

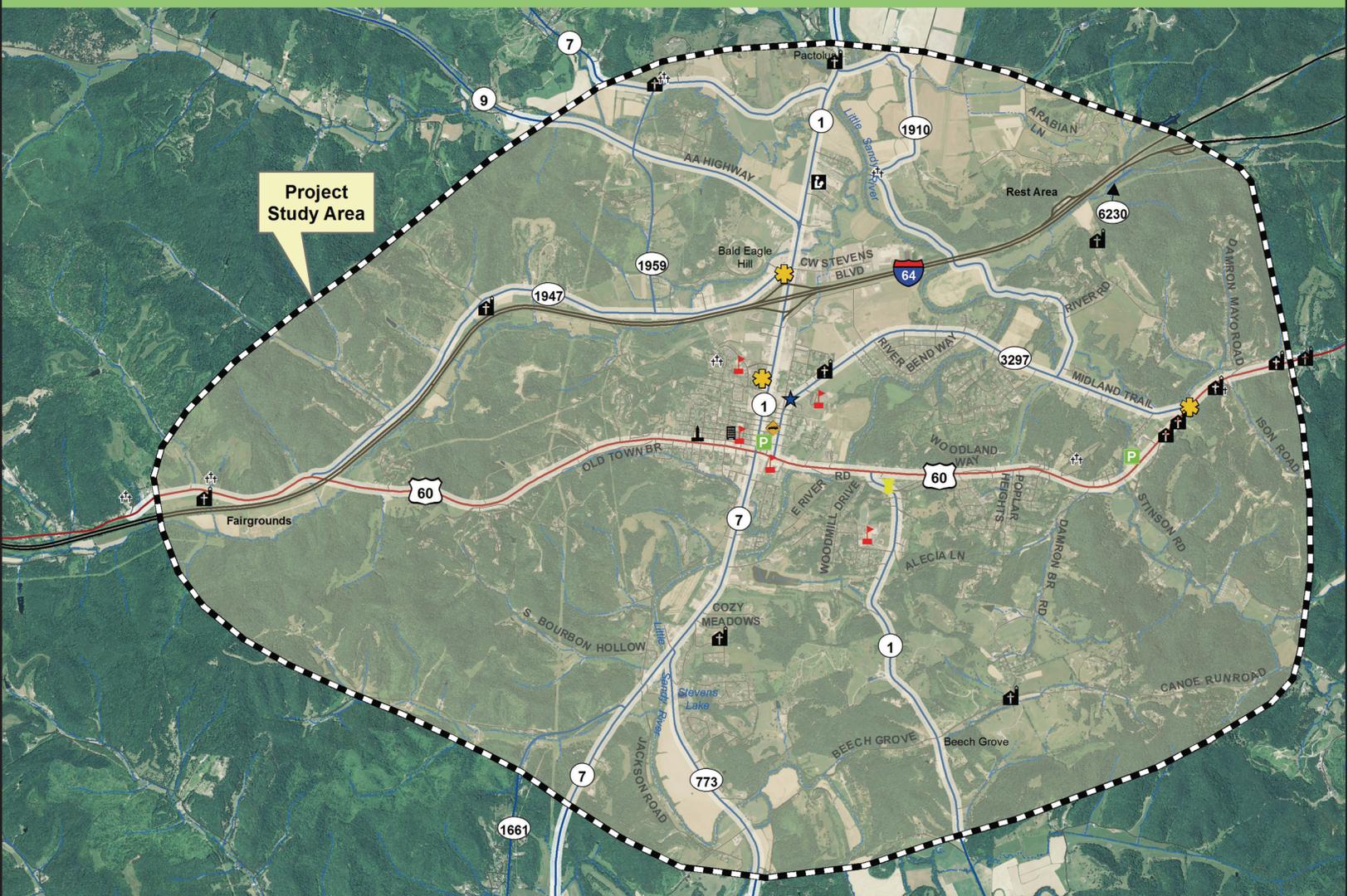
# Grayson Small Urban Area Study

## Carter County

February 2018

# FINAL

## EXECUTIVE SUMMARY



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The Kentucky Transportation Cabinet (KYTC) initiated this transportation-focused Small Urban Area (SUA) Study for the city of Grayson, in Carter County. Grayson is located in the northeastern part of the Commonwealth of Kentucky on Interstate 64 (I-64) about 25 miles south and west of the Ohio and West Virginia borders.

Based on U.S. Census Bureau 2010 data, the population of Grayson was 4,217. Grayson is nicknamed “Heart of the Parks” because of its location near the center of a quadrangle formed by Grayson Lake, Carter Caves, Greenbo Lake, and Yatesville Lake state parks. Downtown Grayson is at the crossroads of US 60 and KY 7. I-64 is along the northern edge of the city, and just north of I-64 is the southern end of KY 9 (AA Highway)<sup>1</sup>, which connects Grayson to Cincinnati, Ohio, and provides transportation access that benefits both commerce and tourism.

The purpose of this SUA Study is to identify and examine transportation issues on state-maintained routes related to safety operations and congestion in Grayson and its surrounding area. In addition to US 60, KY 7, and KY 9, study area roadways evaluated were KY 1, KY 773, KY 1910, KY 1947, and KY 3297.

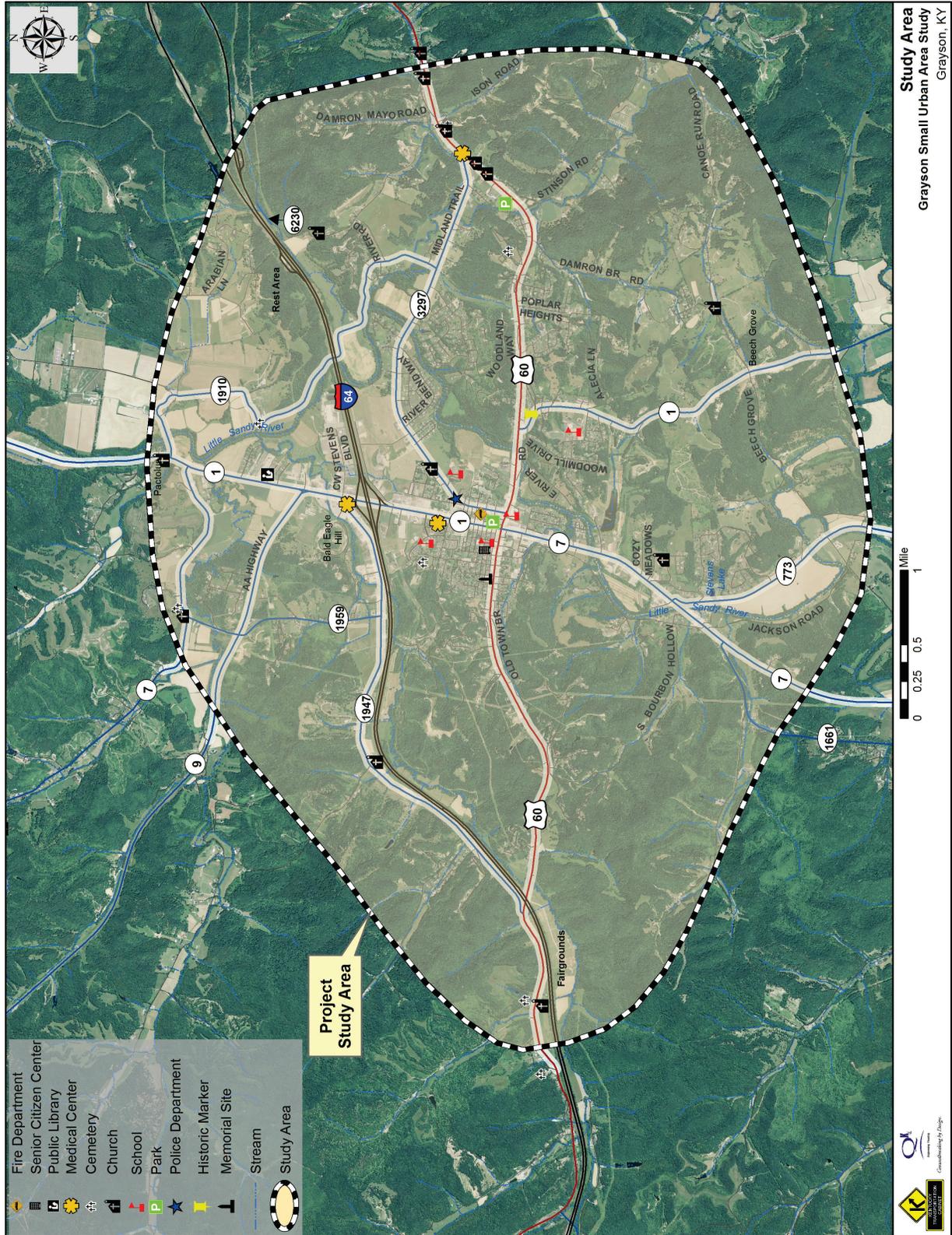
The study focused on (1) short-term improvements—projects quickly and effectively implemented at both an individual intersection level and at an area-wide level; and (2) long-term future improvement projects requiring more significant resources to implement. The initial focus of the study was to examine state-maintained roads; however, as the study progressed, it became important to study several local roads as well (**ES Figure 1**).

Basic project activities performed for this SUA Study included:

- Evaluating existing conditions, crash history, and geometric deficiencies to identify possible safety issues.
- Evaluating capacity needs of state-maintained routes and several routes of local significance.
- Working with Local Officials/Stakeholders (LO/S) and the Project Team to identify trouble spots and potential projects to address congestion and safety.
- Developing a list of short- and long-term recommendations the KYTC, Grayson, Carter County, and/or private developers could advance for further project development and implementation.
- Prioritizing local, short-term, and long-term improvement recommendations.
- Documenting the study process and recommendations.

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<sup>1</sup> A section of AA Highway (meant to connect Alexandria and Ashland), KY 9 is referred to hereafter by its state designation, only.



ES Figure 1: Study Area

The first Project Team meeting was held the morning of July 8, 2016, at the FIVCO Area Development District (FIVCO ADD) office in Grayson. The Project Team was composed of KYTC District 9 and Central Office staff from various disciplines. The purpose of the meeting was to review existing conditions data including high crash locations, current levels of service (LOS), traffic volumes, and an environmental overview. Issues discussed included:

- KY 1 between KY 1947 south and US 60 carries 13,620 vehicles per day (vpd). Five intersections or their approaches (i.e., westbound or eastbound) operate at LOS E or F in either/both the AM or PM peak hour. Four of the five are along KY 1 at Interstate Drive/Everman Street, Love's North and South entrances, and Super Eight Lane.
- A crash analysis yielded 13 high crash 0.1-mile spots, five of which are between CW Stevens Boulevard and KY 1/KY 7.
- One segment of US 60 between KY 1/KY 7 intersection and KY 1 (South) operates at LOS E is currently operating at LOS E. This segment also has a v/c ratio greater than 1.0.
- New or improved sidewalks can reduce congestion and serve as improvement options.
- KY 1910 has narrow lane and shoulder widths, substandard curves, slope stability issues, flooding problems, and a less-than-desirable grade near the intersection with KY 3297.

The first LO/S meeting was held July 8, 2016, following the first Project Team meeting. Attendees were divided into four groups and participated in an exercise to identify transportation issues related to safety, congestion, and growth in the study area. Attendees identified 16 congestion-related trouble spots, 28 locations with safety issues, and four areas of growth. Among the transportation issues discussed were the following:

- School congestion along KY 1, US 60, and KY 3297 (Midland Trail).
- Safety concerns at East Carter High School due to sight distance issues.
- Drainage/flooding issues on KY 1, Rupert Street, and South Hord Street.
- Most of the city's employment (nearly 600 employees at Smithfield Foods) is along CW Stevens Boulevard. The city widened and striped the roadway midway through this study; however, LO/S felt additional improvements were necessary.
- Carol Malone Boulevard (KY 1) should be widened to five lanes from Academic Parkway south to just north of the Little Sandy River (KYTC Item Number: 09-144.00).
- Other suggestions regarded lighting, signing, and turn lanes.

November 1, 2016, a second Project Team meeting was held in Flemingsburg at the KYTC's District 9 office. The purpose of the meeting was to review proposed projects to address safety and congestion, traffic growth of 0.58% annually, LO/S input, the KYTC's FY 2016–FY 2022 Highway Plan projects underway with either funds not authorized or not progressing, and previously identified Project Identification Forms (PIF). PIF projects are unfunded identified needs not in the Highway Plan. Preliminary construction costs were also estimated for each project.

Thirty-nine improvement projects are shown in **ES Figure 2**. One project was not ranked by LO/S (Project H). These recommended projects were categorized as follows:

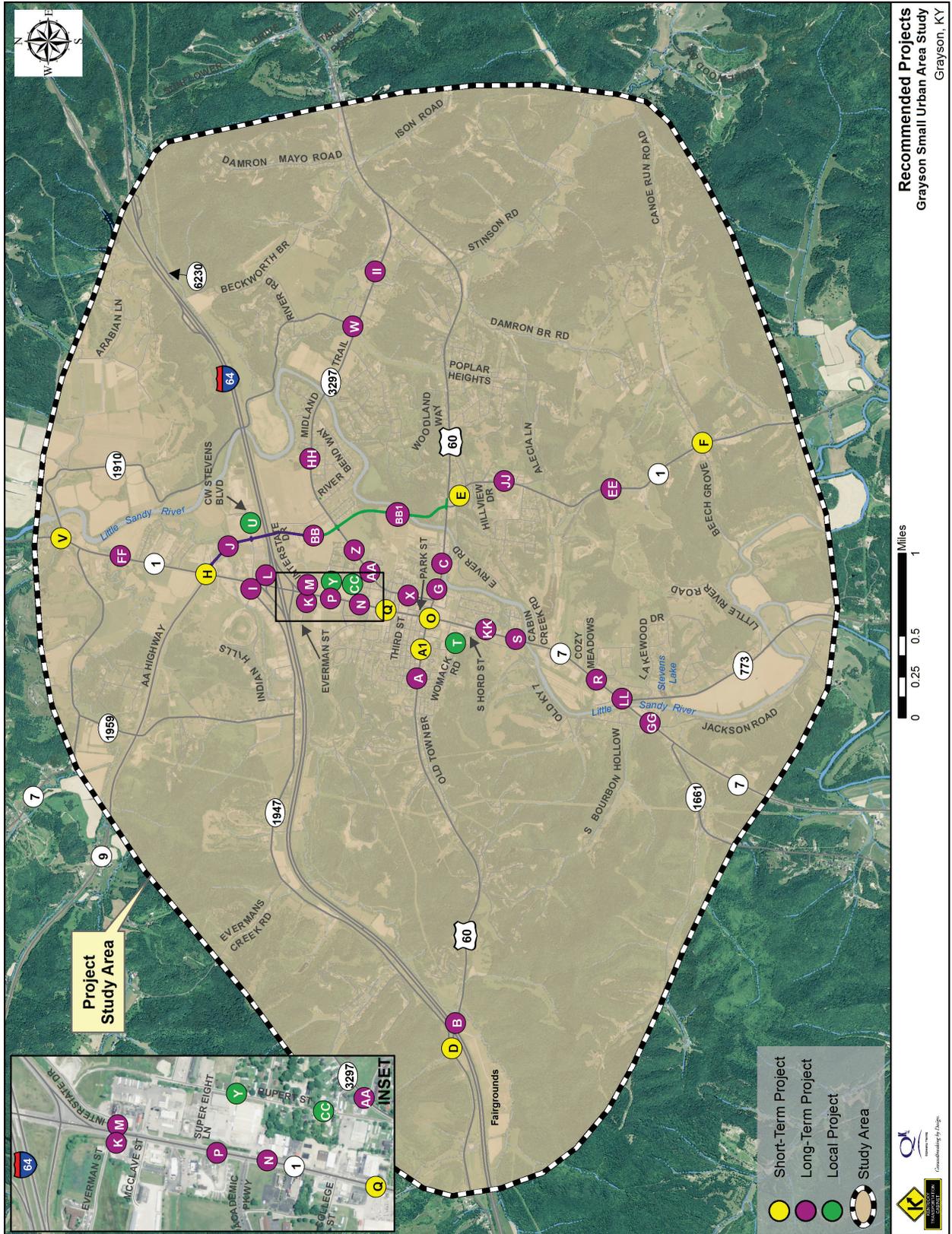
- **Local:** Local projects are not located on the state-maintained system and would likely need to be funded by the City of Grayson or Carter County. A private developer could also assume this responsibility.
- **Short-Term:** Short-term projects are typically lower-cost implemented in the near term. These projects require little or no right-of-way to construct and in some cases may be implemented by the KYTC Divisions of Maintenance or Traffic Operations.
- **Long-Term:** Long-term projects are higher-cost that would require more significant resources to implement. These project types would require additional right-of-way to construct, and would likely need to be funded through the KYTC Highway Plan process.

Cost estimates were developed based on pavement, structures, and an estimate of earthwork quantities utilizing the KYTC's District 9 unit bid prices. The estimates were revised throughout the SUA Study process to account for the addition of detail items such as curb and gutter, culverts, signal heads, retaining walls, etc. District 9 staff provided right-of-way and utility estimates for each new project. The PIF projects' previous construction cost estimates were updated to 2016 dollars.

A second LO/S meeting was held the morning of December 7, 2016, at the FIVCO ADD office in Grayson. A brief overview and presentation of the study's purpose, goals, and proposed projects for Grayson were provided. The LO/S received an exhibit identifying potential project locations, and individual Project Evaluation Worksheets to garner their level of support for each project.

Considering input from the LO/S evaluations, the Project Team prioritized local, short-term, and long-term projects as high, medium, or low. Highway Plan and PIF projects were a part of this process. **ES Tables 1, 2 (p. ES 7) and 3 (p. ES 8)** present the projects according to their prioritization. Regarding three projects listed on the tables, the following should be noted:

- Project H—KYTC has made numerous safety improvements to mitigate crashes at the KY 9/KY 1 intersection, and the reported three-year crash history does not indicate a crash safety issue. The Project Team agreed additional intersection improvements were not necessary. Project H now consists of a District 9 review of signage/stripping for KY 9 in advance of KY 1.
- Project DD—Damron Branch Road, near the intersection of Beech Grove Road, is adjacent to a creek. Due to the large drainage area, proximity of the channel to the roadway, and flood zone location, alleviating drainage problems would require major road reconstruction/relocation, additional right-of-way acquisitions, and utility relocations. Therefore, a concept was not developed and improvements are not recommended at this time. Project DD is not shown on either **ES Figure 2** or **ES Tables 1, 2, or 3**.
- Project V—This project was implemented during the final stage of this study in response to the interest shown in the project by the LO/S and its high priority ranking.



ES Figure 2: Recommended Projects

ES Table 1: High Priority Projects

Project ID	Project Description	Local, Short-Term, or Long-Term	Cost Estimate (2016 Dollars)	Priority
U	Widen CW Stevens Boulevard; add curb and gutter, sidewalks; and improve turning radii at KY 1.	Local	\$2,120,000	High
D	Provide lighting at the intersection of US 60 and KY 1947 and remove hill (along south side of KY 1947) to improve sight distance.*	Short-Term	\$70,000	High
O	Close the Park Street entrance from US 60, and provide curb and sidewalk across the entrance.	Short-Term	\$5,000	High
H	District 9 will review signage/stripping for KY 9 in advance of the intersection with KY 1, but no improvement project is recommended.	Long-Term	\$0	High
V	Install a "No Through Trucks" sign at the KY 1/KY 1910 intersection.	Short-Term	\$1,000	High Completed
I	Provide a right-turn lane on KY 1947 at KY 1.	Long-Term	\$470,000	High
J	Construct a new 0.360-mile-long, two-lane roadway connecting CW Stevens Boulevard north to KY 9 at KY 1. (Section 1 of 3.)	Long-Term	\$3,000,000	High
L	Provide dual left-turn lanes on I-64 westbound off-ramp at KY 1.	Long-Term	\$600,000	High
Z	Provide a right-turn lane on KY 3297 at East Carter Middle School's southernmost entrance.	Long-Term	\$235,000	High
BB	Construct new 0.540-mile two-lane roadway from CW Stevens Boulevard (MP 0.230) south (over I-64) to KY 3297 (MP 0.800). (Section 2 of 3. See J for Section 1.)	Long-Term	\$9,600,000	High
BB1	Construct new 0.720-mile two-lane roadway from KY 3297 (over the Little Sandy River) to US 60 (MP 24.632) at KY 1. (Section 3 of 3. See J for Section 1.)	Long-Term	\$8,500,000	High
JJ	Safety improvements at East Carter High School. PIF 09 022 D0001 1345.0 PIF 09 022 D0001 45.80	Long-Term	\$3,520,000	High
KK	KY 7 and KY 1 (Carol Malone Boulevard) widening from the Little Sandy River Bridge to Academic Parkway. PIF 09 022 D007 1284.0 Item Number 09-144.00	Long-Term	\$3,640,000	High

\* Lighting may become a local project if warrants are not met.

ES Table 2: Medium Priority Projects

Project ID	Project Description	Local, Short-Term, or Long-Term	Cost Estimate (2016 Dollars)	Priority
T	Provide drainage improvements on South Hord Street (CS 1126) along Town Branch Creek south of Womack Road.	Local	\$70,000	Medium
Y	Provide drainage improvements along Rupert Street.	Local	\$375,000	Medium
E	Provide drainage improvements along KY 1 (South) from US 60 to Hillview Drive to minimize flooding.	Short-Term	\$50,000	Medium
F	Provide drainage improvements along KY 1 (South) near Beech Grove Road, including 600 feet of ditching.	Short-Term	\$50,000	Medium
Q	Provide drainage improvements to minimize flooding on KY 1 near the former Ralph's Food Fair.	Short-Term	\$70,000	Medium
C	Reconstruct deficient sidewalks and extend them from KY 1/KY 7 east to the Little Sandy River Bridge.	Long-Term	\$620,000	Medium
G	Add two-way left-turn lane (TWLTL), widen lanes, and provide signage to direct motorists to the appropriate lane along US 60 from KY 1/KY 7 to the Little Sandy River Bridge.	Long-Term	\$490,000	Medium
N	Conduct a KY 1 (Carol Malone Boulevard) access management study from Academic Prkwy north to Everman Street to provide for a more efficient corridor.	Long-Term	\$700,000	Medium
W	Shift KY 1910 approach to KY 3297 east and improve turn radii.	Long-Term	\$225,000	Medium
AA	Reconstruct sidewalk along KY 3297 from Prichard Elementary School on US 60 to Prichard Street.	Long-Term	\$460,000	Medium
HH	Improve operational efficiency and reduce congestion on KY 3297 from Rupert Street east to the Little Sandy River Bridge. PIF 09 022 D3297 39.00	Long-Term	\$13,220,000	Medium
II	Correct geometric and width deficiencies (narrow shoulders) on KY 3297 from the Little Sandy River Bridge to US 60 to improve operational efficiency and system connectivity. PIF 09 022 D3297 40.00	Long-Term	\$10,060,000	Medium
LL*	Improve safety at the KY 7/KY 773 intersection. Add left-turn lane and improve sight distance on KY 7. Item Number 09-8312.10	Long-Term	\$1,050,000	Medium

\* Item Number 09-8312.00 included Safety Improvements to KY 773 from KY 7 to KY 1 from MP 0.100 to 3.505; however, the KYTC District 9 is only pursuing improvements at the KY 7/KY 773 intersection. The total cost represents updated cost estimates (from the KYTC District 9 staff) for the intersection project only.

ES Table 3: Low Priority Projects

Project ID	Project Description	Local, Short-Term, or Long-Term	Cost Estimate (2016 Dollars)	Priority
CC	Provide sidewalks along both sides of Rupert Street.	Local	\$490,000	Low
A1	Restripe US 60 and provide left-turn pockets from Court Street to KY 1/KY 7.	Short-Term	\$5,000	Low
A	Restripe US 60 and provide TWLTL from Old Town Branch Road to KY 1/KY 7 with parking on one side.	Long-Term	\$200,000	Low
B	Provide additional one-lane access road from US 60 to the Fairgrounds east of the entrance.	Long-Term	\$1,100,000	Low
K	Connect Everman Street and Academic Parkway with a two-lane roadway. Close the entrance from Everman Street to KY 1 once the connection has been constructed.	Long-Term	\$2,900,000	Low
M	Close Interstate Drive at KY 1 and the two entrances closest to the KY 1/I-64 eastbound on-ramp, and route those motorists to Super Eight Lane and the roadway directly across KY 1 from McClave Street. Relocate truck parking and improve internal circulation.	Long-Term	\$2,230,000	Low
P	Conduct a pedestrian walkability, safety, and Americans with Disabilities Act (ADA) compatibility study for the community of Grayson to supplement the sidewalk information collected by the KYTC and the FIVCO ADD.	Long-Term	\$150,000	Low
R	Install lighting along KY 7 from KY 773 to Cabin Creek Road.*	Long-Term	\$320,000	Low
S	Construct sidewalks along both sides of KY 7 from Cabin Creek Road north over Little Sandy River Bridge (estimated one side of bridge) to Little Sandy Lane.	Long-Term	\$690,000	Low
X	Improve turning radii from KY 3297 at East Third Street.	Long-Term	\$155,000	Low
EE	Correct horizontal, vertical, and width deficiencies on KY 1 from the Lawrence County Line to US 60 in Grayson to improve safety, sight distances, systems connectivity, operational efficiency, and southern access into Grayson for area residents. PIF 09 022 D0001 45.00	Long-Term	\$111,390,000	Low
FF	Correct geometric and width deficiencies for safety and better accessibility on KY 1 from I-64 to the Greenup County Line. PIF 09 022 D0001 43.00	Long-Term	\$36,760,000	Low
GG	Correct geometric and width deficiencies on KY 7 from KY 1661 to and including the Little Sandy River. Bridge to improve access and systems connectivity between Grayson and Sandy Hook, increase the efficiency of the route, and enhance economic growth in the area. PIF 09 022 D0007 46.20	Long-Term	\$9,880,000	Low

\* Lighting may become a local project if warrants are not met.