

Study Background and Purpose

The US 51 Study in Clinton, Kentucky is a planning and feasibility study to assess the need for and potential improvements to US 51 in the vicinity of Clinton in Hickman County, Kentucky. The Kentucky Transportation Cabinet (KYTC) initiated the study in 2002 as part of the implementation of the KYTC Six-Year Highway Plan. This project was programmed in the highway plan in response to a 1995 US 51 Wickliffe to Fulton corridor study. The 1995 study concluded that widening US 51 from Wickliffe to Fulton was not warranted. However, it identified the portion of US 51 through the town of Clinton as a potential future traffic congestion area.

This current study therefore examined traffic and highway conditions on US 51 in Clinton to confirm whether there are current or projected future deficiencies and to evaluate the extent of those deficiencies. A range of improvement alternatives was developed to address each identified deficiency. The alternatives were then compared and evaluated based on transportation, community, economic, environmental, and construction benefits and impacts/costs. The result of the study was a recommended set of highway improvements for future implementation.

At the outset of the project, KYTC informed the project team, local officials, and members of the public that the study would examine a wide range of possible improvements from doing nothing, to in-town improvements, to bypass alternatives. The Cabinet also made it clear that there was not a predetermined solution or outcome to the study.

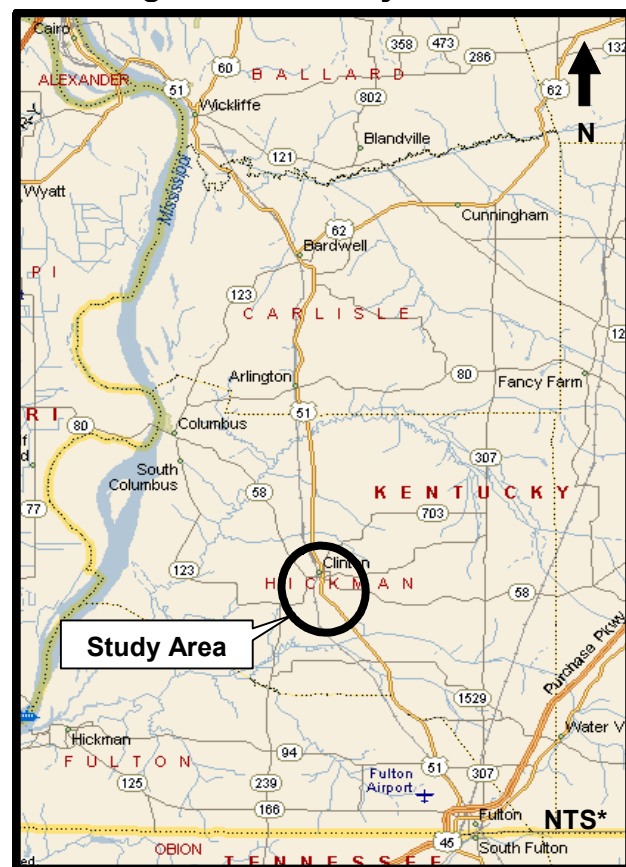
Study Location and Limits

US 51 is a north-south highway in Western Kentucky, connecting Cairo, Illinois to Fulton, Kentucky near the Tennessee border. Clinton, Kentucky is located along US 51 in Hickman County. This study is limited to the portion of US 51 in the vicinity of Clinton and extends from Cane Creek in the north to the Bayou de Chien in the south for a distance of approximately 5.4 miles. Figure ES 1 illustrates the study location.

No-Build Conditions Analysis

US 51 is an undivided two-lane highway. Average daily traffic volumes (ADT) peak at approximately 7,100 ADT in town, with

Figure ES 1: Study Location



*NTS = Not to Scale

2,200 ADT north of town and 2,500 ADT south of town. Truck traffic percentages are approximately 7 percent in town, 14 percent south of town, and 18 percent north of town. Based on the traffic volumes, the current traffic levels of service (LOS) are acceptable (LOS B or C) indicating little vehicle delay and good traffic flow conditions from a capacity standpoint.

Traffic growth on US 51 in Clinton has been modest over the last 19 years with an average growth rate of less than 1.0 percent per year at the eight study area count stations. (In fact, traffic volumes are lower now on US 51 than they were in the late 1970s due to the construction of I-55 in Missouri.) However, for purposes of this study a 1.5 percent growth rate was applied to evaluate how traffic conditions would change if the growth rate were higher.

Using the 1.5 percent per year growth rate, 2030 traffic volumes increase to a high of approximately 10,900 ADT in town, with volumes of around 3,300 to 3,900 ADT north and south of town, respectively. With these traffic volumes and assuming no highway improvements, the two-lane highways north and south of town are projected to operate at acceptable levels of service through 2030. The two key intersections in town however, are expected to fall below the threshold of LOS C. The US 51 / KY 58 / KY 123 intersection will fall to LOS D in 2020 and the side street approaches to the US 51 / KY 58 (Mayfield Road) intersection will fall to LOS E in 2010.

There are several geometric issues with the current highway. While the average lane width ranges from 10 to 14 feet, there are sections with limited shoulders of less than 3 feet. There are curb and gutter sections in town, but the curb heights are small (or missing) in some areas due to damaged curbs and pavement overlays. There are utility poles and other objects in close proximity to the highway in some areas. Also, sight distance is limited along US 51 at some locations due to the vertical geometry.

There are two intersections with deficient turning radii. Field observations indicate that trucks have a difficult time turning at the US 51 / KY 58 / KY 123 intersection due in part to the presence of on street parking on all legs of the intersection. The parking also poses a safety problem for pedestrians and vehicles since many of the parking spaces are angled thereby requiring that vehicles back out into traffic on US 51 or the side streets when leaving. Much of this parking is well used, particularly around the courthouse. The US 51 / KY 58 (Mayfield Road) intersection also has a deficient corner radius. Many sidewalks along US 51 are in disrepair.

A review of recent crash data did not reveal a significant crash problem when US 51 was compared to the statewide critical crash rate for similar roadways. Clusters of crashes were observed however at US 51 / KY 58 (Mayfield Road) and south on US 51 toward Martin Road, indicating the possible need for improvements to the existing highway at these locations.

Project Issues and Goals

Based on the technical analysis, as well as extensive public involvement, the project team identified a number of important issues for consideration in examining US 51 in Clinton. A list of these issues is provided below.

- Vehicular Safety and Highway Design
- Pedestrian Safety
- Truck Traffic
- Traffic Flows
- Economic Development and Regional Access
- Historic Preservation, Property Impacts, and Community Character
- Environmental Issues
- Parking, Drainage, and Utilities
- Highway Beautification
- Minority, Low-Income, and Senior Populations
- Project Implementation and Funding

The goals for projects to be evaluated in the US 51 study directly relate to the key issues discussed above. These goals were developed with extensive input from the local community as well as the project team and technical analysis. The key project goals include:

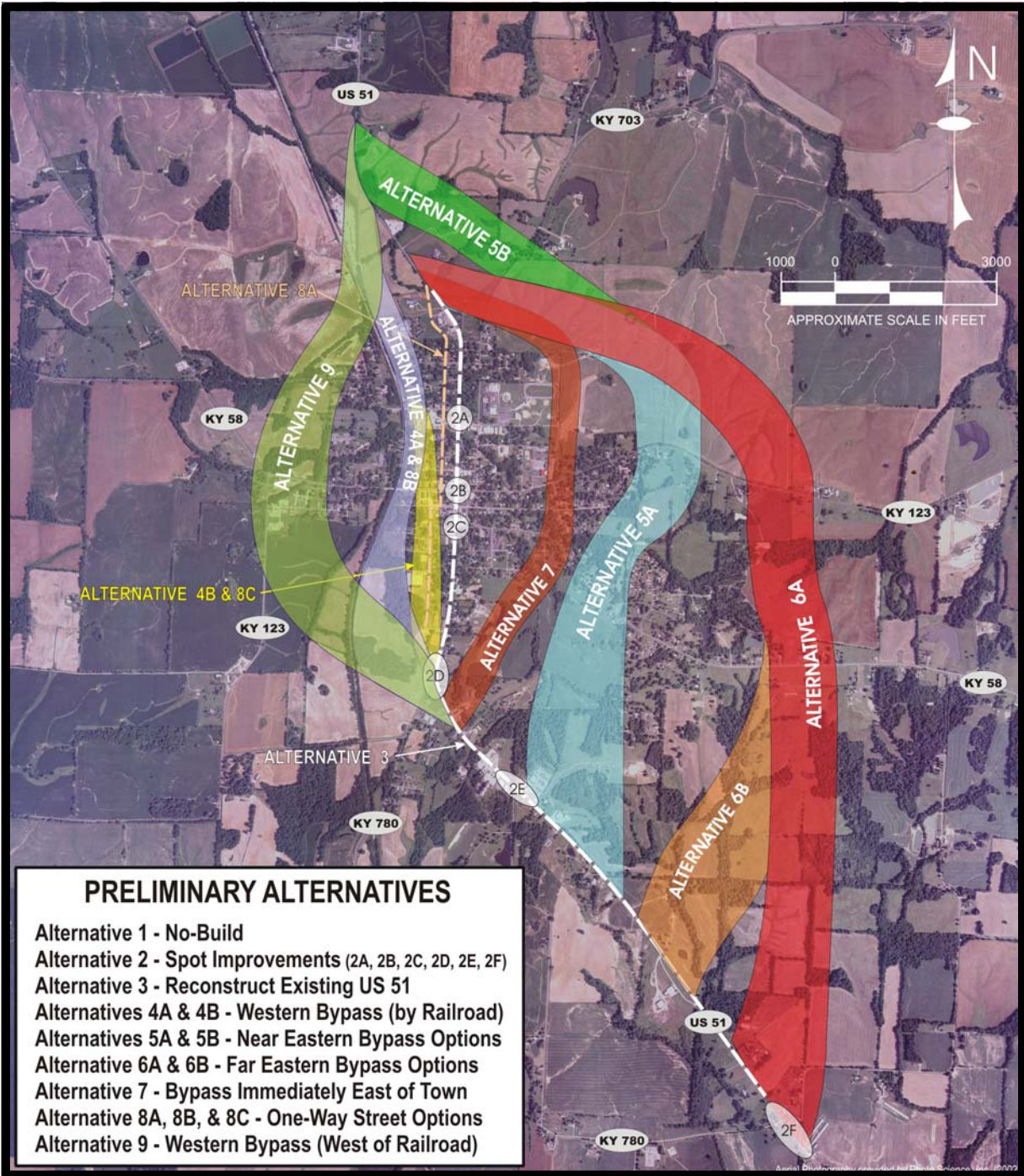
1. Enhance vehicle and pedestrian safety on US 51 in the study area;
2. Mitigate the negative impacts of heavy truck traffic on US 51, while maintaining an efficient through route for trucks and other vehicles;
3. Maintain appropriate traffic controls and traffic flow conditions;
4. Preserve downtown business, while enhancing overall economic development opportunities;
5. Improve highway geometry and drainage;
6. Avoid, minimize, and/or mitigate property takings on US 51 as well as other community and environmental impacts (This was put forward specifically by many local citizens and has been included even though it is understood to be part of the normal KYTC planning and design process); and
7. Facilitate improved regional connections to the Purchase Parkway and other existing regional highways as well as to the possible future I-66 corridor (should it be implemented).

Alternative Development

In response to roadway deficiencies identified in the No-Build Conditions Analysis, fourteen alternatives were developed (see Figure ES 2). These alternatives were based on both technical analysis and public input. They include:

- Alternative 1 – No-Build
- Alternative 2 – Spot Improvements
 - 2A – US 51 in the Vicinity of Cresap Street
 - 2B – US 51 (Washington Street) at KY 58 / KY 123 (Clay Street)
 - 2C – Vicinity of US 51 (Washington Street) and KY 58 (Mayfield Road)
 - 2D – US 51 in the Vicinity of KY 780 (North)
 - 2E – US 51 in the Vicinity of Martin Road
 - 2F – US 51 in the Vicinity of KY 780 (South)
- Alternative 3 – Reconstruct US 51 as a Two-Lane Roadway with Center Two-Way Left Turn Lane

Figure ES 2: All Preliminary Alternatives



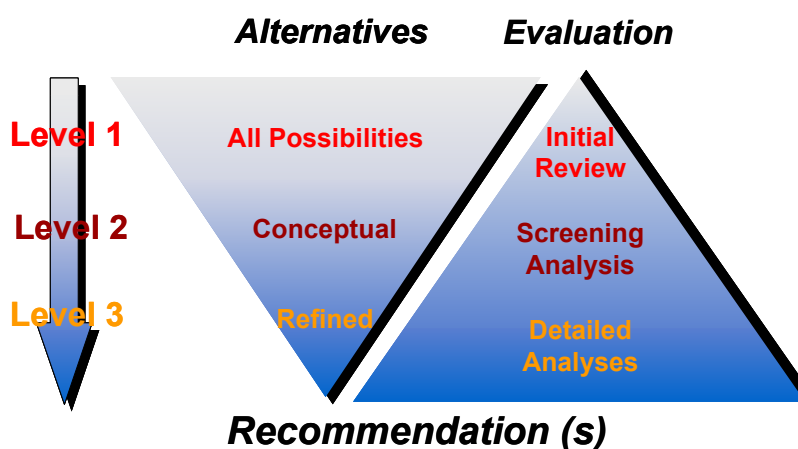
- Alternative 4A – Western Bypass Option A
- Alternative 4B – Western Bypass Option B
- Alternative 5A – Near Eastern Bypass Option A
- Alternative 5B – Near Eastern Bypass Option B
- Alternative 6A – Far Eastern Bypass Option A
- Alternative 6B – Far Eastern Bypass Option B
- Alternative 7 – Bypass Immediately East of Town
- Alternative 8A – One-Way Street System Using Existing Streets
- Alternative 8B – One-Way Street System Using Mainly New Highways
- Alternative 8C – One-Way Street System Using a Combination of Existing and New Streets
- Alternative 9 – Western Bypass (West of Railroad)

Alternative Evaluation

The evaluation process used in this study is a three-step process (see Figure ES 3). The goal is to successively refine the list of alternatives from all possible alternatives, to a short list of promising alternatives, and then finally to the recommended alternative(s).

The evaluation begins at Level 1 with a qualitative analysis applied to all possible alternatives. Alternatives advanced to Level 2 are subjected to a screening analysis that combines both qualitative and quantitative evaluation criteria. The final level, Level 3, uses the most detailed information about each of the remaining alternatives to select the recommended alternative or set of alternatives.

Figure ES 3: Three-Level Process



Recommendation

The final recommendation for improvements to US 51 through Clinton was Alternative 3 – Reconstruct US 51 as a Two-Lane Roadway with Center Two-Way Left Turn Lane South of Town. Spot improvements 2A, 2B, and 2C are included as part of Alternative 3, and are recommended for implementation as well. Alternative 3 is the preferred alternative because it best addresses the key project goals listed previously in this summary in the most cost effective manner and in so doing serves the largest number of people. However, if traffic volumes increase substantially, construction of an eastern bypass as proposed in Alternative 6A could be justified. Therefore, it is suggested that traffic counts be monitored over the next five to ten years. Should traffic volumes increase considerably, KYTC may choose to re-evaluate the viability of an Eastern Bypass.

Next Steps / Implementation

The next step would be to allocate funding for the design and implementation of Alternative 3. Based on the proposed project phasing plan, Alternatives 2B and 2C would be undertaken first, as they involve the least construction and cost. They are also needed sooner than the other improvements. After this first phase is underway, it would be appropriate for KYTC to review the traffic count data on US 51 to verify the scope and phasing of the remainder of the proposed project elements. Subsequently, funding could be allocated for the design and implementation of the remaining phases.