

# Leitchfield-Clarkson Small Urban Area Study

## Grayson County, Kentucky



**Kentucky Transportation Cabinet**

**Division of Planning**

**July 2011**



Division of Planning



# TABLE OF CONTENTS

## Executive Summary

1.0 - Study Purpose.....	1
2.0 - Study Process.....	1
3.0 - Transportation Data.....	2
3.1 - Road Network.....	2
3.2 - Adequacy Ratings.....	2
3.3 - Crash Data.....	4
3.4 - Traffic Data.....	6
4.0 - Environmental and Socioeconomic Data.....	8
5.0 - Existing Projects.....	9
6.0 - Recommended Improvements.....	10
6.1 - Completed Traffic and Maintenance Improvements.....	11
6.2 - Ongoing Traffic and Maintenance Improvements.....	12
6.3 - Construction Projects.....	14

## Tables:

Table 1: Crash Details for High-Crash Segments & Spots.....	4
Table 2: Existing & Projected Volume to Service Flow Ratios.....	7
Table 3: Biennial Highway Plan Projects in Study Area.....	9
Table 4: UPL Projects in Study Area.....	10
Table 5: Recommended UPL Projects to Address Identified Issues.....	17

## Appendix A - Exhibits

Exhibit 1: Area Map	
Exhibit 2: Composite Adequacy Rating Percentiles	
Exhibit 3: Analysis of High-Crash Segments & Spots	
Exhibit 4: 2008 Traffic Data & Levels of Service	
Exhibit 5: 2008 Traffic Data & Volume to Service Flow Ratios for Urban & Low-Speed Streets	
Exhibit 6: 2035 Traffic Data & Levels of Service	
Exhibit 7: 2035 Traffic Data & Volume to Service Flow Ratios for Urban & Low-Speed Streets	
Exhibit 8: Environmental Footprint	
Exhibit 9: UPL & Biennial Highway Plan Projects	
Exhibit 10: Locations of Recommended Improvements and Other Issues	

## Appendix B - Photographs

## Appendix C - Environmental Justice and Community Impact Report

## Appendix D - Meeting Minutes

December 17, 2008: Initial Project Team Meeting	
June 11, 2009: Leitchfield Advisory Committee Meeting	
June 11, 2009: Clarkson Advisory Committee Meeting	
December 7, 2009: Second Project Team Meeting	

**EXECUTIVE SUMMARY**

The *Leitchfield-Clarkson Small Urban Area Study* was prepared by the Division of Planning and Highway District 4 of the Kentucky Transportation Cabinet using a project team approach. The purpose of the study was to identify deficiencies in the transportation network in the Leitchfield-Clarkson urban area, and to recommend solutions to address those deficiencies. To assist in this effort, data on highway adequacy ratings, crash rates, traffic volumes, and highway capacity was retrieved and analyzed for state-maintained highways within the urban area. Meetings were also held with local officials and stakeholders from the cities of Leitchfield and Clarkson to obtain additional information on issues of local concern. As a result of this process, a number of transportation-related issues were identified in the urban area. Several traffic and maintenance improvements were identified to address these issues. Many of these improvements have already been implemented as of the writing of this report, while others are ongoing. These projects are listed below, and their locations are mapped in [Exhibit ES-1](#).

**Completed Traffic and Maintenance Improvements:**

- **US 62 near the Clarkson Church of Christ:** Local officials indicated that a vertical curve just east of the Clarkson Church of Christ could be causing sight distance issues. The District Office investigated this location and found that the sight distance along US 62 to the east of the Clarkson Church of Christ entrance is less than the recommended sight distance for a 55 MPH design speed, which is the posted speed limit along this section of US 62. The District Office has installed a traffic warning sign with an advisory speed plaque to advise motorists at this location.
- **North Patterson Street (KY 2191) in Clarkson:** Local officials requested that the Highway Department consider lowering the speed limit to 20 MPH or 25 MPH. A speed study performed by the District Office did not justify lowering the speed limit, so the speed limit should remain as posted.
- **KY 259 at the Western Kentucky Parkway Eastbound On-Ramp:** Vehicles tend to miss or overshoot the left turn from southbound KY 259 onto the eastbound Parkway on-ramp. The district office replaced the left-turn arrows and added thermoplastic striping to better delineate the traveled way on the ramp.
- **KY 3155 at the transition from five lanes to two lanes:** Local officials requested traffic control improvements at this location. The District Office has replaced a merge sign and added pavement merge arrows.
- **KY 54 at Bel Cheese factory:** Local officials indicated that there is a perceived safety issue at the cross-walk on KY 54 at the Bel Cheese factory just west of downtown Leitchfield. This location was not identified as having a high Critical Rate Factor, and no

collisions with pedestrians were identified during the time period for which crash data was obtained. However, the District Office did replace the 8-inch flashing beacons with 12-inch flashing beacons.

- **KY 259 at US 62 (White Oak Street):** Overhead signs for the northbound lane drop were knocked down. The District Office has added a left-turn arrow and has replaced the overhead lane-use signs.
- **US 62 at KY 3155:** Local officials indicate that there is a blind spot which may contribute to red-light running. The District Office has added reflective backplates to the signal heads on the KY 3155 southbound approach to improve their visibility.

#### Ongoing Traffic and Maintenance Improvements

- **US 62 near Milepoint 24.4 in Clarkson:** The culvert under US 62 near Midway Propane becomes clogged, possibly due to runoff from a large gravel parking lot. Maintenance will keep an eye on this location to make sure water doesn't overflow the roadway. Clarkson officials should discuss the erosion issue with the property owner.
- **KY 88 near US 62 in Clarkson:** There is a large drop-off into a ditch at the alley behind the car-wash, which is located on KY 88 just south of US 62. The alley is a city street, so the city would be responsible for extending the culvert. The estimated cost of this project is \$1,500.
- **KY 224 in Clarkson:** There are drainage issues along KY 224, particularly near the US 62 intersection. Maintenance will schedule work to clean the culverts and drainage pipes in this area. Drainage improvements in this area may be considered during the design phases of the KY 224 and US 62 (MP 23.000 to MP 25.463) reconstruction projects as listed in [Table ES-1](#).
- **KY 259 south of the Western Kentucky Parkway:** There has been confusion about which of the southbound lanes ends at the transition from a five-lane to a two-lane cross-section. The District Office has added merge signs and pavement merge arrows, and will re-evaluate the distance that the skip line separating the two southbound lanes of KY 259 extends toward the merge area the next time the road is resurfaced.
- **Western Kentucky Parkway between Milepoints 108 and 109:** Local officials report that frequent crashes occur in the westbound lanes when it rains. An analysis of crash data did not identify this location as a high-crash spot, and no drainage problems were noted during a field visit. The District Office will monitor the situation and will coordinate with maintenance to see if there are any pavement issues that need to be addressed.
- **KY 259 at US 62 north intersection (Mill Street), US 62 south intersection (White Oak Street), and Shain Drive:** Local officials report that vehicles are turning right on red at these intersections without coming to a complete stop. Increased enforcement is

recommended at these locations. In addition, the stop bar at Shain Drive could be extended to be compatible with the recently increased curb radius at this location.

- **KY 54 at Cannon Drive in Leitchfield:** This location was identified as having a high crash rate. Taken together, angle and opposing left turn crash types made up two-thirds of the crashes at this location. Sight distance at this location may be reduced by both on-street parking and by vehicles queued at the KY 259 intersection. The district office will investigate this location to determine if any potential improvements could be implemented to improve safety.
- **US 62 (South Main Street) from White Oak Street to KY 54:** This segment is approximately 0.2-mile long and consists of one wide lane in the northbound direction and two lanes in the southbound direction, with no median or center turn lane. Only one southbound lane enters this segment from the traffic circle at East Main Street and West Main Street, but the southbound direction immediately transitions to two lanes just south of the traffic circle, which continue beyond the Western Kentucky Parkway. The northbound approach to this segment consists of two lanes, but one of these lanes is dropped as a left-turn lane onto westbound US 62 (West White Oak Street). A cluster of three overlapping one-tenth-mile high-crash spots combine to cover the southern portion of this segment and contribute to a very low adequacy rating for the segment. An analysis of the crash data from White Oak Street (Milepoint 20.737) north to Milepoint 20.9 revealed a total of 23 crashes from August 2005 to August 2008, with the most common manners of collision being rear-end (43%), angle (39%), and same-direction sideswipe (13%). The Kentucky Transportation Center (KTC) at the University of Kentucky is currently working on a research study to identify criteria under which a “road diet” would be appropriate. Based on the crash patterns and preliminary information from the KTC research study, it appears that the crash rate on this section could be reduced by implementing a road diet, which would involve converting the three through lanes to two through lanes (one lane in each direction) with a two-way left-turn lane. However, with a 2008 Average Daily Traffic volume (ADT) of 16,500 vehicles per day and an estimated no-build 2035 ADT of 19,400 vehicles per day, maintaining adequate roadway capacity could be an issue, particularly for the southbound direction at the White Oak Street intersection. Construction of a western bypass around Leitchfield, which is included on the Unscheduled Projects List, is expected to reduce traffic on US 62 through downtown Leitchfield. Therefore, it is recommended that a road diet be considered at this location once the western Leitchfield bypass is constructed and its effect on traffic patterns in downtown Leitchfield is determined. Typically, road diets are implemented during resurfacing projects.

Other issues were identified which could be better addressed by construction projects. Due to the extensive coverage of the Leitchfield-Clarkson area by projects already contained on the Unscheduled Projects List (UPL), no new projects were identified for addition to the UPL. However, a list of existing UPL projects which would address issues identified by the Leitchfield-Clarkson Small Urban Area Study is provided in [Table ES- 1](#). All information for these projects was obtained directly from the UPL database. The locations of these projects are mapped in [Exhibit ES-1](#).

Table ES- 1: Recommended UPL Projects to Address Identified Issues

Unscheduled Projects List Control Number	Route	Begin Mile Point	End Mile Point	Project Description	Estimated Cost (Millions of Dollars)*	District Priority†
04 043 B0062 10.00	US-62	18.952	20.800	Address geometric deficiencies on US-62 from KY-259 to KY-187.	P-0.1, D-1.5, R-1.0, U-1.0, C-7.2 <b>Total-10.8</b>	Medium
04 043 B0062 9.00	US-62	23.000	25.463	Reconstruct US-62 from KY-3155 in Leitchfield to KY-224 in Clarkson to improve geometric deficiencies and address capacity issues.	D-1.5, R-2.0, U-1.0, C-20.0 <b>Total-24.5</b>	High
04 043 D0224 1.00	KY-224	0.000	0.804	Reconstruct KY-224 from US-62 to the Western Kentucky Parkway to address geometric deficiencies and improve safety.	D-0.5, R-0.8, U-0.7, C-3.25 <b>Total-5.25</b>	High
04 043 D0920 1.00	KY-920	0.000	1.500	Reconstruct KY-920, possibly as a 3-lane urban section, from US-62 to KY-3155 to improve geometric deficiencies.	D-0.75, R-1.0, U-0.5, C-4.5 <b>Total-6.75</b>	Low
04 043 D1214 1.00	KY-1214	13.125	14.000	Address geometric deficiencies on KY-1214 between the East Leitchfield Bypass and the Western Kentucky Parkway in conjunction with a new interchange on the Western Kentucky Parkway at KY-1214.	P-0.2, D-0.6, R-0.7, U-0.5, C-3.0 <b>Total-5.0</b>	Low
04 043 D9001 16.00	WK-9001	109.275	109.375	Improve system linkage by adding an interchange on the Western Kentucky Parkway at KY-1214 in conjunction with improvements to KY-1214 between the Parkway and the East Leitchfield Bypass.	P-0.2, D-1.0, R-1.0, U-0.8, C-5.0 <b>Total-8.0</b>	Low
04 043 C0000 1.10	New Route			Construct a bypass section from KY-259 northwest to KY-54 to address congestion in Leitchfield and provide connectivity on the west side.	D-1.4, R-10.2, U-0.6, C-11.3 <b>Total-23.5</b>	N/A
04 043 C0000 1.20	New Route			Construct a bypass section from KY-54 north to KY-737 to improve connectivity on the west side of Leitchfield.	D-1.1, R-3.5, U-0.12, C-9.1 <b>Total-13.8</b>	Low
04 043 C0000 1.30	New Route			Construct a bypass section from KY-737 east to KY-259 to provide connectivity and improve access to the industrial park in north Leitchfield.	D-0.6, R-1.1, U-0.13, C-4.4 <b>Total-6.23</b>	Low
*Phase Abbreviations: P-Planning, D-Design, R-Right-of-Way, U-Utilities, C-Construction						
†District priorities were obtained from the Unscheduled Projects List database.						

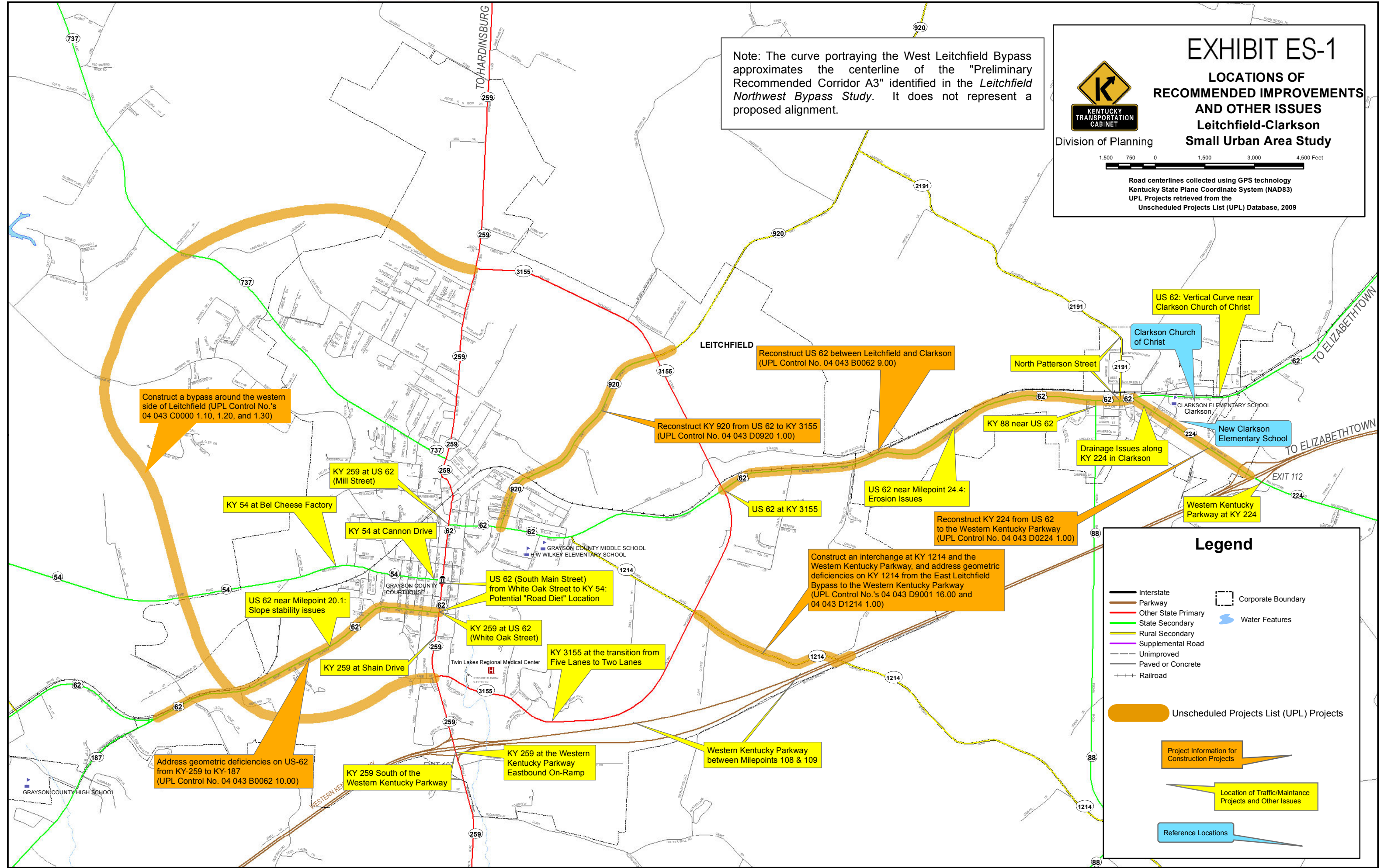
**EXHIBIT ES-1**  
**LOCATIONS OF RECOMMENDED IMPROVEMENTS AND OTHER ISSUES**  
**Leitchfield-Clarkson Small Urban Area Study**

KENTUCKY TRANSPORTATION CABINET  
 Division of Planning

1,500 750 0 1,500 3,000 4,500 Feet

Road centerlines collected using GPS technology  
 Kentucky State Plane Coordinate System (NAD83)  
 UPL Projects retrieved from the  
 Unscheduled Projects List (UPL) Database, 2009

Note: The curve portraying the West Leitchfield Bypass approximates the centerline of the "Preliminary Recommended Corridor A3" identified in the *Leitchfield Northwest Bypass Study*. It does not represent a proposed alignment.



**Legend**

- Interstate
- Parkway
- Other State Primary
- State Secondary
- Rural Secondary
- Supplemental Road
- Unimproved
- Paved or Concrete
- Railroad
- Corporate Boundary
- Water Features

Unscheduled Projects List (UPL) Projects  
 Project Information for Construction Projects  
 Location of Traffic/Maintenance Projects and Other Issues  
 Reference Locations



## **1.0 STUDY PURPOSE**

The purpose of this Small Urban Area Study is to identify deficiencies in the transportation network in the Leitchfield-Clarkson urban area, and to recommend solutions to address those deficiencies. The primary emphasis of this study is on traffic operations and maintenance improvements that can be implemented relatively quickly and inexpensively, and a number of the recommended improvements have already been implemented as of the writing of this report. A listing of recommended improvements, as well as the status of these improvements, is included in Section 6 of this report.

## **2.0 STUDY PROCESS**

This study was conducted using a project team approach. The project team included representatives of the Kentucky Transportation Cabinet (KYTC) Central Office, the KYTC Elizabethtown Highway District Office, and the Lincoln Trail Area Development District. In addition, input was solicited from project advisory committees consisting of local officials and stakeholders. The following steps were completed in the development of this study:

- The initial step in the study process was to obtain data for the study area including traffic volumes, levels of service, volume-to-service-flow ratios, crash rates, and adequacy ratings.
- A field visit was conducted in October 2008 to obtain a better understanding of the study area, with particular emphasis on locations identified as having high crash rates since safety was the main area of concern identified from an analysis of available data.
- An initial project team meeting was held on December 17, 2008. At this meeting, initial data on adequacy ratings, crash history, traffic volumes, and planned area projects were presented to the project team for discussion. Specific transportation concerns of the project team members were discussed, including non-highway projects which could impact future traffic patterns. Preparations were made for Advisory Committee meetings, and the District Office agreed to review high-crash locations for potential safety improvements.
- Two Advisory Committee meetings were held on June 11, 2009 (one in Leitchfield and one in Clarkson) to obtain input from local officials and stakeholders. In both of these meetings, data on adequacy ratings, crash history, traffic volumes, and planned area projects were presented to the Advisory Committee. Advisory Committee members then provided input on their concerns about the transportation system in the study area. Most of the problems identified in these meetings were related to traffic, safety, and maintenance. In general, the Advisory Committee in Leitchfield provided more information about issues in Leitchfield, while the Advisory Committee in Clarkson provided more information about issues in Clarkson. However, both Advisory

Committees expressed the need for improvements to US 62 between Leitchfield and Clarkson. Other issues which could potentially be addressed by construction projects (as opposed to maintenance and traffic projects) included sight distance limitations at the vertical curve on US 62 near the Clarkson Church of Christ (between 2<sup>nd</sup> Street and Bethel Church Road in Clarkson) and improvements to KY 224 to accommodate traffic from the new Clarkson Elementary School building, which will have its main entrance on KY 224. Both of these issues were mentioned at the Clarkson Advisory Committee meeting.

- A field visit was conducted in July 2009 to further investigate issues identified by the project team and the advisory committee.
- A final project team meeting was held on December 7, 2009 to make recommendations to address identified concerns. Because most of the issues identified were related to traffic, safety, and maintenance, the suggested solutions tended to be traffic and maintenance type projects. The project team also noted that implementation of several projects currently identified on the Unscheduled Projects List would address many of the issues identified in the project area.

Detailed minutes for the project team meetings and advisory committee meetings are included in [Appendix D](#) of this report.

### **3.0 TRANSPORTATION DATA**

#### **3.1 Road Network**

Data was retrieved for state-maintained routes within the incorporated areas of Leitchfield and Clarkson. A map showing these routes, along with the route mile points at key intersections and the corporate limits, is included as [Appendix A, Exhibit 1](#).

#### **3.2 Adequacy Ratings**

The Division of Planning calculates composite adequacy ratings for state-maintained roadway sections. These composite adequacy ratings are based on functional classification; pavement condition as measured by the International Roughness Index; safety factors including lane width, shoulder width, median type, horizontal alignment, and crash history; and traffic service factors including volume to service flow ratio and access control. These composite adequacy ratings are then used to calculate composite adequacy rating percentiles for each roadway section. For example, if a roadway section had a composite adequacy rating percentile of 25, this would indicate that 25% of state-maintained roadway sections in Kentucky have a lower composite adequacy rating, while 75% have a higher composite adequacy rating.

Composite adequacy rating percentiles for state-maintained roadway sections within the study area were obtained from the Division of Planning's Highway Information System (HIS) database and are shown graphically in [Appendix A, Exhibit 2](#). These composite adequacy rating percentiles give a good idea of the overall adequacy of each roadway section compared to other roadway sections throughout the state. Several sections had composite adequacy rating percentiles of less than 15:

- KY 88 in Clarkson: The low adequacy rating is primarily due to the safety component. However, a crash rate analysis showed this section as having an overall critical rate factor (as defined in Section 3.3) of less than 1.00. The evaluation section for which the adequacy rating was calculated includes the portion of KY 88 that lies outside the Clarkson city limits and was therefore outside of the scope of this Small Urban Area study. A one-tenth-mile spot with a somewhat high crash rate was identified near the US 62 intersection, but due to the low traffic volumes, this crash rate was attributed to only three collisions, and no crash patterns were noted that would indicate a particular safety concern at this location. A photograph of this location is included in [Appendix B, Page B-12](#).
- US 62 from the western Leitchfield city limits to KY 259: The low composite adequacy rating is due primarily to safety. This section has a high critical rate factor indicating a probable safety concern. Level of service is also fairly low indicating that traffic volumes may be approaching a level for which the facility is inadequate. There are currently two projects on the Unscheduled Projects List (UPL) which would address these issues: One would improve geometric deficiencies and address capacity issues on this section of US 62, and the other would construct the southern portion of the west Leitchfield bypass - from KY 259 to KY 54 - which would divert some traffic from this section of US 62.
- US 62 from White Oak Street north to KY 54: The low composite adequacy rating is due primarily to the safety and pavement condition components. A cluster of three overlapping one-tenth-mile high-crash spots combine to cover the southern portion of this segment. An analysis of the crash data from White Oak Street (Milepoint 20.737) north to Milepoint 20.9 revealed a total of 23 crashes from August 2005 to August 2008. The most common manners of collision were rear-end (43%), angle (39%), and same-direction sideswipe (13%). This section of US 62 is scheduled to be resurfaced in 2012. Photographs of this location are included in [Appendix B, Page B-4](#).
- US 62 from KY 259 east to KY 1214: The low adequacy rating is due to a combination of the condition, service, and safety components. This section was recently reconstructed, which should improve the composite adequacy rating when new data is collected.
- KY 259 from US 62 north to Floyd Street: The low adequacy rating is mainly due to the safety component, although an analysis of crash data did not reveal this evaluation

section to be located within a high-crash segment or to include any high-crash spot locations.

### 3.3 Crash Data

Crash data for the three-year period from August 2005 to August 2008 was obtained from the Kentucky State Police database and used to calculate crash rates for both one-tenth-mile spots and for longer sections of roadways. These longer sections were chosen based on changes in traffic volumes and roadway characteristics. The calculated crash rates were then compared to statewide critical crash rates based on the type of roadway; the ratio of the actual crash rate to the critical crash rate is called the critical rate factor (CRF). A high CRF indicates that there is a high probability that crashes at a particular location are not occurring simply due to random chance. CRF's for all state-maintained roadways in the study area, as well as for spots with CRF's greater than 1.00, are shown in [Appendix A, Exhibit 3](#).

To provide additional insight into potential safety issues, additional data on crash severity and on the manner of collision was initially obtained for the segments having a CRF greater than 1.00, as well as for spots having a CRF greater than 1.25 - or clusters of nearby high-crash spots with at least one of these spots having a CRF greater than 1.25 - where data was not already provided as part of a segment analysis. This data is shown in tabular format in [Table 1](#) below, and also in [Appendix A, Exhibit 3](#).

**Table 1: Crash Details for High-Crash Segments & Spots**

		Segments					Spots					
	Route	KY 259	KY 259	US 62	US 62	KY 920	KY 54	KY 1214	US 62	KY 920	KY 920	US 62
	Begin MP	11.761	12.121	18.952	21.297	0	18.352	13.852	22.289	1.297	2	24.8
	End MP	12.12	12.954	20.787	22.013	1.397	18.466	14.2	22.489	1.527	2.1	24.9
Number of Crashes	Total	32	79	71	60	18	9	8	18	10	3	9
	Injury	10	10	22	18	3	2	5	3	3	3	5
	Fatal	0	0	0	0	0	0	0	0	0	0	0
Manner of Collision	Angle	9	26	11	22	6	3	5	5	3	0	0
	Backing	0	5	0	1	0	0	0	0	0	0	0
	Head-on	0	0	3	1	0	0	1	0	0	0	0
	Opposing Left Turn	2	2	1	1	0	3	0	2	0	0	0
	Rear-End	9	28	38	31	3	0	0	6	2	0	7
	Sideswipe	5	11	9	0	0	0	1	2	0	0	1
	Fixed Object*	5	6	6	2	6	2	1	2	1	3	1
	Bike/Pedestrian	1	0	1	1	1	1	0	0	0	0	0
	Animal	0	1	2	1	2	0	0	0	2	0	0

\*Includes collision with parked vehicle

Several observations about the crash data are noted below:

- The high crash rates on KY 1214 and KY 920 near KY 3155 (the Leitchfield bypass) may be attributed to drivers having to adjust to the new intersections created by the construction of the bypass. Several low-cost safety improvements have been implemented by the District Office at these locations following the opening of the bypass. Stop Ahead warning signs and transverse rumble strips were installed on the KY 1214 and KY 920 approaches to KY 3155, and flashing beacons were installed at the KY 1214/KY 3155 intersection. A photograph of the KY 3155/KY 1214 intersection is included in [Appendix B, Page B-8](#). An analysis of collision dates on KY 1214 near KY 3155 revealed that number of crashes declined from four in the January 2006 to January 2007 time period to two in the July 2007 to July 2008 time period. A similar reduction in crash frequencies was not noted for KY 920 near the KY 3155 intersection, but the most common type of collision changed from angle collisions for the January 2006 to January 2007 time period to single vehicle and rear-end collisions for the July 2007 to July 2008 time period. In addition, there were three injury collisions on KY 920 near KY 3155 in 2006, but none in 2007 or through July 2008.
- A number of factors could be contributing to the high crash rate for the segment of KY 259 just south of the Western Kentucky Parkway. KY 259 is reduced from five lanes to the north of Commerce Drive to two lanes just south of Commerce Drive, and there are four closely spaced entrances just south of Commerce Drive (three entrances to a gas station on the west side of KY 259 and one entrance to a commercial building on the east side of KY 259). Also, motorists unfamiliar with the area sometimes miss the turn onto the eastbound Western Kentucky Parkway ramp from southbound KY 259, which may contribute to driver confusion in the area. Photographs of this location are included in [Appendix B, Page B-6](#).
- Grayson County High School generates a large amount of traffic on US 62 west of Leitchfield, which may contribute to the high crash rate on that roadway. The planned construction of the southwest Leitchfield Bypass is expected to divert much of the traffic from this section of US 62.

Further analysis of crash data was performed at certain locations to develop recommendations for improvements at those locations. In some cases, crash reports from the Kentucky State Police database were examined to identify crash patterns. These analyses are discussed in Section 6, “Recommended Improvements.”

### 3.4 Traffic Data

Year 2008 Levels of Service (LOS) were calculated for routes in the study area having relatively high free-flow speeds and few intersections. This information, along with traffic volumes and truck percentages, where available, is shown in [Appendix A, Exhibit 4](#). Where truck volumes were not known, estimated values based on the roadway's functional classification were used to calculate Levels of Service. LOS can range from A to F, with LOS A indicating free-flow conditions and LOS F indicating severe congestion. Most of the routes in the Leitchfield-Clarkson area for which LOS were calculated have LOS A, B, or C. Two sections of US 62, one between Clarkson and the Leitchfield Bypass (Milepoint 23.002 to Milepoint 25.249) and one west of the downtown Leitchfield area (Milepoint 18.952 to Milepoint 20.330), have LOS D. Both of these sections of US 62 are currently on the Unscheduled Projects List, and a Programming Study dated August 2008 has been prepared for the section between Clarkson and the Leitchfield Bypass. This Programming Study contains a recommendation to reconstruct the route with a three-lane urban cross-section.

Other routes within the study area were characterized by low free-flow speeds and/or frequent intersections. For these routes, calculating Level of Service would have required additional data such as intersection turning movement volumes and travel speeds. As an alternative measure of congestion, Year 2008 Volume to Service Flow (VSF) ratios for these routes were retrieved from the HIS database. These VSF ratios are listed in [Table 2](#) below and are shown graphically in [Appendix A, Exhibit 5](#). Sections of US 62 (Milepoint 20.464 to Milepoint 20.787 and Milepoint 20.950 to Milepoint 21.609) and KY 54 (Milepoint 18.299 to Milepoint 18.466) in downtown Clarkson had volume to service flow ratios between 0.5 and 0.7, indicating minor congestion. The remaining roadway sections had Volume to Service Flow ratios of less than 0.5, indicating an insignificant amount of congestion.

Traffic volumes in Year 2035 were estimated by applying an annual growth rate, ranging from 0.6% to 1.0% based on each route's functional classification, to the Year 2008 traffic volumes. This method of estimating future traffic volumes assumes that no transportation projects which would significantly alter travel patterns in the area would be built before Year 2035 (i.e., the no-build scenario). The projected traffic volumes were then used to calculate projected Year 2035 Level of Service or Volume to Service Flow ratios, depending on the route characteristics. The results of these calculations are shown in [Appendix A, Exhibit 6](#) for routes where Levels of Service were calculated, and in [Appendix A, Exhibit 7](#) for routes where Volume to Service Flow ratios were calculated. Estimated Volume to Service Flow ratios in Year 2035 are also listed in [Table 2](#).

**Table 2: Existing & Projected Volume to Service Flow Ratios**

Route	Beginning Milepoint	Ending Milepoint	Volume to Service Flow Ratio	
			2008	2035
KY 54	17.310	18.299	0.22	0.26
KY 54	18.299	18.466	0.64	0.75
KY 88	0.000	0.457	0.11	0.14
KY 187	10.983	11.178	0.41	0.48
KY 224	0.000	0.694	0.21	0.27
KY 224	0.694	0.930	0.35	0.45
KY 259	11.761	11.860	0.20	0.23
KY 259	11.860	12.230	0.24	0.28
KY 259	12.230	12.954	0.44	0.52
KY 259	12.954	13.159	0.32	0.38
KY 259	13.159	13.505	0.30	0.35
KY 259	13.505	13.692	0.27	0.32
KY 259	13.692	13.976	0.19	0.22
KY 737	0.000	0.481	0.14	0.18
KY 920	0.000	0.886	0.07	0.09
US 62	20.330	20.464	0.33	0.39
US 62	20.464	20.787	0.67	0.79
US 62	20.787	20.950	0.29	0.34
US 62	20.950	21.005	0.57	0.67
US 62	20.950	21.005	0.64	0.75
US 62	21.005	21.296	0.57	0.67
US 62	21.296	21.609	0.71	0.83
US 62	21.609	22.013	0.39	0.46
US 62	22.013	23.002	0.41	0.48
US 62	25.249	25.461	0.42	0.54
US 62	25.461	26.041	0.26	0.33

Comparing [Appendix A, Exhibit 4](#) and [Exhibit 6](#), it can be seen that two roadway segments in the Leitchfield area are expected to see declines in Level of Service by Year 2035 under the no-build scenario. The northeast portion of the Leitchfield Bypass, from KY 920 to KY 259 is expected to decline from the LOS A and B range in 2008 to LOS C in 2035. Similarly, a portion of KY 737 northwest of downtown Leitchfield is expected to decrease from the LOS A and B range in 2008 to LOS C in 2035. Despite these declines, Levels of Service on these roadway segments, as well as all segments in the study area for which LOS was calculated, are expected to remain at or above LOS D, which is considered acceptable for urban areas.

Comparing [Appendix A, Exhibit 5](#) and [Exhibit 7](#), it can be seen that levels of congestion based on Volume to Service Flow ratios are expected to increase for several roadway segments in the Leitchfield-Clarkson area by Year 2035 under the no-build scenario. Levels of congestion based on Volume to Service Flow ratios were established by examining the effect of different VSF

ratios on the service component of the Adequacy Ratings and are color-coded in the exhibits as follows:

- Green indicates insignificant congestion (VSF less than 0.50);
- Yellow indicates minor congestion (VSF from 0.50 to 0.74); and
- Orange indicates moderate congestion (VSF from 0.75 to 0.89).

Under the no-build scenario, two segments of US 62 and one segment of KY 54 in downtown Leitchfield are expected to go from minor to moderate congestion. KY 259 just south of downtown Leitchfield is expected to go from insignificant congestion to minor congestion. A portion of US 62 in the downtown Clarkson area is also expected to go from insignificant congestion to minor congestion.

#### **4.0 ENVIRONMENTAL AND SOCIOECONOMIC DATA**

An Environmental Footprint map was prepared for the study area using available data from the Commonwealth Office of Technology's Division of Geographic Information and is included as [Appendix A, Exhibit 8](#). Approximate locations of construction projects which would address issues identified in the Leitchfield-Clarkson Small Urban Area Study, as discussed in Section 6.3 of this report, are also shown on the Environmental Footprint map. Most of these projects would approximately follow the alignments of existing routes and would not be expected to produce any environmental impacts which would be unusually difficult to mitigate, although this should be confirmed as more detailed plans are developed. One possible exception is the proposed western Leitchfield bypass. The *Leitchfield Northwest Bypass Study*, prepared by the consulting firm Parsons Brinckerhoff, examined the potential environmental impacts of this project in detail and considered these impacts in the recommendation of a preliminary corridor for the western Leitchfield bypass. The curve portraying the proposed western Leitchfield bypass represents the approximate centerline of the preliminary corridor recommended in the *Leitchfield Northwest Bypass Study*.

An *Environmental Justice and Community Impact Report* for the study area was prepared by the Lincoln Trail Area Development District and is included in [Appendix C](#) of this report. Several Census Block Groups containing relatively high percentages of minority, elderly, and low-income persons were identified in the report, but it is not anticipated that these groups would be disproportionately impacted in a negative way by the recommended transportation improvements.



## 5.0 EXISTING PROJECTS

Only one project in the study area was identified in *Kentucky's 2008 Highway Plan*. This project was for the design of the southern portion of the new West Leitchfield Bypass and was scheduled for 2010. *Kentucky's FY2010-FY2012 Enacted Biennial Highway Plan*, which replaced *Kentucky's 2008 Highway Plan*, continues to include funds for the design of the southern portion of the new west Leitchfield Bypass, adds funds for Right-of-Way and Utilities for this portion of the west Leitchfield Bypass, and adds design funds for widening portions of US 62 between Leitchfield and Clarkson. **Table 3** provides a summary of the projects in the study area that are listed in *Kentucky's FY2010-FY2012 Enacted Biennial Highway Plan*. In addition to these projects, the portion of US 62 just east of KY 259 in Leitchfield was recently reconstructed with a three-lane urban cross-section.

**Table 3: Biennial Highway Plan Projects in Study Area**

Item Number	Route	Begin Milepoint	End Milepoint	Length (miles)	Description	Funding			
						Type	Phase	Year	Amount
4-308.01	New Route			4.000	Design for Leitchfield Bypass priority section	SP	D	2010	\$1,560,000
						SP	R	2011	\$16,090,000
						SP	U	2012	\$990,000
4-8502.00	US-62	22.786	25.249	-	Widen portions of US-62 from Leitchfield to Clarkson	STP	D	2010	\$1,500,000

*Note: Phases are abbreviated as D (Design), R (Right-of-Way), U (Utilities), and C (Construction).*

Several projects from the Unscheduled Projects List (UPL) are located in the study area. Information about these projects was obtained from the UPL Database maintained by the Division of Planning and is summarized in **Table 4**. The locations of each of these projects are shown in **Appendix A, Exhibit 9** along with the locations of the *Biennial Highway Plan* projects. Many of these projects correspond to the worst roadway segments in terms of adequacy ratings, safety, and congestion. Cost estimates listed in **Table 4** were retrieved from the UPL database and were not revised as part of this Small Urban Area study.

**Table 4: UPL Projects in Study Area**

Unscheduled Projects List Control Number	Route	Begin Mile Point	End Mile Point	Project Description	Estimated Cost (includes all applicable phases)
04 043 B0062 10.00	US-62	18.952	20.800	Address geometric deficiencies on US-62 from KY-259 to KY-187.	\$10,800,000
04 043 B0062 9.00	US-62	23.000	25.463	Reconstruct US-62 from KY-3155 in Leitchfield to KY-224 in Clarkson to improve geometric deficiencies and address capacity issues.	\$24,500,000
04 043 D0054 13.00	KY-54	17.962	18.162	Address safety and alignment at railroad crossing on KY-54 in Leitchfield.	\$1,100,000
04 043 D0187 10.00	KY-187	9.443	11.178	Construct an interchange on the Western Kentucky Parkway and improve KY-187 and US-62 from the Parkway to the proposed western Leitchfield bypass.	\$17,500,000
04 043 D0224 1.00	KY-224	0.000	0.804	Reconstruct KY-224 from US-62 to the Western Kentucky Parkway to address geometric deficiencies and improve safety.	\$5,250,000
04 043 D0259 15.20	KY-259	6.400	12.116	Reconstruct KY-259 from KY-226 at Smitty City to the Western Kentucky Parkway in Leitchfield to address geometric issues.	\$31,000,000
04 043 D0259 16.00	KY-259	13.359	13.459	Address safety and improve deficiencies at intersection of KY-259 and KY-737 in Leitchfield.	\$1,850,000
04 043 D0259 17.10	KY-259	14.400	15.553	Address geometric deficiencies and provide for truck traffic on KY-259 north of Leitchfield, from the Leitchfield Bypass to Hanging Rock Church Road.	\$6,600,000
04 043 D0920 1.00	KY-920	0.000	1.500	Reconstruct KY-920, possibly as a 3-lane urban section, from US-62 to KY-3155 to improve geometric deficiencies.	\$6,750,000
04 043 D1214 1.00	KY-1214	13.125	14.000	Address geometric deficiencies on KY-1214 between the East Leitchfield Bypass and the Western Kentucky Parkway in conjunction with a new interchange on the Western Kentucky Parkway at KY-1214.	\$5,000,000
04 043 D9001 16.00	WK-9001	109.275	109.375	Improve system linkage by adding an interchange on the Western Kentucky Parkway at KY-1214 in conjunction with improvements to KY-1214 between the Parkway and the East Leitchfield Bypass.	\$8,000,000
04 043 C0000 1.10	New Route			Construct a bypass section from KY-259 northwest to KY-54 to address congestion in Leitchfield and provide connectivity on the west side.	\$23,500,000
04 043 C0000 1.20	New Route			Construct a bypass section from KY-54 north to KY-737 to improve connectivity on the west side of Leitchfield.	\$13,800,000
04 043 C0000 1.30	New Route			Construct a bypass section from KY-737 east to KY-259 to provide connectivity and improve access to the industrial park in north Leitchfield.	\$6,230,000

## **6.0 RECOMMENDED IMPROVEMENTS**

A number of transportation issues in and near the study area were identified through the study process. These issues, along with actions that have been taken or are recommended to be taken, are identified in the list below. Photographs of the project sites, where applicable, are

included in Appendix B of this report. The locations listed below are mapped in [Appendix A, Exhibit 10](#).

### 6.1 Completed Traffic and Maintenance Improvements:

- **US 62 near the Clarkson Church of Christ:** Local officials indicated that a vertical curve just east of the Clarkson Church of Christ could be causing sight distance issues. The District Office investigated this location and found that the sight distance along US 62 to the east of the Clarkson Church of Christ entrance is less than the recommended sight distance for a 55 MPH design speed, which is the posted speed limit along this section of US 62. The District Office has installed a traffic warning sign with an advisory speed plaque to advise motorists at this location. Photographs of this location are included in [Appendix B, Page B-15](#).
- **North Patterson Street (KY 2191) in Clarkson:** Local officials requested that the Highway Department consider lowering the speed limit to 20 MPH or 25 MPH. A speed study performed by the District Office did not justify lowering the speed limit, so the speed limit should remain as posted. A photograph of this location is included in [Appendix B, Page B-10](#).
- **KY 259 at the Western Kentucky Parkway Eastbound On-Ramp:** Vehicles tend to miss or overshoot the left turn from southbound KY 259 onto the eastbound Parkway on-ramp. The District Office replaced the left-turn arrows and added thermoplastic striping to better delineate the traveled way on the ramp. A photograph of this location is included in [Appendix B, Page B-6](#).
- **KY 3155 at the transition from five lanes to two lanes:** Local officials requested traffic control improvements at this location. The District Office has replaced a merge sign and added pavement merge arrows. Photographs of this location are included in [Appendix B, Page B-7](#).
- **KY 54 at Bel Cheese factory:** Local officials indicated that there is a perceived safety issue at the cross-walk on KY 54 at the Bel Cheese factory just west of downtown Leitchfield. This location was not identified as having a high Critical Rate Factor, and no collisions with pedestrians were identified during the time period for which crash data was obtained. However, the District Office did replace the 8-inch flashing beacons with 12-inch flashing beacons. Photographs of this location are included in [Appendix B, Page B-2](#).
- **KY 259 at US 62 (White Oak Street):** Overhead signs for the northbound lane drop were knocked down. The District Office has added a left-turn arrow and has replaced the overhead lane-use signs. A photograph of this location are included in [Appendix B, Page B-2](#).

- **US 62 at KY 3155:** Local officials indicate that there is a blind spot which may contribute to red-light running. The District Office has added reflective backplates to the signal heads on the KY 3155 southbound approach to improve their visibility. A photograph of this intersection is included in [Appendix B, Page B-9](#).

## 6.2 Ongoing Traffic and Maintenance Improvements

- **US 62 near Milepoint 24.4 in Clarkson:** The culvert under US 62 near Midway Propane becomes clogged, possibly due to runoff from a large gravel parking lot. Maintenance will keep an eye on this location to make sure water doesn't overflow the roadway. Clarkson officials should discuss the erosion issue with the property owner. Photographs of this location are included in [Appendix B, Page B-10](#).
- **KY 88 near US 62 in Clarkson:** There is a large drop-off into a ditch at the alley behind the car-wash, which is located on KY 88 just south of US 62. The alley is a city street, so the city would be responsible for extending the culvert. The estimated cost of this project is \$1,500. A photograph of this location is included in [Appendix B, Page B-12](#).
- **KY 224 in Clarkson:** There are drainage issues along KY 224, particularly near the US 62 intersection. Maintenance will schedule work to clean the culverts and drainage pipes in this area. Drainage improvements in this area may be considered during the design phases of the KY 224 and US 62 (MP 23.000 – MP 25.463) reconstruction projects as discussed in Section 6.3 of this report. Photographs of this location are included in [Appendix B, Page B-13](#).
- **KY 259 south of the Western Kentucky Parkway:** There has been confusion about which of the southbound lanes ends at the transition from a five-lane to a two-lane cross-section. The District Office has added merge signs and pavement merge arrows, and will re-evaluate the distance that the skip line separating the two southbound lanes of KY 259 extends toward the merge area the next time the road is resurfaced. Photographs of this location are included in [Appendix B, Page B-6](#).
- **Western Kentucky Parkway between Milepoints 108 and 109:** Local officials report that frequent crashes occur in the westbound lanes when it rains. An analysis of crash data did not identify this location as a high-crash spot, and no drainage problems were noted during a field visit. The District Office will monitor the situation and will coordinate with maintenance to see if there are any pavement issues that need to be addressed. A photograph of this location is included in [Appendix B, Page B-7](#).
- **KY 259 at US 62 north intersection (Mill Street), US 62 south intersection (White Oak Street), and Shain Drive:** Local officials report that vehicles are turning right on red at these intersections without coming to a complete stop. Increased enforcement is recommended at these locations. In addition, the stop bar at Shain Drive could be

extended to be compatible with the recently increased curb radius at this location. Photographs of these intersections are included in [Appendix B, Page B-5](#).

- **KY 54 at Cannon Drive in Leitchfield:** This location was identified as having a high crash rate. Taken together, angle and opposing left turn crash types made up two-thirds of the crashes at this location. Sight distance at this location may be reduced by both on-street parking and by vehicles queued at the KY 259 intersection. The district office will investigate this location to determine if any potential improvements could be implemented to improve safety. Photographs of this intersection are included in [Appendix B, Page B-3](#).
- **US 62 (South Main Street) from White Oak Street to KY 54:** This segment is approximately 0.2-mile long and consists of one wide lane in the northbound direction and two lanes in the southbound direction, with no median or center turn lane. Only one southbound lane enters this segment from the traffic circle at East Main Street and West Main Street, but the southbound direction immediately transitions to two lanes just south of the traffic circle, which continue beyond the Western Kentucky Parkway. The northbound approach to this segment consists of two lanes, but one of these lanes is dropped as a left-turn lane onto westbound US 62 (West White Oak Street). Photographs of this portion of US 62 are included in [Appendix B, Page B-4](#). A cluster of three overlapping one-tenth-mile high-crash spots combine to cover the southern portion of this segment and contribute to a very low adequacy rating for the segment. An analysis of the crash data from White Oak Street (Milepoint 20.737) north to Milepoint 20.9 revealed a total of 23 crashes from August 2005 to August 2008, with the most common manners of collision being rear-end (43%), angle (39%), and same-direction sideswipe (13%). The Kentucky Transportation Center (KTC) at the University of Kentucky is currently working on a research study to identify criteria under which a “road diet” would be appropriate. Based on the crash patterns and preliminary information from the KTC research study, it appears that the crash rate on this section could be reduced by implementing a road diet, which would involve converting the three through lanes to two through lanes (one lane in each direction) with a two-way left-turn lane. However, with a 2008 Average Daily Traffic volume (ADT) of 16,500 vehicles per day and an estimated no-build 2035 ADT of 19,400 vehicles per day, maintaining adequate roadway capacity could be an issue, particularly for the southbound direction at the White Oak Street intersection. Construction of a western bypass around Leitchfield, which is included on the Unscheduled Projects List, is expected to reduce traffic on US 62 through downtown Leitchfield. Therefore, it is recommended that a road diet be considered at this location once the western Leitchfield bypass is constructed and its effect on traffic patterns in downtown

Leitchfield is determined. Typically, road diets are implemented during resurfacing projects.

### 6.3 Construction Projects

No new construction projects were recommended as part of the Leitchfield-Clarkson Small Urban Area study. However, several existing projects were identified on the Unscheduled Projects List (UPL) and in *Kentucky's FY2010-FY2012 Enacted Biennial Highway Plan* that would help to alleviate safety, congestion, and maintenance issues identified through the Small Urban Area Study process. Most projects from the Unscheduled Projects List went through a prioritization process in 2007 at the Highway District level and have been assigned a priority of High, Medium, or Low. Therefore, no additional prioritization of these projects was performed. It is important to note that the priorities assigned to these UPL projects reflect the relative urgency of the project compared to other projects within the Highway District. Therefore, while projects identified as Low and Medium priorities would address valid issues within the transportation network, they are currently considered less urgent than High-priority projects within the Highway District which are also competing for funds. Projects that are identified as Low and Medium priorities are generally not included in the periodic rankings of top-priority projects.

- **US 62 between Leitchfield and Clarkson:** Local officials indicated that reconstruction of US 62 between Leitchfield and Clarkson is a top priority for both Leitchfield and Clarkson. A planning study was completed in 2008 which recommended reconstruction with a three-lane cross-section at an estimated cost (in 2008 dollars) of \$16.3 million. \$1.5 million for the construction phase was included in *Kentucky's FY2010-FY2012 Enacted Biennial Highway Plan*. The district office has requested to use these funds for design, and will pursue additional funding for future phases. This project is also included on the Unscheduled Projects List (UPL Control Number 04 043 B0062 9.00 - High Priority). Some issues were raised during the development of the *Leitchfield-Clarkson Small Urban Area Study* that could potentially be addressed during the reconstruction of this portion of US 62, including pedestrian accommodations and drainage issues in the Clarkson area. Photographs of US 62 near Patterson Street and KY 88 in Clarkson are included in [Appendix B, Page B-14](#). *Estimated cost: \$25 Million.*
- **KY 224 from US 62 to the Western Kentucky Parkway:** A new Clarksville Elementary School building opened in 2010 at the site of the old school building. As a result of the construction of the new building, the school's main entrance was moved from US 62 to KY 224. Buses continue to use the US 62 entrance. Prior to the opening of the new school building, local officials indicated a need for a turn lane and sidewalks along KY 224, as well as cross-walks at 1st Street and KY 224, and possibly at 1st Street and US 62.

Turn lanes are normally included as part of the school construction, but were not in this case. Personnel from the Highway District Office re-examined the need for turn lanes once the new school building was open, but did not observe any significant issues related to the lack of turn lanes on KY 224. Sidewalks were constructed directly in front of the school as shown in the photographs of this location in [Appendix B, Page B-11](#). Unfortunately, these sidewalks do not currently connect to any other sidewalks. A project is currently included on the Unscheduled Projects List (UPL Number 04 043 D0224 1.00 - High Priority) to reconstruct the portion of KY 224 from US 62 to the Western Kentucky Parkway to address geometric deficiencies and improve safety. This project could also address drainage issues along this section of KY 224 which were mentioned by local officials. Improved pedestrian access and the need for turn lanes may be considered during the Design phase of this project. In addition, Safe Routes to School (SRTS) grants may be available for sidewalk construction; the Lincoln Trail Area Development District may be able to assist the city in applying for these grants.

*Estimated cost for reconstruction of KY 224: \$5.3 Million.*

- **US 62 from KY 187 to KY 259:** This section of US 62 was identified as a high-crash location, with a Critical Rate Factor of 1.02. It also has a very low composite adequacy rating (<15), which is primarily due to the safety component. A project currently on the Unscheduled Projects List (UPL Control Number 04 043 B0062 10.00 - Medium Priority) to address geometric deficiencies should improve safety along this section of US 62. There are also slope stability issues along this section of US 62 near Milepoint 20.1, as shown in photographs in [Appendix B, Page B-8](#), which could be addressed by this project. *Estimated cost for addressing geometric deficiencies on US 62: \$11 Million.*
- **KY 920 from US 62 to KY 3155:** This section of KY 920 has a Critical Rate Factor of 1.51, indicating a high probability of safety issues in this area. The most common crash types were angle and fixed-object crashes. Rear-end, bike/pedestrian, and animal collisions were also represented. A project currently on the Unscheduled Projects List (UPL Control Number 04 043 D0920 1.00 - Low Priority) would reconstruct this section of KY 920, possibly as a 3-lane urban section, which should improve traffic safety at this location. *Estimated cost: \$6.8 Million.*
- **KY 1214 from KY 3155 to the Western Kentucky Parkway:** Two projects exist on the Unscheduled Projects List at this location. One (UPL Control Number 04 043 D1214 1.00 - Low Priority) would address geometric deficiencies on this section of KY 1214. The other (UPL Control Number 04 043 D9001 16.00 - Low Priority) would add an interchange to connect KY 1214 to the Western Kentucky Parkway. Together, these projects would provide a route for vehicles traveling from points east of Clarkson to access the Leitchfield Bypass and points north of Leitchfield without having to travel

through Clarkson or along US 62 between Leitchfield and Clarkson, which has a current (Year 2008) and projected (Year 2035) Level of Service of D. *Estimated cost: \$13 Million.*

- **West Leitchfield Bypass:** Three projects on the Unscheduled Projects List (UPL Control Numbers 04 043 C0000 1.10 – No Priority Assigned, 04 043 C0000 1.20 – Low Priority, and 04 043 C0000 1.30 – Low Priority) would combine to form a bypass around the west side of Leitchfield. A project also exists in *Kentucky's FY2010-FY2012 Enacted Biennial Highway Plan* (Item Number 4-308.01) to design the portion of the western Leitchfield bypass from KY 259 northwest to KY 54. Providing a bypass around the western side of Leitchfield would address several issues identified in the Leitchfield-Clarkson Small Urban Area Study. It would divert traffic from US 62 west of Leitchfield, which has a high crash rate and a current Level of Service of D. It would also divert traffic from downtown Leitchfield, where portions of US 62 and KY 54 are expected to experience increased congestion in the future if no projects were implemented. Finally, construction of a bypass around the western side of Leitchfield could potentially divert enough traffic from US 62 between White Oak Street and KY 54 that a road diet could be considered at this location. *Estimated cost: \$44 Million.*

The projects noted above are summarized in [Table 5](#), which also includes phased cost estimates for each of the projects.



**Table 5: Recommended UPL Projects to Address Identified Issues**

Unscheduled Projects List Control Number	Route	Begin Mile Point	End Mile Point	Project Description	Estimated Cost (Millions of Dollars)*	District Priority†
04 043 B0062 10.00	US-62	18.952	20.800	Address geometric deficiencies on US-62 from KY-259 to KY-187.	P-0.1, D-1.5, R-1.0, U-1.0, C-7.2 <b>Total-10.8</b>	Medium
04 043 B0062 9.00	US-62	23.000	25.463	Reconstruct US-62 from KY-3155 in Leitchfield to KY-224 in Clarkson to improve geometric deficiencies and address capacity issues.	D-1.5, R-2.0, U-1.0, C-20.0 <b>Total-24.5</b>	High
04 043 D0224 1.00	KY-224	0.000	0.804	Reconstruct KY-224 from US-62 to the Western Kentucky Parkway to address geometric deficiencies and improve safety.	D-0.5, R-0.8, U-0.7, C-3.25 <b>Total-5.25</b>	High
04 043 D0920 1.00	KY-920	0.000	1.500	Reconstruct KY-920, possibly as a 3-lane urban section, from US-62 to KY-3155 to improve geometric deficiencies.	D-0.75, R-1.0, U-0.5, C-4.5 <b>Total-6.75</b>	Low
04 043 D1214 1.00	KY-1214	13.125	14.000	Address geometric deficiencies on KY-1214 between the East Leitchfield Bypass and the Western Kentucky Parkway in conjunction with a new interchange on the Western Kentucky Parkway at KY-1214.	P-0.2, D-0.6, R-0.7, U-0.5, C-3.0 <b>Total-5.0</b>	Low
04 043 D9001 16.00	WK-9001	109.275	109.375	Improve system linkage by adding an interchange on the Western Kentucky Parkway at KY-1214 in conjunction with improvements to KY-1214 between the Parkway and the East Leitchfield Bypass.	P-0.2, D-1.0, R-1.0, U-0.8, C-5.0 <b>Total-8.0</b>	Low
04 043 C0000 1.10	New Route			Construct a bypass section from KY-259 northwest to KY-54 to address congestion in Leitchfield and provide connectivity on the west side.	D-1.4, R-10.2, U-0.6, C-11.3 <b>Total-23.5</b>	N/A
04 043 C0000 1.20	New Route			Construct a bypass section from KY-54 north to KY-737 to improve connectivity on the west side of Leitchfield.	D-1.1, R-3.5, U-0.12, C-9.1 <b>Total-13.8</b>	Low
04 043 C0000 1.30	New Route			Construct a bypass section from KY-737 east to KY-259 to provide connectivity and improve access to the industrial park in north Leitchfield.	D-0.6, R-1.1, U-0.13, C-4.4 <b>Total-6.23</b>	Low
<p>*Phase Abbreviations: P-Planning, D-Design, R-Right-of-Way, U-Utilities, C-Construction          †District priorities were obtained from the Unscheduled Projects List database.</p>						

**APPENDIX A**  
**EXHIBITS**



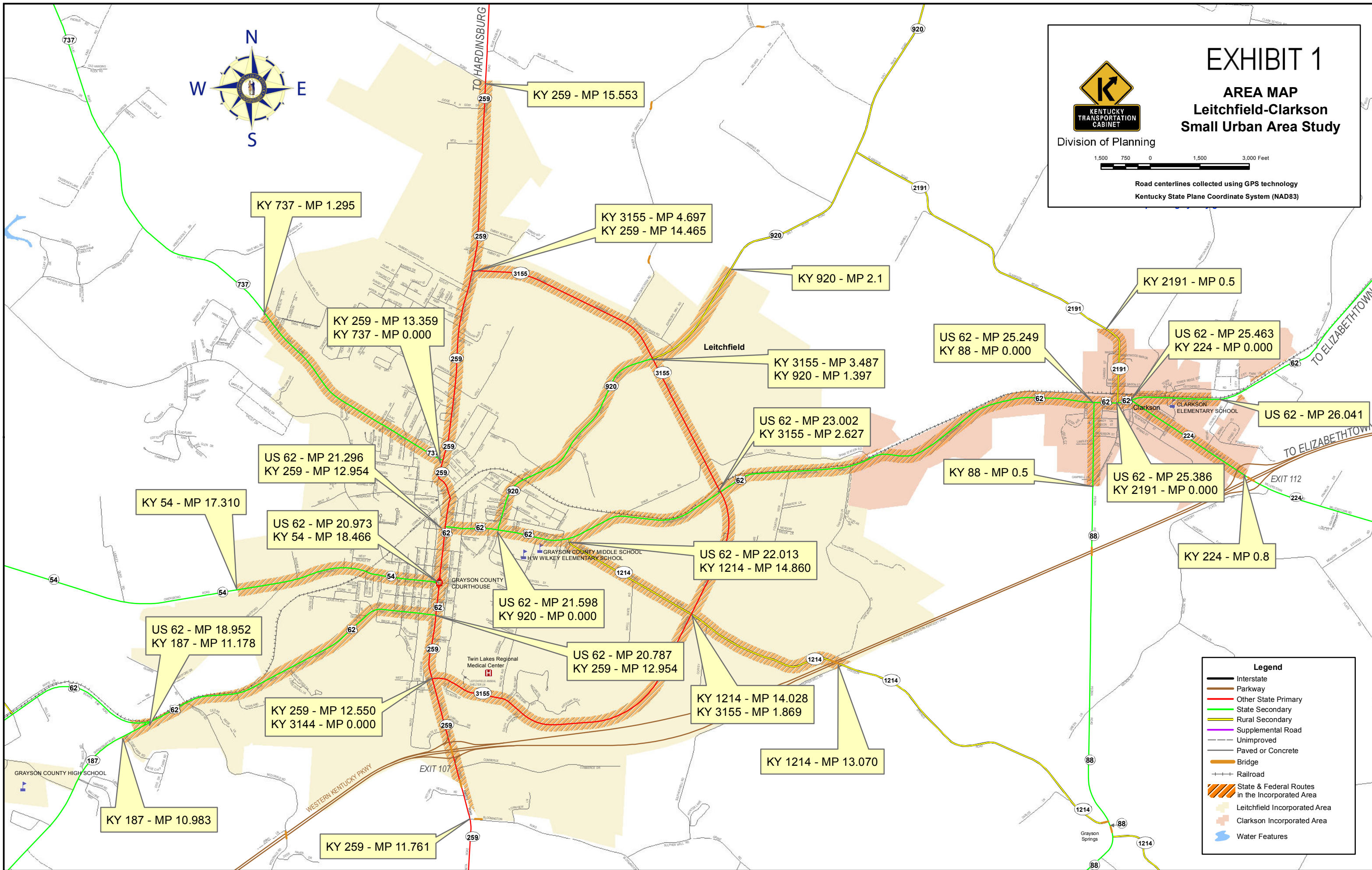
# EXHIBIT 1

## AREA MAP

### Leitchfield-Clarkson Small Urban Area Study

Division of Planning

Road centerlines collected using GPS technology  
Kentucky State Plane Coordinate System (NAD83)



#### Legend

- Interstate
- Parkway
- Other State Primary
- State Secondary
- Rural Secondary
- Supplemental Road
- Unimproved
- Paved or Concrete
- Bridge
- Railroad
- State & Federal Routes in the Incorporated Area
- Leitchfield Incorporated Area
- Clarkson Incorporated Area
- Water Features

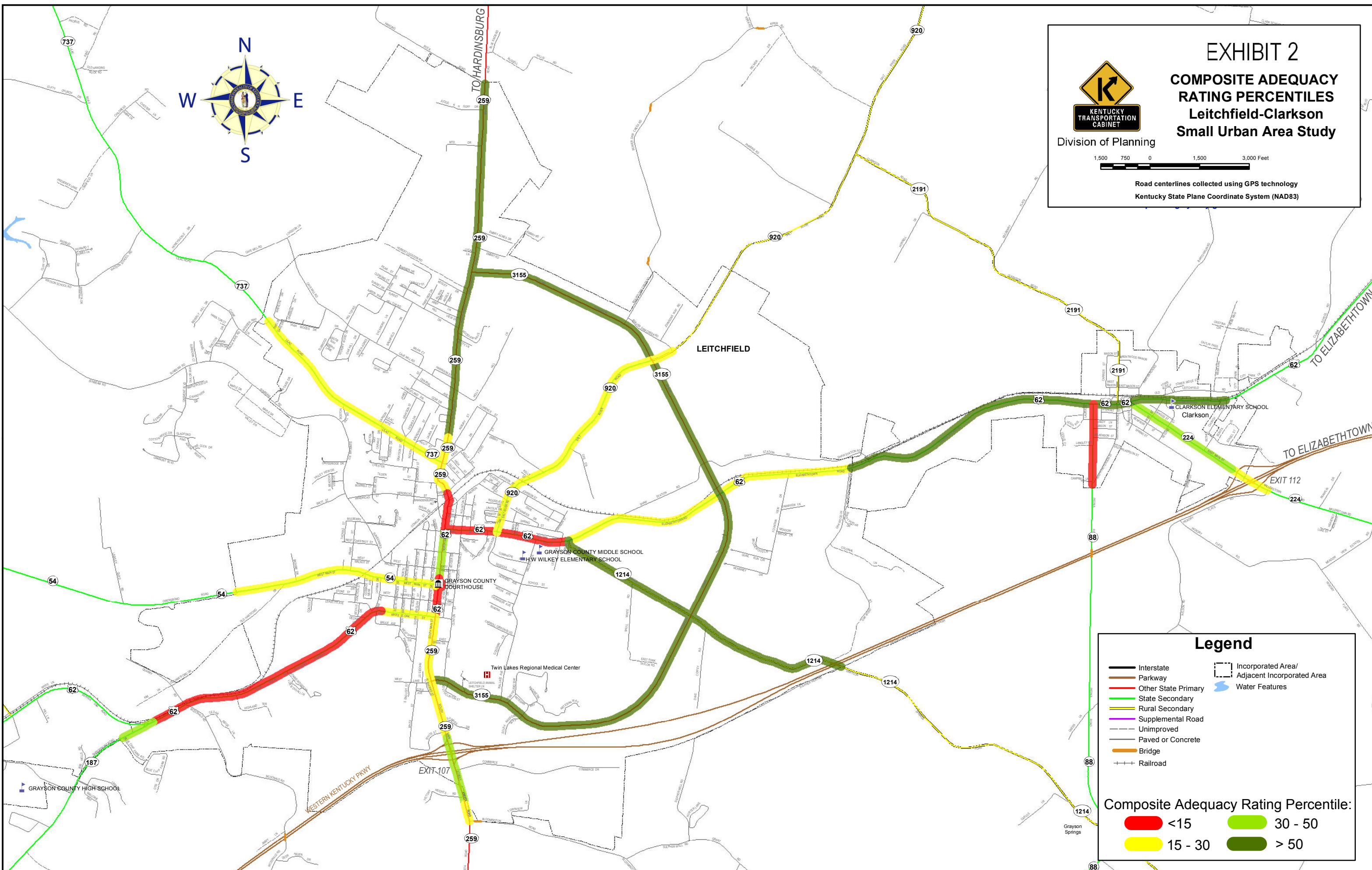


**EXHIBIT 2**  
**COMPOSITE ADEQUACY RATING PERCENTILES**  
**Leitchfield-Clarkson**  
**Small Urban Area Study**

KENTUCKY TRANSPORTATION CABINET  
Division of Planning

1,500 750 0 1,500 3,000 Feet

Road centerlines collected using GPS technology  
Kentucky State Plane Coordinate System (NAD83)



**Legend**

- Interstate
- Parkway
- Other State Primary
- State Secondary
- Rural Secondary
- Supplemental Road
- Unimproved
- Paved or Concrete
- Bridge
- Railroad
- Incorporated Area/ Adjacent Incorporated Area
- Water Features

**Composite Adequacy Rating Percentile:**

<15	30 - 50
15 - 30	> 50


High-Crash Segments						
Segment	I	II	III	IV	V	
	Route	KY 259	KY 259	US 62	US 62	KY 920
	Begin MP	11.761	12.121	18.952	21.297	0
End MP	12.12	12.954	20.787	22.013	1.397	
Number of Crashes	Total	32	79	71	60	18
	Injury	10	10	22	18	3
	Fatal	0	0	0	0	0
Manner of Collision	Angle	9	26	11	22	6
	Backing	0	5	0	1	0
	Head-on	0	0	3	1	0
	Opposing Left Turn	2	2	1	1	0
	Rear-End	9	28	38	31	3
	Sideswipe	5	11	9	0	0
	Fixed Object*	5	6	6	2	6
	Bike/Pedestrian	1	0	1	1	1
	Animal	0	1	2	1	2

High-Crash Spots							
Spot	A	B	C	D	E	F	
	Route	KY 54	KY 1214	US 62	KY 920	KY 920	US 62
	Begin MP	18.352	13.852	22.289	1.297	2	24.8
End MP	18.466	14.2	22.489	1.527	2.1	24.9	
Number of Crashes	Total	9	8	18	10	3	9
	Injury	2	5	3	3	3	5
	Fatal	0	0	0	0	0	0
Manner of Collision	Angle	3	5	5	3	0	0
	Backing	0	0	0	0	0	0
	Head-on	0	1	0	0	0	0
	Opposing Left Turn	3	0	2	0	0	0
	Rear-End	0	0	6	2	0	7
	Sideswipe	0	1	2	0	0	1
	Fixed Object*	2	1	2	1	3	1
	Pedestrian	1	0	0	0	0	0
	Animal	0	0	0	2	0	0


# EXHIBIT 3

## ANALYSIS OF HIGH-CRASH SEGMENTS & SPOTS

### Leitchfield-Clarkson Small Urban Area Study



Division of Planning



Road centerlines collected using GPS technology Kentucky State Plane Coordinate System (NAD83)  
Crash Data from Kentucky State Police Database from August 2005 to August 2008



### Legend

- Interstate
- Parkway
- Other State Primary
- State Secondary
- Rural Secondary
- Supplemental Road
- Unimproved
- Paved or Concrete
- Railroad
- Incorporated Area
- Water Features

### Critical Rate Factors for High-Crash Spots:

- 1.00 - 1.25
- 1.26 - 1.50
- 1.51 - 2.00
- 2.01 - 3.00
- 3.01 - 3.47

### Critical Rate Factors for Segments:

- 0.00 - 1.00
- 1.01 - 1.50
- 1.51 - 2.00
- 2.01 - 2.70





# EXHIBIT 5

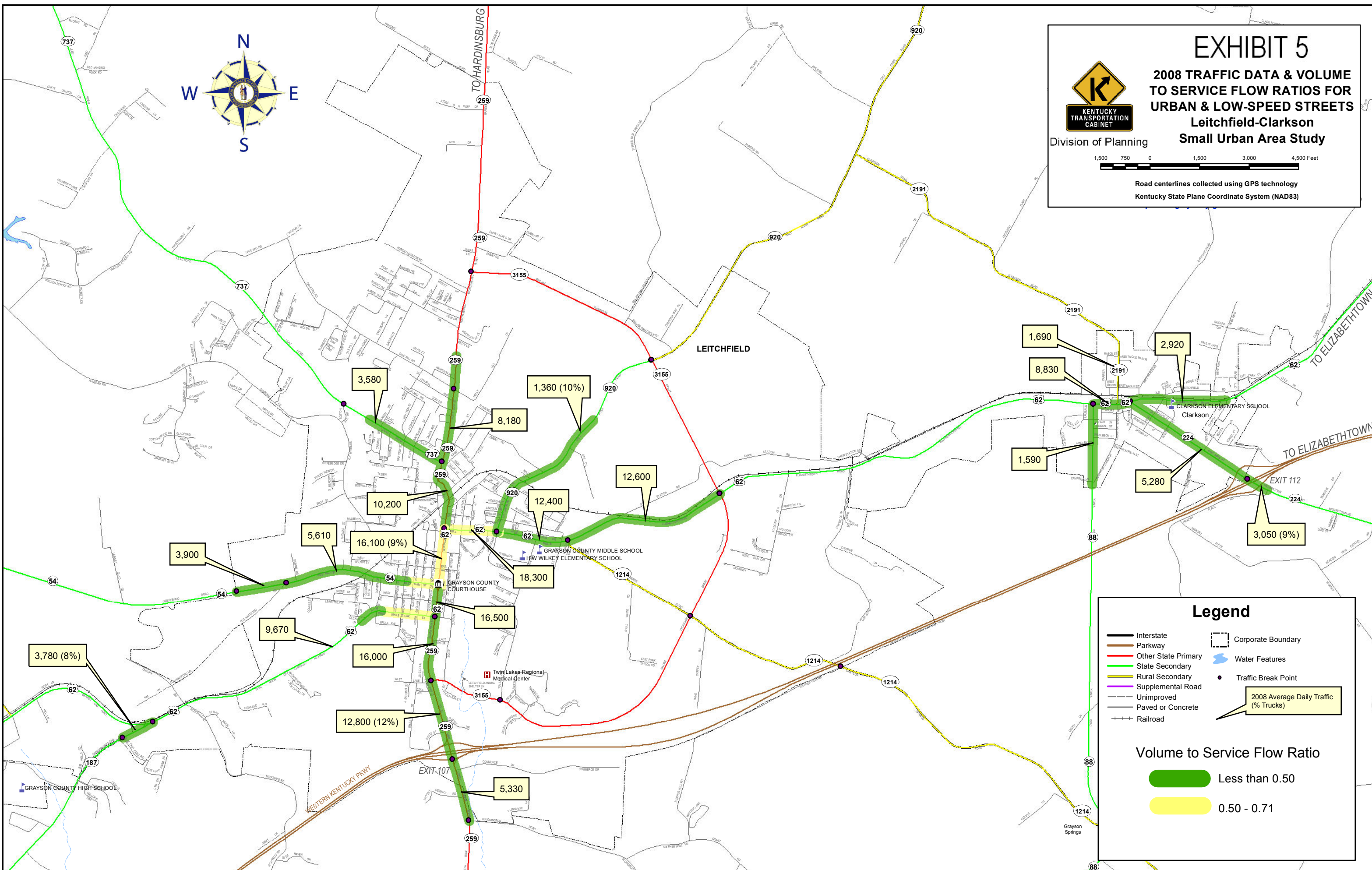
## 2008 TRAFFIC DATA & VOLUME TO SERVICE FLOW RATIOS FOR URBAN & LOW-SPEED STREETS

### Leitchfield-Clarkson Small Urban Area Study

Division of Planning

1,500 750 0 1,500 3,000 4,500 Feet

Road centerlines collected using GPS technology  
Kentucky State Plane Coordinate System (NAD83)



### Legend

- Interstate
- Parkway
- Other State Primary
- State Secondary
- Rural Secondary
- Supplemental Road
- Unimproved
- Paved or Concrete
- Railroad
- Corporate Boundary
- Water Features
- Traffic Break Point
- 2008 Average Daily Traffic (% Trucks)

### Volume to Service Flow Ratio

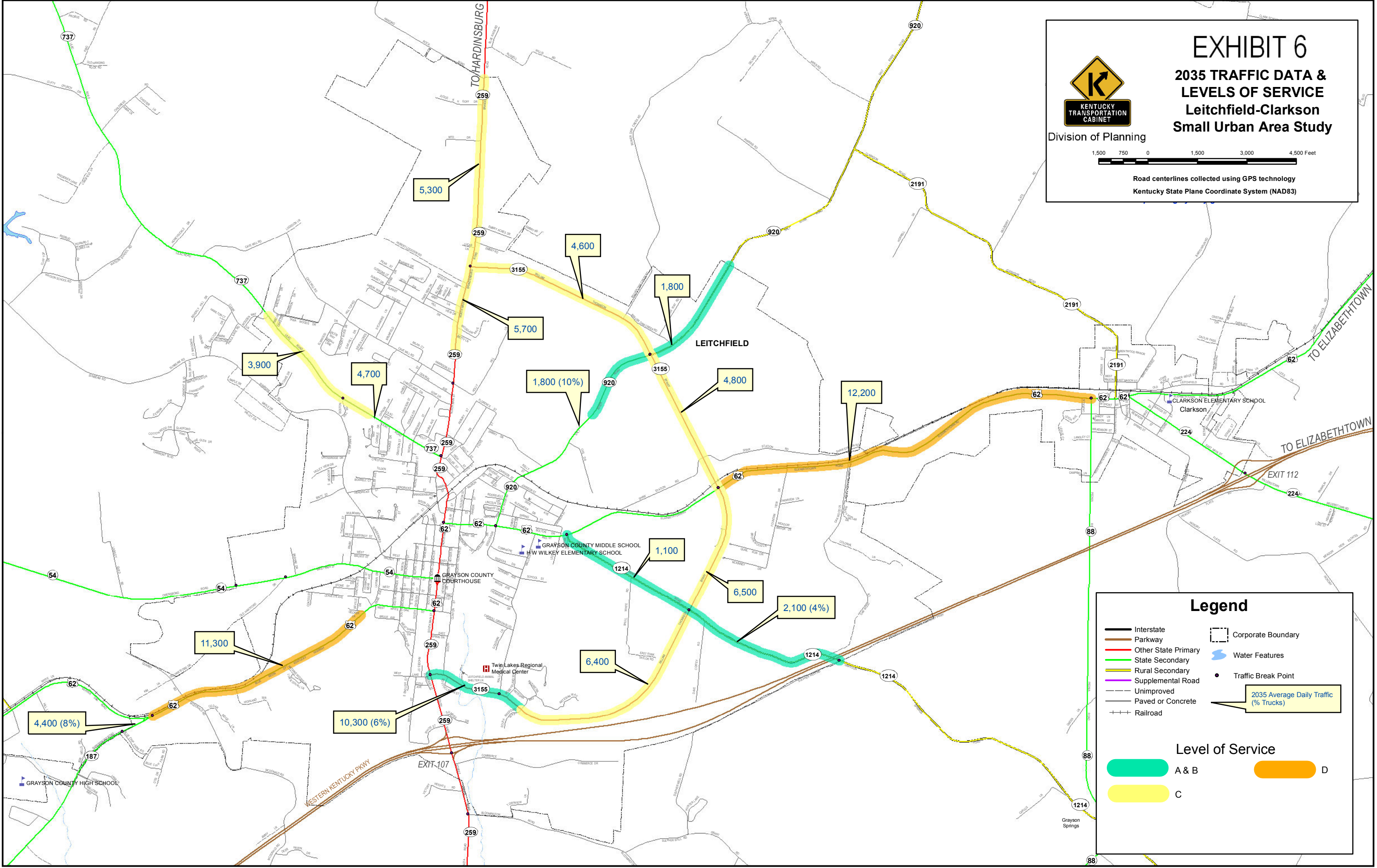
- Less than 0.50
- 0.50 - 0.71

**EXHIBIT 6**  
**2035 TRAFFIC DATA & LEVELS OF SERVICE**  
**Leitchfield-Clarkson**  
**Small Urban Area Study**

Kentucky Transportation Cabinet  
 Division of Planning

1,500 750 0 1,500 3,000 4,500 Feet

Road centerlines collected using GPS technology  
 Kentucky State Plane Coordinate System (NAD83)



5,300

4,600

1,800

5,700

1,800 (10%)

4,800

12,200

3,900

4,700

1,100

6,500

2,100 (4%)

11,300

6,400

10,300 (6%)

4,400 (8%)



# EXHIBIT 7

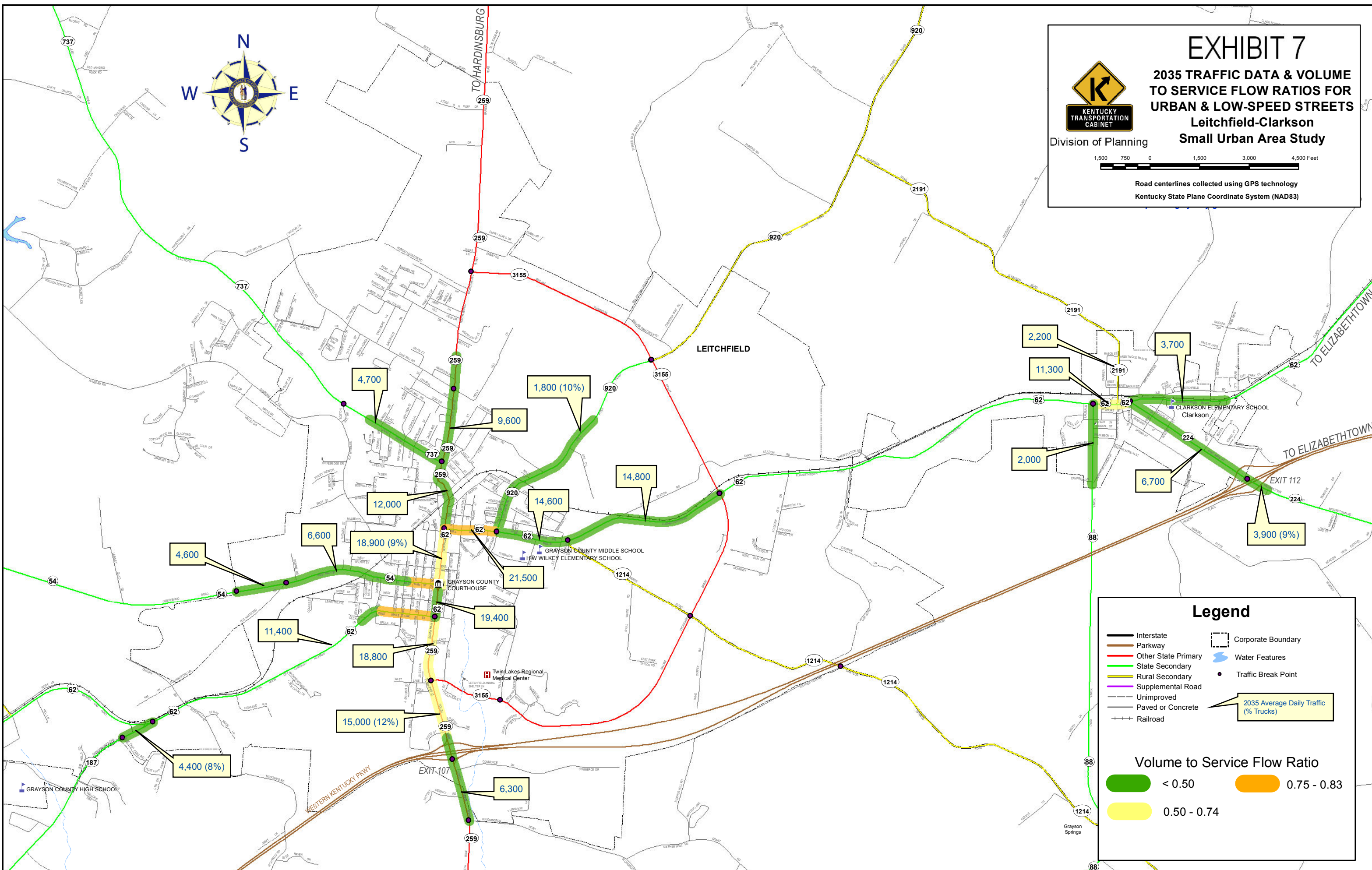
## 2035 TRAFFIC DATA & VOLUME TO SERVICE FLOW RATIOS FOR URBAN & LOW-SPEED STREETS

### Leitchfield-Clarkson Small Urban Area Study

Division of Planning

1,500 750 0 1,500 3,000 4,500 Feet

Road centerlines collected using GPS technology  
Kentucky State Plane Coordinate System (NAD83)



### Legend

- Interstate
- Parkway
- Other State Primary
- State Secondary
- Rural Secondary
- Supplemental Road
- Unimproved
- Paved or Concrete
- Railroad
- Corporate Boundary
- Water Features
- Traffic Break Point
- 2035 Average Daily Traffic (% Trucks)

#### Volume to Service Flow Ratio

- < 0.50
- 0.50 - 0.74
- 0.75 - 0.83





Note: The curve portraying the West Leitchfield Bypass approximates the centerline of the "Preliminary Recommended Corridor A3" identified in the *Leitchfield Northwest Bypass Study*. It does not represent a proposed alignment.

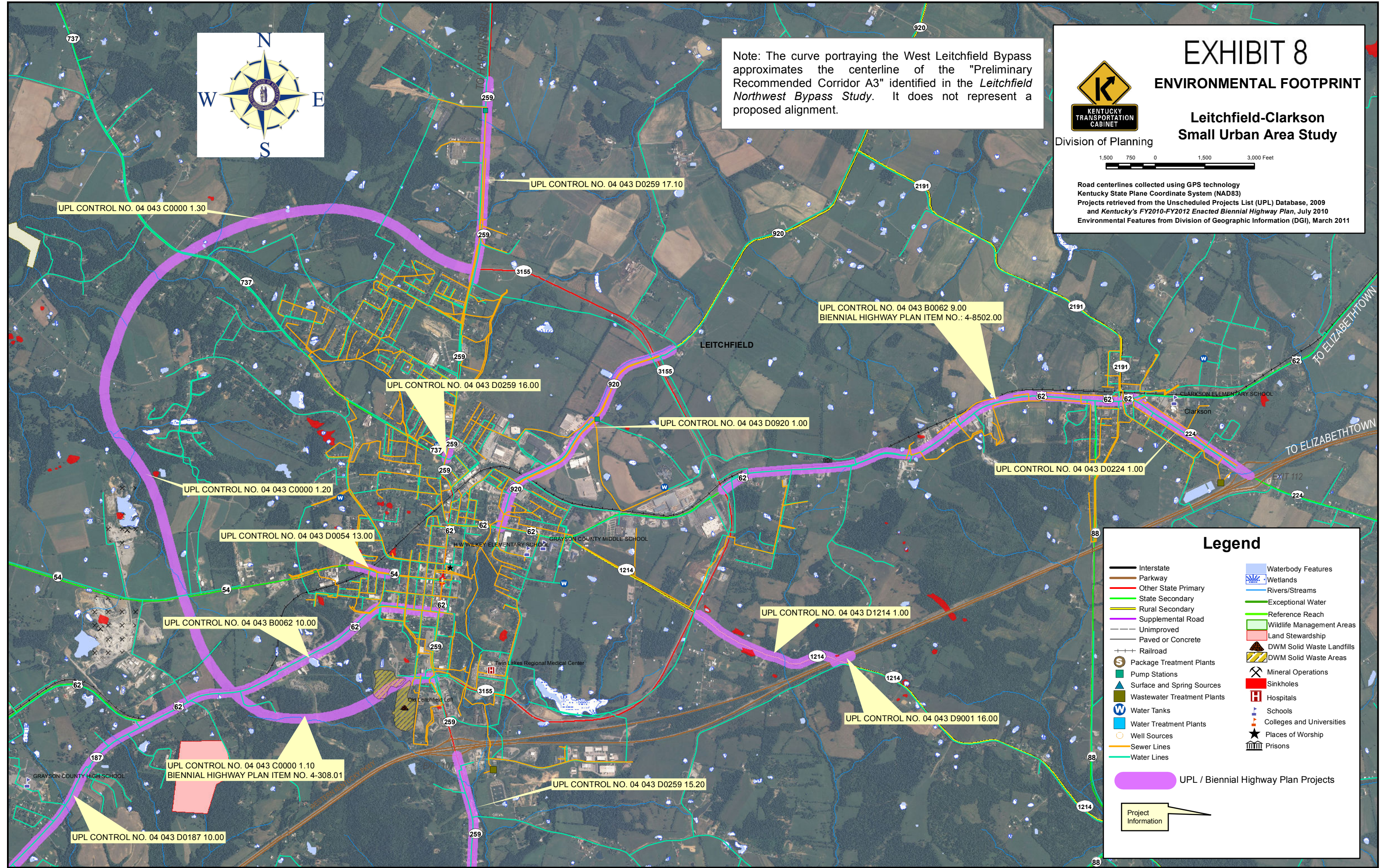
# EXHIBIT 8

## ENVIRONMENTAL FOOTPRINT

### Leitchfield-Clarkson Small Urban Area Study

Division of Planning

Road centerlines collected using GPS technology  
Kentucky State Plane Coordinate System (NAD83)  
Projects retrieved from the Unscheduled Projects List (UPL) Database, 2009  
and Kentucky's FY2010-FY2012 Enacted Biennial Highway Plan, July 2010  
Environmental Features from Division of Geographic Information (DGI), March 2011



### Legend

Interstate	Waterbody Features
Parkway	Wetlands
Other State Primary	Rivers/Streams
State Secondary	Exceptional Water
Rural Secondary	Reference Reach
Supplemental Road	Wildlife Management Areas
Unimproved	Land Stewardship
Paved or Concrete	DWM Solid Waste Landfills
Railroad	DWM Solid Waste Areas
Package Treatment Plants	Mineral Operations
Pump Stations	Sinkholes
Surface and Spring Sources	Hospitals
Wastewater Treatment Plants	Schools
Water Tanks	Colleges and Universities
Water Treatment Plants	Places of Worship
Well Sources	Prisons
Sewer Lines	
Water Lines	

UPL / Biennial Highway Plan Projects

Project Information

# EXHIBIT 10

## LOCATIONS OF RECOMMENDED IMPROVEMENTS AND OTHER ISSUES

### Leitchfield-Clarkson Small Urban Area Study

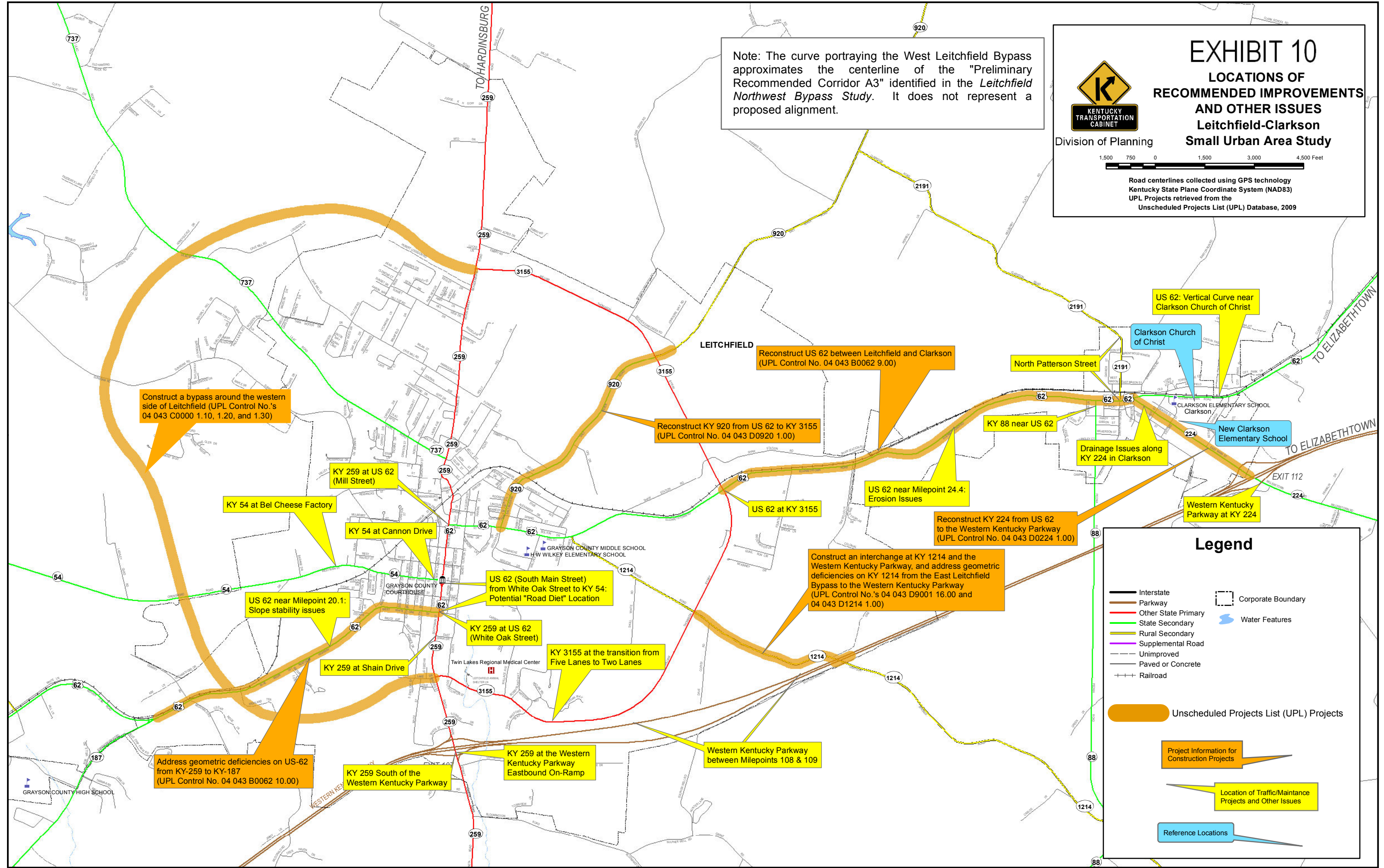


Division of Planning



Road centerlines collected using GPS technology  
 Kentucky State Plane Coordinate System (NAD83)  
 UPL Projects retrieved from the  
 Unscheduled Projects List (UPL) Database, 2009

Note: The curve portraying the West Leitchfield Bypass approximates the centerline of the "Preliminary Recommended Corridor A3" identified in the *Leitchfield Northwest Bypass Study*. It does not represent a proposed alignment.



Construct a bypass around the western side of Leitchfield (UPL Control No.'s 04 043 C0000 1.10, 1.20, and 1.30)

Reconstruct US 62 between Leitchfield and Clarkson (UPL Control No. 04 043 B0062 9.00)

Reconstruct KY 920 from US 62 to KY 3155 (UPL Control No. 04 043 D0920 1.00)

KY 88 near US 62

Drainage Issues along KY 224 in Clarkson

Western Kentucky Parkway at KY 224

Reconstruct KY 224 from US 62 to the Western Kentucky Parkway (UPL Control No. 04 043 D0224 1.00)

US 62 near Milepoint 24.4: Erosion Issues

US 62 at KY 3155

Construct an interchange at KY 1214 and the Western Kentucky Parkway, and address geometric deficiencies on KY 1214 from the East Leitchfield Bypass to the Western Kentucky Parkway (UPL Control No.'s 04 043 D9001 16.00 and 04 043 D1214 1.00)

US 62 (South Main Street) from White Oak Street to KY 54: Potential "Road Diet" Location

KY 259 at US 62 (White Oak Street)

KY 3155 at the transition from Five Lanes to Two Lanes

Western Kentucky Parkway between Milepoints 108 & 109

KY 259 at the Western Kentucky Parkway Eastbound On-Ramp

KY 259 South of the Western Kentucky Parkway

Address geometric deficiencies on US-62 from KY-259 to KY-187 (UPL Control No. 04 043 B0062 10.00)

KY 54 at Bel Cheese Factory

KY 54 at Cannon Drive

US 62 near Milepoint 20.1: Slope stability issues

KY 259 at Shain Drive

### Legend

- Interstate
- Parkway
- Other State Primary
- State Secondary
- Rural Secondary
- Supplemental Road
- Unimproved
- Paved or Concrete
- Railroad
- Corporate Boundary
- Water Features

Unscheduled Projects List (UPL) Projects

Project Information for Construction Projects

Location of Traffic/Maintenance Projects and Other Issues

Reference Locations

**APPENDIX B**  
**PHOTOGRAPHS**



## Appendix B Table of Contents

KY 54 at Bel Cheese.....	B-2
KY 259 at White Oak Street.....	B-2
KY 54 at Cannon Drive.....	B-3
US 62 (S. Main St.) between US 62 (White Oak St.) & KY 54.....	B-4
KY 259 at Mill Street, White Oak Street, and Shain Drive.....	B-5
KY 259 at the Western Kentucky Parkway.....	B-6
Westbound Western Kentucky Parkway.....	B-7
KY 3155 at the Transition from Five Lanes to Two Lanes.....	B-7
KY 1214 at KY 3155.....	B-8
US 62 Slope Stability Issues.....	B-8
US 62 near KY 3155.....	B-9
North Patterson Street.....	B-10
US 62 near Milepoint 24.4.....	B-10
KY 224 at new Clarkson Elementary School Entrance.....	B-11
KY 88 near US 62 in Clarkson.....	B-12
US 62 and KY 224 near new Clarkson Elementary School.....	B-13
US 62 at Patterson Street in Clarkson.....	B-14
US 62 at KY 88 in Clarkson.....	B-14
US 62 near Clarkson Church of Christ.....	B-15

**KY 54 at Bel Cheese  
Factory, facing West**



**KY 259 at  
White Oak Street.  
Photos are facing  
North along  
KY 259.**





**KY 54 at Cannon Drive  
in Leitchfield,  
facing East (top),  
facing West (middle),  
facing North (bottom  
left), and approaching  
the intersection from  
the West (bottom right)**





**US 62 (South Main Street) between US 62 (White Oak Street) and KY 54, facing South just South of the Grayson County Courthouse (top) and just North of the US 62-White Oak Street intersection (bottom)**







**KY 259 at  
US 62-Mill Street (top),  
US 62-White Oak  
Street (middle),  
and Shain Drive  
(bottom)**

**KY 259 facing South  
at the Western  
Kentucky Parkway  
overpass (top) and  
South of the  
Parkway overpass  
(bottom)**



**KY 259 at the  
Western Kentucky  
Parkway  
Eastbound  
On-Ramp**

**Westbound Western  
Kentucky Parkway  
between  
Milepoints 108 & 109**



**KY 3155 at the  
transition from  
Five Lanes to  
Two Lanes**



**KY 1214 at KY 3155,  
facing East**



**US 62 slope stability  
issues near  
Milepoint 20.1**



**US 62 at the Wal-Mart  
entrance, facing West  
toward the  
KY 3155 intersection**

**North  
Patterson  
Street in  
Clarkson**



**US 62 near  
Milepoint 24.4 in  
Clarkson**





**KY 224 at new  
Clarkson Elementary  
School entrance**



**KY 88 near the US 62 intersection  
in Clarkson, facing South**





**US 62 and KY 224  
near new Clarkson  
Elementary School.  
Drainage along  
KY 224 near US 62  
(top left and right);  
KY 224 at First Street;  
and US 62 at First  
Street (bottom).**

**US 62 at  
Patterson Street in  
Clarkson, facing  
East (top) and  
North-East  
(bottom)**



**US 62 at KY 88,  
facing West**

**US 62 near  
Clarkson Church  
of Christ,  
facing East (top),  
and facing West  
(middle and  
bottom)**



**APPENDIX C**

**ENVIRONMENTAL JUSTICE AND  
COMMUNITY IMPACT REPORT**



# **Leitchfield Small Urban Area Study**

## **Grayson County, Kentucky**

### **Environmental Justice and Community Impact Report**



**March 2009**

**Prepared By:**  
Lincoln Trail Area Development District  
613 College Street Rd.  
P.O. Box 604  
Elizabethtown, KY 42702  
(270) 769-2393



# Table of Contents

1.0 Introduction.....	3
2.0 What is Environmental Justice?.....	3
2.1 Definitions.....	4
3.0 Methodology .....	4
4.0 Census Data Analysis .....	5
5.0 Study Findings .....	5
6.0 Study Findings / Population by Persons of Minority Origin .....	6
7.0 Study Findings / Population by Hispanic or Latino Origin .....	6
8.0 Study Findings / Population by Persons 65 and Over .....	7
9.0 Study Findings / Population by Persons Below the Poverty Level .....	8
10.0 Conclusion .....	8
11.0 Study Area Maps.....	9
10.1 2000 Census Tracts and Block Groups .....	9
10.2 Population by Black or African American .....	10
10.3 Population by Hispanic or Latino Origin .....	11
10.4 Population by Persons 65 and Over .....	12
10.5 Population by Persons Below the Poverty Level .....	13
Appendix A: Planning Study Contact List.....	A-1
Appendix B: Methodology for Assessing Potential Environmental Justice Concerns for KYTC Planning Studies.....	B-1
Appendix C: Census Data Tables .....	C-1

## 1.0 Introduction

The following document is an assessment of the community demographics and economic characteristics related to the defined project study area of the Leitchfield Small Urban Area Study. This area is depicted in Map 10.1

The resources used to compile the data contained herein are the U.S. Census Bureau, Kentucky State Data Center, local elected officials, community leaders, and field observations of the study area. The information and results are intended to assist the Kentucky Transportation Cabinet in making informed and prudent decisions in the study area, particularly as it pertains to the requirements of Executive Order 12898<sup>1</sup>, to ensure equal environmental protection to all groups potentially impacted by both short and long-term improvement strategies for the defined study area.

This report includes data tables comparing the populations of the census divisions directly in and around the study area at the county, state, and national levels. Statistics are provided for minority, elderly, and low-income populations for census tracts and block groups. For ease of analysis, maps are included that highlight areas of interest at the block group level.

## 2.0 What is Environmental Justice?

The U.S. EPA Office of Environmental Justice (EJ) defines EJ as:

“The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies. Fair treatment means that no group of people, including racial, ethnic, or socio-economic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local and tribal programs and policies.”

A disproportionately high and adverse effect on a minority or low-income population means an adverse effect that:

1. is predominately borne by a minority population and/or low-income population, or
2. will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that

---

<sup>1</sup> Executive Order 12898 signed on February 11, 1994 states “...each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations...”



will be suffered by the non-minority population and/or non-low-income population.

## 2.1 Definitions

USDOT Order 5610.2 on EJ, issued in the April 15, 1997 Federal Register defines what constitutes low-income and minority population.

- **Low-Income** is defined as a person whose median household income is at or below the U.S. Department of Health and Human Services poverty guidelines.
- **Minority** is defined as a person who is: (1) Black (a person having origins in any black racial groups of Africa); (2) Hispanic (a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race); (3) Asian American (a person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands); or (4) American Indian and Alaskan Native (a person having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition).
- **Low-Income Population** is defined as any readily identifiable group of low-income persons who live in geographic proximity, and if circumstances warrant geographically dispersed/transient persons who will be similarly affected by a proposed DOT program, policy or activity.
- **Minority Population** is defined as any readily identifiable group of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons who will be similarly affected by a proposed DOT program, policy or activity.

EO12898 and USDOT Order 5610.2 do not address consideration of the elderly population. However, the U.S. DOT encourages the study of these populations in EJ discussions and in accordance with EJ, Title VI of the Civil Rights Act of 1964 and the Kentucky Transportation Cabinet's advocacy of inclusive public involvement and equal treatment of all persons this study includes statistics for persons age 65 and over that are within the study and comparison areas.

## 3.0 Methodology

For this study, data was collected by using the method outlined by the Kentucky Transportation Cabinet document, "Methodology for Assessing Potential Environmental Justice Concerns for KYTC Planning Studies." (See Appendix B.)

The primary sources of data used in the compilation of this report were the U.S. Census Bureau's 2000 Census, Kentucky State Data Center, local elected officials, community leaders, and field observations. Statistics were compiled to present a detailed analysis of the community conditions for the project study area.

## 4.0 Census Data Analysis

The U.S. Census Bureau defines geographical units as:

- **Census Tract (CT)** – A small, relatively, permanent statistical subdivision of a county or statistically equivalent entity delineated for data presentation purposes by a local group of census data users or the geographic staff of a regional census center in accordance with Census Bureau guidelines. CTs generally contain between 1,000 and 8,000 people. CT boundaries are delineated with the intention of being stable over many decades, so they generally follow relatively permanent visible features. They may also follow governmental unit boundaries and other invisible features in some instances; the boundary of a state or county is always a census tract boundary.
- **Block Group (BG)** – A statistical subdivision of a CT. A BG consists of all tabulation blocks whose numbers begin with the same digit in a CT. BGs generally contain between 300 and 3,000 people, with an optimum size of 1,500 people.
- **Census Block (CB)** – An area bounded on all sides by visible and/or invisible features shown on a map prepared by the Census Bureau. A CB is the smallest geographic entity for which the Census Bureau tabulates decennial census data.

The census data tables include percentages for minority, Hispanic, elderly, and low-income populations in the United States, Kentucky, Grayson County, Census Tracts, and Block Groups Blocks located in and around the study area.

## 5.0 Study Findings

This Environmental Justice and Community Impact Report is to be used as a component of a programming study currently being conducted by the Kentucky Transportation Cabinet Division of Planning for the identification of short and long-term improvement strategies for the defined small urban area of Leitchfield. This study is intended to help define the location and purpose of these projects and meet federal requirements regarding consideration of environmental issues as defined in the National Environmental Policy Act (NEPA).

According to the 2000 Census, there are four (4) Census Tracts and eleven (11) Block Groups included in the defined study area. These are listed below. If all of the Block Groups within the Census Tract were not included in the study area, the total Census Tract population was not given. See Map 10.1 for geographic location.

Grayson County Total Population	24,053
---------------------------------	--------

Study Area Total Populations	12,784
------------------------------	--------

Census Tract 9502

Block Group 1	1,346
Block Group 2	853
Census Tract 9503	3,744
Block Group 1	1,274
Block Group 2	921
Block Group 3	1,549
Census Tract 9504	6,081
Block Group 1	1,316
Block Group 2	1,486
Block Group 3	1,377
Block Group 4	1,239
Block Group 5	663
Census Tract 9505	
Block Group 1	760

## **6.0 Study Findings / Population by Persons of Minority Origin**

As described in the Census Data Table, the White Alone population percentage for the United States was 75.10%. The population percentage for the state of Kentucky was 90.04%. The population percentage for Grayson County was 98.48%.

There are only two census tracts with a White Alone population percentage below the County percentage. These are CT 9503 with 96.26% and CT 9504 with 98.04%. However, within these two Census Tracts there are several block groups with a minority population percentage above 1.00%.

Within CT 9503 Block Group 2, the percentage of the Some Other Race Alone population was 2.17% and the Two or More Races population percentage was 2.61%. Within CT 9503 Block Group 3, the percentage of Black or African American Alone population was 5.81%.

Within CT 9504 Block Group 1, the percentage of Black or African American Alone population was 1.29%. Within CT 9504 Block Group 5, the percentage of the same population was 11.76%.

Map 10.2 displays the Black and African American Alone populations geographically.

## **7.0 Study Findings / Population by Persons of Hispanic or Latino Origin**

Persons of Hispanic or Latino Origin may be of any race. As described in the Census Data Table, the Hispanic or Latino Origin population percentage for the United States

was 12.52%. The population percentage for the state of Kentucky was 1.40%. The population percentage for Grayson County was 0.84%.

There are only two census tracts with a Hispanic or Latino Origin population percentage above the County percentage. These are CT 9502 with 1.08% and CT 9505 with 1.12%. However, within the study there are several block groups with a Hispanic or Latino Origin population percentage above the County level.

Within CT 9502 Block Group 1, the percentage of Hispanic or Latino Origin population was 1.34%. Within Block Group 2, the percentage was 1.76%.

Within CT 9503 Block Group 2, percentage of Hispanic or Latino Origin population was 1.52%.

Within CT 9504 Block Group 2, the percentage of Hispanic or Latino Origin population was 1.62%. Within Block Group 3, the percentage was 1.89%.

Within CT 9505 Block Group 2, the percentage of Hispanic or Latino Origin population was 1.58%.

Map 10.3 displays the Hispanic or Latino Origin populations geographically.

## **8.0 Study Findings / Population by Persons 65 and Over**

As described in the Census Data Table, the Persons 65 and Over population percentage for the United States was 12.43%. The population percentage for the state of Kentucky was 12.46%. The population percentage for Grayson County was 13.97%.

There is only one census tract with a Persons 65 and Over population percentage above the County percentage. This was CT 9503 with 14.96%. However, there are several block groups within the study area with population percentages above the County level.

Within CT 9502 Block Group 2, the population percentage of Persons 65 and Over was 16.30%. Within Block Group 3, the population percentage was 14.72%.

Within CT 9503 Block Group 3, the population percentage of Persons 65 and Over was 19.75%.

Within CT 9504 Block Group 2, the population percentage of Persons 65 and Over was 23.82%. Within Block Group 5, the population percentage was 17.65%.

Map 10.4 displays the Persons 65 and Over populations geographically.

## **9.0 Study Findings / Population by Persons Below the Poverty Level**

As described in the Census Data Table, the Persons Below the Poverty Level for the United States was 12.05%. The population percentage for the state of Kentucky was 15.37%. The population percentage for Grayson County was 17.74%.

There are only two census tracts with a Persons Below the Poverty Level population percentage above the County percentage. This was CT 9504 with 18.50% and CT 9505 with 18.21%. However, there are several block groups within the study area with population percentages above the County level.

Within CT 9503 Block Group 2, the population percentage of Persons Below the Poverty Level was 20.09%. Within Block Group 3, the population percentage was 19.50%.

Within CT 9504 Block Group 5, the population percentage of Persons Below the Poverty Level was 34.24%.

Within CT 9505 Block Group 2, the population percentage of Persons Below the Poverty Level was 18.72%.

Map 10.5 displays the Persons Below the Poverty Level populations geographically.

## **10.0 Conclusion**

After an analysis of the Leitchfield SUA study area, there are several block groups that will require further evaluation in the development of a transportation improvement project with regard to race, age, and income level. The block groups with relatively high percentages have been described below and in detail in the *Study Findings* sections of this report.

The total population of Persons of Minority Origin in Grayson County was calculated as 365 or 1.52%. The Black or African American Alone population made up 56.7% of the minority population. There were two concentrations of Black or African American Alone population in the study area. This was CT 9503 Block Group 3 (5.81%) and CT 9504 Block Group 5 (11.76%). These populations would need to be taken into consideration when developing a project.

The total population percentage of Persons of Hispanic or Latino Origin was 0.84%. There were several concentrations of this population in the study area. The highest percentages were found in CT 9502 Block Group 2 (1.76%); CT 9504 Block Group 2 (1.62%) and CT 9504 Block Group 3 (1.89%). These populations would need to be taken into consideration when developing a project.

The population percentage of Persons 65 and Over in Grayson County was 13.97%. This population seems to be dispersed throughout the study area. However, as shown in Map 10.4, there are three block groups that may require further evaluation in the development of a project. These are CT 9503 Block Group 3 (19.75%); CT 9504 Block Group 2 (23.82%) and CT 9504 Block Group 5 (17.65%)

The population percentage of Persons Below the Poverty Level in Grayson County was 17.74%. The population seems to be well dispersed throughout the study area. However, as shown in Map 10.5, there are three block groups that may require further evaluation in the development of a project. These are CT 9503 Block Group 2 (20.09%); CT 9503 Block Group 3 (19.50%) and CT 9504 Block Group5 (34.24%).

The LTADD staff will work with the KYTC to continue to monitor the locations indicated above as well as the surrounding study area for demographic and/or socioeconomic changes that may occur throughout the development of the project.

## **Appendix A: Planning Study Contact List**

### **Planning Study Contact List**

Honorable Gary Logsdon  
Grayson Co. Judge/Executive  
10 Court Square  
Leitchfield, KY 42754  
270-259-3159

Mr. Roger Tomes  
Grayson Co. PVA  
10 Court Square  
Leitchfield, KY 42754  
270-259-4838

Mr. Steve Mahurin  
Grayson Co. Road Supervisor  
655 W. White Oak Street  
Leitchfield, KY 42755  
270-259-3093

Mr. Randall Smith, Director  
Grayson Co. Emergency Management  
104 W Main Street  
Leitchfield, KY 42754  
270-259-0096

Sheriff Rick Clemons  
Grayson Co. Sheriff Department  
44 Public Square  
Leitchfield, KY 42754  
270-259-3024

Mr. Barry Anderson, Superintendent  
Grayson County Schools  
909 Brandenburg Rd  
P.O. Box 4009  
Leitchfield, KY 42754  
270-259-4011

Honorable William H. Thomason  
Mayor of Leitchfield  
314 W. White Oak Street

P.O. Box 398  
Leitchfield, KY 42755-0398  
270-259-4034

Chief Bart Glenn  
Leitchfield Police Department  
314 W. White Oak Street  
P.O. Box 398  
Leitchfield, KY 42755  
270-259-3850

Chief Carl Smith  
Leitchfield Fire Department  
314 W. White Oak Street  
P.O. Box 398  
Leitchfield, KY 42755  
270-259-4871

Ms. Sue Vincent  
Lincoln Trail Health Department  
124 E. White Oak Street  
Leitchfield, KY 42754  
270-259-6026

Mr. Darrell Harrell, Director  
Public Works  
314 W. White Oak Street  
P.O. Box 398  
Leitchfield, KY 42755  
270-259-4034

Mr. Keith Jones  
Leitchfield Planning and Zoning  
314 W. White Oak Street  
P.O. Box 398  
Leitchfield, KY 42755  
270-259-4034

Honorable Bonnie Henderson  
106 Spring Street  
P.O. Box 10  
Clarkson, KY 42726  
270-242-6997

Chief Andy Cain  
Clarkson Fire Department

P.O. Box 15  
Clarkson, KY 42726  
270-230-3245

Chief Dan Petterson  
Clarkson Police Department  
106 Spring Street  
Clarkson, KY 42726  
270-242-6997



## **Methodology for Assessing Potential Environmental Justice Concerns for KYTC Planning Studies**

Updated: February 1, 2002

The demographics of the affected area should be defined using U.S. Census data (Census tracts and block groups) and the percentages for minorities, low-income, elderly, or disabled populations should be compared to those for the following:

- Other nearby Census tracts and block groups,
- The county as a whole,
- The entire state, and
- The United States.

Information from PVA offices, social service agencies, local health organizations, local public agencies, and community action agencies can be used to supplement the Census data. Specifically, we are interested in obtaining the following information:

- Identification of community leaders or other contacts who may be able to represent these population groups and through which coordination efforts can be made.
- Comparison of the Census tracts and block groups encompassing the project area to other nearby Census tracts and block groups, county, state, and United States percentages.
- Locations of specific or identified minority, low-income, elderly, or disabled population groups within or near the project area. This may require some field reviews and/or discussions with knowledgeable persons to identify locations of public housing, minority communities, ethnic communities, etc., to verify Census data or identify changes that may have occurred since the last Census. Examples would be changes due to new residential developments in the area or increases in Asian and/or Hispanic populations.
- Concentrations or communities that share a common religious, cultural, ethnic, or other background, e.g., Amish communities.
- Communities or neighborhoods that exhibit a high degree of community cohesion or interaction and the ability to mobilize community actions at the start of community involvement.
- Concentrations of common employment, religious centers, and/or educational institutions with members within walking distance of facilities.
- Potential effects, both positive and negative, of the project on the affected groups as compared to the non-target groups. This may include, but are not limited to:
  1. Access to services, employment or transportation.
  2. Displacement of persons, businesses, farms, or non-profit organizations.
  3. Disruption of community cohesion or vitality.
  4. Effects to human health and/or safety.
- Possible methods to minimize or avoid impacts on the target population groups.

If percentages of these populations are elevated within the project area, it should be brought to the attention of the Division of Planning immediately so that coordination with affected populations may be conducted to determine the affected population's concerns and comments on the project. Also, with this effort, representatives of minority, elderly, low-income, or disabled populations should be identified so that, together, we can build a partnership for the region that may be incorporated into other projects. Also, we hope to build a Commonwealth-wide database of contacts. We are available to participate in any meetings with these affected populations or with their community leaders or representatives.

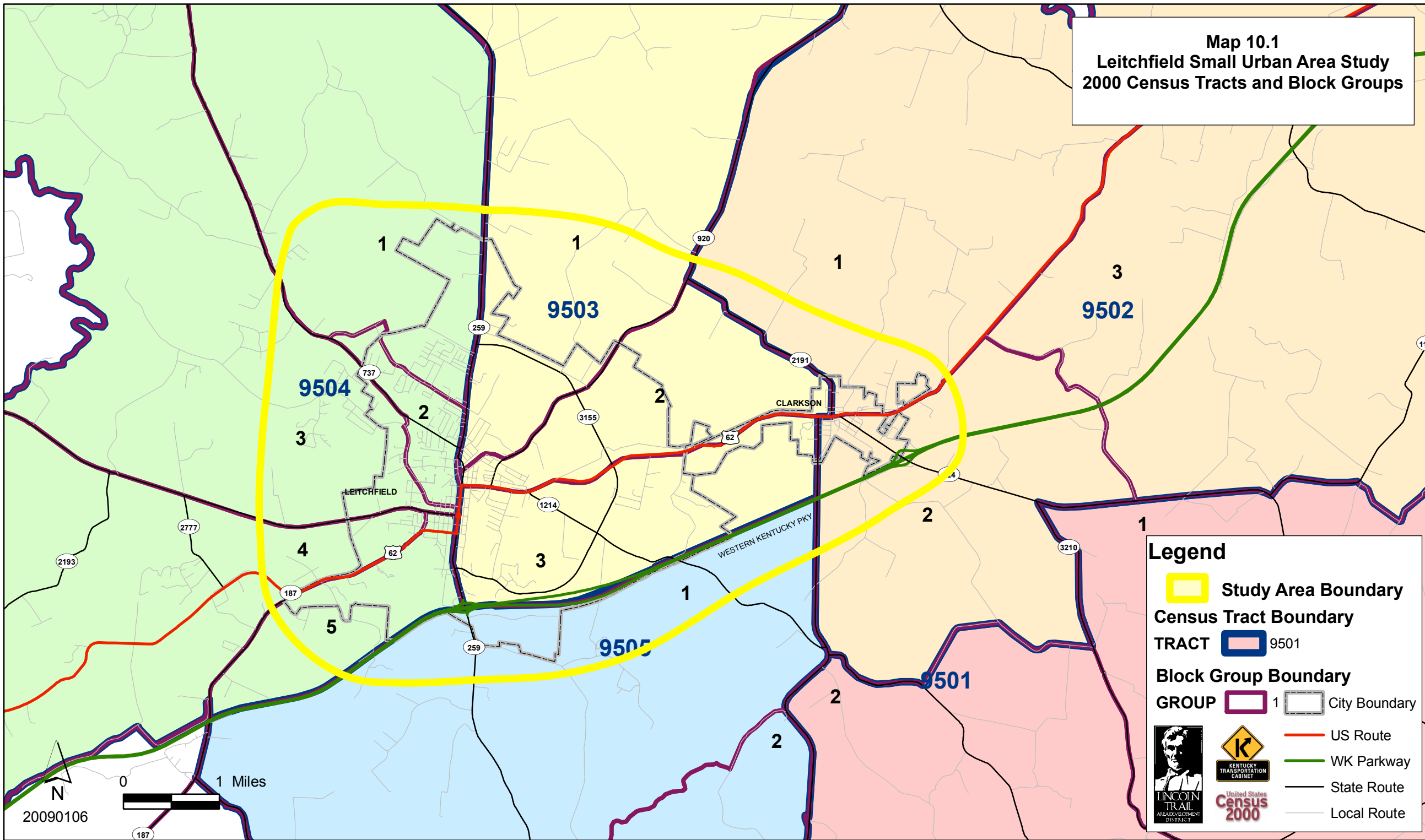
In identifying communities, agencies may consider as a community either a group of individuals living in geographic proximity to one another, or a geographically dispersed/transient set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect. The selection of the appropriate unit of analysis may be a governing body's jurisdiction, a neighborhood, census tract, or other similar unit that is to be chosen so as not to artificially dilute or inflate the affected population. A target population also exists if there is (1) more than one minority or other group present and (2) the percentages, as calculated by aggregating all minority persons, exceed that of the general population or other appropriate unit of geographic analysis.

Maps should be included that show the Census tracts and block groups included in the analysis as well as the relation of the project area to those Census tracts and block groups.

	Total	White Alone	White Alone (%)	Black or African American alone	Black or African American alone (%)	American Indian and Alaska Native alone	American Indian and Alaska Native alone (%)	Asian alone	Asian alone (%)	Native Hawaiian and other Pacific Islander alone	Native Hawaiian and other Pacific Islander alone (%)
<b>United States</b>	281,421,906	211,353,725	75.10%	34,361,740	12.21%	2,447,989	0.87%	10,171,820	3.61%	378,782	0.13%
<b>Kentucky</b>	4,041,769	3,639,168	90.04%	293,915	7.27%	9,080	0.22%	28,994	0.72%	1,155	0.03%
<b>Grayson Co.</b>	24,053	23,688	98.48%	207	0.86%	15	0.06%	9	0.04%	-	0.00%
<b>Tract 9501</b>	2,593	2593	100.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
<b>Block Group 1</b>	934	934	100.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
<b>Block Group 2</b>	778	778	100.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
<b>Block Group 3</b>	881	881	100.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
<b>Tract 9502</b>	3,055	3030	99.18%	0	0.00%	0	0.00%	5	0.16%	0	0.00%
<b>Block Group 1</b>	1,346	1327	98.59%	0	0.00%	0	0.00%	5	0.37%	0	0.00%
<b>Block Group 2</b>	853	851	99.77%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
<b>Block Group 3</b>	856	852	99.53%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
<b>Tract 9503</b>	3,744	3604	96.26%	90	2.40%	6	0.16%	0	0.00%	0	0.00%
<b>Block Group 1</b>	1,274	1274	100.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
<b>Block Group 2</b>	921	871	94.57%	0	0.00%	6	0.65%	0	0.00%	0	0.00%
<b>Block Group 3</b>	1,549	1459	94.19%	90	5.81%	0	0.00%	0	0.00%	0	0.00%
<b>Tract 9504</b>	6,081	5962	98.04%	113	1.86%	0	0.00%	0	0.00%	0	0.00%
<b>Block Group 1</b>	1,316	1299	98.71%	17	1.29%	0	0.00%	0	0.00%	0	0.00%
<b>Block Group 2</b>	1,486	1478	99.46%	8	0.54%	0	0.00%	0	0.00%	0	0.00%
<b>Block Group 3</b>	1,377	1367	99.27%	10	0.73%	0	0.00%	0	0.00%	0	0.00%
<b>Block Group 4</b>	1,239	1233	99.52%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
<b>Block Group 5</b>	663	585	88.24%	78	11.76%	0	0.00%	0	0.00%	0	0.00%
<b>Tract 9505</b>	2,592	2571	99.19%	0	0.00%	0	0.00%	4	0.15%	0	0.00%
<b>Block Group 1</b>	760	760	100.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
<b>Block Group 2</b>	1,832	1811	98.85%	0	0.00%	0	0.00%	4	0.22%	0	0.00%
Source: US Census Bureau, 2000 Census Summary File 3 (SF3)											
Detailed Tables: P.6-Race, P.7-Hispanic or Latino by Race, P.8-Sex by Age, P.87-Poverty Status in 1999 by Age											

	Some other race alone	Some other race alone (%)	Two or more races	Two or more races (%)	Hispanic or Latino Origin	Hispanic or Latino Origin (%)	Persons 65 and Over	Persons 65 and Over (%)	Persons Below Poverty Level	Persons Below Poverty Level (%)
<b>United States</b>	15,436,924	5.49%	7,270,926	2.58%	35,238,481	12.52%	34,978,972	12.43%	33,899,812	12.05%
<b>Kentucky</b>	22,116	0.55%	47,341	1.17%	56,414	1.40%	503,668	12.46%	621,096	15.37%
<b>Grayson Co.</b>	37	0.15%	97	0.40%	202	0.84%	3,360	13.97%	4,267	17.74%
<b>Tract 9501</b>	0	0.00%	0	0.00%	46	1.77%	447	17.24%	332	12.80%
<b>Block Group 1</b>	0	0.00%	0	0.00%	16	1.71%	172	18.42%	93	9.96%
<b>Block Group 2</b>	0	0.00%	0	0.00%	9	0.96%	92	11.83%	141	15.10%
<b>Block Group 3</b>	0	0.00%	0	0.00%	21	2.38%	183	20.77%	98	11.12%
<b>Tract 9502</b>	6	0.20%	14	0.46%	33	1.08%	419	13.72%	390	12.77%
<b>Block Group 1</b>	6	0.45%	8	0.59%	18	1.34%	154	11.44%	222	16.49%
<b>Block Group 2</b>	0	0.00%	2	0.23%	15	1.76%	139	16.30%	78	9.14%
<b>Block Group 3</b>	0	0.00%	4	0.47%	0	0.00%	126	14.72%	90	10.51%
<b>Tract 9503</b>	20	0.53%	24	0.64%	14	0.37%	560	14.96%	597	15.95%
<b>Block Group 1</b>	0	0.00%	0	0.00%	0	0.00%	164	12.87%	110	8.63%
<b>Block Group 2</b>	20	2.17%	24	2.61%	14	1.52%	90	9.77%	185	20.09%
<b>Block Group 3</b>	0	0.00%	0	0.00%	0	0.00%	306	19.75%	302	19.50%
<b>Tract 9504</b>	0	0.00%	6	0.10%	50	0.82%	834	13.71%	1125	18.50%
<b>Block Group 1</b>	0	0.00%	0	0.00%	0	0.00%	118	8.97%	226	17.17%
<b>Block Group 2</b>	0	0.00%	0	0.00%	24	1.62%	354	23.82%	241	16.22%
<b>Block Group 3</b>	0	0.00%	0	0.00%	26	1.89%	101	7.33%	215	15.61%
<b>Block Group 4</b>	0	0.00%	6	0.48%	0	0.00%	144	11.62%	216	17.43%
<b>Block Group 5</b>	0	0.00%	0	0.00%	0	0.00%	117	17.65%	227	34.24%
<b>Tract 9505</b>	0	0.00%	17	0.66%	29	1.12%	307	11.84%	472	18.21%
<b>Block Group 1</b>	0	0.00%	0	0.00%	0	0.00%	58	7.63%	129	16.97%
<b>Block Group 2</b>	0	0.00%	17	0.93%	29	1.58%	249	13.59%	343	18.72%

**Map 10.1**  
**Leitchfield Small Urban Area Study**  
**2000 Census Tracts and Block Groups**



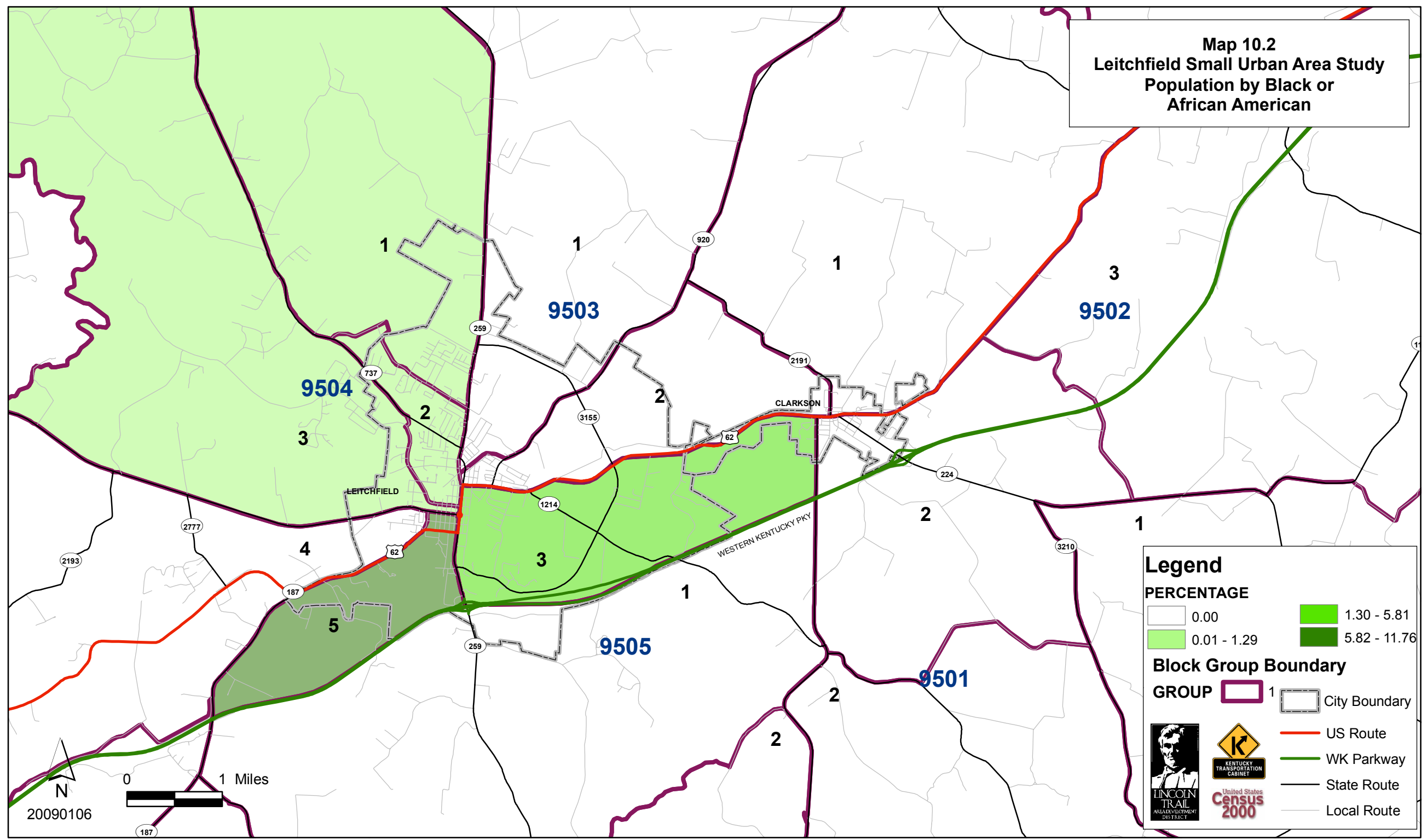
**Legend**

- Study Area Boundary
- Census Tract Boundary
- TRACT** 9501
- Block Group Boundary**
- GROUP** 1 City Boundary
- US Route
- WK Parkway
- State Route
- Local Route

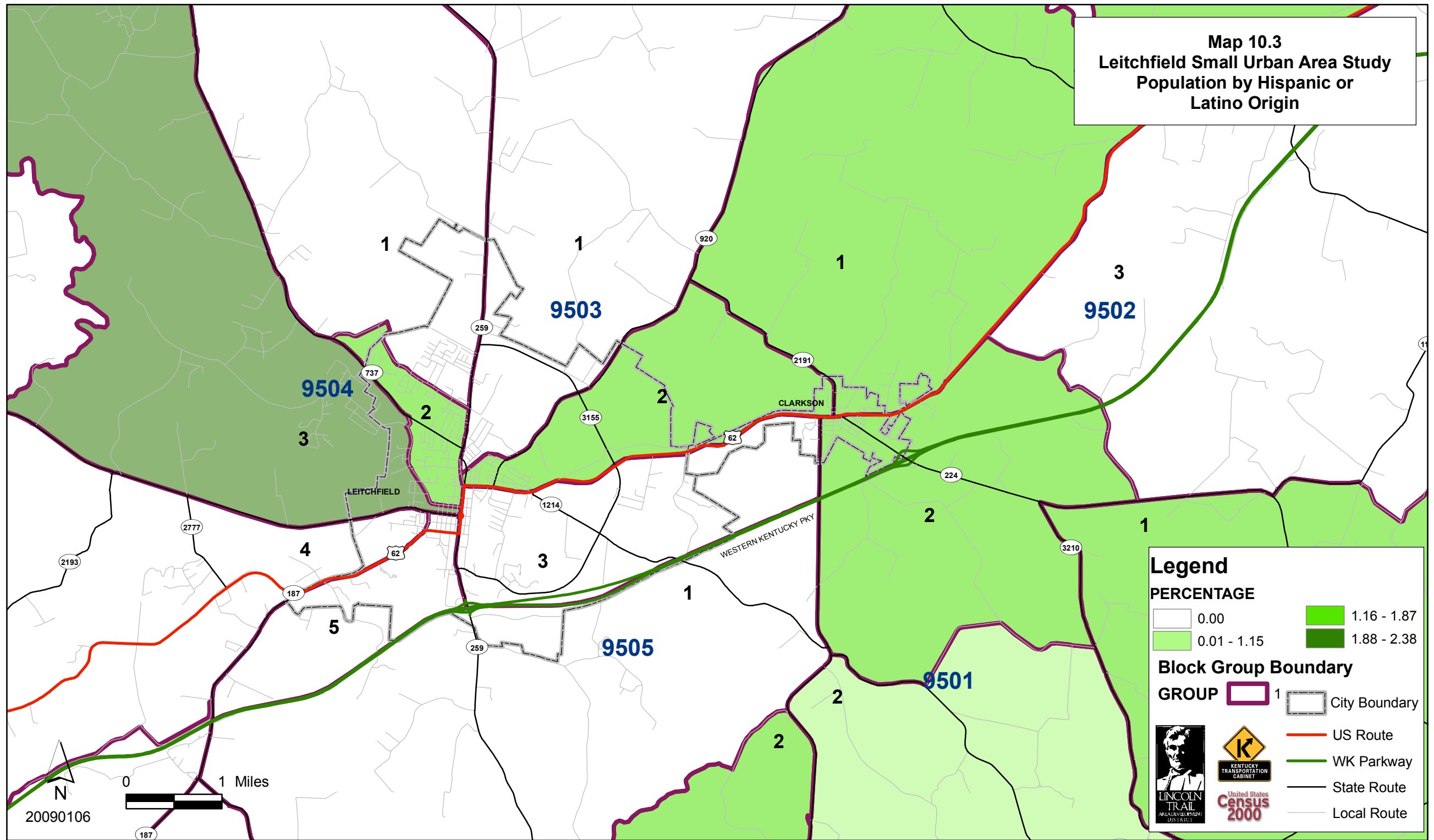
0 1 Miles

20090106

**Map 10.2**  
**Leitchfield Small Urban Area Study**  
**Population by Black or African American**



**Map 10.3**  
**Leitchfield Small Urban Area Study**  
**Population by Hispanic or Latino Origin**



**Legend**

**PERCENTAGE**

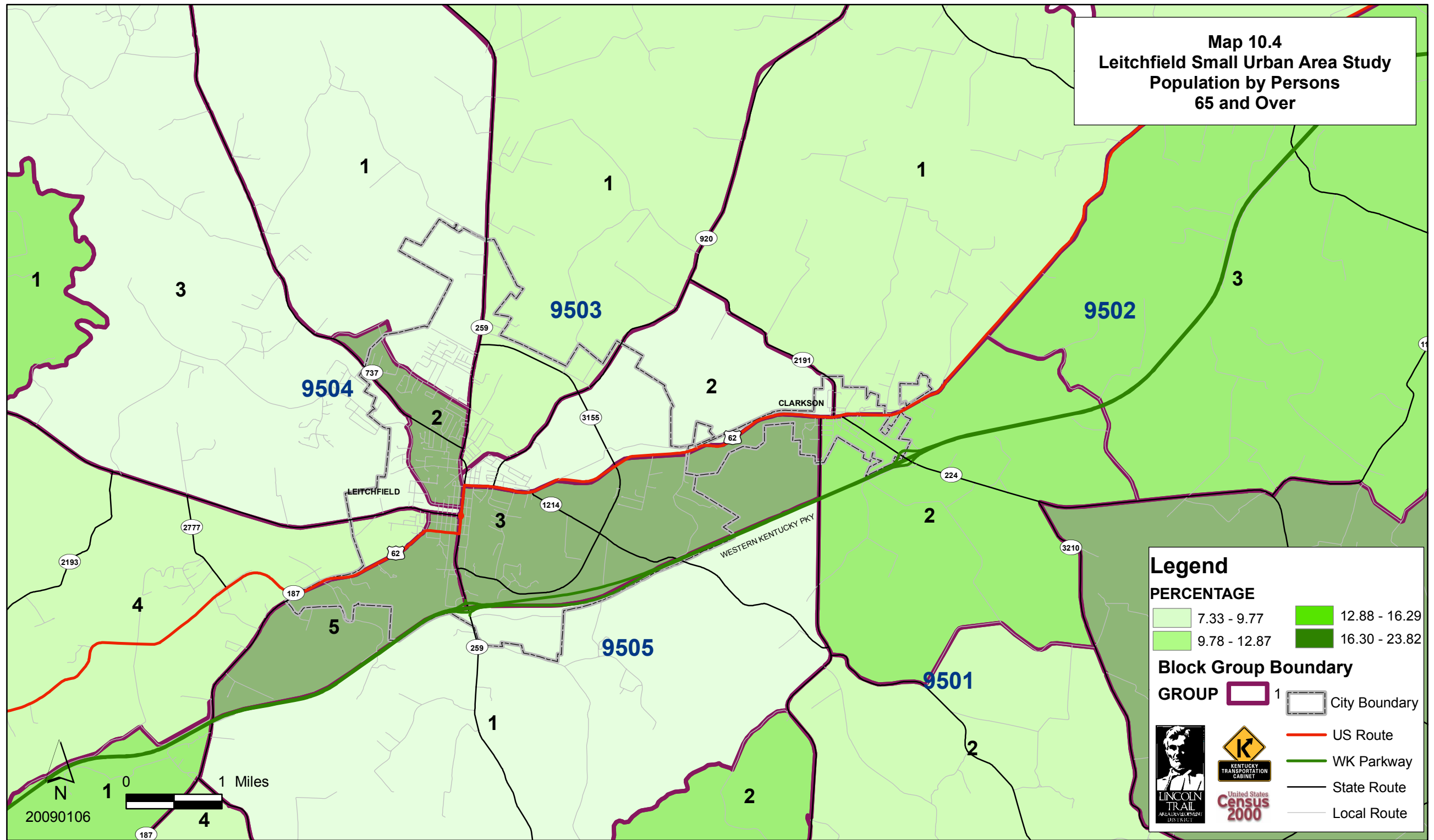
0.00	1.16 - 1.87
0.01 - 1.15	1.88 - 2.38

**Block Group Boundary**

**GROUP**

1	City Boundary
2	US Route
3	WK Parkway
4	State Route
5	Local Route

**Map 10.4**  
**Leitchfield Small Urban Area Study**  
**Population by Persons**  
**65 and Over**



**Legend**

**PERCENTAGE**

	7.33 - 9.77		12.88 - 16.29
	9.78 - 12.87		16.30 - 23.82

**Block Group Boundary**

**GROUP** 1 City Boundary

US Route  
 WK Parkway  
 State Route  
 Local Route

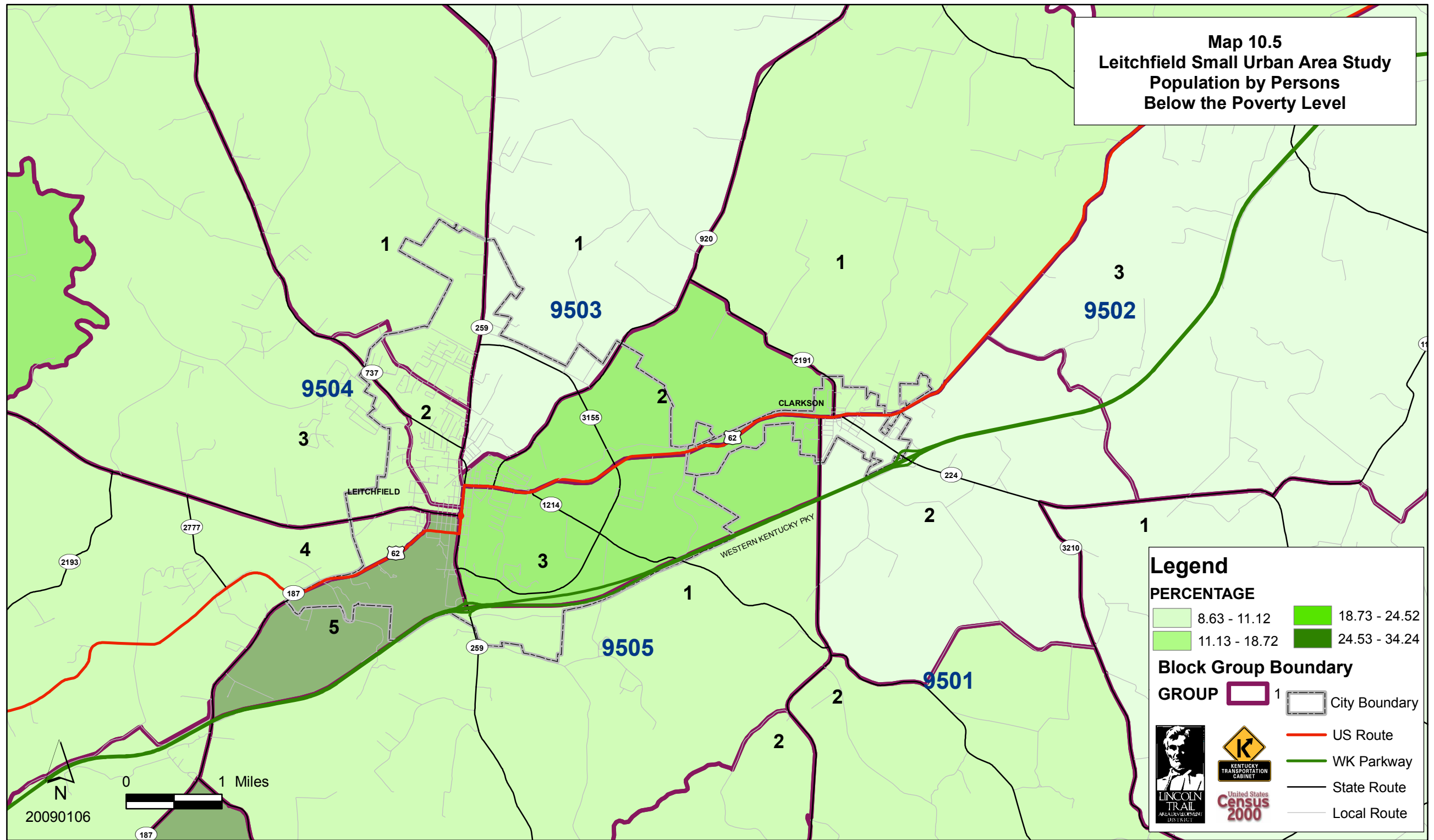
20090106

1 0 1 Miles

1 4



**Map 10.5**  
**Leitchfield Small Urban Area Study**  
**Population by Persons**  
**Below the Poverty Level**



**Legend**

**PERCENTAGE**

	8.63 - 11.12		18.73 - 24.52
	11.13 - 18.72		24.53 - 34.24

**Block Group Boundary**

**GROUP** 1 City Boundary

US Route  
 WK Parkway  
 State Route  
 Local Route

20090106

N

0 1 Miles

187

**APPENDIX D**  
**MEETING MINUTES**



Meeting Minutes  
Leitchfield Small Urban Area Study  
Initial Project Team Meeting – December 17, 2008

A project team meeting for the Leitchfield Small Urban Area Study was held on December 17, 2008 in the conference room of the Highway District 4 Office in Elizabethtown. The meeting began at 10:00 a.m. and ended at approximately 11:30 a.m. The following people attended the meeting:

- Patty Dunaway, District 4 Chief District Engineer
- John Moore, District 4 Project Development
- Kevin Young, District 4 Planning
- James Beauchamp, District 4 Traffic
- Kevin Blain, District 4 Traffic
- Becky Judson, District 4 Public Information Officer
- Brandon Booth, Lincoln Trail Area Development District
- Thomas Witt, Central Office Division of Planning
- Boday Borres, Central Office Division of Planning

The following items were discussed:

**Existing Conditions:**

Data on adequacy ratings, traffic volumes, level of service, volume-to-service flow ratios, and crash rates for state routes within the Leitchfield-Clarkson area were presented to the project team. Personnel from the District Office agreed that this information appeared reasonable. Regarding the crash data, the following items were noted:

- The high critical rate factors on roadways approaching the Leitchfield Bypass may be due to drivers having to adjust to the new intersections created by the construction of the bypass. The District Office will provide the dates that the various sections of the Leitchfield Bypass were opened to traffic, and Central Office will review the dates of crashes at these locations to see if this appears to be the case. Several low-cost safety improvements have already been implemented at these locations.
- A number of factors could be contributing to the high crash rate for the segment of KY 259 just south of the Western Kentucky Parkway. KY 259 is reduced from five lanes to two lanes at this location, and there are several closely spaced entrances near Commerce Drive. Also, motorists unfamiliar with the area sometimes miss the turn onto the eastbound Western Kentucky Parkway ramp from southbound KY 259, which may contribute to some confusion in the area.
- Due to the location of Grayson County High School, many inexperienced drivers use US 62 west of Leitchfield, which may contribute to the high crash rate on that roadway. The planned construction of the southwest Leitchfield Bypass is expected to divert much of the traffic from this roadway. The intersection of US 62 and KY 187 was converted from a Y intersection to a T intersection in 2006.

**Area Projects:**

A list of Highway Plan projects in Grayson County was presented, along with a map of UPL projects in the Leitchfield area. Of the three Highway Plan projects in Grayson County, only Item No. 4-308.01 (design for a section of the Leitchfield Bypass) is actually in the Leitchfield area. It was noted that the portion of US 62 from KY 259 in downtown Leitchfield to near the east Leitchfield Bypass is currently being reconstructed.

Several non-highway projects which may impact traffic were also mentioned:

- A new elementary school is planned on the existing school site in Clarkson with access to KY 224 and US 62.
- A new middle school is under construction near US 62 just east of downtown Leitchfield.
- Commercial development is expected to continue on US 62 just west of the east Leitchfield Bypass near the new Wal-Mart.
- A new courthouse is under construction on Wallace Lane.

**Next Steps:**

- There will be no formal public involvement for this Small Urban Area Study, but an on-line survey may be used to solicit public input. This survey would be developed by Central Office and publicized by the District Office.
- Meetings will be held with local officials from Grayson County, Leitchfield, and Clarkson. The project team suggested initially having separate meetings with Grayson County officials, Leitchfield officials, and Clarkson officials, followed by a formal Advisory Committee meeting with officials from all three entities. A final Advisory Committee meeting would be held to present the results of the study.
- The same data that was provided at the project team meeting will also be provided at the local officials meeting, but the map showing crash data will be simplified, and the other maps will be printed on 11x17-inch paper.
- District 4 Traffic will review high-crash locations for potential safety improvements.

**Meeting Minutes  
Leitchfield Small Urban Area Study  
Leitchfield Advisory Committee Meeting – June 11, 2009**

An advisory committee meeting for the Leitchfield Small Urban Area Study was held with officials from Leitchfield on June 11, 2009 beginning at 9:00 a.m. The following people attended the meeting:

Name	Organization
William H. Thomason	City of Leitchfield
Erin Embry	City of Leitchfield
Darrell Harrell	City of Leitchfield
Keith Jones	City of Leitchfield
Gary Logsdon	Grayson County Fiscal Court
Steve Mahurin	Grayson County Road Department
Scotty Haycraft	Grayson County Road Department
Rick Clemons	Grayson County Sheriff
T. J. Dennison	Grayson County Property Valuation Office
Brandon Booth	Lincoln Trail Area Development District
Patty Dunaway	KYTC District 4
Ashley Higdon	KYTC District 4, Grayson County Maintenance
John Moore	KYTC District 4, Project Development
Kevin Young	KYTC District 4, Planning
Chuck Allen	KYTC Central Office, Design
Scott Schurman	KYTC Central Office, DEA
Jill Asher	KYTC Central Office, Planning
Thomas Witt	KYTC Central Office, Planning

Thomas Witt began the meeting by presenting the initial data that had been gathered by the Transportation Cabinet for state routes within the study area, which encompasses the incorporated areas of Clarkson and Leitchfield. Attendees were given handouts showing the study area, composite adequacy rating percentiles, traffic volumes and truck percentages, levels of service (for high-speed routes), volume to service flow ratios (for low-speed routes), and current projects on the Unscheduled Projects List. The discussion was centered mainly on data for the Leitchfield portion of the study area. Patty Dunaway noted that the level of service C on the bypass seemed low.

After reviewing the initial data for the study area, members of the Advisory Committee were given the opportunity to provide input on transportation-related issues in the project area. The following items were mentioned:

- The section of US 62 between Clarkson and Leitchfield is a top priority. Funds in the amount of \$1.5 million are included for construction of this section of roadway in the *2008 Recommended Highway Plan*, but John Moore indicated that this would only cover about a tenth of the estimated cost.
- There is some confusion about which of the southbound lanes ends on KY 259 just south of the Western Kentucky Parkway. Consider adding merge arrows on the pavement and removing some of the skip line between the lanes prior to the merge.
- Improve traffic control where the bypass (KY 3155) transitions from five lanes to two lanes, possibly including merge arrows on the pavement.
- Vehicles tend to miss or overshoot the left turn from southbound KY 259 onto the Western Kentucky Parkway.
- The cross-walk on KY 54 at the Bel Cheese factory is dangerous. Employees use the cross-walk to get from the parking lot to the factory.
- Congestion at the McDonald's on KY 259 can be a problem in the morning.
- When it rains, there are frequent accidents in the westbound lanes of the Western Kentucky Parkway between mileposts 108 and 109, and the guardrail must be replaced continuously. This could be due to poor drainage.
- There are slope stability problems on US 62 near the quarry and the Grayson County maintenance barn.
- There is a blind spot on US 62 eastbound at the bypass which may be contributing to vehicles running the red light.
- Check signal timing at White Oak Street (US 62) and South Main Street (KY 259). Southbound traffic is having to stop at the signal, and there are long waits going east.
- Vehicles are running the stop signs on KY 1214 at the KY 3155 intersection. This may be due to drivers who used KY 1214 before the

bypass was constructed and are not expecting an intersection at that location.

- Vehicles turning right on red at the KY 259 northern and southern intersections with US 62, as well as at the Shain Drive intersection, are not coming to a complete stop. Consider installing warning signs.
- Add advance warning signs for the lane drop on KY 259 at the southern US 62 intersection. There were signs at this location but they were knocked down.
- Add LED “Stop Ahead” signs for the stop sign on KY 54 at the KY 79 intersection.





**Meeting Minutes  
Leitchfield Small Urban Area Study  
Clarkson Advisory Committee Meeting – June 11, 2009**

An advisory committee meeting for the Leitchfield Small Urban Area Study was held with officials from Clarkson on June 11, 2009 beginning at 1:00 p.m. The following people attended the meeting:

Name	Organization
Bonnie Henderson	Mayor, City of Clarkson
Jeff King	Police Chief, City of Clarkson
Scotty Gore	City of Clarkson
Kay Gibson	City of Clarkson
John Moore	KYTC District 4, Project Development
Kevin Young	KYTC District 4, Planning
Scott Schurman	KYTC Central Office, DEA
Jill Asher	KYTC Central Office, Planning
Thomas Witt	KYTC Central Office, Planning

Thomas Witt began the meeting by presenting the initial data that had been gathered by the Transportation Cabinet for state routes within the study area, which encompasses the incorporated areas of Clarkson and Leitchfield. Attendees were given handouts showing the study area, composite adequacy rating percentiles, traffic volumes and truck percentages, levels of service (for high-speed routes), volume to service flow ratios (for low-speed routes), and current projects on the Unscheduled Projects List. The discussion was centered mainly on data for the Clarkson portion of the study area.

After reviewing the initial data for the study area, members of the Advisory Committee were given the opportunity to provide input on transportation-related issues in the project area. The following items were mentioned:

- The section of US 62 between Clarkson and Leitchfield is a top priority. Funds in the amount of \$1.5 million are included for construction of this section of roadway in the *2008 Recommended Highway Plan*, but John Moore indicated that this would only cover about a tenth of the estimated cost. He suggested that the current funds could be used for the design

phase of the project, or to do small-scale improvements at select locations.

- A pedestrian was recently hit by a car at the intersection of US 62 and Patterson Street. The cross-walk needs to be re-striped at this intersection, and consideration should be given to installing a traffic signal. The district office can check to see if a signal is warranted at this location.
- Sight distance to the west is limited at the eastbound off-ramp from the Western Kentucky Parkway onto KY 224 making it difficult to turn left at that location.
- Drainage is an issue along KY 224 (Millerstown Street). Culverts get clogged up which causes flooding at the intersection with US 62.
- Consider lowering the speed limit on KY 2191 (North Patterson Street) to 20 or 25 miles per hour. The district office can conduct a speed study at this location to see if a lower speed limit is warranted.
- There is a problem with a clogged culvert at 709 West Main Street (US 62), across from Heartland Electric.
- There is a large drop-off into the ditch next to KY 88 and the alley behind the car wash.
- There is a small sign at Clarkson Community Church on KY 88 that is obstructing sight distance for vehicles turning from the alley behind the car wash.
- A junction box on a utility pole at the intersection of KY 88 and US 62 is obstructing sight distance. The district office has contacted the utility company about this issue and will check to see if they have responded. Also at this location, the close proximity of the US 62 L&L entrance to the KY 88 intersection causes traffic conflicts. Consider installing a caution light or signal at this intersection.
- A new elementary school is scheduled to open in August 2010. It will be at the same location as the existing school (between KY 224 and US 62 on the east side of Clarkson), but will have its main entrance on KY 224 instead of US 62. Buses will continue to access the school via the US 62

entrance. Currently, there is a problem with school traffic backing up onto US 62. When the new school is completed, a turn lane and sidewalks along KY 224 would be helpful. A cross-walk is also needed at KY 224 and 1<sup>st</sup> Street to improve access to the school, and possibly on US 62 at 1<sup>st</sup> Street where there is currently a crossing guard.

- The vertical curve on US 62 at Lees Lane, just east of the Clarkson Church of Christ causes sight distance issues.



Meeting Minutes  
 Leitchfield Small Urban Area Study  
 Second Project Team Meeting – December 7, 2009

A project team meeting for the Leitchfield Small Urban Area Study was held on December 7, 2009 in the conference room of the Highway District 4 Office in Elizabethtown. The meeting began at 1:30 p.m. and ended at approximately 3:00 p.m. The following people attended the meeting:

Patty Dunaway	District 4 Chief District Engineer
John Moore	District 4 Project Development
Kevin Young	District 4 Planning
Kevin Blain	District 4 Traffic
Michael Malham	Lincoln Trial Area Development District
Jill Asher	Division of Planning
Thomas Witt	Division of Planning

Thomas Witt began the meeting by providing an update on the schedule of the Small Urban Area Study, noting that problem locations had been identified through a review of available data and meetings with local officials and stakeholders, and that the study was expected to be completed by early 2010. Handouts containing information on potential problem locations that had been identified during previous phases of the study were distributed to the project team members. The project team discussed the issues at each of these locations and made the following decisions on how to proceed:

Location	Issue	Decision
US 62 at Lees Lane	A vertical curve just east of the Clarkson Church of Christ may be causing sight distance issues.	The district office will check sight distance from Lees Lane and the Clarkson Church of Christ entrances and address as appropriate. No reconstruction is recommended.
US 62 and Patterson Street in Clarkson	Local officials stated that a pedestrian was recently hit by a car at this intersection and that the cross-walk needs to be re-stripped and a signal possibly added.	The district office would like to remove this cross-walk and has determined that a signal wouldn't be warranted at this location.

Western Kentucky Parkway at KY 224 in Clarkson	Sight distance to the northwest is limited by guardrail at the Eastbound off-ramp, making it difficult to turn left at that location.	Consider moving the guardrail and re-striping the ramp to encourage traffic to stay on the right side of the ramp where there is more sight distance.
North Patterson Street (KY 2191) in Clarkson	Local officials requested that the Highway Department consider lowering the speed limit to 20 MPH or 25 MPH.	A speed study performed by the District Office did not justify lowering the speed limit. The speed limit will remain as posted.
709 West Main Street (US 62) in Clarkson	The culvert under US 62 at this location becomes clogged due to runoff from a large gravel parking lot at Midway Propane.	Maintenance will keep an eye on this location to make sure water doesn't overflow the roadway. Clarkson officials should discuss the erosion issue with the property owner.
KY 88 at US 62 in Clarkson	There is a large drop-off into a ditch at the alley behind the car-wash.	The alley is a city street, so the city would be responsible for extending the culvert.
	Local officials are concerned that a small sign at Clarkson Community Church obstructs sight distance for vehicles turning from the alley behind the car-wash.	The city would have to address this issue since it is not on state right-of-way. The sign does not appear to be causing significant sight distance issues.
	A junction box on a utility pole obstructs sight distance for vehicles turning from KY 88 onto US 62.	The district office checked with the utility company and found that it would be very expensive to move the junction box. Two signs just west of the junction box also reduce sight distance. The district office will consider removing the redundant US 62 sign and moving the KY 88 sign to a point west of the L&L entrance.
	The close proximity of the US 62 L&L entrance to the KY 88 intersection may cause traffic conflicts with vehicles turning from KY 88.	This location doesn't appear to have a high number of crashes, so the district office does not wish to pursue closing the entrance.

US 62 and KY 224 near new elementary school in Clarkson	A new school is scheduled to open in August 2010 at the site of the old school, but with its main entrance on KY 224 instead of US 62. Buses will continue to use the US 62 entrance. Local officials indicated a need for a turn lane and sidewalks along KY 224, as well as cross-walks at 1st Street and KY 224, and possibly at 1st Street and US 62, when the new school is completed.	Turn lanes are normally included as part of the school construction, but were not in this case. The district office will re-examine the need for turn lanes when the school is built. Safe Routes to School (SRTS) grants may be available for sidewalk construction. The district office will examine the need for cross-walks, but is concerned about the safety of cross-walks at uncontrolled intersections
	There are drainage problems along KY 224, particularly near the US 62 intersection.	Maintenance will make sure the culverts and drainage pipes are kept clear in this area.
US 62 between Leitchfield and Clarkson	Reconstruction of this section of roadway is a top priority for both Leitchfield and Clarkson. A planning study was completed in 2008 which recommended reconstruction with a three-lane cross-section at an estimated cost of \$16.3 million.	\$1.5 million has been included in the Six-Year Plan for construction. The district office has requested to use these funds for design, and will pursue additional funding for future phases.
KY 259 south of the Western Kentucky Parkway	There has been confusion about which of the southbound lanes ends.	The district office has already added merge signs and pavement merge arrows, and will check to make sure the skip line doesn't extend too far into the merge.
KY 259 at the Western Kentucky Parkway	Vehicles tend to miss or overshoot the left turn from southbound KY 259 onto the eastbound Parkway on-ramp.	The district office replaced the left-turn arrows and added thermoplastic striping to better delineate the traveled way on the ramp.
Western Kentucky Parkway from MP 108 to MP 109	Local officials report that frequent crashes occur in the westbound lanes when it rains. This location was not identified as a high-crash spot, and no drainage problems were noted during a field visit.	The district office will monitor the situation and will check with maintenance to see if there are any pavement issues that could be addressed.



KY 3155 at the transition from five lanes to two lanes	Local officials requested traffic control improvements at this location.	The district office has replaced a merge sign and added pavement merge arrows.
KY 1214 at KY 3155	Local officials report that vehicles are running the stop signs on KY 1214. This location was identified as a high-crash location with mostly angle crashes.	The district office installed LED warning signs at least a year ago, and has also added rumble strips and "stop ahead" pavement markings. Central Office will check the crash data to see if crashes have declined recently.
US 62 near the Ready Mix Plant	There are slope stability problems on US 62 near the quarry and the Grayson County maintenance barn.	A project exists on the UPL to rebuild this section of US 62. In the meantime, maintenance will continue to monitor the situation.
KY 54 at KY 79	Local officials requested LED "Stop Ahead" signs on the KY 79 approach to this intersection.	This location was not identified as a high-crash location, and existing traffic control includes stop signs, flashing beacons, and "Stop Ahead" warning signs. No additional traffic control devices are recommended at this location.
KY 54 at Bel Cheese factory	Local officials stated that the cross-walk at this location is dangerous.	The district office replaced the 8-inch beacons with 12-inch beacons and will consider installing a more visible type of cross-walk marking.
KY 259 at US 62 (White Oak Street)	Overhead signs for the northbound lane drop were knocked down.	The district office has added a left-turn arrow and will replace the overhead lane-use signs.
KY 259 at US 62 north intersection (Mill Street), US 62 south intersection (White Oak Street), and Shain Drive	Local officials report that vehicles are turning right on red at these intersections without coming to a complete stop.	Increased enforcement is recommended at these locations. In addition, the district office will replace the Stop sign at the Mulberry Street approach to the US 62 North intersection with a "Stop Here on Red" sign to reflect the new signalization of this approach, and will revise the stop bar at Shain Drive to be compatible with the increased curb radius at this location.
McDonald's on KY 259	Local officials complain of congestion at this location in the morning.	No action is recommended.

US 62 at KY 3155	Local officials indicate that there is a blind spot which may contribute to red-light running.	The district office will add reflective backplates to the signal heads on the KY 3155 southbound approach to improve their visibility.
------------------	--	--

No new construction projects were identified that would require prioritization, and therefore no additional public involvement was anticipated for the Leitchfield Small Urban Area Study.