

**APPENDIX J**  
**SIGNAL WARRANT ANALYSES**



**TEAPAC[Ver 9.50.02] - MUTCD Warrant Analysis**

Conditions Used for Warrant Analysis 2009 MUTCD

Intersection # 1

Major Street Direction	EastWest
Number of Lanes in North-South direction	1
Number of Lanes in East-West direction	3
Approach speed on major street is greater than 40 mph	No
Isolated community has population less than 10,000	No
Signal will not seriously disrupt progressive traffic flow	Yes
Trials of other remedies have failed to improve conditions	Yes
Number of accidents correctable by a signal	0
Peak hour stop sign delay for worst minor approach (veh-hours)	1
Number of accidents correctable by a multi-way stop	0
Peak hour average delay for all minor approaches (sec/veh)	80

**TEAPAC[Ver 9.50.02] - Warrant Analysis for Traffic Signal**

Warrant 1A Analysis - 8-Hour Minimum Vehicular Volume

Start Time	1500	1600	800	1100	700	1300	1700	1200	Req.
Minor Volume	67	65	50	36	35	34	31	30	150
Major Volume	2662	3034	2855	1679	3144	1789	3052	1725	600
Warrant Met?	No	No	No	No	No	No	No	No	8

Number of 1-hour periods meeting the warrant 0  
Signal will not seriously disrupt progressive traffic flow Yes

>> WARRANT 1A IS NOT MET <<

Warrant 1B Analysis - 8-Hour Interruption of Continuous Traffic

Start Time	1500	1600	800	1100	700	1300	1700	1200	Req.
Minor Volume	67	65	50	36	35	34	31	30	75
Major Volume	2662	3034	2855	1679	3144	1789	3052	1725	900
Warrant Met?	No	No	No	No	No	No	No	No	8

Number of 1-hour periods meeting the warrant 0  
Signal will not seriously disrupt progressive traffic flow Yes

>> WARRANT 1B IS NOT MET <<

**TEAPAC[Ver 9.50.02] - Warrant Analysis for Traffic Signal**

**Warrant 1A Analysis (80%) - 8-Hour Minimum Vehicular Volume**

Start Time	1500	1600	800	1100	700	1300	1700	1200	Req.
Minor Volume	67	65	50	36	35	34	31	30	120
Major Volume	2662	3034	2855	1679	3144	1789	3052	1725	480
Warrant Met?	No	No	No	No	No	No	No	No	8

Number of 1-hour periods meeting the warrant 0

**Warrant 1B Analysis (80%) - 8-Hour Interruption of Continuous Traf**

Start Time	1500	1600	800	1100	700	1300	1700	1200	Req.
Minor Volume	67	65	50	36	35	34	31	30	60
Major Volume	2662	3034	2855	1679	3144	1789	3052	1725	720
Warrant Met?	Yes	Yes	No	No	No	No	No	No	8

Number of 1-hour periods meeting the warrant 2

**Warrant 1C Analysis - 8-Hour Combination of Warrants**

80% of Warrants 1A and 1B are met	No
Signal will not seriously disrupt progressive traffic flow	Yes
Trials of other remedies have failed to reduce delays	Yes

>> WARRANT 1C IS NOT MET <<

**Warrant 2 Analysis - 4-Hour Vehicular Volume**

Start Time	1500	1600	800	1100	700	1300	1700	1200	Req.
Minor Volume	67	65	50	36	35	34	31	30	—
Minor Reqrmt	80	80	80	80	80	80	80	80	<--
Warrant Met?	No	No	No	No	No	No	No	No	4

Number of 1-hour periods meeting the warrant 0

Signal will not seriously disrupt progressive traffic flow Yes

>> WARRANT 2 IS NOT MET <<

**TEAPAC[Ver 9.50.02] - Warrant Analysis for Traffic Signal**

**Warrant 3A Analysis - Peak Hour Delay**

Start Time	1500	1600	800	1100	700	1300	1700	1200	Req.
Minor Volume	67	65	50	36	35	34	31	30	100
Total Volume	2758	3137	2938	1737	3197	1847	3110	1776	800
Warrant Met?	No	No	No	No	No	No	No	No	1

Number of 1-hour periods meeting the warrant	0
Signal will not seriously disrupt progressive traffic flow	Yes
Delay for worst minor approach (must be at least 4 veh-hours)	1

>> WARRANT 3A IS NOT MET <<

**Warrant 3B Analysis - Peak Hour Volume**

Start Time	1500	1600	800	1100	700	1300	1700	1200	Req.
Minor Volume	67	65	50	36	35	34	31	30	—
Minor Reqrmt	100	100	100	108	100	101	100	104	<--
Warrant Met?	No	No	No	No	No	No	No	No	1

Number of 1-hour periods meeting the warrant	0
Signal will not seriously disrupt progressive traffic flow	Yes

>> WARRANT 3B IS NOT MET <<

**Warrant 7 Analysis - Crash Experience**

80% of Warrant 1A or 1B is met	No
Signal will not seriously disrupt progressive traffic flow	Yes
Trials of other remedies have failed to reduce accidents	Yes
Number of correctable accidents (must be 5 or more per year)	0

>> WARRANT 7 IS NOT MET <<

**Summary of MUTCD Traffic Signal Warrant Analysis**

Warrant 1A 8-Hour Minimum Vehicular Volume	NOT MET
Warrant 1B 8-Hour Interruption of Continuous Traffic	NOT MET
Warrant 1C 8-Hour Combination of Warrants	NOT MET
Warrant 2 4-Hour Vehicular Volume	NOT MET
Warrant 3A Peak Hour Delay	NOT MET
Warrant 3B Peak Hour Volume	NOT MET
Warrant 7 Crash Experience	NOT MET

>> Traffic Signal Warrant is NOT MET <<

Table 1  
 Glenmont Forest Traffic Signal Warrant Study  
 Traffic Signal Warrant Summary (1) (2)

Warrant Number	Warrant Title	Requirements	Heurich Rd/Randolph Rd Existing Conditions	
			Analysis Results	Warrant Results
1-A	8 - Hour Minimum Vehicular Volume	8 hours	0 hours	Not Met
1-B	8 - Hour Interruption of Continuous Traffic	8 hours	0 hours	Not Met
1-C	8 - Hour Combination of Warrants	8 hours	0 hours	Not Met
	Warrant 1-A (80%) Warrant 1-B (80%)	<u>8 hours</u>	0 hours	Not Met
	Overall 1-C Warrant	8 hours (Both)		Not Met
2	4 - Hour Vehicular Volume	4 hours	0 hours	Not Met
3-A	Peak Hour Delay	≥ 4 vehicle-hours	0 vehicle-hours	Not Met
3-B	Peak Hour Volume	1 hour	0 hours	Not Met
4-A	Pedestrian Peak Hour Volume	≥ 100 peds/hour for 4 consecutive hours; or	N/A	N/A
4-B	Pedestrian 4-Hour Volume	≥ 190 peds/hour	N/A	N/A
5	School Crossing (2)	Min. 20 students/hour	N/A	N/A
6	Coordinated Signal System (2)	Maintain Proper Platooning	N/A	N/A
7	Crash Experience	≥ 5 correctable accidents for one 12 month period during last three years	0 crashes	Not Met
8	Roadway Network (2)	≥ 1000 vehs on Sat./Sun.	N/A	N/A
9	Intersection Near a Grade Crossing (2)	(3)	N/A	N/A

Notes: (1) Warrant summary based on TEAPAC (version 8.61.01) - 2009 MUTCD Warrant Analysis

(2) N/A: Not Applicable or does not apply