

FINAL REPORT
OCTOBER 2014

US 60 Traffic Study

SUMMARY OF

FINDINGS & RECOMMENDATIONS



Kentucky Transportation Cabinet
Division of Planning
District 5

**PARSONS
BRINCKERHOFF**

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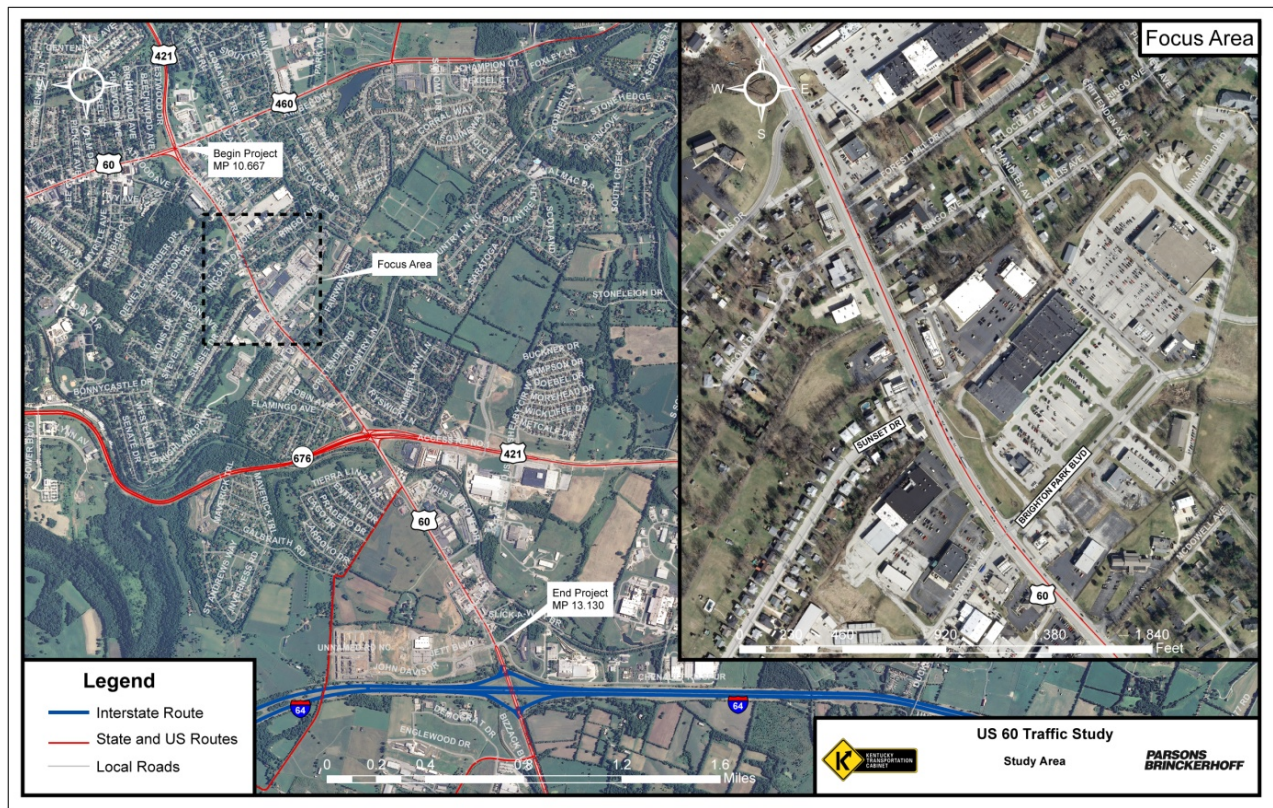
Executive Summary – US 60 Traffic Study

Introduction and Study Area

The Kentucky Transportation Cabinet (KYTC) identified the need to complete a corridor-based scoping study that investigated various operations and construction possibilities to enhance safety, improve capacity, and help traffic movement along the US 60 corridor in Franklin County near the City of Frankfort. Issues such as access and environmental and human impacts were evaluated, along with public input, to determine future goals for the corridor.

The study area is located in Franklin County and is bounded by the I-64 westbound interchange to the south and US 460 to the north. The total corridor length is approximately three miles. Additional emphasis, referred to as the focus area, was given to the Sunset Drive / McDonald's intersection and Laramie Avenue / Brighton Park Boulevard intersection. **Figure ES 1** shows the study area and the focus area.

Figure ES 1 - Study Area



Initial Traffic Study

At the outset of this study, a review was conducted of physical design improvements developed by the KYTC for the focus area. These two intersections have had a history of crashes and poor levels of service due to increased traffic volumes and ensuing congestion. The recommendations made by KYTC include:

- Eliminating the two-way left-turn lane between Sunset and Brighton Park Boulevard and repurposing the pavement to make a dedicated SB and NB left turn lane at both intersections.
- Providing a SB dedicated left turn lane into The Shoppers Village (McDonald's).
- Providing a NB right turn lane into The Shoppers Village (McDonald's).

Additional analysis by Parsons Brinckerhoff determined that traffic operations could further be improved with another left turn lane into Brighton Park Boulevard to have an ultimate build of dual left turn lanes.

At the conclusion of the overall study, KYTC had committed funding to complete designated priority improvements. These include the right turn lane into the McDonald's, a left turn lane onto Sunset Drive, a curbed island at the Dollar Tree entrance for right-in / right- out traffic, and a left turn lane with QWICK KURB median delineators onto Brighton Park Boulevard. Other identified improvements for this focus area do not have any allocated funding and are not committed at this point. These priority improvements are to be completed in Fall 2014 to address safety concerns at the focus area.

Purpose and Need

For the remainder of the corridor study, the following purpose and need was developed. The purpose of this project is to relieve congestion and improve safety along the US 60 corridor from US 460 to just north of I-64.

Project needs including the following:

- Safety – The corridor has a critical crash rate factor of 1.0 or greater.
- Capacity – Without geometric changes to the roadway and intersections, individual movements of the intersections evaluated currently operate over capacity with more movements operating over capacity by the analysis year of 2040.
- Congestion – Intersections currently operate at a poor LOS.
- Access – Any improvements should not seek to specifically impact business / property access, rather they should improve traffic flow between businesses on US 60.

The alternatives development and analysis focus on how to address the purpose and need of this project.

Existing and Future Conditions

Existing highway characteristics and geometrics, traffic volumes, levels of service (LOS) / capacity, and safety concerns were all evaluated as part of the existing conditions analysis. The key transportation issues identified from this analysis are summarized below:

- US 60 currently operates at LOS A or B in both AM and PM peaks.
- Volume to capacity (v/c) ratios do not exceed 1.0 for the roadway segments.
- Three of the four intersections evaluated (US 460, Sunset Drive / McDonald's, Lalaran Avenue / Brighton Park Boulevard, and Jett Boulevard / Chenault Road) currently operate at LOS E or F in at least one of the peak periods.

- During the AM peak period, the Jett Boulevard / Chenault Road intersection with US 60 has two movements (northbound through and right) that has a v/c ratio greater than one. In the PM peak period, all intersections with the exception of the US 60 / Sunset Drive intersection, has one or more individual movements that has a v/c ratio greater than one.
- All seven segments evaluated along US 60 have a critical crash rate factor of one or greater.
- Rear end crashes are the most common type of crash (55%), followed by angle crashes (24%).

Future year traffic volumes and LOS / capacity were also analyzed along US 60 and for the four intersections for the year 2040. In 2040, US 60 operates at LOS B in the AM peak and C in the PM peak. Three of the four intersections analyzed operate at LOS F in the PM peak, and one operates at LOS F in the AM peak.

Both human and natural environmental overviews were performed as part of the existing conditions analysis. According to the Cultural Historic Overview, there is one previously recorded site listed in the National Register of Historic Places (NRHP) within the study area. The site is a monument to the United States Colored Troops from Franklin County, found near the US 60 / US 460 intersection. A review of archaeological records found one unconfirmed Paleo-Indian archaeological site reported in the area. A windshield survey identified a large agricultural field in the southern half of the project area as a red flag area for the presence of both prehistoric and historic archaeological resources.

The environmental overview also found that the study area contains a gray bat foraging and travel corridor as well as habitat for the Indiana bat. Also, there are 52 potential underground storage tank (UST) / hazardous materials sites located in the study area, as well as category B, C and E noise sensitive receptors.

Community facilities located in the study area include the East Frankfort Baptist Church, the Highland Christian Church and the Synergy Church. There are also some off road multi-use trails and sidewalks in the area.

An Environmental Justice (EJ) Review was prepared for the study area, and examined the potential for disproportionate adverse community impacts on selected groups (minority, low-income, elderly and disabled). The primary source of data for this report was assembled from the American Community Survey (ACS) 2012 Five Year Estimate tables and GIS data provided by KYTC. According to the ACS, there are four (4) census tracts (CT) and nine (9) block groups (BG) that encompass the population of the study area. The conclusion is that each of the nine block groups that intersect the study area have at least one disadvantaged population and should be considered for further analysis prior to the commencement of any future project.

Public Involvement

The public involvement component for this study was comprised of meetings with local officials and stakeholders, business owners, and resource agency mailings. Two meetings with elected officials and stakeholders and a separate meeting with local business and property owners were held to obtain feedback on the information compiled for the project. These meetings helped derive and refine the list of options and alternatives to evaluate. The final meeting held with all interested local officials /

stakeholders / and business owners was also used to evaluate project priority and help KYTC determine project prioritization.

Alternatives Development and Evaluation

A full range of alternatives were developed to address known issues identified within the corridor through the technical analysis as well as through local officials and stakeholder input. Consideration during the development process was given to determining the overall look / character of the corridor while providing individual projects that can be completed that complement the bigger picture goals.

Corridor-wide improvement alternatives initially considered include the following:

- Alternative 1: Access considerations
- Alternative 2: Four lanes with divided median
- Alternative 3: Six lanes with divided median
- Alternative 4: Reversible lanes

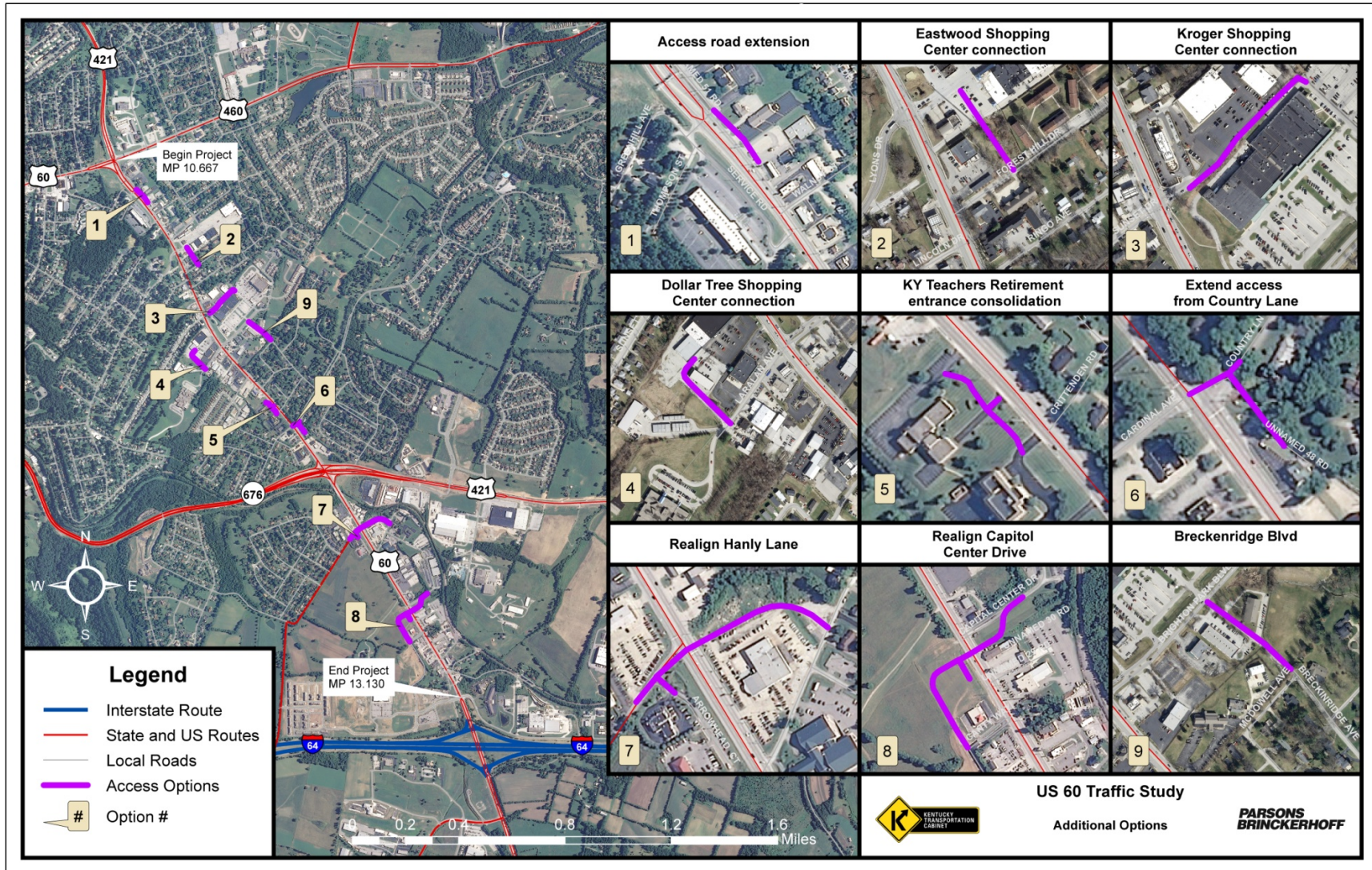
Additional projects were identified that could complement any of the corridor-wide improvements. They are designated by option number and include the following:

- Option 1: Extension of front access road from Farmer's Bank to Circle K Gas Station just south of the US 60 / US 460 intersection.
- Option 2: Provide connection between Eastwood Shopping Center and Forest Hill Drive.
- Option 3: Provide connection between Kroger Shopping Center and Goodwill / Peddlers Mall.
- Option 4: Provide connection between Laralan Avenue and Dollar Tree Shopping Center.
- Option 5: Consolidate entrance and provide front access road to Kentucky Teachers Retirement Buildings.
- Option 6: Extend access from Country Lane to retail area near US 421 interchange with US 60.
- Option 7: Realign Hanly Lane and provide connection to Locust Drive to form a four-legged signalized intersection.
- Option 8: Realign Capitol Center Drive and provide rear-access connector to Allen Way as well as signalize new intersection.
- Option 9¹: Remove gates on Breckenridge Boulevard (between the shopping center and the neighborhood) and improve Breckenridge Boulevard from the neighborhood to Brighton Park Boulevard.
- Option 10: Bicycle / pedestrian connections.

Figure ES 2 shows the location and extent of these additional options.

¹ This option was identified by KYTC after submission of the final report. It was not presented to the local officials and stakeholders nor was it included in the resource agency mailing. Additional evaluation of Option 9 may be necessary to determine the extent of impacts in the study corridor.

Figure ES 2 – Additional Project Options



The preliminary analysis began with the four alternatives and nine options. Each alternative was considered for any fatal flaws that would prohibit it from progressing as a potential feasible option for improvement to US 60. Given several concerns about the operation of a reversible lane system along US 60, Alternative 4 was eliminated during this phase of analysis. Current guidance from sources such as the Institute of Transportation Engineers (ITE), the American Association of State Highway and Transportation Officials (AASHTO), and the Federal Highway Administration (FHWA) noted lane requirements would not be met and also cited that reversible lanes be considered when no other acceptable alternative improvement solution exists. The remaining three alternatives were advanced to the next stage for detailed analysis, where a more detailed evaluation was performed with respect to safety, traffic, right-of-way impacts, and costs. **Table ES 1** shows the results of these analyses.

Table ES 1 – Planning Level Cost Estimates

Alt. #	Description	ROW Impacts		Cost				
		Temporary Easement (#)	ROW (acres)	Construction	Design	ROW	Utilities	Total (\$)
Alternative 1	Access considerations	58	0.6	\$7,570,000	\$500,000	\$910,000	\$190,000	\$9,170,000
Alternative 2	Four lanes with divided median	66	0.6	\$8,670,000	\$600,000	\$970,000	\$210,000	\$10,450,000
Alternative 3	Six lanes with divided median	82	2.2	\$11,580,000	\$700,000	\$3,720,000	\$660,000	\$16,660,000
Option 1	Access road extension	1	0.3	\$110,000	\$11,000	\$220,000	\$30,000	\$371,000
Option 2	Eastwood Shopping Center connection	2	0.9	\$140,000	\$14,000	\$360,000	\$0	\$514,000
Option 3	Kroger Shopping Center connection	2	0.6	\$150,000	\$15,000	\$440,000	\$60,000	\$665,000
Option 4	Dollar Tree Shopping Center connection	1	0.4	\$150,000	\$15,000	\$180,000	\$0	\$345,000
Option 5	KY Teachers Retirement entrance consolidation	3	0.4	\$170,000	\$17,000	\$310,000	\$0	\$497,000
Option 6	Extend access from Country Lane	2	0.0	\$50,000	\$5,000	\$50,000	\$10,000	\$115,000
Option 7	Realign Hanly Lane	4	0.8	\$470,000	\$47,000	\$520,000	\$50,000	\$1,087,000
Option 8	Realign Capitol Center Drive	4	1.9	\$670,000	\$67,000	\$1,220,000	\$50,000	\$2,007,000
Option 9	Remove gates and improve Breckenridge Blvd	3	0.4	\$30,000	\$3,000	\$190,500	\$0	\$223,500
Option 10	Bicycle / pedestrian connections	N/A - Part of Master Plan						

Notes: Planning level cost estimates are in current year dollars (2014)
 Right-of-Way and Utility costs provided by KYTC District 5
 Construction and Design costs determined by Parsons Brinckerhoff

Recommendation

Based on alternatives analysis, Project Development Team (PDT), and local official and stakeholder input, at this time all three alternatives shall carry forward. Alternatives 1, 2 and 3 all provide unique benefits with different impacts, but are all feasible at this time. Local officials and stakeholders were asked to prioritize the three alternatives and nine options. Based on feedback, Alternative 3 was given a slightly higher preference than Alternatives 1 and 2. **Table ES 2** shows the prioritization of the nine options. The PDT agreed with the general assignment as determined by the local officials and stakeholders. (Note that Option 9 was included following the submittal of this report. Therefore local officials and stakeholders were unable to provide any feedback on it and it is not included in the rankings).

Table ES 2 – Project Option Prioritization

Option	Description	# of Responses			Priority
		High Priority	Medium Priority	Low Priority	
Option 1	Access road extension	2	2	1	Medium
Option 2	Eastwood Shopping Center connection	1	2	1	Medium
Option 3	Kroger Shopping Center connection	6	0	0	High
Option 4	Dollar Tree Shopping Center connection	4	1	0	High
Option 5	KY Teachers Retirement entrance consolidation	0	1	4	Low
Option 6	Extend access from Country Lane	0	1	3	Low
Option 7	Realign Hanly Lane	0	5	0	Medium
Option 8	Realign Capitol Center Drive	4	2	0	High
Option 9	Remove gates and improve Breckenridge Blvd	N/A – Option included after ranking process			
Option 10	Bicycle / pedestrian connections	2	0	0	High

Funding / Next Steps

Upon completion of this study, funding would need to be secured for future project development. Further review in Phase I Design should provide the necessary evaluation (including public input) on the preferred treatment of the entire corridor. Many of the option projects are located outside the right-of-way and on private property or City / County property. Further project development may need to go through the City of Frankfort and / or Franklin County for these projects.

1.0 Introduction

Parsons Brinckerhoff has been contracted by the Kentucky Transportation Cabinet (KYTC) to complete a corridor-based traffic and scoping study that investigated various operations and construction possibilities to enhance safety, improve capacity, and help traffic movement along the US 60 corridor in Franklin County near the City of Frankfort. Issues such as access, and environmental and human impacts were evaluated along with public input to determine future goals for the corridor.

Members of the Project Development Team (PDT) included KYTC Central Office Division of Planning, KYTC District 5, the Bluegrass Area Development District (BGADD), and the consultant team which consisted of Parsons Brinckerhoff, Third Rock Consultants LLC, and Cultural Resource Analysts, Inc.

1.1 Study Objectives

Based on the initial direction provided by the KYTC, eight primary study objectives were developed as summarized below:

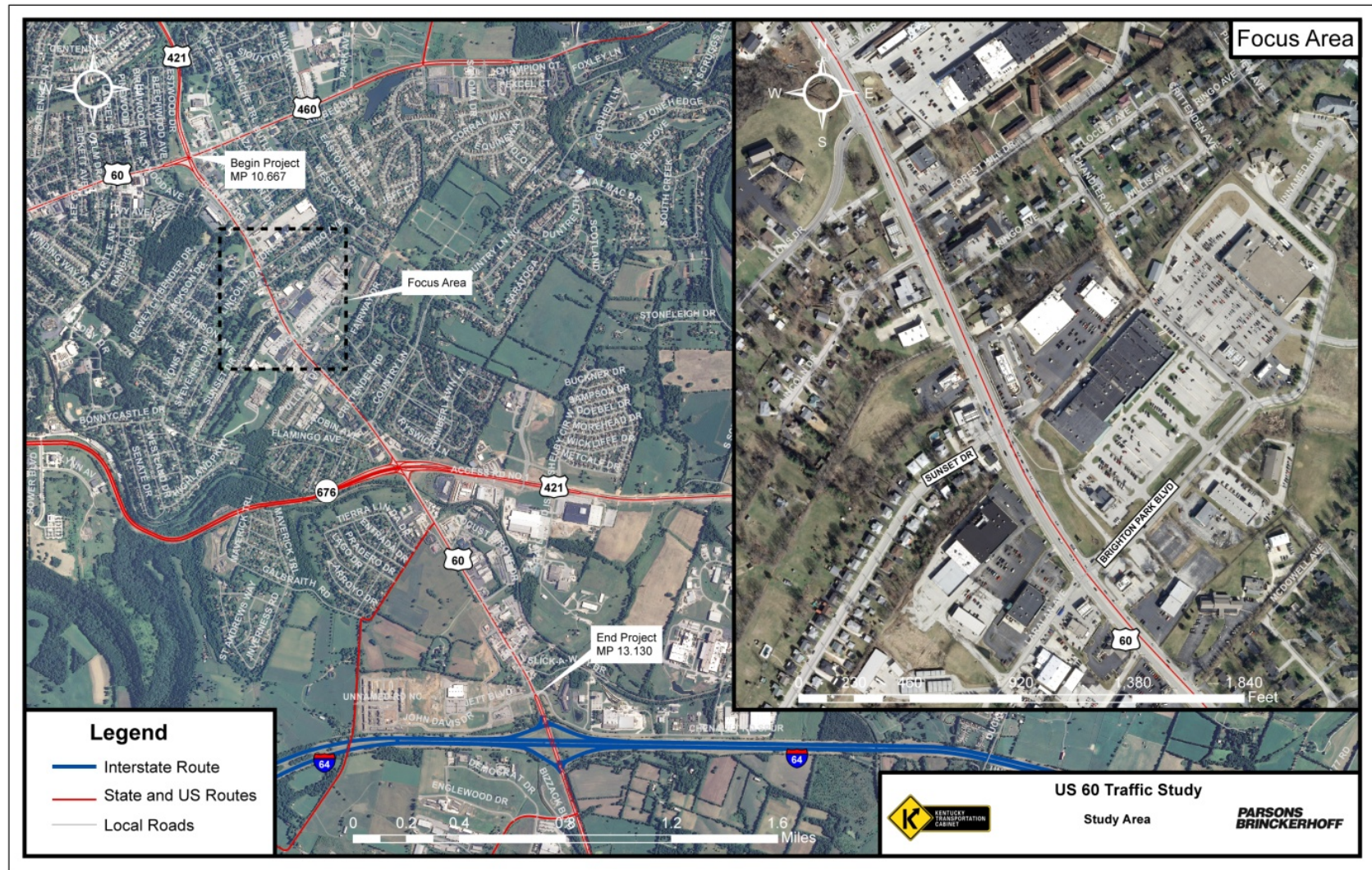
1. Initial traffic study between Sunset Drive and Brighton Park Boulevard (**Appendix A**).
2. Evaluate and document the existing conditions of the corridor.
3. Develop a traffic forecast for Future Year 2040.
4. Compile a review of the existing environmental conditions.
5. Develop, evaluate and refine potential improvement alternatives.
6. Obtain stakeholder feedback.
7. Provide conclusions / recommendation.
8. Document the study process for review by the KYTC.

While KYTC has the ultimate responsibility for constructing and maintaining safe and efficient highways, KYTC desires to incorporate stakeholder and agency input into the evaluation and decision-making process. Therefore, all eight of these study objectives were completed with additional project input from these groups.

1.2 Project Location and Study Area

The study area is located in Franklin County and is one of two major arterials which provide access to the state capitol from Interstate 64 (I-64). It is bounded by the I-64 westbound intersection with US 60 to the south and the US 460 intersection with US 60 to the north. The total corridor length is approximately three miles. There have been considerations for improvements along this corridor due to its importance in providing access to not only Frankfort, but to local commercial areas and other destinations. Additional emphasis, referred to as the focus area, was given to the Sunset Drive / McDonald's intersection and Laramie Avenue / Brighton Park Boulevard intersection. **Figure 1** shows the study area and focus area.

Figure 1: Study Area



1.3 Study Process

The study process used to evaluate potential alternatives consisted of four major elements: 1) Define the purpose and need of the study, 2) Develop alternatives, 3) Evaluate the alternatives, and 4) Recommend an alternative(s).

The subsequent chapters in this report follow these steps, beginning with the development of the purpose and need for the study. These chapters contain the technical analysis and documentation used to confirm the purpose and need and then develop the alternatives. In addition to the technical analysis, stakeholder feedback was gathered throughout the study process and is presented, followed by a discussion of the alternatives development procedure and evaluation. The final stage in the study process was to provide a recommendation, which is the final section in this report. The report also contains several appendices providing additional information on the geotechnical overview (performed by the KYTC), Environmental Justice (EJ) analysis (performed by the BGADD) as well as several letters, emails and other correspondence in relation to resource agency feedback from a mailing sent by the KYTC. These are summarized in the body of this report and the appendices provide the full documentation of these elements.

2.0 Purpose and Need

It is important to establish the Purpose and Need for a project during its early stages since it defines the actual reason(s) for doing the study and provides the basis for the development, evaluation, and comparison of alternatives. The three parts to a complete Purpose and Need statement include: 1) the Purpose, 2) the Need, and 3) Goals and Objectives. The Purpose identifies the problem to be solved by the study and is supported by the Need. Goals and Objectives are other elements of the study that go beyond the transportation issues of the study and should be considered and addressed as part of a successful solution to the problem.

The Purpose and Need statement for this study was developed from issues identified in field reviews, through local official and stakeholder input, as well as from deficiencies identified in the Existing and Future Conditions technical analysis.

2.1 Purpose

The purpose of this project is to relieve congestion and improve safety along the US 60 corridor from US 460 to I-64.

2.2 Need

Supporting the study Purpose is the study Need. The study aims to address the following needs:

- **Safety** – 471 crashes occurred during a three-year analysis period along US 60. Critical crash rate factors ranged from 1.00 to 3.29. A value over 1.0 is considered to be a safety concern. The majority of these crash types are rear-end (55%) collisions and angle (24%) collisions which is consistent with crash types in an urban setting with numerous access points.
- **Capacity** – Utilizing the HCS 2010 software, volume to capacity (v/c) ratios were calculated for US 60 between major intersections and for individual movements at the four primary study area intersections. Without geometric changes to the roadway and intersections, the segments of US 60 are below capacity now and in the future analysis year of 2040. Individual intersection movements, however, are at or above capacity. Study area improvements should target ways to improve traffic flow at the intersections for these movements as well as improve overall traffic flow through the corridor.
- **Congestion** – Current average daily traffic (ADT) volumes along US 60 range from 23,100 to 32,500. These volumes increase to 33,000 to 37,200 in the year 2040. This leads to poor intersection operations as well as poor operations between the intersections, particularly in the PM peak period. During meetings with the local officials and stakeholders, it was noted that there is significant congestion at the focus area intersections (Sunset Drive and Brighton Park Boulevard). Vehicles waiting to turn left onto Brighton Park Boulevard form a queue and it may take several cycles of the traffic signal to clear the queue. Because of this (and other safety issues) these intersections were initially evaluated for improvement options.
- **Access** – Balancing access and mobility is critical for this study. Lining the corridor are numerous businesses, residences, and other commercial development. By consolidating and / or changing access, it is possible to improve traffic operations to enable better access.

2.3 Goals and Objectives

The following goals and objectives were developed to balance environmental and community issues with transportation issues:

- Provide an initial short-term solution to improve the high-emphasis focus area between the Sunset Drive / McDonald's intersection and Lalaran Avenue / Brighton Park Boulevard intersection. **(Appendix A)**
- Provide short-term, low-cost improvement options throughout the study area.
- Provide long-term improvement options that enhance safety and improve capacity and traffic movement along the entire US 60 corridor from US 460 to I-64.

3.0 Existing and Future Conditions

A detailed inventory was completed that examined ongoing / identified transportation projects, existing roadway characteristics, existing and future traffic volumes, level of service (LOS), capacity, crash rates, and multimodal facilities. The following sections provide more detailed information about each topic.

3.1 Review of Ongoing / Identified Transportation Projects

Projects ongoing or currently identified either within or in the vicinity of the study area were identified for reference purposes. These include the following KYTC Unscheduled Needs List (UNL) / Project Identification Form (PIF) Projects:

- Spot improvements at the Laramie Avenue / Brighton Park Boulevard Intersection with US 60. Funding is committed for initial improvements at this location.
- Upgrades to the existing system on US 60 from US 460 to I-64.
- Improvements to safety and level of service by incorporating access management principles on US 60 from US 460 to I-64.

All projects that were listed on PIFs show the initial need for a study for this corridor. This study will satisfy that need and look to provide feasible improvement options to address identified needs. The KYTC Six Year Highway Plan (FY 2014 – 2020) was also reviewed and there are no projects identified for Franklin County that impact this study or study area.

3.2 Existing Roadway Characteristics

KYTC's Highway Information System (HIS) database was used to compile the existing roadway characteristics of US 60 in the study area. The highway characteristics summary is included as **Table 1**.

Table 1: US 60 Highway Characteristics Summary

Route	Section	Begin Milepoint	End Milepoint	Section Length (miles)	Functional Class	Facility Type	Lane Width (feet)	Shoulder Width (feet)	Median Type	Median Width (feet)	Posted Speed Limit (MPH)	
US 60	1	10.667	10.836	0.169	Rural - Principal Arterial	4 Lanes	12	2	Non - Mountable	12	45	
		US 460	Greenhill Ave									
	2	10.836	11.163	0.327				0-2	None	0		
		Greenhill Ave	Lyons Drive									
	3	11.163	11.375	0.212								0-10
		Lyons Drive	Sunset Drive									
	4	11.375	11.910	0.535				0-2				
		Sunset Drive	Cardinal Ave									
	5	11.910	12.020	0.110								0-10
		Cardinal Ave	KY 676 & US 421 Interchange									
	6	12.020	12.157	0.137				0-12				
		KY 676 & US 421 Interchange	End of Bridge									
	7	12.157	13.130	0.973						0	50	
		End of Bridge	Chenault Road									

3.3 Existing Traffic Volumes, Level of Service and Capacity

Traffic volumes along US 60 were obtained using KYTC's traffic count system database (CTS). These counts were supplemented with 48-hour road tube counts (including classification counts) at two locations along US 60, and turning movement counts (for the AM, PM and mid-day peaks) at four intersections along the corridor. The tube counts were performed north of Sunset Drive and south of Brighton Park Boulevard. The turning movement counts were performed at the following intersections with US 60:

- US 460
- Sunset Drive / McDonald's
- Laramie Avenue / Brighton Park Boulevard
- Jett Boulevard / Chenault Road

These traffic counts, along with roadway characteristics were used to evaluate the capacity and level of service (LOS) along US 60, as well as the four intersections.

US 60 is a four lane highway with either a median or two-way left-turn lane in the middle. LOS for multilane highway sections is based on density in terms of passenger cars per mile per lane (pc/mi/ln) as shown in **Table 2**. Density is used to define LOS because it is an indicator of freedom to maneuver within the traffic stream and the proximity to other vehicles. Speed in terms of mean passenger-car speed and v/c ratios are interrelated with density and can be used to characterize a multilane highway segment. LOS D is the threshold for desirable traffic operations used in this study. For multilane highways, a LOS D corresponds to a density between 26 and 35 pc/mi/ln.

Table 2: LOS Criteria for Multilane Highways

LOS	Density Range (pc/mi/ln)
A	0 – 11
B	>11 – 18
C	>18 – 26
D	>26 – 35
E (55 mph)	>35 – 41
E (45 mph)	>35 – 45
F (55 mph)	>41
F (45 mph)	>45

Source: Highway Capacity Manual (2010)

LOS for signalized intersections is based on control delay, which is the delay associated with vehicles slowing in advance of an intersection, the time spent stopped on an intersection approach, the time spent as vehicles move up in the queue, and the time needed for vehicles to accelerate to their desired speed. Control delay alone is used to calculate LOS for an entire intersection or approach, while control delay and v/c ratio are used to calculate LOS for a lane group. The LOS thresholds for signalized intersections are shown in **Table 3**. Similar to multilane highway segments, a LOS D is the threshold for desirable traffic operations at a signalized intersection. LOS D corresponds to a v/c ratio less than or equal to 1.0 and control delay between 35 and 55 seconds. (Refer to the Highway Capacity Manual 2010 for more specific information.)

Figures 2, 3, and 4 show the existing traffic volumes, LOS, and v/c ratios along the mainline of US 60 and for the four intersections at which turning movement counts were performed. These are shown for the

AM and PM peak periods as these are the time periods that replicates the most fluctuation in traffic operations throughout the day

Table 3: LOS Criteria for Signalized Intersections

Control Delay (s/veh)	LOS by Volume to Capacity Ratio	
	≤ 1.0	> 1.0
≤ 10	A	F
> 10 - 20	B	F
> 20 - 35	C	F
> 35 - 55	D	F
> 55 - 80	E	F
> 80	F	F

Notes: For approach-based and intersection-wide assessments, LOS is defined solely by control delay.

Source: Highway Capacity Manual (2010)

Figure 2: Existing Traffic Volumes

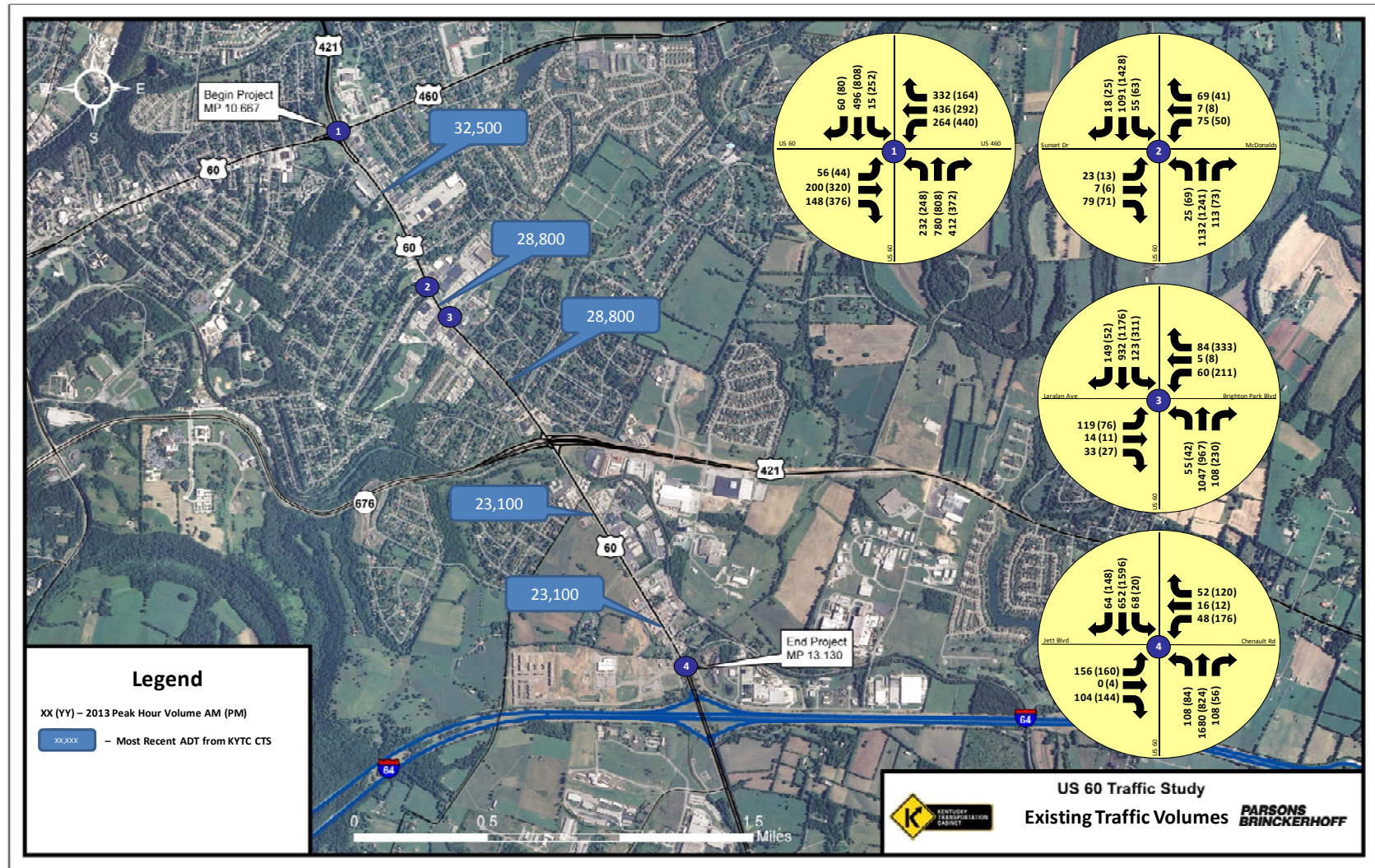


Figure 3: Existing LOS and V/C Ratios in the AM Peak

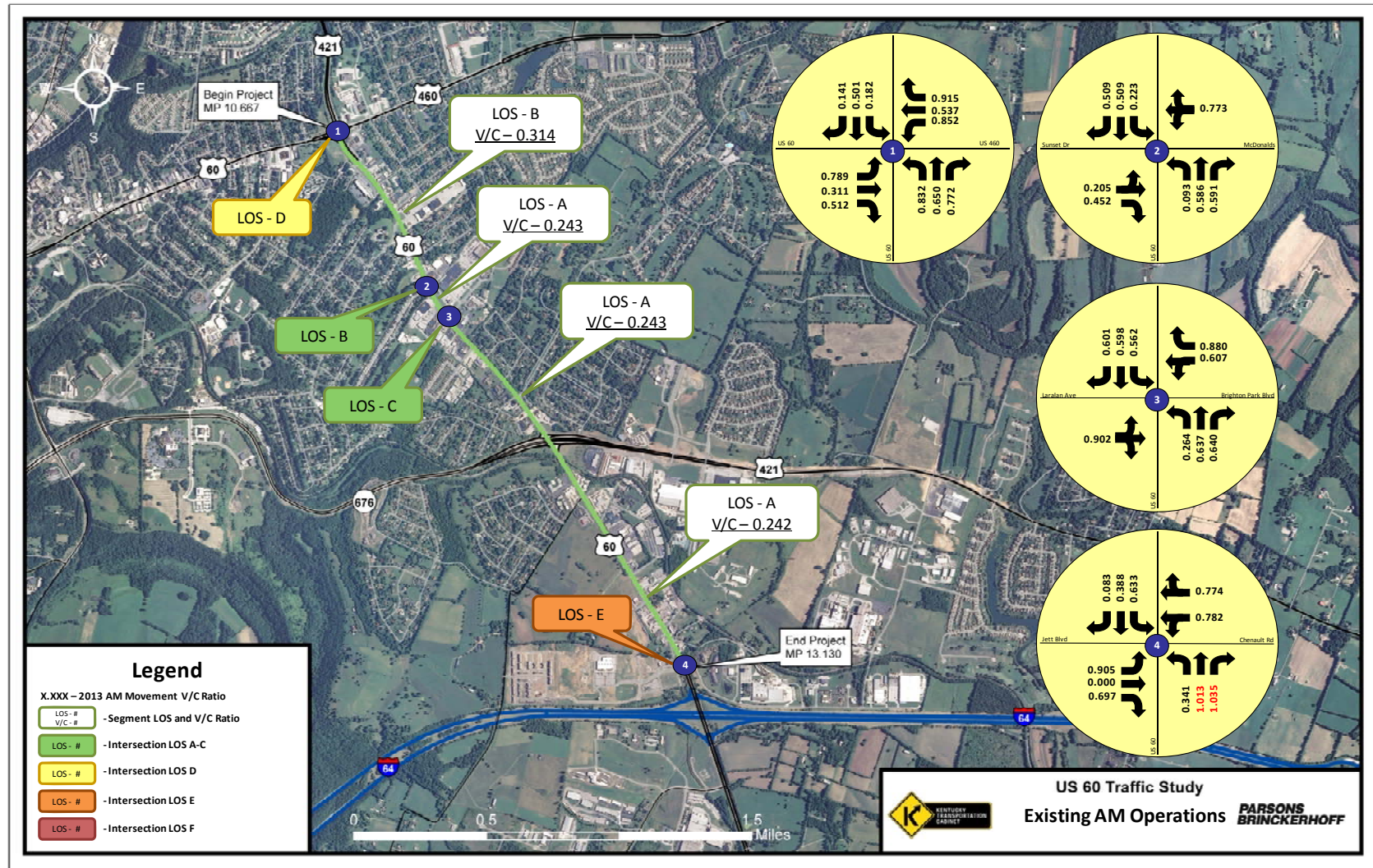
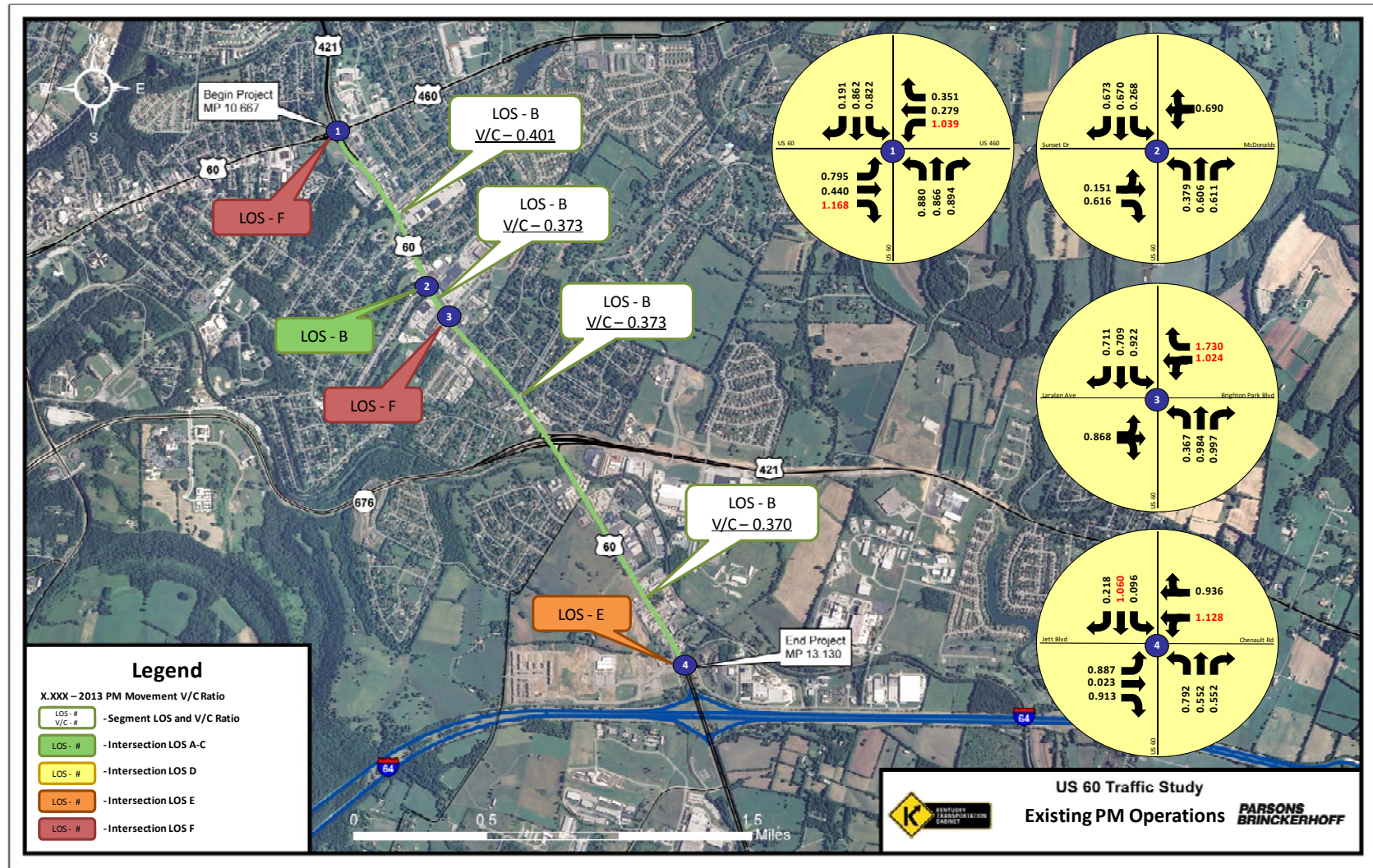


Figure 4: Existing LOS and V/C Ratios in the PM Peak



3.4 Future Traffic Volumes, Level of Service and Capacity

Historical traffic counts from the CTS database were used to determine growth rates along US 60. A growth rate of 0.5% per year was used north of US 421, and a growth rate of 1.5% per year was used south of US 421. This reflects the fact that the area north of US 421 is mostly built out, while new development potential and opportunities for future growth exist south of US 421. These growth rates were applied to the traffic volumes along US 60 as well as at the intersections. The HCM and methodologies discussed in the previous section were used to calculate LOS and v/c ratios for the Future Year 2040. **Figures 5, 6, and 7** show future traffic volumes along with AM and PM peak period LOS and v/c ratios.

3.4.1 Future Traffic Generators

A new Jim Beam Distribution Center is proposed along US 421, just east of the study area. A Traffic Impact Study (TIS) was prepared in 2013 to determine the impacts of this 600,000 (expandable to 1,000,000) square foot development on the traffic on surrounding roadways. The study assumed that eight percent of traffic would come from I-64 via US 60 to access the site on US 421. The development is anticipated to be completed by the end of 2014; therefore the study used 2015 as the analysis year. The trip generation shows 55 vehicles entering the site and 28 leaving the site utilizing US 60 in the AM peak period. In the PM peak period, there will be 31 vehicles entering the site and 70 exiting the site utilizing US 60.

US 60 currently has an AM peak traffic exceeding 1,500 vehicles per hour and PM peak traffic exceeding 2,000 vehicles per hour. Therefore, adding approximately 100 vehicles per hour to these volumes is not anticipated to greatly impact the operations of US 60.

Figure 5: Future Year (2040) Traffic Volumes

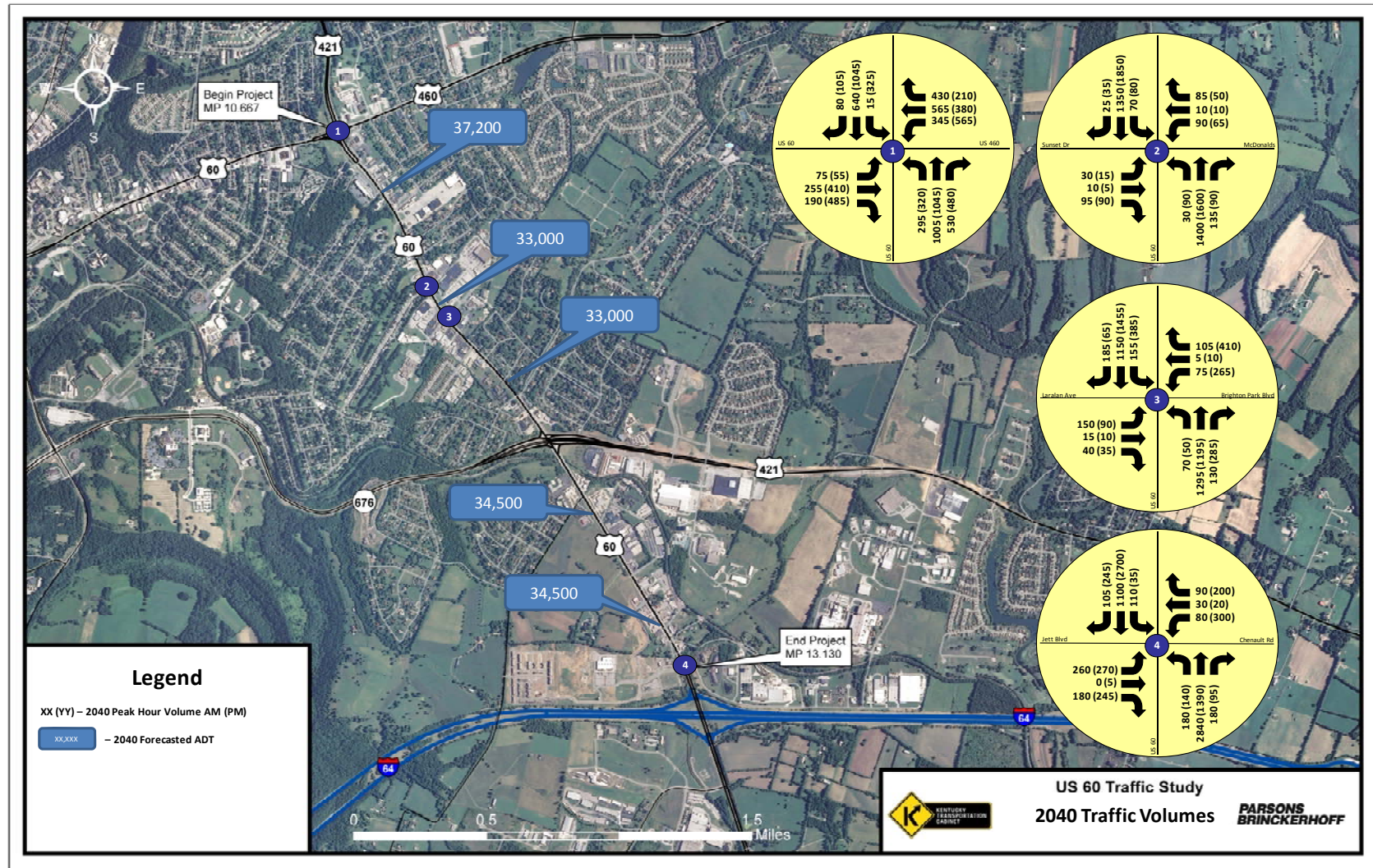


Figure 6: 2040 LOS and V/C Ratios in the AM Peak

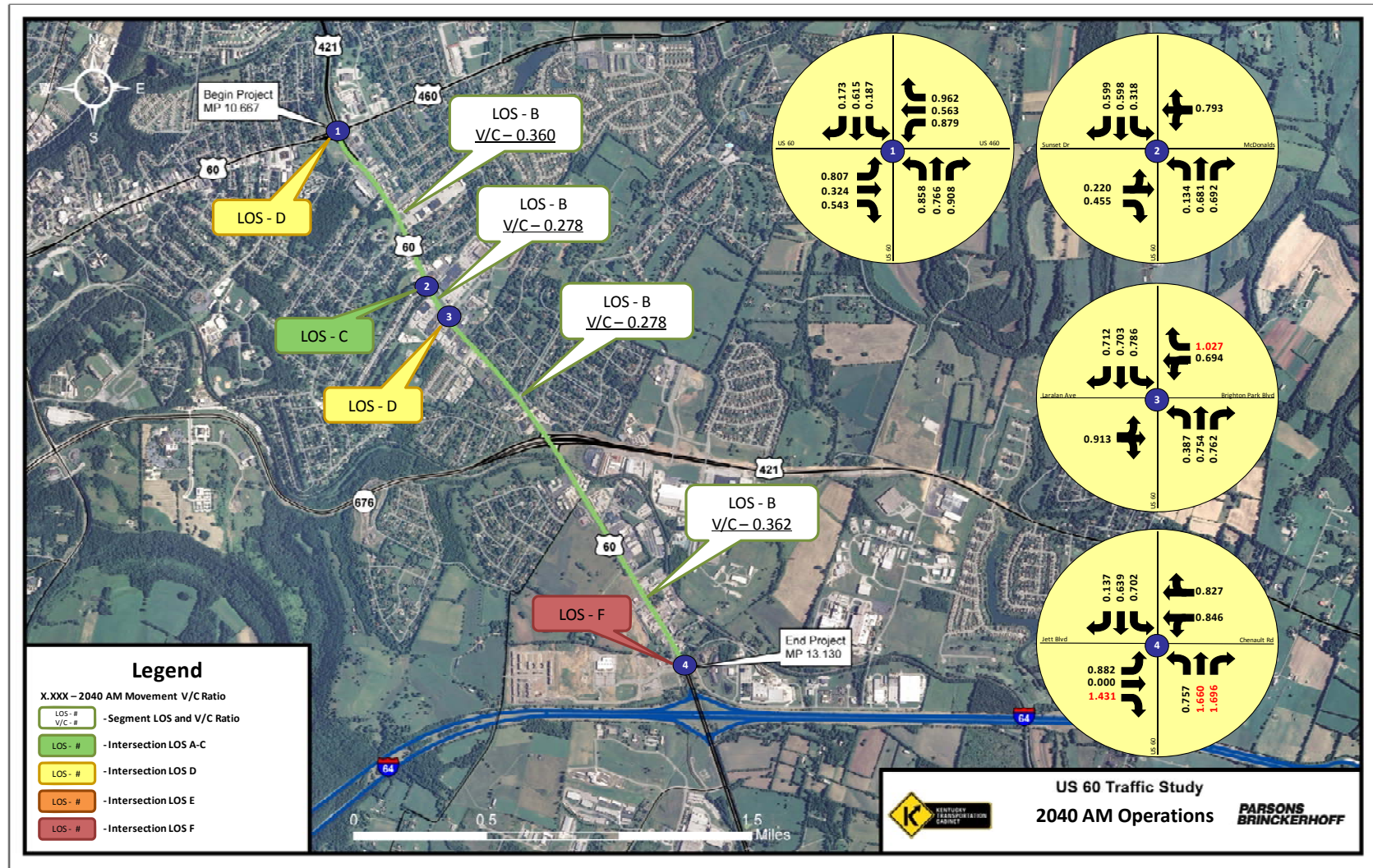
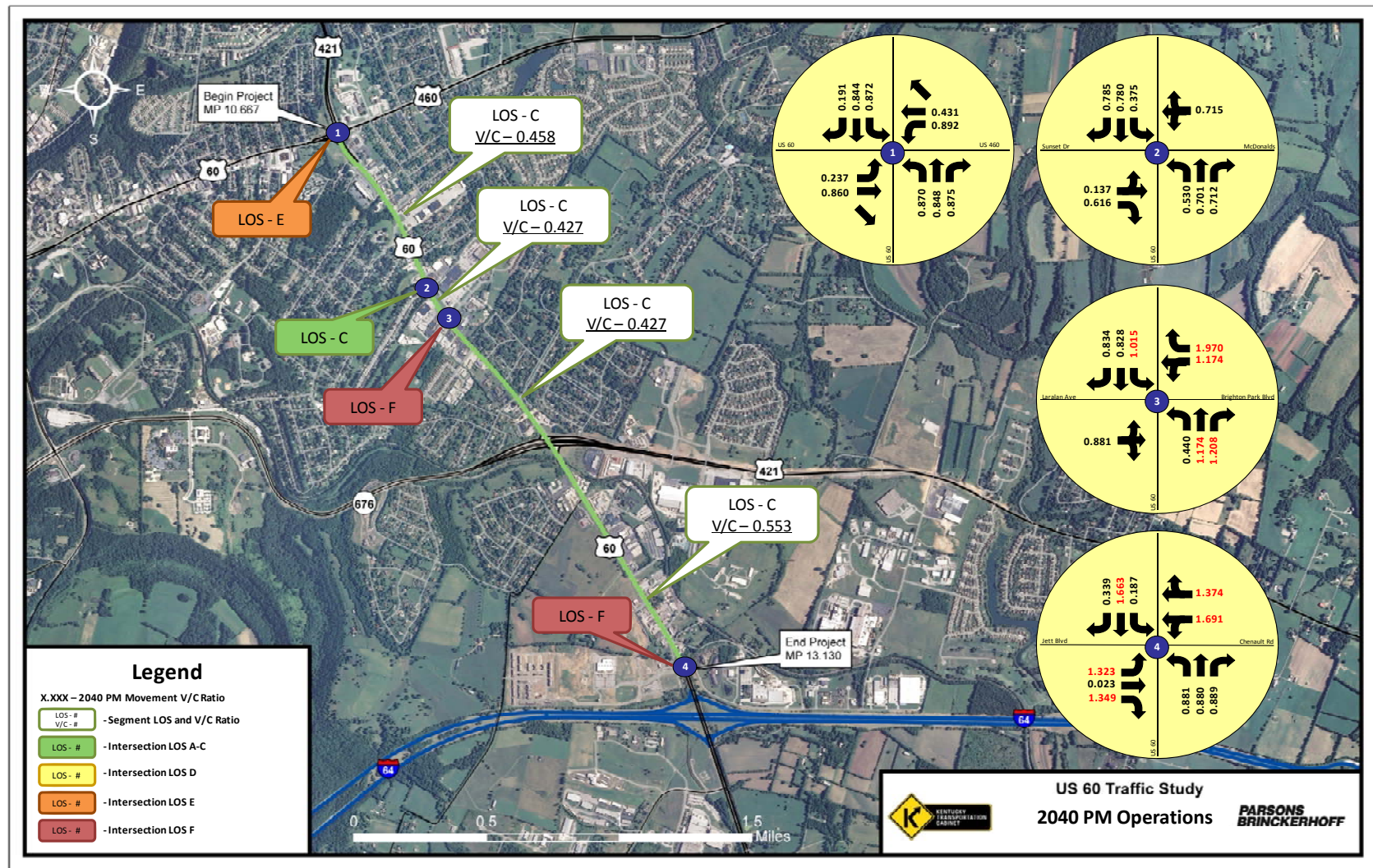


Figure 7: 2040 LOS and V/C Ratios in the PM Peak



3.5 Crash Analysis

The KYTC provided crash data for a three-year period from December 1, 2010 through November 30, 2013. The crash rate along US 60 throughout the study area was computed using the methodology provided in the crash analysis report periodically published by the Kentucky Transportation Center (KTC).¹ The crash rate is based on the number of crashes along the segment of US 60, the average daily traffic on that segment, the time frame of the analysis, and the length of the section. It is expressed in terms of crashes per 100 million vehicle-miles and is compared to a statewide critical crash rate² derived from critical crash rate tables for highway sections in the KTC crash report (Appendix D of KTC crash report). The comparison is expressed as a ratio of the segment crash rate to the critical crash rate and is referred to as the critical crash rate factor. If the factor is greater than one it indicates that it is more likely a crash will occur at this location than at other similar locations throughout the state.

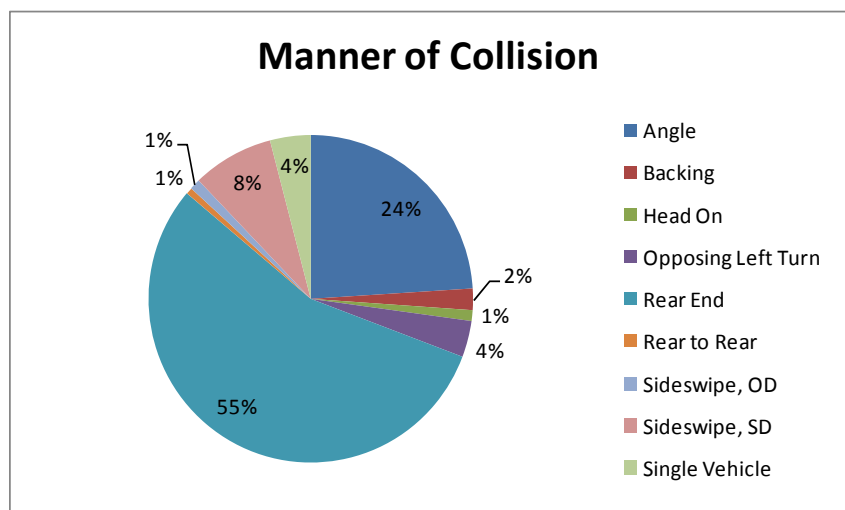
The section crash rate is also compared directly to the statewide average crash rate presented in the KTC crash report. The statewide averages consider all crashes for a specified period that are listed in the Collision Report Analysis for Safer Highways (CRASH) database maintained by the Kentucky State Police and stratified by functional classification (Table B-2 in KTC crash report). Section rates that exceed the statewide average crash rate but not the critical crash rate may be problem areas, but they are not statistically proven to be higher crash areas. Therefore, this second comparison is used to identify a second tier of highway sections that may have crash problems and could be considered for safety improvements if warranted based on further analysis.

For sections with a length less than 0.30 mile, a spot crash rate analysis was employed which is similar to the methodology discussed above but takes out the length component of the equation.

The crash analysis performed for US 60 is shown in **Table 4**. As shown, all sections of the corridor have a critical crash rate of one or greater. This indicates it is more likely for a

crash to occur along this corridor compared to other similar locations throughout the state. **Figure 8** shows the various manners of collision for the 471 crashes that occurred in the three year period.

Figure 8: Manner of Collision



¹ Analysis of Traffic Crash Data in Kentucky (2008 – 2012), Kentucky Transportation Center Research Report KTC-13-13/KSP2-11-1F.

² The critical crash rate is the threshold above which an analyst can be statistically certain (at a 99.5% confidence level) that the section crash rate exceeds the average crash rate for a similar roadway and is not mistakenly shown as higher than the average due to randomly occurring crashes.

Table 4: Crash Rate Analysis for US 60 (2010 to 2013)

Route	Section	Begin Milepoint	End Milepoint	Total Crashes	Average Daily Traffic	Length (miles)	Exposure "M" (100 or 1 MVM)	Statewide Average Crash Rate	Section Crash Rate	Statewide Critical Crash Rate	Critical Crash Rate Factor	Manner of Collision	Weather
US 60	1*	10.667	10.836	39	32,500	0.169	1.096	96	36	0.47	2.36	Rear End (53.8%)	Clear (51.3%)
		US 460	Greenhill Ave										
	2	10.836	11.163	53	32,500	0.327	0.116	96	455	263.50	1.73	Rear End (39.6%)	Clear (62.3%)
		Greenhill Ave	Lyons Drive										
	3*	11.163	11.375	89	28,800	0.212	2.822	96	32	0.86	3.29	Rear End (52.8%)	Clear (59.6%)
		Lyons Drive	Sunset Drive										
	4	11.375	11.910	125	28,800	0.535	0.169	96	741	266.41	2.78	Rear End (60.0%)	Clear (60.8%)
		Sunset Drive	Cardinal Ave										
	5*	11.910	12.020	27	28,800	0.110	0.856	96	32	0.86	1.00	Rear End (51.9%)	Clear (63.0%)
		Cardinal Ave	KY 676 & US 421 Interchange										
	6*	12.020	12.157	28	23,100	0.137	1.107	96	25	0.90	1.23	Rear End (78.6%)	Clear (42.9%)
		KY 676 & US 421 Interchange	End of Bridge										
	7	12.157	13.130	110	23,100	0.973	0.246	96	447	253.91	1.76	Rear End (55.5%)	Clear (60.0%)
		End of Bridge	Chenault Road										

Critical Crash Rate Factor >1, Section Crash Rate Exceeds Statewide Critical Rate (High Crash Rate Section)

Notes:

Section * denotes that a spot rate analysis was used instead of a section analysis as the length is less than 0.30 mile

Analysis Period: 3 Years (12/1/2010 to 11/30/2013)

Crash rates are expressed in crashes per 100 MVM (100 million vehicle miles traveled) for sections; 1 MVM for spots

Section Exposure (M) = [(ADT) x (365) x (Time Frame of Analysis (Years)) x (Section Length)] / 100,000,000

Section Crash Rate = Total Crashes / Exposure

Spot Crash Rate = [(1,000,000) x (Total Crashes)] / [(365) x (Analysis Period in Years) x (ADT)]

Critical Crash Rate Factor = Section or Spot Crash Rate / Statewide Critical Crash Rate

ADT = Average Daily Traffic, MVM = Million Vehicle Miles

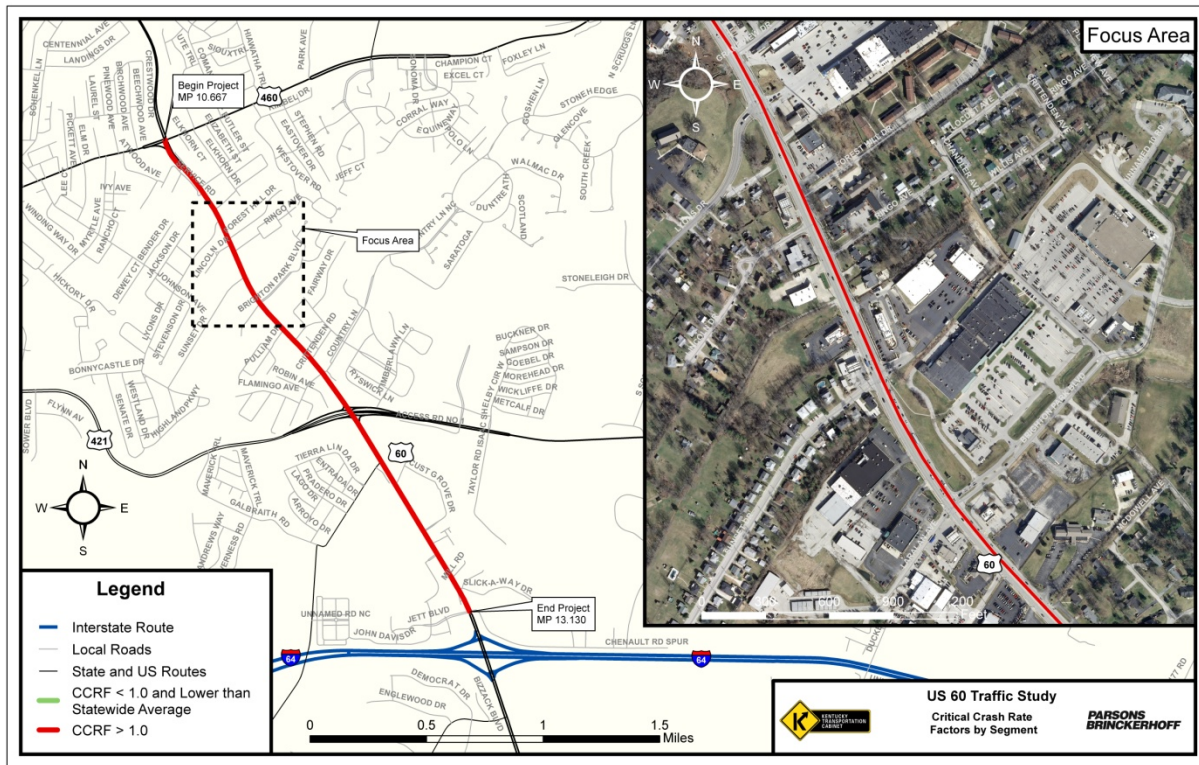
Sources:

Crash data for 12/1/2010 to 11/30/2013 from KYTC Data

Statewide Rates from Analysis of Traffic Crash Data in Kentucky (2008 – 2012), Kentucky Transportation Center Research Report KTC-13-13/KSP2-11-1F.

Figure 9 below shows the crash analysis by segment. As noted previously the entire corridor has a critical crash rate factor (CCRF) either equal to or greater than 1.0.

Figure 9: US 60 Crash Rate Analysis



To summarize:

- Rear end crashes accounted for over half of the crash types (55%).
- Angle crashes accounted for just under a quarter of all crash types (24%).
- The majority of all of the crashes occurred in clear weather (58%).
- The entire corridor has a CCRF either equal to or over 1.0.

For more detailed information on the distribution of crash severity and manner of collision, refer to **Appendix B**. This appendix includes graphs detailing the breakdown of crash severity (fatal, injury, or property damage only) as well as maps of the study area noting the distribution of crashes by collision type. Also included in the appendix is the crash record data set for reference.

3.6 Multimodal Facilities (Transit, Rail, Bicycle, and Pedestrian)

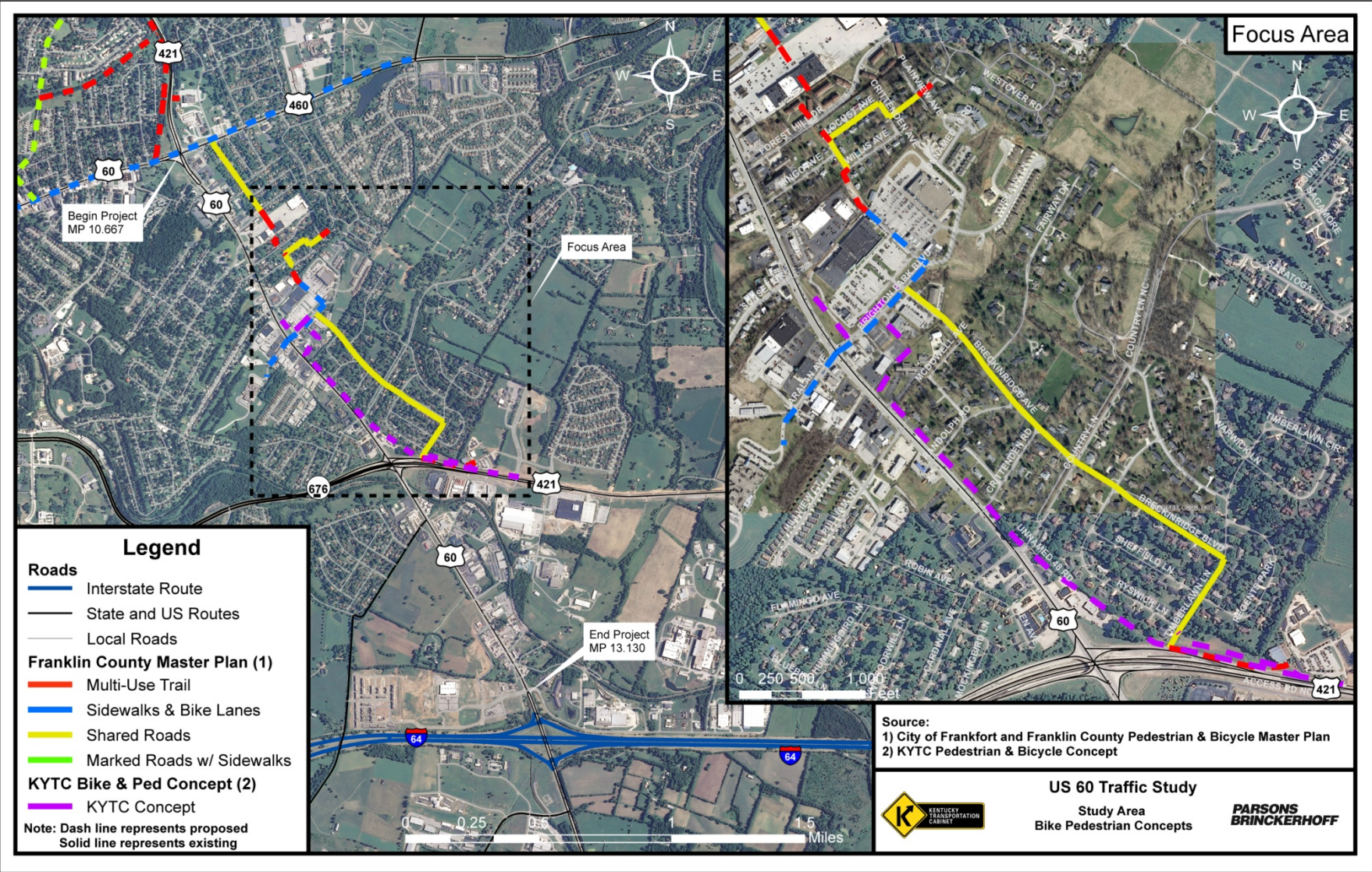
The City of Frankfort Transit Department operates Frankfort Transit which is a fully accessible fixed route service that operates three routes across the city Monday through Friday and one route on Saturday. Frankfort Transit also operates a free trolley service through downtown Tuesday through Saturday. The East Route and Saturday Route follows the US 60 corridor the entire length from US 460 to the shopping center at Jett Boulevard.

R.J. Corman Railroad Group operates a rail line which runs parallel to the study area south of US 421 and crosses underneath US 60 just south of the KY 676 interchange. There are no grade crossings in the study area; therefore there is no impact to the operations of the corridor's major movements.

Pedestrian facilities are intermittent along the corridor. A majority of the study area has sidewalks on one side of the road. The exception is on the northern end of the study area from Sunset Drive north to US 460. This segment has continuous sidewalks on both sides.

The City of Frankfort has a master plan, the City of Frankfort & Franklin County Pedestrian & Bicycle Master Plan – WalkBike Frankfort (December 2007). The plan identifies ten projects to build and enhance bicycle and pedestrian facilities throughout the city. Beyond that, the KYTC Bicycle and Pedestrian Program Statewide Coordinator has been involved throughout the study and has provided input as well as shared KYTC's bicycle / pedestrian plan for the region. The preferred bicycle path would utilize some existing connections and roadways and generally parallel US 60 from US 421 north to the Brighton Park Boulevard shopping center. **Figure 10** is a visual representation of the bike and pedestrian-related projects along the US 60 study area. The dashed purple line represented on the figure is the concept proposed by the KYTC bicycle and pedestrian coordinator that they would like to move forward with as permitting and funds are available.

Figure 10: Bike and Pedestrian Concepts



4.0 Environmental Overview

An environmental overview was performed with respect to the following:

- Cultural Historic Overview (**Appendix C**)
- Archaeological Resources
- Environmental Constraints
- Environmental Justice (EJ) (**Appendix D**)

4.1 Cultural Historic Overview

A Cultural Historic Overview, located in **Appendix C**, was conducted for this project. A search of records maintained by the Kentucky Heritage Council indicated that there is one previously recorded cultural historic site listed in the National Register of Historic Places (NRHP) within the study area. The site is a monument to the United States Colored Troops from Franklin County. In addition, there is a listed site located just outside the southern portion of the study area, the Arrowhead property. The house is listed as the sole remnant of the community of Jett, and the property itself includes three outbuildings (a shed, a chicken coop, and a tobacco barn), and a workers cottage. Access to the property is off of US 60. The O’Nan Cemetery is also located in the study area, and is a potentially significant site, although its eligibility for the NRHP has not been established. For additional information on location of these sites, refer to the maps included in the overview in **Appendix C**.

4.2 Archaeological Resources

A review of archaeological records found one unconfirmed Paleo-Indian archaeological site reported in the area. A windshield survey identified a large agricultural field in the southern half of the project area as a red flag area for both prehistoric and historic archaeological resources. This means that there is likelihood of finding artifacts in that area based on observed conditions. The area includes the unconfirmed Paleo-Indian site and land affiliated with the Arrowhead property. A thorough archaeological reconnaissance should be performed on this area before any development occurs.

4.3 Environmental Constraints

A broad overview was performed to identify any environmental features that may impact future project development. This consisted of producing an environmental overview map and a records search for underground storage tanks (UST) and hazardous materials. The environmental overview of the study area is shown in **Figure 11**.

Given the highly-developed, urban nature of the corridor, there are few environmental concerns. The most notable issues would be UST / hazardous materials sites. The study area also contains a gray bat foraging and travel corridor as well as potential habitat for the Indiana bat.

4.3.1 Underground Storage Tanks and Hazardous Material Concerns

There are 52 potential UST / hazardous materials sites in the study area. These areas are shown in **Figure 11**, and listed in **Table 5**.

Figure 11: Environmental Constraints

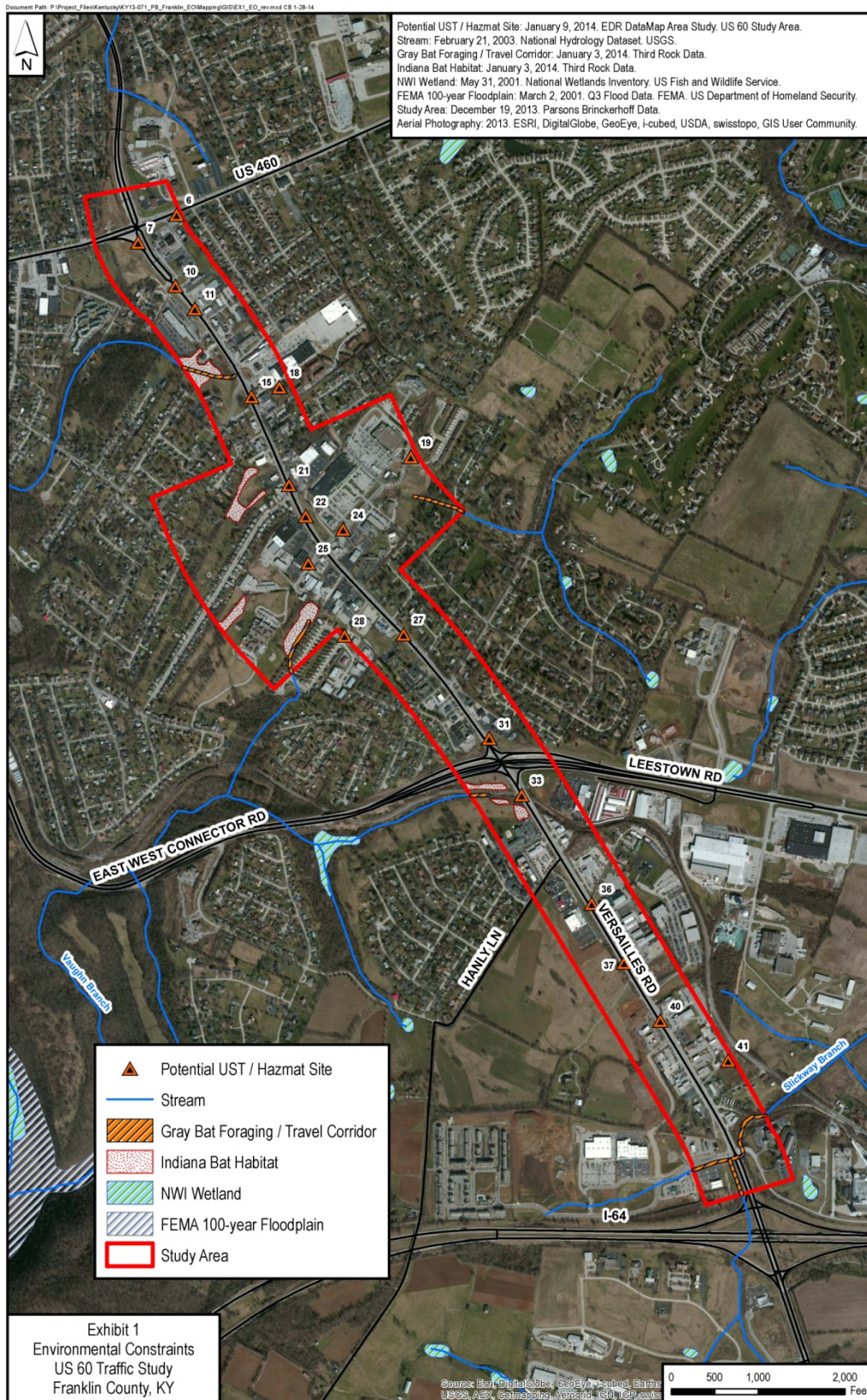


Table 5: Potential UST / Hazardous Materials Sites

Site	Address	Database	Potential UST / Hazmat Site Map ID
Frankfort Station, Inc	260 Versailles Rd	RCRA-LQG, FINDS	15
Toyota of Frankfort	459 Versailles Rd	RCRA-CESQG, FINDS, UST, SHWS	22
Honda of Frankfort	450 Versailles Rd	RCRA-CESQG, FINDS, UST, EDR US Hist Auto Stat	22
Scotty Dunn's Custom Body Shop	425 Versailles Rd	RCRA-CESQG, ERNS, FINDS, EDR US Hist Auto Stat	22
Neighborhood Cleaners	112 Brighton Park Blvd	RCRA-CESQG, FINDS, US AIRS, DRYCLEANERS	24
J.B. Long & Son body Shop	107 Collision Center Dr	RCRA-CESQG, FINDS	28
Kroger Co Store 397	302 Brighton Park	RCRA-CESQ, FINDS, UST, EDR US Hist Auto Stat	19
Capitol Cadillac Olds Pontiac	925 Versailles Rd	RCRA-LQG, FINDS, UST, EDR US Hist Auto Stat	33
Franklin County Public Schools	916 East Main St	RCRA NonGen, FINDS, UST	6
Plaza Chevrolet Buick	US 60	RCRA NonGen, FINDS, UST	7
Dairy Mart #131	174 Versailles Rd	RCRA NonGen, FINDS	7
Sherwin Williams Co	Versailles Rd & Grandview Dr	RCRA NonGen, FINDS	15
Sunoco Service Station	244 Versailles Rd	RCRA NonGen	15
Superamerica #5635	387 Versailles Rd	RCRA NonGen, ERNS, FINDS, UST	21
Kenvirons, Inc	452 Versailles Rd	RCRA NonGen, ERNS, FINDS	22
Jerry Holders 76 Service Station	922 Versailles Rd	RCRA NonGen, ERNS, FINDS, UST, EDR US Hist Auto Stat	33
Jett Chevron #4480	1620 Versailles Rd	RCRA NonGen, FINDS, UST, SHWS	40
Ashland Inc #316-00	90 Mill Rd	RCRA NonGen, FINDS	41
Kats #7 Food Mart	917 E Main St	FINDS, UST, SB 193	6
S&S Tire, Inc / Palmer Tire	301 Versailles Rd	FINDS, EDR US Hist Auto Stat, UST, SPILLS	15
Sunoco Service Station	244 Versailles Rd	FINDS, UST	15
Five Star Shell	1645 Versailles Rd	FINDS, UST	40
Old Ashland Service Station	1615 Versailles Rd	FINDS, UST	40
Not Reported	260 Versailles Rd	SHWS	15
Not Reported	1220 Versailles Rd	SHWS, INST CONTROL, EDR US Hist Auto Stat	37
Not Reported	1024 Capital Center Dr	SHWS	40
Sears Roebuck & Co	Rt 60 & Versailles Rd	UST	7
Dairy Mart #3216	172 Versailles Rd	UST	11
Ringo Gas	325 Versailles Rd	UST, EDR US Hist Auto Stat	15
Chevron #00048917	305 Versailles Rd	UST	15
Swift Station #232	289 Versailles Rd	UST	15
Speedway Superamerica LLC #1258	473 Versailles Rd	UST, PSTEF	22
WDP Transportation Inc	453 Versailles Rd	UST, EDR US Hist Auto Stat	22
Burley Oil Co Inc	632 Versailles Rd	UST	27
Howard Property	630 Versailles Rd	UST	27
Clark Distributing Company Inc	US 60 W	UST	31
Cross Roads Ford	1070 Versailles Rd	UST	36
Shell Foodmart	1680 Versailles Rd	UST, EDR US Hist Auto Stat	40
Cowboys #104	1585 Versailles Rd	UST	40
Not Reported	114 Lincoln Dr	LEAD	15
Not Reported	136 Versailles Rd	EDR US Hist Auto Stat	10
Not Reported	301 Eastwood Shopping	EDR US Hist Auto Stat	18
Not Reported	121 Laramie Ave	EDR US Hist Auto Stat	25
Not Reported	104 Pulliam Dr	EDR US Hist Auto Stat	28
Not Reported	3 Locust Ln	EDR US Hist Auto Stat	36
Not Reported	1240 Versailles Rd	EDR US Hist Auto Stat	37
Not Reported	1537 Versailles Rd	EDR US Hist Auto Stat	40
Not Reported	1348 Versailles Rd	EDR US Hist Auto Stat	40
Not Reported	330 Versailles Rd	EDR US Hist Cleaners	15
Not Reported	1 Grandview Dr	EDR US Hist Cleaners	15
Not Reported	110 Brighton Park Blvd	EDR US Hist Cleaners	24
Not Reported	127 Brighton Park Blvd	EDR US Hist Cleaners	24

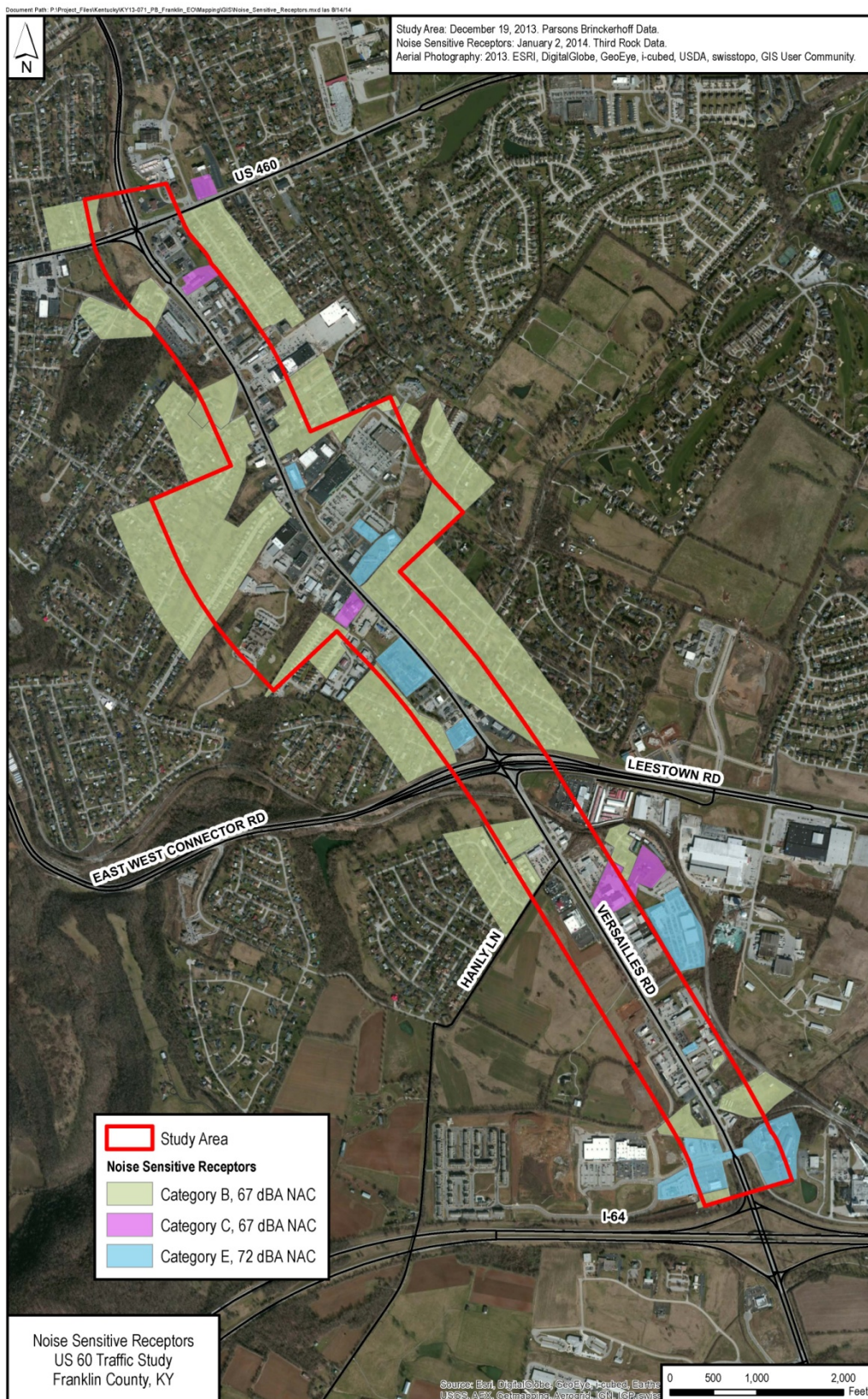
Reference

EDR DataMap Area Study, US 60 Study Area, January 9, 2014

4.3.2 Traffic Noise

The study area contains Category B, C and E noise sensitive receptors. These locations are shown in **Figure 12**. Category B noise receptors include single and multi-family residences. Category C noise receptors include many service and public land uses including day care centers, hospitals, places of worship, recreation areas, and schools. Category E noise receptors include a variety of commercial activities such as hotels, motels, offices, and restaurants / bars.

Figure 12: Noise Sensitive Receptors



4.4 Community Facilities

Community facilities located in the study area include the East Frankfort Baptist Church, the Highland Christian Church and the Synergy Church. There are also some off road multi-use trails and sidewalks in the area. At this time it is anticipated that the potential for adverse impacts to these facilities is likely to be minimal. However, that assumption needs to be analyzed in the next phase(s) of project development.

4.5 Environmental Justice

An EJ Review was prepared by the Bluegrass Area Development District (BGADD) for the study area, and examined the potential disproportionate adverse community impacts on selected groups (minority, low-income, elderly and disabled). The primary source of data for this report was assembled from the American Community Survey (ACS) 2012 Five Year Estimate tables B03002 (minorities), B17021 (poverty status), C23023 (disabled status), and S0101 (over 60 status) via the American FactFinder³ website and GIS data provided by KYTC.

The review is intended to identify areas of concern that may be affected by potential projects proposed by this study and to meet federal requirements regarding consideration of environmental justice and other issues as defined in the National Environmental Policy Act (NEPA). According to the ACS, there are four census tracts and nine block groups that encompass the population of the study area. The conclusion is that each of the nine block groups that intersect the study area have at least one disadvantaged population. This should be considered for further analysis prior to the commencement of said projects. **Table 6** summarizes the findings of the EJ Review indicating which unit of analysis has what type of concern(s). The entire report can be found in **Appendix D**. During further project development stages, more in-depth EJ analysis will need to be undertaken in conjunction with right-of-way acquisition.

³ <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>

Table 6: Environmental Justice Summary

Census Tract / Block Groups	Minorities	Poverty	Over 60	Disability
701 / 4			X	
701 / 5		X		
706 / 1	X			
706 / 2	X	X		
707.01 / 1				X
707.01 / 2		X		
707.01 / 3			X	
707.02 / 1			X	
707.02 / 3	X			

Source: BGADD

5.0 Public Involvement and Project Development Team Meetings

This study is in the early planning stages, therefore meetings were held with key local officials and stakeholders to obtain input on transportation issues and potential improvements to US 60 in the study area. Two meetings were held with the local officials and stakeholders throughout the study process. An additional meeting was held to allow business owners along the corridor the opportunity to review potential alternatives and provide input as well. Additional input was requested from agencies with jurisdiction within the study area to identify any other potential impacts relative to the alternatives. Finally, two meetings were held with the Project Development Team (PDT) to discuss study progress, local officials and stakeholder input, and the study outcome. More information for these meetings / activities is provided in the sections below.

5.1 Local Officials and Stakeholder Coordination

Meetings were held with locally elected officials and stakeholders of Franklin County and the City of Frankfort, including business owners along the corridor. Invitees included representatives from the Kentucky legislature, Franklin County Fiscal Court, Franklin County Planning, fire and EMS, police and Office of Emergency Operations as well as County Public Works and the City Road Department. Two meetings with local officials and stakeholders and a separate meeting with local business and property owners were held to obtain feedback on the information compiled for the project. Brief summaries of the meetings are given below. Meeting minutes, as well as the letter sent out to local officials and stakeholders are provided in **Appendix E**.

The first local officials and stakeholders meeting was held on March 19, 2014 at the KYTC Central Office. A general overview of the project and the existing conditions analysis were presented. The initial evaluation of the focus area from the Sunset Drive / McDonald's intersection to the Laramie Avenue / Brighton Park Boulevard intersection was also presented and some feedback was given on the recommendation. Preliminary ideas for the entire corridor were presented to the group, such as driveway consolidation and access management. The group provided feedback and recommendations for specific spots improvements along the corridor, as well as information about future development in the study area.

A meeting was held with local business stakeholders on April 17, 2014 at the KYTC Central Office. The project overview was presented to the group, as well as the existing conditions, and the initial evaluation of the focus area from the Sunset Drive / McDonald's intersection to the Laramie Avenue / Brighton Park Boulevard intersection. Preliminary ideas for the corridor were presented as well as draft plans showcasing areas of impact related to a six lane facility with a median and driveway consolidation considerations. The group provided feedback and generally agreed that some quick fixes should be completed to help with pressing traffic and congestion issues. They also agreed the area between McDonald's and Brighton Park Boulevard is the highest priority, followed by the area to the west of US 460, and the section between I-64 and US 421 is a lower priority. The group expressed an interest to explore the option of reversible lanes, but believe ultimately a six lane corridor with full build out of turn lanes and some median treatments may be feasible for the roadway. Additionally, the attendees agreed that aesthetics and multimodal accommodations should be part of any future projects. The local business owners requested to stay involved and included in the next local officials and stakeholders meeting.

The final local officials and stakeholders meeting was held on June 24, 2014 at the KYTC Central Office. All invitees from the previous local official and stakeholder meetings plus those from the business owners meeting were invited to this final meeting. The KYTC Division of Design made some modifications to the focus area projects and presented those projects initially. These included Priority 1 improvements that are to be constructed in Fall 2014 to address safety. There is no funding currently for Priority 2 projects. These plan sheets as shown at the meeting are included with the meeting minutes in **Appendix E** for reference. The remainder of the meeting was dedicated to the presentation and discussion of longer-term corridor-wide improvements as well as some additional spot options to improve access. Discussion showed that all alternatives and options seemed reasonable though there was emphasis on specific median treatments if that alternative was to move forward. It was desired to provide a mountable median or treatment that allows crossover traffic for police, fire and EMS vehicles.

5.2 Resource Agency Mailings

A letter containing information about the study as well as a draft statement of purpose and need was mailed to interested agencies for input relative to project impacts and future development. Additionally, a link was provided containing draft plan sheets depicting various roadway options; including six lanes with a median. The list of agency respondents included:

- Kentucky Department of Environmental Protection – Division of Water
- Kentucky Division of Mine Reclamation and Enforcement
- Kentucky Department for Natural Resources
- Kentucky League of Cities
- Kentucky Education and Workforce Development Cabinet
- Kentucky Division for Air Quality
- Kentucky Department for Environmental Protection
- Kentucky Department of Fish and Wildlife Resources
- Kentucky Cabinet for Economic Development
- Federal Aviation Administration, Memphis Airports District Office
- United States Department of Housing and Urban Development
- United States Coast Guard
- United States Department of Agriculture Natural Resources Conservation Service
- United States Fish and Wildlife Service

Overall, the agencies largely had no objections nor did they present a position that would indicate one or more of the alternatives under consideration could not be further developed. Comments included:

- Avoid impacting wetlands, streams, endangered species, wells, and water lines in the study area.
- A notice that if impacts to streams and wetlands exceed General Certification conditions, then an Individual Water Quality Certification may be required.
- Ensure the protection of tributaries in and near the study area.
- Consideration of water and sewer lines with a recommendation to contact local water / wastewater utilities.

- A recommendation to contact the superintendent of the Franklin County School District.
- Notice of several air quality regulations that must be met.
- Farmland classification and brief descriptions of soil map units on potential farmland in the study area.
- Frankfort has two industrial parks that are accessed via US 60. It was noted in the agency response that improvements to the corridor would overall positively affect access and economic growth. However, care should be taken to provide adequate maintenance of traffic during the construction period.

A copy of the materials distributed, a recipient list, and their responses can be found in **Appendix F**.

5.3 Project Development Team Meetings

Two meetings were also held with the KYTC and the consultant team to discuss project issues including study progress, local officials / stakeholder meetings, issues and goals, development of alternatives, alternatives evaluation, and the conclusions of the study. The meeting minutes are included in **Appendix G**.

Project Development Team Meeting #1 – March 19, 2014: The purpose of this meeting was to provide an overview of the existing conditions, discuss initial alternatives, and preview the materials to be discussed at the local officials / stakeholder meeting being held later that day. It was determined at that meeting that some of the local business owners along the corridor should be included in the study. As a result, a separate meeting was to be scheduled to provide them the opportunity to be briefed on the study and gather their input on potential improvement alternatives. The initial alternative concepts were presented with requests to consider streetscape improvements / overall aesthetics as well as multimodal components as part of the overall concepts.

Project Development Team Meeting #2 – June 24, 2014: The second meeting was held following the second local officials / stakeholder meeting. The purpose of this meeting was to review the local officials / stakeholder input, discuss the alternatives and provide thoughts on the outcome of the study. It was determined that all alternatives are feasible at this point with a slight preference for Alternative 3 based on local officials / stakeholder input. The additional project options as scored by the local officials / stakeholders related to prioritization were considered and used to assign high, medium, and low prioritization ranking to the options.

6.0 Alternative Development

A full range of alternatives were developed to address known issues identified within the corridor through the technical analysis as well as through local officials and stakeholder input. Consideration during the alternative development process was given to determining the overall look / character of the corridor while providing individual projects that can be completed while complementing the overall study goals.

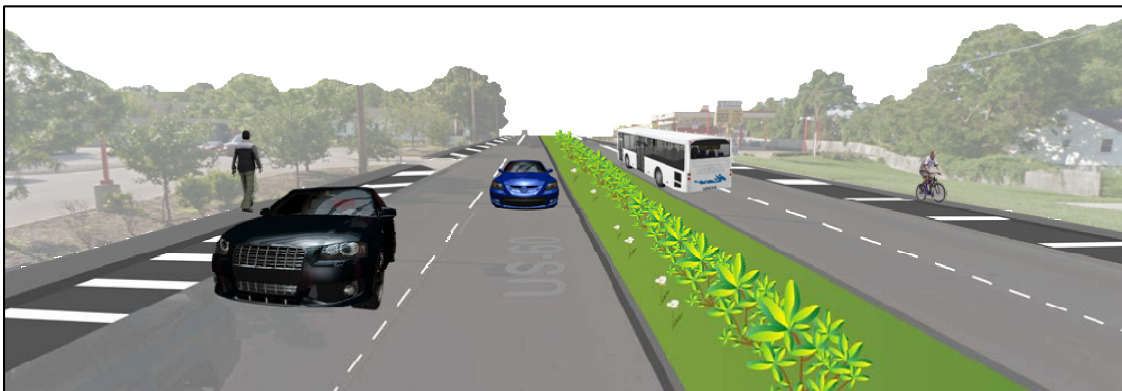
Corridor-wide improvement alternatives initially considered included the following:

- Alternative 1: Access considerations
- Alternative 2: Four lanes with divided median
- Alternative 3: Six lanes with divided median
- Alternative 4: Reversible lanes

Alternative 1 was developed based on meetings with the PDT, including discussion on where linkages may be feasible between adjoining properties. A review was also conducted of properties with multiple access points that could be reduced to single access points. Circulation patterns through fast-food drive through businesses were typically excluded from driveway consolidation while businesses such as gas stations / car lots were targeted as they did not have a need for circulatory traffic flow. Conceptual plan sheets for this alternative can be found in **Appendix H**.

Alternative 2 was developed to improve safety along the corridor by reducing the number of vehicle to vehicle conflict points. By eliminating the center two-way left-turn lane, the potential for angle collisions decreases between intersections. Included with this alternative is an evaluation of improvements necessary at the signalized intersections (i.e. turn lanes / signal timing) to accommodate the additional turning movements. **Figure 13** shows a graphical concept of this alternative. Conceptual plan sheets for this alternative can be found in **Appendix H**.

Figure 13: Alternative 2 Conceptual Typical Section



Alternative 3 is similar in concept to Alternative 2 but adds an additional travel lane in each direction to increase the capacity of the corridor. **Figure 14** shows a graphical concept of this alternative. Conceptual plan sheets for this alternative can be found in **Appendix H**.

Figure 14: Alternative 3 Conceptual Typical Section

Alternative 4 is a concept noted and supported by local business owners, requested at the meeting held on April 17, 2014. Realizing the length of time and cost of alternatives that involve a significant construction component, the concept of reversible lanes was identified as a more near-term solution to improving traffic flow through the corridor. Further discussion of the feasibility of reversible lanes is included in Chapter 7: Preliminary Analysis.

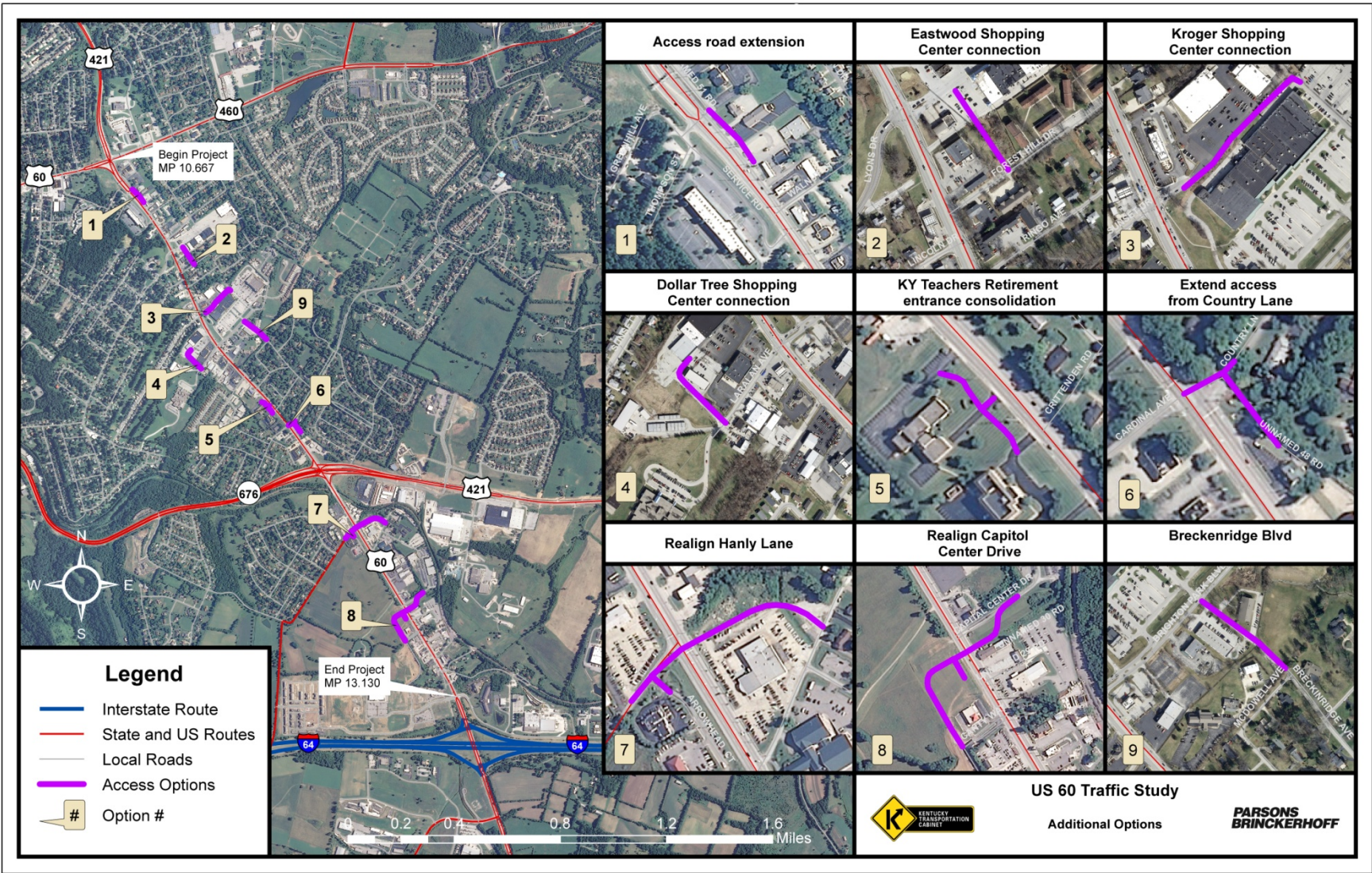
Additional projects have been identified that could complement any of the corridor-wide improvements. They are designated by option number and included the following:

- Option 1: Extension of front access road from Farmer's Bank to Circle K Gas Station just south of the US 60 / US 460 intersection.
- Option 2: Provide connection between Eastwood Shopping Center and Forest Hill Drive.
- Option 3: Provide connection between Kroger Shopping Center and Goodwill / Peddlers Mall.
- Option 4: Provide connection between Laralan Avenue and Dollar Tree Shopping Center.
- Option 5: Consolidate entrance and provide front access road to Kentucky Teachers Retirement Buildings.
- Option 6: Extend access from Country Lane to retail area near US 421 interchange with US 60.
- Option 7: Realign Hanly Lane and provide connection to Locust Drive to form a four-legged signalized intersection.
- Option 8: Realign Capitol Center Drive and provide rear-access connector to Allen Way as well as signalize the new intersection.
- Option 9⁴: Remove gates on Breckenridge Boulevard (between the shopping center and the neighborhood) and improve Breckenridge Boulevard from the neighborhood to Brighton Park Boulevard.
- Option 10: Bicycle / pedestrian connections.

Figure 15 shows the relative location of each option. For a more detailed review of the option, refer to the conceptual plan sheets in **Appendix H**.

⁴ This option was identified by KYTC after submission of the final report. It was not presented to the local officials and stakeholders nor was it included in the resource agency mailing. Additional evaluation of Option 9 may be necessary to determine the extent of impacts in the study corridor.

Figure 15: Additional Options Overview



Options 1 through 9 provide increased connectivity to existing streets and between existing developments. Option 10 details locations where bicycle / pedestrian connections can be made through the corridor, building upon planning-level documents including the Frankfort Ped & Bike Master Plan for US 60 and 460 and information provided by the KYTC Bicycle and Pedestrian Program Statewide Coordinator. This alternative may be combined with any of the alternatives during the refinement / recommendation stage.

7.0 Preliminary Analysis

The preliminary analysis began with the four alternatives and nine options presented in the previous section. Each alternative was considered for any fatal flaws that would prohibit it from progressing as a potential feasible option for improvement to US 60.

Some considerations for each alternative are listed below.

Alternative 1: Access considerations

Pros	Cons
Reduces the number of access points and therefore conflict points, decreasing the likelihood of traffic collisions.	Will be difficult to implement corridor-wide at the same time.
Improves traffic flow along the corridor with less turning traffic.	Will require changes in the access permitting process that may or may not be receptive to business owners.

Alternative 2: Four lanes with divided median

Pros	Cons
Reduces the number of access points and therefore conflict points, decreasing the likelihood of traffic collisions.	Traffic will have to make U-turns to access some businesses which may or may not be acceptable to business owners.
Improves traffic flow along the corridor with less turning traffic.	

Alternative 3: Six lanes with divided median

Pros	Cons
Reduces the number of access points and therefore conflict points, decreasing the likelihood of traffic collisions.	Traffic will have to make U-turns to access some businesses which may or may not be acceptable to business owners.
Improves traffic flow along the corridor with less turning traffic and increased capacity.	Exceeds existing right-of-way limits – additional right-of-way would need to be purchased and impacts are likely to some business access points.

Alternative 4: Reversible lanes

Pros	Cons
Utilizes additional capacity to improve traffic operations in the dominant traffic flow direction by peak period.	For the remaining one lane, traffic operations may degrade as this lane would also be used for through travel and right-turning traffic into the numerous businesses along the corridor.
Improves traffic flow along the corridor with less turning traffic.	Will require some education and time for drivers to become familiar with this concept. May need to consider application near I-64 for any drivers exiting for services at the interchange who may be unfamiliar with the concept.

A review of guidance on operations practices for reversible roadways through various sources including the Institute of Transportation Engineers (ITE), the American Association of State Highway and Transportation Officials (AASHTO) and the Federal Highway Administration (FHWA) provides the following parameters for the successful applications of reversible lanes⁵.

- *Reversible operations are best suited for segments with a directionally unbalanced traffic flow which leaves one or more minor flow direction lane underutilized.* This is true for AM and PM peak period operations along US 60.
- *Reversible lanes work best on segments with minimal turning and stopping maneuvers.* US 60 has numerous access points and would not fit these criteria.
- *No other acceptable alternative improvement solutions exist.* Several other improvement alternatives are proposed for this corridor in this study area that are feasible options including the four lane and six lane alternatives as well as the various spot options.
- *A minimum of two lanes per direction is suggested to maintain traffic flow and allow for turning traffic.* As US 60 is now, this is not possible with the four lanes of traffic. If the two-way left-turn lane was removed, this additional pavement could be used for another travel lane making it feasible to have three lanes in the dominant traffic flow direction and two in the minor direction.

Given the noted concerns about the operation of a reversible lane system along US 60, this alternative is not recommended for further study at this time. Other, more feasible alternatives have been developed that address the corridor transportation issues in a better manner (i.e., while not compromising congestion and safety). Furthermore, attendees at the second local officials and stakeholder meeting agreed to remove this alternative from further consideration.

The remaining three alternatives and options were advanced to the next stage for detailed analysis.

⁵ Planning and Operational Practices for Reversible Roadways, ITE Journal, August 2006

8.0 Detailed Analysis

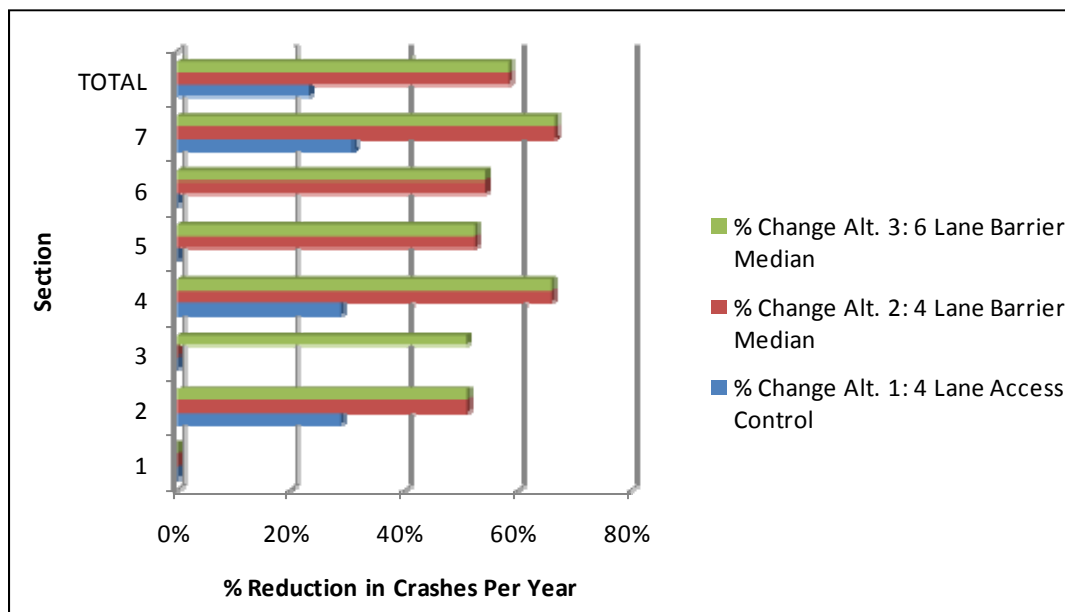
After the preliminary analysis, Alternatives 1, 2, and 3 were retained as feasible alternatives. A more detailed evaluation was then performed with respect to safety, traffic, right-of-way impacts, and costs. The following sections explain the evaluation criteria, and how the alternatives perform in each of those categories.

8.1 Safety

The Highway Safety Manual (HSM) was used to quantify the safety impacts of each of the alternatives. The predictive models for urban and suburban arterials were used to calculate an expected percentage reduction in crashes per year for each alternative. The predicted value is the predicted average crash frequency for a specific year. The current year (2014) traffic volumes were used to compare the changes in crash frequency as a result of alternative modifications. Crash modification factors were changed to account for whether or not the median is divided as well as the access point density. Based on the access modifications, each segment along the corridor was reviewed to determine the number of access points and the number that were closed to calculate a new access point density as a result of the alternative.

The results of this analysis are shown in **Figure 16** below. Section 1 begins at the US 60 / US 460 intersection for reference.

Figure 16: Changes in Expected Crash Frequency



Alternatives 2 (4 Lane Barrier Median) and 3 (6 Lane Barrier Median) have the highest impact on the potential for reduction in crashes per year. The average percent reduction in crashes per year for the entire corridor is 58 percent. Alternative 1 (4 Lane Access Control) results in an average percent reduction in crashes per year for the entire corridor of 23 percent. Overall, all three alternatives provide some level of anticipated improvement in safety throughout the corridor.

8.2 Traffic Impacts

A methodology was devised to quantify the impact of limiting left turns to signalized intersections only through the corridor (i.e., Alternatives 2 and 3). For an assessment of traffic operations related to Alternative 1, refer to the future year 2040 analysis shown earlier in this report. Traffic operations for the additional options were not evaluated as these are primarily located off of the mainline corridor and traffic volume information was not readily available for an assessment.

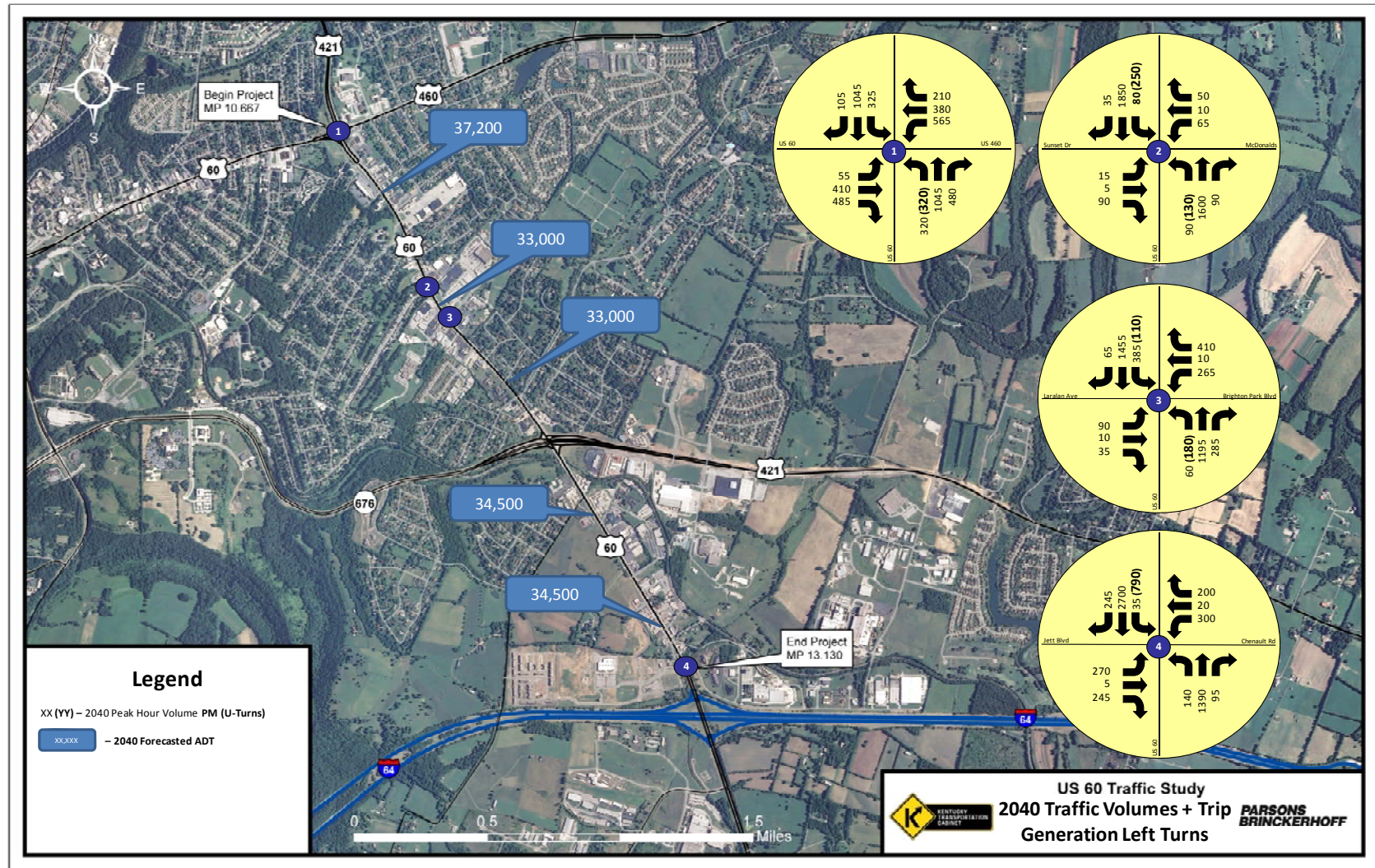
Based on the previous traffic analysis work completed to assess existing and future year options, it was determined that the PM peak period resulted in higher levels of delay. Therefore this assessment for the impact of installing medians with regard to traffic operations was limited to the PM peak period. It was assumed the AM peak period would operate as well as or better than operations for the PM peak period.

The ITE Trip Generation Manual, 9th Edition was the initial source of information used to quantify the traffic volumes accessing different land uses for each business. Only major trip generators were considered at this point. Residences that generate only a couple of trips were not considered. The following steps were then undertaken to arrive at the potential left turn volume at the signalized intersections:

1. A summary table of land use codes was created along the corridor. The list was then generalized to reduce the number of land uses to be assigned along the corridor by grouping similar land uses.
2. Existing driveways were counted and a land use code was assigned to each.
3. Information was then gathered to derive the number of trips expected based on variables in the Trip Generation Manual for each use. Most properties had individual driveways. In cases where properties shared a driveway, the total number of trips was assigned.
4. The number of additional left turns was then calculated that would be processed at the closest intersection(s). This task began by quantifying the number of trips impacted by the addition of a median along US 60 between signalized intersections, using the steps below.
 - a. Used the entering and exiting trips generated per business in Step 3.
 - b. Assumed entering and exiting trips would mirror the traffic split along the corridor in that section.
 - c. The assumed split allowed a calculation to be made for how entering and exiting trips came from the northbound or southbound sides of the road.
 - d. A summation of the totals between intersections gave a total number of additional left turns.

After reviewing the initial results, further review was performed for the southern portion of the corridor between Hanly Avenue and Jett Boulevard. The distance between existing signals led to a significant increase of traffic. The project for Option 8 leads to a new signalized intersection that connects Zaxby's and KFC with a re-aligned Capitol Center Drive. This additional break was considered and left turning traffic re-assigned accordingly. **Figure 17** shows the additional left turn traffic at the four study area intersections. Other intersections were not included in the evaluation as turning movement counts were not available at this time.

Figure 17: 2040 Traffic Volumes with Approximate Additional Left Turns



The HCS 2010 software was then used to evaluate the resulting levels of service and volume to capacity ratios. **Figure 18** provides a summary of this information.

Scenario 1 shown on the figure illustrates the intersection operations without any additional modifications to capacity. Scenario 2 shows additional turn lanes / modifications that would improve traffic operations. This includes channelized right turn lanes from US 421 to US 60 and from US 60 to US 460 and additional turn lanes at the Sunset Drive and Brighton Park Boulevard intersections (in keeping with the recommendations made in the initial traffic analysis). No additional turn lanes were recommended for the Jett Boulevard intersection as this intersection is currently almost fully built out and the improvement in delay is not substantial enough to warrant the cost of improvements. Scenario 3 builds upon Scenario 2 and includes the additional through lane associated with Alternative 3.

Table 7 provides a detailed summary of the delay, level of service, and volume to capacity ratio impacts associated with the proposed intersection changes and alternatives. The impact with the additional left turning traffic in the four lane scenario does increase delay for almost every movement and overall for the four evaluated intersections. The change in delay is not as dramatic with the six lane scenario. In some cases, the delay is actually reduced.

As shown in the figure and table, the four intersections evaluated have operational concerns in the future even with proposed capacity projects. Closely spaced intersections, particularly Brighton Park Boulevard and Sunset Drive with US 60 as well as the Jett Boulevard and I-64 interchange with US 60, affect signal timings and can lead to poor intersection operations. Also, the Brighton Park Boulevard and Jett Boulevard intersections operate currently with split phasing on the side streets. Consideration was made to modify the phasing to remove the split phasing; however, minor improvements were achieved according to the HCS software output. Therefore, for these two intersections, the signal phasing was left as it currently is and the timing optimized only, as other changes such as turn lanes were evaluated.

There are some improvements in operations to note. It is possible to achieve a LOS D / E overall for the intersection of US 60 and US 460 (compared to the existing LOS F) by channelizing the northbound / southbound right turn movements. In addition, a LOS E is possible for the US 60 and Brighton Park Boulevard intersection (compared to the existing LOS F) by providing a second left turn lane from US 60 to Brighton Park Boulevard and adding the additional through travel lane for a total of three per direction. The intersection of US 60 and Jett Boulevard is located where there is significant on-going development which is expected to put additional capacity constraints on this intersection in the future. This is reflected by the poor LOS (LOS F) regardless of scenario. The notable improvement for this intersection is that by adding the additional through lane for capacity with Alternative 3, the delay is reduced by eight percent.

At this time, there is no committed funding in the Six Year Highway Plan for additional improvements along US 60. Therefore additional analysis is not warranted at this time for study of these intersections. The capacity concerns noted from this study should be considered along with the proposed improvement alternatives in the next phase of project development – Phase I Design.

Figure 18: 2040 Proposed Intersection Configurations

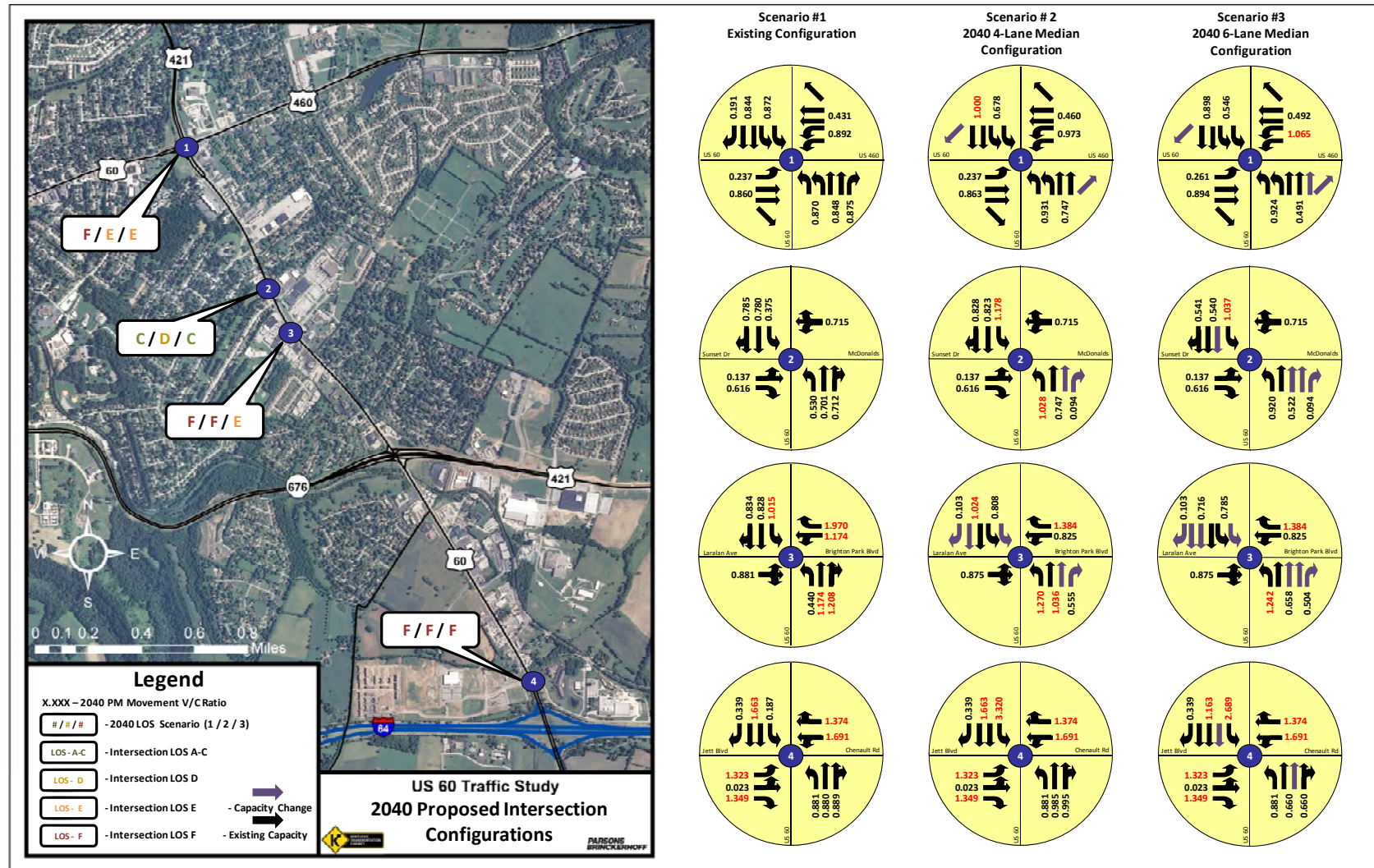


Table 7: Traffic Operations Summary

Intersection	Movement	PM - Existing			PM - Modified Alt. 1			PM - Modified Alt. 2			% Change Delay to PM Modified	PM - Modified Alt. 3			% Change Delay to PM Modified
		Delay	LOS	V/C	Delay	LOS	V/C	Delay	LOS	V/C		Delay	LOS	V/C	
US 60 and Main Street	EB	69.4	F	0.86	52.8	D	0.72	69.3	E	0.86	31%	85.4	F	0.89	62%
	WB	56.1	F	0.89	40.5	D	0.81	68.8	E	0.97	70%	89.4	F	1.07	121%
	NB	54.5	E	0.88	46.6	D	0.91	51.0	D	0.93	9%	40.0	D	0.92	-14%
	SB	53.1	E	0.87	46.2	D	0.91	71.7	E	1.00	55%	47.6	D	0.90	3%
	Overall	55.8	F	0.89	45.8	D	0.91	63.0	E	1.00	38%	57.5	E	1.07	26%
US 60 and Sunset Drive	EB	69.3	E	0.62	69.3	E	0.62	69.3	E	0.62	0%	69.3	E	0.62	0%
	WB	72.3	E	0.72	72.3	E	0.72	72.3	E	0.72	0%	72.3	E	0.72	0%
	NB	16.3	B	0.71	14.3	B	0.70	29.8	C	1.03	108%	18.8	B	0.92	31%
	SB	19.3	B	0.79	19.2	B	0.79	46.0	D	1.18	140%	27.4	C	1.04	43%
	Overall	21.0	C	0.79	20.0	C	0.79	40.2	D	1.18	101%	26.0	C	1.04	30%
US 60 and Brighton Park	EB	94.2	F	0.88	76.5	F	0.88	76.5	E	0.88	0%	76.5	E	0.88	0%
	WB	383.7	F	1.97	181.8	F	1.38	181.8	F	1.38	0%	181.8	F	1.38	0%
	NB	145.6	F	1.21	55.5	F	0.94	94.7	F	1.27	71%	60.6	E	1.24	9%
	SB	52.0	D	1.02	51.6	D	0.94	70.1	E	1.02	36%	43.2	D	0.79	-16%
	Overall	140.4	F	1.97	74.8	F	1.38	96.3	F	1.38	29%	71.6	E	1.38	-4%
US 60 and Jett Blvd	EB	247.4	F	1.35	247.4	F	1.35	247.4	F	1.35	0%	247.4	F	1.35	0%
	WB	344.7	F	1.69	344.7	F	1.69	347.7	F	1.69	1%	347.7	F	1.69	1%
	NB	48.8	D	0.89	48.8	D	0.89	71.7	E	1.00	47%	39.0	D	0.88	-20%
	SB	310.9	F	1.66	310.9	F	1.66	490.5	F	3.32	58%	267.4	F	2.69	-14%
	Overall	233.0	F	1.69	233.0	F	1.69	353.6	F	3.32	52%	214.6	F	2.69	-8%

8.3 Community and Environmental Impacts

Following the development of the alternatives, an additional assessment was performed to evaluate any additional or specific impacts with the proposed improvements. The evaluation showed that most improvements fall within the study area previously assessed. It was noted that in Option 7, where the extension of the road connects with Locust Drive, there is a historical auto repair business (per the Electronic Data Reporting) in the vicinity. Further review of the exact location and impact would need to be noted for future development of this option.

An additional environmental concern was discussed at the second local officials and stakeholder meeting. For Option 6, the area in question for the improvement incorporates a former bulk oil facility. There have been noted issues with leeching petro chemicals coming to the surface. Recently two USTs were also removed from the area. This issue would need to be taken into consideration with further development of this option.

The corridor is primarily lined with commercial, office, or business land uses. Impacts to access for business owners are a concern with all of the alternatives. The intent of the study and possible modifications are to improve safety and traffic operations overall for the corridor, thereby improving access and flow to destinations along the corridor (i.e., eliminating long queues and congestion between intersections). Regarding the permitting process for changing property access, as individual development plans are submitted for approval, KYTC typically manages access through the permitting process. Implementation of wholesale access changes may not be feasible; therefore it may be more reasonable to target individual areas designated per the plans for access considerations. It thereby becomes a slow and methodical process to consolidate and / or eliminate access. A consideration would be to monitor any changes in property ownership and try to implement access recommendations at that time at the individual property level.

8.4 Geotechnical Overview

The Geotechnical Branch of KYTC completed a review of the project study area. A summary of the findings is given below. For the full geotechnical documentation, refer to **Appendix I**.

The study area is located in the Frankfort East Geologic Quadrangle. The predominate formation in the study area is the Lexington Limestone Formation. This formation is susceptible to developing karst-related issues. Mapping indicates a few sinkholes are present near the study area. The other formation of note is the Clays Ferry Formation in the higher elevation section between US 460 and KY 676. This is limestone and shale which can be susceptible to weathering. Rock cut slopes in the area require site specific design. Furthermore, artificial fill should be anticipated due to the amount of development in the area. Typical soil depths are less than 20 feet and there are numerous places where bedrock is outcropped.

8.5 Cost

Planning-level construction costs were also calculated at this stage of the analysis, and are shown in **Table 8**. All costs are in current year (2014) dollars. Right-of-way and utilities costs were estimated by KYTC District 5. The full spreadsheet of right-of-way and utilities costs as provided by the District is included in **Appendix J**.

It should be noted that with the numerous impacts to property access points, a number of temporary easements will need to be acquired for construction purposes. This additional cost is included with the right-of-way acquisition cost. Numbers of impacts (acres for right-of-way and number of temporary easements) are estimated and included in **Table 8** for reference.

Table 8: Planning-Level Cost Estimates

Alt. #	Description	ROW Impacts		Cost				
		Temporary Easement (#)	ROW (acres)	Construction	Design	ROW	Utilities	Total (\$)
Alternative 1	Access considerations	58	0.6	\$7,570,000	\$500,000	\$910,000	\$190,000	\$9,170,000
Alternative 2	Four lanes with divided median	66	0.6	\$8,670,000	\$600,000	\$970,000	\$210,000	\$10,450,000
Alternative 3	Six lanes with divided median	82	2.2	\$11,580,000	\$700,000	\$3,720,000	\$660,000	\$16,660,000
Option 1	Access road extension	1	0.3	\$110,000	\$11,000	\$220,000	\$30,000	\$371,000
Option 2	Eastwood Shopping Center connection	2	0.9	\$140,000	\$14,000	\$360,000	\$0	\$514,000
Option 3	Kroger Shopping Center connection	2	0.6	\$150,000	\$15,000	\$440,000	\$60,000	\$665,000
Option 4	Dollar Tree Shopping Center connection	1	0.4	\$150,000	\$15,000	\$180,000	\$0	\$345,000
Option 5	KY Teachers Retirement entrance consolidation	3	0.4	\$170,000	\$17,000	\$310,000	\$0	\$497,000
Option 6	Extend access from Country Lane	2	0.0	\$50,000	\$5,000	\$50,000	\$10,000	\$115,000
Option 7	Realign Hanly Lane	4	0.8	\$470,000	\$47,000	\$520,000	\$50,000	\$1,087,000
Option 8	Realign Capitol Center Drive	4	1.9	\$670,000	\$67,000	\$1,220,000	\$50,000	\$2,007,000
Option 9	Remove gates and improve Breckenridge Blvd	3	0.4	\$30,000	\$3,000	\$190,500	\$0	\$223,500
Option 10	Bicycle / pedestrian connections	N/A - Part of Master Plan						

Notes: Planning cost estimates are in current year dollars (2014)
Right-of-Way and Utility costs provided by KYTC District 5
Construction and Design costs determined by Parsons Brinckerhoff

9.0 Recommendation

Based on the alternatives analysis, the PDT discussion, and inputs from the local officials and stakeholders, the decision was made to carry forward all three alternatives to the next phase of project development. Alternatives 1, 2 and 3 all provide different benefits and have different impacts, but are essentially all feasible at this time. A summary of the detailed analysis shows:

- Alternatives 2 and 3 are predicted to have the greatest safety benefits with the highest percentage reduction in crashes per year, while Alternative 1 is also expected to provide some improvement in the number of crashes per year along the corridor.
- While limiting access points along the corridor improves safety, it can have an adverse effect on the intersections that will accommodate more traffic. The traffic analysis shows that some movements, particularly the left turns on and off of US 60 may experience an increase in v/c ratio and reduction in level of service in Alternatives 2 and 3.
- Each of the three alternatives will have some impacts to access of businesses along US 60.
- Alternative 1 is the least expensive alternative, followed by Alternatives 2 and 3 respectively.

When asked to identify the preferred alternative, the following is the distribution of points assigned to each alternative based on local officials and stakeholder input. The lower the point total indicates a higher preference for the alternative:

- Alternative 1 – 13 points
- Alternative 2 – 11 points
- Alternative 3 – 6 points

The point total distribution indicates a slightly higher preference for Alternative 3 at this time. Note that only six stakeholders provided a ranking.

Additional consideration was given to the prioritization of the project options. Local officials and stakeholders were asked to assign a “low, medium, or high” priority to Options 1 through 8 as well as Option 10 (Note that Option 9 was included following the submittal of this report. Therefore local officials and stakeholders were unable to provide any feedback on it and it is not included in the rankings). The number of assignments by response is provided in **Table 9**. Based on this input a priority was assigned to each project. The PDT agreed with the general assignment as determined by the local officials and stakeholders.

Table 9: Project Option Prioritization

Option	Description	# of Responses			Priority
		High Priority	Medium Priority	Low Priority	
Option 1	Access road extension	2	2	1	Medium
Option 2	Eastwood Shopping Center connection	1	2	1	Medium
Option 3	Kroger Shopping Center connection	6	0	0	High
Option 4	Dollar Tree Shopping Center connection	4	1	0	High
Option 5	KY Teachers Retirement entrance consolidation	0	1	4	Low
Option 6	Extend access from Country Lane	0	1	3	Low
Option 7	Realign Hanly Lane	0	5	0	Medium
Option 8	Realign Capitol Center Drive	4	2	0	High
Option 9	Remove gates and improve Breckenridge Blvd	N/A – Option included after ranking process			
Option 10	Bicycle / pedestrian connections	2	0	0	High

9.1 Additional Considerations

Some considerations that should be noted for future project development related to the feasible alternatives are provided below. These are based on discussions with the PDT and the local officials and stakeholders.

Mountable Median – For Alternatives 2 and 3 that include a median, there was substantial discussion on what type of median treatment should be specified. For aesthetic purposes, a grass median with low-maintenance plantings could be considered. The concern with a grass median is the ability to maintain some type of cross-over functionality for police, fire and EMS vehicles. A solution to consider both the aesthetic and functional aspects of the median would be to design a mountable median with grass pavers. There should be enough differentiation in height to discourage regular vehicular traffic from traversing the median but low enough to allow for crossover of larger police, fire and EMS vehicles. Grass pavers have the advantage of being load-bearing, low-maintenance (similar to mowing a lawn), and allow rainfall to permeate and decrease run-off.

Numbered Intersections – To help facilitate business location and access, the consideration of numbering the intersections and installing signs for this through the corridor was discussed. This will enable businesses to advertise where they are located and has been considered a desirable way-finding tool in other community settings. Examples for reference include US 27 through Somerset, Kentucky and along US 441 in Pigeon Forge, Tennessee.

Pedestrian Accommodations – If Alternative 3 is selected for future project development, additional consideration will need to be given to pedestrian crossings at intersections. With a wider typical section (three lanes per direction), refuge islands and pedestrian signal timing needs to be considered to safely accommodate crossings.

9.2 Funding / Next Steps

At this time there is no funding in the 2014 Highway Plan for any future phases of project development. Funding would need to be secured, if desired, for future project development. Further review in Phase I Design should provide the necessary evaluation (including public input) on the preferred treatment of the entire corridor. Many of the option projects are located outside the right-of-way and on private property or City / County property. Further project development may need to go through the City of Frankfort and / or Franklin County for these projects.

10.0 Contacts / Additional Information

Written requests for additional information should be sent to:

John Moore, Director
KYTC Division of Planning
200 Mero Street
Frankfort, Kentucky 40622

Additional information regarding this study can also be obtained from the KYTC District 5 Project Manager, Tom Hall, at (502) 210-5400 or via email at tom.hall@ky.gov.



FINAL REPORT

US 60 Traffic Study

Kentucky Transportation Cabinet
Division of Planning
District 5

**PARSONS
BRINCKERHOFF**