final report

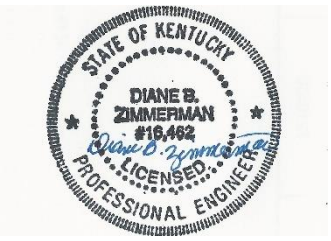
June 2, 2022

Turn Lane Analysis

805 South English Station Road
Louisville, KY

Prepared for

Louisville Metro Planning Commission



DIANE B. ZIMMERMAN
Traffic Engineering, LLC

12803 High Meadows Pike
Prospect, KY 40059
502.648.1858
dianebzim@att.net

Table of Contents

INTRODUCTION 2

Figure 1. Site Map 2

EXISTING CONDITIONS 2

Figure 2. Existing Peak Hour Volumes 3

FUTURE CONDITIONS 3

Figure 3. 2024 No Build Peak Hour Volumes 4

TRIP GENERATION 4

Table 1. Peak Hour Trips Generated by Site 4

Figure 4. Trip Distribution Percentages 5

Figure 5. Peak Hour Trips Generated by Site 5

Figure 6. Build Peak Hour Volumes 6

ANALYSIS 6

CONCLUSIONS 6

APPENDIX 7

INTRODUCTION

The development plan for an apartment community at 805 South English Station Road in Louisville, KY shows 82 apartment units. **Figure 1** displays a map of the site. Access to the community will be from an entrance on South English Station Road, opposite Signature Point Drive. The purpose of this study is to determine if a right turn lane is needed at the entrance. This study uses the 1007 South English Station Road study, dated July 2020 as the basis for volumes on South English Station Road.

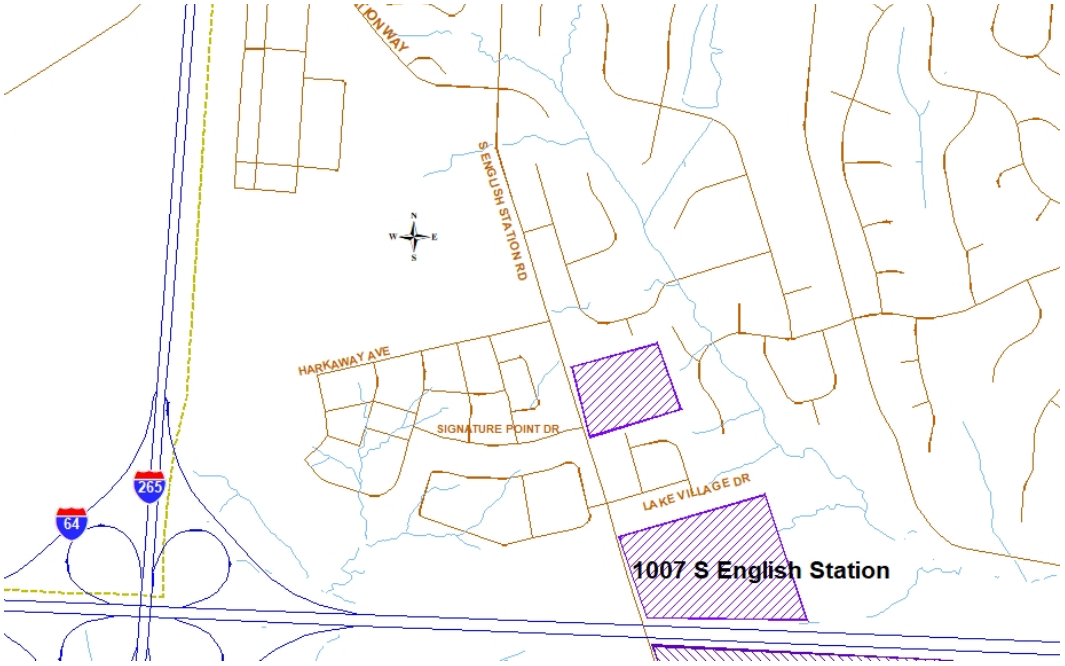


Figure 1. Site Map

EXISTING CONDITIONS

South English Station Road is maintained by Louisville Metro with an estimated 2022 ADT of 4,800 vehicles per day south of Lake Village Drive as estimated from the turning movement count. At the site, the road is a two-lane road with eleven-foot lanes with a two-way left turn lane. There are curb and gutter on the west side and a one-foot shoulder on the east side. The speed limit is 35 mph. There are sidewalks on the west side.

Peak hour traffic counts for the intersection of South English Station Road at Lake Village Drive were obtained on Tuesday, March 3, 2020. The a.m. peak hour was 7:15 to 8:15 and the p.m. peak hour was 4:45 to 5:45. **Figure 2** illustrates the existing a.m. and p.m. peak hour traffic volumes. The Appendix contains the full count data for the intersection.

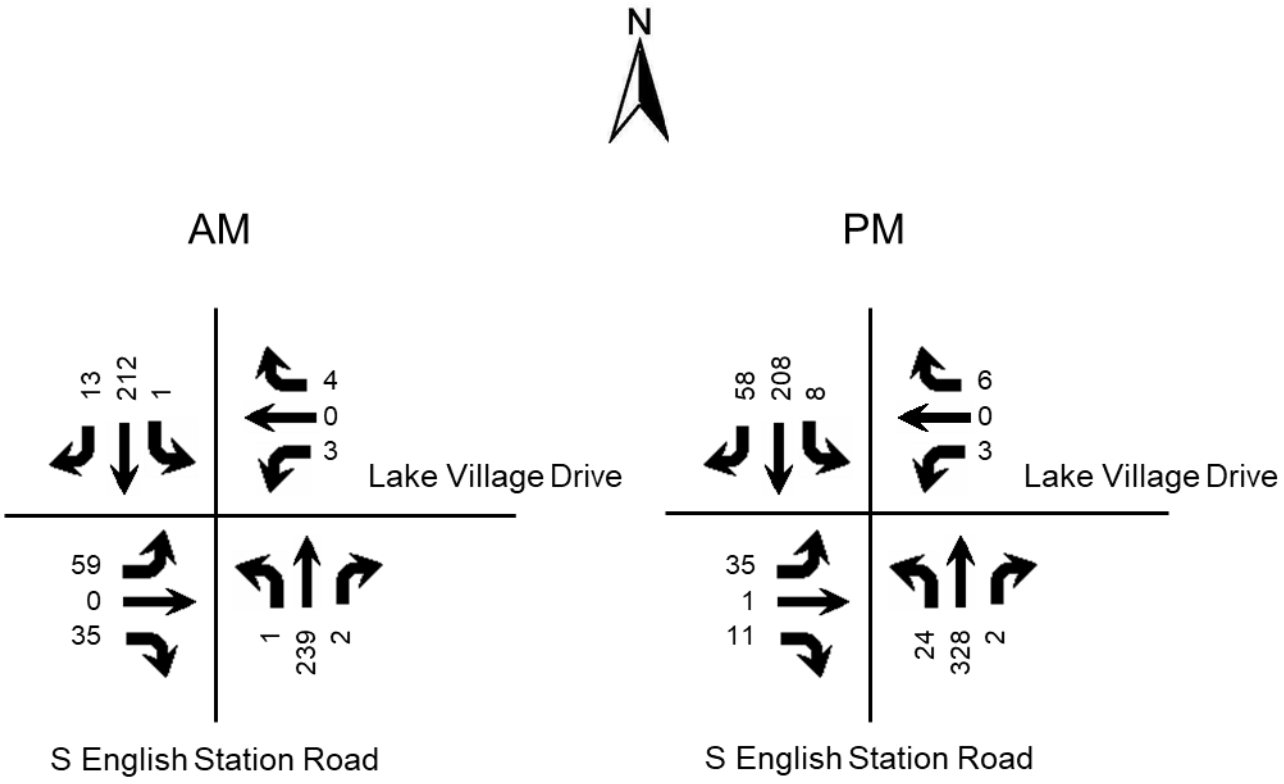


Figure 2. Existing Peak Hour Volumes

FUTURE CONDITIONS

The project completion date is 2024. The Build volumes from 1007 S English Station Road were 2023. A 2 percent annual growth has been added to those volumes. **Figure 3** displays the 2024 No Build peak hour volumes. No count data is available for Signature Point Drive.

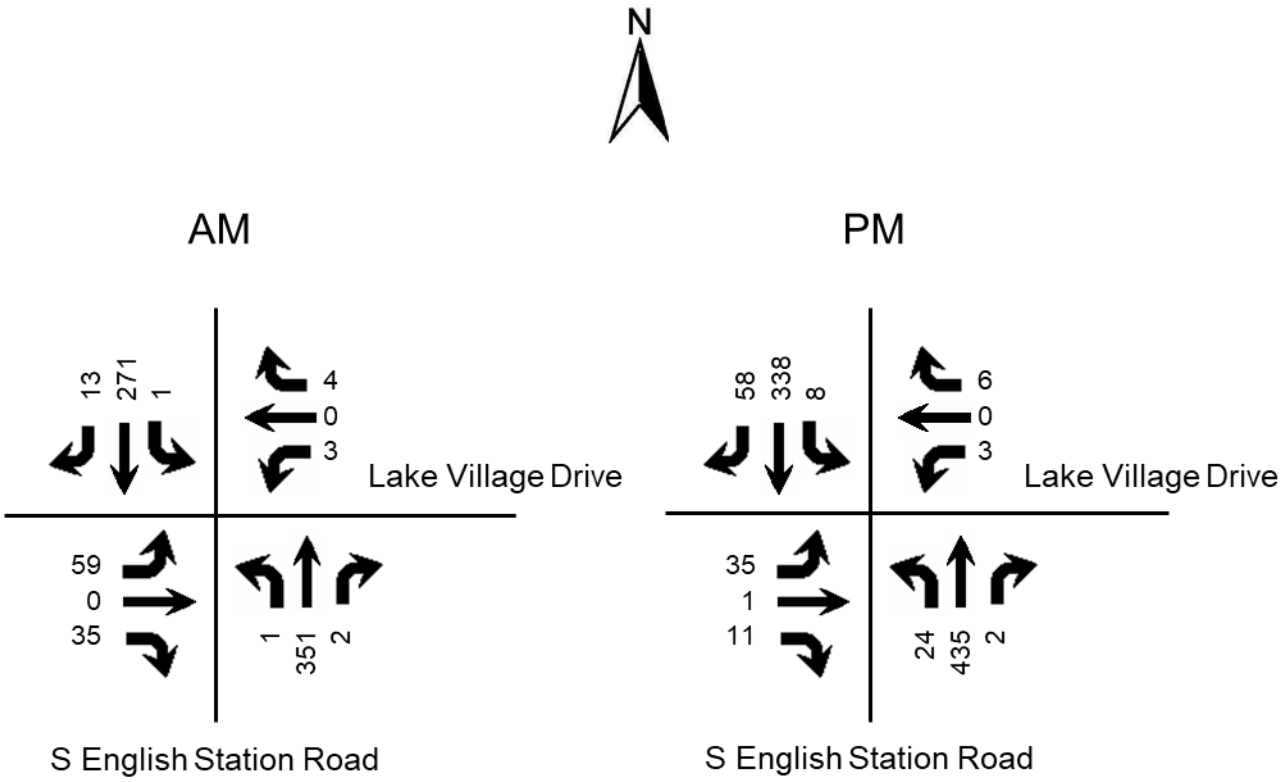


Figure 3. 2024 No Build Peak Hour Volumes

TRIP GENERATION

The Institute of Transportation Engineers Trip Generation Manual, 11th Edition contains trip generation rates for a wide range of developments. The land uses of "Multifamily Housing Low-Rise (220)" was reviewed and determined to be the best match. The trip generation results are listed in **Table 1**. The trips were assigned to the highway network with the percentages shown in **Figure 4**. **Figure 5** shows the trips generated by this development and distributed throughout the road network during the peak hours. **Figure 6** displays the individual turning movements for the peak hours when the development is completed.

Table 1. Peak Hour Trips Generated by Site

	A.M. Peak Hour			P.M. Peak Hour		
Land Use	Trips	In	Out	Trips	In	Out
Multifamily Housing Low-Rise (82 units)	48	12	36	56	35	21

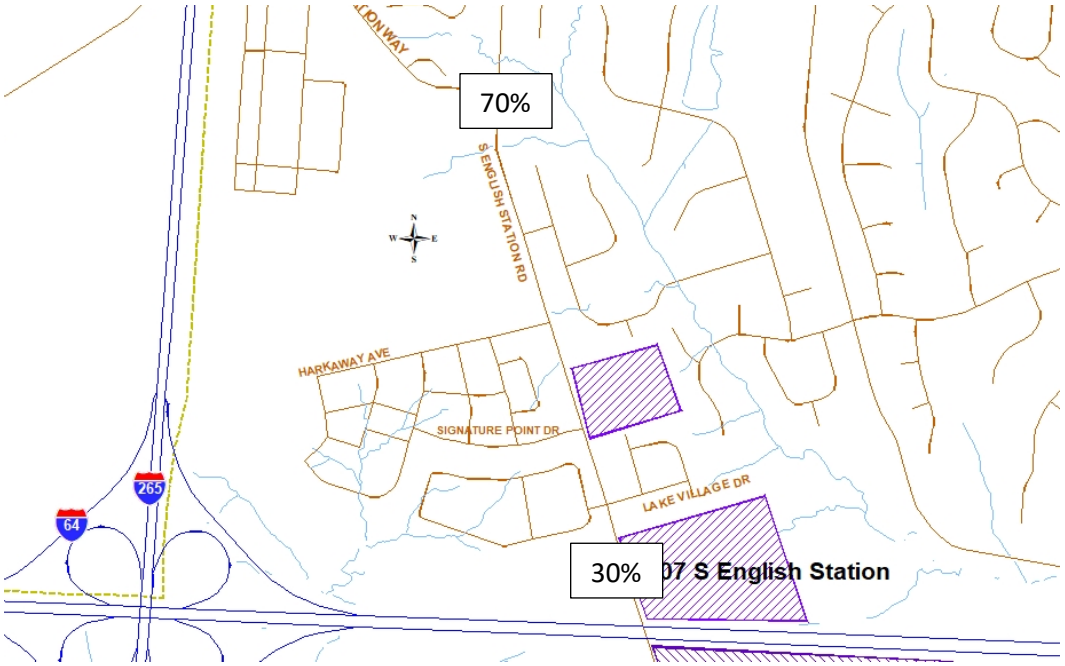


Figure 4. Trip Distribution Percentages

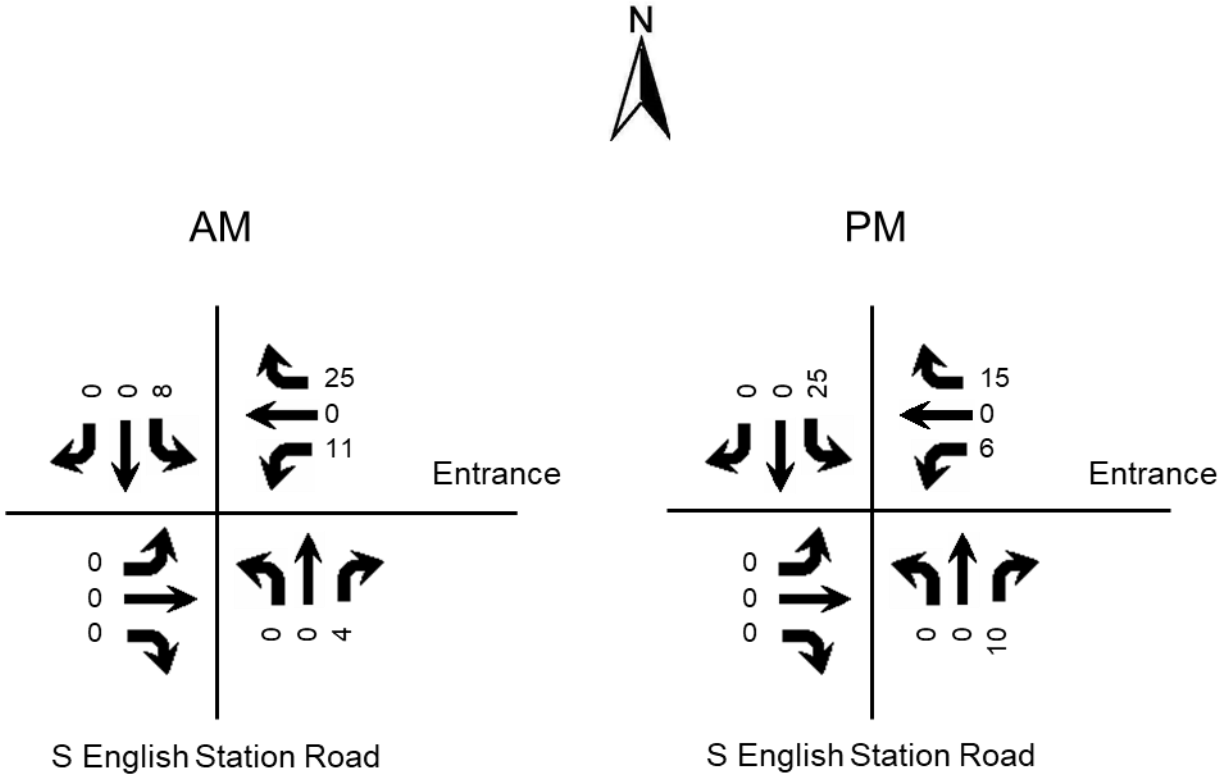


Figure 5. Peak Hour Trips Generated by Site

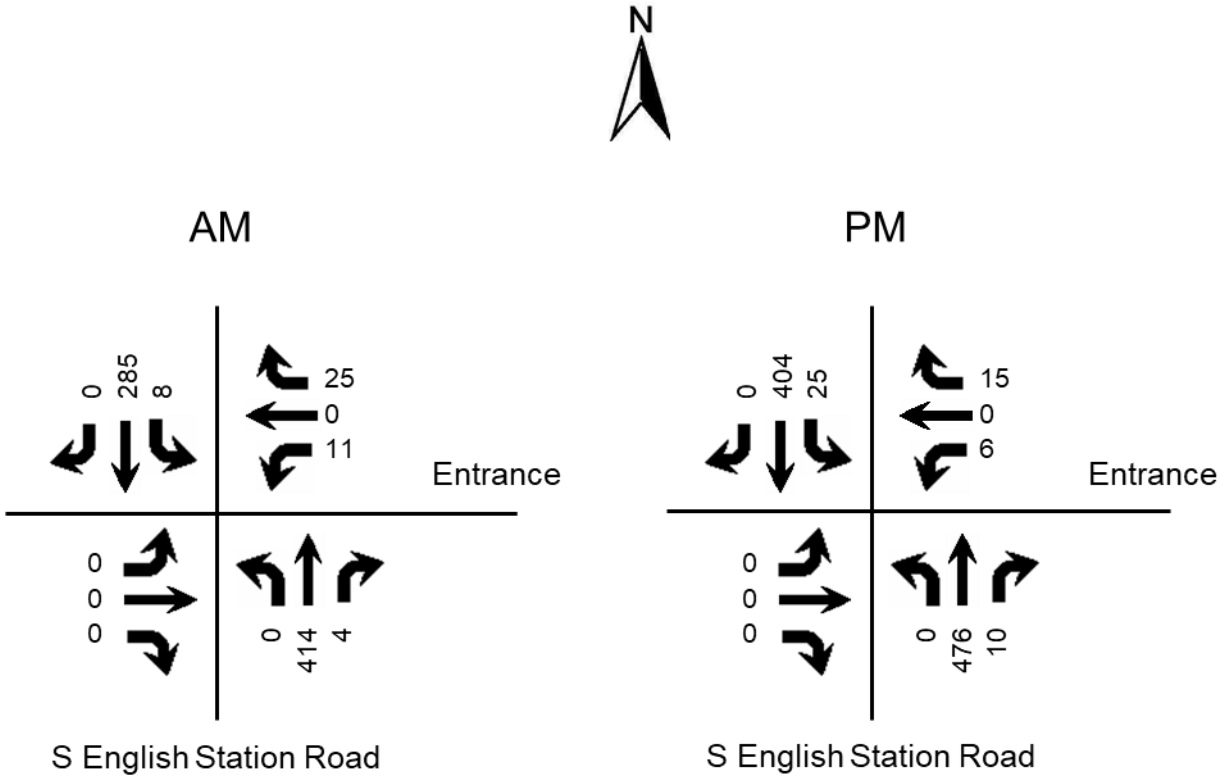


Figure 6. Build Peak Hour Volumes

ANALYSIS

The entrance was evaluated for a right turn lane using the Kentucky Transportation Cabinet Highway Design Guidance Manual dated July, 2020. Using the volumes in Figure 6, the volumes do not meet the volume warrants for a right turn lane on South English Station Road. The KYTC worksheet is included in the appendix.

CONCLUSIONS

Based upon the volume of traffic generated by the development and the amount of traffic forecasted for the year 2024, there will be a minimal impact to the existing highway network. No improvements are required.

APPENDIX

Traffic Counts

Jefferson County, KY
Classified Turn Movement Count

Site 1 of 1
S English Station Rd (North)
Lake Village Dr
S English Station Rd (South)
English Park Cir

Lat/Long
38.224740°, -85.494760°

Weather
Fair
55°F

Date
Tuesday, March 3, 2020

Marr Traffic
Transportation Data Collection

41 Peabody Street, Nashville, TN 37210
10 Glenlake Parkway, Suite 130, Atlanta, GA 30328
555 Fayetteville Street, Suite 201, Raleigh, NC 27601
1229 South Shelby Street, Louisville, KY 40203
6565 North MacArthur Boulevard, Suite 225, Dallas, TX 75039

hello@marrtraffic.com
www.marrtraffic.com

1 (800) 615-3765

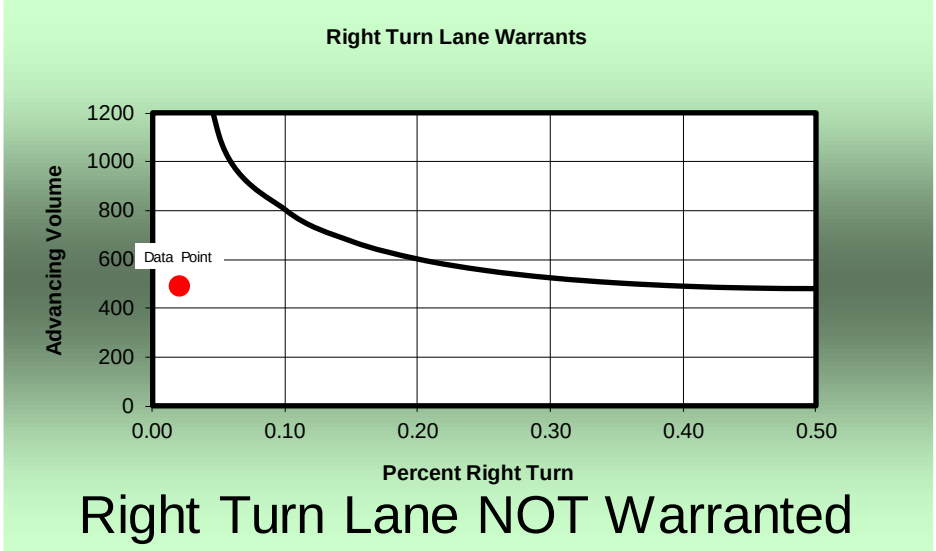
	Southbound						Westbound						Northbound						Eastbound						
	S English Station Rd (North)						Lake Village Dr						S English Station Rd (South)						English Park Cir						
	U-Turn	Left	Thru	Right	Peds	App	U-Turn	Left	Thru	Right	Peds	App	U-Turn	Left	Thru	Right	Peds	App	U-Turn	Left	Thru	Right	Peds	App	Int
0700 - 0715	0	1	22	0	0	23	0	0	0	2	0	2	0	0	22	1	0	23	1	14	0	3	0	18	66
0715 - 0730	0	0	43	1	0	44	0	1	0	3	0	4	0	0	63	1	0	64	0	22	0	7	0	29	141
0730 - 0745	0	0	53	5	0	58	0	0	0	0	0	0	0	0	71	0	0	71	0	17	0	8	0	25	154
0745 - 0800	0	0	54	3	0	57	0	1	0	1	0	2	0	0	55	1	0	56	0	12	0	12	0	24	139
0800 - 0815	0	1	62	4	0	67	0	1	0	0	0	1	0	1	50	0	0	51	0	8	0	8	0	16	135
0815 - 0830	0	0	37	1	0	38	0	0	0	3	0	3	0	1	42	0	0	43	0	15	1	7	3	26	110
0830 - 0845	0	0	24	4	0	28	0	1	0	2	0	3	0	0	42	0	0	42	0	14	0	2	0	16	89
0845 - 0900	0	0	24	3	0	27	0	0	0	0	0	0	0	1	28	2	0	31	0	18	0	0	0	18	76
1600 - 1615	0	2	29	14	0	45	0	0	0	2	0	2	0	2	32	1	0	35	0	1	0	0	0	1	83
1615 - 1630	0	4	39	13	3	59	0	0	0	1	0	1	0	3	46	0	0	49	0	6	0	0	0	6	115
1630 - 1645	0	2	43	12	0	57	0	0	0	3	0	3	0	3	53	0	0	56	0	6	0	2	0	8	124
1645 - 1700	0	1	43	15	0	59	0	0	0	1	0	1	0	5	55	0	0	60	0	12	0	1	0	13	133
1700 - 1715	0	0	46	12	0	58	0	1	0	1	0	2	0	4	86	1	0	91	0	5	1	0	0	6	157
1715 - 1730	0	3	60	13	0	76	0	0	0	1	0	1	0	10	104	0	0	114	0	11	0	2	0	13	204
1730 - 1745	0	4	59	18	0	81	0	2	0	3	0	5	0	5	83	1	0	89	0	7	0	8	0	15	190
1745 - 1800	0	2	24	15	0	41	0	0	0	2	0	2	0	4	50	1	0	55	0	6	0	2	0	8	106

0715 - 0730	0	0	43	1	0	44	0	1	0	3	0	4	0	0	63	1	0	64	0	22	0	7	0	29	141
0730 - 0745	0	0	53	5	0	58	0	0	0	0	0	0	0	0	71	0	0	71	0	17	0	8	0	25	154
0745 - 0800	0	0	54	3	0	57	0	1	0	1	0	2	0	0	55	1	0	56	0	12	0	12	0	24	139
0800 - 0815	0	1	62	4	0	67	0	1	0	0	0	1	0	1	50	0	0	51	0	8	0	8	0	16	135
AM PEAK	**0**	**1**	**212**	**13**	**0**	**226**	**0**	**3**	**0**	**4**	**0**	**7**	**0**	**1**	**239**	**2**	**0**	**242**	**0**	**59**	**0**	**35**	**0**	**94**	**569**
1645 - 1700	0	1	43	15	0	59	0	0	0	1	0	1	0	5	55	0	0	60	0	12	0	1	0	13	133
1700 - 1715	0	0	46	12	0	58	0	1	0	1	0	2	0	4	86	1	0	91	0	5	1	0	0	6	157
1715 - 1730	0	3	60	13	0	76	0	0	0	1	0	1	0	10	104	0	0	114	0	11	0	2	0	13	204
1730 - 1745	0	4	59	18	0	81	0	2	0	3	0	5	0	5	83	1	0	89	0	7	0	8	0	15	190
PM PEAK	**0**	**8**	**208**	**58**	**0**	**274**	**0**	**3**	**0**	**6**	**0**	**9**	**0**	**24**	**328**	**2**	**0**	**354**	**0**	**35**	**1**	**11**	**0**	**47**	**684**

Right Turn Lane Warrants

Input Fields

Right Turn Volume (vph)	10	Speed Limit (mph)	35
Advancing Volume (vph)	486		



Note: This spreadsheet is intended to supplement the guidance provided in the Auxiliary Turn Lane policy outlined in the KYTC Highway Design Manual. This policy should be fully reviewed and understood prior to using this application.