

**ATTACHMENT C:**

***MUTCD* TRAFFIC SIGNAL WARRANT ANALYSIS**

## TRAFFIC SIGNAL WARRANT ANALYSIS - VOLUME WARRANTS

Intersection of and	Tyne Boulevard Granny White Pike	Date of Count: Day of Week of Count:	11/10/2009 Typical Weekday	Are warranting volumes to be adjusted for built up area in an isolated community of less than 10,000 people or speeds greater than 40 mph? .....	No
City or County:	City of Oak Hill State: TN	Adjustment factor for day of week and month of year of count: .....	1.00	Major Street	Minor Street
		Number of Lanes: .....	1		1

Time	Major Street			Minor Street		Warrant 1A Min Vehicular Volume		Warrant 1B Interruption of Contr Traffic		Warrant 1A 80% of Warrant 1A		Warrant 1B 80% of Warrant 1B		Warrant 2 Four Hour Volume		Warrant 3 Peak Hour Volume	
	Actual Volume			Adjusted Total Volume		Percent of Warrant		Percent of Warrant		Percent of Warrant		Percent of Warrant		Warrant Volume	Percent of Warrant	Warrant Volume	Percent of Warrant
	Beginning	App #1	App #2	Total	Volume	Volume	Volume	Volume	Major	Minor	Major	Minor	Major	Minor	Volume	Warrant	Volume
6:00 am			0	0		0	0	0	0	0	0	0	0	0	*****	0	*****
7:00	268	440	708	708	337	142	225	94	449	177	281	118	562	170	198	310	109
8:00	322	347	669	669	245	134	163	89	327	167	204	112	408	190	129	330	74
9:00 am			0	0		0	0	0	0	0	0	0	0	0	*****	0	*****
10:00			0	0		0	0	0	0	0	0	0	0	0	*****	0	*****
11:00	231	266	497	497	111	99	74	66	148	124	93	83	185	260	43	420	26
12:00 noon	231	282	513	513	104	103	69	68	139	128	87	86	173	250	42	410	25
1:00			0	0		0	0	0	0	0	0	0	0	0	*****	0	*****
2:00	275	337	612	612	203	122	135	82	271	153	169	102	338	210	97	350	58
3:00 pm	373	343	716	716	274	143	183	95	365	179	228	119	457	170	161	310	88
4:00	391	366	757	757	228	151	152	101	304	189	190	126	380	160	143	290	79
5:00	448	429	877	877	290	175	193	117	387	219	242	146	483	130	223	240	121
6:00 pm			0	0		0	0	0	0	0	0	0	0	0	*****	0	*****
7:00			0	0		0	0	0	0	0	0	0	0	0	*****	0	*****
8:00			0	0		0	0	0	0	0	0	0	0	0	*****	0	*****
Note: --- No adjustment made.						Warranting Volumes 500 150		Warranting Volumes 750 75		Warranting Volumes 400 120		Warranting Volumes 600 60		Warranting Volumes From MUTCD Fig. 4C-1		Warranting Volumes From MUTCD Fig. 4C-3	
--- Where more than one minor approach exists use the higher approach volume						Total Hours Meeting Warrant = 8		Total Hours Meeting Warrant = 2		Total Hours Meeting Warrant = 8		Total Hours Meeting Warrant = 6		Total Hours Meeting Warrant = 5		Total Hours Meeting Warrant = 2	
--- Number of hours shown is the minimum meeting the MUTCD requirements. Additional hours outside of the count period may meet the MUTCD specified volume levels.						Warrant Met? No		Warrant Met? No		Warrant Met? No		Warrant Met? No		Warrant Met? Yes		Warrant Met? Yes	

Warrant 1 (Eight-Hour Vehicle Volume) Met? No

\*\*\*\*\* Major Street volume is so low that no Minor Street warrant exists

Comments:  Relating roadway geometry (single lane approaches for each direction)	
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Analysis Prepared by:	Name: Colleen Judy, E.I.	Date: 12/03/09	Developed by: T. Darcy Sullivan, P.E.	Updated by: Jason A. Crouch, P.E.	VC/R4
	Organization: Kinley-Horn and Associates, Inc.	Time: 15:36	Distributed by: University of Tennessee Center for Transportation Research - TTAP Program		

## TRAFFIC SIGNAL WARRANT ANALYSIS - VOLUME WARRANTS

Intersection of and: **Tyne Boulevard** and **Granny White Pike**      Date of Count: **11/10/2009**      Are warranting volumes to be adjusted for built up area in an isolated community of less than 10,000 people or speeds greater than 40 mph? **No**  
 City or County: **City of Oak Hill**      State: **TN**      Day of Week of Count: **Typical Weekday**      Adjustment factor for day of week and month of year of count: **1.00**      Major Street      Minor Street  
 Number of Lanes: **1**      **2**

Time	Major Street			Minor Street		Warrant 1A Min Vehicular Volume		Warrant 1B Interruption of Cont Traffic		Warrant 1A 80% of Warrant 1A		Warrant 1B 80% of Warrant 1B		Warrant 2 Four Hour Volume		Warrant 3 Peak Hour Volume			
	Actual Volume			Adjusted Total Volume	Actual Volume	Adjusted Total Volume	Percent of Warrant		Percent of Warrant		Percent of Warrant		Percent of Warrant		Warrant Volume	Percent of Warrant	Warrant Volume	Percent of Warrant	
	Beginning	App #1	App #2	Total			Major	Minor	Major	Minor	Major	Minor	Major	Minor	Volume		Volume		
6:00 am				0	0			0	0	0	0	0	0	0	*****	0	*****		
7:00	268	440	708	708	137	337	142	169	94	337	177	211	118	421	230	147	400	84	
8:00	322	342	669	669	245	245	134	123	89	245	167	153	112	306	250	98	420	58	
9:00 am				0	0			0	0	0	0	0	0	0	*****	0	*****		
10:00				0	0			0	0	0	0	0	0	0	*****	0	*****		
11:00	231	266	497	497	111	111	99	56	66	111	124	69	83	139	330	34	0	*****	
12:00 noon	231	282	513	513	104	104	103	52	68	104	128	65	86	130	320	33	0	*****	
1:00				0	0			0	0	0	0	0	0	0	*****	0	*****		
2:00	275	337	612	612	203	203	122	102	82	303	153	127	102	254	270	75	450	45	
3:00 pm	373	343	716	716	274	274	143	137	95	274	179	171	119	343	230	119	390	70	
4:00	391	366	757	757	228	228	151	114	101	228	189	143	126	285	220	104	370	62	
5:00	448	429	877	877	290	290	175	145	117	290	219	181	146	363	180	161	320	91	
6:00 pm				0	0			0	0	0	0	0	0	0	*****	0	*****		
7:00				0	0			0	0	0	0	0	0	0	*****	0	*****		
8:00				0	0			0	0	0	0	0	0	0	*****	0	*****		

Note: --- No adjustment made.

- Where more than one minor approach exists use the higher approach volume
- Number of hours shown is the minimum meeting the MUTCD requirements. Additional hours outside of the count period may meet the MUTCD specified volume levels.

Warranting Volumes	Warranting Volumes	Warranting Volumes	Warranting Volumes	Warranting Volumes	Warranting Volumes
500    200	750    100	400    160	600    80	From MUTCD Fig. 4C-1	From MUTCD Fig. 4C-3
Total Hours Meeting Warrant = 6	Total Hours Meeting Warrant = 2	Total Hours Meeting Warrant = 6	Total Hours Meeting Warrant = 8	Total Hours Meeting Warrant = 4	Total Hours Meeting Warrant = 0
Warrant Met? <b>No</b>	Warrant Met? <b>No</b>	Warrant Met? <b>No</b>	Warrant Met? <b>No</b>	Warrant Met? <b>Yes</b>	Warrant Met? <b>No</b>

Warrant 1 (Eight-Hour Vehicle Volume) Met? **No**

\*\*\*\*\* Major Street volume is so low that no Minor Street warrant exists

Comments: **Analysis performed with proposed exclusive left-turn lanes being considered**

Analysis Prepared by: _____ Name: <b>Colleen Judy, E.L.</b> Organization: <b>Kinley-Horn and Associates, Inc.</b>	Date: <b>12/03/09</b> Time: <b>15:36</b>	Developed by: <b>T. Darcy Sullivan, P.E.</b> Distributed by: <b>University of Tennessee Center for Transportation Research - TTAP Program</b>	Updated by: <b>Jason A. Crouch, P.E.</b> VC/R4
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