# KY 1286 & KY 998 Planning Study
# Executive Summary

**US 45 to US 62 in Paducah, McCracken County, Kentucky**
**KYTC Item No. 1-153.00**

The Kentucky Transportation Cabinet (KYTC), in partnership with CDM Smith, undertook a planning study for two state highways: KY 1286 (Friendship Road) from US 45 (Lone Oak Road, MP 3.639) to KY 998 (Olivet Church Road, MP 6.916) and KY 998 from KY 1286 (MP 1.718) to US 60 (Hinkleville Road, MP 2.314) in Paducah, Kentucky.

## Existing Conditions

KY 1286 is classified as an Urban Minor Arterial with posted speed limits of 35 to 45 mph in the study area. It is a two lane facility with 9 to 11 foot lanes and 2 to 8 foot shoulders. KY 998 has the same functional classification and a posted speed limit of 45 mph in the study area. It is a two lane facility with 9 to 12 foot lanes and 2 to 10 foot shoulders. The routes provide access to residential neighborhoods, several schools, churches, and cemeteries.

Existing traffic volumes range from 4,600 to 10,400 vehicles per day, with the heavier volumes in the southeast portion approaching the intersection with US 45. Peak direction volume-to-capacity ranges from 0.92 to 0.21 for the 30th highest design hour, largely controlled by signalized intersections.

The segment of the corridor nearest US 45 also has the highest crash frequencies; in four years from October 31, 2008 to October 31, 2012, 121 total reported crashes occurred along KY 1286 between US 45 and US 62. This equates to a Critical Rate Factor of 1.80, indicating crashes are happening more often than can be attributed to random occurrence. Several 0.10-mile long spots along the route also exhibit above average crash rates.

A review of existing plans identified deficient horizontal curves, a deficient vertical curve that limits headlight sight distance, and several sections where the cross-section does not meet current standards.

## Purpose & Need

The purpose of the proposed KY 1286/KY 998 project is to improve safety and traffic operations along this route between US 45 and US 60. The need is expressed through above average crash rates, substandard geometric features, and congested traffic operations.

Other project goals include minimizing impacts to the environment, accommodating bicyclists and pedestrians, and ensuring any improvement can handle traffic from other planned improvements.

## Alternates Considered

To improve safety and traffic operations, the project team considered a selection of potential alternates:

- No Build Alternate.
- Short-term Spot Improvement options.
- The Improve Two-Lane Alternate, which would reconstruct the route with wider lanes and shoulders.
- The Three-Lane Widening Alternate, which would reconstruct the route with wider lanes, shoulders, and a two way left turn lane (TWLTL).

Throughout the study, the project team met with local officials, stakeholders, and the public to discuss alternates and understand local perspectives on improvement concepts.

Generally, feedback received indicated strong public support for the proposed project:

- 21 of 21 surveys indicated the route should be improved.
- 14 of 21 surveys preferred the Three-Lane Widening Alternate to the Improve Two-Lane Alternate.
- Segment 1 (US 45 to US 62) was seen as the highest priority need.

## Recommendations

In light of technical analyses and local input, the project team recommends seven priority improvements advance for future project development phases. The following summary outlines the list of projects and their priority with **#1 being the top priority and #7 being the lowest priority.**

1. Segment 1: Both Alternate 1F and Alternate 1G should be considered with a 35 to 45 mph design speed. Given the number of cross streets and business and residential driveways along the segment, an urban three lane typical section is recommended. Bicycle and pedestrian facilities are recommended and should be studied further in the next phase of the project. Connection to Lone Oak Elementary School should be emphasized. To address poor LOS at the US 45 intersection, additional capacity at this intersection should be considered as part of the overall segment improvement.

2. Combine Spot Improvement B and Spot Improvement C into one project; fix the deficient horizontal curve between Deerhaven Lane and New Holt Road and add left turn lanes at the KY 1286/New Holt Road intersection.

3. Spot Improvement F: Add turn lanes on KY 1286 for Lone Oak Elementary School. This improvement was recommended in the *2002 Paducah-McCracken County Transportation Study*. If Segment 1 is widened to three lanes, this project should be implemented as part of the larger widening project. Otherwise, it should be implemented as a standalone improvement.

4. Segment 2: Alternate 2B with a 45 mph design speed and improved curves near Buckner Lane, including a potential new alignment which removes the reverse curves. A rural two lane typical section is recommended based on the preliminary traffic analysis but a three lane typical section should also be considered, particularly given the driveway density and number of side streets along the segment. At a minimum bicycle facilities are recommended, but pedestrian facilities should also be considered in the next phase of the project. A spot improvement to add turn lanes at the New Holt Road intersection is included as an independent, higher priority proposed project. If Spot Improvement C has not been completed, it should be implemented as part of this larger widening project.

5. Segment 3: Alternate 3C with a 45 mph design speed and an improved curve near New Holt Road. A rural two lane typical section is recommended based on the preliminary traffic analysis but a three lane typical section should also be considered. At a minimum bicycle facilities are recommended, but pedestrian facilities should also be considered in the next phase of the project. Spot improvements at this location are included as independent, higher priority proposed projects. If Spot Improvements A, B, and C have not been completed, it should be implemented as part of this larger widening project.

6. Segment 4: Alternate 4A with a 45 mph design speed. A rural two lane typical section is recommended based on the

preliminary traffic analysis but a three lane typical section should also be considered. At a minimum bicycle facilities are recommended, but pedestrian facilities should also be considered in the next phase of the project.

7. Spot Improvement A: Although existing traffic does not justify turn lanes at this time, this should be looked at as a future improvement as traffic grows. If Segments 3 or 4 are widened, this project should be implemented as part of the larger widening projects. Otherwise, it should be implemented as a standalone improvement.

**Table S-1** provides summary information about costs and recommendations for these priority improvements. **Figure S-1** shows these recommended priorities on a map of the area.

Table S-1: Planning Level Costs by Phase for Recommendations

| Priority | Project | Cost by Phase | Total Cost |
|---|---|---|---|
| **1** | Widen KY 1286 to three lanes, US 45 to US 62 (Alternate 1F or 1G) | Alternate 1F:<br>Design = $1.3 million<br>ROW = $8.0 million<br>Utilities = $3.0 million<br>Construction = $10.8 million<br><br>Alternate 1G:<br>Design = $1.1 million<br>ROW = $6.3 million<br>Utilities = $2.4 million<br>Construction = $8.6 million | $23.1 million<br><br>$18.4 million |
| **2** | Intersection Improvements near New Holt Road; fix curve and add turn lanes. (Spot B and Spot C) | Design = $0.3 million<br>ROW = $1.5 million<br>Utilities = $0.6 million<br>Construction = $2.1 million | $4.5 million |
| **3** | Add turn Lanes to Lone Oak School (Spot F) | Design = $0.2 million<br>ROW = $0.8 million<br>Utilities = $0.3 million<br>Construction = $1.1 million | $2.4 million |
| **4** | Widen KY 1286, US 62 to New Holt Road (Alternate 2B) | Design = $1.0 million<br>ROW = $5.7 million<br>Utilities = $1.9 million<br>Construction = $8.4 million | $17.0 million |
| **5** | Widen KY 1286, New Holt Road to KY 998 (Alternate 3C) | Design = $0.5 million<br>ROW = $2.7 million<br>Utilities = $0.9 million<br>Construction = $3.9 million | $8.0 million |
| **6** | Widen KY 998, KY 1286 to Village Square Drive (Alternate 4A) | Design = $0.3 million<br>ROW = $1.6 million<br>Utilities = $0.6 million<br>Construction = $2.4 million | $4.9 million |
| **7** | Add turn Lanes at KY 1286/KY 998 (Spot A) | Design = $0.2 million<br>ROW = $1.2 million<br>Utilities = $0.5 million<br>Construction = $1.7 million | $3.6 million |

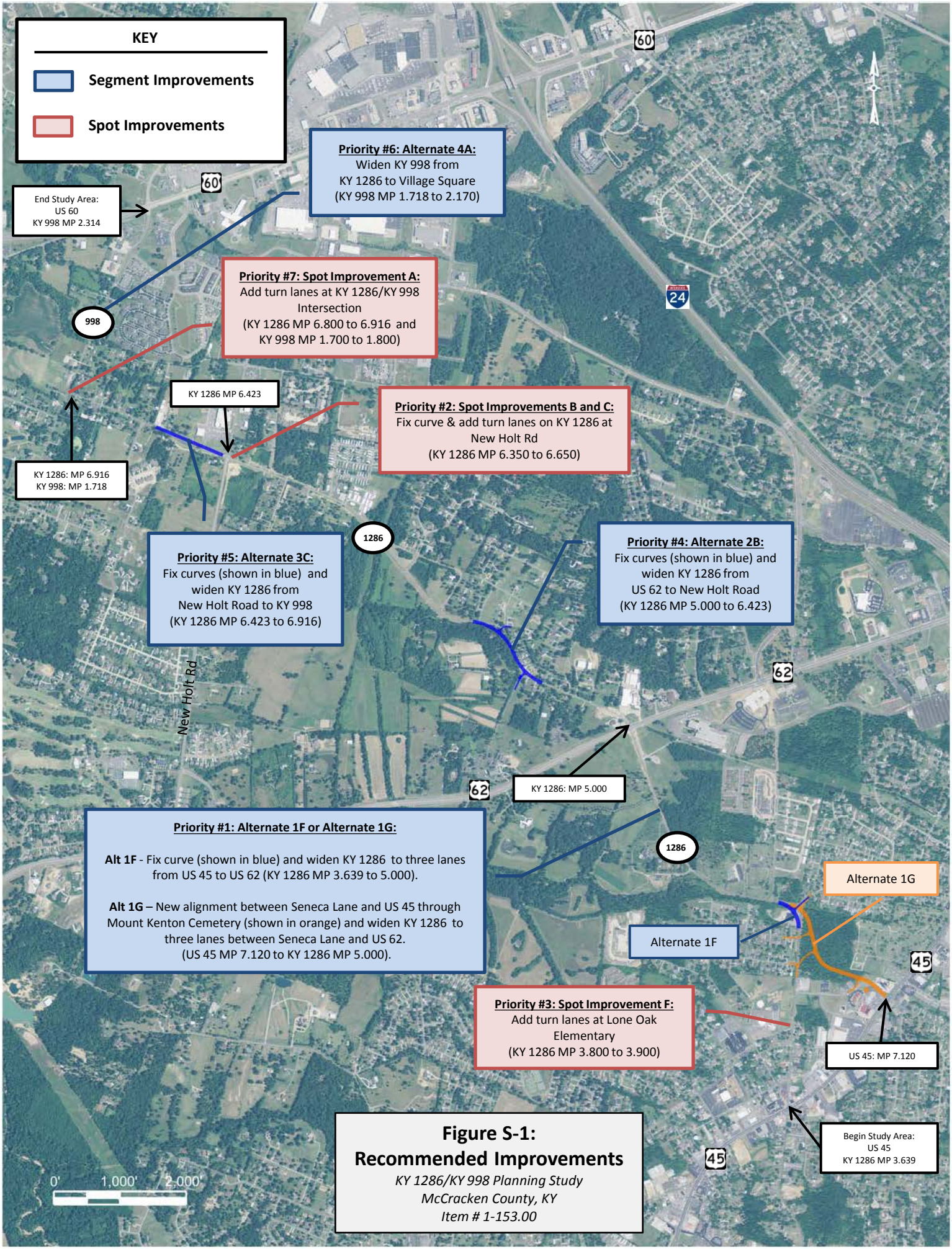


**Figure S-1:**
**Recommended Improvements**
*KY 1286/KY 998 Planning Study*
*McCracken County, KY*
*Item # 1-153.00*