

APPENDIX A:

**TRAFFIC FORECAST METHODOLOGY
REPORT**

**Traffic Forecast Methodology Report
Jefferson County Traffic Forecasts
Taylorsville Road (KY 155)
Item No. 5-xxxx**

The purpose of this document is to outline the methodology proposed by PB Americas, Inc. (PB) to prepare traffic forecasts for Taylorsville Road (KY 155) in Jefferson County, Kentucky as part of the Taylorsville Road Scoping Study for the Kentucky Transportation Cabinet (KYTC). The Taylorsville Road study area extends from the intersection of KY 155 and KY 148 in the east to the intersection of KY 155 and Watterson Trail in Jeffersontown in the west. Traffic forecasts will be prepared for a No-Build scenario as well as multiple Build alternatives.

Traffic Volumes

The average daily traffic (ADT) volumes used for this project included traffic counts provided by the KYTC. The counts provided by the KYTC were conducted during the years of 2004 - 2006, and included the following count stations:

- Taylorsville Lake Road (KY 155): Station 361 – 2004
- Taylorsville Road (KY 155): Station 996 – 2006
- Taylorsville Road (KY 155): Station 253 – 2006
- Taylorsville Road (KY 155): Station 348 – 2006
- Taylorsville Road (KY 155): Station 346 – 2006
- Taylorsville Road (KY 155): Station 334 – 2005
- Taylorsville Road (KY 155): Station 332 – 2004
- Taylorsville Road (KY 148): Station 251 – 2005

The count locations are shown in **Figure 1** attached to the end of this report.

The 2004 and 2005 counts will be forecasted to a base year of 2006 using historical trends.

In addition, KYTC conducted turning movement counts at five key intersections within the study area during the AM peak (6:30 AM – 9:00 AM) and PM peak (4:00 PM – 6:00 PM) periods in May 2006 and August 2006. These intersections included:

- Taylorsville Road (KY 155) / Taylorsville Lake Road (KY 155) / Taylorsville Road (KY 148)
- Taylorsville Road (KY 155) / South Pope Lick Road
- Taylorsville Road (KY 155) / Old Heady Road
- Taylorsville Road (KY 155) / Ruckriegel Parkway (KY 1819)
- Taylorsville Road (KY 155) / Watterson Trail

The counts were provided to PB as part of this study.

Growth Rate

Growth rates for this study are based upon a historical traffic growth analysis along KY 155 and adjacent routes within the study area. The analysis utilized traffic counts obtained from the KYTC's 'CTS' traffic count program which includes counts from 1963 to 2006.

The historical counts were entered into a spreadsheet provided by KYTC. The spreadsheet calculates growth rates using both exponential and trendline analyses. The growth rates are then averaged for each count station. Based on this, the growth rates identified for each

segment within the study area are shown in **Table 1**. For reference, **Figure 2** shows the segments.

Table 1: Proposed Growth Rates

Segment	Route	From	To	Historic Growth Rate	Proposed Growth Rate
A	KY 155	S of Study Area	KY 148	4.89%	4.70%
B	KY 155	KY 148	South Pope Lick	4.62%	4.70%
C	KY 155	South Pope Lick	I-265	4.62%	4.70%
D	KY 155	I-265	Tucker Station	4.18%	3.30%
E	KY 155	Tucker Station	Old Heady	2.86%	3.30%
F	KY 155	Old Heady	Chenoweth Run	2.86%	3.30%
G	KY 155	Chenoweth Run	Ruckriegel Pkwy	2.98%	3.30%
H	KY 155	Ruckriegel Pkwy	Watterson Trail	3.27%	3.30%
I	KY 155	Watterson Trail	W of Study Area	3.59%	3.30%

It should be noted that the growth rates reflect historical trends along each segment and do not include specific developments that may be constructed within the project area. PB met with Louisville Metro Planning and Design Services on October 24, 2006 to discuss known developments within the study area. Trip generation rates will be derived for any new proposed developments and added to the background traffic growth as appropriate.

K Factor

K factors for this study were based upon field data as well as data collected by the Kentucky Transportation Cabinet. Where possible, the known K Factor was taken directly from the collected data. For routes without known K Factors, a systemwide average was used. Proposed K factors for the study area routes are shown in **Table 2**.

Table 2: Proposed K Factors

Segment	Route	From	To	Proposed AM K Factor	Proposed PM K Factor
A	KY 155	S of Study Area	KY 148	11.8%	12.0%
B	KY 155	KY 148	South Pope Lick	10.0%	9.8%
C	KY 155	South Pope Lick	I-265	10.0%	9.8%
D	KY 155	I-265	Tucker Station	9.5%	10.3%
E	KY 155	Tucker Station	Old Heady	8.0%	10.0%
F	KY 155	Old Heady	Chenoweth Run	8.0%	10.0%
G	KY 155	Chenoweth Run	Ruckriegel Pkwy	7.2%	9.8%
H	KY 155	Ruckriegel Pkwy	Watterson Trail	6.7%	9.9%
I	KY 155	Watterson Trail	W of Study Area	6.7%	8.1%

Peak Hour Factor

Based on field observations and turning movement count data, a typical peak hour factor (PHF) of 0.90 will be used for this project.

Truck Percentages

To determine current truck percentages, vehicle classification data was obtained from the Vehicle classification data available from KYTC's Vehicle Classification (VCR) Viewer. **Table 3** provides base year daily truck percentages for this project.

Table 3: Truck Percentages

Segment	Route	From	To	Proposed ADT Truck Percentage	Proposed DHV Truck Percentage
A	KY 155	S of Study Area	KY 148	13.0%	3.0%
B	KY 155	KY 148	South Pope Lick	13.2%	3.3%
C	KY 155	South Pope Lick	I-265	13.2%	3.3%
D	KY 155	I-265	Tucker Station	10.4%	2.9%
E	KY 155	Tucker Station	Old Heady	10.4%	2.9%
F	KY 155	Old Heady	Chenoweth Run	10.4%	2.9%
G	KY 155	Chenoweth Run	Ruckriegel Pkwy	6.0%	3.6%
H	KY 155	Ruckriegel Pkwy	Watterson Trail	6.0%	3.6%
I	KY 155	Watterson Trail	W of Study Area	11.4%	7.3%

Population

Population data was obtained from the Kentucky State Data Center for both Jefferson County and Kentucky. **Table 4** displays the historical population growth while **Table 5** displays population projections.

Table 4: Historical Population Growth

Area	1970	1980	1990	2000	% Growth (1990-2000)
Kentucky	3,220,711	3,660,334	3,686,892	4,041,769	9.7%
Jefferson County	695,055	684,648	665,123	693,604	4.3%

Source: Kentucky State Data Center

Table 5: Population Forecasts

Area	2000	2010	2020	2030	% Growth (2000-2030)
Kentucky	4,041,769	4,326,490	4,660,703	4,912,621	21.5%
Jefferson County	693,604	710,120	738,732	763,393	10.1%

Source: Kentucky State Data Center

As shown in **Table 4**, the population of Jefferson County increased 4.3% from 1990 to 2000 compared to 9.7% for Kentucky during the same time period. The population of Jefferson County is expected to increase by 10.1% between 2000 and 2030, at a rate of nearly 0.32% per year. This compares to a growth of 21.5% in Kentucky at a rate of 0.65% per year.

Other Items

Other items to be considered in the traffic forecast include:

- The base year for the forecasts is Year 2006.
- Both intersections and segments will be forecasted to Year 2010 using the applied growth rates.
- Only segments will be forecasted to Year 2030. The Kentuckiana Regional Planning and Development Agency (KIPDA) travel demand model will be utilized to develop growth factors and volumes for 2030 in both the No-Build and Build scenarios.

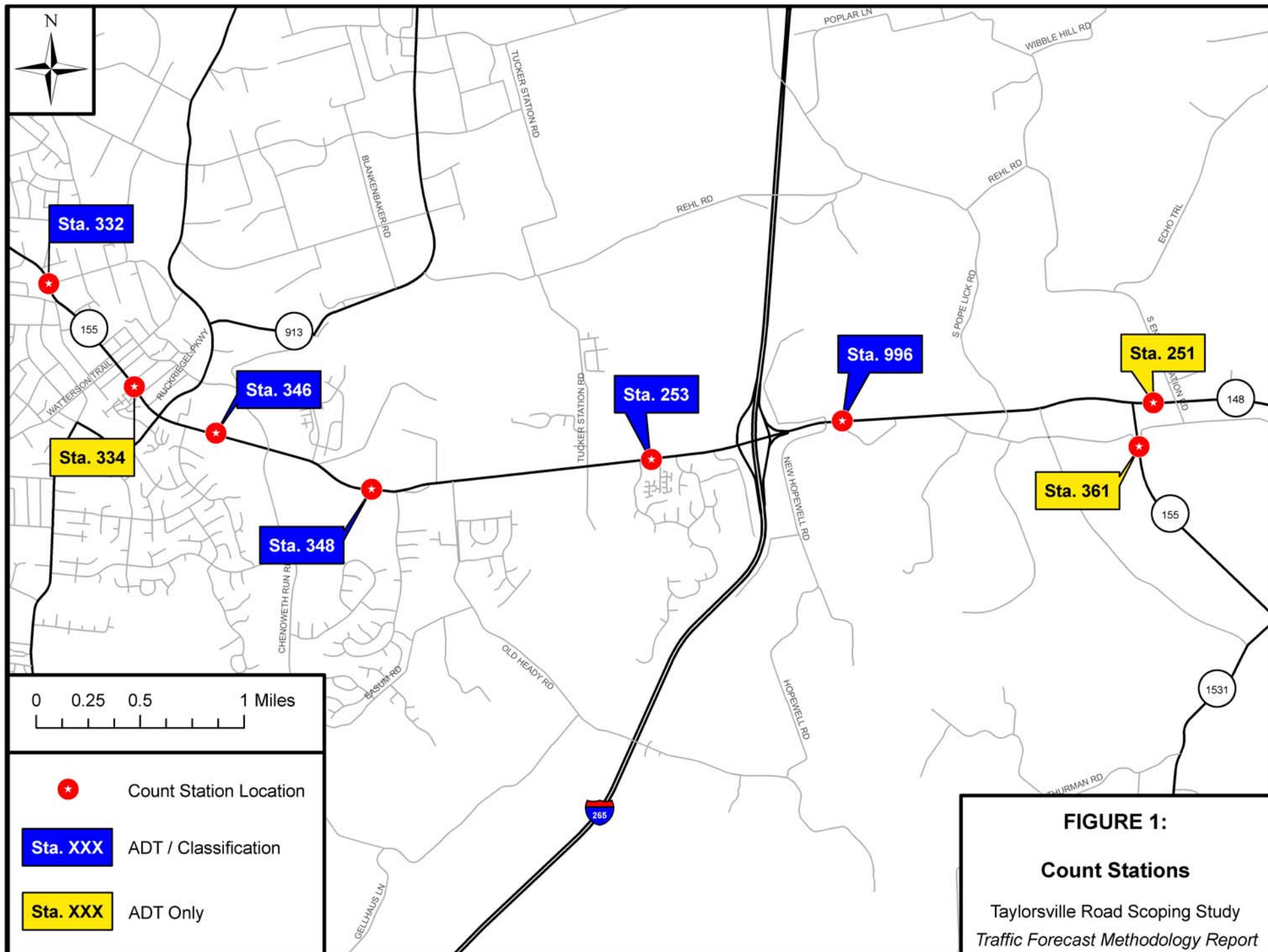


FIGURE 1:

Count Stations

Taylorsville Road Scoping Study
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