

4.0 REVIEW OF RELATED STUDIES

A review of previous transportation studies is necessary to understand the problems and solutions that have already been identified or studied. In this case there is only one previous report relevant to the current study, the *US 51 Fulton to Wickliffe Scoping Study*, prepared by the KYTC, Planning Division in October 1995. The purpose of the study was to evaluate the need for and feasibility of improvements in the US 51 corridor.

KYTC evaluated the existing (1995) physical infrastructure and highway operations and found deficiencies with regard to passing sight distance, vertical and horizontal alignments, and stopping sight distance. Most bridges on US 51 were physically and operationally adequate, though the older structures had narrow widths. Most sections of US 51 were found to operate at LOS C, with some sections operating at LOS B. Crashes (accidents) were also examined on US 51 and found to be within normal ranges for similar roadways throughout the state.

The following improvement alternatives were examined in the study:

- 1) The No-Build Alternative (termed the Do-Nothing Alternative in the study)
- 2) Reconstruct US 51 on its existing alignment (2-lanes)
- 3) Widen US 51 to 4 lanes on its existing alignment
- 4) Improve (2-lane or 4-lane) US 51 with bypasses in Clinton and Bardwell

For the No-Build Alternative, the 2020 design year level of service was calculated to be LOS C or D throughout the length of the study corridor, except through the towns of Clinton and Bardwell, where it would be LOS F. This projection was based on an assumed annual traffic growth rate of approximately 3 percent per year. (The actual growth rate has been less than 1 percent per year in the vicinity of Clinton.)

The 2-lane Reconstruction Alternative resulted in LOS C on all segments in the design year of 2020, again with the exception of US 51 in Clinton and Bardwell, which would operate at LOS E and F, respectively. The proposed bypasses in Clinton and Bardwell would operate at LOS B and C, respectively. To achieve LOS B or better, the 4-lane widening alternative was required. The 4-lane alternative would provide LOS A 50 years beyond the design year.

Construction cost estimates were developed on a per mile basis (in 1995 dollars). The 2-lane alternative costs ranged from \$110 to \$130 million, depending on whether the bypasses were constructed. The 4-lane costs ranged from \$170 to \$200 million, depending on whether the bypasses were constructed. Environmental, socio-cultural and geotechnical overviews were performed. While impacts were anticipated, the analysis did not reveal any issues that would prevent the alternatives from advancing.

Ultimately, the study concluded, that with a reasonably good alignment, 11' lane widths, no apparent crash problems, and average truck traffic, that the no build or do-nothing alternate was adequate. However, it was recommended that the existing narrow bridges be replaced and that construction of bypasses at Clinton and Bardwell be considered if funding were to become available.