

APPENDIX F – TRAFFIC FORECAST MEMORANDUM

TRAFFIC FORECAST MEMORANDUM

KY 8 Licking River Bridge Scoping Study
Campbell and Kenton Counties
Item No. 6-1086.00

PROJECT DESCRIPTION

Preliminary traffic forecasts have been developed to assist in the evaluation of improvement concepts for the KY 8 (4th Street) bridge over the Licking River between Covington and Newport. KY 8 is an east-west state highway through northern Kentucky and serves as one of only two connectors between Covington and Newport over the Licking River. The bridge is a steel truss with three 11-foot wide lanes, with two lanes in the westbound direction and a single lane in the eastbound direction. KY 8 provides access to the CW Bailey Bridge and John A. Roebling Bridge to Ohio on the west and the Taylor Southgate Bridge to Ohio on the east. The current location of the bridge serves as an ideal site for connectivity through Newport and Covington. The general study area for the project, including KYTC's most recent average daily traffic (ADT) volumes, is shown on **Figure 1**.

The purpose of the project is to provide a safe, modern, efficient, and multi-modal crossing of the Licking River within the existing corridor. The KY 8 Licking River Bridge was constructed in 1936 and carries about 17,500 vehicles per day with over 10 percent trucks. At 80 years old, the bridge has exceeded its original design life. The bridge is classified as functionally obsolete (FO) due to the narrow shoulder widths (one-foot) which do not meet current design standards. The bridge was load rated by KYTC Central Office staff in May 2016. Subsequent to this load rating, the bridge was posted for 17 tons indicating that the bridge is also structurally deficient (SD). The Kentucky Transportation Cabinet (KYTC) initiated the KY 8 Licking River Bridge Scoping Study to evaluate the need for and impacts of rehabilitating or replacing the bridge.

This document summarizes the methodology and preliminary findings for the KY 8 Licking River Bridge traffic forecasts.

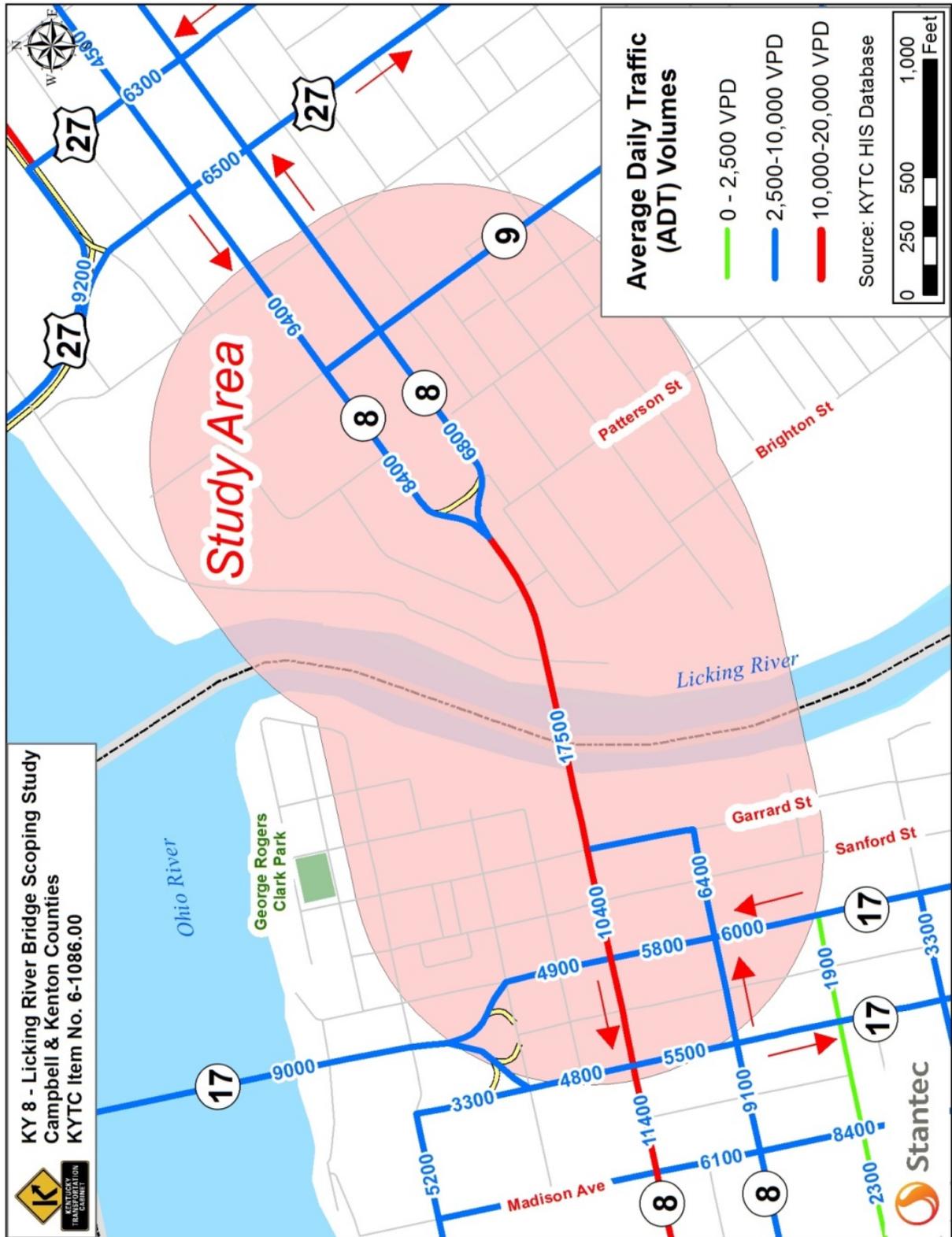


Figure 1: Existing Average Daily Traffic (ADT) Volumes

TRAFFIC VOLUMES

Traffic counts were conducted by the KYTC at several locations on KY 8 and surrounding roadways in the study area. Based on the counts, the current ADT volume on the Licking River Bridge is 17,500 vpd, with 10 percent of the ADT being trucks. Historical average annual daily traffic (AADT) volumes were obtained from the KYTC traffic count reporting system (CTS) for the KY 8 Licking River Bridge, which are summarized in **Table 1**.

Table 1: KYTC CTS Traffic Counts at Station 059D26

Year	AADT	Year	AADT	Year	AADT
2015		2005		1995	
2014		2004		1994	17900
2013		2003	19600	1993	
2012	17519	2002		1992	
2011		2001		1991	25100
2010	16100	2000		1990	
2009	17300	1999	24400	1989	
2008		1998		1988	21600
2007	19300	1997		1987	
2006		1996	17600	1986	

ESTIMATING FUTURE TRAFFIC

The Ohio-Kentucky-Indiana Regional Council of Governments (OKI) maintains a travel demand model that replicates existing travel patterns and forecasts future traffic volumes on roadways throughout the region. This model was utilized to develop a base year traffic simulation model using the TransCADD software package. The model was updated in 2015, and has a base year of 2010. The model uses socioeconomic data, namely households and employment, to estimate current and future travel demand, and the estimated traffic is assigned to the model network based on estimated travel times. The model was used to estimate the likely growth in traffic demand along the study portion of KY 8. Given the recent update, no network or socioeconomic data modifications were required.

Generally speaking, the 2010 base year assignments are lower than the latest counts provided by KYTC. Therefore, rather than comparing the future year assignments to the latest counts, the future year assignments were compared to the 2010 base year assigned volumes.

The OKI provided model outputs to assist in developing the traffic forecast volumes for a horizon scenario in the year 2040. A summary of the output (in vehicles per day) is provided in **Figure 2**. Values from the OKI model included in Figure 2 include the 2010 base year assignment, the 2040 future assigned volume assuming a 3-lane bridge replacement with two lanes in the westbound direction and a single lane in the eastbound direction, and the 2040 future assigned volume assuming new 4-lane bridge replacement with two lanes in the westbound direction and two lanes in the eastbound direction. The 2040 volumes include the OKI Existing plus Committed network which includes the replacement of the Brent Spence Bridge carrying I-71 and I-75 over the Ohio River, a project that would affect the traffic demand within the study area.

Based on outputs from the OKI Regional Travel Model, the corridor is not expected to see significant traffic growth through 2040. This is evidenced by the anticipated negative 1.4 percent growth in the westbound trips and a 0.1 percent growth in eastbound trips between 2010 and 2040 for the 3-lane bridge alternative. The 4-lane bridge alternative shows a negative 0.9 percent growth in the westbound trips and a 10.7 percent growth (about 0.4 percent growth per year) in eastbound trips between 2010 and 2040.

Recommendations

The potential for development in Covington and Newport, while not completely quantifiable in the OKI model, is very much expected. One example is the new Ovation development which is directly adjacent to the eastern side of the bridge. The development is a large, mixed-use site which will provide an estimated 1.1 million square feet of office space in five separate buildings.

A second example is the realignment of KY 9 along the Licking River to meet KY 8 in Newport, Kentucky (KYTC Item No. 6-8101). The realignment is located on the eastern side of the KY 8 Licking River Bridge. Construction is scheduled to begin in 2017. The road expansion will have a dramatic impact on the redevelopment of the area and future land uses along the Licking River.

Considering the potential for development in Covington and Newport, and the desire of any newly constructed bridge to accommodate traffic demand over its entire design life (50 to 100 years), a 4-lane bridge should be considered in future project development phases.

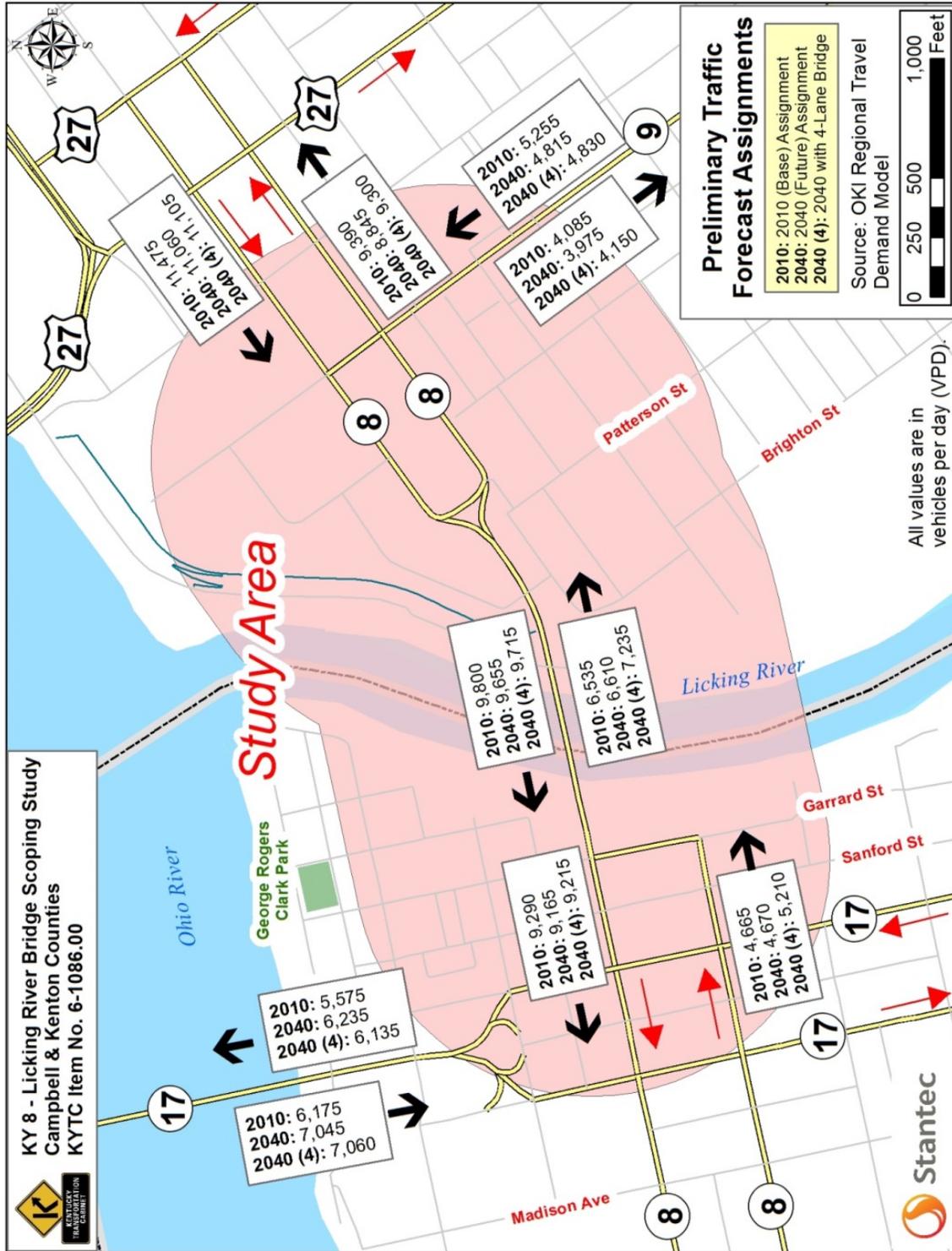


Figure 2: OKI Daily Traffic Forecast Volumes