Existing Railroad Crossings

Table 2-4: Railroad Crossing Inventory

Roadway Type	Total	Crossing type		Crossing Protection		
		At-Grade	Grade-Separated	None	Passive	Active
State-maintained	16	10	6	0	1	9
Local road	23	22	1	5	10	6

2.4 Public Transportation

Public transportation in Bullitt County is limited. Currently, the Transit Authority of the River City (TARC) has one route that extends into Bullitt County. Route 66x, shown in **Figure 2-8**, provides express bus service from Bullitt County to downtown Louisville. The service operates only during the morning and evening peak hours, providing three round trips daily from Mt. Washington to Shepherdsville via KY 44 and then to downtown Louisville utilizing I-65 in the morning (reverse in the evening). The route does not operate on the weekends or holidays.

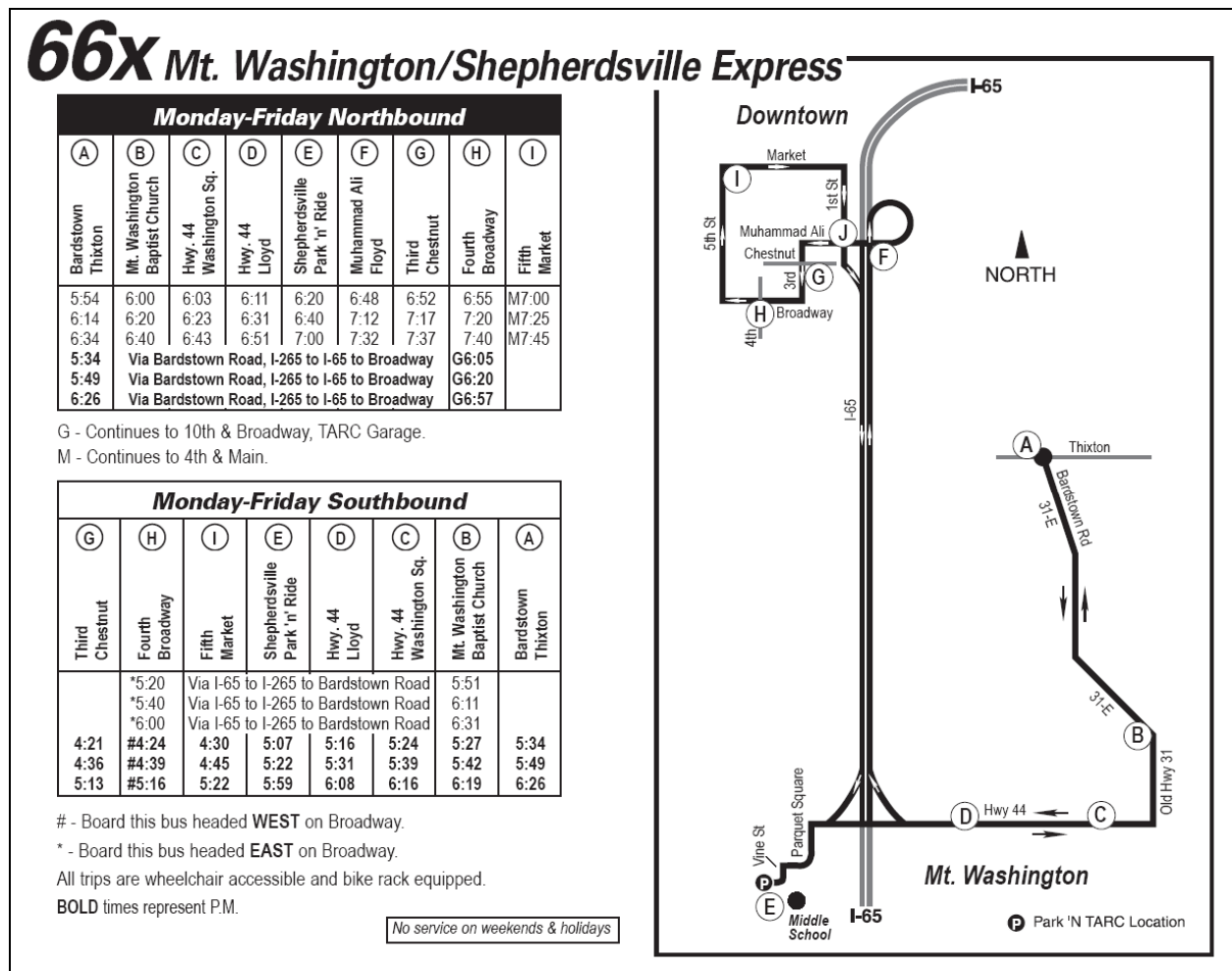


Figure 2-8: TARC Route 66x
(Source: www.rideTARC.org)

2.5 Commuting Patterns

Figure 2-9 presents a summary of the daily commuter traffic to and from Bullitt County. Data from the 2000 Census suggested that 22,229 workers commuted out of Bullitt County each day for work, with nearly 89 percent of those traveling to jobs in Jefferson County. 3,941 workers commuted into Bullitt County each day, and over 50 percent of those come from Jefferson County. As Bullitt County's population continues to increase, these trends are also likely to continue.

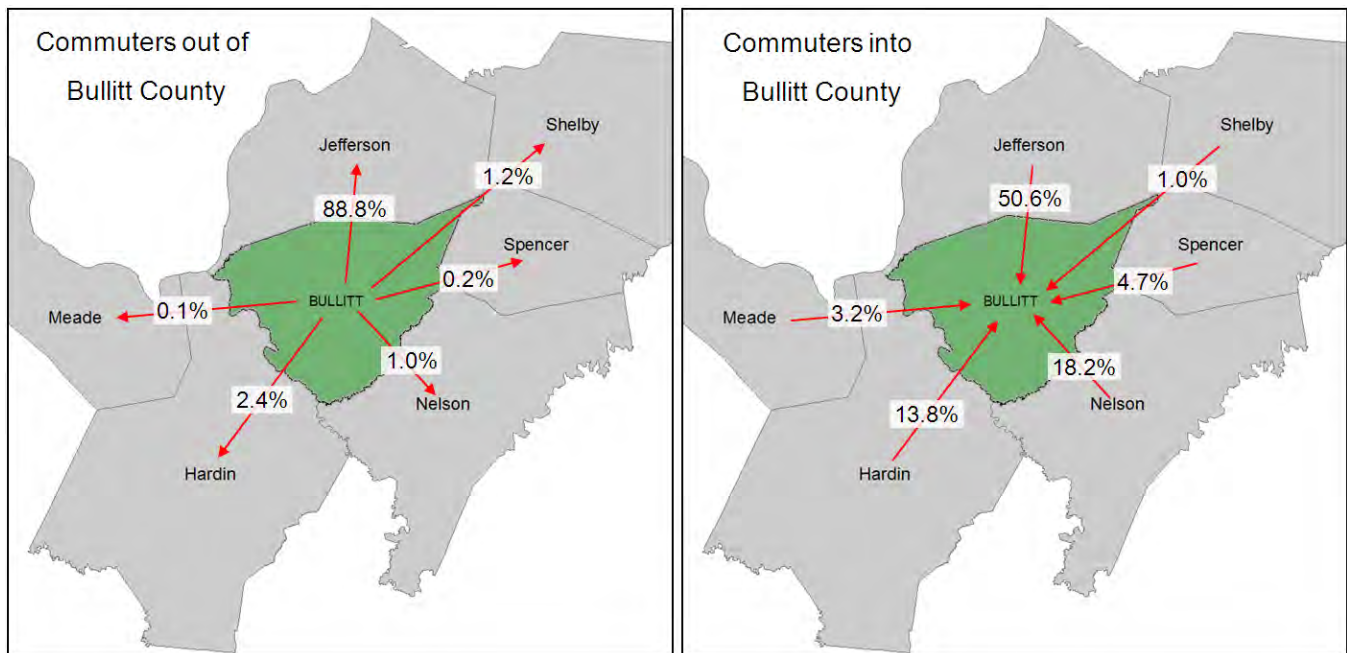


Figure 2-9: Bullitt County Commute Data

(Source: U.S. Census Bureau)

3.0 FUTURE CONDITIONS

An analysis of the anticipated future travel conditions in Bullitt County was performed to estimate likely typical daily traffic conditions on the Study Area transportation network for the year 2030 and to identify future highway deficiencies. In terms of the future transportation network, it is assumed that only those projects included in the current 2008-2014 Six-Year Highway Plan (“Six Year Plan”) will be constructed by the year 2030. The future year roadway system, referred to as the year 2030 Existing Plus Committed (“E+C”) network, was used in the development of future year traffic projections and resulting levels of service.

3.1 Demographic Forecasts

Overall population growth within Bullitt County will continue to increase into 2030. According to revised forecasts provided by the Kentucky State Data Center in April 2009 (shown in **Figure 3-1**), Bullitt County’s population will grow by approximately 85 percent between 2000 and 2030. This increase will bring the county’s population to nearly 114,000, making Bullitt County the ninth most populous county in Kentucky by 2030.

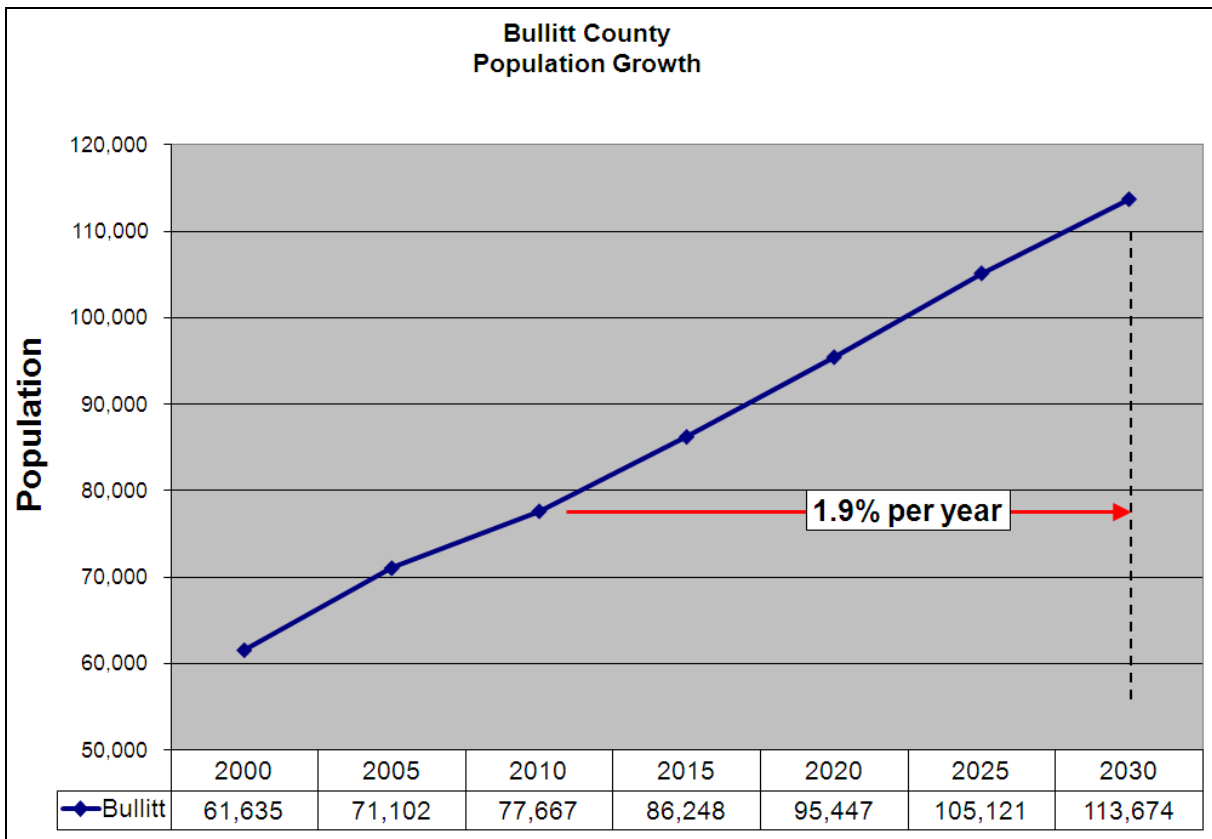


Figure 3-1: Population Forecasts for Bullitt County
(Source: Kentucky State Data Center and U.S. Census Bureau)

Housing within Bullitt County is expected to grow substantially throughout the county, but growth is expected to be more concentrated in the northern portions. **Figure 3-2** presents a summary of the anticipated growth in households based on socioeconomic data estimates and forecasts found in KIPDA's regional travel demand model. The model uses these data to estimate the number of trips completed between traffic analysis zones (TAZ's) on a daily basis. A TAZ is a geographic area within a demand model that is based on U.S. Census blocks and is used to allocate socioeconomic data (namely households and employment) throughout a model area.

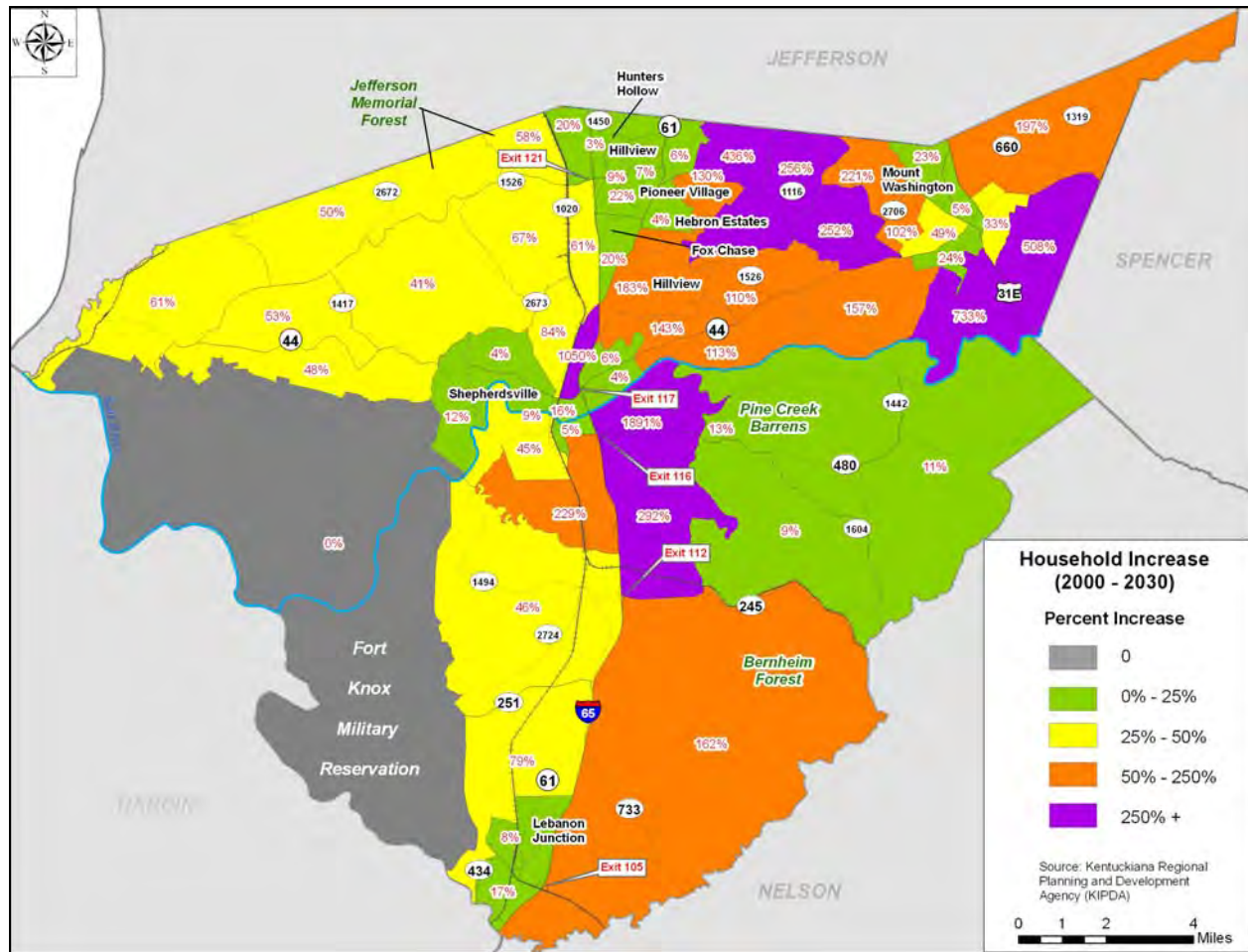


Figure 3-2: Forecasted Growth in Households in Bullitt County from 2000 to 2030

(Source: KIPDA's Horizon 2030 Metropolitan Transportation Plan
in cooperation with Bullitt County Planning & Zoning)

The area along Bardstown Road (US 31E) south of Mount Washington and KY 44 will see continued growth as a planned expansion of the Mount Washington Water Treatment Plant will help facilitate the growth. The areas between the communities of Mount Washington and Hillview will also see a substantial amount of growth. This area currently contains open space in which housing may be developed and these communities will continue to grow towards each other. In Shepherdsville, the area along Preston Highway (KY 61) north of KY 44 also shows significant housing growth with several subdivisions under development (including Mallard Lakes).

Another area with significant household growth is along I-65 from the Salt River south to Clermont Road (KY 245). This area is projected to have a significant increase in housing given its proximity to the Cedar Grove and Salt River Business Park. There are large areas of land without any development that are suitable for development and are close to Shepherdsville and I-65. In this area, the Heritage Hill Community, which is currently under construction, includes many housing units.

The employment forecast for Bullitt County indicates significant job growth within the northern portion of the county, as shown in **Figure 3-3**.

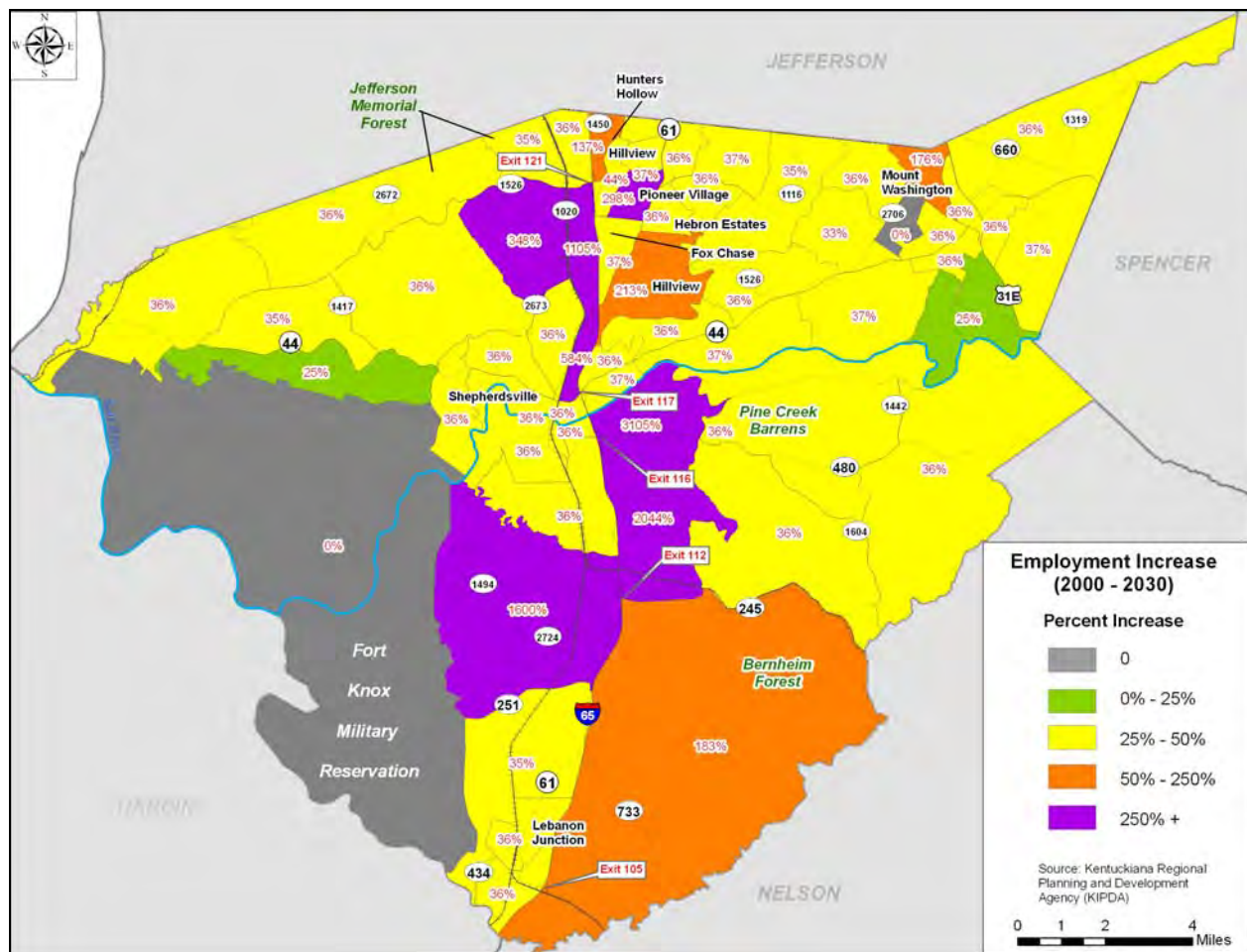


Figure 3-3: Forecasted Growth in Employment in Bullitt County from 2000 to 2030

(Source: KIPDA's Horizon 2030 Metropolitan Transportation Plan in cooperation with Bullitt County Economic Development)

These jobs are relatively close to I-65. According to the TAZ forecasting, most significant job growth will occur in three different areas. The first location is the area along Coral Ridge Road (KY 1020). This area currently is home to warehouses at Brooks Hill Road and Coral Ridge Road, the Kentucky Solite Corporation and the

Brookview Industrial Park, which is currently a Build-to-Suit Industrial Facility. According to KIPDA's forecasts, this area was anticipated to see an employment increase of over 2,000 jobs between 2000 and 2030.

Significant employment growth has occurred and will continue to occur along I-65 spanning from Cedar Grove Road (KY 480) to Clermont Road (KY 245). With the recent and continued development of the Cedar Grove Industrial Park and the Salt River Business Park, employment in this area of the county has and will continue to see tremendous growth. Additional improvements to the Bourbon Trail and areas surrounding the Jim Beam Distillery will also increase employment along Clermont Road east of I-65. Lastly, the area along Clermont Road (KY 245) east of I-65 is also expected to see significant job growth. This is attributed to the expansion of the Shepherdsville sewer system within this area of the county.

3.2 Future Land Use

The 1998 Bullitt County Comprehensive Plan update included a land use plan which was developed in 1997, depicted in **Figure 3-4** below. According to Bullitt County Planning and Zoning, this land use plan has been re-adopted as a guide for future development. This plan consists of primarily residential development concentrated within the northeastern portion of the county. This land use plan centers the development around the major transportation corridors in this area of the county, namely I-65, KY 61 (Preston Highway), KY 44, and Bardstown Road (US 31E).

Bullitt County has seen rapid growth and is predicted to continue to grow given its location within the Louisville Metropolitan Area. These growth areas are difficult to predict given a dated land use plan. However, with planned improvements to city services and the transportation network, a few potential areas can be identified.

The City of Shepherdsville has plans to extend sewer service south of its current city limits toward the Jim Beam Distillery along KY 245 (Clermont Road). The extension of sewer services is expected to bring significant commercial and industrial growth as well as possible residential development to this area of the county. There are also plans to construct a campus for the proposed Bullitt County Community College, part of the Kentucky Community and Technical College System (KCTCS), near the I-65 interchange on KY 245.

Additional projects within the Kentucky Transportation Cabinet's Six-Year Highway Plan will bring significant growth to particular areas of the county. These projects are the improvements to Preston Highway (Widen KY 61 from existing four-lane to Shepherdsville) and KY 44 (Reconstruct from I-65 to Shepherdsville). It is expected that with the improvements to Preston Highway (KY 61), more industrial and commercial development will occur and the cities of Hillview and Shepherdsville will begin to expand towards each others' respective boundaries. Mount Washington and Shepherdsville will also continue to expand towards one another.

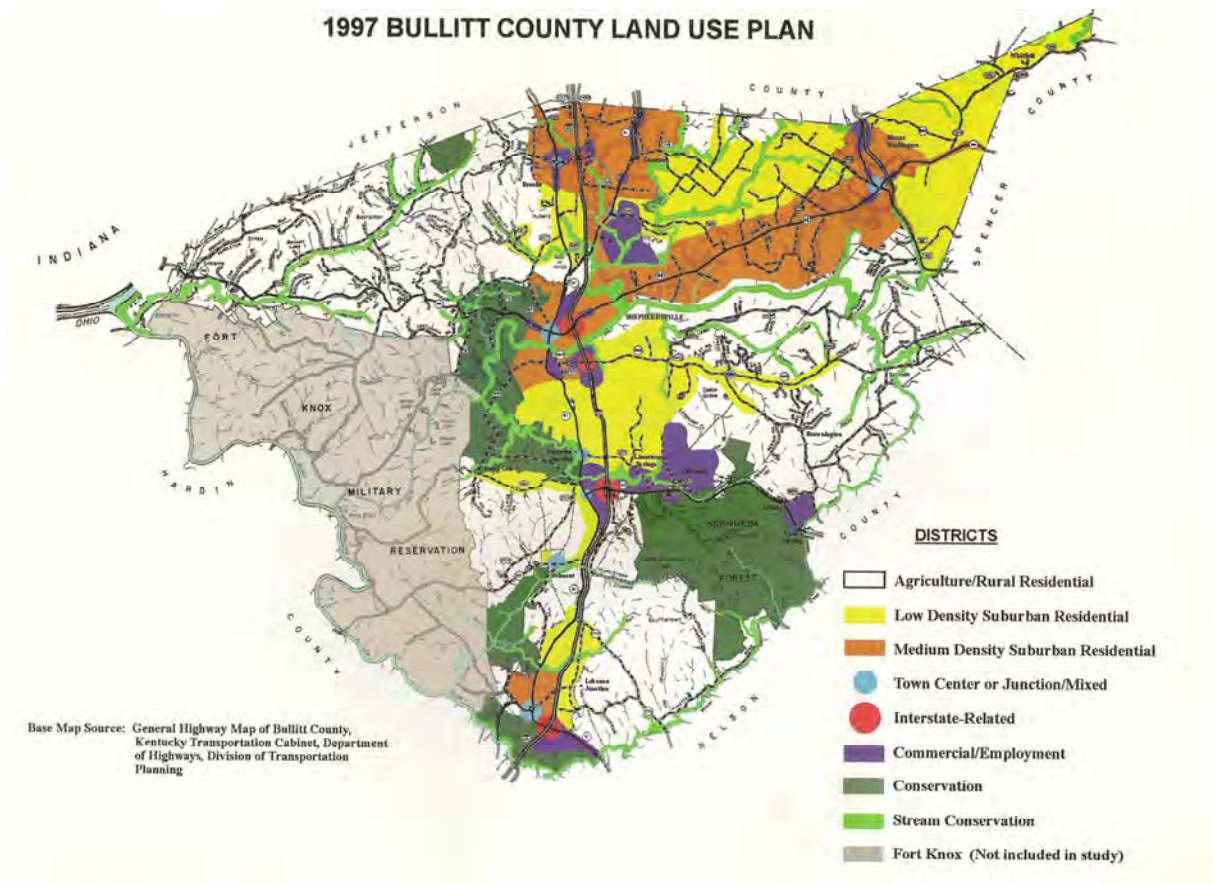


Figure 3-4: 1997 Bullitt County Land Use Plan

3.3 Committed Transportation Improvements

It typically takes a great deal of time for a transportation need or deficiency to be identified and for a solution to be implemented. Under the metropolitan planning process, transportation projects originate in the local agency's Metropolitan Transportation Plan (MTP). *Horizon 2030* is KIPDA's long-range transportation planning document. Projects listed in the MTP are prioritized and the local transportation priorities for the region are set forth in Transportation Improvement Program (TIP), a short-range fiscal programming document representing the first four years of the MTP. The TIP includes detail on the scope for intended improvements or strategies and what types of funds will be used for a particular project. A project must be in the MTP before it can be advanced to the TIP. KYTC evaluates all projects statewide and determines funding priorities. Projects that represent the highest statewide priorities are included in Kentucky's Six Year Highway Plan. The Six Year Plan is enacted by the legislature and allocates anticipated state and federal revenues for transportation projects. Only the first two years of Six Year Plan projects (or in some cases project phases) are guaranteed to be funded.

The currently committed transportation improvement projects found in the current version of the Six Year Plan for Bullitt County are shown in **Figure 3-5** and summarized.

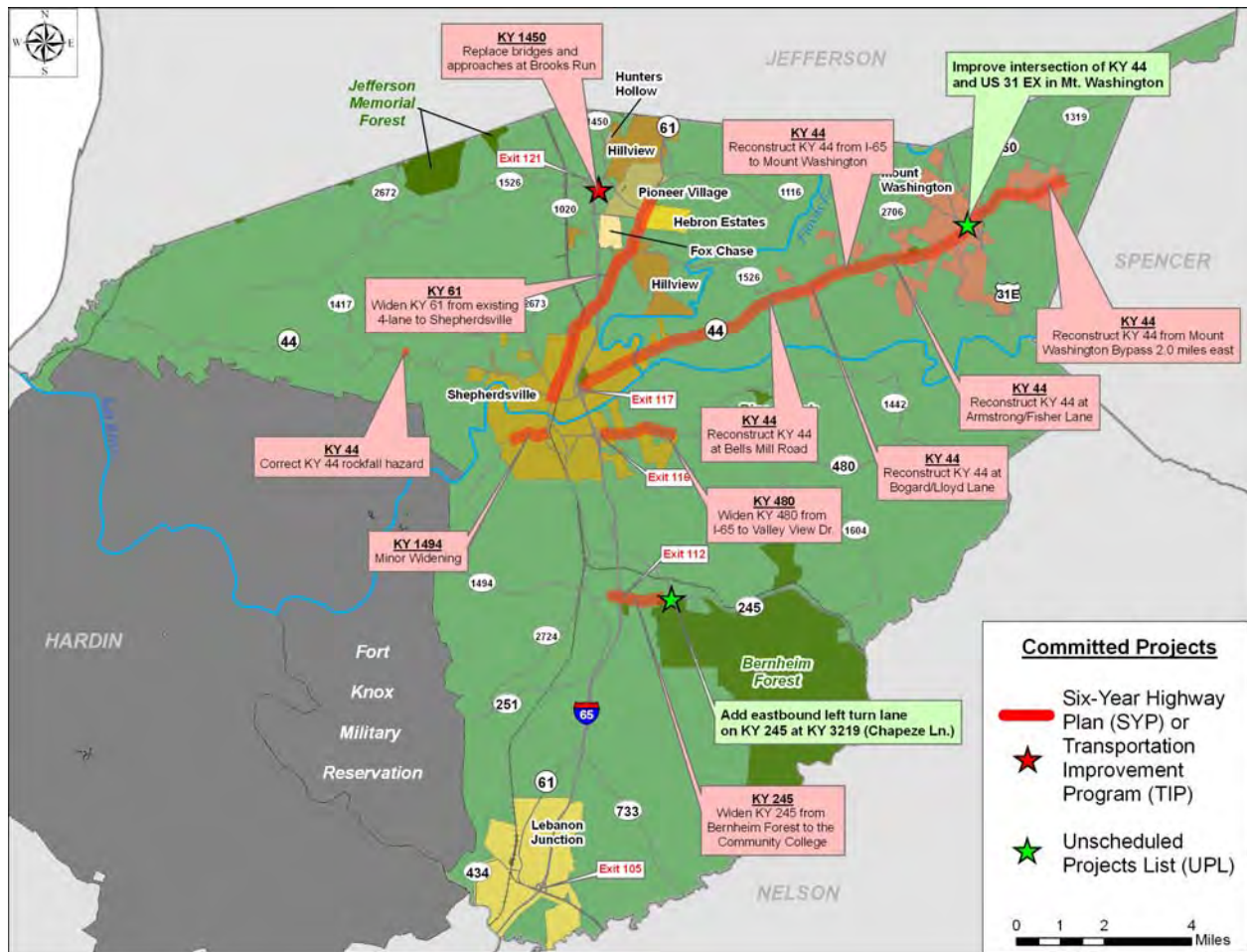


Figure 3-5: Committed Transportation Improvements for Bullitt County

- KY 61: Major Widening
 - South of KY 44 to existing 4-lane section
- KY 44: Intersection Reconstruction
 - KY 44 at KY 1526 (Bells Mill Road)
 - KY 44 at Bogard/Lloyd Lane
 - KY 44 at Armstrong/Fisher Lane
- KY 44: Reconstruction
 - From Mt. Washington Bypass 2.0 miles east
- KY 1494: Minor Widening
 - Relocate section from KY 61 to Cundiff Lane
- KY 480: Reconstruction
 - I-65 to Cedar Grove Elementary
- KY 245: Minor Widening
 - Bernheim Forest to Community College

3.4 Traffic Forecasts

As mentioned in Section 3.1, KIPDA developed and now maintains a regional travel demand model for a five-county area surrounding Louisville. Bullitt County is divided into 58 TAZ's, geographic areas based on Census Blocks that typically consist of similar land uses. The travel demand model uses socioeconomic data estimates, including households and employment, to estimate the number of daily trips between each TAZ in the model.

The base year (2000) model includes 22,035 households in Bullitt County and the 2030 model includes 37,472 households, an increase of over 70 percent. Employment is expected to grow from 13,767 in 2000 to 30,881 by 2030, an increase of over 124 percent.

Figure 3-6 depicts the 2030 No-Build traffic forecasts for Bullitt County. The No-Build Scenario includes all committed transportation projects, including the KY 61 improvements, the KY 44 widening from Shepherdsville to east of Mt. Washington, and the KY 480 widening. However, no additional improvements are included in this scenario, including the recommendations from this study.

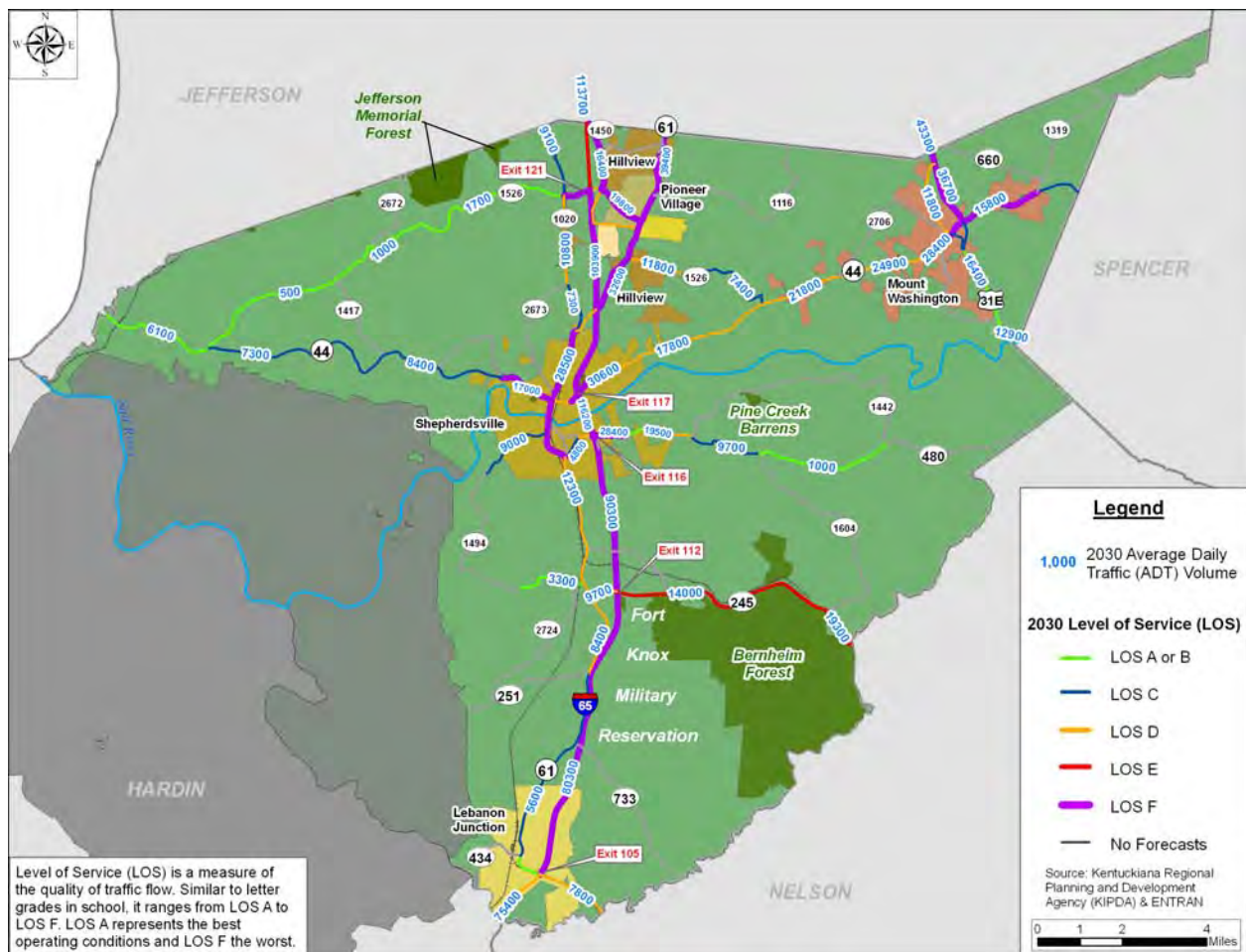


Figure 3-6: 2030 No-Build Traffic Forecasts

The forecasts suggest that most north-south routes that connect Bullitt County to Louisville will be over capacity in 2030. Traffic volumes along I-65, which is currently congested during much of the day, are expected to grow from 1.0 to 1.8 percent per year between 2008 and 2030. This growth is slightly lower than the statewide average for an urban freeway facility, but I-65 is already at or near capacity. This results in traffic diverting to other parallel roadways, such as KY 61, which is expected to grow by 5.9 percent per year north of Shepherdsville.

4.0 DEVELOPMENT OF ALTERNATIVES

A number of transportation alternatives were developed and evaluated as part of the Bullitt County Transportation Study. This includes both short-term projects that could potentially be implemented in the near term with minimal cost and long-range improvement alternatives that would require significant resources to implement. This chapter discusses how improvement concepts were conceived and then developed into feasible roadway improvement projects.

4.1 Stakeholder Input

One of the primary goals of the public involvement component of the study was to solicit input on the location of existing transportation deficiencies and needed improvements. To that end, the initial meetings with the Steering Committee were used as an opportunity to ask focused questions concerning locations that could be considered “trouble spots” and areas where new or significantly improved routes are warranted. **Figure 4-1** presents the results from the identification of trouble spots and needed new routes.

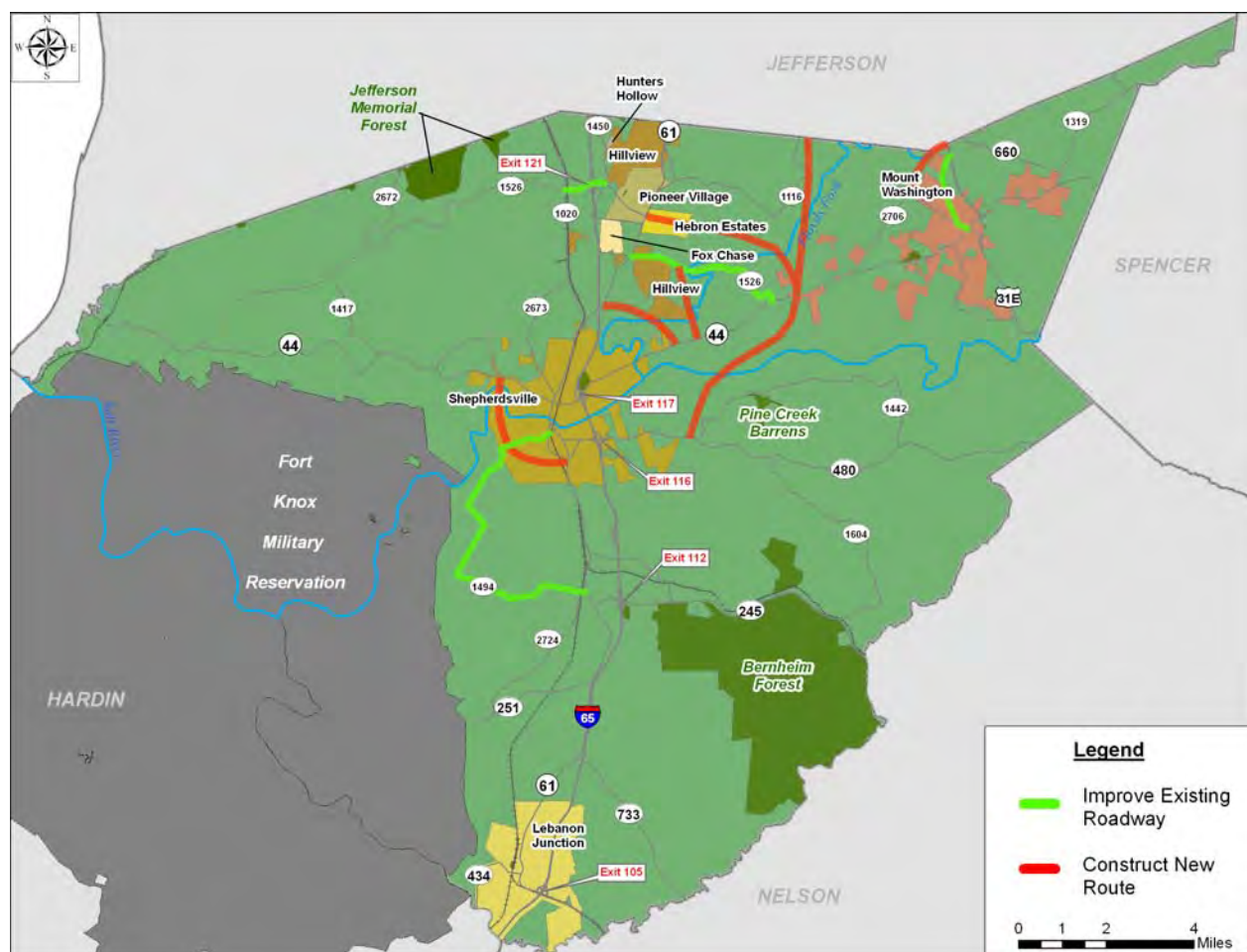


Figure 4-1: Preliminary Trouble Spots and Needed New Routes

The identified problem areas/roadways included sections of KY 44 within or approaching Shepherdsville and Mount Washington, all of KY 1494 (Beech Grove Road), and KY 1526 west of I-65 and between KY 61 and KY 44. A strong desire to complete the planned widening of KY 61 from the existing four-lane section south of the Jefferson County line to Shepherdsville was also discussed. Other issues identified during this exercise included pedestrian issues in Bullitt County and a lack of roadway connectivity in the southwest quadrant of Shepherdsville. A recurring theme discussed during the initial meetings was a need for improved public transportation services, either in the form of expanded TARC bus service or dedicated intra-county service within Bullitt County.

New routes discussed by the Steering Committee included the following:

- Alternative route for KY 1526 from John Harper Road to KY 44 through Hebron Estates.
- New corridor along the northeast side of Shepherdsville, just south of Hillview, to connect KY 61 near I-65 to KY 44. Two options were discussed, one connecting to KY 1526 west of Floyds Fork and one connecting directly to KY 61 east of I-65; both options connected to KY 44 east of Shepherdsville and Floyds Fork.
- A new north-south route located between Mt. Washington and Shepherdsville, providing a new bridge over Floyds Fork and a connection between KY 44 and I-265 in Jefferson County.
- A new north-south route connecting KY 480 to KY 44 east of I-65, with a bridge over the Salt River.
- A new northwest bypass for Mount Washington, connecting US 31E to KY 44.
- A new southwest bypass for Shepherdsville.

Other improvements discussed by the Steering Committee included the need for improved crosswalks and creating a “sense of place” for each of the county’s communities.

This process assisted the study team in developing a preliminary list of improvement projects for subsequent discussion and evaluation.

4.2 Short-Term Improvement Alternatives

A number of short-term improvements (also referred to as “spot improvements”) were developed based on stakeholder input, investigation of crash data, and site reconnaissance. These projects, most of which were developed to improve traffic safety, are shown on **Figure 4-2**. Descriptions of each of these projects follow.

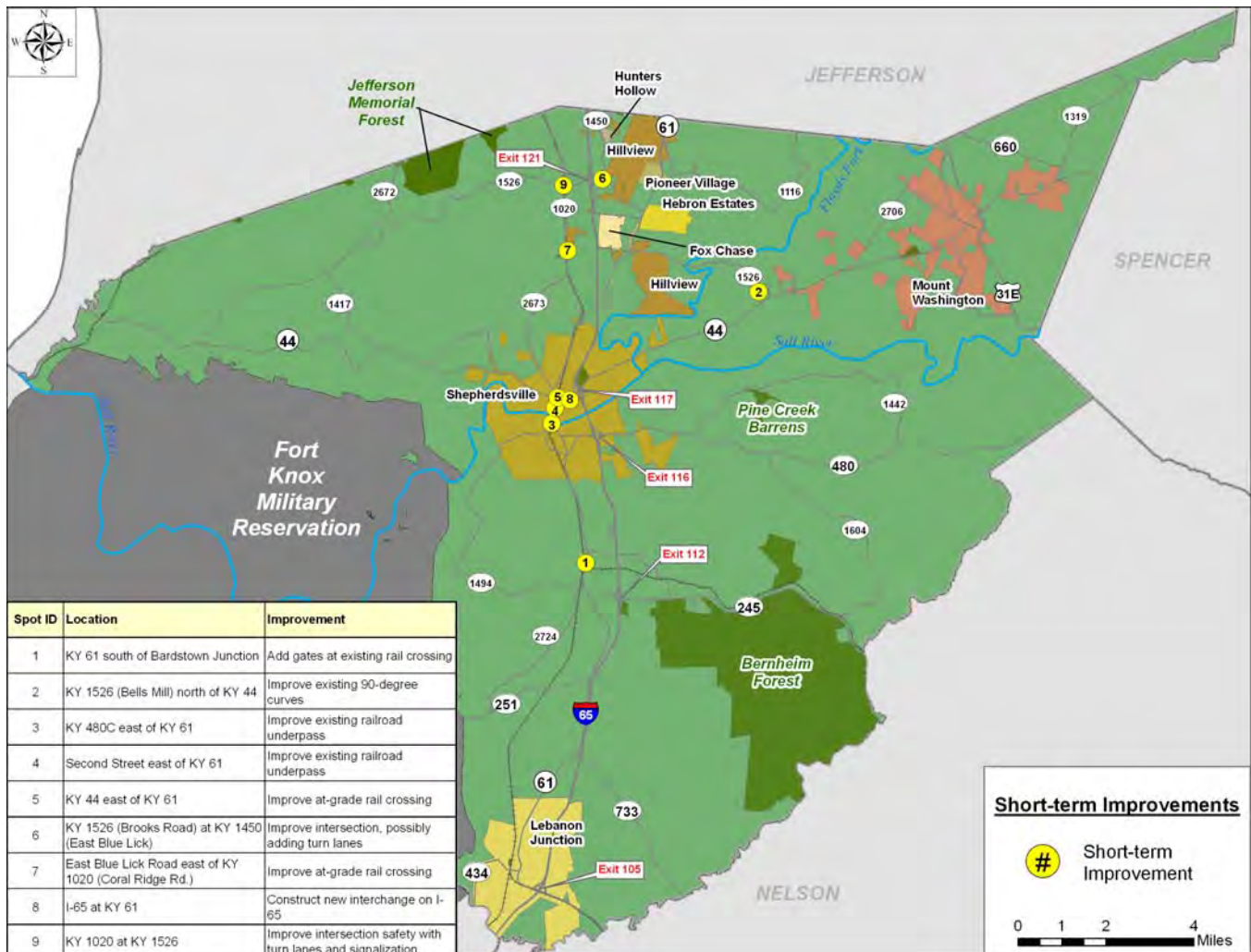


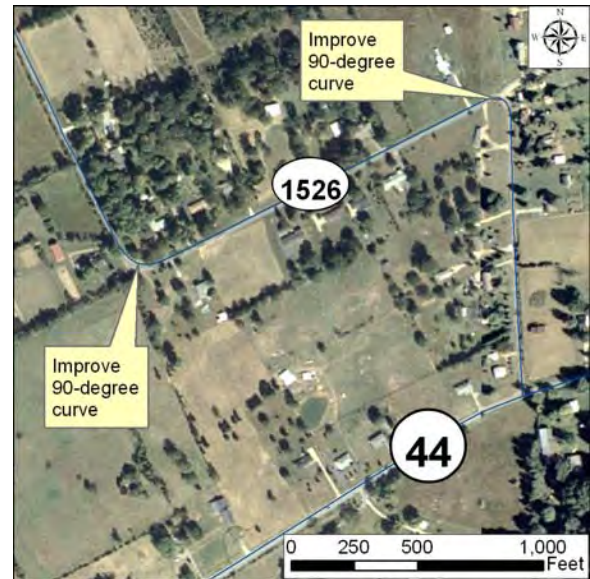
Figure 4-2: Preliminary Short-Term Transportation Improvement Projects

Project 1 – KY 61 south of Bardstown Junction: The existing at-grade rail crossing along KY 61 south of Chapeze Lane has signs and lights but no gates. This is the only “major” at-grade rail crossing in Bullitt County that does not have gates. The proposed improvement is to add gates at the crossing.



Project 2: KY 1526 (Bells Mill Road) north of KY 44:

There are two 90-degree curves along Bells Mill Road within approximately a half-mile of its intersection with KY 44. There was much discussion early in the study concerning the need to improve Bells Mill as it carries significant traffic during the peak hours, serving as a detour around Shepherdsville and providing a more direct connection between I-65 and KY 44. Widening the entire route was considered less desirable than constructing a new corridor, but the two curves will continue to present a safety issue. Between January 2006 and February 2009 there were 11 crashes near the western curve with five resulting in injuries; no crashes were reported at the eastern curve. The suggested improvement is to increase the radius for both curves through minor realignment and/or widening.



Project 3 – KY 480C east of KY 61; and Project 4 – Second Street east of KY 61 in Shepherdsville: Not

including KY 61, there are four roadway crossings of the north-south CSX rail line passing through Shepherdsville. Two of these crossings are at-grade (KY 44 and Adam Shepherd Parkway) and two are grade-separated (KY 480C and Second Street). If an incident closes the two at-grade crossings, the grade-separated crossings would provide the only east-west access from one side of Shepherdsville to the other.

The existing rail underpass on KY 480C south of Shepherdsville has a vertical clearance of only 10 feet, 9 inches and inadequate horizontal clearance to accommodate more than one vehicle. Current KYTC guidelines call for a minimum vertical clearance of 15 feet. In addition, the horizontal alignment east of the underpass provides less than desirable sight distance for eastbound traffic, as shown to the right. The suggested improvement is to lower the grade on KY 480C, widen the underpass and provide a minor realignment of KY 480C east of the underpass.



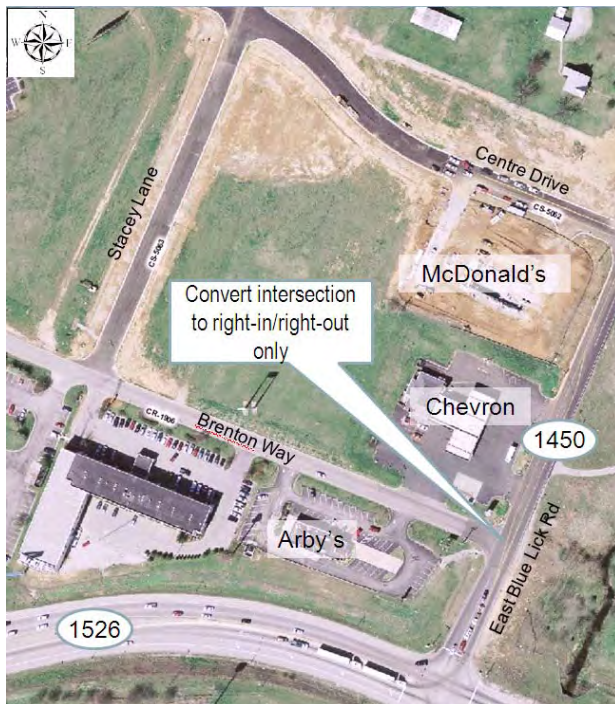
KY 480C



Second Street

The Second Street rail underpass has a vertical clearance of 11 feet, 7 inches and inadequate horizontal clearance to accommodate more than one vehicle. The suggested improvement is to lower the grade of Second Street to increase the vertical clearance and to widen the underpass.

Project 5 – KY 44 east of KY 61 in Shepherdsville: The at-grade rail crossing on KY 44 east of KY 61 is elevated above the approaches on KY 44, as shown to the right. This difference in elevation limits sight distance, and over 40 crashes occurred within 0.2 miles of the crossing between January 2006 and February 2009. The suggested improvement is to raise the grades slightly on both the east and west KY 44 approaches.



Project 6 – KY 1526 (Brooks Road) at KY 1450 (East Blue Lick Road): With its proximity to I-65, the area north of Brooks Road and west of East Blue Lick Road has rapidly developed over the past few years with a mix of commercial and light industrial uses. The high demand for the left turn from eastbound Brooks Road to northbound East Blue Lick Road combined with the demand for left turns from East Blue Lick to Brenton Way causes backups that, at times, extend into the Brooks Road intersection. Additional, yet-to-be-identified development is also planned for the northeast quadrant of the Brooks Road intersection with East Blue Lick. The suggested improvement is to convert the Brenton Way intersection to a right-in/right-out condition. Additional access to the businesses along Brenton Way is provided via Centre Drive (which has a left-turn lane from northbound East Blue Lick Road), so the right-in/right-out conversion will reduce congestion and improve safety on East Blue Lick Road while minimizing inconvenience to motorists.

Project 7 – East Blue Lick Road east of KY 1020 (Coral Ridge Road): Over the past two years, there have been seven documented incidents where tractor trailers have attempted to traverse the at-grade rail crossing on east Blue Lick Road east of Coral Ridge Road but have been stuck because the crossing is significantly higher than the roadway approaches. Many of these trucks are attempting to enter the industrial park off Coral Ridge Road, even though East Blue Lick is not signed as a truck route. The suggested improvement is to raise the grades on the eastern East Blue Lick approach, shown the right, to better match the grade of the rail crossing and the western approach.





center's secondary entrance, located immediately west of Republic Bank.

Project 8 – KY 44 west of Adam Shepherd Parkway in Shepherdsville: KY 44 is a four-lane roadway with turn lanes west of I-65 in Shepherdsville and becomes a three-lane facility west of Hester Street. In the westbound direction, this transition results in the right lane dropping as a right-turn only at Hester Street, which is the entrance to Republic Bank north of KY 44. Discussions with the public revealed that this lane drop is an issue as many drivers use Republic Bank's parking lot to access the Kroger shopping center to the north. The shopping center also has access on Adam Shepherd Parkway. The proposed improvement is to extend the right-turn lane west to the shopping

Project 9 – KY 1020 at KY 1526: The KY 1526 (Brooks Road) intersection with KY 1020 (Coral Ridge Road) is a four-way stop-controlled intersection located approximately 75 feet west of a railroad grade crossing. The crossing location restricts available storage on the westbound approach on KY 1526 and congestion also occurs routinely on the route east of the intersection. A new elementary school, Brooks Elementary, is under construction west of the intersection along KY 1526 and will increase traffic demand through the intersection when it opens this fall. A traffic impact study was completed for the school, but this intersection was not included in the analysis. Therefore, once the school is open, traffic counts should be collected to determine if the intersection warrants turn lanes or the installation of a traffic signal.



4.3 Long-Range Alternatives

The preliminary long-range corridor alternatives identified for the Bullitt County Transportation Study were developed based on stakeholder outreach, investigation of existing conditions, and examination of likely future conditions. Two types of long-range projects were discussed over the course of the study. The first includes improvements to existing highways. The second includes the construction of the new roadways.

Figure 4-3 presents a summary of the improvements to existing roadways that were discussed during the Bullitt County Transportation Study. The majority of these projects were suggested by the Steering Committee. In many cases, KYTC has committed to implement improvements along these facilities. Examples where commitments have been made include the following:

- **Project A:** This project includes widening KY 245 east of I-65. KYTC intends to widen a portion of the roadway and possibly provide some landscaping improvements.
- **Project B:** The Southwest Shepherdsville Transportation Study recommended realigning the northern portion of KY 1494 (Beech Grove Road) to provide a better connection between the residential areas along the route and KY 61. KYTC has provided funding to the City of Shepherdsville to acquire the right-of-way necessary to construct the recommended improvements.
- **Project C:** KYTC has provided funding to the City of Shepherdsville to widen KY 480 (Cedar Grove Road) from the existing five-lane section east to near Cedar Grove Elementary.
- **Project E:** KYTC initiated a study in the Summer of 2009 to investigate the need for and scope of improvements to KY 44 between Shepherdsville and Mount Washington. East of Mount Washington, KYTC is currently designing for the widening of two miles of KY 44 east of US 31E.
- **Project G:** The KY 61 widening project has been divided into four sections, and the northern-most section (from just south of the John Harper Highway to the existing four-lane section near the Jefferson County line) was under construction in the Fall of 2009. There is no definite schedule for the remaining three sections, but the latest estimate provided by KYTC indicated construction could begin sometime in 2010.

The remaining projects on **Figure 4-3** include improvements recommended by the Steering Committee that have no current commitments from KYTC and are not included on the Long Range Plan for Bullitt County. These projects include the following:

- **Project B:** Widen KY 1494 (Beech Grove Road) from KY 61 north to the proposed realigned section
- **Project D:** Widen US 31EX (Old Bardstown Road) from US 31E to KY 44
- **Project F:** Widen KY 1526 (Bells Mill Road) from KY 61 to KY 44
- **Project H:** Widen KY 1526 (Brooks Hill Road) from I-65 to KY 1020 (Coral Ridge Road)

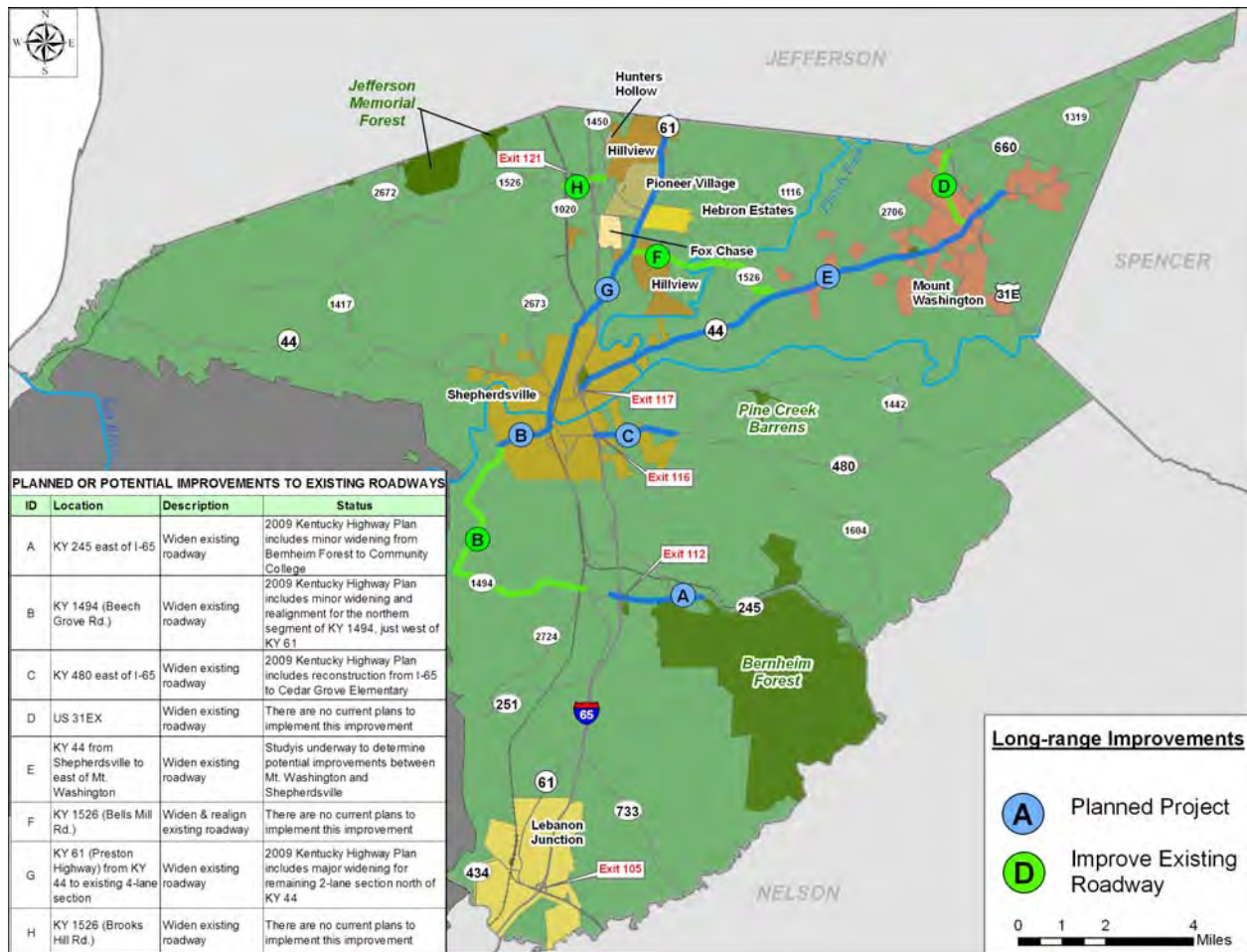


Figure 4-3: Suggested Improvements to Existing Roadways

Figure 4-4 shows the preliminary new route alternatives that were developed based on the recommendations of the Steering Committee. Specific alignments have not been developed and each alternative represents a corridor within which a new route could feasibly be constructed. Therefore, the terms “Route” and “Corridor” are used interchangeably to describe these alternatives. More detailed descriptions of each of these alternatives follow. For purposes of this study, a four-lane divided typical section was assumed for all new roadways.

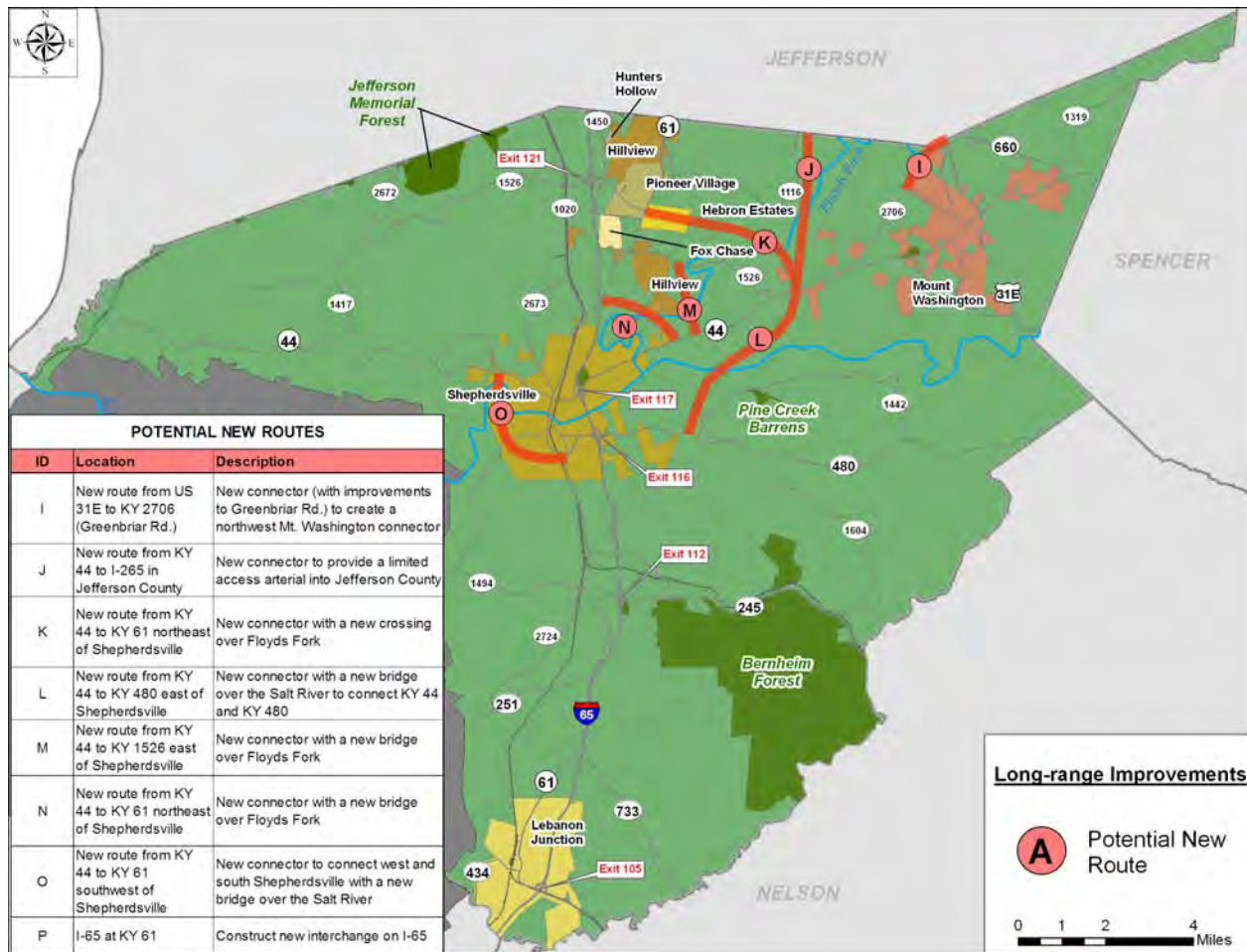
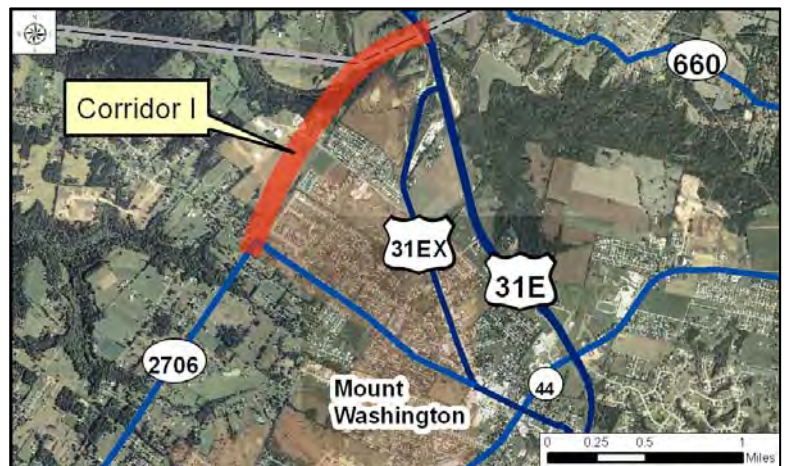


Figure 4-4: Preliminary New Highway Route Alternatives

Route I is a new route, approximately 1.5 miles in length, from US 31E to KY 2706 (Greenbriar Road). The purpose of this new connector, which would likely require widening Greenbriar Road to four lanes, is to create a northwest Mount Washington connector providing a more efficient and more direct connection from US 31E to KY 44 that will divert some traffic from Mount Washington. Widening portions of KY 44 through Mount Washington may be infeasible due to right-of-way constraints.

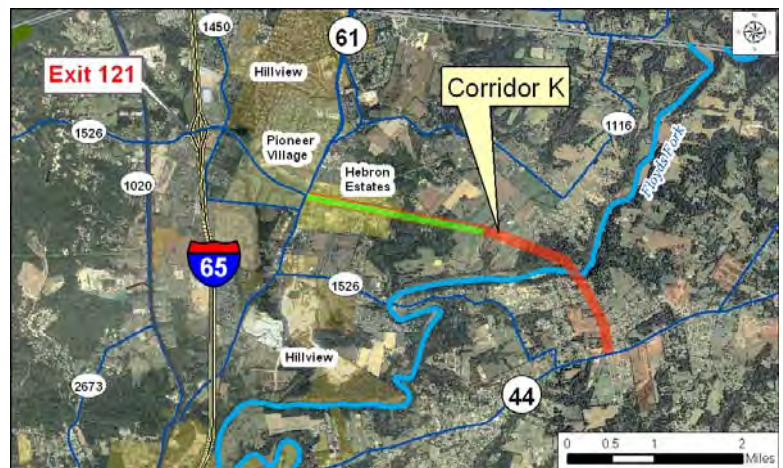


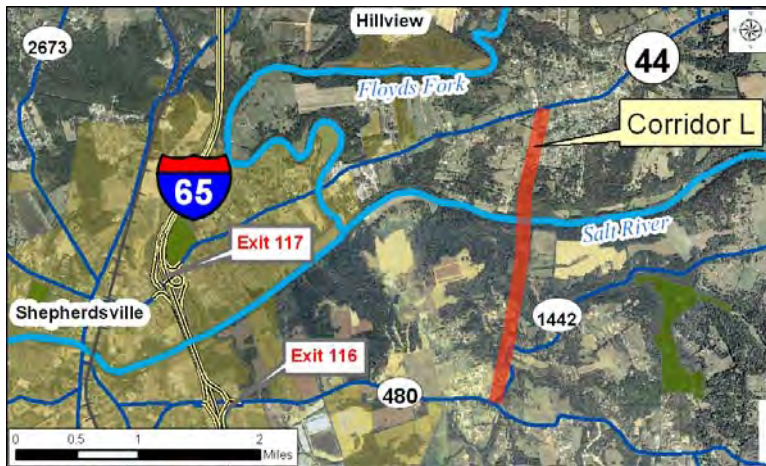


Route J is a new eight-mile long route between KY 44 and I-265 in Jefferson County. The 2030 traffic forecasts for the No-Build Alternative suggest all north-south routes connecting Bullitt County to Jefferson County would be severely congested in the future as Bullitt County's population continues to grow and the demand for commuter travel between residential areas and Louisville increases. The purpose of this new connector is to provide a limited access arterial into Jefferson County, providing an additional travel alternative for traffic to/from Louisville with a new crossing over Floyd's Fork. The corridor for this route, shown to the left, was shifted west compared to the preliminary concept (shown in **Figure 4-4**) in order to minimize impacts to residential areas and to provide a better crossing location over Floyd's Fork. The currently envisioned terminus in Jefferson County is the existing KY 864 (Beulah Church Road) interchange with I-265. Constructing this route would

likely require significant upgrades to the existing interchange.

Route K is a new route from KY 44 to KY 61 northeast of Shepherdsville. This new connector with a new crossing over Floyd's Fork would provide an improved connection between KY 61 and KY 44 and serve as an alternative to KY 1526 (Bells Mill). Two options are available. The first would be to construct Route K from KY 61 east to where it would intersect with Route J, a length of approximately two miles. The second option would be to construct Route K from KY 61 all the way to KY 44, a distance of approximately 4.2 miles. In order to provide improved access to the existing I-65 interchange at Exit 121, widening KY 1526 (John Harper Highway) should also be considered.

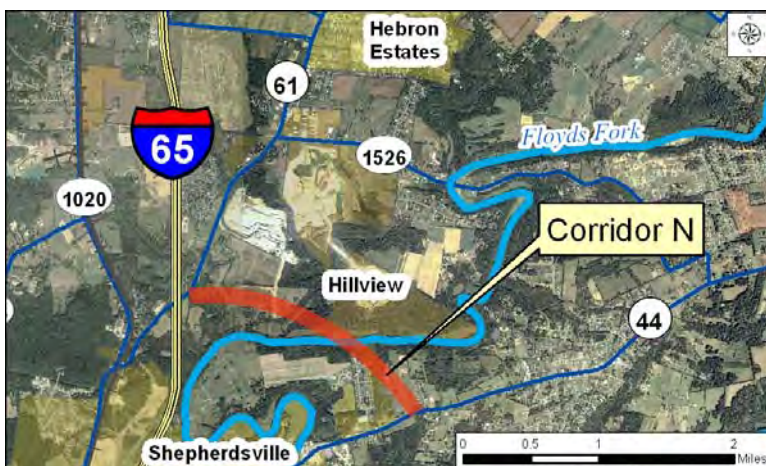
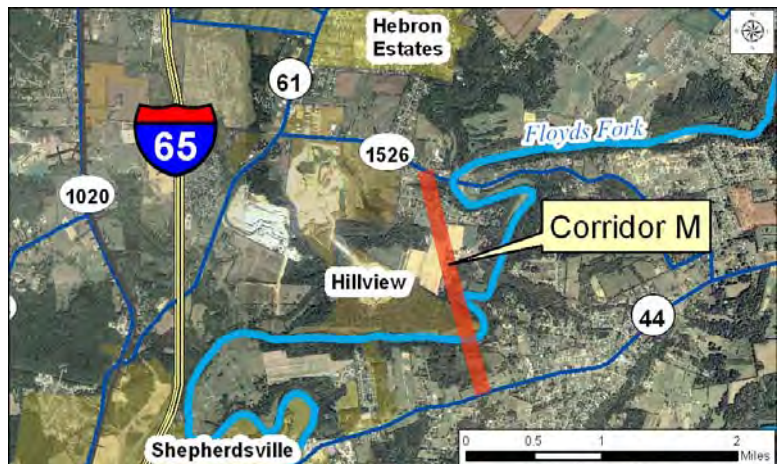




Route L is a new route from KY 44 to KY 480 east of Shepherdsville. This new 2.5-mile long connector would provide a new bridge over the Salt River, providing an improved connection between KY 44 and the industrial and residential areas along KY 480. Route L was shifted from the location of the preliminary concept to match the southern end of Route J; constructing both routes would provide a continuous route between KY 480 and I-265 in Jefferson County. There are significant floodplain issues that must be considered adjacent to the Salt River, and

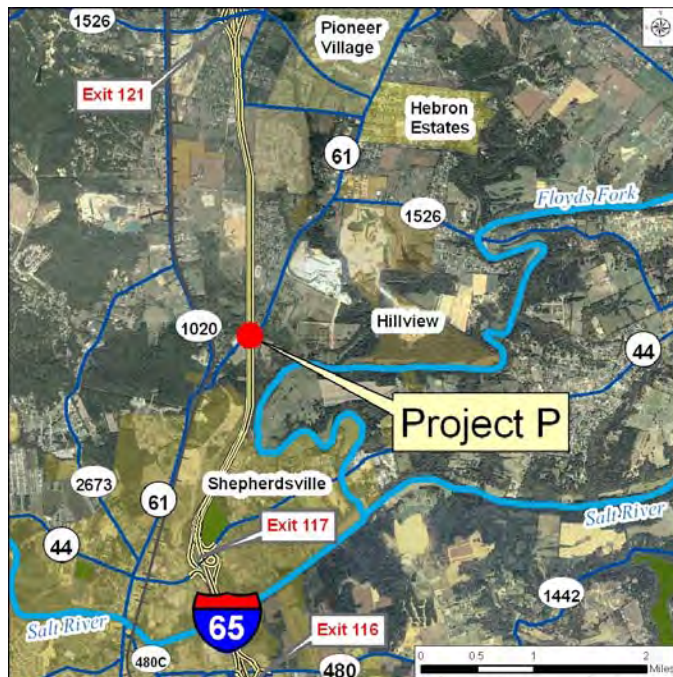
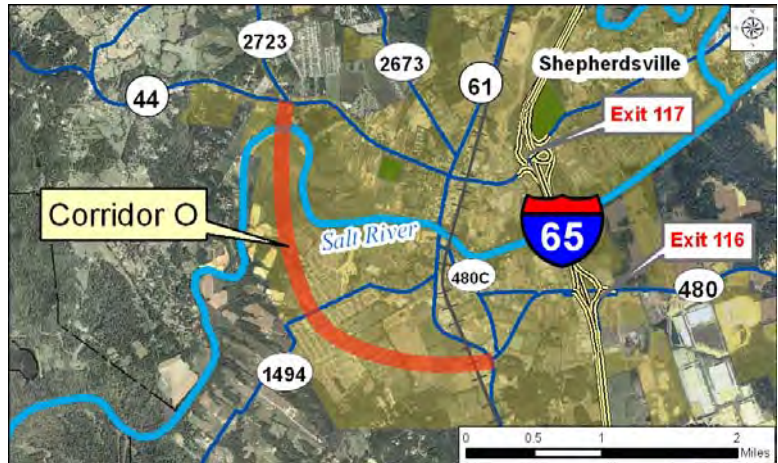
potential relocations may be numerous depending on where Route L connects to KY 44.

Route M is a new route from KY 44 to KY 1526 (Bells Mill Road) east of Shepherdsville. This 1.7-mile long new roadway with a new bridge over Floyd's Fork would serve as a northeast Shepherdsville connector, providing an improved connection between KY 61 and KY 44 as an alternative to the eastern section of Bells Mill. If Route M were to be pursued, it would likely require widening Bells Mill Road between KY 61 and the new route to accommodate additional traffic demand. Locating the appropriate crossing over Floyd's Fork will be critical to minimizing floodplain impacts.



Route N is similar to Route M in that it is a new route from KY 44 to KY 61 that would provide a new northeast Shepherdsville connector and a new bridge over Floyd's Fork. Should a new interchange be constructed on I-65 at KY 61, the two-mile long Route N would provide a relatively direct connection between I-65 and KY 44 as an alternative to KY 44 through Shepherdsville. As is the case with Route M, determining the appropriate location for a new crossing over Floyd's Fork will be critical to minimizing floodplain impacts.

Route O is a three-mile long new route from KY 44 to KY 61 southwest of Shepherdsville. This new roadway would connect west and south Shepherdsville with a new bridge over the Salt River, providing a more efficient and more direct connection from KY 61 to KY 44 that would divert some traffic from KY 61 through Shepherdsville. The floodplain adjacent to the Salt River is very wide in this area.



Project P includes the construction of a new interchange on I-65 at KY 61. It is approximately five miles between the existing KY 44 interchange (Exit 117) in Shepherdsville to the KY 1526 interchange (Exit 121) at Brooks, a significant distance with no in-state access in such a rapidly developing urban area. This new interchange with KY 61 would provide improved access to northern Shepherdsville as well as the northern portions of Bullitt County. Widening KY 61, which is currently a committed project, would be necessary to accommodate the future travel demand that would result from the interchange. Other roadway improvements would likely be required as well.

Planning level cost estimates were developed for each of the new route alternatives. These estimates, shown in **Table 4-1**, are based on KYTC average unit bid costs from 2009 and are in present year (2009) dollars and include design, utility relocations, and construction. Right-of-way estimates have not been developed.

Table 4-1: Cost Estimates

Project	Description	Limits	Length	Approximate cost (\$Millions)
Route I*	New route northwest of Mount Washington	US 31E to KY 2706	1.5 miles	\$10.0
Route J	New route with Floyds Fork crossing	KY 44 to I-265 (Jefferson County)	7.9 miles	\$60.9
Route K	New route - long option with Floyds Fork crossing	KY 61 to KY 44	4.2 miles	\$37.5
Route K1	New route - short option	KY 61 to Alternative J	2.0 miles	\$13.5
Route L	New route with Salt River crossing	KY 480 to KY 44	2.5 miles	\$36.2
Route M**	New route with Floyds Fork crossing	KY 1526 to KY 44	1.7 miles	\$21.2
Route N	New route with Floyds Fork crossing	KY 1526 to KY 44	2.0 miles	\$23.2
Route O	New route with Salt River crossing	KY 61 to KY 44	3.0 miles	\$34.9
Project P	New I-65 interchange	KY 61	0	\$20.0

* Does not include cost to improve KY 2706.

** Does not include cost to improve KY 1526 (John Harper Highway).

KIPDA provided 2030 traffic forecasts for each new route based on five possible scenarios. These scenarios included packages of alternatives that complement one another and avoid construction of “redundant” routes. For example, Route M and Route N are very similar and provide essentially the same connections with slight variations. Therefore, it would be infeasible to construct both Route M and Route N, so these alternatives were not modeled together. The five scenarios for which KIPDA developed traffic forecasts are summarized below.

- Scenario 1: Routes J, K, and L
 - Includes widening John Harper Highway (KY 1526) to four lanes between I-65 and Route K
 - Construct Route K only between KY 61 and Route J
- Scenario 2: Project P, Routes N, I, and O
 - New I-65 Interchange on I-65 at KY 61 north of Shepherdsville
 - Widen Greenbriar Road (KY 2706) to four lanes
- Scenario 3: Projects F and D, Route M
 - For Project F, widen Bells Mill Road to 4 lanes from Preston Highway to Route M
- Scenario 4: Routes K, H, and I
 - Widen John Harper Highway to four lanes (I-65 to Corridor K)
 - Widen Green Brier Road/Wales Run Road (KY 2706) to four lanes
- Scenario 5: Project P
 - New I-65 Interchange on I-65 at KY 61 north of Shepherdsville

A summary of the traffic forecasts for each of the new or improved routes assumed in the scenarios above is presented in **Table 4-2**. Detailed graphics depicting the forecasts for all Bullitt County roads for each of these scenarios are presented in **Appendix C**.

Table 4-2: 2030 Traffic Forecast Summary

Alternative	No-Build	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Project F (KY 1526)	11,500			18,200		
Project D (US 31EX)	11,300 - 13,500			15,500 - 26,200		
Route I			11,700 - 22,200		12,100 - 21,700	
Route J		34,000 - 46,900				
Route K		18,800			19,700 - 27,100	
Route L		21,800				
Route M				12,400		
Route N			9,200 - 10,300			
Route O			3,200 - 3,600			
Project P*	24,000		34,900 - 39,000			30,200 - 39,100

** Traffic forecasts are from KY 61 near the proposed interchange.*

5.0 CONCLUSIONS

The primary goal of the Bullitt County Transportation Study was to provide the basis for identifying and prioritizing future transportation improvements in Bullitt County over the next 20 years. This process included an evaluation and analysis of existing and projected traffic conditions, an evaluation of alternative transportation modes, and recommendations of priorities for future projects. This chapter summarizes the recommendations from the study and provides some suggestions on direction for transportation strategies for future consideration.

5.1 Recommended Projects and Prioritization

All of the Short-term Improvement Alternatives received favorable public support at the second public meeting and are recommended for implementation. These projects were prioritized based on a number of factors, including the severity of the problem being addressed and the traffic volumes along the roadway segment to be improved. The prioritization represents the order in which projects should be pursued and is in terms of High, Medium, and Low. In other words, a low priority does not indicate a particular project should not be implemented but rather it should be implemented after the higher priority projects have been completed. The recommended prioritization of the short-term projects is summarized in **Table 5-1**.

Table 5-1: Recommended Prioritization of Short-term Projects

Project ID	Location	Improvement	Priority
1	KY 61 south of Bardstown Junction	Add gates at existing rail crossing	Low
2	KY 1526 (Bells Mill) north of KY 44	Improve existing 90-degree curves	High
3	KY 480C east of KY 61	Improve existing railroad underpass	Medium
4	Second Street east of KY 61	Improve existing railroad underpass	Medium
5	KY 44 east of KY 61	Improve at-grade rail crossing	Medium
6	KY 1526 (Brooks Road) at KY 1450 (East Blue Lick)	Improve intersection	High
7	East Blue Lick Road east of KY 1020 (Coral Ridge Rd.)	Improve at-grade rail crossing	High
8	KY 44 west of Adam Shepherd Parkway	Extend right-turn lane	High
9	KY 1020 at KY 1526	Improve intersection	High

Project 1 is the sole low priority project. Adding railroad crossing gates on KY 61 south of Bardstown Junction is considered a low priority because of the low volume of traffic along this section of KY 61 as well as the relatively low volume of trains at the crossing. Projects 3, 4, and 5 are considered medium priorities. In the case of Projects 3 and 4, it would be desirable to reconstruct at least one of the two grade-separated rail crossing in Shepherdsville to provide a safer detour in the event of a train incident affecting KY 44, but likely not both of them. Project 5 is a medium priority as modifying the grades on the KY 44 approaches to the at-grade rail crossing will provide some improvement to the current poor sight distance, but the cost to implement the project will be relatively high. The remaining short-term projects are considered high priority.

A total of four long-range projects were discussed to improve existing routes and eight projects were discussed to construct new routes. However, it is not financially feasible to suggest that each of these projects should be implemented within the next 20 years. Therefore, some screening of these alternatives was considered necessary to determine not only which should be pursued in the foreseeable future, but also in what order they should be pursued.

With respect to improvements to the existing routes (Projects B, D, F, and H), in most cases it was considered more desirable to construct new routes to alleviate traffic congestion rather than attempt to widen the existing roadways. Widening the southern and western portions of KY 1494 (Beech Grove Road, Project B) would be difficult to justify based on its low traffic volumes. The committed project to realign the northern end of the route should eliminate many of the traffic and safety issues experienced today in the areas with the highest volumes. Widening either US 31EX (Project D) or KY 1526 (Bells Mill Road, Project F) would require significant right-of-way and would result in only marginal improvement to the overall transportation network. In the case of US 31EX, this right-of-way would require taking numerous businesses and would terminate on the south end at a point on KY 44 that may not be feasible for future widening, resulting in a bottleneck. Widening Bells Mill would not provide the same travel efficiency that may be realized through constructing a new route that more directly connects to existing transportation facilities. For these reasons, none of the significant improvements to existing routes are recommended at this time.

The potential new routes were presented to the Steering Committee at the fourth committee meeting and the attendees were asked to provide feedback on the alternatives under consideration. More specifically, the attendees were asked to rate each option on a scale of 1 to 10 as to how well each addresses the issues outlined in the study Purpose and Need Statement, as shown in Section 1.2. The results of this exercise are shown on **Figure 5-1**. The Steering Committee indicated Route L would best satisfy the Purpose and Need, followed by Route J and Route N. The committee indicated Route M and Route O would least address the Purpose and Need Statement.

While this information was used to assist in the screening and prioritization of alternatives, it was not the sole factor used in the process. A limited number of committee members were present to participate in the rating process, so the results of the evaluation should be considered a check on the local priorities. Ideally, the recommended long-range alternatives should be among the highest rated alternatives. However, the prioritization of the recommended projects should consider the appropriate implementation order to maximize the use of limited resources and to avoid construction of routes that require other significant improvements to see their full benefits realized.

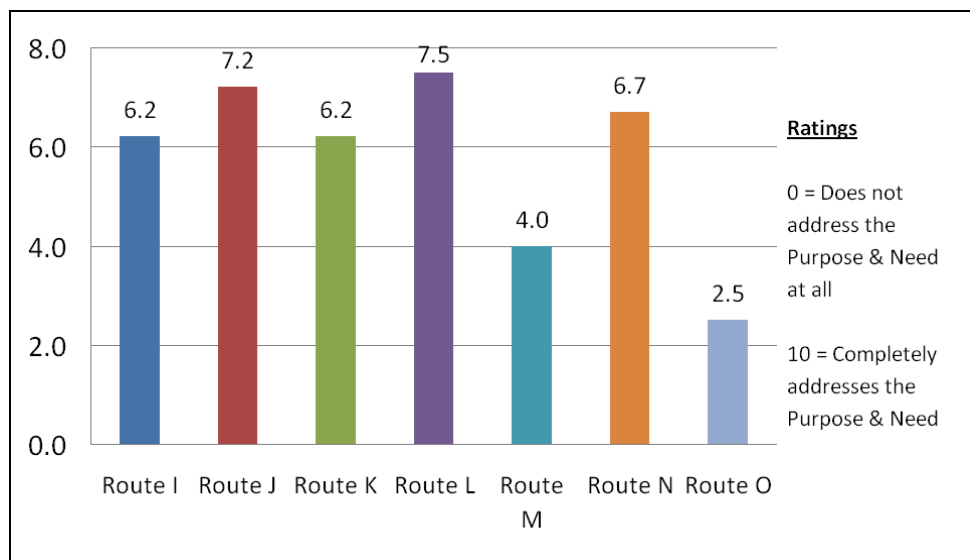


Figure 5-1: Steering Committee Response to the Question, “How well does each route address the issues in the project Purpose and Need Statement?”

Table 5-2 presents the recommended long-range projects and the prioritization for those projects. At this time, Route M, Route N, and Route O are not recommended for further consideration. Each of these alternatives would require significant resources to construct while providing some benefits in terms of traffic congestion relief. However, these alternatives do not provide the same level of benefit as the recommended alternatives. Traffic forecasts indicate Route O would serve only a limited number of vehicles each day, and Routes M and N would serve fewer vehicles than other options that serve the same or similar purpose.

The prioritization of the recommended projects is based largely on how the new routes relate to the existing transportation system and to one another. Route I and Route J are both considered high priorities in that they satisfy existing needs and would not require the construction of additional routes in order to see maximum benefit. Route K and Project P are medium priorities. The recommendation for Route K is to construct between KY 61 and Route J initially as this section would be most critical in providing improved access between I-65 and KY 44. This access would not be provided until Route J was in place and open to traffic. Project P is a medium priority because additional improvements would be required to accommodate the traffic demand resulting from a new interchange on I-65 at KY 61. This may include further widening of portions of KY 61 and/or the construction of additional connector roadways. Route L is a low priority as it would require the construction of Route J and likely Route L in order to see maximum benefit. If Route L were pursued before Route J, it would terminate at KY 44, an already congested corridor, and would not have access to other facilities north.

Table 5-2: Recommended Long-Range Projects and Priorities

ID	Location	Description	Project Purpose	Priority
I	New route from US 31E to KY 2706 (Greenbriar Rd.)	New connector (with improvements to Greenbriar Rd.) to create a northwest Mt. Washington connector	Provide a more efficient and more direct connection from US 31E to KY 44 that will divert some traffic from Mount Washington	High
J	New route from KY 44 to I-265 in Jefferson County	New connector to provide a limited access arterial into Jefferson County	Provide an additional travel alternative for traffic to/from Louisville with a new crossing over Floyds Fork	High
K	New route from KY 44 to KY 61 northeast of Shepherdsville	New connector with a new crossing over Floyds Fork	Provide an improved connection between KY 61 and KY 44 as an alternative to KY 1526 (Bells Mill) and provide improved access to existing I-65 interchange	Medium
L	New route from KY 44 to KY 480 east of Shepherdsville	New connector with a new bridge over the Salt River to connect KY 44 and KY 480	Provide a better connection between KY 480 and KY 44 while providing an additional crossing over the Salt River	Low
P	I-65 at KY 61	Construct new interchange on I-65	Provide a new interchange on I-65 to improve access to northern portions of Shepherdsville and areas to the north	Medium

Figure 5-2 presents the 2030 traffic forecasts and anticipated level of service (LOS) for the recommended long-range plan developed from this study. It is important to note that even with the construction of Route J, which provides an additional north-south connection between Bullitt County and Louisville, the north-south facilities serving both counties will still be congested in 2030.

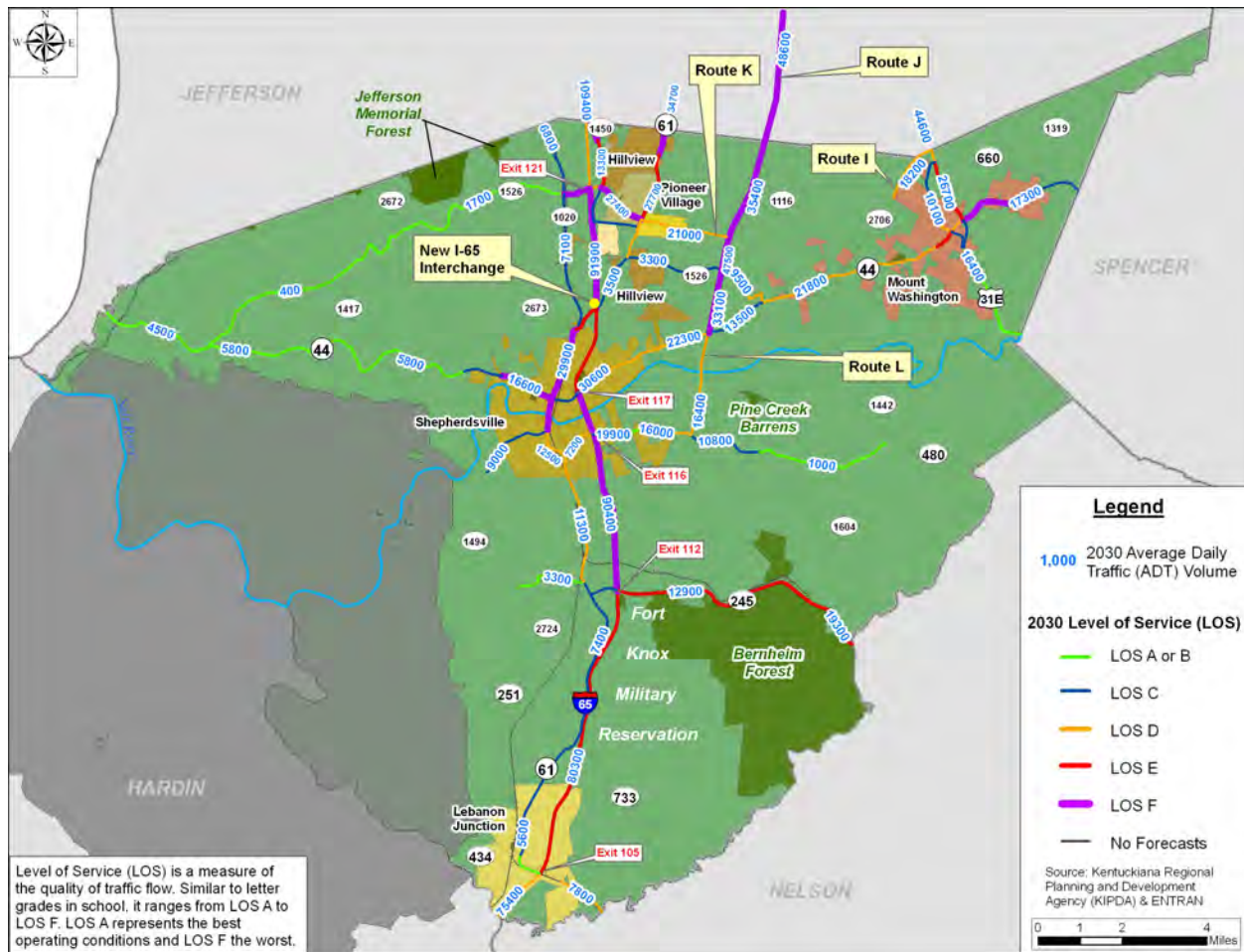


Figure 5-2: Traffic Forecasts Based on Recommended Long-Range Improvement Projects for Bullitt County

The importance of a new north-south route cannot be overemphasized. **Table 5-3** presents a summary of the estimated number of daily vehicular trips that cross the Bullitt County/Jefferson County line for each of the traffic forecasting scenarios modeled by KIPDA. These volumes include all trips traveling between Bullitt and Jefferson County as well as trips passing through Bullitt County.

Table 5-3: Estimated 2030 Average Daily Traffic Volume (ADT) at the Bullitt County /Jefferson County Line

	No-Build	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Recommended
KY 1020	9,100	6,900	7,800	7,900	9,800	8,200	6,800
I-65	113,700	110,700	115,600	118,200	114,600	116,000	109,400
KY 1450	16,400	13,500	16,700	16,200	16,600	17,000	14,800
KY 61	39,400	35,800	40,500	39,000	42,700	39,600	34,700
New Route J		34,100					35,400
US 31E	47,300	43,000	47,900	46,900	44,900	47,900	44,600
TOTAL	225,900	244,000	228,500	228,200	228,600	228,700	245,700

In the No-Build Scenario, approximately 226,000 vehicles per day are anticipated to cross the Bullitt/Jefferson County line using one of the five major roadway facilities that serve those trips. In the scenarios that do not provide additional roadway capacity between the two counties, such as Scenarios 2 through 5, this daily traffic volume at the county line does not increase significantly from the No-Build. However, in the case of Scenario 1 which includes Route J, the traffic volume at the county line increases to 244,000 trips per day. This suggests there will likely be significant unmet demand if a new north-south route is not constructed by 2030. The recommended plan provides the highest number of daily inter-county trips served at approximately 246,000 trips per day.

Table 5-4 presents a summary of the cost estimates for the recommended plan. The six recommended projects are estimated to cost approximately \$175.5 Million in 2009 dollars, including construction and estimated right-of-way.

Table 5-4: Cost Estimates for the Recommended Long-Range Projects

Project	Project Limits	Length	Approximate cost (\$Millions)
Route I*	US 31E to KY 2706	1.5 miles	\$10.0
Route J	KY 44 to I-265 (Jefferson County)	7.9 miles	\$60.9
Route K**	KY 61 to Route J	2.0 miles	\$13.5
Route L	KY 480 to KY 44	2.5 miles	\$36.2
Route O	KY 61 to KY 44	3.0 miles	\$34.9
Project P	KY 61	0	\$20.0
		TOTAL	\$175.5

* Does not include cost to improve KY 2706.

** Does not include cost to improve KY 1526 (John Harper Highway).

5.2 Funding Sources

Highway infrastructure improvements within Bullitt County are currently funded by the standard revenue sharing mechanisms from KYTC. Revenue Sharing funds are utilized for roadway maintenance which includes county road aid, rural secondary roads, and municipal aid. Bullitt County and the City of Shepherdsville rely solely on the funds from the Transportation Cabinet to maintain their roadways. Mount Washington also receives funds for roadway improvements from the Kentucky Transportation Cabinet. In the event that Mount Washington's Restricted Fund from the Cabinet is depleted, a small percentage of the General City Fund is allocated for Roadway Improvements. This revenue in the General City Fund comes from Taxation and Permit and Licensure Fees within the City of Mount Washington.

The recommended long-range projects may be funded through a combination of state or federal sources, including the following:

- National Highway System (NHS) - NHS funds can be used for any type of improvement on roadways designated as part of the National Highway System, which include all interstate routes, strategic highway connectors, and certain arterial roadways. I-65 is currently the only NHS route in Bullitt County, but additional routes could be added in the future. NHS program funding comes from federal funds (80%) and requires a state match (20%).
- Surface Transportation Program (STP) - The STP program provides funding for projects on non-local roadways not included on the interstate system or the NHS. There are subcategories of STP funding based on the location of the improvement (urban or elsewhere) and type of improvement (e.g. enhancement funds must be used for intermodal improvements). All STP funding requires 20% matching state funds.
- High Priority Project (HPP) Program – The HPP program consists of Congressional “earmark” projects, also referred to as “demonstration” projects. HPP funding requires 20% matching state funds.

In order to be eligible for these funding sources, proposed projects in Bullitt County must be prioritized through the and must be contained in KIPDA's TIP. Ultimately, projects must be listed on the Kentucky Six Year Highway Plan before NHS or STP funds may be allocated.

Most of the short-term improvement alternatives were recommended to address existing safety issues. As such, they may be eligible for Highway Safety Improvement Program (HSIP) funding. HSIP funding is subject to 10% state matching funds and is typically limited to relatively low cost projects. Where HSIP funding is not applicable, other traditional funding sources will be required.

5.3 Other Transportation Strategies

Bicycle and Pedestrian Accommodations

Bicycling and walking are more than just recreational activities. The benefits of these modes of travel are numerous, and accommodating walkers and cyclists promotes improved quality of life as well as less congestion. U.S. Census Bureau data indicates less than two percent of Bullitt County workers commuted by bicycle or by walking to work in 2000, but over four percent of households did not have access to a vehicle and nearly 24 percent had access to one vehicle.

The United States Department of Transportation (DOT) released a policy statement on bicycle and pedestrian accommodations in March 2010.¹ This policy statement supports the “establishment of well-connected walking and bicycling networks as an important component for livable communities”, and further indicates that “their design should be a part of Federal-aid project developments”. Existing legislation requires policies and projects that promote bicycle and pedestrian modes of travel be incorporated into transportation plans and project development. The March 2010 DOT policy is “to incorporate safe and convenient walking and bicycling facilities into transportation projects”, and recommends actions such as the following to achieve that goal:

- Consider walking and bicycling as equals with other transportation modes: The primary goal of a transportation system is to safely and efficiently move people and goods. Because of the benefits they provide, transportation agencies should give the same priority to walking and bicycling as is given to other transportation modes. Walking and bicycling should not be an afterthought in roadway design.
- Ensure that there are transportation choices for people of all ages and abilities, especially children: Pedestrian and bicycle facilities should meet accessibility requirements and provide safe, convenient, and interconnected transportation networks. For example, children should have safe and convenient options for walking or bicycling to school and parks. People who cannot or prefer not to drive should have safe and efficient transportation choices.
- Improve non-motorized facilities during maintenance projects: Many transportation agencies spend most of their transportation funding on maintenance rather than on constructing new facilities. Transportation agencies should find ways to make facility improvements for pedestrians and bicyclists during resurfacing and other maintenance projects.
- Go beyond minimum design standards: Transportation agencies are encouraged, when possible, to avoid designing walking and bicycling facilities to the minimum standards. For example, shared-use paths that have been designed to minimum width requirements will need retrofits as more people use them. It is more effective to plan for increased usage than to retrofit an older facility. Planning projects for the long-term should anticipate likely future demand for bicycling and walking facilities and not preclude the provision of future improvements.
- Integrate bicycle and pedestrian accommodation on new, rehabilitated, and limited-access bridges: DOT encourages bicycle and pedestrian accommodation on bridge projects including facilities on limited-access bridges with connections to streets or paths.
- Collect data on walking and biking trips: The best way to improve transportation networks for any mode is to collect and analyze trip data to optimize investments. Communities that routinely collect walking and bicycling data are able to track trends and prioritize investments to ensure the success of new facilities. These data are also valuable in linking walking and bicycling with public transportation.
- Set mode share targets for walking and bicycling and tracking them over time: A byproduct of improved data collection is that communities can establish targets for increasing the percentage of trips made by walking and bicycling.

¹ http://www.fhwa.dot.gov/environment/bikeped/policy_accom.htm

According to its 2002 *Pedestrian and Bicycle Travel Policy*², the KYTC will consider including pedestrian facilities on a roadway project if the project meets one or more of the following criteria:

- A pedestrian facility already exists on the current roadway.
- The recommended roadway cross section is urban (curb and gutter).
- Project limits are adjacent to an existing residential, commercial, industrial, institutional, public or semi-public use area or adjacent to an area planned to develop one of these uses within the next 20 years.
- A state, local, or regional adopted pedestrian network or policy has designated pedestrian improvements in the area of the specific roadway project or for that classification of roadway.
- A KYTC Small Urban Transportation Study has specific pedestrian improvements recommended for the roadway project.
- Pedestrian traffic exists along the current roadway: This may be determined by the observation of pedestrian traffic or by the public-involvement process.
- Public interest in and demand for pedestrian facilities are determined at the planning and preliminary engineering public-involvement stages

KIPDA currently considers KY 61, KY 44, KY 245, and US 31EX to be high priority bicycle and pedestrian corridors. The long-range transportation projects recommended in the Bullitt County Transportation Study should include consideration of bicycle and pedestrian accommodations, to include sidewalks and/or multi-use paths. Bullitt County should also consider developing a comprehensive bicycle and pedestrian plan to establish future policy for both modes. The study leading up to the plan could include tasks such as: establishing community goals and objectives; identifying travel barriers and deficiencies with existing facilities; establishing development guidelines; developing a “complete streets” policy to require inclusion of non-motorized facilities with all roadway projects; creating a planned network of bicycle trails; and identifying funding sources for implementing the plan. Public participation should be a significant component of the study and could include holding Walkable Community Workshops within Bullitt County’s communities.

Public Transportation

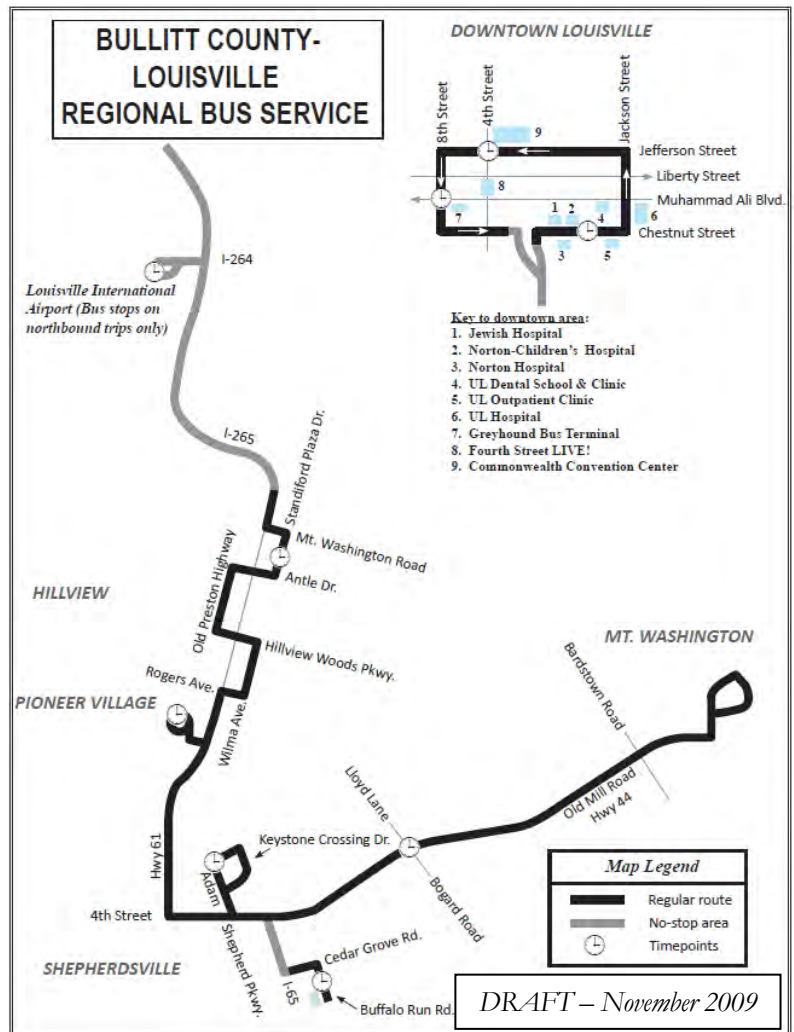
The need for better public transportation was a recurring theme throughout the Bullitt County Transportation Study. In the Spring of 2009, a public transportation committee was formed from a group of local elected officials, business leaders, and concerned citizens. Working with KIPDA and TARC, the committee has sought ways to introduce additional bus service to underserved populations within the county.

Bullitt County, partnering with Louisville Wheels, a local transportation provider affiliated with the Louisville Area Chapter of the American Red Cross, will begin inter-county bus transit service between Bullitt County and Jefferson County early in 2010. A draft of the single bus route to be implemented is shown to the right. The preliminary plan for this route would provide three round trips per day which should supplement existing TARC service.

² http://www.planning.kytc.ky.gov/bike_walk

Early in the Winter of 2009, Bullitt County was awarded over \$36,000 through a Federal Transit Administration (FTA) New Freedom grant. According to the FTA, the New Freedom formula grant program aims to provide additional tools to overcome existing barriers facing Americans with disabilities seeking integration into the work force and full participation in society. Bullitt County also applied for but was unsuccessful in obtaining funding through the Job Access and Reverse Commute (JARC) program, which provides funding for development and maintenance of job access programs for welfare recipients and persons with low income and for reverse commute programs.

Establishing the proposed inter-county bus service is a logical first step in the process. The recommended next step would be to conduct a comprehensive public transportation feasibility study to plan for the future transit needs of the county. Possible concepts that should be considered may include a dedicated bus service within Bullitt County or expansion of the existing TARC bus service to include fixed route, non-express bus service to portions of the county.



Access Management

Roadways are an important, yet costly public resource. By allowing closely spaced curb cuts, median openings, driveways near major intersections, and poorly coordinated traffic signals, many areas are placing a heavy burden on the roadway which leads to unsafe and congested conditions.

Access management is the systematic control of the location, spacing, design, and operation of driveways, median openings, interchanges, and street connections to a roadway. It also involves the implementation of roadway design concepts, such as median treatments and auxiliary lanes, and the appropriate spacing of traffic signals. The purpose of access management is to provide vehicular access to land development in a responsible manner in an effort to preserve the safety and efficiency of the transportation system.

Access management techniques can extend the life of roadways, improve traffic safety, decrease congestion, improve traffic flow, and improve air quality, which helps preserve long-term property values and provides an improved quality of life. An effective access management program can significantly improve traffic flow and safety. Studies have shown reduction in crashes by as much as 50 percent, increases in roadway capacity by 25 to 30 percent, reductions in travel time and delay by as much as 40 to 60 percent, as well as fuel savings in the thousands of gallons per mile per year range.

Access management can be implemented through zoning regulations with respect to land use types, number of allowable access points, restrictions on flag lots, connectivity, and frontage requirements. Through subdivision regulations, access management principles can be implemented in establishing criteria for driveway widths, minimum throat lengths, cross connections and joint access. To assist Kentucky cities and counties in developing their own access management ordinances, the **Kentucky Model Access Ordinance**³ has been created. Though not entirely comprehensive, the ordinance does address Kentucky's most-used access treatments. Cities and counties are urged to tailor the ordinance to meet specific local needs and to develop additional language as necessary. Local entities such as Bullitt County may develop and implement access management initiatives through other avenues as well. Through local comprehensive plans, access management initiatives can be implemented through the goals and objectives, transportation element and land use element. Comprehensive plans should incorporate access management principles as much as possible.

Development Requirements

One issue that was brought to the attention of the study team over the course of the study is a common lack of infrastructure improvements accompanying developments. Examples that were discussed by the public include relatively recent residential developments that have been constructed along Raymond Road and Chillicoop Road west of Shepherdsville and Hubbard Lane southeast of Mount Washington. In each of these cases, subdivisions have been developed along county roads and the adjacent roadway has not been improved to meet the needs of the newly introduced traffic. Other local governments in Kentucky employ regulations that require the developer to, at minimum, improve the roadway adjacent to the property to be developed. These improvements can include widening the adjacent roadway or constructing turn lanes to serve the development. An example of such a guideline enforced by the Georgetown-Scott County Planning Commission is as follows:

165 SUFFICIENCY OF INFRASTRUCTURE

The Planning Commission may deny approval of any proposed development for which infrastructure sufficient to serve the needs generated by the proposed development is neither available nor planned to be constructed as part of the proposal or as part of the capital improvement program of the providing agency.

As of Winter 2009, Bullitt County Planning and Zoning was in the process of revising its zoning regulations. Development guidelines should be given some consideration in order to place some of the burden associated with needed transportation improvements onto the developer as opposed to the local government.

³ http://www.planning.kytc.ky.gov/modal_programs/am.asp

APPENDIX C

2030 Traffic Forecasts

2030 TRAFFIC FORECASTS

Bullitt County
Transportation Study

Includes only
committed roadway
improvement projects.

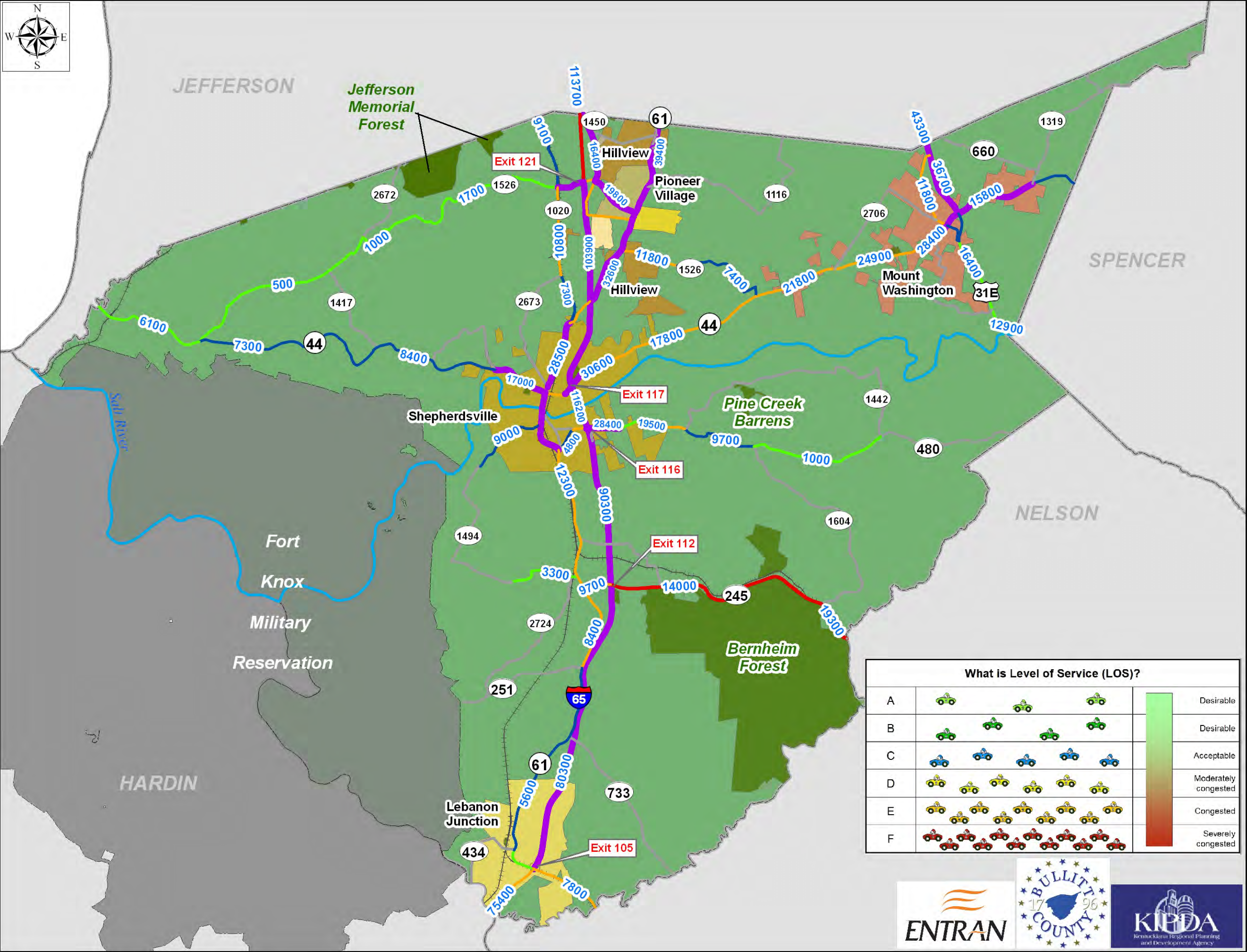
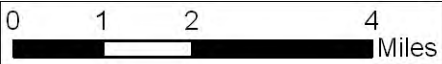
1,000 2030 Average Daily
Traffic (ADT) Volume

2030 Level of Service (LOS)

- LOS A or B
- LOS C
- LOS D
- LOS E
- LOS F
- No Forecasts

Level of Service (LOS) is a measure of the quality of traffic flow. Similar to letter grades in school, it ranges from LOS A to LOS F. LOS A represents the best operating conditions and LOS F the worst.

Source: Kentuckiana Regional
Planning and Development
Agency (KIPDA) & ENTRAN



What is Level of Service (LOS)?			
A			Desirable
B			Desirable
C			Acceptable
D			Moderately congested
E			Congested
F			Severely congested



SCENARIO 1 2030 TRAFFIC FORECASTS

Bullitt County
Transportation Study

Includes committed projects
plus the construction of
Corridors J, K, and L as
four-lane divided roadways

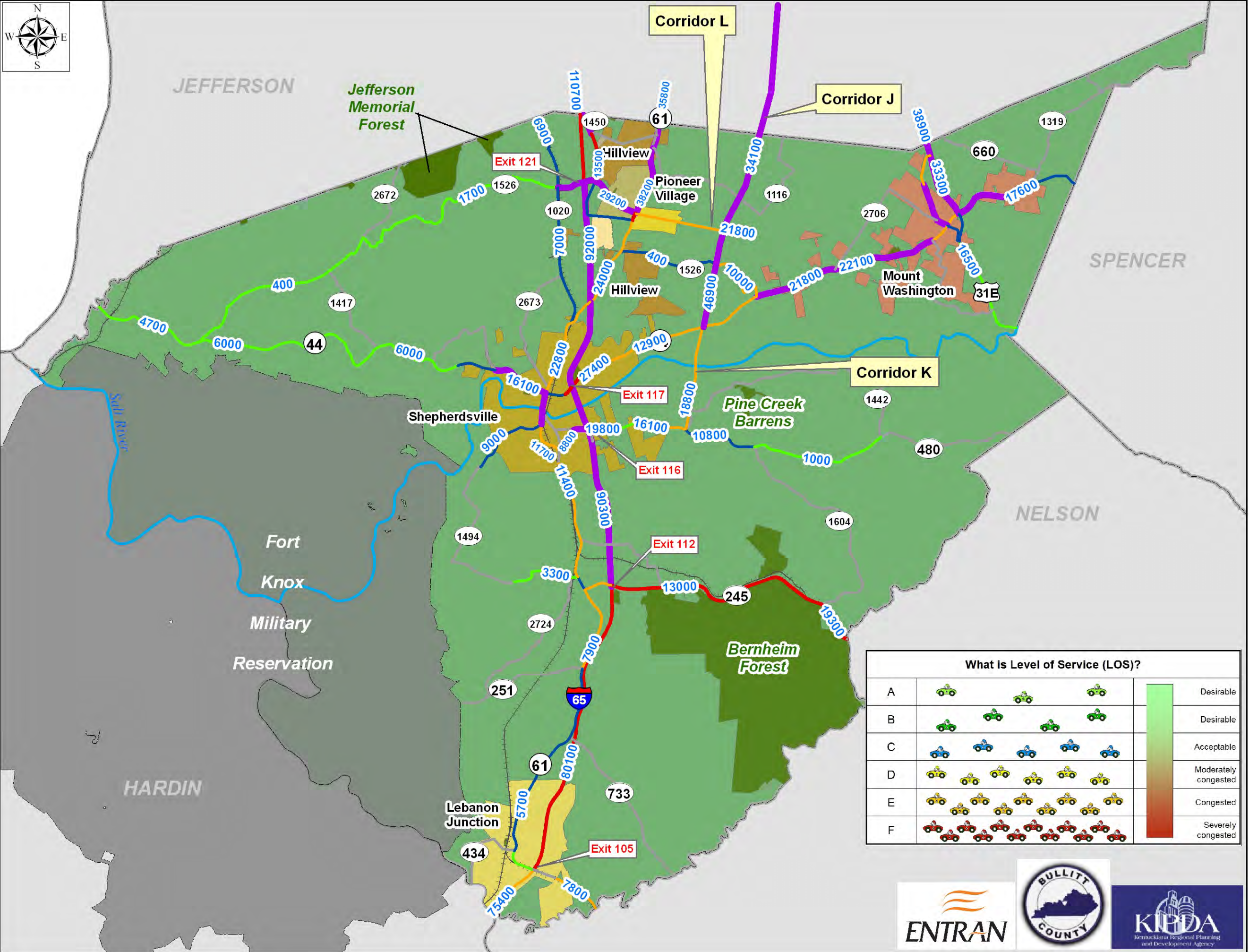
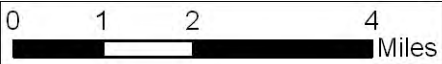
1,000 2030 Average Daily
Traffic (ADT) Volume

2030 Level of Service (LOS)

- LOS A or B
- LOS C
- LOS D
- LOS E
- LOS F
- No Forecasts

Level of Service (LOS) is a measure of
the quality of traffic flow. Similar to letter
grades in school, it ranges from LOS A to
LOS F. LOS A represents the best
operating conditions and LOS F the worst.

Source: Kentuckiana Regional
Planning and Development
Agency (KIPDA) & ENTRAN



What is Level of Service (LOS)?			
A			Desirable
B			Desirable
C			Acceptable
D			Moderately congested
E			Congested
F			Severely congested



SCENARIO 2 2030 TRAFFIC FORECASTS

Bullitt County
Transportation Study

Includes committed projects
plus the construction of
a new I-65 interchange at
KY 61 and Corridors N, I,
and O as four-lane divided
roadways

1,000 2030 Average Daily
Traffic (ADT) Volume

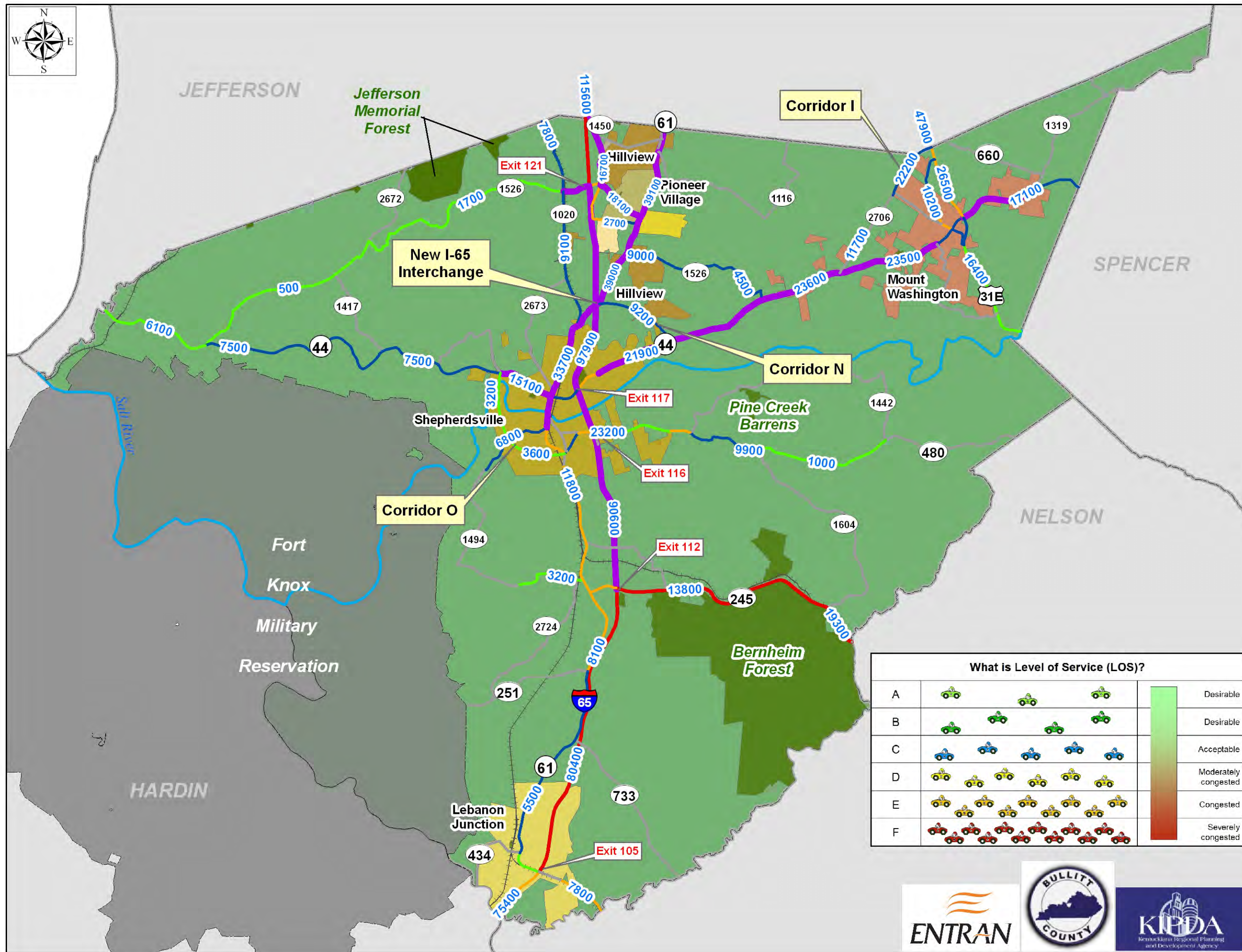
2030 Level of Service (LOS)

- LOS A or B
- LOS C
- LOS D
- LOS E
- LOS F
- No Forecasts

Level of Service (LOS) is a measure of
the quality of traffic flow. Similar to letter
grades in school, it ranges from LOS A to
LOS F. LOS A represents the best
operating conditions and LOS F the worst.

Source: Kentuckiana Regional
Planning and Development
Agency (KIPDA) & ENTRAN

0 1 2 4
Miles



What is Level of Service (LOS)?			
A			Desirable
B			Desirable
C			Acceptable
D			Moderately congested
E			Congested
F			Severely congested



SCENARIO 3 2030 TRAFFIC FORECASTS

*Bullitt County
Transportation Study*

Includes committed projects plus Corridor D (widening US 31 EX), Corridor F (widening Bells Mill), and Corridor M as four-lane divided roadways

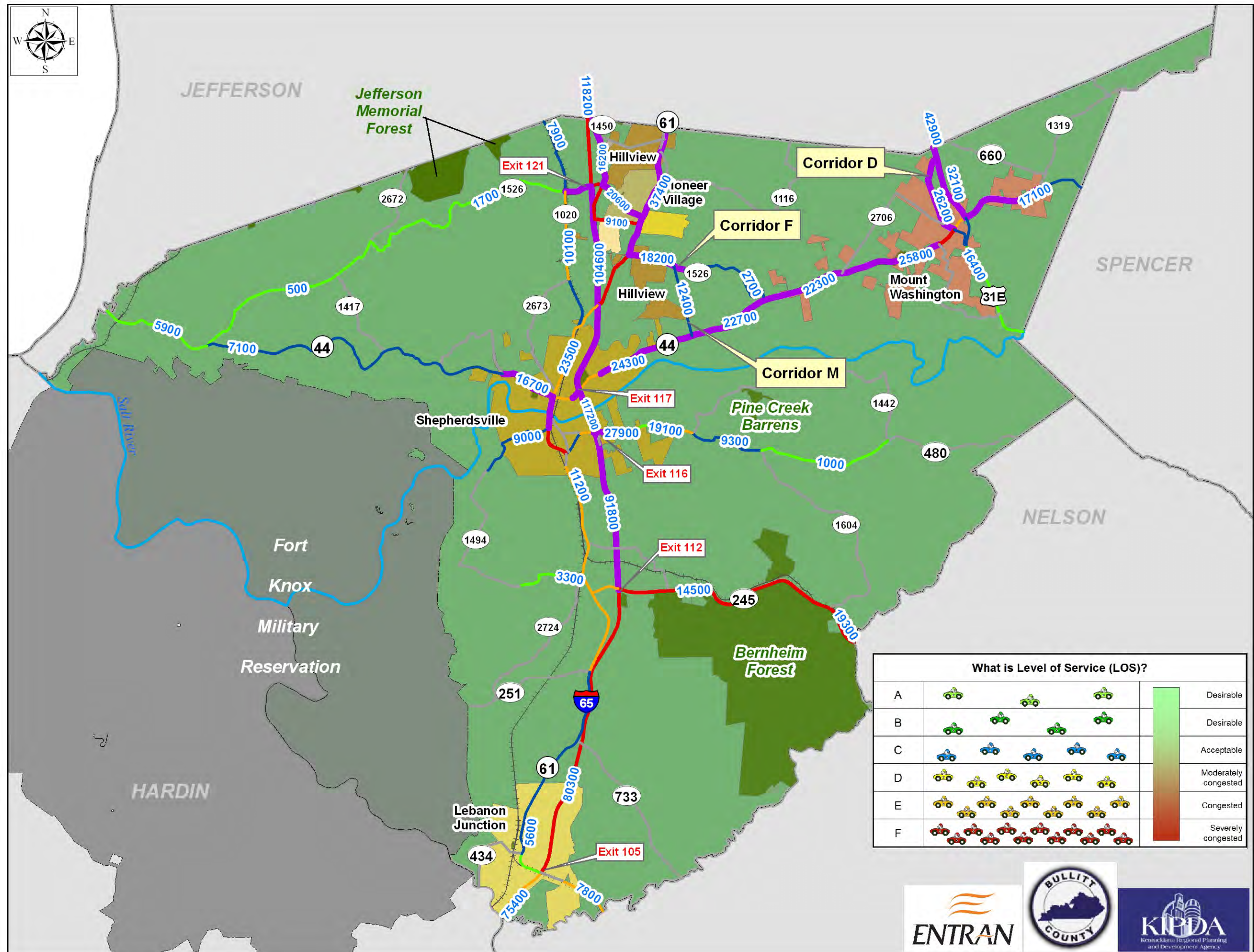
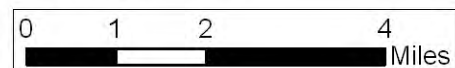
1,000 2030 Average Daily Traffic (ADT) Volume

2030 Level of Service (LOS)

- LOS A or B
- LOS C
- LOS D
- LOS E
- LOS F
- No Forecasts

Level of Service (LOS) is a measure of the quality of traffic flow. Similar to letter grades in school, it ranges from LOS A to LOS F. LOS A represents the best operating conditions and LOS F the worst.

Source: Kentuckiana Regional Planning and Development Agency (KIPDA) & ENTRAN



SCENARIO 4 2030 TRAFFIC FORECASTS

Bullitt County
Transportation Study

Includes committed projects
plus Corridor H (widening
Brooks Road), Corridor I, and
Corridor K as four-lane divided
roadways

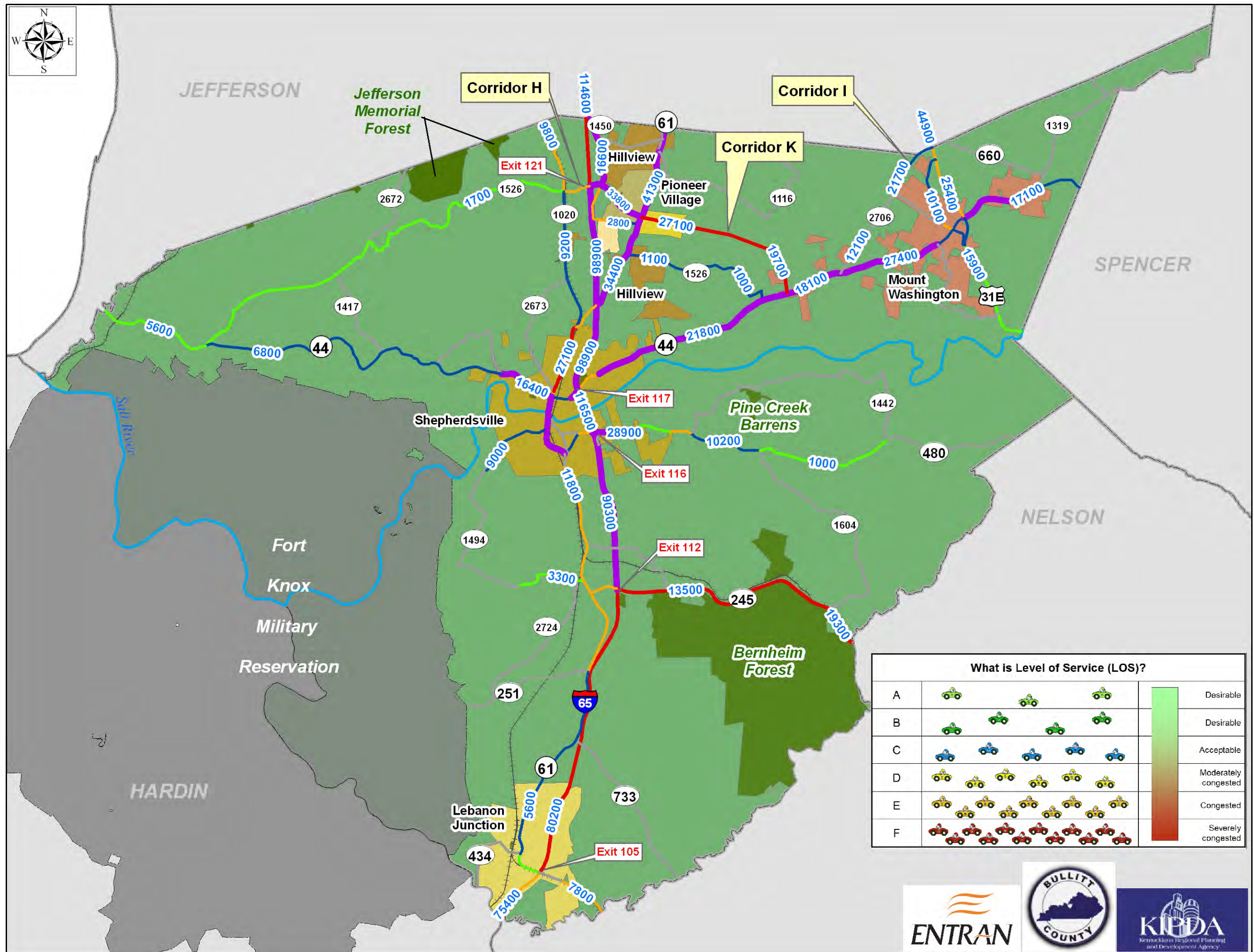
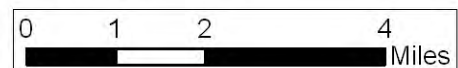
1,000 2030 Average Daily
Traffic (ADT) Volume

2030 Level of Service (LOS)

- LOS A or B
- LOS C
- LOS D
- LOS E
- LOS F
- No Forecasts

Level of Service (LOS) is a measure of
the quality of traffic flow. Similar to letter
grades in school, it ranges from LOS A to
LOS F. LOS A represents the best
operating conditions and LOS F the worst.

Source: Kentuckiana Regional
Planning and Development
Agency (KIPDA) & ENTRAN



What is Level of Service (LOS)?			
A			Desirable
B			Desirable
C			Acceptable
D			Moderately congested
E			Congested
F			Severely congested



SCENARIO 5 2030 TRAFFIC FORECASTS

Bullitt County
Transportation Study

Includes committed projects
plus the construction of
a new I-65 interchange at
KY 61

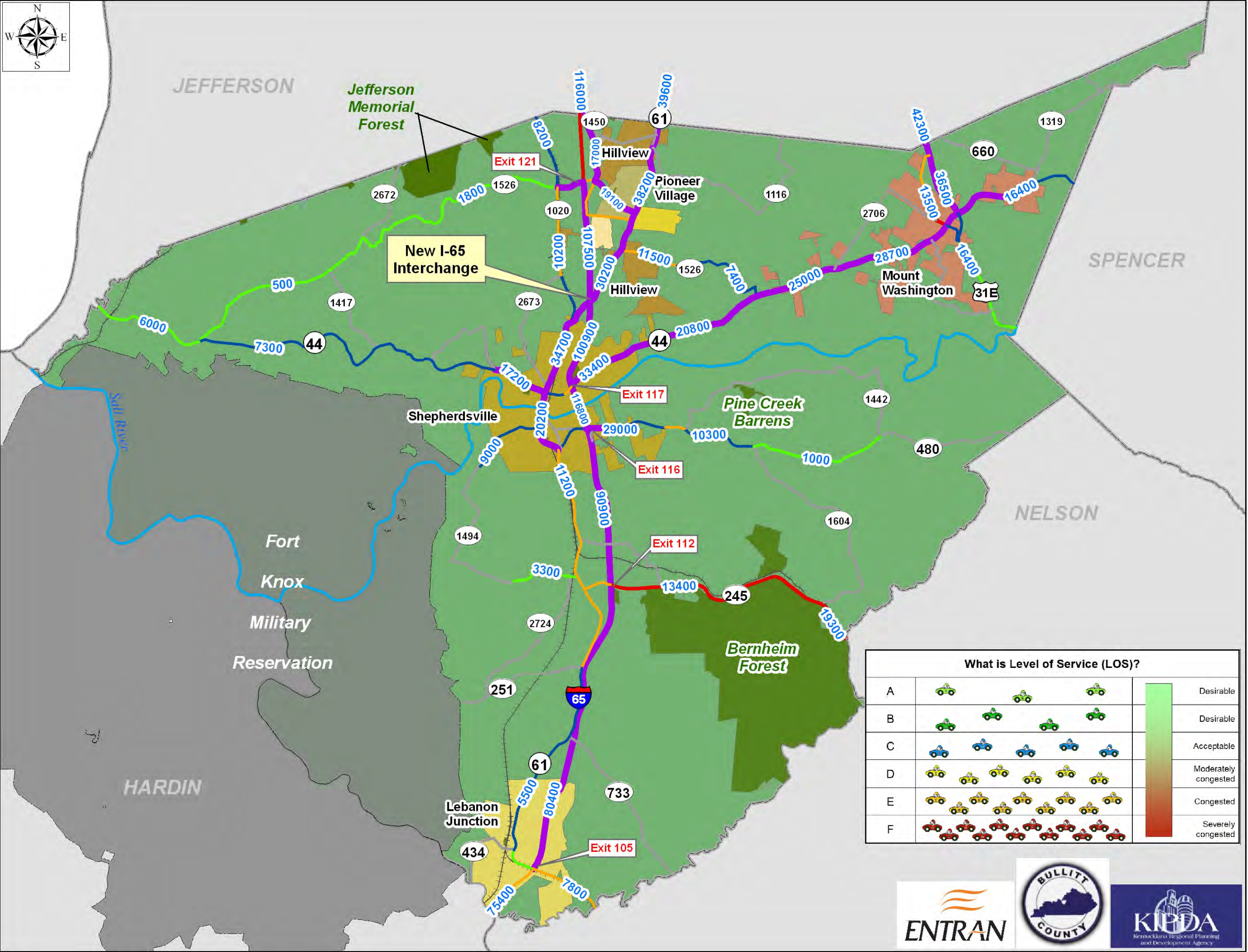
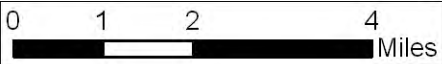
1,000 2030 Average Daily
Traffic (ADT) Volume

2030 Level of Service (LOS)

- LOS A or B
- LOS C
- LOS D
- LOS E
- LOS F
- No Forecasts

Level of Service (LOS) is a measure of
the quality of traffic flow. Similar to letter
grades in school, it ranges from LOS A to
LOS F. LOS A represents the best
operating conditions and LOS F the worst.

Source: Kentuckiana Regional
Planning and Development
Agency (KIPDA) & ENTRAN



What is Level of Service (LOS)?			
A			Desirable
B			Desirable
C			Acceptable
D			Moderately congested
E			Congested
F			Severely congested



FINAL SCENARIO 2030 TRAFFIC FORECASTS

Bullitt County Transportation Study

Includes committed projects
plus the construction of
Corridors I, J, K, and L as
four-lane divided roadways
and a new I-65 interchange
at KY 61 north of Shepherdsville

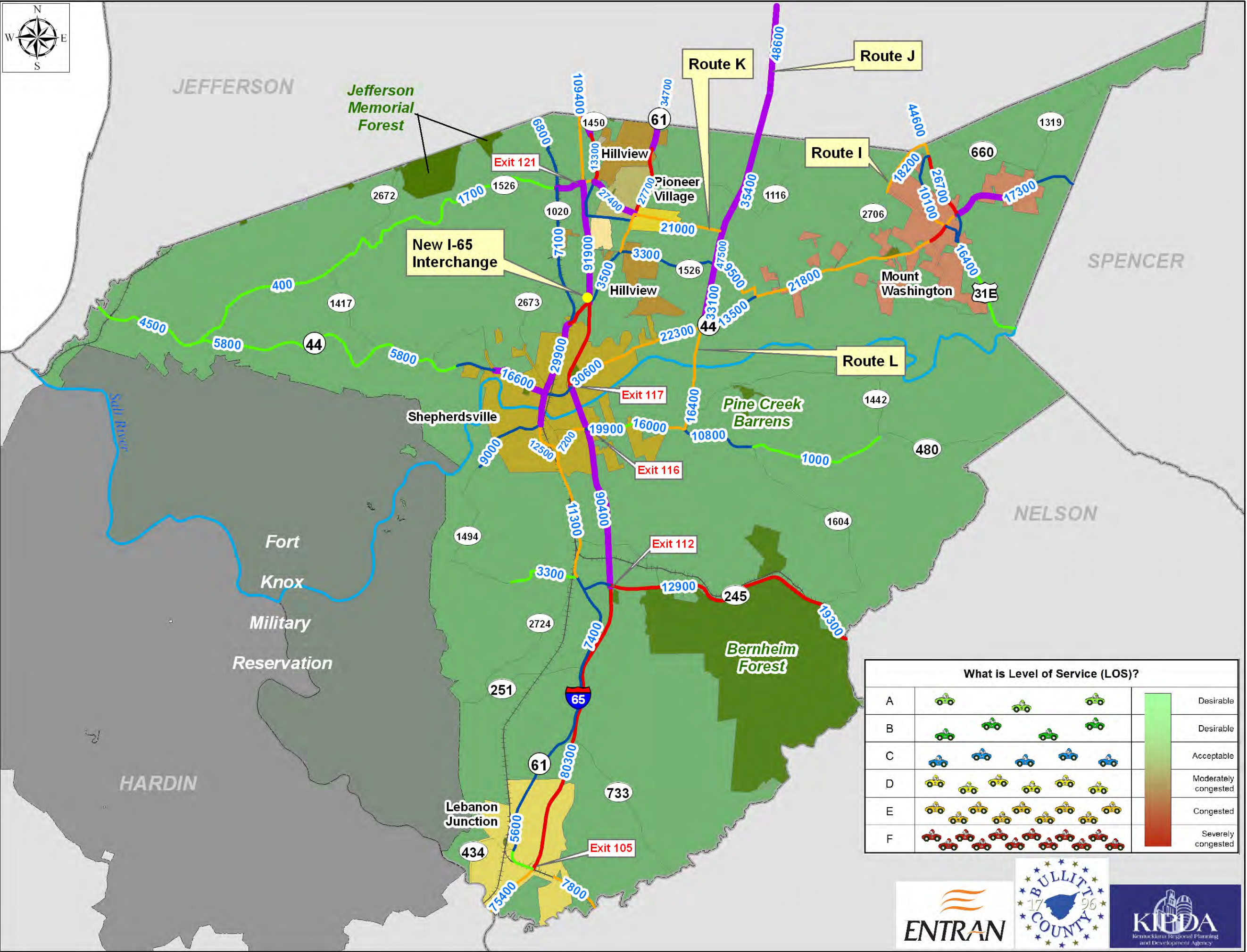
1,000 2030 Average Daily
Traffic (ADT) Volume

2030 Level of Service (LOS)

- LOS A or B
- LOS C
- LOS D
- LOS E
- LOS F
- No Forecasts

Level of Service (LOS) is a measure of
the quality of traffic flow. Similar to letter
grades in school, it ranges from LOS A to
LOS F. LOS A represents the best
operating conditions and LOS F the worst.

Source: Kentuckiana Regional
Planning and Development
Agency (KIPDA) & ENTRAN



What is Level of Service (LOS)?		
A		Desirable
B		Desirable
C		Acceptable
D		Moderately congested
E		Congested
F		Severely congested



APPENDIX B

Roadway Inventory

LANE DATA

Bullitt County
Transportation Study

Legend

Lanes are 10-foot
wide or less

2-Lane

4-Lane

Greater than
10-foot lanes

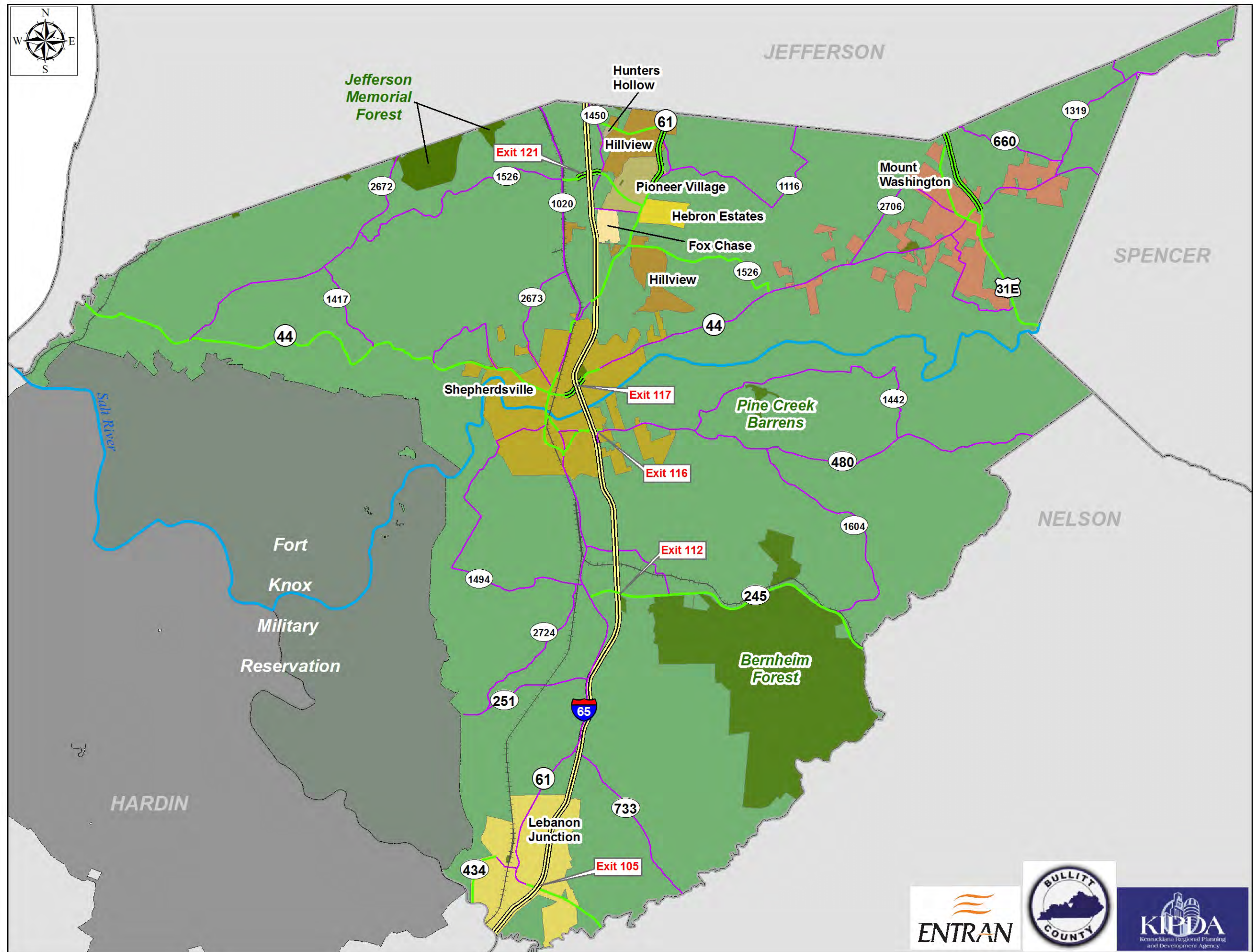
2-Lane

4-Lane

6-Lane

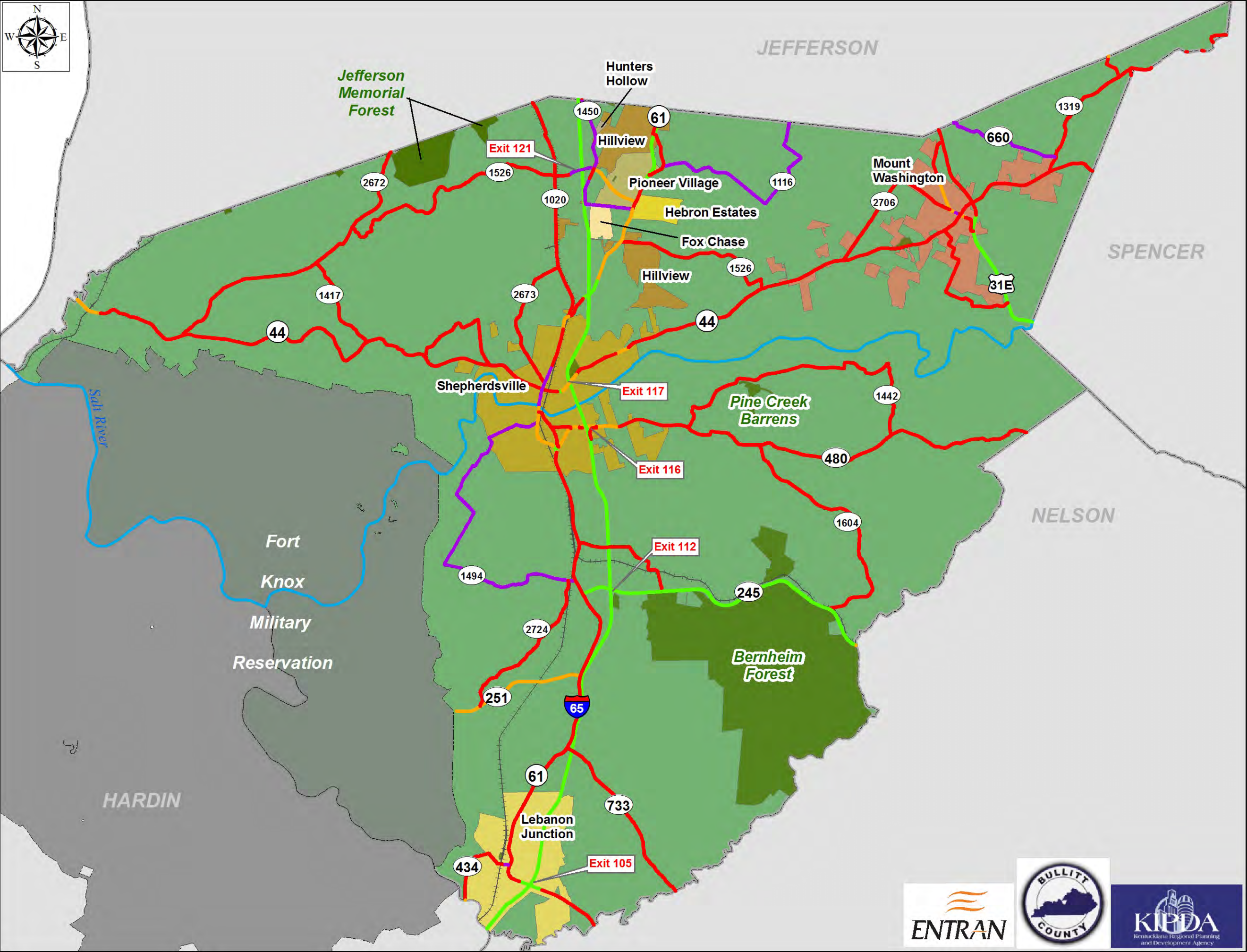
Source: KY Transportation Cabinet
Highway Information System (HIS)
database

0 1 2 4
Miles



SHOULDER WIDTHS

Bullitt County
Transportation Study



Shoulder Width

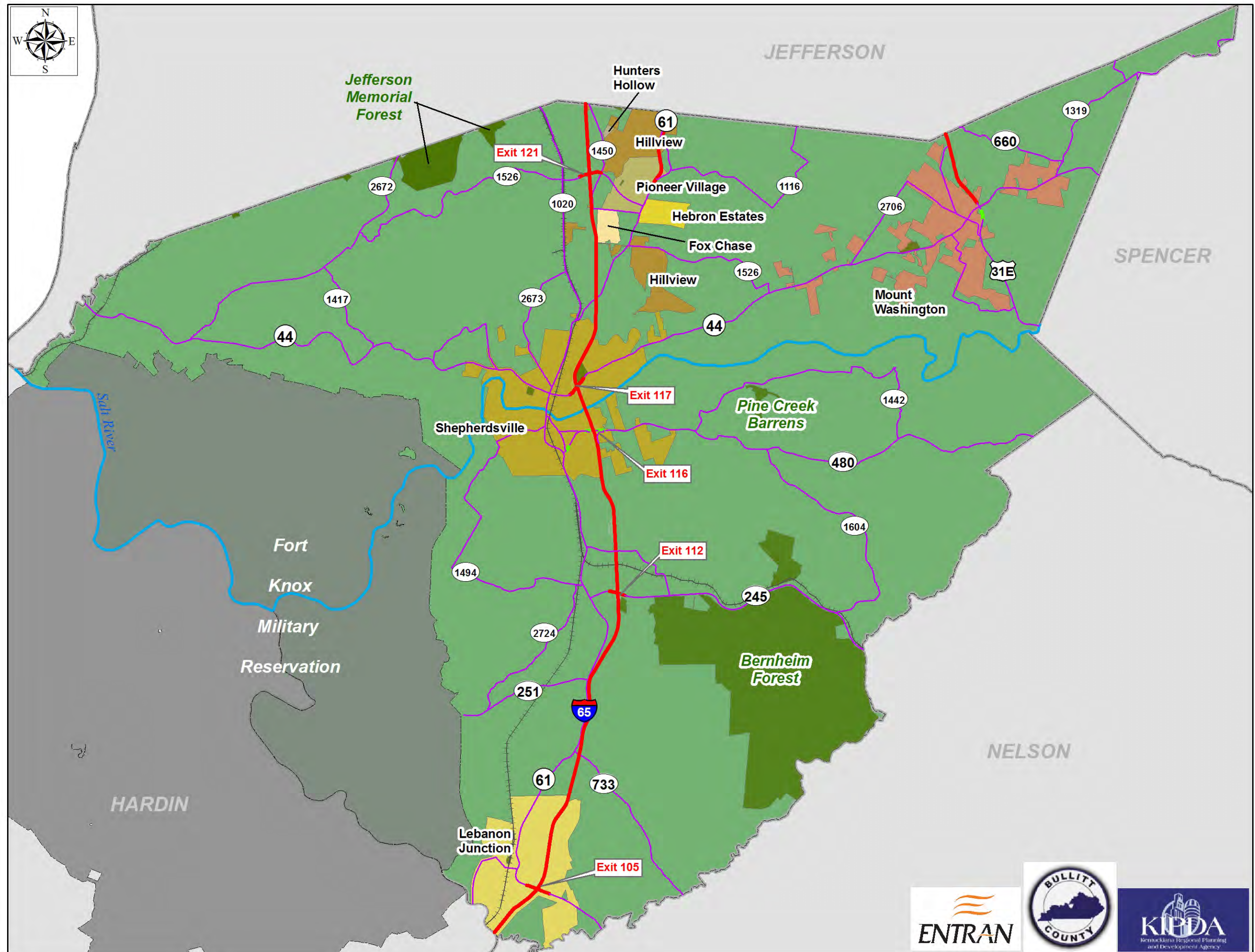
- 8 feet +
- 4 - 8 feet
- 1 - 4 feet
- 0 - 1 feet

Source: KY Transportation Cabinet
Highway Information System (HIS)
database

0 1 2 4
Miles








*Bullitt County
Transportation Study*

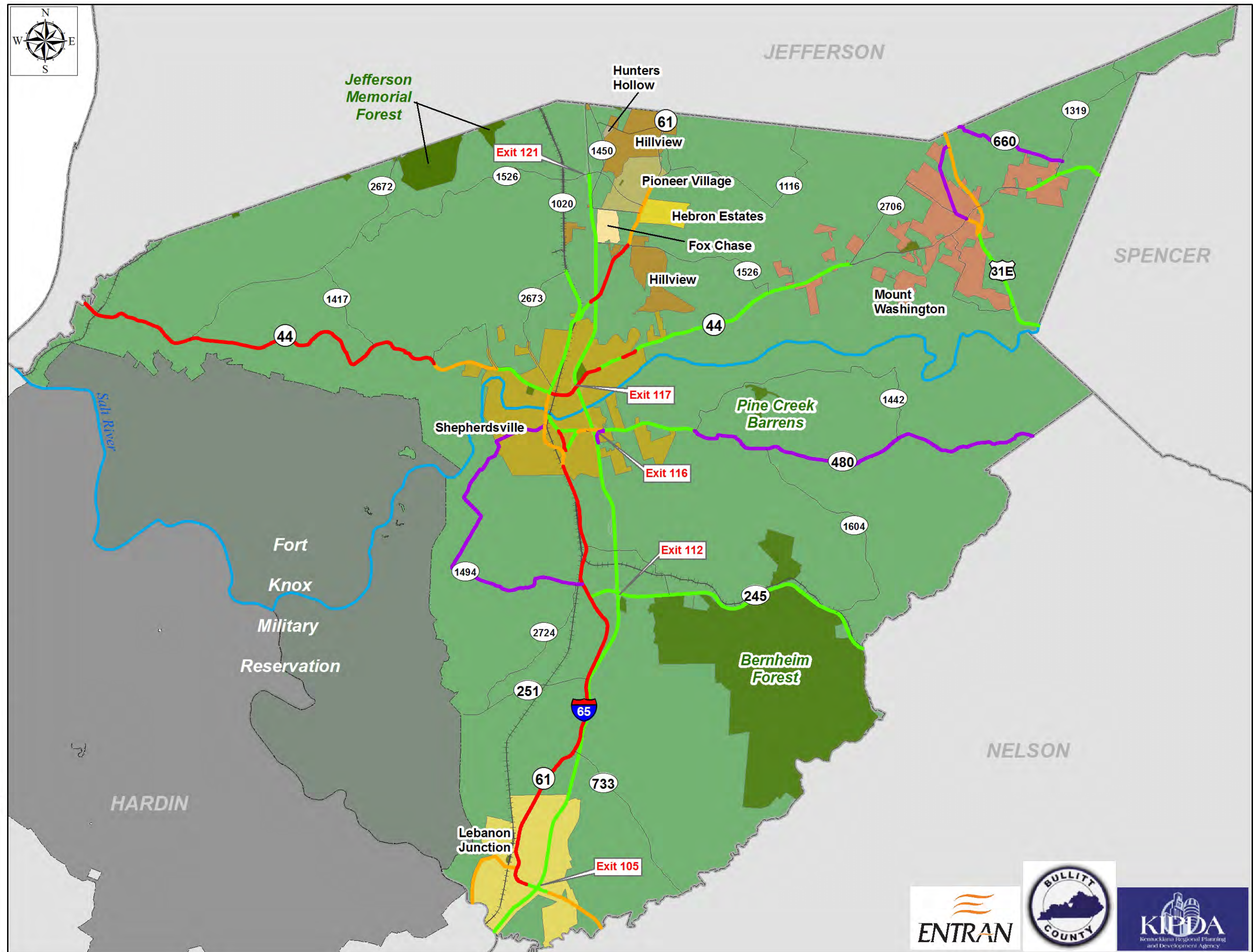
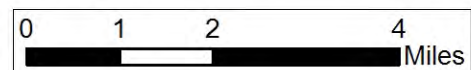


*Bullitt County
Transportation Study*



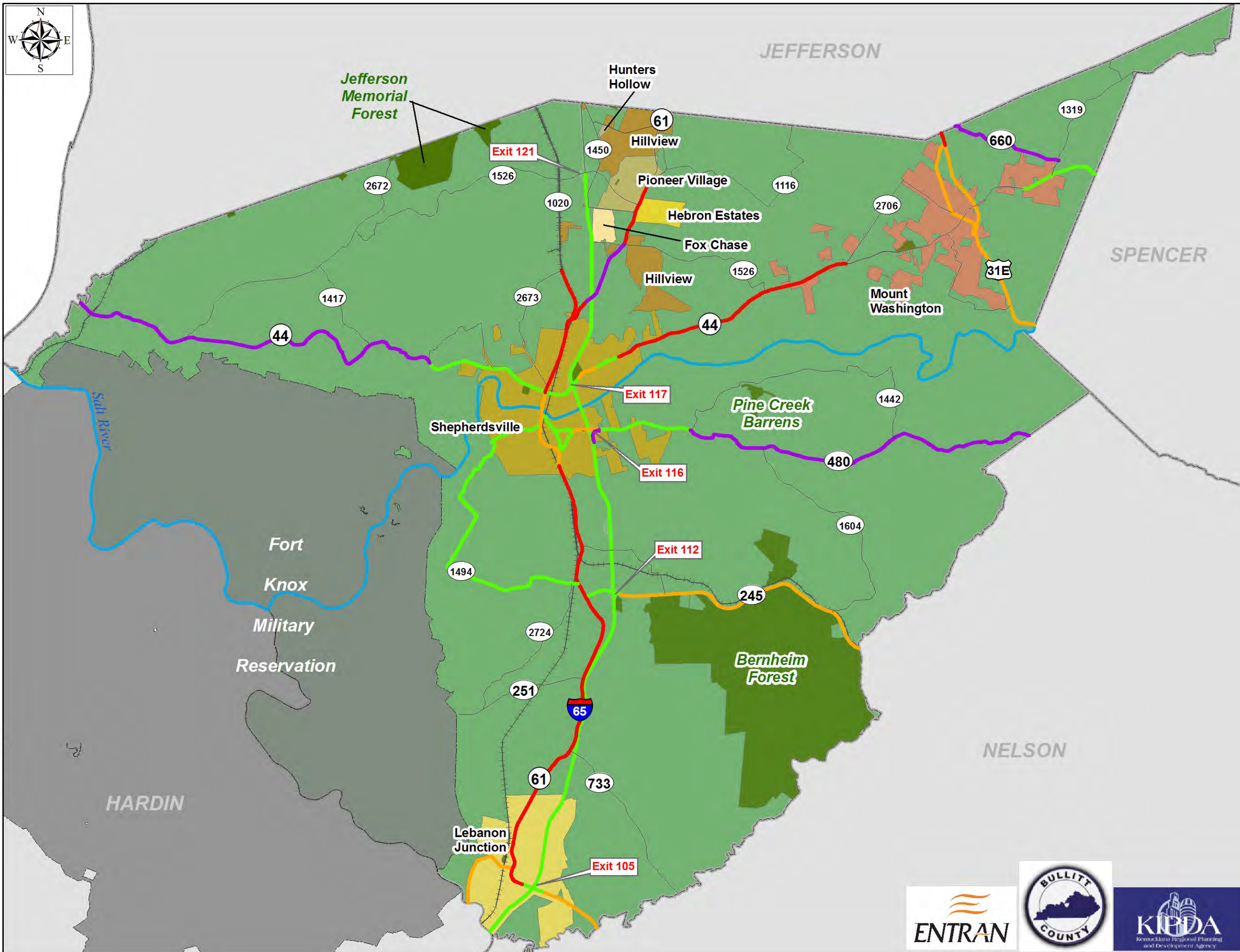
-  Curves meet design standards
-  Some curves less than standard, but safe at the speed limit
-  Infrequent curves with reduced speed
-  Several curves severely affecting speed
-  Not Available

Source: KY Transportation Cabinet
Highway Information System (HIS)
database



VERTICAL CURVATURE ADEQUACY

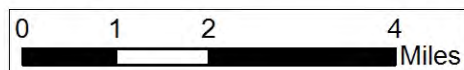
Bullitt County
Transportation Study



Vertical Alignment

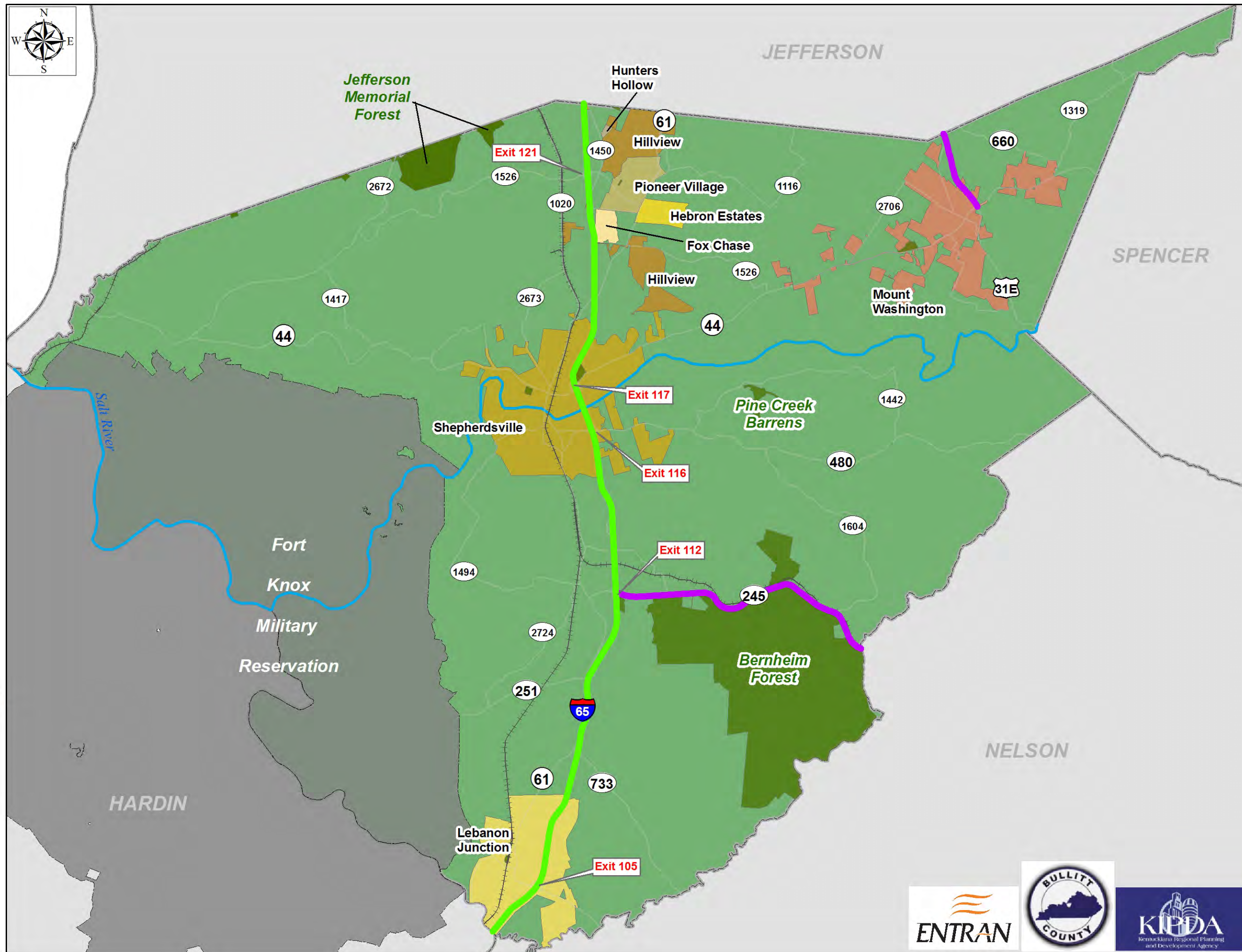
- Grades meet design standards for terrain
- Some curves less than standard, but with adequate sight distance
- Some grades without sight distance
- Frequent grades without sight distance
- Not Available

Source: KY Transportation Cabinet
Highway Information System (HIS)
database



DESIGNATED TRUCK ROUTES

Bullitt County
Transportation Study



Truck Routes

 Federal Designated Truck Route

 State Designated Truck Route

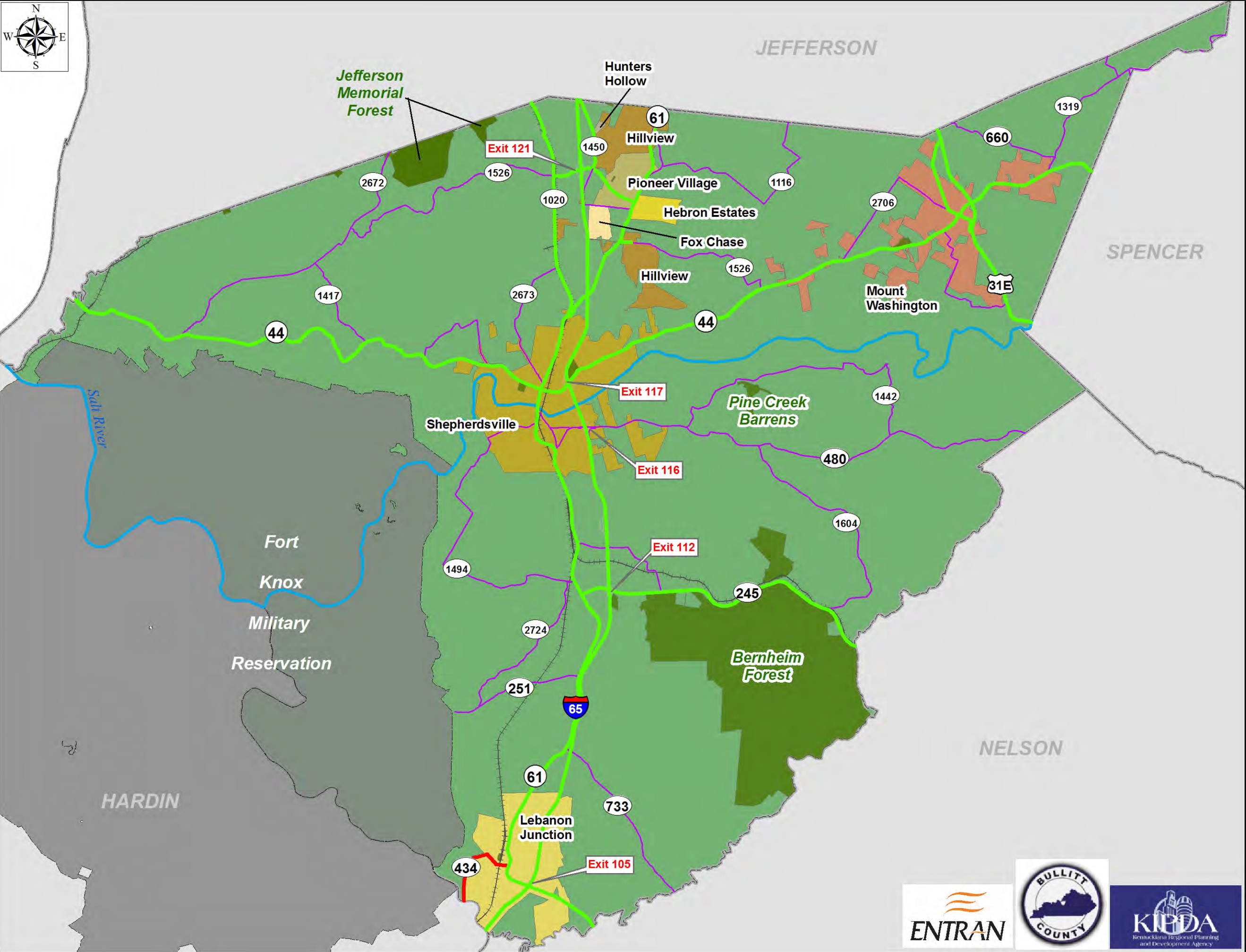
Source: KY Transportation Cabinet Highway Information System (HIS) database

0 1 2 4 Miles






**TRUCK
WEIGHT
CLASS**

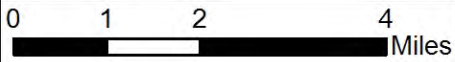
*Bullitt County
Transportation Study*



Truck Weight Class

-  A (44,000 lbs.)
-  AA (62,000 lbs.)
-  AAA (80,000 lbs.)

Source: KY Transportation Cabinet
Highway Information System (HIS)
database



APPENDIX A

Meeting Summaries

Meeting Summary

TO: Andy Rush
Kentuckiana Planning and Development Agency (KIPDA)

FROM: Tom Creasey, P.E.
Project Manager
ENTRAN, PLC

DATE: February 13, 2009

SUBJECT: Bullitt County Transportation Study
Kickoff Meeting

The kickoff Steering Committee meeting for the Bullitt County Transportation Study was held on January 21, 2009 at 1:30 p.m. in the Paroquet Springs Conference Center in Shepherdsville. The following individuals were in attendance:

Attendees:

Linda Belcher	State Representative, House District 49
Ed Bleemel	Bullitt County Fiscal Court
Carrie Butler	TARC
Joetta Calhoun	City of Mt. Washington
Dwayne Cummings	Shepherds Shelter
Bonnie J. Enlow	City of Shepherdsville
Martha Ferguson	Alternative ADC
Brian Meade	KYTC, District 5
Melanie Roberts	Bullitt County Judge Executive
Andy Rush	KIPDA
Nancy Snow	TARC
Jimmy Stivers	Bullitt County Road Department
Alice White	City of Fox Chase
Ted Grossardt	Community Decisions
Brian Schoester	EHI Consultants
Brian Aldridge	ENTRAN
Tony Catalina	ENTRAN
Tom Creasey	ENTRAN
Ashley Williams	ENTRAN

Judge Melanie Roberts began the meeting at approximately 1:30 p.m. with a brief preface of the study and those that will be key participants throughout the process. Andy Rush followed by introducing ENTRAN, the consulting firm that was selected to conduct the study. All meeting attendees were then asked to introduce themselves.

Tom Creasey continued the meeting with a presentation describing the study's key objectives, issues, tasks, and schedule. The key objectives for the study are to actively engage the public in the identification of transportation issues and development of potential solutions, to develop an implementation plan so that improvements are constructed in a timely manner, and to provide strong leadership and effective communication throughout the study. ENTRAN is the lead firm working with KIPDA to conduct the study, and the ENTRAN team includes EHI Consultants and Community Decisions.

Some of the key issues the ENTRAN team identified in its proposal include rapid growth, long commuting times for Bullitt County residents to Louisville, high levels of truck traffic, and known roadway capacity and safety deficiencies. Bullitt County's population grew by approximately 21 percent between 2000 and 2007 and there has not been an adequate response in terms of transportation infrastructure to accommodate such growth.

Tom discussed how Community Decisions would be involved with the public involvement process. Ted Grossardt walked the group through the Key Issues exercise, demonstrating how the electronic polling system works and how we will ask questions of the Steering Committee and general public as a way to identify the important issues and ultimately develop and prioritize transportation improvement options. The group participated in an exercise to identify additional key issues that may be considered for the study. The group then ranked each issue discussed using the automatic polling system. The following issues were identified by one or more members:

- Lack of funding for project design/construction
- Lack of public transportation
- Traffic congestion during peak hours

A lengthy discussion was held regarding projects within the county that have been discussed for many years but not constructed, specifically the KY 61 widening north of Shepherdsville and the reconstruction of KY 44 between Shepherdsville and Mount Washington. Brian Meade with the Kentucky Transportation Cabinet (KYTC) spoke to the group about the current funding situation in the state, particularly the lack of federal and state funding for transportation projects. He added that the KY 61 project may receive funding for construction through the stimulus package proposed by President Obama.

Several members of the Committee expressed the need for public transportation improvements within Bullitt County. It was stated that TARC's presence in the county only assists Jefferson County commuters. After the polling exercise, a member of the group questioned the prioritization of the vehicular-mode improvements versus the alternative-mode improvements. Tony Catalina stated that funding for the two types are separate sources. He added that the public and the Steering Committee would help decide the prioritization of the recommended projects for the study.

Obtaining representation from Bullitt County Planning and Zoning at future meetings was discussed. Judge Roberts explained that a new Planning and Zoning Administrator is

currently being sought. Andy Rush stated that he would invite a member of KIPDA's Social Services Department to join the Committee.

The next Steering Committee meeting was tentatively scheduled for the month of March. Several members asked for more advance notice of the meeting dates.

The meeting ended at approximately 3:00 p.m.

Meeting Summary

TO: Andy Rush
Kentuckiana Planning and Development Agency (KIPDA)

FROM: Tom Creasey, P.E.
Project Manager
ENTRAN, PLC

DATE: March 16, 2009

SUBJECT: Bullitt County Transportation Study
Steering Committee Meeting #2

The second Steering Committee meeting for the Bullitt County Transportation Study was held on March 9, 2009 at 1:30 p.m. in the Paroquet Springs Conference Center in Shepherdsville. The following individuals were in attendance:

Attendees:

Carrie Butler	TARC
Dwayne Cummings	Shepherds Shelter
Molly Dobson	KIPDA
Bonnie Enlow	City of Shepherdsville
Robert Flaherty	Bullitt County Attorney's Office
Bob Fouts	Bullitt County Economic Development
Les Gerald	Rogers Group
Tom Hall	KYTC, District 5
Melanie Roberts	Bullitt County Judge Executive
Andy Rush	KIPDA
Ken Stovall	City of Mt. Washington
John Ripy	Community Decisions
Brian Schoester	EHl Consultants
Brian Aldridge	ENTRAN
Tom Creasey	ENTRAN
Ashley Williams	ENTRAN

Tom Creasey began the meeting at approximately 1:40 p.m. with introductions. Tom continued with providing an overview of the presentation. He also emphasized to the group the significance of examining the existing traffic-related conditions of the study area. This is a critical step in determining the transportation improvements that should be considered as a result of the study.

Brian Aldridge continued the meeting by introducing the draft version of the study purpose and need statement. There were no comments from the group regarding the statement.

An explanation of the development and timeline of a typical planning study was presented to the group. Brian acknowledged the components for this study included the following:

- Existing Conditions Inventory
- Traffic Forecasting
- Public Involvement
- Develop and Evaluate Alternatives
- Provide Recommendations

Next, the Committee was presented with several existing conditions maps for Bullitt County. Brian described several of the maps to the group, including:

- Average Daily Traffic Volume (ADT),
- Crash History,
- Lane Data,
- Shoulder Width,
- Horizontal Curvature Adequacy, and
- Planned and Committed Projects.

The attendees had a few comments regarding the maps. One individual stated that the shoulder width on KY 1494 (Beech Grove Road) near KY 61 (Preston Highway) should be zero (0) feet, instead of the one to four (1-4) feet shoulder width noted on the map. Another member noted that a section of KY 480 should have a greater shoulder width than what was shown on the map. Regarding the Planned and Committed Projects map, one member stated that the KY 480 widening project should be identified as a Six-Year Highway Plan project. Brian stated that the maps were still in draft form, and appreciated the Committee's review of the data. He added that ENTRAN will confirm that all of the existing data are as accurate as possible before presenting them to the public.

Some discussion was held between several members of the Steering Committee regarding how projects are initiated and the steps that must be undertaken to get to the construction stage. In summary, it was explained that a project originates on the local agency's Unscheduled Projects List (UPL), a component of the Long-Range Plan. Horizon 2030 is KIPDA's Long-Range Transportation Plan. The Transportation Improvement Program (TIP) is a short-range fiscally-constrained programming document representing approximately the first four years of the Long-Range Plan. The TIP represents the local priorities for the region and includes some detail on the scope for intended improvements or strategies and what types of funds will be used for a particular project. A project must be included in the UPL before it can be advanced to the TIP. Once the project is in the TIP, it is submitted to the KYTC for consideration. KYTC must then evaluate all projects statewide and determine funding priorities. Projects that represent the highest statewide priorities are then added to Kentucky's Six Year Highway Plan (SYP). The SYP is enacted by the legislature and allocates anticipated state and federal revenues for transportation projects. Only the first two years of SYP projects (or in some cases project phases) are guaranteed to be funded.

Additional maps distributed to the group that were not described in detail included Roadway Functional Classification, Median Type, Vertical Curvature Adequacy, Existing Land Use, Truck Weight Class, and Designated Truck Routes.

Tom Creasey announced the creation of a website for the study. The website address is <http://www.gobullitt.com>. Key information regarding the study and upcoming meeting dates will be available to the public on the website. This website will serve as a tool for the community to stay informed about the study as well as an opportunity for comments to be submitted to the project team at any point during the study's progression.

Brian then asked the Committee to complete a group exercise. The members were split into three groups and were asked to discuss roadway or traffic issues within Bullitt County, such as:

- Intersections where turn lanes or traffic signals are needed;
- Roadways that are too narrow or congested;
- Roadways that should be re-aligned; and,
- Railroad crossings that need attention.

Brian proceeded to give specific examples of potential traffic problems within the county before the groups began their discussions. He identified two inadequate grade-separated rail crossings in Shepherdsville and a narrow two-lane roadway with no shoulders. Each example included a photograph of the problem location.

Before the Committee divided into groups, a member discussed a possible intersection improvement that could be made just north of the Bullitt County line at the KY 61/Cooper Chapel Road intersection. Brian asked that the group try to keep the problem locations within Bullitt County. Each of the three groups was given a study area map to highlight or circle areas with traffic problems. After approximately ten minutes of discussion, the Committee convened and each group presented their greatest traffic issues identified within Bullitt County.

The problem areas/roadways identified by Group One included sections of KY 44 within or approaching Shepherdsville and Mt. Washington; KY 1494 near KY 61 in Shepherdsville; and KY 1526 near John Harper Road. The group stated that a new corridor should be considered as an alternative route for KY 1526 from John Harper Road to KY 44.

Group Two also identified several problem areas/roadways within the County, including KY 1526 between KY 61 and KY 44; all of KY 1494; and pedestrian issues within each of the cities in Bullitt County. Group Two expressed the need for improved crosswalks and characterizing a “sense of place” for each of the county’s communities.

The third group identified the lack of connectivity in the southwest quadrant of Shepherdsville and improvements needed on KY 1526. Additionally, the group identified the

possible need for a new corridor along the northwest side of Shepherdsville, just south of Hillview, to connect KY 61 near I-65 to KY 44.

With no additional comments from the Steering Committee, Tom concluded the meeting by stating that the next Steering Committee Meeting would be scheduled for early to mid-April and the first of the two public meetings would be in early to mid-May. Tom added that in addition to the email invitations, future meeting dates would be posted on the study website as soon as the dates were known.

The meeting ended at approximately 3:45 p.m.

Meeting Summary

TO: Andy Rush
Kentuckiana Planning and Development Agency (KIPDA)

FROM: Tom Creasey, P.E.
Project Manager
ENTRAN, PLC

DATE: May 14, 2009

SUBJECT: Bullitt County Transportation Study
Steering Committee Meeting #3

The third Steering Committee meeting for the Bullitt County Transportation Study was held on April 20, 2009 at 1:30 p.m. in the Paroquet Springs Conference Center in Shepherdsville. The following individuals were in attendance:

Attendees:

Carrie Butler	TARC
Willie Byrd	Options Unlimited
Larry Chaney	KIPDA
Dwayne Cummings	Shepherds Shelter
John Lehenbauer	Divine Savior Lutheran
Melanie Roberts	Bullitt County Judge Executive
Andy Rush	KIPDA
Bud White	Bullitt County Chamber of Commerce
Angie Woodward	Leadership Bullitt County
Ted Grossardt	Community Decisions
Brian Schoester	EHI Consultants
Brian Aldridge	ENTRAN
Tom Creasey	ENTRAN

Tom Creasey began the meeting at 1:30 p.m. with introductions. Tom continued with providing an overview of the presentation. He indicated that the KY 44 widening project, between Shepherdsville and Mt. Washington, is moving forward as ENTRAN recently received a notice to proceed on the study. The scope of those improvements will be better understood over the course of that project.

Brian Aldridge continued the meeting by briefly summarizing steering committee meeting #2. He added that the study website, www.gobullitt.com, went live a couple weeks after the meeting. All study materials provided to the steering committee, including meeting summaries, are available on the website.

Brian said the 2009 Highway Plan was adopted by the legislature in March and includes several improvements in Bullitt County. The following projects include capacity and safety improvements scheduled in the next two years for Bullitt County:

- KY 61: Major Widening
 - South of KY 44 to existing 4-lane section
- KY 44: Intersection Reconstruction
 - KY 44 at KY 1526 (Bells Mill Road)
 - KY 44 at Bogard/Lloyd Lane
 - KY 44 at Armstrong/Fisher Lane
- KY 44: Reconstruction
 - From Mt. Washington Bypass 2.0 miles east
- KY 1494: Minor Widening
 - Relocate section from KY 61 to Cundiff Lane
- KY 480: Reconstruction
 - I-65 to Cedar Grove Elementary
- KY 245: Minor Widening
 - Bernheim Forest to Community College

The entire 2009 Highway Plan is available on the web at:
http://www.lrc.ky.gov/budget/09rs/HB330_SCS.pdf

Brian continued the presentation discussing recent population forecast estimates released by the Kentucky State Data Center at the University of Louisville. The previous population forecasts by county were released in 2004 and indicated Bullitt County's population would increase to 89,729 by the year 2030. The 2009 forecasts, released on April 12, suggest the 2030 population will increase to 113,764. This is an increase of nearly 27 percent over the 2004 version of the forecasts. Between 2000 and 2030, Bullitt County is expected to grow by about 2.1 percent per year. This annual growth decreases slightly between 2010 and 2030 to about 1.9 percent per year. For comparison purposes, Brian indicated the new forecasts have Kentucky growing by 0.7 percent per year and Jefferson County by 0.3 percent per year between 2000 and 2030.

A question was asked concerning what data are considered in developing population forecasts. Brian responded that a number of variables are taken into consideration, including birth and mortality rates, migration patterns, and job growth. He added that the Kentucky State Data Center provides a detailed report concerning how the forecasts are developed, and it should be available on their website (ksdc.louisville.edu) soon. A committee member added that Ron Crouch with the State Data Center could be contacted for more information.

Brian Schoester discussed some of the existing land use data within Bullitt County. He began with a map depicting the existing land use within the county. The majority of the south and west portions of the county are predominately agricultural with pockets of residential uses. The next two maps showed business and industrial sites and residential areas. Much of the

industrial land uses are focused along the I-65 corridor with sporadic sites located elsewhere in the county. Business areas are also found along the I-65 corridor as well as along KY 44 and US 31E and US 31EX near Mt. Washington. Residential uses are much more dense in the northern parts of the county, closer to Louisville. The final graphic was a “dot density” map depicting current population estimates with one “dot” representing 20 people. As suggested with the residential land use areas, the population densities are significantly higher in the northern parts of Bullitt County. It was noted that growth is likely to continue in these locations due to development constraints elsewhere in the county and the locations of Fort Knox and Bernheim Forest.

Brian Aldridge discussed how traffic forecasts are developed, noting that KIPDA developed and now maintains a regional travel demand model for a five-county area surrounding Louisville. Bullitt County is divided into 58 traffic analysis zones (TAZ), geographic areas based on Census Blocks that typically consist of similar land uses. The travel demand model uses socioeconomic data estimates, including households and employment, to estimate the number of daily trips between each TAZ in the model.

The regional travel demand model has a base year of 2000 and a forecast year of 2030. Two maps were presented showing the growth in households and population for each TAZ in Bullitt County as estimated in the model. The number of households in the northern and central parts of the county is expected to increase significantly, some by more than 250 percent. Areas around Hillview and Hunters Hollow are not expected to grow as much, likely because those areas are densely developed currently. Population is expected to follow a similar trend as the growth in households. It was noted that some TAZ’s on both maps indicated a high percentage increase in households or population, but some of those areas should not experience significant growth. Brian indicated the TAZ’s were color-coded by the percent increase from 2000 to 2030. In some cases, the 2000 socioeconomic data may have been very low (few people or few jobs located within the zone) and a relatively small increase in those numbers would result in a high percentage increase as shown on the maps. Brian gave the example that if the 2000 population was 10 in a particular TAZ and increase to 100 in 2030, only 90 people were added but the result is an increase of 900 percent.

The base year model includes 22,035 households in Bullitt County and the 2030 model includes 37,472 households, an increase of over 70 percent. Employment is expected to grow from 13,767 in 2000 to 30,881 by 2030, an increase of over 124 percent.

A map depicting the 2030 traffic forecasts for Bullitt Count was presented. Brian indicated that several committed transportation projects were taken into consideration in developing the forecasts, including the KY 61 improvements, the KY 44 widening from Shepherdsville to east of Mt. Washington, and the KY 480 widening. The forecasts suggest that most north-south routes that connect Bullitt County to Louisville will be over capacity in 2030. Traffic volumes along I-65, which is currently congested during much of the day, are expected to grow from 1.0 to 1.8 percent per year between 2008 and 2030. This growth is slightly lower than the statewide average for an urban freeway facility, but I-65 is already at or near capacity. This results in traffic diverting to other parallel roadways, such as KY 61, which is expected to grow by about 5.9 percent per year north of Shepherdsville.

Brian presented one additional piece of information supporting the need for new or improved north-south travel alternatives. Data from the 2000 Census suggested that 22,229 workers commuted from Bullitt County each day for work, with nearly 89 percent of those traveling to jobs in Jefferson County. An additional 3,941 workers commuted into Bullitt County each day, and over 50 percent of those come from Jefferson County. As Bullitt County's population continues to increase, these trends are also likely to continue.

Brian reviewed the results of the group exercise from meeting #2 and asked the Committee to complete another group exercise. The members were split into three groups and were asked to discuss roadways needing improvement or new routes needed within Bullitt County. Brian added that this information will be used to develop a preliminary list of projects for discussion at the first public meeting. Each of the three groups was given a study area map to highlight or circle areas with traffic problems. After 15 minutes of discussion, the Committee reconvened and each group presented its greatest traffic issues identified within Bullitt County. The potential projects and/or new roadways identified by the groups included the following:

- Improvements to Brooks Hill Road near I-65
- Improvements to KY 480 to US 31E in Nelson County
- A new north-south route between Mt. Washington and Shepherdsville, providing a connection between KY 44 and I-265 in Jefferson County
- A new route connecting KY 480 to the route discussed above, with a new crossing over the Salt River

The final discussion item included the date and location for the first public meeting. Brian said the meeting would be conducted in an open house format where the public could drop in at any time to view study exhibits, ask questions, and share their concerns with the study team. It was decided the meeting would be held on May 28 at the Paroquet Springs Conference in Shepherdsville from 5:00 to 7:00 P.M.

With no additional comments from the Steering Committee, Tom concluded the meeting by stating that the next Steering Committee Meeting would be scheduled for mid-summer. Tom added that in addition to the email invitations, future meeting dates would be posted on the study website as soon as the dates were known.

The meeting ended at approximately 3:00 p.m.

Meeting Summary

TO: Andy Rush
Kentuckiana Planning and Development Agency (KIPDA)

FROM: Tom Creasey, P.E.
Project Manager
ENTRAN, PLC

DATE: September 4, 2009

SUBJECT: Bullitt County Transportation Study
Steering Committee Meeting #4

The fourth Steering Committee meeting for the Bullitt County Transportation Study was held on August 24, 2009 at 1:30 p.m. in the Paroquet Springs Conference Center in Shepherdsville. The following individuals were in attendance:

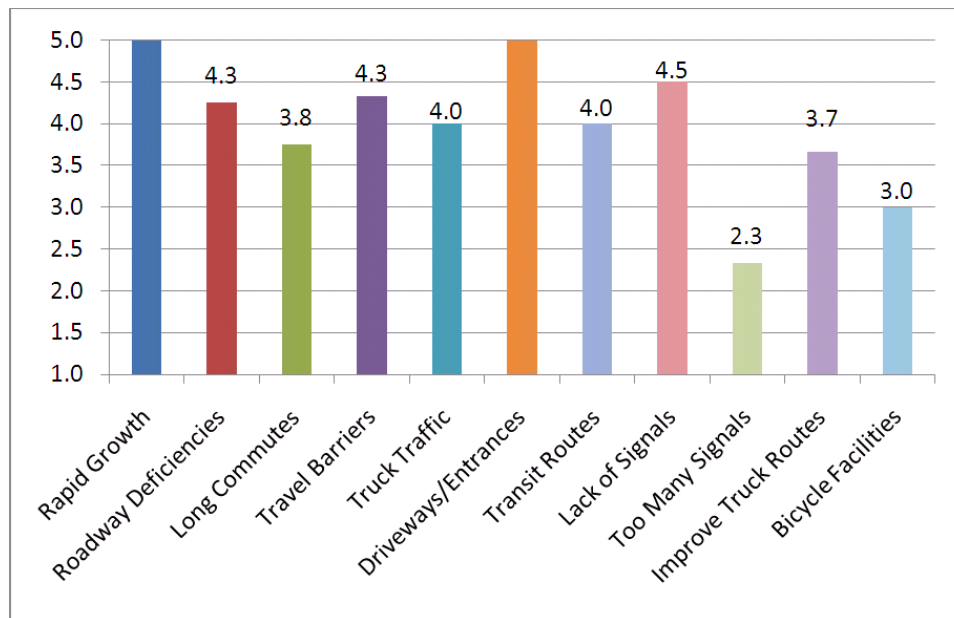
Attendees:

Linda Belcher	State Representative
Carrie Butler	TARC
Larry Chaney	KIPDA
Dwayne Cummings	Shepherds Shelter
Les Gerald	Rogers Group
Tom Hall	KYTC – District 5
Melanie Roberts	Bullitt County Judge Executive
Andy Rush	KIPDA
Nancy Snow	TARC
Ted Grossardt	Community Decisions
John Ripy	Community Decisions
Brian Schoester	EHI Consultants
Brian Aldridge	ENTRAN
Tom Creasey	ENTRAN
Ashley Williams	ENTRAN

Tom Creasey began the meeting at 1:30 p.m. with introductions and continued by providing an overview of the presentation.

Brian Aldridge discussed the first public meeting, which was held on May 28 at the Paroquet Springs Conference Center. There were 17 attendees who signed in at the meeting. Discussion items included the scope of a typical planning study, existing conditions, planned and committed transportation projects, and conceptual projects under consideration. A questionnaire was distributed to attendees and respondents were asked to rate from 1 (the

issues is not a problem) to 5 (the issue is a serious problem) how serious existing transportation issues are in Bullitt County. The results are summarized below.



Rapid growth and the number of existing driveways and entrances were rated the most serious issues affecting transportation, both rated 5.

Other projects underway in the county were discussed. Brian gave a brief summary of the KY 44 widening project including the alternatives under consideration. He also discussed the schedule for the KY 61 widening in Bullitt County.

Brian went on to discuss the long-range alternatives developed over the past several months of the study. He mentioned that this study would not be able to identify much of the detail that would come through more detailed planning and design phases, but he said the new routes under consideration would likely be arterial roadways with four lanes (two per direction) and divided medians. He then displayed a map showing the location of each potential new route, and discussed how Route J and Route L had been shifted to the west (from their preliminary location as suggested by the Steering Committee) in order to provide a better location to cross both Floyds Fork and the Salt River and to connect to I-265 in Jefferson County. He then summarized each of the potential new roadway corridors as follows:

Corridor I

- Approximately 1.5 miles long
- Estimated construction cost: \$9.4 Million
- Provides a direct connection between US 31E and KY 44
 - Diverts traffic from US 31EX, US 31E, and KY 44 through Mt. Washington
 - Carries up to 22,000 VPD
- Would require improvements to Greenbriar Road (KY 2706)

- Approximately \$8.5 Million

Corridor J

- Approximately 8.0 miles long
- Estimated construction cost: \$61 Million
- Provides a direct connection between I-265 (Jefferson County) and KY 44
- May carry up to 47,000 vehicles per day (VPD)
- Provides a new crossing over Floyds Fork
- Would require improvements to Beulah Church Road (KY 864) and the I-265 interchange

Corridor K

- Approximately 2.0 to 4.2 miles long
 - May be constructed between KY 61 and “Corridor J” – 2.0 miles
 - Complete corridor from KY 61 to KY 44 – 4.2 miles
- Estimated construction cost: \$13.5 to \$37.5 Million
- Provides an improved connection between I-65 and KY 44
 - May carry up to 27,000 VPD
 - May provide a new crossing over Floyds Fork
- Widening John Harper Highway should be considered

Corridor L

- Approximately 2.5 miles long
- Estimated construction cost: \$36 Million
- Provides a direct connection between KY 480 and KY 44
 - Would carry up to 19,000 VPD
 - Provides a new crossing over the Salt River
- Significant floodplain issues & potential relocations

Corridor M

- Approximately 1.7 miles long
- Estimated construction cost: \$21.2 Million
- Provides a better connection between KY 61 and KY 44
 - Would carry up to 12,400 VPD
 - Provides a new crossing over Floyds Fork
- Requires widening Bells Mill (KY 1526) between KY 61 and the new route

Corridor N

- Approximately 2.0 miles long
- Estimated construction cost: \$23.2 Million
- Provides a better connection between KY 61 and KY 44
 - Would carry up to 9,200 VPD
 - Provides a new crossing over Floyds Fork
- Reduces traffic on Bells Mill (KY 1526)

- Significant floodplain issues

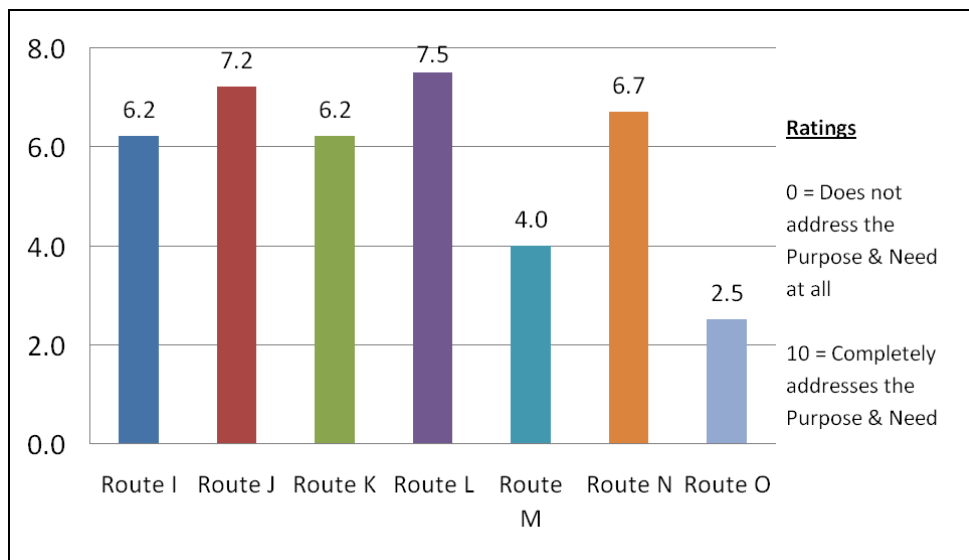
Corridor O

- Approximately 3.0 miles long
- Estimated construction cost: \$35 Million
- Provides a connection between KY 61 and KY 44 west of Shepherdsville
 - Would carry up to 3,600 VPD
 - Provides a new crossing over the Salt River
- Significant floodplain issues

2030 traffic forecasts were developed based on five scenarios with combinations of new and/or improved corridors. These scenarios were as follows:

- Scenario 1: Corridors J, K, and L
 - Widen John Harper Highway to 4 lanes (I-65 to Corridor K)
- Scenario 2: New I-65 interchange, Corridors N, I, and O
 - Widen Green Brier Road/Wales Run Road (KY 2706) to 4 lanes
- Scenario 3: Corridors F, M, and D
 - For Corridor F, widen Bells Mill Road to 4 lanes from Preston Highway to Corridor M
- Scenario 4: Corridors K, H, and I
 - Widen John Harper Highway to 4 lanes (I-65 to Corridor K)
 - Widen Green Brier Road/Wales Run Road (KY 2706) to 4 lanes
- Scenario 5: New I-65 Interchange

Handouts depicting these scenarios were provided to the attendees. The attendees were then asked to participate in an electronic scoring process to rate each option on a scale of 1 to 10 as to how well each addresses the issues outlined in the study Purpose and Need Statement, as shown in Section 1.2. The results are shown below.



The Steering Committee indicated Route L would best satisfy the Purpose and Need, followed by Route J and Route N. The committee indicated Route M and Route O would least address the Purpose and Need Statement.

The final discussion item was planning for the second public meeting. Brian asked for suggestions on the time and location for the meeting. The Paroquet Springs Conference Center was mentioned again and someone said the Shepherdsville Government Center may be a suitable location. Brian said the study team would discuss these and other options.

The meeting ended at approximately 3:30 p.m.

Meeting Summary

TO: Andy Rush
Kentuckiana Planning and Development Agency (KIPDA)

FROM: Tom Creasey, P.E.
Project Manager
ENTRAN, PLC

DATE: November 19, 2009

SUBJECT: Bullitt County Transportation Study
Steering Committee Meeting #5

The fifth and final Steering Committee meeting for the Bullitt County Transportation Study was held on November 12, 2009 at 1:30 p.m. in the Paroquet Springs Conference Center in Shepherdsville. The following individuals were in attendance:

Attendees:

Happy Cahoe	Bullitt County Economic Development
Dwayne Cummings	Shepherds Shelter
Roanne Hammond	Bullitt County Planning and Zoning
Brian Meade	KYTC – District 5
Melanie Roberts	Bullitt County Judge Executive
Andy Rush	KIPDA
Nancy Snow	TARC
Bud White	Bullitt County Chamber of Commerce
Brian Schoester	EHI Consultants
Brian Aldridge	ENTRAN
Tom Creasey	ENTRAN

Tom Creasey began the meeting at 1:30 p.m. with introductions and continued by providing an overview of the presentation. He discussed the second public meeting, which was held on October 1 at the Shepherdsville Government Center. There were 17 attendees who signed in at the meeting.

Brian Aldridge continued the presentation by discussing the rationale for how the short-term projects were prioritized. He noted that the projects were ranked as High, Medium, or Low priorities but that a Low priority does not mean the project is not warranted. Rather, it simply indicates that the higher-ranked projects should be implemented first. These priorities were based on a number of factors, including the severity of the problem being addressed and the traffic volumes along the roadway segment to be improved. The recommended priorities for the short-term projects are summarized in the table below.

Recommended Short-term Projects and Priorities

Spot ID	Location	Improvement	Priority
1	KY 61 south of Bardstown Junction	Add gates at existing rail crossing	Low
2	KY 1526 (Bells Mill) north of KY 44	Improve existing 90-degree curves	High
3	KY 480C east of KY 61	Improve existing railroad underpass	Medium
4	Second Street east of KY 61	Improve existing railroad underpass	Medium
5	KY 44 east of KY 61	Improve at-grade rail crossing	Medium
6	KY 1526 (Brooks Road) at KY 1450 (East Blue Lick)	Improve intersection	High
7	East Blue Lick Road east of KY 1020 (Coral Ridge Rd.)	Improve at-grade rail crossing	High
8	KY 44 west of Adam Shepherd Parkway	Extend right-turn lane	High

Brian provided some brief details on each of the short-term projects. Project 1 is the sole low priority project. Adding railroad crossing gates on KY 61 south of Bardstown Junction is considered a low priority because of the low volume of traffic along this section of KY 61 as well as the relatively low volume of trains at the crossing. Projects 3, 4, and 5 are considered medium priorities. Brian indicated that either Project 3 or Project 4 may be desirable to reconstruct at least one of the two grade-separated rail crossing in Shepherdsville to provide a safer detour in the event of a train incident affecting KY 44, but it would likely not be feasible to reconstruct both of them. Project 5 is a medium priority as modifying the grades on the KY 44 approaches to the at-grade rail crossing will provide some improvement to the current poor sight distance, but the cost to implement the project will be relatively high. The remaining short-term projects are considered high priority.

There was some discussion regarding Project 6. The original concept for this improvement was to add a left-turn lane on northbound East Blue Lick Road north of the KY 1526 intersection to provide storage for vehicles trying to turn left onto Breton Way. This movement, at times, causes backups into the KY 1526 intersection. Brian Meade indicated an undisclosed development has been proposed for the northeast quadrant of the intersection (opposite Brenton Way) and may result in the conversion of the Brenton Way intersection to right-in/right-out only.

The table below shows the prioritization of the recommended alternatives. Brian notes that Route M, Route N, and Route O are not recommended for further consideration. Each of

these alternatives would require significant resources to construct while providing some benefits in terms of traffic congestion relief. However, these alternatives do not provide the same level of benefit as the recommended alternatives. With respect to improvements to the existing routes (Projects B, D, F, and H), in most cases it was considered more desirable to construct new routes to alleviate traffic congestion rather than attempt to widen the existing roadways.

Recommended Long Range Projects and Priorities

ID	Location	Description	Project Purpose	Priority
I	New route from US 31E to KY 2706 (Greenbriar Rd.)	New connector (with improvements to Greenbriar Rd.) to create a northwest Mt. Washington connector	Provide a more efficient and more direct connection from US 31E to KY 44 that will divert some traffic from Mt. Washington	High
J	New route from KY 44 to I-265 in Jefferson County	New connector to provide a limited access arterial into Jefferson County	Provide an additional travel alternative for traffic to/from Louisville with a new crossing over Floyds Fork	High
K	New route from KY 44 to KY 61 northeast of Shepherdsville	New connector with a new crossing over Floyds Fork	Provide an improved connection between KY 61 and KY 44 as an alternative to KY 1526 (Bells Mill) and provide improved access to existing I-65 interchange	Medium
L	New route from KY 44 to KY 480 east of Shepherdsville	New connector with a new bridge over the Salt River to connect KY 44 and KY 480	Provide a better connection between KY 480 and KY 44 while providing an additional crossing over the Salt River	Low
P	I-65 at KY 61	Construct new interchange on I-65	Provide a new interchange on I-65 to improve access to northern portions of Shepherdsville and areas to the north	Medium

The prioritization of the recommended projects is based largely on how the new routes relate to the existing transportation system and to one another. Route I and Route J are both considered high priorities in that they satisfy existing needs and would not require the construction of additional routes in order to see maximum benefit. Route K and Project P are medium priorities. The recommendation for Route K is to construct between KY 61 and Route J initially as this section would be most critical in providing improved access between I-65 and KY 44. This access would not be provided until Route J was in place and open to traffic. Project P is a medium priority because additional improvements would be required to accommodate the traffic demand resulting from a new interchange on I-65 at KY 61.

Brian discussed additional transportation strategies that should be considered in the future. These included performing a comprehensive public transit study to investigate the need for future inter-county (between Jefferson and Bullitt County) and intra-county public transportation, instituting access management principles along both new and existing routes, and implementing regulations requiring developers to improve existing routes where necessary to accommodate traffic generated by their developments.

With no additional comments from the Steering Committee, Tom concluded the meeting by thanking the Steering Committee Meeting for their input and their assistance over the course of the study. Tom added that a draft report would be completed soon and made available for review.

The meeting ended at approximately 3:00 p.m.



Project Web Site

www.gobullitt.com

Project Partners

KIPDA

Kentucky Transportation Cabinet
Bullitt County Fiscal Court



Project Team

ENTRAN, PLC
Community Decisions, LLC
EHI Consultants, Inc.