



## TRANSPORTATION CABINET

Frankfort, Kentucky 40622  
www.transportation.ky.gov/

**Steven L. Beshear**  
Governor

**Michael W. Hancock, P.E.**  
Secretary

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### MEMORANDUM

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**TO:** Matt Bullock, P.E.  
Chief District Engineer  
District 5 - Louisville

**ATTN:** Ricardo Policicchio

**FROM:** Keith R. Damron, P.E.  
Director  
Division of Planning

*Keith R. Damron*

**DATE:** January 26, 2011

**SUBJECT:** Bullitt County Traffic Forecast  
KY 245 Widening Project  
Item No. 5-1054.00

In response to your January 10, 2011, request, we are providing the following forecasts in the attached report:

- 2010 and 2034 Build Average Daily Traffic
- 2010 and 2034 Build Daily and Design Hour Turning Movements
- Truck Percentages
- 20 year ESALs

If you have any questions, please contact Scott Thomson of this Division at (502) 564-7183.

KRD/JST/BC

Attachments

c/att: Bob Farley  
Tom Hall  
Dan Hite  
Paul Looney  
Brian Meade  
Amy Thomas



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*Final Report*

# KY 245 Widening Project Traffic Forecast Report

KYTC Item No. 5-8509

*Submitted to*

KY Transportation Cabinet  
Division of Planning



*Submitted by*

ENTRAN, PLC

*Submitted*

December 2010



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Suite 300  
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**EXECUTIVE SUMMARY**  
**Bullitt County – KY 245 Widening**  
**Item No. 5-8509**  
**Letter Agreement #1**

**PROJECT DESCRIPTION**

This project involves the widening of KY 245 (Clermont Road) from the proposed Bullitt County Community College to Bernheim Forest in Bullitt County. KY 245, functionally classified a rural minor arterial, connects the city of Bardstown in Nelson County to I-65. This portion of KY 245 is also considered a gateway to the “Bourbon Trail”, a tourist attraction focusing on several bourbon distilleries in the region. The general study area for the project, including KYTC’s average daily traffic (ADT) estimates for 2010, is shown below.

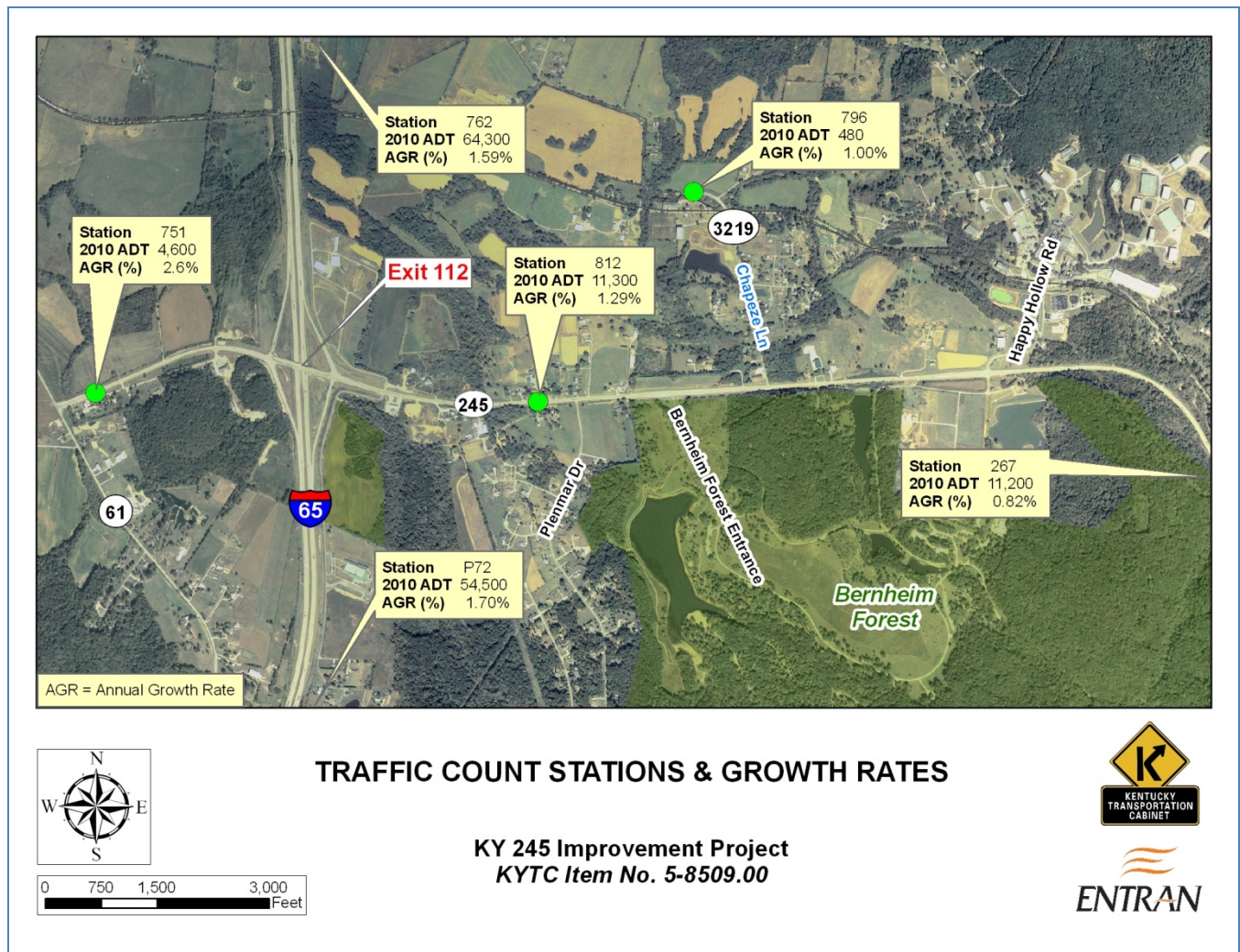


Figure 1: Study Area



## TRAFFIC VOLUMES

Average daily traffic volumes for I-65, KY 245, and KY 3219 were obtained from the KYTC CTS traffic count database and are summarized in **Table 1**.

**Table 1: Estimated Average Daily Traffic (ADT) Volumes**

Route	Station	Section	Count Year	ADT
I-65	P72	KY 61 (MP 104.698) to KY 245 (MP 111.773)	2009	46520
I-65	762	KY 245 (MP 111.773) to KY 480 (MP 115.582)	2008	64300
KY 245	751	I-65 (MP 6.472) to KY 61 (MP 7.178)	2010	4560
KY 245	812	KY 3219 (MP 5.329) to I-65 (MP 6.472)	2010	11200
KY 245	267	KY 1604 (MP 1.033) to KY 3219 (MP 5.329)	2008	11200
KY 245	750	Nelson County Line (MP 0.0) to KY 1604 (MP 1.033)	2010	13000
KY 3219	796	I-65 (MP 0.668) to KY 245 (MP 2.580)	2008	476

Source: KYTC CTS database

## POPULATION

**Table 2** summarizes the population estimates and forecasts for Bullitt County. Statewide estimates and forecasts are included for comparison. Between 2000 and 2030, Bullitt County's population is projected to increase at a rate of 2.1 percent per year.

**Table 2: Bullitt County and Statewide Population Projections**

Area	2000 Census	2005 Estimate	Annual Growth 2000-2005	2030 Projection	Annual Growth 2000-2030
Kentucky	4,049,036	4,170,211	0.6%	4,971,582	0.7%
Bullitt County	61,635	71,102	2.9%	113,674	2.1%

Source: Kentucky State Data Center and U.S. Census Bureau



**Table 3** presents a summary of the 2000 and 2009 population estimated for the incorporated cities in Bullitt County. Overall, the population of Bullitt County is estimated to have increased by about 2.2 percent per year over that time period. The non-incorporated portions of the county grew by about 2.7 percent per year, and only Mount Washington grew at a faster rate (3.5 percent per year).

**Table 3: Bullitt County Population by Incorporated City**

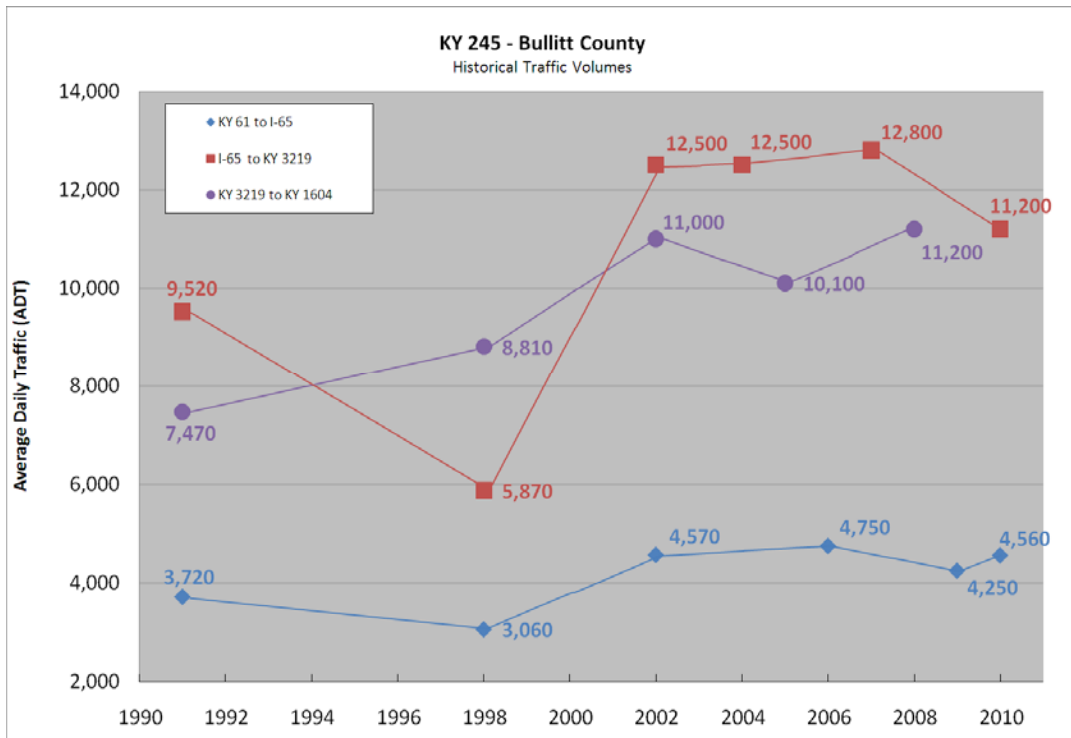
County / Incorporated Place	2000 Census (April 1)	2009 Estimate (July 1)	Population Increase	Annual Growth 2000 - 2009
<b>Bullitt County</b>	61,633	75,653	14,020	2.2%
Fox Chase	478	516	38	0.8%
Hebron Estates	1,105	1,183	78	0.7%
Hillview	7,039	7,554	515	0.8%
Hunters Hollow	430	441	11	0.3%
Lebanon Junction	1,806	2,024	218	1.2%
Mount Washington	8,711	12,026	3,315	3.5%
Pioneer Village	2,535	2,716	181	0.7%
Shepherdsville	8,512	9,344	832	1.0%
<b>Balance of Bullitt County</b>	31,017	39,849	8,832	2.7%

Source: Kentucky State Data Center and U.S. Census Bureau

#### **GROWTH RATE:**

There are three count stations located on KY 245 within or near the study area. Historical daily traffic volumes for these count stations are summarized in **Figure 2** below.

Between 1991 and 2002, traffic along KY 245 west of I-65 grew by approximately 1.9 percent per year, according to historic traffic counts from the KYTC. However, growth has been flat in this area since 2002. Between I-65 and KY 3219, traffic volumes on KY 245 increased by about 2.5 percent per year between 1991 and 2002 but has decreased by -1.4 percent per year since 2002. (The 1998 traffic count shown for this segment appears to be an outlier.) Growth along the section of KY 245 east of KY 3219 was slightly higher from 1991 to 2002 at 2.4 percent per year and dropped to 0.3 percent per year from 2002 to 2008, the latest available count year. For comparison, the average growth rate for rural minor arterials statewide is 2.44 percent per year.



**Figure 2: Historical Traffic Volumes along KY 245**

The Kentuckiana Regional Planning and Development Agency (KIPDA) provided raw model output from its regional travel demand model that includes Jefferson, Oldham, and Bullitt County in Kentucky. The average daily traffic output and estimated growth rates are summarized in **Table 4** below.

**Table 4: 2009 and 2030 Daily Traffic Estimates from the KIPDA Regional Travel Demand Model**

KY 245 Segment	2009 Estimate	2030 Forecast	2009-2030 Annual Growth
KY 61 to I-65	4,520	5,225	0.69%
Between I-65 ramps	11,585	13,200	0.62%
I-65 to Bernheim Forest Entrance	18,145	22,505	1.03%
Bernheim to KY 3219 (Chapeze Ln.)	12,435	13,935	0.54%
KY 3219 to Happy Hollow Rd.	13,220	16,820	1.15%
East of Happy Hollow Rd.	13,135	16,730	1.16%
Bullitt/Nelson Co. line	13,230	20,900	2.20%



The KIPDA model is relatively coarse near the KY 245 study area. There are few modeled roads that connect to KY 245 in this area and the output volumes are heavily influenced by the centroid connector from the traffic analysis zone (TAZ) south of KY 245, and by the external station volume at the Nelson County line. Therefore, these growth rates should be used only to verify the reasonableness of assumed growth.

There are several planned or potential developments that could affect the future travel demand in the KY 245 corridor. The Jim Beam Distillery, located on Happy Hollow Road, is currently a significant tourist attraction drawing approximately 80,000 tourists annually. The distillery is in the process of spending between \$15 and \$20 million expanding its existing tourism venue and is planning to accommodate up to 200,000 annual visitors in the future. The Kentucky Community and Technology College System (KCTCS) has plans to build a permanent campus for the Bullitt County Community College on 40 acres in the northwest quadrant of the I-65 interchange with KY 245. The existing campus, located in temporary facilities in Shepherdsville, serves 350 students and the college hopes to serve up to 500 students at the permanent location. There is currently no schedule for the development of the permanent campus due to funding issues.

A contractor has plans to develop the northeast quadrant of the I-65 interchange. At this time, the potential plans for this area include a hotel (with outparcels likely to develop as fast food restaurants, gas stations, etc.) or possibly a tourism venue in the form of a music hall. The same contractor has purchased over 100 acres near the KY 61 intersection with KY 245 and ultimately would like to develop a business park at that location.

Discussions with Bullitt County officials suggest the KY 245 corridor is likely to experience both residential and commercial growth in the coming years. Sewers were extended to serve the Jim Beam Distillery in 2009 and 2010 and may be provided to nearby development in the future. With the planned or likely development that may occur within the KY 245 corridor, estimating a growth rate is nebulous. An annual growth rate of 1.7 percent is proposed for KY 245.

### **K FACTOR**

From 2008 and 2010 traffic counts provided for the corridor, the observed average design hour factor (K Factor) for KY 245 was 0.11 east of I-65 and approximately 0.09 west of I-65. Based on those counts, the design hour K factors are estimated using the following formula:

#### **West of I-65:**

$$\text{KY 245 K Factor}_{\text{Design}} = 1.22 * (\text{High Hour Count}) / (\text{Total Daily Count}) = 1.22 * 0.09 = \mathbf{0.11}$$

#### **East of I-65:**

$$\text{KY 245 K Factor}_{\text{Design}} = 1.22 * (\text{High Hour Count}) / (\text{Total Daily Count}) = 1.22 * 0.11 = \mathbf{0.13}$$





### **PEAK HOUR FACTOR (PHF):**

Intersection turning movement counts were collected at KY 245 intersections with the following roads:

- T1: Northbound I-65
- T2: Southbound I-65
- T3: Plenmar Drive
- T4: Entrance to Bernheim Forest
- T5: KY 3219 (Chapeze Lane)
- T5: Happy Hollow Road / Bernheim Forest Service Entrance

The average peak hour factor (PHF) was 0.88 for the A.M. peak and 0.93 for the P.M. peak. For design purposes, a PHF of 0.90 is proposed.

### **TRUCK PERCENTAGES**

Year 2010 vehicle classification data were available for Sta. 751 and Sta. 812, located west and east of I-65 (respectively). From these count data, 1.9 percent of the total daily traffic consists of heavy trucks and 6.9 percent consists of medium (i.e. single-unit) trucks west of I-65. East of I-65, heavy trucks make up 3.8 percent of the daily traffic and medium trucks 5.3 percent. For design purposes, 4 percent heavy trucks and 6 percent medium trucks is suggested, based on the observed traffic and recognizing the general increase statewide in truck traffic. Based on the functional classification for KY 245, a truck growth rate of 1.0 percent per year is assumed.

### **TURNING MOVEMENTS**

Growth rates were applied to the existing daily traffic counts and design hour turning movements to develop design year (2034) traffic forecasts. The existing and 2034 ADT's are shown in **Figure 3**, and the turning movements are included in **Appendix A**.

There is an apparent imbalance in the existing traffic counts between the northbound I-65 ramps and Plenmar Drive. A likely explanation is the location of the gas station east of I-65 and Bernheim Middle School located on Audubon Drive (southeast of the interchange). Both these traffic generators tend to attract trips to/from I-65 to the west, resulting in a slightly higher existing ADT near I-65 compared to near Plenmar Drive. For purposes of the forecast summary and ESAL calculations, the segment was split at Audubon Drive to account for this difference.

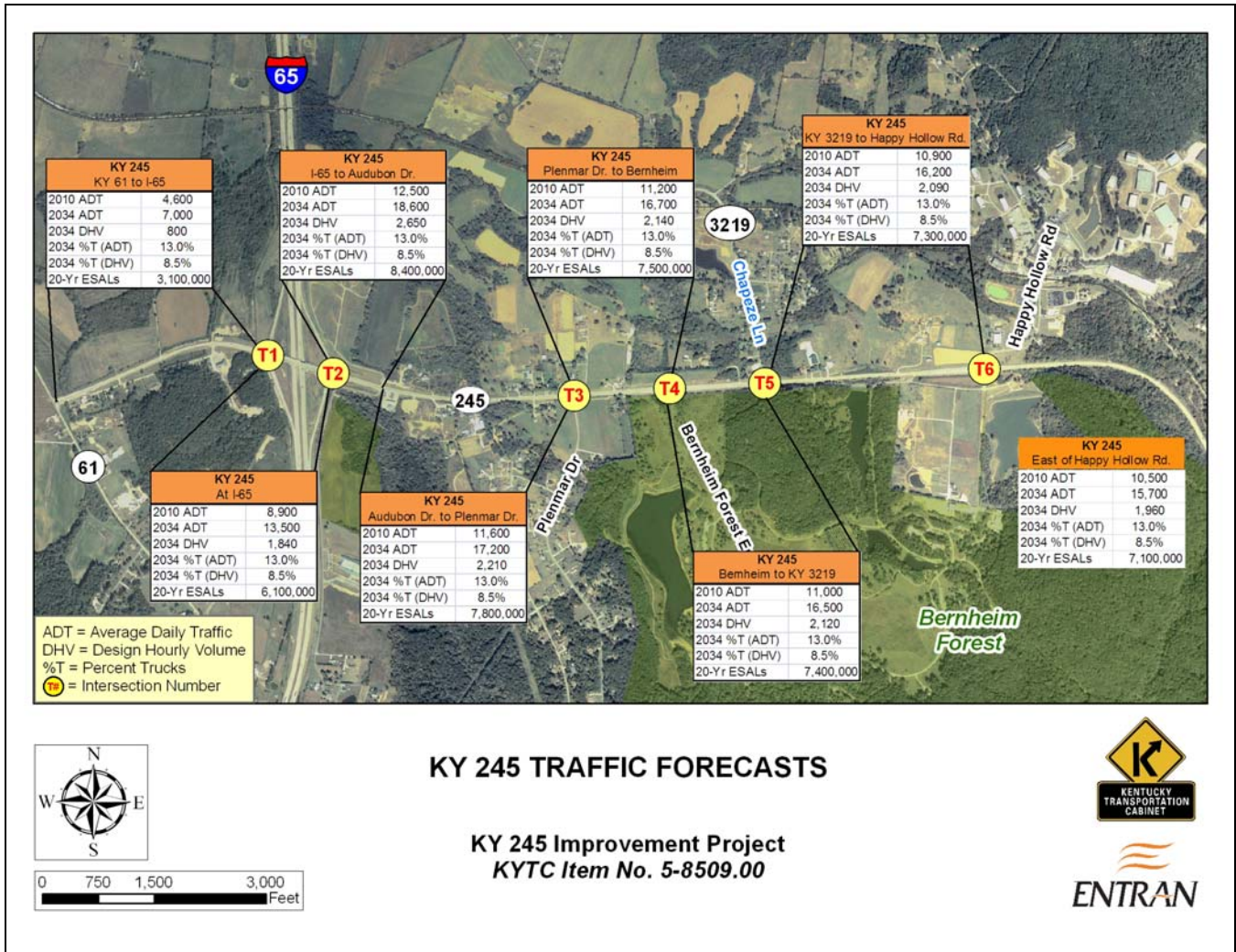


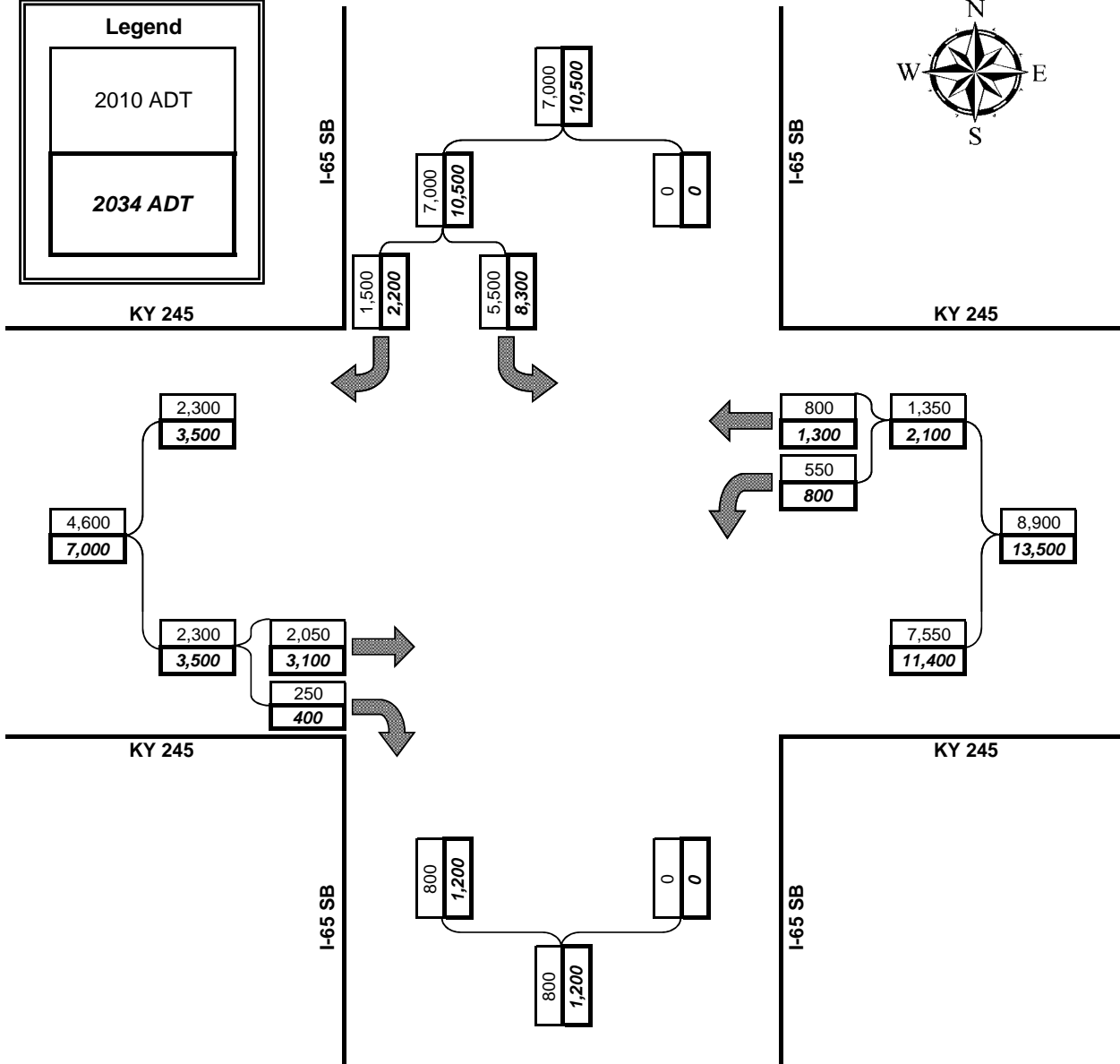
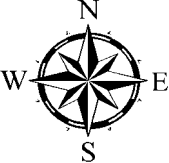
Figure 3: KY 245 Traffic Forecasts

## **Appendix A – Turning Movements**

**Bullitt County  
KY 245 Widening  
KYTC Item No. 5-8509.00  
T1: KY 245 at SB I-65**

**Legend**

2010 ADT
2034 ADT



PREPARED BY: B. Aldridge  
 DATE PREPARED: 10/29/2010

Notes: Existing (2008) & Design Year (2034)  
 Average Daily Traffic Volumes

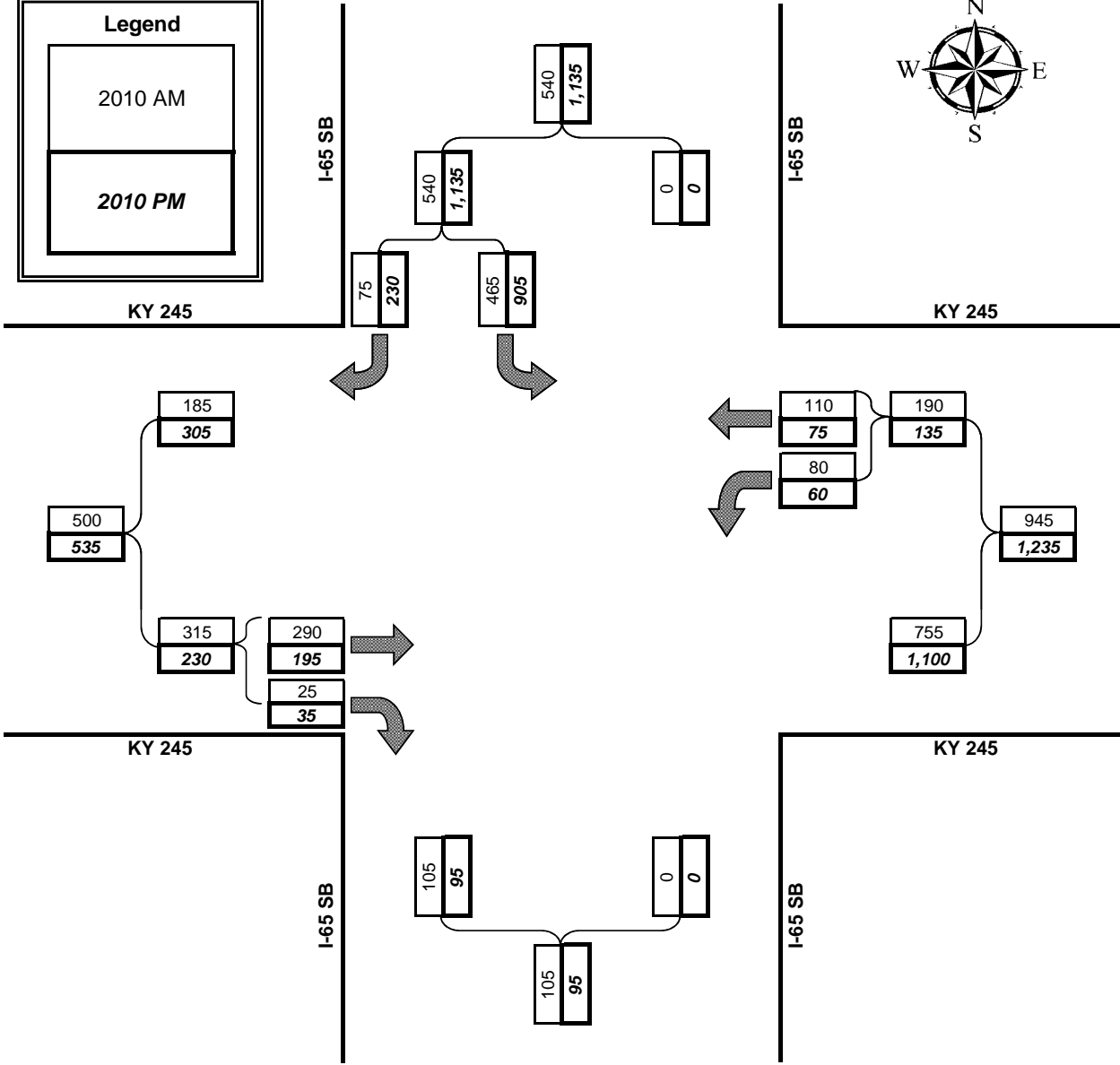
**Bullitt County  
KY 245 Widening  
KYTC Item No. 5-8509.00  
T1: KY 245 at SB I-65**

**Legend**

2010 AM

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2010 PM

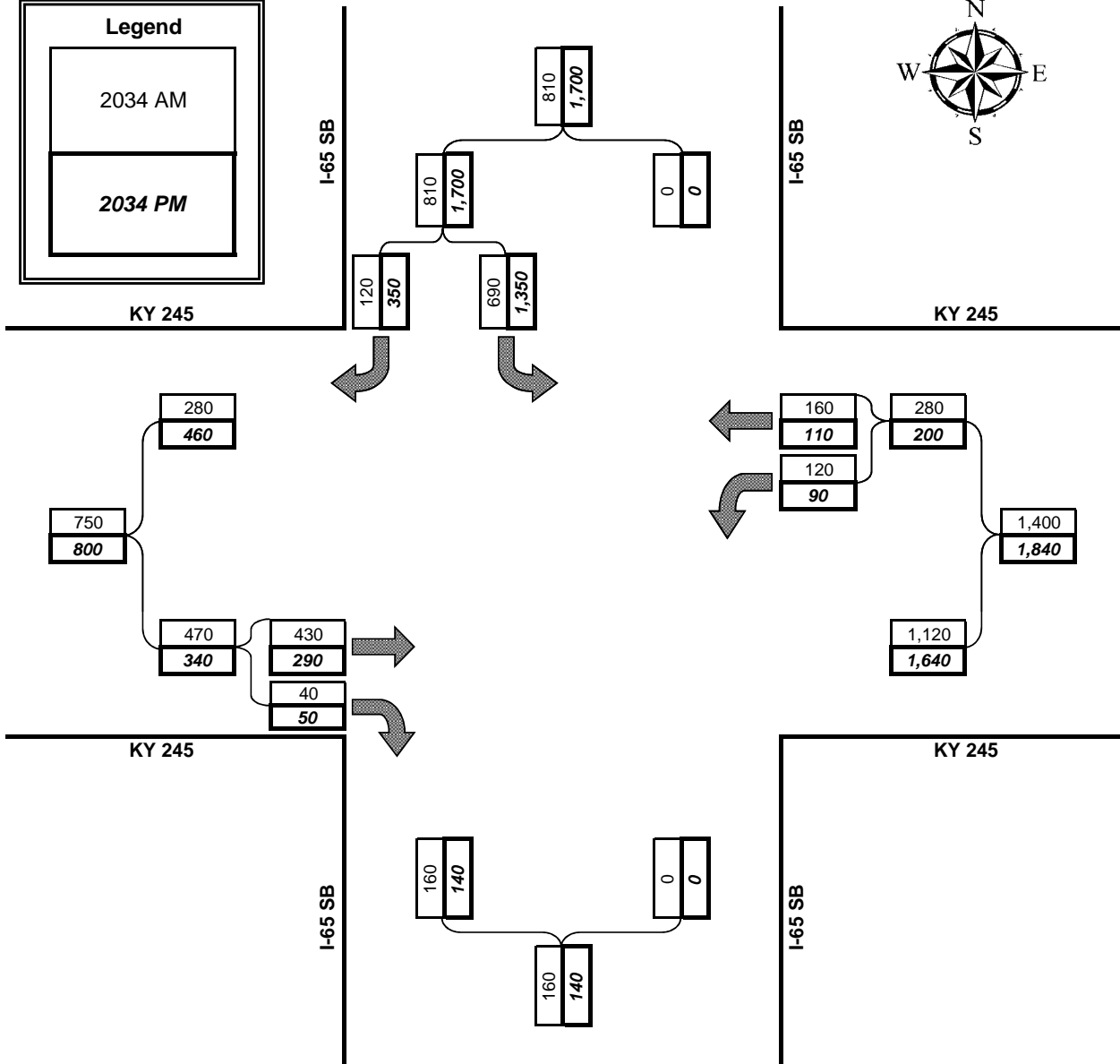
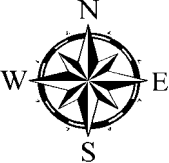


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PREPARED BY: B. Aldridge	AM PHF: 0.84
DATE PREPARED: 10/29/2010	PM PEAK HOUR: 4:30 PM to 5:30 PM
	PM PHF: 0.98

**Bullitt County  
KY 245 Widening  
KYTC Item No. 5-8509.00  
T1: KY 245 at SB I-65**

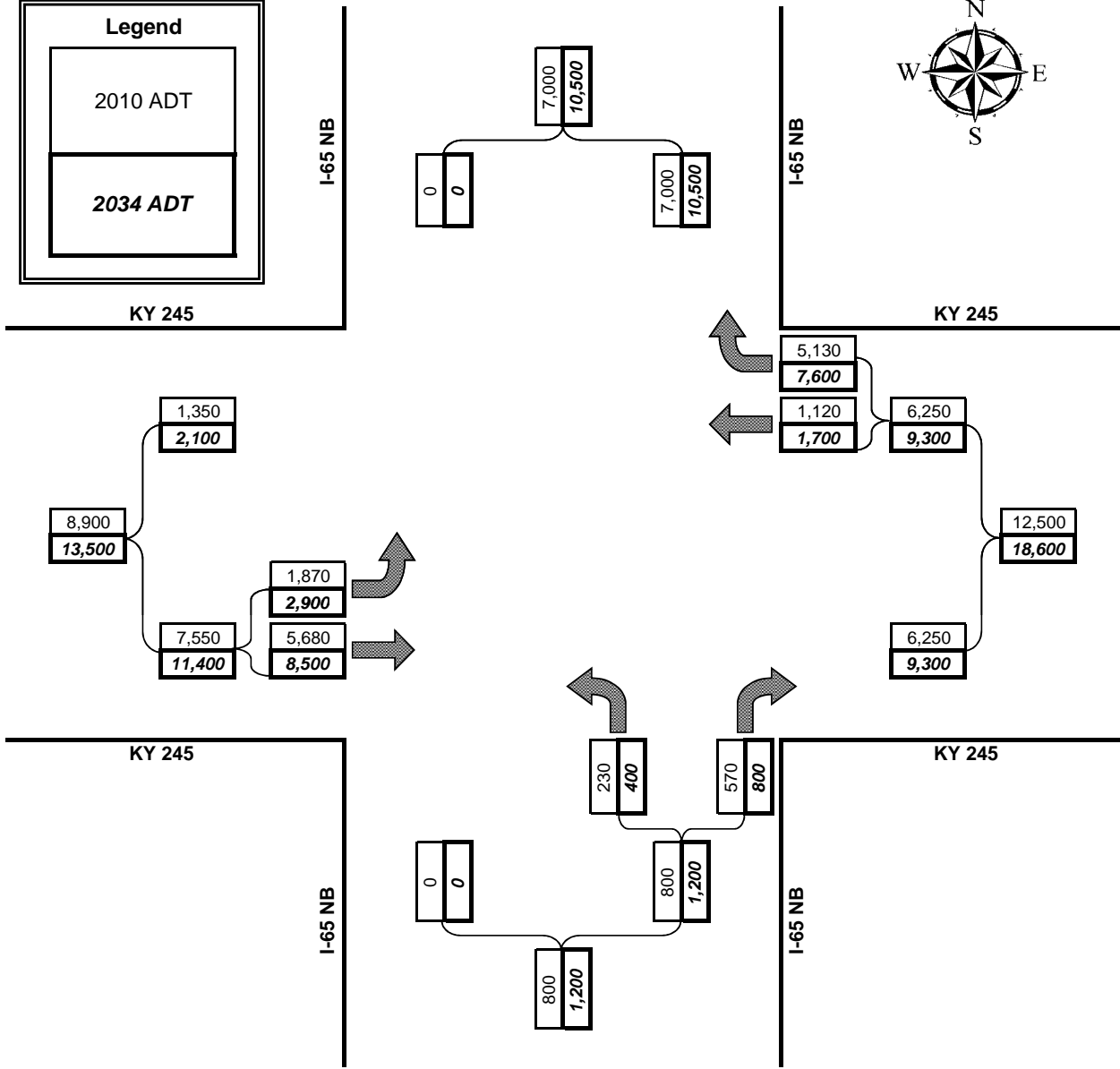
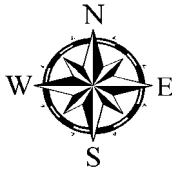
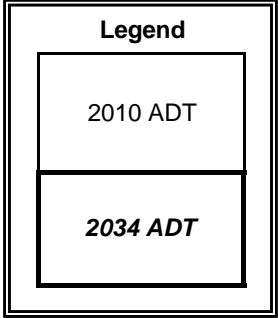
**Legend**

2034 AM
2034 PM



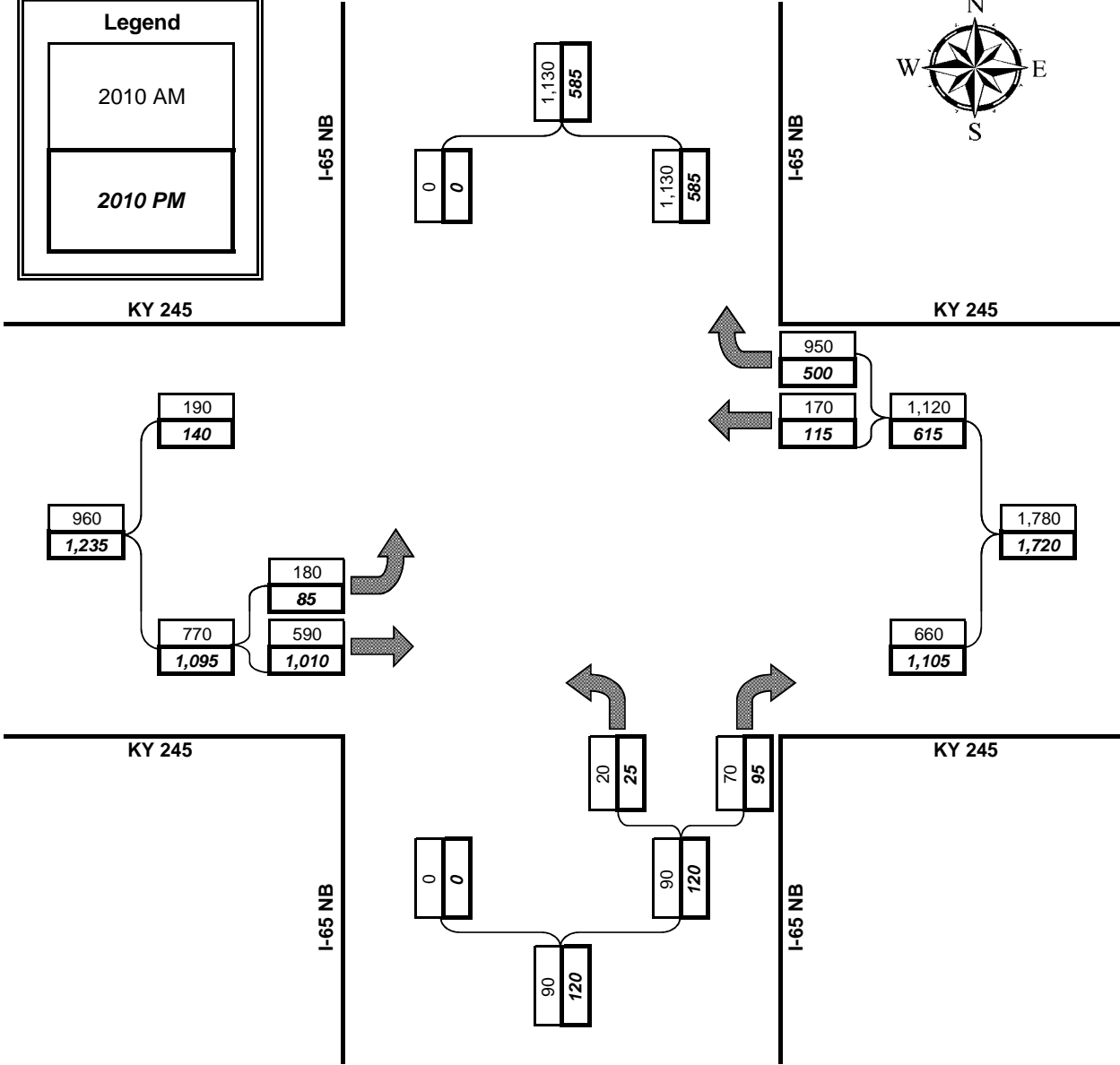
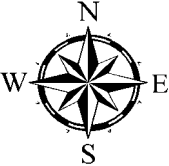
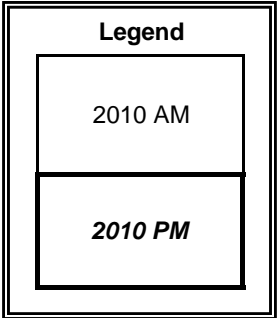
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 PREPARED BY: B. Aldridge  
 DATE PREPARED: 10/29/2010

**Bullitt County  
 KY 245 Widening  
 KYTC Item No. 5-8509.00  
 T2: KY 245 at NB I-65**



<b>PREPARED BY:</b> B. Aldridge <b>DATE PREPARED:</b> 10/29/2010	<b>Notes:</b> Existing (2010) & Design Year (2034) Average Daily Traffic Volumes
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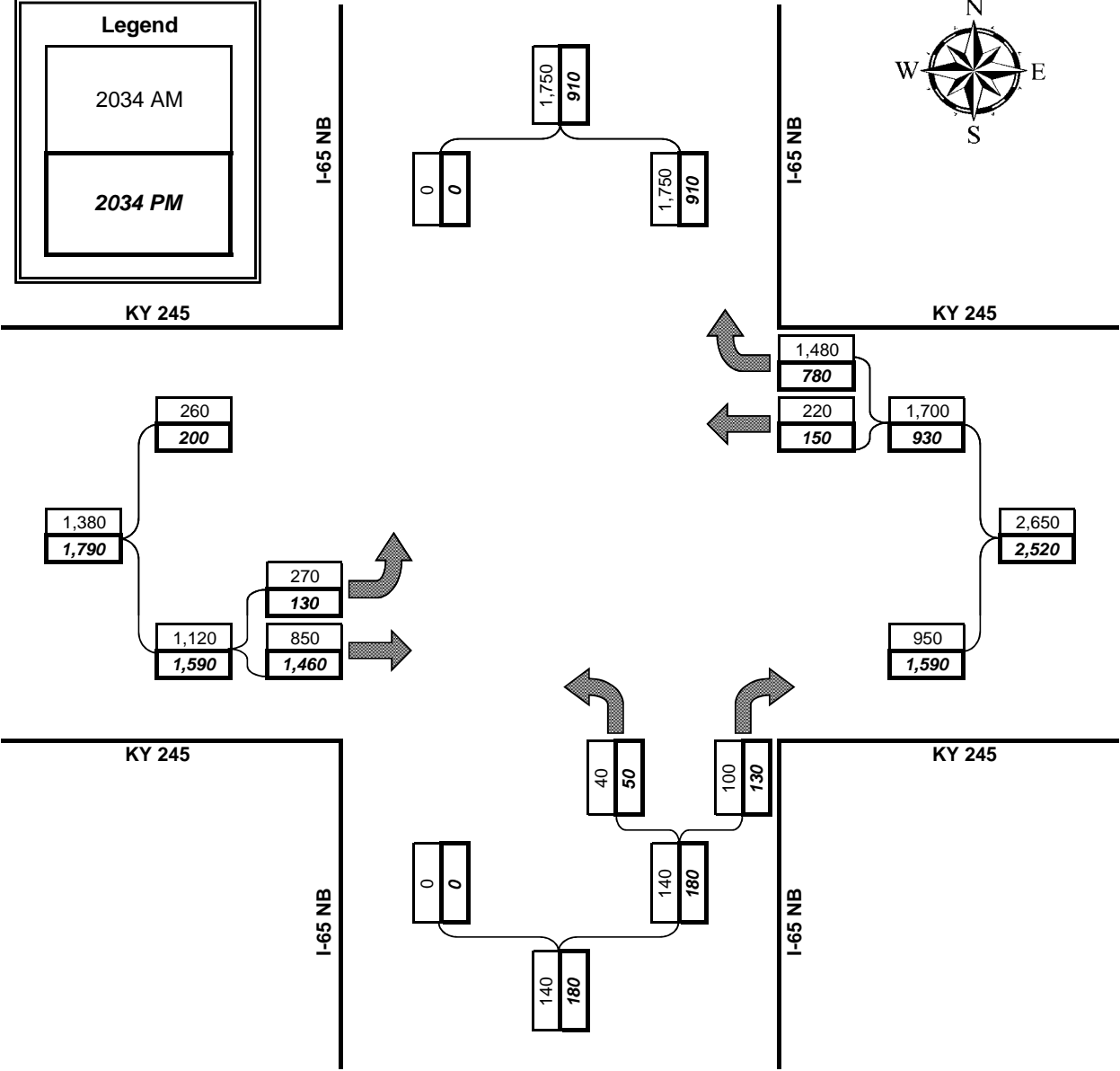
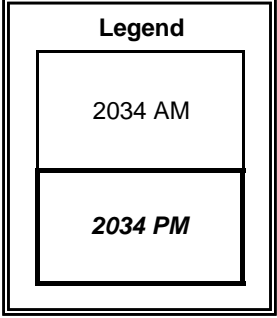
**Bullitt County  
 KY 245 Widening  
 KYTC Item No. 5-8509.00  
 T2: KY 245 at NB I-65**



PERIOD: Existing (2010) Design Hour Volumes (DHV's)	AM PEAK HOUR: 8:00 AM to 9:00 AM
PREPARED BY: B. Aldridge	AM PHF: 0.90
DATE PREPARED: 10/29/2010	PM PEAK HOUR: 4:30 PM to 5:30 PM
	PM PHF: 0.92

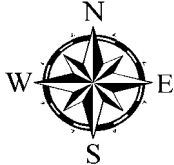
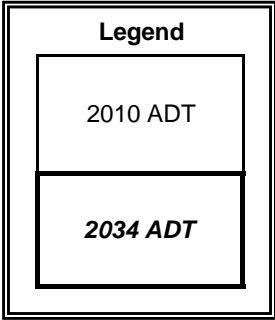


**Bullitt County  
 KY 245 Widening  
 KYTC Item No. 5-8509.00  
 T2: KY 245 at NB I-65**

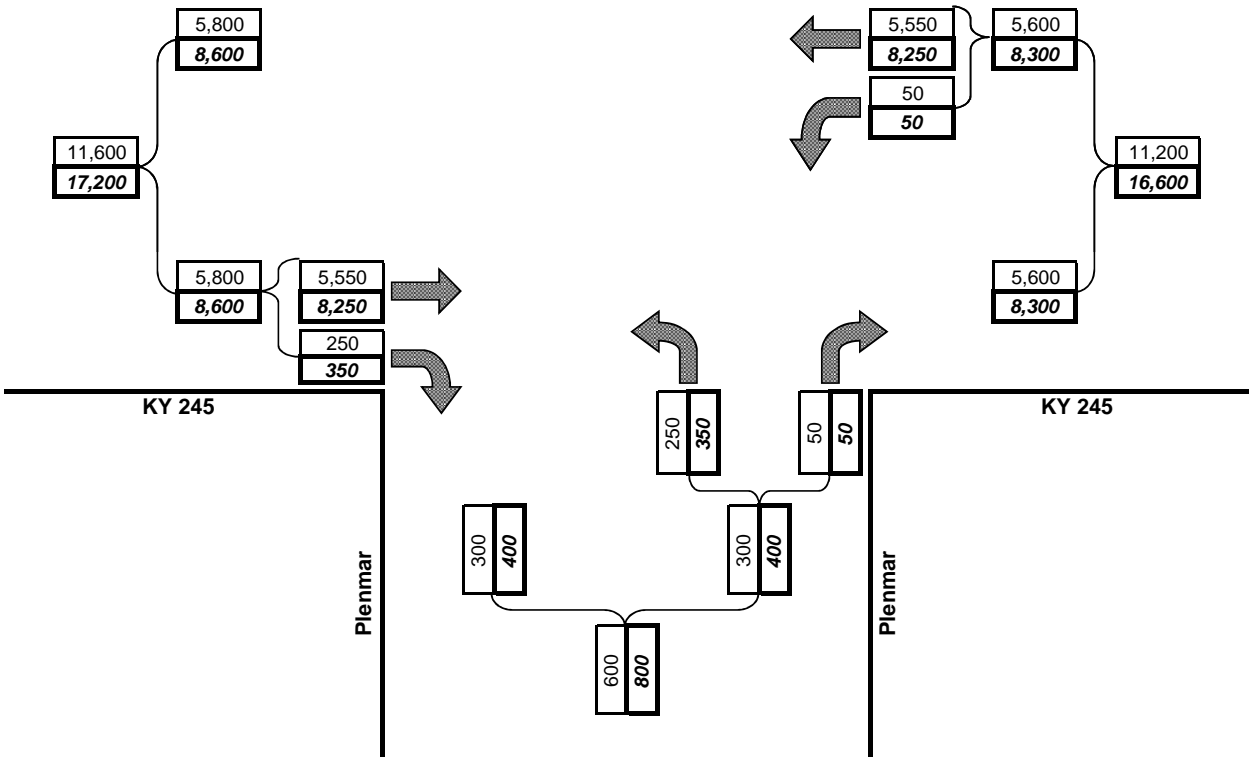


PERIOD: 2034 Design Hour Volumes (DHV's) PREPARED BY: B. Aldridge DATE PREPARED: 10/29/2010	
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**Bullitt County  
 KY 245 Widening  
 KYTC Item No. 5-8509.00  
 T3: KY 245 at Plenmar Drive**

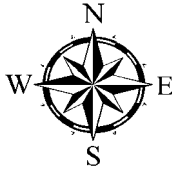
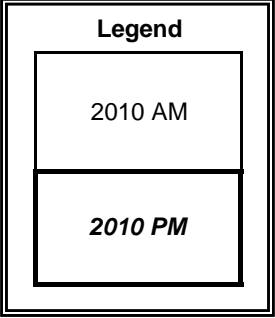


KY 245 KY 245

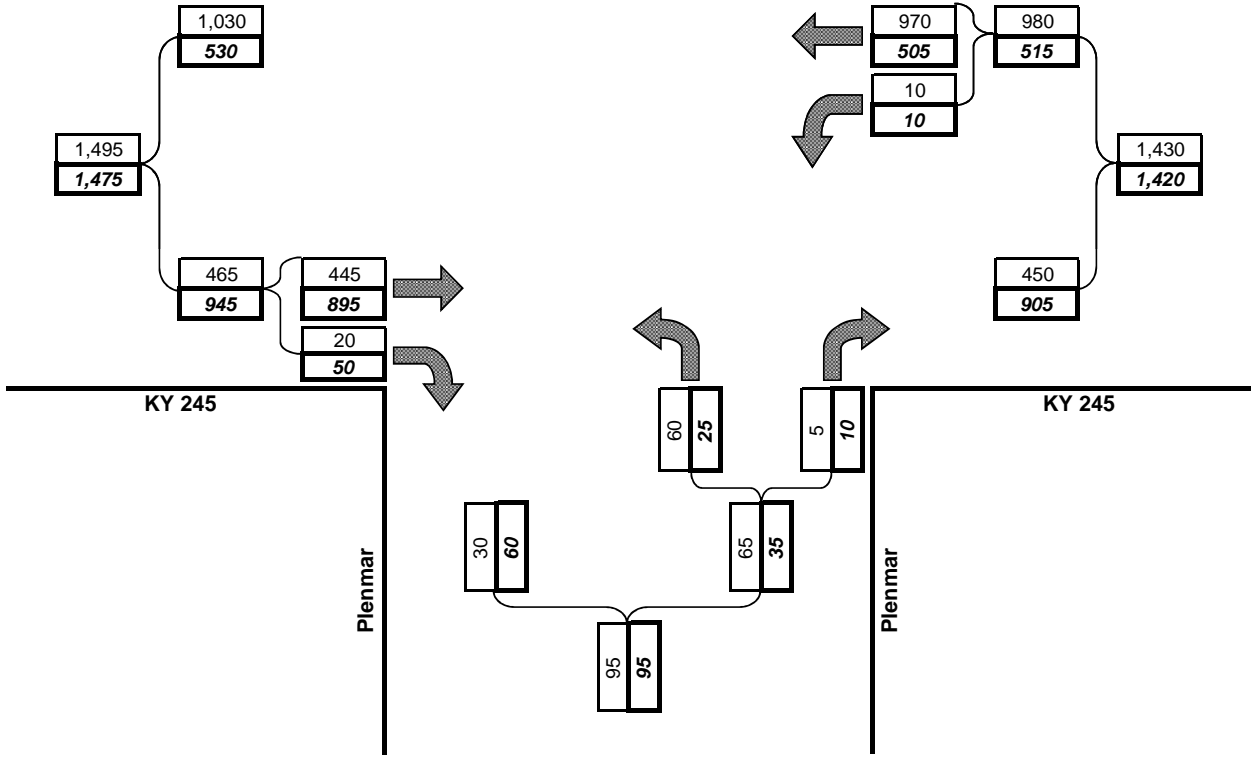


PREPARED BY: B. Aldridge DATE PREPARED: 10/29/2010	Notes: Existing (2010) & Design Year (2034) Average Daily Traffic Volumes
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**Bullitt County  
KY 245 Widening  
KYTC Item No. 5-8509.00  
T3: KY 245 at Plenmar Drive**



KY 245 KY 245

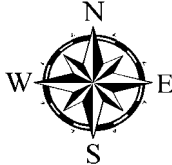


<p>PERIOD: Existing (2010) Design Hour Volumes (DHV's)</p> <p>PREPARED BY: B. Aldridge</p> <p>DATE PREPARED: 10/29/2010</p>	<p>AM PEAK HOUR: 8:00 AM to 9:00 AM</p> <p>AM PHF: 0.87</p> <p>PM PEAK HOUR: 4:00 PM to 5:00 PM</p> <p>PM PHF: 0.94</p>
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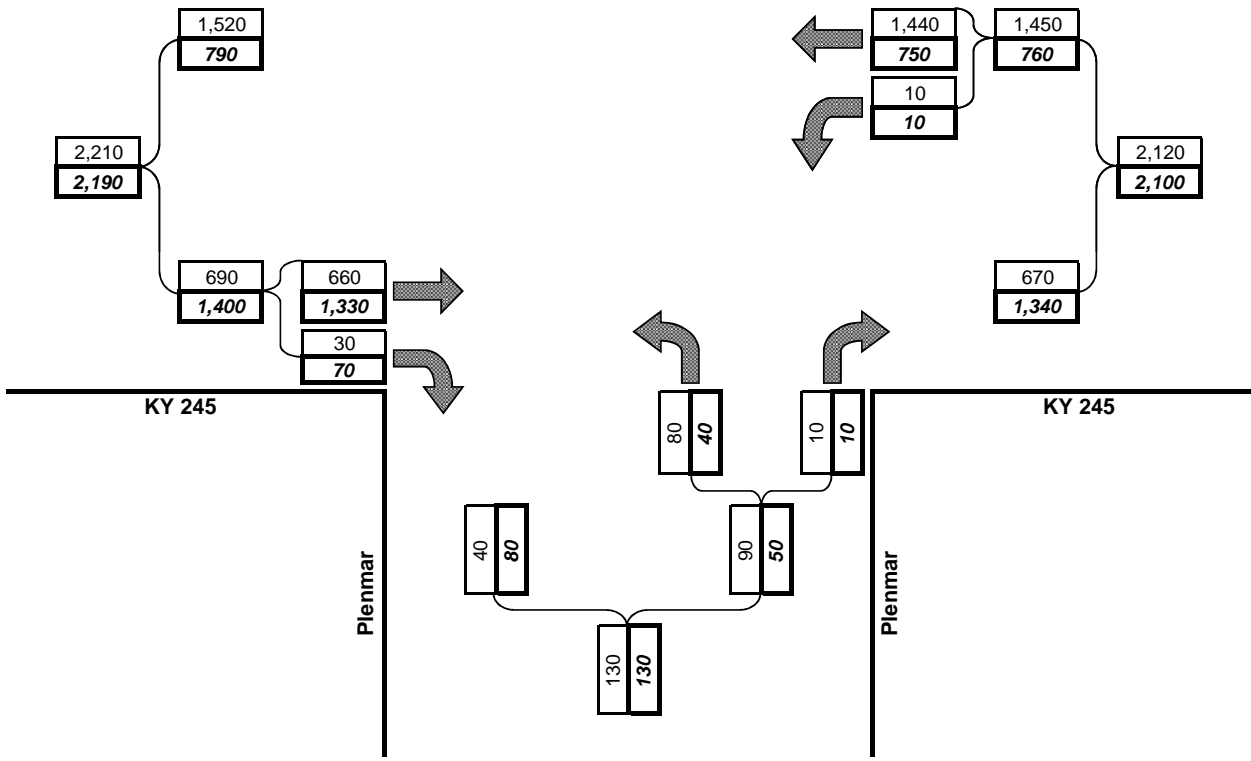
**Bullitt County  
KY 245 Widening  
KYTC Item No. 5-8509.00  
T3: KY 245 at Plenmar Drive**

**Legend**

2034 AM
2034 PM

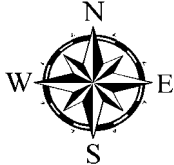
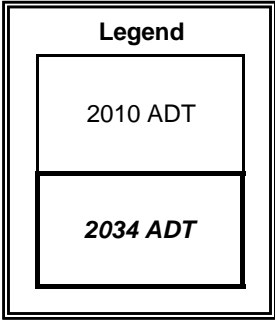


KY 245 KY 245

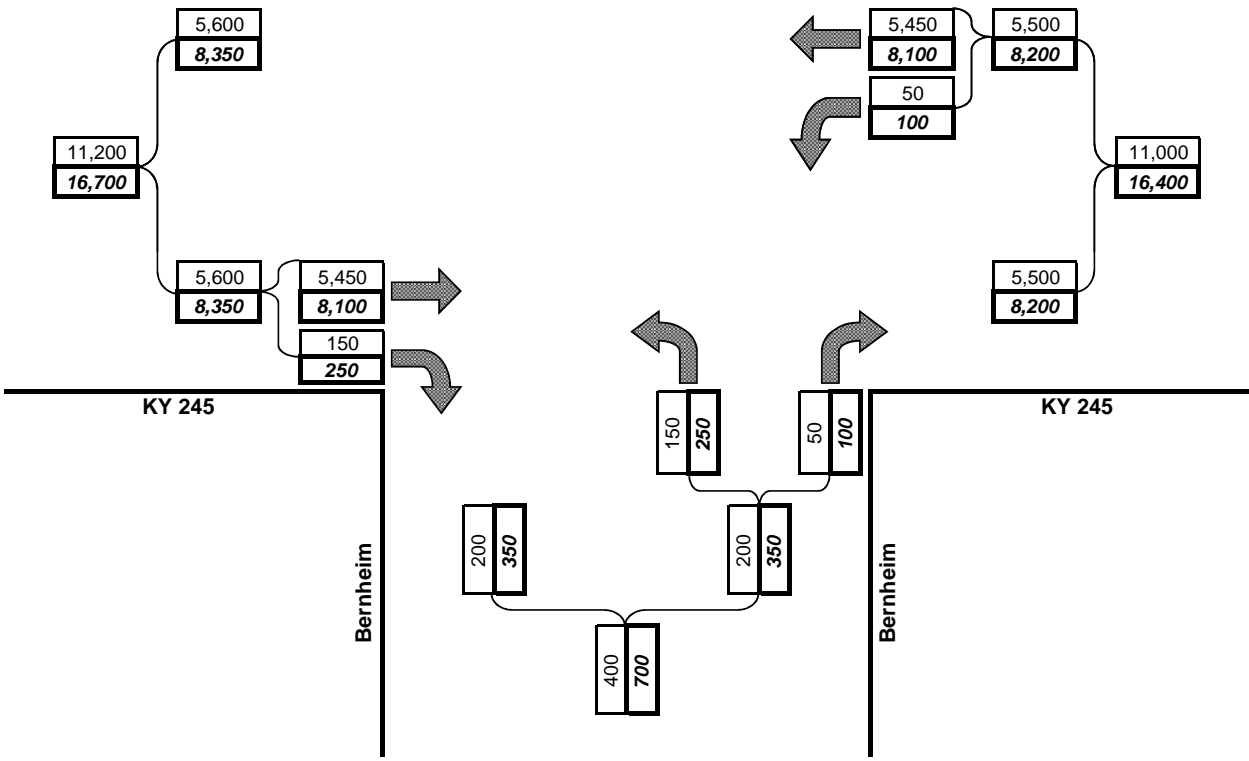


<p>PERIOD: 2034 Design Hour Volumes (DHV's)          PREPARED BY: B. Aldridge          DATE PREPARED: 10/29/2010</p>	
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**Bullitt County  
KY 245 Widening  
KYTC Item No. 5-8509.00  
T4: KY 245 at Bernheim**



KY 245 KY 245



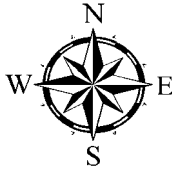
<p>PREPARED BY: B. Aldridge DATE PREPARED: 10/29/2010</p>	<p>Notes: Existing (2010) &amp; Design Year (2034) Average Daily Traffic Volumes</p>
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**Bullitt County  
KY 245 Widening  
KYTC Item No. 5-8509.00  
T4: KY 245 at Bernheim**

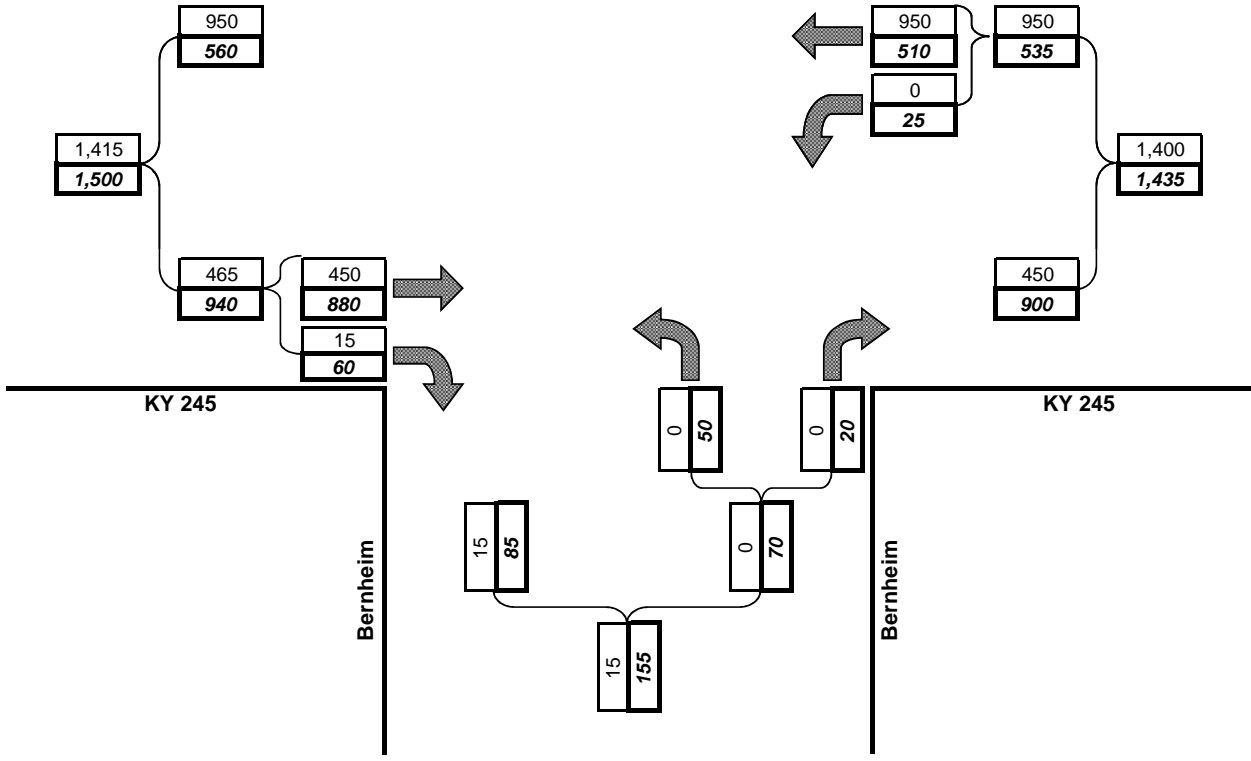
**Legend**

2010 AM

2010 PM



KY 245 KY 245

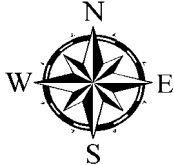


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PREPARED BY: B. Aldridge	AM PHF: 0.89
DATE PREPARED: 10/29/2010	PM PEAK HOUR: 4:45 PM to 5:45 PM
	PM PHF: 0.97

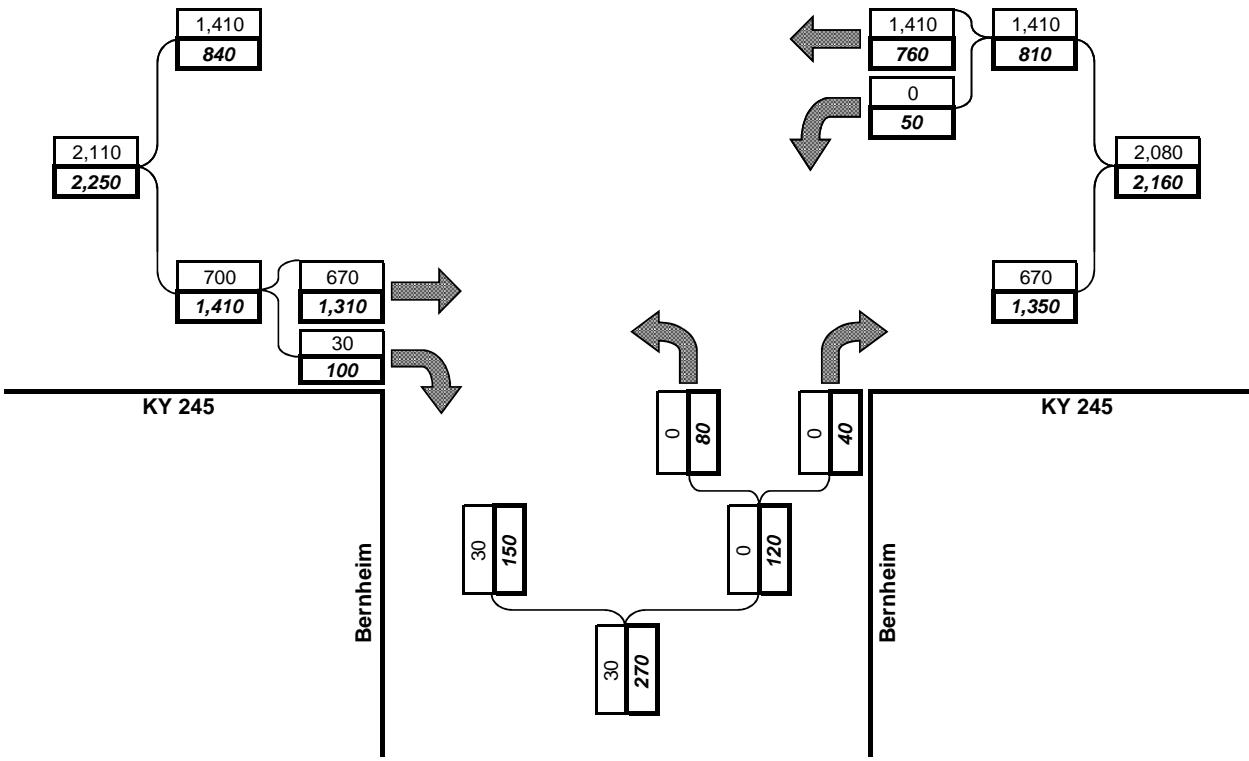
**Bullitt County  
KY 245 Widening  
KYTC Item No. 5-8509.00  
T4: KY 245 at Bernheim**

**Legend**

2034 AM
2034 PM



KY 245 KY 245

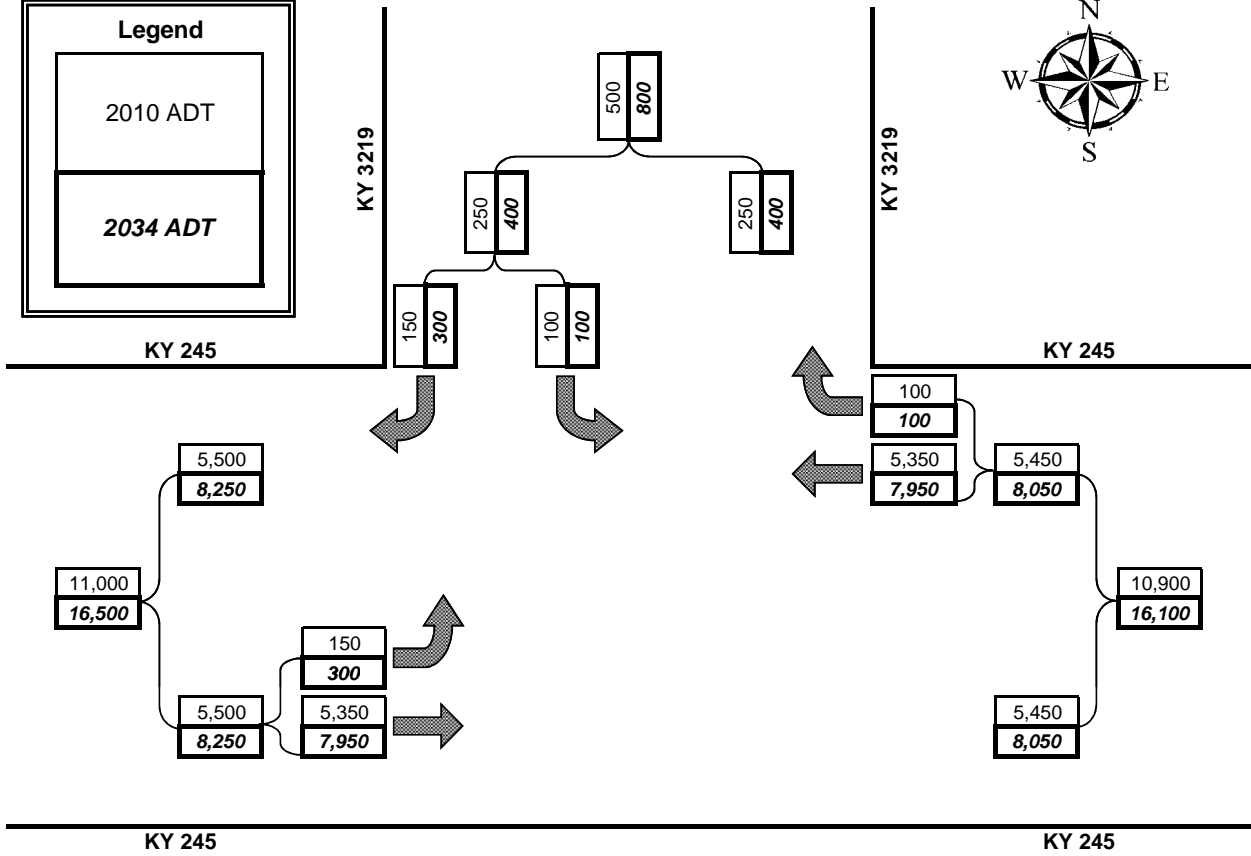
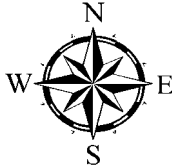


<p>PERIOD: 2034 Design Hour Volumes (DHV's)          PREPARED BY: B. Aldridge          DATE PREPARED: 10/29/2010</p>	
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**Bullitt County  
KY 245 Widening  
KYTC Item No. 5-8509.00  
T5: KY 245 at KY 3219**

**Legend**

2010 ADT
2034 ADT



<p>PREPARED BY: B. Aldridge DATE PREPARED: 10/29/2010</p>	<p>Notes: Existing (2010) &amp; Design Year (2034) Average Daily Traffic Volumes</p>
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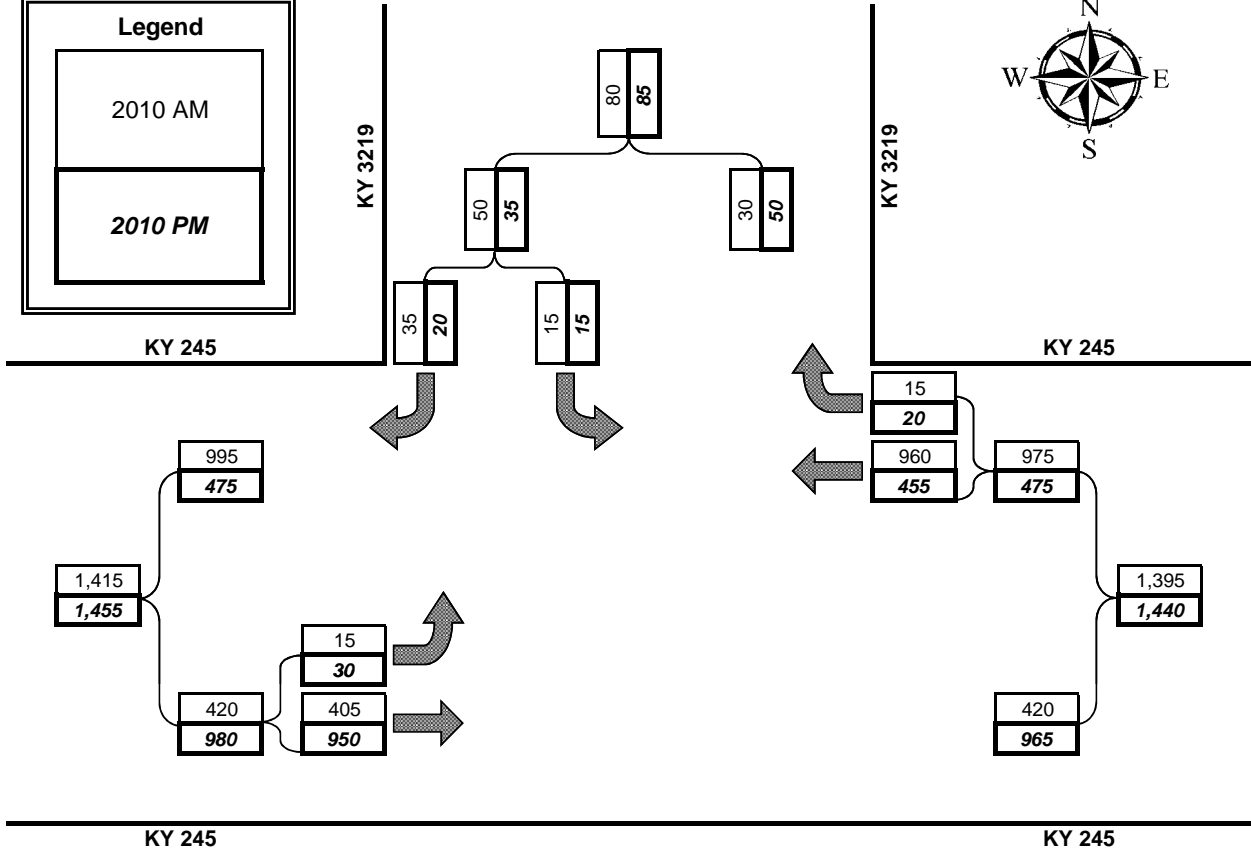
**Bullitt County  
KY 245 Widening  
KYTC Item No. 5-8509.00  
T5: KY 245 at KY 3219**

**Legend**

2010 AM

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2010 PM

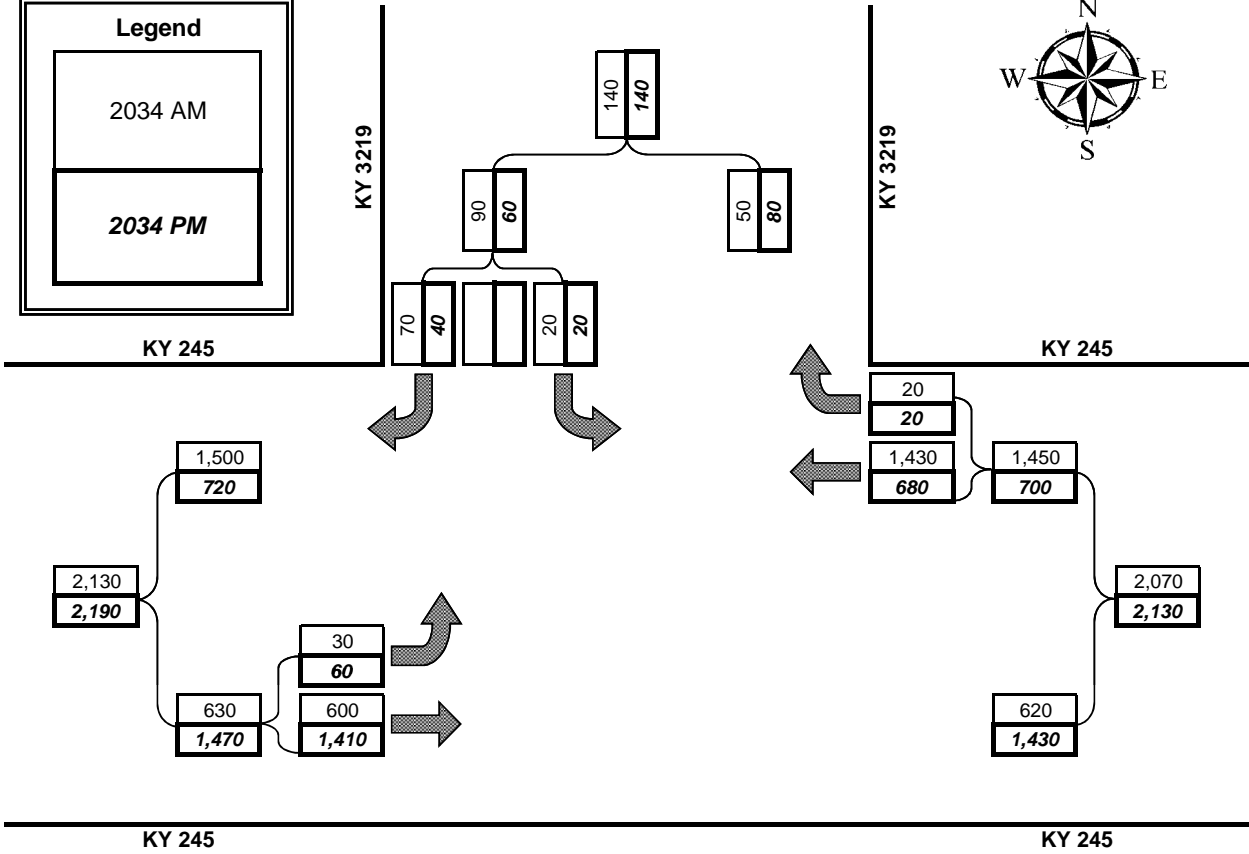


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PREPARED BY: B. Aldridge	AM PHF: 0.90
DATE PREPARED: 10/29/2010	PM PEAK HOUR: 4:45 PM to 5:45 PM
	PM PHF: 0.92

**Bullitt County  
KY 245 Widening  
KYTC Item No. 5-8509.00  
T5: KY 245 at KY 3219**

**Legend**

2034 AM
2034 PM

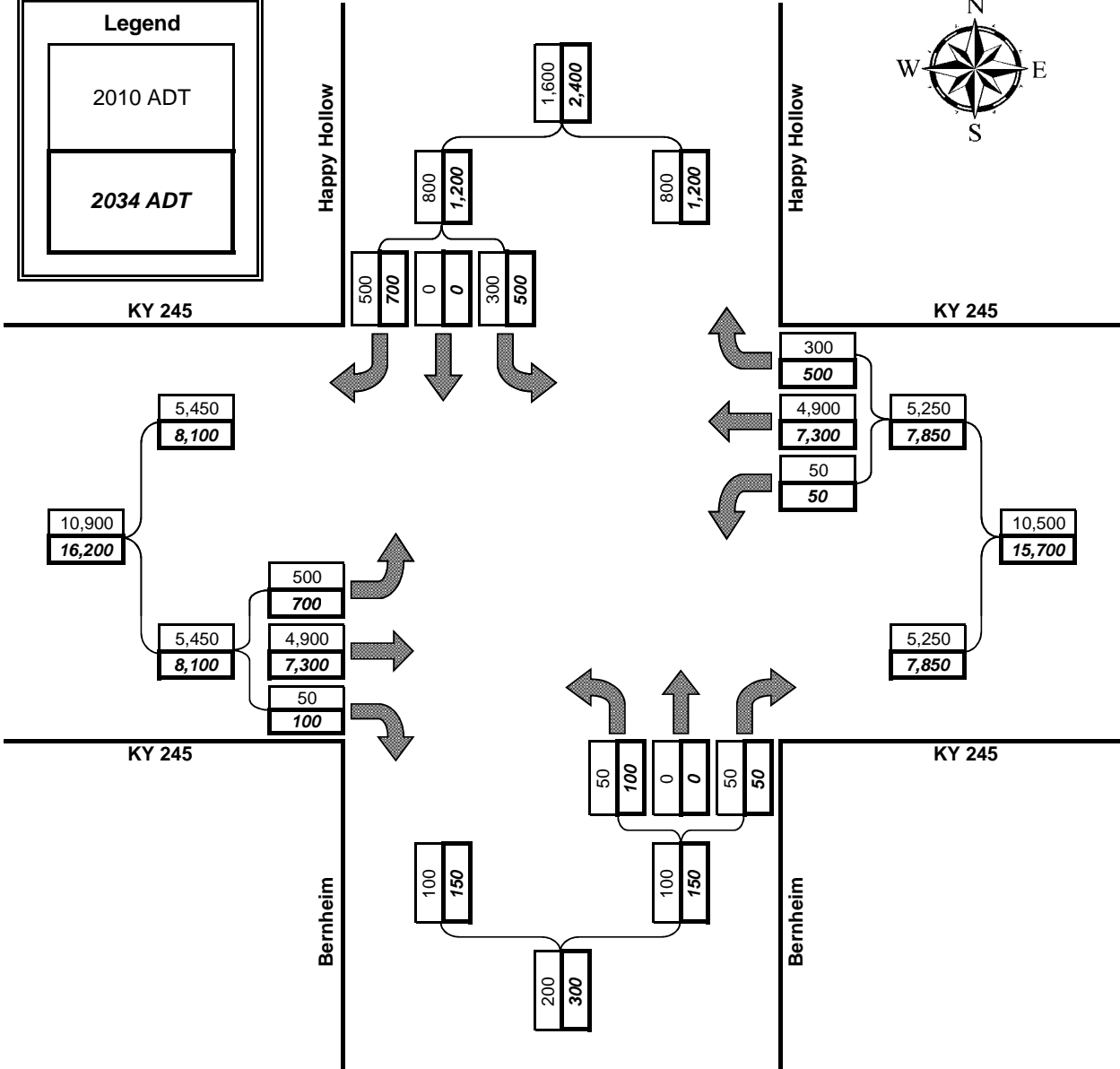


PERIOD: 2034 Design Hour Volumes (DHV's) PREPARED BY: B. Aldridge DATE PREPARED: 10/29/2010	
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**Bullitt County  
 KY 245 Widening  
 KYTC Item No. 5-8509.00  
 T6: KY 245 at Happy Hollow**

**Legend**

2010 ADT
2034 ADT



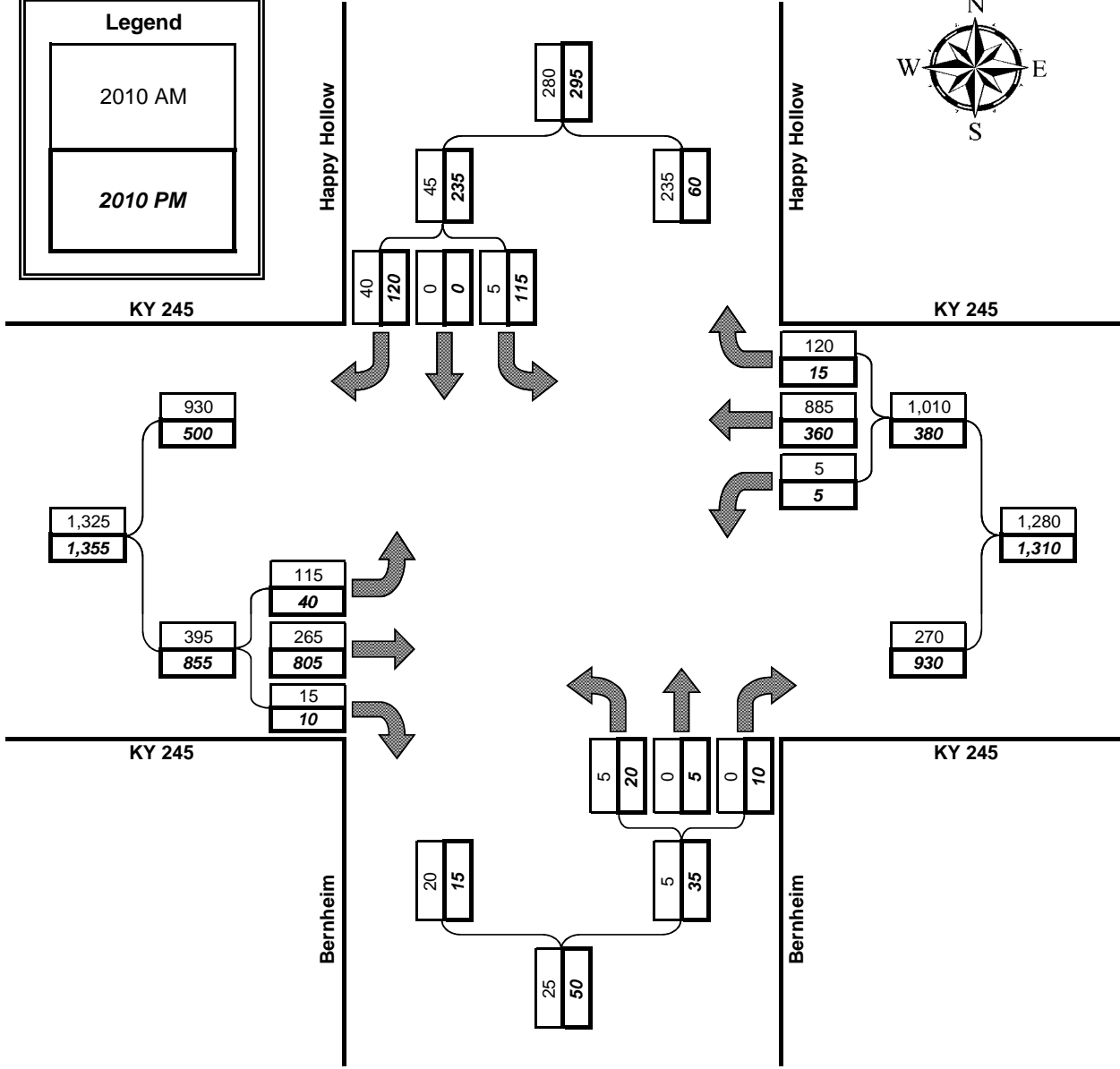
PREPARED BY: B. Aldridge  
 DATE PREPARED: 10/29/2010

Notes: Existing (2010) & Design Year (2034)  
 Average Daily Traffic Volumes

**Bullitt County  
KY 245 Widening  
KYTC Item No. 5-8509.00  
T6: KY 245 at Happy Hollow**

**Legend**

2010 AM
2010 PM

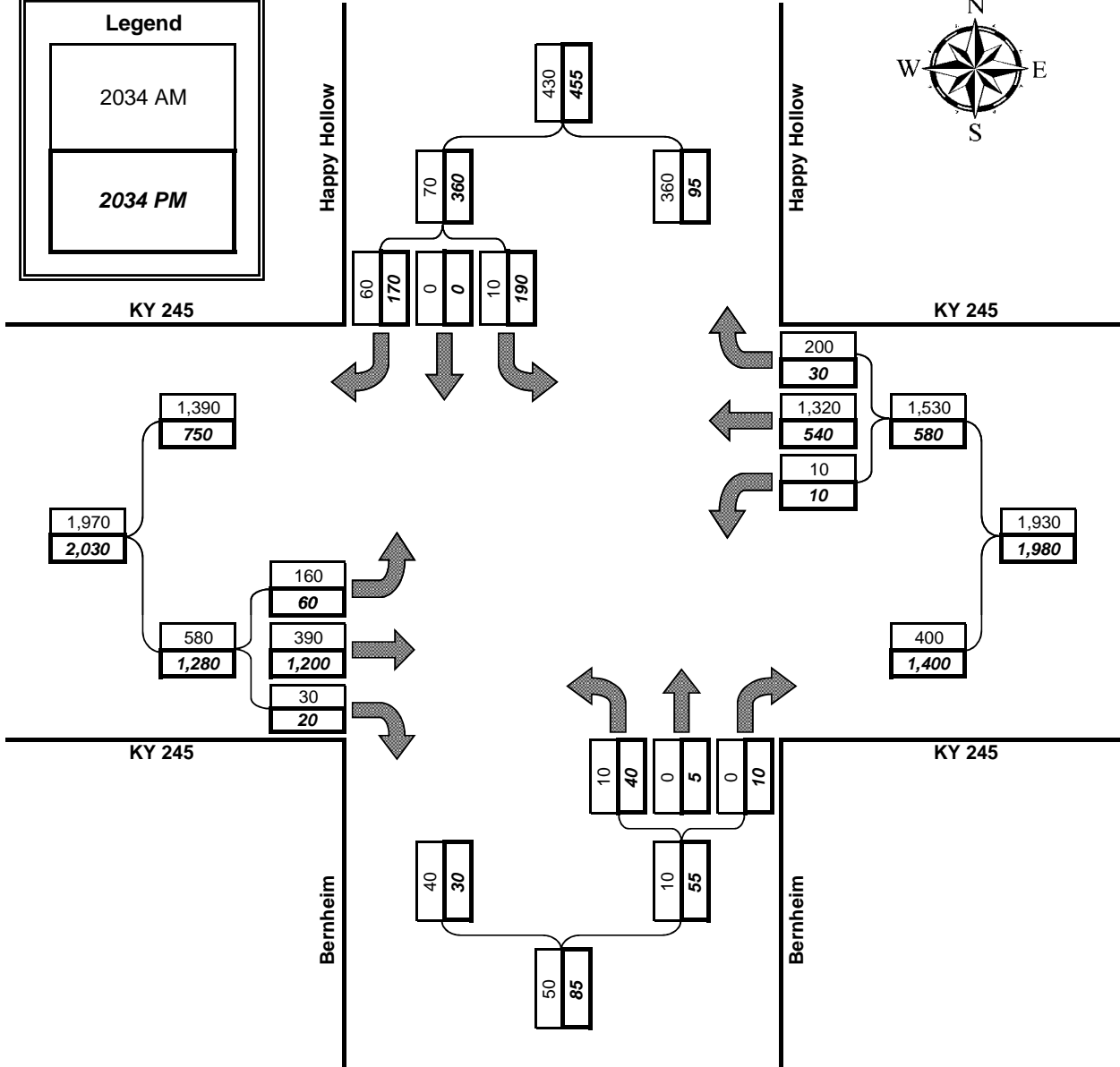
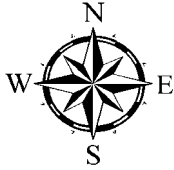


PERIOD: Existing (2010) Design Hour Volumes (DHV's)	AM PEAK HOUR: 6:45 AM to 7:45 AM
PREPARED BY: B. Aldridge	AM PHF: 0.89
DATE PREPARED: 10/29/2010	PM PEAK HOUR: 4:00 PM to 5:00 PM
	PM PHF: 0.81

**Bullitt County  
 KY 245 Widening  
 KYTC Item No. 5-8509.00  
 T6: KY 245 at Happy Hollow**

**Legend**

2034 AM
2034 PM



PERIOD: 2034 Design Hour Volumes (DHV's) PREPARED BY: B. Aldridge DATE PREPARED: 10/29/2010	
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## **Appendix B – ESAL Calculations**

## FORECAST OF EQUIVALENT SINGLE AXLE LOAD ACCUMULATIONS (20-year)

### ROUTE ID:

County	Bullitt	Date	12/20/10
Road Name	245	Forecaster	Brian Aldridge
Functional Class	6 - Rural Minor Arterial	MARS No.	8330501D
Project Description	KY 245 Widening	Item No.	5-8509.00
Scenario	2034 Build	Route No.	KY
Segment Description	I-65 to KY 61	Beg. MP	6.585
		End MP	7.178
		T.F. No.	0.000
		No. of Lanes	2
		1 or 2 way	2

### REFERENCES:

Previous Forecasts	None	K- Factor Value	11.1%
Traffic Volume Source	Current Year, 2010 Traffic Count Future Year, Growth Rate	K-Factor Source	2010 Counts
Truck Percent Milepoint	2010 VCC, Sta. 751 6.6	PHF	0.9
ESAL Information	2007 Aggregated ESALS		
Growth Rate	1.8%		

### TRAFFIC PARAMETERS:

		Present Year	Growth Rate	Construction Year	Median Year	Design Year
		2010		2014	2024	2034
Volume	(AADT)	4600	1.8%	4900	5900	7000
Percent Trucks	(%T)	10.0%	1.0%	10%	11%	13%
Number of Trucks		460	2.8%	490	650	910
Percent Trucks Hauling Coal	(%CT)	0%	0.0%	0%	0%	0%
<i>Non-Coal Trucks:</i>						
Axles/Truck	(A/T)	3.600	0.00%	3.600	3.600	3.600
ESALs/Axle	(ESAL/A)	0.260	1.60%	0.277	0.325	0.381
<i>Coal Trucks:</i>						
Axles/Truck	(A/CT)	0	0.00%	0.000	0.000	0.000
ESALs/Axle	(ESAL/CA)	0	0.00%	0.000	0.000	0.000

### ESAL CALCULATIONS: SEE ATTACHED ESAL CALCULATION SHEET

Design ESALs in Critical Lane 3,100,000

General Comments:

## FORECAST OF EQUIVALENT SINGLE AXLE LOAD ACCUMULATIONS (20-year)

### ROUTE ID:

County	Bullitt	Date	12/20/10
Road Name	245	Forecaster	Brian Aldridge
Functional Class	6 - Rural Minor Arterial	MARS No.	8330501D
Project Description	KY 245 Widening	Item No.	5-8509.00
Scenario	2034 Build	Route No.	KY
Segment Description	At I-65	Beg. MP	6.4
		End MP	6.585
		T.F. No.	0.000
		No. of Lanes	2
		1 or 2 way	2

### REFERENCES:

Previous Forecasts	None	K- Factor Value	12.9%
Traffic Volume Milepoint	Current Year, 2010 Traffic Count Future Year, Growth Rate	K-Factor Source	2010 counts
Truck Percent Milepoint	2010 VCC, Sta. 812 5.9	PHF	0.9
ESAL Information	2007 Aggregated ESALS		
Growth Rate	1.8%		

### TRAFFIC PARAMETERS:

		Present Year	Growth Rate	Construction Year	Median Year	Design Year
		<b>2010</b>		<b>2014</b>	<b>2024</b>	<b>2034</b>
Volume	(AADT)	8900	1.8%	9500	11000	14000
Percent Trucks	(%T)	10.0%	1.0%	10%	11%	13%
Number of Trucks		890	2.8%	950	1200	1800
Percent Trucks Hauling Coal	(%CT)	0%	0.0%	0%	0%	0%
<i>Non-Coal Trucks:</i>						
Axles/Truck	(A/T)	3.600	0.00%	3.600	3.600	3.600
ESALs/Axle	(ESAL/A)	0.260	1.60%	0.277	0.325	0.381
<i>Coal Trucks:</i>						
Axles/Truck	(A/CT)	0	0.00%	0.000	0.000	0.000
ESALs/Axle	(ESAL/CA)	0	0.00%	0.000	0.000	0.000

### ESAL CALCULATIONS: SEE ATTACHED ESAL CALCULATION SHEET

Design ESALs in Critical Lane 6,100,000

General Comments:



## FORECAST OF EQUIVALENT SINGLE AXLE LOAD ACCUMULATIONS (20-year)

### ROUTE ID:

County	Bullitt	Date	12/20/10
Road Name	245	Forecaster	Brian Aldridge
Functional Class	6 - Rural Minor Arterial	MARS No.	8330501D
Project Description	KY 245 Widening	Item No.	5-8509.00
Scenario	2034 Build	Route No.	KY
Segment Description	I-65 to Audubon Drive	Beg. MP	6.297
		End MP	6.4
		T.F. No.	0.000
		No. of Lanes	2
		1 or 2 way	2

### REFERENCES:

Previous Forecasts	None	K- Factor Value	12.9%
Traffic Volume Milepoint	Current Year, 2010 Traffic Count Future Year, Growth Rate	K-Factor Source	2010 Counts
Truck Percent Milepoint	2010 VCC, Sta. 812 5.9	PHF	0.9
ESAL Information	2007 Aggregated ESALS		
Growth Rate	1.7%		

### TRAFFIC PARAMETERS:

		Present Year	Growth Rate	Construction Year	Median Year	Design Year
		<b>2010</b>		<b>2014</b>	<b>2024</b>	<b>2034</b>
Volume	(AADT)	12500	1.7%	13000	16000	19000
Percent Trucks	(%T)	10.0%	1.0%	10%	11%	13%
Number of Trucks		1300	2.7%	1300	1800	2500
Percent Trucks Hauling Coal	(%CT)	0%	0.0%	0%	0%	0%
<i>Non-Coal Trucks:</i>						
Axles/Truck	(A/T)	3.600	0.00%	3.600	3.600	3.600
ESALs/Axle	(ESAL/A)	0.260	1.60%	0.277	0.325	0.381
<i>Coal Trucks:</i>						
Axles/Truck	(A/CT)	0	0.00%	0.000	0.000	0.000
ESALs/Axle	(ESAL/CA)	0	0.00%	0.000	0.000	0.000

### ESAL CALCULATIONS: SEE ATTACHED ESAL CALCULATION SHEET

Design ESALs in Critical Lane 8,400,000

General Comments:

## FORECAST OF EQUIVALENT SINGLE AXLE LOAD ACCUMULATIONS (20-year)

### ROUTE ID:

County	Bullitt	Date	12/20/10
Road Name	245	Forecaster	Brian Aldridge
Functional Class	6 - Rural Minor Arterial	MARS No.	8330501D
Project Description	KY 245 Widening	Item No.	5-8509.00
Scenario	2034 Build	Route No.	KY
Segment Description	Audubon Drive to Plenmar Drive	Beg. MP	5.801
		End MP	6.297
		T.F. No.	0.000
		No. of Lanes	2
		1 or 2 way	2

### REFERENCES:

Previous Forecasts	None	K- Factor Value	12.9%
Traffic Volume Milepoint	Current Year, 2010 Traffic Count Future Year, Growth Rate	K-Factor Source	2010 Counts
Truck Percent Milepoint	2010 VCC, Sta. 812 5.9	PHF	0.9
ESAL Information	2007 Aggregated ESALS		
Growth Rate	1.7%		

### TRAFFIC PARAMETERS:

		Present Year	Growth Rate	Construction Year	Median Year	Design Year
		2010		2014	2024	2034
Volume	(AADT)	11600	1.7%	12000	15000	17000
Percent Trucks	(%T)	10.0%	1.0%	10%	11%	13%
Number of Trucks		1200	2.7%	1200	1700	2200
Percent Trucks Hauling Coal	(%CT)	0%	0.0%	0%	0%	0%
<i>Non-Coal Trucks:</i>						
Axles/Truck	(A/T)	3.600	0.00%	3.600	3.600	3.600
ESALs/Axle	(ESAL/A)	0.260	1.60%	0.277	0.325	0.381
<i>Coal Trucks:</i>						
Axles/Truck	(A/CT)	0	0.00%	0.000	0.000	0.000
ESALs/Axle	(ESAL/CA)	0	0.00%	0.000	0.000	0.000

### ESAL CALCULATIONS: SEE ATTACHED ESAL CALCULATION SHEET

Design ESALs in Critical Lane 7,800,000

General Comments:

## FORECAST OF EQUIVALENT SINGLE AXLE LOAD ACCUMULATIONS (20-year)

### ROUTE ID:

County	Bullitt	Date	12/20/10
Road Name	245	Forecaster	Brian Aldridge
Functional Class	6 - Rural Minor Arterial	MARS No.	8330501D
Project Description	KY 245 Widening	Item No.	5-8509.00
Scenario	2034 Build	Route No.	KY
Segment Description	Plenmar Dr. to Bernheim Forest	Beg. MP	5.551
		End MP	5.801
		T.F. No.	0.000
		No. of Lanes	2
		1 or 2 way	2

### REFERENCES:

Previous Forecasts	None	K- Factor Value	12.9%
Traffic Volume Milepoint	Current Year, 2010 Traffic Count Future Year, Growth Rate	K-Factor Source	2010 Counts
Truck Percent Milepoint	2010 VCC, Sta. 812 5.9	PHF	0.9
ESAL Information	2007 Aggregated ESALS		
Growth Rate	1.7%		

### TRAFFIC PARAMETERS:

		Present Year	Growth Rate	Construction Year	Median Year	Design Year
		<b>2010</b>		<b>2014</b>	<b>2024</b>	<b>2034</b>
Volume	(AADT)	11200	1.7%	12000	14000	17000
Percent Trucks	(%T)	10.0%	1.0%	10%	11%	13%
Number of Trucks		1100	2.7%	1200	1500	2200
Percent Trucks Hauling Coal	(%CT)	0%	0.0%	0%	0%	0%
<i>Non-Coal Trucks:</i>						
Axles/Truck	(A/T)	3.600	0.00%	3.600	3.600	3.600
ESALs/Axle	(ESAL/A)	0.260	1.60%	0.277	0.325	0.381
<i>Coal Trucks:</i>						
Axles/Truck	(A/CT)	0	0.00%	0.000	0.000	0.000
ESALs/Axle	(ESAL/CA)	0	0.00%	0.000	0.000	0.000

### ESAL CALCULATIONS: SEE ATTACHED ESAL CALCULATION SHEET

Design ESALs in Critical Lane 7,500,000

General Comments:

## FORECAST OF EQUIVALENT SINGLE AXLE LOAD ACCUMULATIONS (20-year)

### ROUTE ID:

County	Bullitt	Date	12/20/10
Road Name	245	Forecaster	Brian Aldridge
Functional Class	6 - Rural Minor Arterial	MARS No.	8330501D
Project Description	KY 245 Widening	Item No.	5-8509.00
Scenario	2034 Build	Route No.	KY
Segment Description	Bernheim Forest to KY 3219	Beg. MP	5.329
		End MP	5.551
		T.F. No.	0.000
		No. of Lanes	2
		1 or 2 way	2

### REFERENCES:

Previous Forecasts	None	K- Factor Value	12.9%
Traffic Volume Milepoint	Current Year, 2010 Traffic Count Future Year, Growth Rate	K-Factor Source	2010 Counts
Truck Percent Milepoint	2010 VCC, Sta. 812 5.9	PHF	0.9
ESAL Information	2007 Aggregated ESALS		
Growth Rate	1.7%		

### TRAFFIC PARAMETERS:

		Present Year	Growth Rate	Construction Year	Median Year	Design Year
		2010		2014	2024	2034
Volume	(AADT)	11000	1.7%	12000	14000	17000
Percent Trucks	(%T)	10.0%	1.0%	10%	11%	13%
Number of Trucks		1100	2.7%	1200	1500	2200
Percent Trucks Hauling Coal	(%CT)	0%	0.0%	0%	0%	0%
<i>Non-Coal Trucks:</i>						
Axles/Truck	(A/T)	3.600	0.00%	3.600	3.600	3.600
ESALs/Axle	(ESAL/A)	0.260	1.60%	0.277	0.325	0.381
<i>Coal Trucks:</i>						
Axles/Truck	(A/CT)	0	0.00%	0.000	0.000	0.000
ESALs/Axle	(ESAL/CA)	0	0.00%	0.000	0.000	0.000

### ESAL CALCULATIONS: SEE ATTACHED ESAL CALCULATION SHEET

Design ESALs in Critical Lane 7,400,000

General Comments:

## FORECAST OF EQUIVALENT SINGLE AXLE LOAD ACCUMULATIONS (20-year)

### ROUTE ID:

County	Bullitt	Date	12/20/10
Road Name	245	Forecaster	Brian Aldridge
Functional Class	6 - Rural Minor Arterial	MARS No.	8330501D
Project Description	KY 245 Widening	Item No.	5-8509.00
Scenario	2034 Build	Route No.	KY
Segment Description	KY 3219 to Happy Hollow	Beg. MP	4.763
		End MP	5.329
		T.F. No.	0.000
		No. of Lanes	2
		1 or 2 way	2

### REFERENCES:

Previous Forecasts	None	K- Factor Value	12.9%
Traffic Volume Milepoint	Current Year, 2010 Traffic Count Future Year, Growth Rate	K-Factor Source	2010 Counts
Truck Percent Milepoint	2010 VCC, Sta. 812 5.9	PHF	0.9
ESAL Information	2007 Aggregated ESALS		
Growth Rate	1.7%		

### TRAFFIC PARAMETERS:

		Present Year <b>2010</b>	Growth Rate	Construction Year <b>2014</b>	Median Year <b>2024</b>	Design Year <b>2034</b>
Volume	(AADT)	10900	1.7%	12000	14000	16000
Percent Trucks	(%T)	10.0%	1.0%	10%	11%	13%
Number of Trucks		1100	2.7%	1200	1500	2100
Percent Trucks Hauling Coal	(%CT)	0%	0.0%	0%	0%	0%
<i>Non-Coal Trucks:</i>						
Axles/Truck	(A/T)	3.600	0.00%	3.600	3.600	3.600
ESALs/Axle	(ESAL/A)	0.260	1.60%	0.277	0.325	0.381
<i>Coal Trucks:</i>						
Axles/Truck	(A/CT)	0	0.00%	0.000	0.000	0.000
ESALs/Axle	(ESAL/CA)	0	0.00%	0.000	0.000	0.000

### ESAL CALCULATIONS: SEE ATTACHED ESAL CALCULATION SHEET

Design ESALs in Critical Lane 7,300,000

General Comments:

## FORECAST OF EQUIVALENT SINGLE AXLE LOAD ACCUMULATIONS (20-year)

### ROUTE ID:

County	Bullitt	Date	12/20/10
Road Name	245	Forecaster	Brian Aldridge
Functional Class	6 - Rural Minor Arterial	MARS No.	8330501D
Project Description	KY 245 Widening	Item No.	5-8509.00
Scenario	2034 Build	Route No.	KY
Segment Description	East of Happy Hollow Rd.	Beg. MP	2.648
		End MP	4.763
		T.F. No.	0.000
		No. of Lanes	2
		1 or 2 way	2

### REFERENCES:

Previous Forecasts	None	K- Factor Value	12.9%
Traffic Volume Milepoint	Current Year, 2010 Traffic Count Future Year, Growth Rate	K-Factor Source	2010 Counts
Truck Percent Milepoint	2010 VCC, Sta. 267 3.3	PHF	0.9
ESAL Information	2007 Aggregated ESALS		
Growth Rate	1.7%		

### TRAFFIC PARAMETERS:

		Present Year	Growth Rate	Construction Year	Median Year	Design Year
		2010		2014	2024	2034
Volume	(AADT)	10500	1.7%	11000	13000	16000
Percent Trucks	(%T)	10.0%	1.0%	10%	11%	13%
Number of Trucks		1100	2.7%	1100	1400	2100
Percent Trucks Hauling Coal	(%CT)	0%	0.0%	0%	0%	0%
<i>Non-Coal Trucks:</i>						
Axles/Truck	(A/T)	3.600	0.00%	3.600	3.600	3.600
ESALs/Axle	(ESAL/A)	0.260	1.60%	0.277	0.325	0.381
<i>Coal Trucks:</i>						
Axles/Truck	(A/CT)	0	0.00%	0.000	0.000	0.000
ESALs/Axle	(ESAL/CA)	0	0.00%	0.000	0.000	0.000

### ESAL CALCULATIONS: SEE ATTACHED ESAL CALCULATION SHEET

Design ESALs in Critical Lane 7,100,000

General Comments:

## **Appendix C – Traffic Forecast Request**

# Kentucky Transportation Cabinet Division of Planning Traffic Forecast Request Form

(For internal use)  
TF \_\_\_\_\_-\_\_\_\_\_

**TO:** Division of Planning, 5-1, TCOB

**FROM:** Ricardo Policicchio \_\_\_\_\_ **DISTRICT:** 5

**DATE:** 01 /12 /2010

**PROJECT:** KY 245 – Bernheim Forest to Community College  
(Include map)

**PROJECT DESCRIPTION:** Major Widening  
(Major widening, new highway, etc.)

**ITEM NO.:** 5-8509.00 **COUNTY:** Bullitt **MARS PROJ.:** 83305 01D

**PRIORITY** (circle one): L  H **DATE NEEDED:** 01-05-2010

**FORMAT** (Check one): PDF only  Paper only  Both

**TYPE FORECAST** (Phase I Design, Phase II Design, Air/Noise, Bridge Replacement, Resurface, other):  
Phase II Design

**INFORMATION NEEDED**

	Check as Appropriate		
<i>ADT</i>	<b>Build</b>	<b>No-Build</b>	<b>Residual</b>
Current	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Design (Year=_2030)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Include DHV's <input checked="" type="checkbox"/>			
<i>Truck Percentages</i>			
ADT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Light/Heavy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Include DHV's <input checked="" type="checkbox"/>			
ESALs (Year=_2030)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*Turning Movements for Design Geometry Needed At* (Identify intersections below and on map):

- KY 245 @ Bernheim Forest Entrance for AM. Peak & PM. Peak**
- KY 245 @ KY 3219 intersection for AM. Peak & PM. Peak**
- KY 245 @ Jim Beam Entrance for AM. Peak & PM. Peak**
- KY 245 @ Plenmar Dr. for AM. Peak & PM. Peak**