Appendix 4.1-F

Preliminary Traffic Signal Warrant Analysis

2003 MUTCD

TRAFFIC SIGNAL WARRANT ANALYSIS (VOLUME BASED)

Intersection: Anawan / Broadway

Major Street Direction: Northbound-Southbound

Year: **Condition:** Future

Operating speed on major roadway: 40 mph

Number of approaches: 3

Required approach volumes

Warrant 1	**EIGHT-HOUR VEHICULAR VOLUME**	Minimum*	Adjusted Minimum**
Warrant 1A	MINIMUM VEHICULAR VOLUME (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	500	500
	Minor Street : 1 Lane(s) on each approach	150	150
Warrant 1B	INTERRUPTION OF CONTINUOUS TRAFFIC (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	750	750
	Minor Street : 1 Lane(s) on each approach	75	75
80 PERCENT SATISFACTION OF WARRANT 1A **AND** WARRANT 1B		Warrant 1A	Warrant 1B
	Major Street : 1 Lane(s) on each approach	400	600
	Minor Street : 1 Lane(s) on each approach	120	60

Warrant 2 **FOUR HOUR VEHICULAR VOLUME**

Major Street : 1 Lane(s) on each approach — If "verify" indicated, see Figure 4C-1 or 4C-2.

Minor Street : 1 Lane(s) on each approach — 25 = accuracy of regression equations

Warrant 3 **PEAK HOUR VOLUME**

Major Street : 1 Lane(s) on each approach — If "verify" indicated, see Figure 4C-3 or 4C-4.

Minor Street : 1 Lane(s) on each approach — 25 = accuracy of regression equations

Hour	Entering Vol. Minor Road+	Entering Vol. on Major Road Northbound	Entering Vol. on Major Road Southbound	Tot. Ent. Vol. On Major Rd	Meets the following volume-based warrants? 1A	1B	80%(1A&1B)	2	3
6:00 - 7:00 AM				0	No	No	No	No	No
7:00 - 8:00 AM	375	265	575	840	Yes	Yes	Yes	Yes	Yes
8:00 - 9:00 AM				0	No	No	No	No	No
9:00 - 10:00 AM				0	No	No	No	No	No
10:00 - 11:00 AM				0	No	No	No	No	No
11:00 - 12:00 AM				0	No	No	No	No	No
12:00 - 1:00 PM				0	No	No	No	No	No
1:00 - 2:00 PM				0	No	No	No	No	No
2:00 - 3:00 PM				0	No	No	No	No	No
3:00 - 4:00 PM				0	No	No	No	No	No
4:00 - 5:00 PM	275	260	655	915	Yes	Yes	Yes	Yes	Yes
5:00 - 6:00 PM				0	No	No	No	No	No
6:00 - 7:00 PM				0	No	No	No	No	No
					No	**No**	**No**	**No**	**Yes**
				Warrants Met?		**1**		**2**	**3**
						NO		**No**	**Yes**

*From the criteria described for the warrant in the MUTCD.

**If the operating speed is higher than 40mph then the volumes can be adjusted to 70%. (If no adjusted minimum, the minimum from the previous column is shown)

+If more than one approach, report the approach that has the higher volume.

NON-VOLUME-BASED WARRANTS

Warrant 4, Minimum Pedestrian Volume: No

Peak Four Hour Pedestrian Volumes: 0

(non-concurrent) 0

0

0

Warrant 5, School Crossing:

See MUTCD for details.

Warrant 6, Coordinated Signal System:

See MUTCD for details.

Warrant 7, Crash Experience: No

# of accidents "correctable by signalization" occuring in the last 12 months: 0

Warrant 8, Roadway Network:

See MUTCD for details.

Source: *Manual on Uniform Traffic Control Devices* (MUTCD); 2003 Edition [2003]

last updated: 08/05/05 [version]

2003 MUTCD

TRAFFIC SIGNAL WARRANT ANALYSIS (VOLUME BASED)

Intersection: Central / Davol

Major Street Direction: Northbound-Southbound

Year: **Condition:** Future

Operating speed on major roadway: 40 mph

Number of approaches: 3

Required approach volumes

Warrant 1	EIGHT-HOUR VEHICULAR VOLUME	Minimum*	Adjusted Minimum**
Warrant 1A	MINIMUM VEHICULAR VOLUME (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	500	500
	Minor Street : 2 Lane(s) on each approach	200	200
Warrant 1B	INTERRUPTION OF CONTINUOUS TRAFFIC (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	750	750
	Minor Street : 2 Lane(s) on each approach	100	100
80 PERCENT SATISFACTION OF WARRANT 1A **AND** WARRANT 1B		Warrant 1A	Warrant 1B
	Major Street : 1 Lane(s) on each approach	400	600
	Minor Street : 2 Lane(s) on each approach	160	80

Warrant 2 FOUR HOUR VEHICULAR VOLUME

Major Street : 1 Lane(s) on each approach — If "verify" indicated, see Figure 4C-1 or 4C-2.

Minor Street : 2 Lane(s) on each approach — 25 = accuracy of regression equations

Warrant 3 PEAK HOUR VOLUME

Major Street : 1 Lane(s) on each approach — If "verify" indicated, see Figure 4C-3 or 4C-4.

Minor Street : 2 Lane(s) on each approach — 25 = accuracy of regression equations

Hour	Entering Vol. Minor Road+	Entering Vol. on Major Road Northbound	Entering Vol. on Major Road Southbound	Tot. Ent. Vol. On Major Rd	Meets the following volume-based warrants? 1A	1B	80%(1A&1B)	2	3
6:00 - 7:00 AM				0	No	No	No	No	No
7:00 - 8:00 AM	224	327	560	887	Yes	Yes	Yes	Yes	No
8:00 - 9:00 AM				0	No	No	No	No	No
9:00 - 10:00 AM				0	No	No	No	No	No
10:00 - 11:00 AM				0	No	No	No	No	No
11:00 - 12:00 AM				0	No	No	No	No	No
12:00 - 1:00 PM				0	No	No	No	No	No
1:00 - 2:00 PM				0	No	No	No	No	No
2:00 - 3:00 PM				0	No	No	No	No	No
3:00 - 4:00 PM				0	No	No	No	No	No
4:00 - 5:00 PM	300	348	596	944	Yes	Yes	Yes	Yes	Verify
5:00 - 6:00 PM				0	No	No	No	No	No
6:00 - 7:00 PM				0	No	No	No	No	No
					No	**No**	**No**	**No**	**Verify**
			Warrants Met?		**1**			**2**	**3**
					NO			**No**	**Verify**

*From the criteria described for the warrant in the MUTCD.

**If the operating speed is higher than 40mph then the volumes can be adjusted to 70%. (If no adjusted minimum, the minimum from the previous column is shown)

+If more than one approach, report the approach that has the higher volume.

NON-VOLUME-BASED WARRANTS

Warrant 4, Minimum Pedestrian Volume: No

Peak Four Hour Pedestrian Volumes: 0

(non-concurrent) 0

0

0

Warrant 5, School Crossing:

See MUTCD for details.

Warrant 6, Coordinated Signal System:

See MUTCD for details.

Warrant 7, Crash Experience: No

# of accidents "correctable by signalization" occuring in the last 12 months: 0

Warrant 8, Roadway Network:

See MUTCD for details.

Source: *Manual on Uniform Traffic Control Devices* (MUTCD); 2003 Edition [2003]

last updated: 08/05/05 [version]

2003 MUTCD

TRAFFIC SIGNAL WARRANT ANALYSIS (VOLUME BASED)

Intersection: Davol Street NB / Station Driveway

Major Street Direction: Northbound-Southbound

Year: **Condition:** Future

Operating speed on major roadway: 40 mph

Number of approaches: 3

Required approach volumes

Warrant 1	**EIGHT-HOUR VEHICULAR VOLUME**	Minimum*	Adjusted Minimum**
Warrant 1A	MINIMUM VEHICULAR VOLUME (8 hours of day)		
	Major Street : 2 Lane(s) on each approach	600	600
	Minor Street : 1 Lane(s) on each approach	150	150
Warrant 1B	INTERRUPTION OF CONTINUOUS TRAFFIC (8 hours of day)		
	Major Street : 2 Lane(s) on each approach	900	900
	Minor Street : 1 Lane(s) on each approach	75	75
80 PERCENT SATISFACTION OF WARRANT 1A **AND** WARRANT 1B		Warrant 1A	Warrant 1B
	Major Street : 2 Lane(s) on each approach	480	720
	Minor Street : 1 Lane(s) on each approach	120	60

Warrant 2 **FOUR HOUR VEHICULAR VOLUME**

Major Street : 2 Lane(s) on each approach — If "verify" indicated, see Figure 4C-1 or 4C-2.

Minor Street : 1 Lane(s) on each approach — 25 = accuracy of regression equations

Warrant 3 **PEAK HOUR VOLUME**

Major Street : 2 Lane(s) on each approach — If "verify" indicated, see Figure 4C-3 or 4C-4.

Minor Street : 1 Lane(s) on each approach — 25 = accuracy of regression equations

Hour	Entering Vol. Minor Road+	Entering Vol. on Major Road Northbound	Entering Vol. on Major Road Southbound	Tot. Ent. Vol. On Major Rd	Meets the following volume-based warrants? 1A	1B	80%(1A&1B)	2	3
6:00 - 7:00 AM				0	No	No	No	No	No
7:00 - 8:00 AM	50	975		975	No	No	No	No	No
8:00 - 9:00 AM				0	No	No	No	No	No
9:00 - 10:00 AM				0	No	No	No	No	No
10:00 - 11:00 AM				0	No	No	No	No	No
11:00 - 12:00 AM				0	No	No	No	No	No
12:00 - 1:00 PM				0	No	No	No	No	No
1:00 - 2:00 PM				0	No	No	No	No	No
2:00 - 3:00 PM				0	No	No	No	No	No
3:00 - 4:00 PM				0	No	No	No	No	No
4:00 - 5:00 PM	190	910		910	Yes	Yes	Yes	Verify	No
5:00 - 6:00 PM				0	No	No	No	No	No
6:00 - 7:00 PM				0	No	No	No	No	No
					No	**No**	**No**	**No**	**No**
			Warrants Met?		**1**			**2**	**3**
					NO			**No**	**No**

*From the criteria described for the warrant in the MUTCD.

**If the operating speed is higher than 40mph then the volumes can be adjusted to 70%. (If no adjusted minimum, the minimum from the previous column is shown)

+If more than one approach, report the approach that has the higher volume.

NON-VOLUME-BASED WARRANTS

Warrant 4, Minimum Pedestrian Volume: No

Peak Four Hour Pedestrian Volumes: 0

(non-concurrent) 0

0

0

Warrant 5, School Crossing:

See MUTCD for details.

Warrant 7, Crash Experience: No

# of accidents "correctable by signalization" occuring in the last 12 months: 0

Warrant 6, Coordinated Signal System:

See MUTCD for details.

Warrant 8, Roadway Network:

See MUTCD for details.

Source: *Manual on Uniform Traffic Control Devices* (MUTCD); 2003 Edition [2003]

last updated: 08/05/05 [version]

2003 MUTCD

TRAFFIC SIGNAL WARRANT ANALYSIS (VOLUME BASED)

Intersection: South Main St / High Street

Major Street Direction: Northbound-Southbound

Year: **Condition:** Future

Operating speed on major roadway: 40 mph

Number of approaches: 4

Warrant 1	**EIGHT-HOUR VEHICULAR VOLUME**	Minimum*	Adjusted Minimum**
Warrant 1A	MINIMUM VEHICULAR VOLUME (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	500	500
	Minor Street : 1 Lane(s) on each approach	150	150
Warrant 1B	INTERRUPTION OF CONTINUOUS TRAFFIC (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	750	750
	Minor Street : 1 Lane(s) on each approach	75	75
	80 PERCENT SATISFACTION OF WARRANT 1A **AND** WARRANT 1B	Warrant 1A	Warrant 1B
	Major Street : 1 Lane(s) on each approach	400	600
	Minor Street : 1 Lane(s) on each approach	120	60

Required approach volumes

Warrant 2	**FOUR HOUR VEHICULAR VOLUME**	
	Major Street : 1 Lane(s) on each approach	If "verify" indicated, see Figure 4C-1 or 4C-2.
	Minor Street : 1 Lane(s) on each approach	25 = accuracy of regression equations

Warrant 3	**PEAK HOUR VOLUME**	
	Major Street : 1 Lane(s) on each approach	If "verify" indicated, see Figure 4C-3 or 4C-4.
	Minor Street : 1 Lane(s) on each approach	25 = accuracy of regression equations

Hour	Entering Vol. Minor Road+	Entering Vol. on Major Road Northbound	Entering Vol. on Major Road Southbound	Tot. Ent. Vol. On Major Rd	Meets the following volume-based warrants? 1A	1B	80%(1A&1B)	2	3
6:00 - 7:00 AM				0	No	No	No	No	No
7:00 - 8:00 AM				0	No	No	No	No	No
8:00 - 9:00 AM	63	555	1250	1805	No	No	No	No	No
9:00 - 10:00 AM				0	No	No	No	No	No
10:00 - 11:00 AM				0	No	No	No	No	No
11:00 - 12:00 AM				0	No	No	No	No	No
12:00 - 1:00 PM				0	No	No	No	No	No
1:00 - 2:00 PM				0	No	No	No	No	No
2:00 - 3:00 PM				0	No	No	No	No	No
3:00 - 4:00 PM				0	No	No	No	No	No
4:00 - 5:00 PM				0	No	No	No	No	No
5:00 - 6:00 PM	14	1433	719	2152	No	No	No	No	No
6:00 - 7:00 PM				0	No	No	No	No	No
					No	**No**	**No**	**No**	**No**
			Warrants Met?		**1**			**2**	**3**
					NO			**No**	**No**

*From the criteria described for the warrant in the MUTCD.

**If the operating speed is higher than 40mph then the volumes can be adjusted to 70%. (If no adjusted minimum, the minimum from the previous column is shown)

+If more than one approach, report the approach that has the higher volume.

NON-VOLUME-BASED WARRANTS

Warrant 4, Minimum Pedestrian Volume: No

Peak Four Hour Pedestrian Volumes: 0

(non-concurrent) 0

0

0

Warrant 5, School Crossing:

See MUTCD for details.

Warrant 7, Crash Experience: No

# of accidents "correctable by signalization" occuring in the last 12 months: 0

Warrant 6, Coordinated Signal System:

See MUTCD for details.

Warrant 8, Roadway Network:

See MUTCD for details.

Source: *Manual on Uniform Traffic Control Devices* (MUTCD); 2003 Edition [2003]

last updated: 08/05/05 [version]

2003 MUTCD

TRAFFIC SIGNAL WARRANT ANALYSIS (VOLUME BASED)

Intersection: South Main St / Ridge Hill Road

Major Street Direction: Northbound-Southbound

Year: **Condition:** Future

Operating speed on major roadway: 40 mph

Number of approaches: 4

		Required approach volumes	
			Adjusted
Warrant 1	**EIGHT-HOUR VEHICULAR VOLUME**	Minimum*	Minimum**
Warrant 1A	MINIMUM VEHICULAR VOLUME (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	500	500
	Minor Street : 1 Lane(s) on each approach	150	150
Warrant 1B	INTERRUPTION OF CONTINUOUS TRAFFIC (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	750	750
	Minor Street : 1 Lane(s) on each approach	75	75
	80 PERCENT SATISFACTION OF WARRANT 1A **AND** WARRANT 1B	Warrant 1A	Warrant 1B
	Major Street : 1 Lane(s) on each approach	400	600
	Minor Street : 1 Lane(s) on each approach	120	60

Warrant 2	**FOUR HOUR VEHICULAR VOLUME**	
	Major Street : 1 Lane(s) on each approach	If "verify" indicated, see Figure 4C-1 or 4C-2.
	Minor Street : 1 Lane(s) on each approach	25 = accuracy of regression equations

Warrant 3	**PEAK HOUR VOLUME**	
	Major Street : 1 Lane(s) on each approach	If "verify" indicated, see Figure 4C-3 or 4C-4.
	Minor Street : 1 Lane(s) on each approach	25 = accuracy of regression equations

Hour	Entering Vol. Minor Road+	Entering Vol. on Major Road Northbound	Entering Vol. on Major Road Southbound	Tot. Ent. Vol. On Major Rd	Meets the following volume-based warrants? 1A	1B	80%(1A&1B)	2	3
6:00 - 7:00 AM				0	No	No	No	No	No
7:00 - 8:00 AM				0	No	No	No	No	No
8:00 - 9:00 AM	76	848	1292	2140	No	Yes	No	No	No
9:00 - 10:00 AM				0	No	No	No	No	No
10:00 - 11:00 AM				0	No	No	No	No	No
11:00 - 12:00 AM				0	No	No	No	No	No
12:00 - 1:00 PM				0	No	No	No	No	No
1:00 - 2:00 PM				0	No	No	No	No	No
2:00 - 3:00 PM				0	No	No	No	No	No
3:00 - 4:00 PM				0	No	No	No	No	No
4:00 - 5:00 PM				0	No	No	No	No	No
5:00 - 6:00 PM	281	1513	700	2213	Yes	Yes	Yes	Yes	Yes
6:00 - 7:00 PM				0	No	No	No	No	No
					No	**No**	**No**	**No**	**Yes**
			Warrants Met?		**1**			**2**	**3**
					NO			**No**	**Yes**

*From the criteria described for the warrant in the MUTCD.

**If the operating speed is higher than 40mph then the volumes can be adjusted to 70%. (If no adjusted minimum, the minimum from the previous column is shown)

+If more than one approach, report the approach that has the higher volume.

NON-VOLUME-BASED WARRANTS

Warrant 4, Minimum Pedestrian Volume: No

Peak Four Hour Pedestrian Volumes: 0

(non-concurrent) 0

0

0

Warrant 5, School Crossing:

See MUTCD for details.

Warrant 6, Coordinated Signal System:

See MUTCD for details.

Warrant 7, Crash Experience: No

# of accidents "correctable by signalization" occuring in the last 12 months: 0

Warrant 8, Roadway Network:

See MUTCD for details.

Source: *Manual on Uniform Traffic Control Devices* (MUTCD); 2003 Edition [2003]

last updated: 08/05/05 [version]

2003 MUTCD

TRAFFIC SIGNAL WARRANT ANALYSIS (VOLUME BASED)

Intersection: South Main St / Narrows

Major Street Direction: Northbound-Southbound

Year: **Condition:** Future

Operating speed on major roadway: 40 mph

Number of approaches: 3

Required approach volumes

Warrant 1	**EIGHT-HOUR VEHICULAR VOLUME**	Minimum*	Adjusted Minimum**
Warrant 1A	MINIMUM VEHICULAR VOLUME (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	500	500
	Minor Street : 1 Lane(s) on each approach	150	150
Warrant 1B	INTERRUPTION OF CONTINUOUS TRAFFIC (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	750	750
	Minor Street : 1 Lane(s) on each approach	75	75
80 PERCENT SATISFACTION OF WARRANT 1A **AND** WARRANT 1B		Warrant 1A	Warrant 1B
	Major Street : 1 Lane(s) on each approach	400	600
	Minor Street : 1 Lane(s) on each approach	120	60

Warrant 2 **FOUR HOUR VEHICULAR VOLUME**

Major Street : 1 Lane(s) on each approach — If "verify" indicated, see Figure 4C-1 or 4C-2.

Minor Street : 1 Lane(s) on each approach — 25 = accuracy of regression equations

Warrant 3 **PEAK HOUR VOLUME**

Major Street : 1 Lane(s) on each approach — If "verify" indicated, see Figure 4C-3 or 4C-4.

Minor Street : 1 Lane(s) on each approach — 25 = accuracy of regression equations

Hour	Entering Vol. Minor Road+	Entering Vol. on Major Road Northbound	Entering Vol. on Major Road Southbound	Tot. Ent. Vol. On Major Rd	Meets the following volume-based warrants? 1A	1B	80%(1A&1B)	2	3
6:00 - 7:00 AM				0	No	No	No	No	No
7:00 - 8:00 AM				0	No	No	No	No	No
8:00 - 9:00 AM	160	199	479	678	Yes	No	Yes	No	No
9:00 - 10:00 AM				0	No	No	No	No	No
10:00 - 11:00 AM				0	No	No	No	No	No
11:00 - 12:00 AM				0	No	No	No	No	No
12:00 - 1:00 PM				0	No	No	No	No	No
1:00 - 2:00 PM				0	No	No	No	No	No
2:00 - 3:00 PM				0	No	No	No	No	No
3:00 - 4:00 PM				0	No	No	No	No	No
4:00 - 5:00 PM				0	No	No	No	No	No
5:00 - 6:00 PM	138	578	142	720	No	No	Yes	No	No
6:00 - 7:00 PM				0	No	No	No	No	No
					No	**No**	**No**	**No**	**No**
			Warrants Met?		**1**			**2**	**3**
					NO			**No**	**No**

*From the criteria described for the warrant in the MUTCD.

**If the operating speed is higher than 40mph then the volumes can be adjusted to 70%. (If no adjusted minimum, the minimum from the previous column is shown)

+If more than one approach, report the approach that has the higher volume.

NON-VOLUME-BASED WARRANTS

Warrant 4, Minimum Pedestrian Volume: No

Peak Four Hour Pedestrian Volumes: 0

(non-concurrent) 0

0

0

Warrant 5, School Crossing:

See MUTCD for details.

Warrant 7, Crash Experience: No

# of accidents "correctable by signalization" occuring in the last 12 months: 0

Warrant 6, Coordinated Signal System:

See MUTCD for details.

Warrant 8, Roadway Network:

See MUTCD for details.

Source: *Manual on Uniform Traffic Control Devices* (MUTCD); 2003 Edition [2003]

last updated: 08/05/05 [version]

2003 MUTCD

TRAFFIC SIGNAL WARRANT ANALYSIS (VOLUME BASED)

Intersection: South Main St / Site Driveway

Major Street Direction: Northbound-Southbound

Year: **Condition:** Future

Operating speed on major roadway: 40 mph

Number of approaches: 3

		Required approach volumes	
Warrant 1	**EIGHT-HOUR VEHICULAR VOLUME**	Minimum*	Adjusted Minimum**
Warrant 1A	MINIMUM VEHICULAR VOLUME (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	500	500
	Minor Street : 2 Lane(s) on each approach	200	200
Warrant 1B	INTERRUPTION OF CONTINUOUS TRAFFIC (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	750	750
	Minor Street : 2 Lane(s) on each approach	100	100
	80 PERCENT SATISFACTION OF WARRANT 1A **AND** WARRANT 1B	Warrant 1A	Warrant 1B
	Major Street : 1 Lane(s) on each approach	400	600
	Minor Street : 2 Lane(s) on each approach	160	80

Warrant 2 **FOUR HOUR VEHICULAR VOLUME**

Major Street : 1 Lane(s) on each approach — If "verify" indicated, see Figure 4C-1 or 4C-2.

Minor Street : 2 Lane(s) on each approach — 25 = accuracy of regression equations

Warrant 3 **PEAK HOUR VOLUME**

Major Street : 1 Lane(s) on each approach — If "verify" indicated, see Figure 4C-3 or 4C-4.

Minor Street : 2 Lane(s) on each approach — 25 = accuracy of regression equations

Hour	Entering Vol. Minor Road+	Entering Vol. on Major Road Northbound	Entering Vol. on Major Road Southbound	Tot. Ent. Vol. On Major Rd	Meets the following volume-based warrants? 1A	1B	80%(1A&1B)	2	3
6:00 - 7:00 AM				0	No	No	No	No	No
7:00 - 8:00 AM				0	No	No	No	No	No
8:00 - 9:00 AM	26	240	472	712	No	No	No	No	No
9:00 - 10:00 AM				0	No	No	No	No	No
10:00 - 11:00 AM				0	No	No	No	No	No
11:00 - 12:00 AM				0	No	No	No	No	No
12:00 - 1:00 PM				0	No	No	No	No	No
1:00 - 2:00 PM				0	No	No	No	No	No
2:00 - 3:00 PM				0	No	No	No	No	No
3:00 - 4:00 PM				0	No	No	No	No	No
4:00 - 5:00 PM				0	No	No	No	No	No
5:00 - 6:00 PM	54	539	336	875	No	No	No	No	No
6:00 - 7:00 PM				0	No	No	No	No	No
					No	**No**	**No**	**No**	**No**
			Warrants Met?		**1**			**2**	**3**
					NO			**No**	**No**

*From the criteria described for the warrant in the MUTCD.

**If the operating speed is higher than 40mph then the volumes can be adjusted to 70%. (If no adjusted minimum, the minimum from the previous column is shown)

+If more than one approach, report the approach that has the higher volume.

NON-VOLUME-BASED WARRANTS

Warrant 4, Minimum Pedestrian Volume: No

Peak Four Hour Pedestrian Volumes: 0

(non-concurrent) 0

0

0

Warrant 5, School Crossing:

See MUTCD for details.

Warrant 7, Crash Experience: No

# of accidents "correctable by signalization" occuring in the last 12 months: 0

Warrant 6, Coordinated Signal System:

See MUTCD for details.

Warrant 8, Roadway Network:

See MUTCD for details.

Source: *Manual on Uniform Traffic Control Devices* (MUTCD); 2003 Edition [2003]

last updated: 08/05/05 [version]

2003 MUTCD

TRAFFIC SIGNAL WARRANT ANALYSIS (VOLUME BASED)

Intersection: Coggeshall St at North Front Street

Major Street Direction: Eastbound-Westbound

Year: **Condition:** Future

Operating speed on major roadway: 40 mph

Number of approaches: 3

Required approach volumes

Warrant 1	**EIGHT-HOUR VEHICULAR VOLUME**	Minimum*	Adjusted Minimum**
Warrant 1A	MINIMUM VEHICULAR VOLUME (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	500	500
	Minor Street : 1 Lane(s) on each approach	150	150
Warrant 1B	INTERRUPTION OF CONTINUOUS TRAFFIC (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	750	750
	Minor Street : 1 Lane(s) on each approach	75	75
80 PERCENT SATISFACTION OF WARRANT 1A **AND** WARRANT 1B		Warrant 1A	Warrant 1B
	Major Street : 1 Lane(s) on each approach	400	600
	Minor Street : 1 Lane(s) on each approach	120	60

Warrant 2 **FOUR HOUR VEHICULAR VOLUME**

Major Street : 1 Lane(s) on each approach — If "verify" indicated, see Figure 4C-1 or 4C-2.

Minor Street : 1 Lane(s) on each approach — 25 = accuracy of regression equations

Warrant 3 **PEAK HOUR VOLUME**

Major Street : 1 Lane(s) on each approach — If "verify" indicated, see Figure 4C-3 or 4C-4.

Minor Street : 1 Lane(s) on each approach — 25 = accuracy of regression equations

Hour	Entering Vol. Minor Road+	Entering Vol. on Major Road Eastbound	Entering Vol. on Major Road Westbound	Tot. Ent. Vol. On Major Rd	Meets the following volume-based warrants? 1A	1B	80%(1A&1B)	2	3
6:00 - 7:00 AM				0	No	No	No	No	No
7:00 - 8:00 AM	150	495	490	985	No	Yes	Yes	Yes	No
8:00 - 9:00 AM				0	No	No	No	No	No
9:00 - 10:00 AM				0	No	No	No	No	No
10:00 - 11:00 AM				0	No	No	No	No	No
11:00 - 12:00 AM				0	No	No	No	No	No
12:00 - 1:00 PM				0	No	No	No	No	No
1:00 - 2:00 PM				0	No	No	No	No	No
2:00 - 3:00 PM				0	No	No	No	No	No
3:00 - 4:00 PM				0	No	No	No	No	No
4:00 - 5:00 PM				0	No	No	No	No	No
5:00 - 6:00 PM	275	550	435	985	Yes	Yes	Yes	Yes	Yes
6:00 - 7:00 PM				0	No	No	No	No	No
					No	**No**	**No**	**No**	**Yes**
			Warrants Met?		**1**			**2**	**3**
					NO			**No**	**Yes**

*From the criteria described for the warrant in the MUTCD.

**If the operating speed is higher than 40mph then the volumes can be adjusted to 70%. (If no adjusted minimum, the minimum from the previous column is shown)

+If more than one approach, report the approach that has the higher volume.

NON-VOLUME-BASED WARRANTS

Warrant 4, Minimum Pedestrian Volume: No

Peak Four Hour Pedestrian Volumes: 0

(non-concurrent) 0

0

0

Warrant 5, School Crossing:

See MUTCD for details.

Warrant 7, Crash Experience: No

# of accidents "correctable by signalization" occuring in the last 12 months: 0

Warrant 6, Coordinated Signal System:

See MUTCD for details.

Warrant 8, Roadway Network:

See MUTCD for details.

Source: *Manual on Uniform Traffic Control Devices* (MUTCD); 2003 Edition [2003]

last updated: 08/05/05 [version]

2003 MUTCD

TRAFFIC SIGNAL WARRANT ANALYSIS (VOLUME BASED)

Intersection: Coggeshall St at Purchase Street

Major Street Direction: Northbound-Southbound

Year: **Condition:** Future

Operating speed on major roadway: 40 mph

Number of approaches: 4

Required approach volumes

Warrant 1	**EIGHT-HOUR VEHICULAR VOLUME**	Minimum*	Adjusted Minimum**
Warrant 1A	MINIMUM VEHICULAR VOLUME (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	500	500
	Minor Street : 1 Lane(s) on each approach	150	150
Warrant 1B	INTERRUPTION OF CONTINUOUS TRAFFIC (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	750	750
	Minor Street : 1 Lane(s) on each approach	75	75
80 PERCENT SATISFACTION OF WARRANT 1A **AND** WARRANT 1B		Warrant 1A	Warrant 1B
	Major Street : 1 Lane(s) on each approach	400	600
	Minor Street : 1 Lane(s) on each approach	120	60

Warrant 2 **FOUR HOUR VEHICULAR VOLUME**

Major Street : 1 Lane(s) on each approach — If "verify" indicated, see Figure 4C-1 or 4C-2.

Minor Street : 1 Lane(s) on each approach — 25 = accuracy of regression equations

Warrant 3 **PEAK HOUR VOLUME**

Major Street : 1 Lane(s) on each approach — If "verify" indicated, see Figure 4C-3 or 4C-4.

Minor Street : 1 Lane(s) on each approach — 25 = accuracy of regression equations

Hour	Entering Vol. Minor Road+	Entering Vol. on Major Road Northbound	Entering Vol. on Major Road Southbound	Tot. Ent. Vol. On Major Rd	Meets the following volume-based warrants? 1A	1B	80%(1A&1B)	2	3
6:00 - 7:00 AM				0	No	No	No	No	No
7:00 - 8:00 AM	170	272	292	564	Yes	No	No	No	No
8:00 - 9:00 AM				0	No	No	No	No	No
9:00 - 10:00 AM				0	No	No	No	No	No
10:00 - 11:00 AM				0	No	No	No	No	No
11:00 - 12:00 AM				0	No	No	No	No	No
12:00 - 1:00 PM				0	No	No	No	No	No
1:00 - 2:00 PM				0	No	No	No	No	No
2:00 - 3:00 PM				0	No	No	No	No	No
3:00 - 4:00 PM				0	No	No	No	No	No
4:00 - 5:00 PM				0	No	No	No	No	No
5:00 - 6:00 PM	178	427	355	782	Yes	Yes	Yes	Verify	No
6:00 - 7:00 PM				0	No	No	No	No	No
					No	**No**	**No**	**No**	**No**
			Warrants Met?		**1**			**2**	**3**
					NO			**No**	**No**

*From the criteria described for the warrant in the MUTCD.

**If the operating speed is higher than 40mph then the volumes can be adjusted to 70%. (If no adjusted minimum, the minimum from the previous column is shown)

+If more than one approach, report the approach that has the higher volume.

NON-VOLUME-BASED WARRANTS

Warrant 4, Minimum Pedestrian Volume: No

Peak Four Hour Pedestrian Volumes: 0

(non-concurrent) 0

0

0

Warrant 5, School Crossing:

See MUTCD for details.

Warrant 7, Crash Experience: No

# of accidents "correctable by signalization" occuring in the last 12 months: 5

Warrant 6, Coordinated Signal System:

See MUTCD for details.

Warrant 8, Roadway Network:

See MUTCD for details.

Source: *Manual on Uniform Traffic Control Devices* (MUTCD); 2003 Edition [2003]

last updated: 08/05/05 [version]

2003 MUTCD

TRAFFIC SIGNAL WARRANT ANALYSIS (VOLUME BASED)

Intersection: Purchase Street at Weld Street

Major Street Direction: Northbound-Southbound

Year: **Condition:** Future

Operating speed on major roadway: 40 mph

Number of approaches: 4

Required approach volumes

Warrant 1	**EIGHT-HOUR VEHICULAR VOLUME**	Minimum*	Adjusted Minimum**
Warrant 1A	MINIMUM VEHICULAR VOLUME (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	500	500
	Minor Street : 2 Lane(s) on each approach	200	200
Warrant 1B	INTERRUPTION OF CONTINUOUS TRAFFIC (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	750	750
	Minor Street : 2 Lane(s) on each approach	100	100
80 PERCENT SATISFACTION OF WARRANT 1A **AND** WARRANT 1B		Warrant 1A	Warrant 1B
	Major Street : 1 Lane(s) on each approach	400	600
	Minor Street : 2 Lane(s) on each approach	160	80

Warrant 2 **FOUR HOUR VEHICULAR VOLUME**

Major Street : 1 Lane(s) on each approach — If "verify" indicated, see Figure 4C-1 or 4C-2.

Minor Street : 2 Lane(s) on each approach — 25 = accuracy of regression equations

Warrant 3 **PEAK HOUR VOLUME**

Major Street : 1 Lane(s) on each approach — If "verify" indicated, see Figure 4C-3 or 4C-4.

Minor Street : 2 Lane(s) on each approach — 25 = accuracy of regression equations

Hour	Entering Vol. Minor Road+	Entering Vol. on Major Road Northbound	Entering Vol. on Major Road Southbound	Tot. Ent. Vol. On Major Rd	Meets the following volume-based warrants? 1A	1B	80%(1A&1B)	2	3
6:00 - 7:00 AM				0	No	No	No	No	No
7:00 - 8:00 AM	205	285	280	565	Yes	No	No	No	No
8:00 - 9:00 AM				0	No	No	No	No	No
9:00 - 10:00 AM				0	No	No	No	No	No
10:00 - 11:00 AM				0	No	No	No	No	No
11:00 - 12:00 AM				0	No	No	No	No	No
12:00 - 1:00 PM				0	No	No	No	No	No
1:00 - 2:00 PM				0	No	No	No	No	No
2:00 - 3:00 PM				0	No	No	No	No	No
3:00 - 4:00 PM				0	No	No	No	No	No
4:00 - 5:00 PM				0	No	No	No	No	No
5:00 - 6:00 PM	240	460	275	735	Yes	No	Yes	Verify	No
6:00 - 7:00 PM				0	No	No	No	No	No
					No	**No**	**No**	**No**	**No**
			Warrants Met?		**1**			**2**	**3**
					NO			**No**	**No**

*From the criteria described for the warrant in the MUTCD.

**If the operating speed is higher than 40mph then the volumes can be adjusted to 70%. (If no adjusted minimum, the minimum from the previous column is shown)

+If more than one approach, report the approach that has the higher volume.

NON-VOLUME-BASED WARRANTS

Warrant 4, Minimum Pedestrian Volume: No

Peak Four Hour Pedestrian Volumes: 0

(non-concurrent) 0

0

0

Warrant 5, School Crossing:

See MUTCD for details.

Warrant 6, Coordinated Signal System:

See MUTCD for details.

Warrant 7, Crash Experience: No

# of accidents "correctable by signalization" occuring in the last 12 months: 0

Warrant 8, Roadway Network:

See MUTCD for details.

Source: *Manual on Uniform Traffic Control Devices* (MUTCD); 2003 Edition [2003]

last updated: 08/05/05 [version]

2003 MUTCD

TRAFFIC SIGNAL WARRANT ANALYSIS (VOLUME BASED)

Intersection: Purchase Street at Rt 18 SB Exit Ramp

Major Street Direction: Northbound-Southbound

Year: **Condition:** Future

Operating speed on major roadway: 40 mph

Number of approaches: 4

Required approach volumes

Warrant 1	**EIGHT-HOUR VEHICULAR VOLUME**	Minimum*	Adjusted Minimum**
Warrant 1A	MINIMUM VEHICULAR VOLUME (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	500	500
	Minor Street : 1 Lane(s) on each approach	150	150
Warrant 1B	INTERRUPTION OF CONTINUOUS TRAFFIC (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	750	750
	Minor Street : 1 Lane(s) on each approach	75	75
80 PERCENT SATISFACTION OF WARRANT 1A **AND** WARRANT 1B		Warrant 1A	Warrant 1B
	Major Street : 1 Lane(s) on each approach	400	600
	Minor Street : 1 Lane(s) on each approach	120	60

Warrant 2 **FOUR HOUR VEHICULAR VOLUME**

Major Street : 1 Lane(s) on each approach — If "verify" indicated, see Figure 4C-1 or 4C-2.

Minor Street : 1 Lane(s) on each approach — 25 = accuracy of regression equations

Warrant 3 **PEAK HOUR VOLUME**

Major Street : 1 Lane(s) on each approach — If "verify" indicated, see Figure 4C-3 or 4C-4.

Minor Street : 1 Lane(s) on each approach — 25 = accuracy of regression equations

Hour	Entering Vol. Minor Road+	Entering Vol. on Major Road Northbound	Entering Vol. on Major Road Southbound	Tot. Ent. Vol. On Major Rd	Meets the following volume-based warrants? 1A	1B	80%(1A&1B)	2	3
6:00 - 7:00 AM				0	No	No	No	No	No
7:00 - 8:00 AM	298	231	279	510	Yes	No	No	Yes	No
8:00 - 9:00 AM				0	No	No	No	No	No
9:00 - 10:00 AM				0	No	No	No	No	No
10:00 - 11:00 AM				0	No	No	No	No	No
11:00 - 12:00 AM				0	No	No	No	No	No
12:00 - 1:00 PM				0	No	No	No	No	No
1:00 - 2:00 PM				0	No	No	No	No	No
2:00 - 3:00 PM				0	No	No	No	No	No
3:00 - 4:00 PM				0	No	No	No	No	No
4:00 - 5:00 PM				0	No	No	No	No	No
5:00 - 6:00 PM	250	468	269	737	Yes	No	Yes	Yes	No
6:00 - 7:00 PM				0	No	No	No	No	No
					No	**No**	**No**	**No**	**No**
			Warrants Met?		**1**			**2**	**3**
					NO			**No**	**No**

*From the criteria described for the warrant in the MUTCD.

**If the operating speed is higher than 40mph then the volumes can be adjusted to 70%. (If no adjusted minimum, the minimum from the previous column is shown)

+If more than one approach, report the approach that has the higher volume.

NON-VOLUME-BASED WARRANTS

Warrant 4, Minimum Pedestrian Volume: No

Peak Four Hour Pedestrian Volumes: 28

(non-concurrent) 0

0

0

Warrant 5, School Crossing:

See MUTCD for details.

Warrant 6, Coordinated Signal System:

See MUTCD for details.

Warrant 7, Crash Experience: No

# of accidents "correctable by signalization" occuring in the last 12 months: 2

Warrant 8, Roadway Network:

See MUTCD for details.

Source: *Manual on Uniform Traffic Control Devices* (MUTCD); 2003 Edition [2003]

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2003 MUTCD

TRAFFIC SIGNAL WARRANT ANALYSIS (VOLUME BASED)

Intersection: Route 140 SB Off Ramps at Mr. Pleasant Street

Major Street Direction: Northbound-Southbound

Year: **Condition:** Future

Operating speed on major roadway: 40 mph

Number of approaches: 3

Warrant 1	**EIGHT-HOUR VEHICULAR VOLUME**		Minimum*	Adjusted Minimum**
Warrant 1A	MINIMUM VEHICULAR VOLUME (8 hours of day)			
	Major Street :	1 Lane(s) on each approach	500	500
	Minor Street :	1 Lane(s) on each approach	150	150
Warrant 1B	INTERRUPTION OF CONTINUOUS TRAFFIC (8 hours of day)			
	Major Street :	1 Lane(s) on each approach	750	750
	Minor Street :	1 Lane(s) on each approach	75	75
80 PERCENT SATISFACTION OF WARRANT 1A **AND** WARRANT 1B			Warrant 1A	Warrant 1B
	Major Street :	1 Lane(s) on each approach	400	600
	Minor Street :	1 Lane(s) on each approach	120	60

Required approach volumes

Warrant 2	**FOUR HOUR VEHICULAR VOLUME**		
	Major Street :	1 Lane(s) on each approach	If "verify" indicated, see Figure 4C-1 or 4C-2.
	Minor Street :	1 Lane(s) on each approach	25 = accuracy of regression equations

Warrant 3	**PEAK HOUR VOLUME**		
	Major Street :	1 Lane(s) on each approach	If "verify" indicated, see Figure 4C-3 or 4C-4.
	Minor Street :	1 Lane(s) on each approach	25 = accuracy of regression equations

Hour	Entering Vol. Minor Road+	Entering Vol. on Major Road Northbound	Entering Vol. on Major Road Southbound	Tot. Ent. Vol. On Major Rd	Meets the following volume-based warrants? 1A	1B	80%(1A&1B)	2	3
6:00 - 7:00 AM				0	No	No	No	No	No
7:00 - 8:00 AM	167	638	281	919	Yes	Yes	Yes	Yes	No
8:00 - 9:00 AM				0	No	No	No	No	No
9:00 - 10:00 AM				0	No	No	No	No	No
10:00 - 11:00 AM				0	No	No	No	No	No
11:00 - 12:00 AM				0	No	No	No	No	No
12:00 - 1:00 PM				0	No	No	No	No	No
1:00 - 2:00 PM				0	No	No	No	No	No
2:00 - 3:00 PM				0	No	No	No	No	No
3:00 - 4:00 PM				0	No	No	No	No	No
4:00 - 5:00 PM				0	No	No	No	No	No
5:00 - 6:00 PM	257	667	567	1234	Yes	Yes	Yes	Yes	Yes
6:00 - 7:00 PM				0	No	No	No	No	No
					No	**No**	**No**	**No**	**Yes**
			Warrants Met?			**1**		**2**	**3**
						NO		**No**	**Yes**

*From the criteria described for the warrant in the MUTCD.

**If the operating speed is higher than 40mph then the volumes can be adjusted to 70%. (If no adjusted minimum, the minimum from the previous column is shown)

+If more than one approach, report the approach that has the higher volume.

NON-VOLUME-BASED WARRANTS

Warrant 4, Minimum Pedestrian Volume: No

Peak Four Hour Pedestrian Volumes: 0

(non-concurrent) 0

0

0

Warrant 5, School Crossing:

See MUTCD for details.

Warrant 6, Coordinated Signal System:

See MUTCD for details.

Warrant 7, Crash Experience: No

# of accidents "correctable by signalization" occuring in the last 12 months: 0

Warrant 8, Roadway Network:

See MUTCD for details.

Source: *Manual on Uniform Traffic Control Devices* (MUTCD); 2003 Edition [2003]

last updated: 08/05/05 [version]

2003 MUTCD

TRAFFIC SIGNAL WARRANT ANALYSIS (VOLUME BASED)

Intersection: Whales's Tooth Station Driveway / Mc Arthur Dr

Major Street Direction: Northbound-Southbound

Year: **Condition:** Future

Operating speed on major roadway: 40 mph

Number of approaches: 3

		Required approach volumes	
			Adjusted
Warrant 1	**EIGHT-HOUR VEHICULAR VOLUME**	Minimum*	Minimum**
Warrant 1A	MINIMUM VEHICULAR VOLUME (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	500	500
	Minor Street : 1 Lane(s) on each approach	150	150
Warrant 1B	INTERRUPTION OF CONTINUOUS TRAFFIC (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	750	750
	Minor Street : 1 Lane(s) on each approach	75	75
80 PERCENT SATISFACTION OF WARRANT 1A **AND** WARRANT 1B		Warrant 1A	Warrant 1B
	Major Street : 1 Lane(s) on each approach	400	600
	Minor Street : 1 Lane(s) on each approach	120	60

Warrant 2 **FOUR HOUR VEHICULAR VOLUME**

Major Street : 1 Lane(s) on each approach — If "verify" indicated, see Figure 4C-1 or 4C-2.

Minor Street : 1 Lane(s) on each approach — 25 = accuracy of regression equations

Warrant 3 **PEAK HOUR VOLUME**

Major Street : 1 Lane(s) on each approach — If "verify" indicated, see Figure 4C-3 or 4C-4.

Minor Street : 1 Lane(s) on each approach — 25 = accuracy of regression equations

Hour	Entering Vol. Minor Road+	Entering Vol. on Major Road Northbound	Entering Vol. on Major Road Southbound	Tot. Ent. Vol. On Major Rd	Meets the following volume-based warrants? 1A	1B	80%(1A&1B)	2	3
6:00 - 7:00 AM				0	No	No	No	No	No
7:00 - 8:00 AM				0	No	No	No	No	No
8:00 - 9:00 AM	70	230	125	355	No	No	No	No	No
9:00 - 10:00 AM				0	No	No	No	No	No
10:00 - 11:00 AM				0	No	No	No	No	No
11:00 - 12:00 AM				0	No	No	No	No	No
12:00 - 1:00 PM				0	No	No	No	No	No
1:00 - 2:00 PM				0	No	No	No	No	No
2:00 - 3:00 PM				0	No	No	No	No	No
3:00 - 4:00 PM				0	No	No	No	No	No
4:00 - 5:00 PM	165	115	110	225	No	No	No	No	No
5:00 - 6:00 PM				0	No	No	No	No	No
6:00 - 7:00 PM				0	No	No	No	No	No
					No	**No**	**No**	**No**	**No**
			Warrants Met?		**1**			**2**	**3**
					NO			**No**	**No**

*From the criteria described for the warrant in the MUTCD.

**If the operating speed is higher than 40mph then the volumes can be adjusted to 70%. (If no adjusted minimum, the minimum from the previous column is shown)

+If more than one approach, report the approach that has the higher volume.

NON-VOLUME-BASED WARRANTS

Warrant 4, Minimum Pedestrian Volume: No

Peak Four Hour Pedestrian Volumes: 0

(non-concurrent) 0

0

0

Warrant 5, School Crossing:

See MUTCD for details.

Warrant 6, Coordinated Signal System:

See MUTCD for details.

Warrant 7, Crash Experience: No

# of accidents "correctable by signalization" occuring in the last 12 months: 0

Warrant 8, Roadway Network:

See MUTCD for details.

Source: *Manual on Uniform Traffic Control Devices* (MUTCD); 2003 Edition [2003]

last updated: 08/05/05 [version]

2003 MUTCD

TRAFFIC SIGNAL WARRANT ANALYSIS (VOLUME BASED)

Intersection: Washington St at Fredrick Martin Parkway

Major Street Direction: Northbound-Southbound

Year: **Condition:** Future

Operating speed on major roadway: 40 mph

Number of approaches: 4

Warrant 1 EIGHT-HOUR VEHICULAR VOLUME		Required approach volumes: Minimum*	Adjusted Minimum**
Warrant 1A MINIMUM VEHICULAR VOLUME (8 hours of day)			
Major Street :	2 Lane(s) on each approach	600	600
Minor Street :	2 Lane(s) on each approach	200	200
Warrant 1B INTERRUPTION OF CONTINUOUS TRAFFIC (8 hours of day)			
Major Street :	2 Lane(s) on each approach	900	900
Minor Street :	2 Lane(s) on each approach	100	100
80 PERCENT SATISFACTION OF WARRANT 1A **AND** WARRANT 1B		Warrant 1A	Warrant 1B
Major Street :	2 Lane(s) on each approach	480	720
Minor Street :	2 Lane(s) on each approach	160	80

Warrant 2 FOUR HOUR VEHICULAR VOLUME		
Major Street :	2 Lane(s) on each approach	If "verify" indicated, see Figure 4C-1 or 4C-2.
Minor Street :	2 Lane(s) on each approach	25 = accuracy of regression equations

Warrant 3 PEAK HOUR VOLUME		
Major Street :	2 Lane(s) on each approach	If "verify" indicated, see Figure 4C-3 or 4C-4.
Minor Street :	2 Lane(s) on each approach	25 = accuracy of regression equations

Hour	Entering Vol. Minor Road+	Entering Vol. on Major Road: Northbound	Southbound	Tot. Ent. Vol. On Major Rd	Meets the following volume-based warrants? 1A	1B	80%(1A&1B)	2	3
6:00 - 7:00 AM				0	No	No	No	No	No
7:00 - 8:00 AM	149	939	855	1794	No	Yes	No	Yes	No
8:00 - 9:00 AM				0	No	No	No	No	No
9:00 - 10:00 AM				0	No	No	No	No	No
10:00 - 11:00 AM				0	No	No	No	No	No
11:00 - 12:00 AM				0	No	No	No	No	No
12:00 - 1:00 PM				0	No	No	No	No	No
1:00 - 2:00 PM				0	No	No	No	No	No
2:00 - 3:00 PM				0	No	No	No	No	No
3:00 - 4:00 PM				0	No	No	No	No	No
4:00 - 5:00 PM				0	No	No	No	No	No
5:00 - 6:00 PM	156	1033	1119	2152	Yes	Yes	Yes	Yes	Yes
6:00 - 7:00 PM				0	No	No	No	No	No
					No	**No**	**No**	**No**	**Yes**
			Warrants Met?		**1**			**2**	**3**
					NO			**No**	**Yes**

*From the criteria described for the warrant in the MUTCD.

**If the operating speed is higher than 40mph then the volumes can be adjusted to 70%. (If no adjusted minimum, the minimum from the previous column is shown)

+If more than one approach, report the approach that has the higher volume.

NON-VOLUME-BASED WARRANTS

Warrant 4, Minimum Pedestrian Volume: No

Peak Four Hour Pedestrian Volumes: 0

(non-concurrent) 0

0

0

Warrant 5, School Crossing:

See MUTCD for details.

Warrant 7, Crash Experience: No

# of accidents "correctable by signalization" occuring in the last 12 months: 0

Warrant 6, Coordinated Signal System:

See MUTCD for details.

Warrant 8, Roadway Network:

See MUTCD for details.

Source: *Manual on Uniform Traffic Control Devices* (MUTCD); 2003 Edition [2003]

last updated: 08/05/05 [version]

2003 MUTCD

TRAFFIC SIGNAL WARRANT ANALYSIS (VOLUME BASED)

Intersection: Oak Street / Station Driveway

Major Street Direction: Northbound-Southbound

Year: **Condition:** Future

Operating speed on major roadway: 40 mph

Number of approaches: 3

		Required approach volumes	
			Adjusted
Warrant 1	**EIGHT-HOUR VEHICULAR VOLUME**	Minimum*	Minimum**
Warrant 1A	MINIMUM VEHICULAR VOLUME (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	500	500
	Minor Street : 2 Lane(s) on each approach	200	200
Warrant 1B	INTERRUPTION OF CONTINUOUS TRAFFIC (8 hours of day)		
	Major Street : 2 Lane(s) on each approach	900	900
	Minor Street : 1 Lane(s) on each approach	75	75
	80 PERCENT SATISFACTION OF WARRANT 1A **AND** WARRANT 1B	Warrant 1A	Warrant 1B
	Major Street : 2 Lane(s) on each approach	400	720
	Minor Street : 1 Lane(s) on each approach	160	60

Warrant 2 **FOUR HOUR VEHICULAR VOLUME**

Major Street : 2 Lane(s) on each approach — If "verify" indicated, see Figure 4C-1 or 4C-2.

Minor Street : 1 Lane(s) on each approach — 25 = accuracy of regression equations

Warrant 3 **PEAK HOUR VOLUME**

Major Street : 2 Lane(s) on each approach — If "verify" indicated, see Figure 4C-3 or 4C-4.

Minor Street : 1 Lane(s) on each approach — 25 = accuracy of regression equations

Hour	Entering Vol. Minor Road+	Entering Vol. on Major Road Northbound	Entering Vol. on Major Road Southbound	Tot. Ent. Vol. On Major Rd	Meets the following volume-based warrants? 1A	1B	80%(1A&1B)	2	3
6:00 - 7:00 AM				0	No	No	No	No	No
7:00 - 8:00 AM				0	No	No	No	No	No
8:00 - 9:00 AM	109	400	489	889	No	No	No	No	No
9:00 - 10:00 AM				0	No	No	No	No	No
10:00 - 11:00 AM				0	No	No	No	No	No
11:00 - 12:00 AM				0	No	No	No	No	No
12:00 - 1:00 PM				0	No	No	No	No	No
1:00 - 2:00 PM				0	No	No	No	No	No
2:00 - 3:00 PM				0	No	No	No	No	No
3:00 - 4:00 PM				0	No	No	No	No	No
4:00 - 5:00 PM				0	No	No	No	No	No
5:00 - 6:00 PM	163	477	540	1017	No	Yes	Yes	Verify	No
6:00 - 7:00 PM				0	No	No	No	No	No
					No	**No**	**No**	**No**	**No**
			Warrants Met?		**1**			**2**	**3**
					NO			**No**	**No**

*From the criteria described for the warrant in the MUTCD.

**If the operating speed is higher than 40mph then the volumes can be adjusted to 70%. (If no adjusted minimum, the minimum from the previous column is shown)

+If more than one approach, report the approach that has the higher volume.

NON-VOLUME-BASED WARRANTS

Warrant 4, Minimum Pedestrian Volume: No

Peak Four Hour Pedestrian Volumes: 0

(non-concurrent) 0

0

0

Warrant 5, School Crossing:

See MUTCD for details.

Warrant 6, Coordinated Signal System:

See MUTCD for details.

Warrant 7, Crash Experience: No

# of accidents "correctable by signalization" occuring in the last 12 months: 0

Warrant 8, Roadway Network:

See MUTCD for details.

Source: *Manual on Uniform Traffic Control Devices* (MUTCD); 2003 Edition [2003]

last updated: 08/05/05 [version]

2003 MUTCD

TRAFFIC SIGNAL WARRANT ANALYSIS (VOLUME BASED)

Intersection: Arlington St / Station Driveway

Major Street Direction: Northbound-Southbound

Year: **Condition:** Future

Operating speed on major roadway: 40 mph

Number of approaches: 3

Required approach volumes

Warrant 1	**EIGHT-HOUR VEHICULAR VOLUME**	Minimum*	Adjusted Minimum**
Warrant 1A	MINIMUM VEHICULAR VOLUME (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	500	500
	Minor Street : 2 Lane(s) on each approach	200	200
Warrant 1B	INTERRUPTION OF CONTINUOUS TRAFFIC (8 hours of day)		
	Major Street : 2 Lane(s) on each approach	900	900
	Minor Street : 1 Lane(s) on each approach	75	75
80 PERCENT SATISFACTION OF WARRANT 1A **AND** WARRANT 1B		Warrant 1A	Warrant 1B
	Major Street : 2 Lane(s) on each approach	400	720
	Minor Street : 1 Lane(s) on each approach	160	60

Warrant 2 **FOUR HOUR VEHICULAR VOLUME**

Major Street : 2 Lane(s) on each approach — If "verify" indicated, see Figure 4C-1 or 4C-2.

Minor Street : 1 Lane(s) on each approach — 25 = accuracy of regression equations

Warrant 3 **PEAK HOUR VOLUME**

Major Street : 2 Lane(s) on each approach — If "verify" indicated, see Figure 4C-3 or 4C-4.

Minor Street : 1 Lane(s) on each approach — 25 = accuracy of regression equations

Hour	Entering Vol. Minor Road+	Entering Vol. on Major Road Northbound	Entering Vol. on Major Road Southbound	Tot. Ent. Vol. On Major Rd	Meets the following volume-based warrants? 1A	1B	80%(1A&1B)	2	3
6:00 - 7:00 AM				0	No	No	No	No	No
7:00 - 8:00 AM				0	No	No	No	No	No
8:00 - 9:00 AM	50	265	363	628	No	No	No	No	No
9:00 - 10:00 AM				0	No	No	No	No	No
10:00 - 11:00 AM				0	No	No	No	No	No
11:00 - 12:00 AM				0	No	No	No	No	No
12:00 - 1:00 PM				0	No	No	No	No	No
1:00 - 2:00 PM				0	No	No	No	No	No
2:00 - 3:00 PM				0	No	No	No	No	No
3:00 - 4:00 PM				0	No	No	No	No	No
4:00 - 5:00 PM	107	126	541	667	No	No	No	No	No
5:00 - 6:00 PM				0	No	No	No	No	No
6:00 - 7:00 PM				0	No	No	No	No	No
					No	**No**	**No**	**No**	**No**
			Warrants Met?		**1**			**2**	**3**
					NO			**No**	**No**

*From the criteria described for the warrant in the MUTCD.

**If the operating speed is higher than 40mph then the volumes can be adjusted to 70%. (If no adjusted minimum, the minimum from the previous column is shown)

+If more than one approach, report the approach that has the higher volume.

NON-VOLUME-BASED WARRANTS

Warrant 4, Minimum Pedestrian Volume: No

Peak Four Hour Pedestrian Volumes: 0

(non-concurrent) 0

0

0

Warrant 5, School Crossing:

See MUTCD for details.

Warrant 7, Crash Experience: No

# of accidents "correctable by signalization" occuring in the last 12 months: 0

Warrant 6, Coordinated Signal System:

See MUTCD for details.

Warrant 8, Roadway Network:

See MUTCD for details.

Source: *Manual on Uniform Traffic Control Devices* (MUTCD); 2003 Edition [2003]

last updated: 08/05/05 [version]

2003 MUTCD

TRAFFIC SIGNAL WARRANT ANALYSIS (VOLUME BASED)

Intersection: Route 123 / N Worcester

Major Street Direction: Eastbound-Westbound

Year: **Condition:** Future

Operating speed on major roadway: 40 mph

Number of approaches: 4

Required approach volumes

Warrant 1	**EIGHT-HOUR VEHICULAR VOLUME**	Minimum*	Adjusted Minimum**
Warrant 1A	MINIMUM VEHICULAR VOLUME (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	500	500
	Minor Street : 2 Lane(s) on each approach	200	200
Warrant 1B	INTERRUPTION OF CONTINUOUS TRAFFIC (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	750	750
	Minor Street : 2 Lane(s) on each approach	100	100
80 PERCENT SATISFACTION OF WARRANT 1A **AND** WARRANT 1B		Warrant 1A	Warrant 1B
	Major Street : 1 Lane(s) on each approach	400	600
	Minor Street : 2 Lane(s) on each approach	160	80

Warrant 2 **FOUR HOUR VEHICULAR VOLUME**

Major Street : 1 Lane(s) on each approach — If "verify" indicated, see Figure 4C-1 or 4C-2.

Minor Street : 2 Lane(s) on each approach — 25 = accuracy of regression equations

Warrant 3 **PEAK HOUR VOLUME**

Major Street : 1 Lane(s) on each approach — If "verify" indicated, see Figure 4C-3 or 4C-4.

Minor Street : 2 Lane(s) on each approach — 25 = accuracy of regression equations

Hour	Entering Vol. Minor Road+	Entering Vol. on Major Road Eastbound	Entering Vol. on Major Road Westbound	Tot. Ent. Vol. On Major Rd	Meets the following volume-based warrants? 1A	1B	80%(1A&1B)	2	3
6:00 - 7:00 AM				0	No	No	No	No	No
7:00 - 8:00 AM	457	550	412	962	Yes	Yes	Yes	Yes	Yes
8:00 - 9:00 AM				0	No	No	No	No	No
9:00 - 10:00 AM				0	No	No	No	No	No
10:00 - 11:00 AM				0	No	No	No	No	No
11:00 - 12:00 AM				0	No	No	No	No	No
12:00 - 1:00 PM				0	No	No	No	No	No
1:00 - 2:00 PM				0	No	No	No	No	No
2:00 - 3:00 PM				0	No	No	No	No	No
3:00 - 4:00 PM				0	No	No	No	No	No
4:00 - 5:00 PM	372	565	654	1219	Yes	Yes	Yes	Yes	Yes
5:00 - 6:00 PM				0	No	No	No	No	No
6:00 - 7:00 PM				0	No	No	No	No	No
					No	**No**	**No**	**No**	**Yes**
				Warrants Met?		**1**		**2**	**3**
						NO		**No**	**Yes**

*From the criteria described for the warrant in the MUTCD.

**If the operating speed is higher than 40mph then the volumes can be adjusted to 70%. (If no adjusted minimum, the minimum from the previous column is shown)

+If more than one approach, report the approach that has the higher volume.

NON-VOLUME-BASED WARRANTS

Warrant 4, Minimum Pedestrian Volume: No

Peak Four Hour Pedestrian Volumes: 0

(non-concurrent) 0

0

0

Warrant 5, School Crossing:

See MUTCD for details.

Warrant 6, Coordinated Signal System:

See MUTCD for details.

Warrant 7, Crash Experience: No

# of accidents "correctable by signalization" occuring in the last 12 months: 0

Warrant 8, Roadway Network:

See MUTCD for details.

Source: *Manual on Uniform Traffic Control Devices* (MUTCD); 2003 Edition [2003]

last updated: 08/05/05 [version]

2003 MUTCD

TRAFFIC SIGNAL WARRANT ANALYSIS (VOLUME BASED)

Intersection: Station Driveway / S. Worcester Street

Major Street Direction: Northbound-Southbound

Year: **Condition:** Future

Operating speed on major roadway: 40 mph

Number of approaches: 3

		Required approach volumes	
			Adjusted
Warrant 1	**EIGHT-HOUR VEHICULAR VOLUME**	Minimum*	Minimum**
Warrant 1A	MINIMUM VEHICULAR VOLUME (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	500	500
	Minor Street : 1 Lane(s) on each approach	150	150
Warrant 1B	INTERRUPTION OF CONTINUOUS TRAFFIC (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	750	750
	Minor Street : 1 Lane(s) on each approach	75	75
	80 PERCENT SATISFACTION OF WARRANT 1A **AND** WARRANT 1B	Warrant 1A	Warrant 1B
	Major Street : 1 Lane(s) on each approach	400	600
	Minor Street : 1 Lane(s) on each approach	120	60

Warrant 2	**FOUR HOUR VEHICULAR VOLUME**	
	Major Street : 1 Lane(s) on each approach	If "verify" indicated, see Figure 4C-1 or 4C-2.
	Minor Street : 1 Lane(s) on each approach	25 = accuracy of regression equations

Warrant 3	**PEAK HOUR VOLUME**	
	Major Street : 1 Lane(s) on each approach	If "verify" indicated, see Figure 4C-3 or 4C-4.
	Minor Street : 1 Lane(s) on each approach	25 = accuracy of regression equations

Hour	Entering Vol. Minor Road+	Entering Vol. on Major Road Northbound	Entering Vol. on Major Road Southbound	Tot. Ent. Vol. On Major Rd	Meets the following volume-based warrants? 1A	1B	80%(1A&1B)	2	3
6:00 - 7:00 AM				0	No	No	No	No	No
7:00 - 8:00 AM				0	No	No	No	No	No
8:00 - 9:00 AM	74	204	255	459	No	No	No	No	No
9:00 - 10:00 AM				0	No	No	No	No	No
10:00 - 11:00 AM				0	No	No	No	No	No
11:00 - 12:00 AM				0	No	No	No	No	No
12:00 - 1:00 PM				0	No	No	No	No	No
1:00 - 2:00 PM				0	No	No	No	No	No
2:00 - 3:00 PM				0	No	No	No	No	No
3:00 - 4:00 PM				0	No	No	No	No	No
4:00 - 5:00 PM				0	No	No	No	No	No
5:00 - 6:00 PM	90	283	160	443	No	No	No	No	No
6:00 - 7:00 PM				0	No	No	No	No	No
					No	**No**	**No**	**No**	**No**
			Warrants Met?		**1**			**2**	**3**
					NO			**No**	**No**

*From the criteria described for the warrant in the MUTCD.

**If the operating speed is higher than 40mph then the volumes can be adjusted to 70%. (If no adjusted minimum, the minimum from the previous column is shown)

+If more than one approach, report the approach that has the higher volume.

NON-VOLUME-BASED WARRANTS

Warrant 4, Minimum Pedestrian Volume: No

Peak Four Hour Pedestrian Volumes: 0

(non-concurrent) 0

0

0

Warrant 5, School Crossing:

See MUTCD for details.

Warrant 6, Coordinated Signal System:

See MUTCD for details.

Warrant 7, Crash Experience: No

# of accidents "correctable by signalization" occuring in the last 12 months: 0

Warrant 8, Roadway Network:

See MUTCD for details.

Source: *Manual on Uniform Traffic Control Devices* (MUTCD); 2003 Edition [2003]

last updated: 08/05/05 [version]

2003 MUTCD

TRAFFIC SIGNAL WARRANT ANALYSIS (VOLUME BASED)

Intersection: Route 138 at Station Driveway

Major Street Direction: Northbound-Southbound

Year: **Condition:** Future

Operating speed on major roadway: 40 mph

Number of approaches: 4

		Required approach volumes	
Warrant 1	**EIGHT-HOUR VEHICULAR VOLUME**	Minimum*	Adjusted Minimum**
Warrant 1A	MINIMUM VEHICULAR VOLUME (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	500	500
	Minor Street : 1 Lane(s) on each approach	150	150
Warrant 1B	INTERRUPTION OF CONTINUOUS TRAFFIC (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	750	750
	Minor Street : 1 Lane(s) on each approach	75	75
	80 PERCENT SATISFACTION OF WARRANT 1A **AND** WARRANT 1B	Warrant 1A	Warrant 1B
	Major Street : 1 Lane(s) on each approach	400	600
	Minor Street : 1 Lane(s) on each approach	120	60

Warrant 2 **FOUR HOUR VEHICULAR VOLUME**

Major Street : 1 Lane(s) on each approach — If "verify" indicated, see Figure 4C-1 or 4C-2.

Minor Street : 1 Lane(s) on each approach — 25 = accuracy of regression equations

Warrant 3 **PEAK HOUR VOLUME**

Major Street : 1 Lane(s) on each approach — If "verify" indicated, see Figure 4C-3 or 4C-4.

Minor Street : 1 Lane(s) on each approach — 25 = accuracy of regression equations

Hour	Entering Vol. Minor Road+	Entering Vol. on Major Road Northbound	Entering Vol. on Major Road Southbound	Tot. Ent. Vol. On Major Rd	Meets the following volume-based warrants? 1A	1B	80%(1A&1B)	2	3
6:00 - 7:00 AM				0	No	No	No	No	No
7:00 - 8:00 AM	83	1431	409	1840	No	Yes	No	Verify	No
8:00 - 9:00 AM				0	No	No	No	No	No
9:00 - 10:00 AM				0	No	No	No	No	No
10:00 - 11:00 AM				0	No	No	No	No	No
11:00 - 12:00 AM				0	No	No	No	No	No
12:00 - 1:00 PM				0	No	No	No	No	No
1:00 - 2:00 PM				0	No	No	No	No	No
2:00 - 3:00 PM				0	No	No	No	No	No
3:00 - 4:00 PM				0	No	No	No	No	No
4:00 - 5:00 PM				0	No	No	No	No	No
5:00 - 6:00 PM	119	644	1107	1751	No	Yes	No	Yes	Yes
6:00 - 7:00 PM				0	No	No	No	No	No
					No	**No**	**No**	**No**	**Yes**
			Warrants Met?		**1**			**2**	**3**
					NO			**No**	**Yes**

*From the criteria described for the warrant in the MUTCD.

**If the operating speed is higher than 40mph then the volumes can be adjusted to 70%. (If no adjusted minimum, the minimum from the previous column is shown)

+If more than one approach, report the approach that has the higher volume.

NON-VOLUME-BASED WARRANTS

Warrant 4, Minimum Pedestrian Volume: No

Peak Four Hour Pedestrian Volumes: 0

(non-concurrent) 0

0

0

Warrant 5, School Crossing:

See MUTCD for details.

Warrant 6, Coordinated Signal System:

See MUTCD for details.

Warrant 7, Crash Experience: No

# of accidents "correctable by signalization" occuring in the last 12 months: 0

Warrant 8, Roadway Network:

See MUTCD for details.

Source: *Manual on Uniform Traffic Control Devices* (MUTCD); 2003 Edition [2003]

last updated: 08/05/05 [version]

2003 MUTCD

TRAFFIC SIGNAL WARRANT ANALYSIS (VOLUME BASED)

Intersection: Route 138 at ElmStreet

Major Street Direction: Northbound-Southbound

Year: **Condition:** Future

Operating speed on major roadway: 40 mph

Number of approaches: 3

		Required approach volumes	
Warrant 1	**EIGHT-HOUR VEHICULAR VOLUME**	Minimum*	Adjusted Minimum**
Warrant 1A	MINIMUM VEHICULAR VOLUME (8 hours of day)		
	Major Street : 2 Lane(s) on each approach	600	600
	Minor Street : 1 Lane(s) on each approach	150	150
Warrant 1B	INTERRUPTION OF CONTINUOUS TRAFFIC (8 hours of day)		
	Major Street : 2 Lane(s) on each approach	900	900
	Minor Street : 1 Lane(s) on each approach	75	75
	80 PERCENT SATISFACTION OF WARRANT 1A **AND** WARRANT 1B	Warrant 1A	Warrant 1B
	Major Street : 2 Lane(s) on each approach	480	720
	Minor Street : 1 Lane(s) on each approach	120	60

Warrant 2 **FOUR HOUR VEHICULAR VOLUME**

Major Street : 2 Lane(s) on each approach — If "verify" indicated, see Figure 4C-1 or 4C-2.

Minor Street : 2 Lane(s) on each approach — 25 = accuracy of regression equations

Warrant 3 **PEAK HOUR VOLUME**

Major Street : 2 Lane(s) on each approach — If "verify" indicated, see Figure 4C-3 or 4C-4.

Minor Street : 2 Lane(s) on each approach — 25 = accuracy of regression equations

Hour	Entering Vol. Minor Road+	Entering Vol. on Major Road Northbound	Entering Vol. on Major Road Southbound	Tot. Ent. Vol. On Major Rd	Meets the following volume-based warrants? 1A	1B	80%(1A&1B)	2	3
6:00 - 7:00 AM				0	No	No	No	No	No
7:00 - 8:00 AM	232	1415	492	1907	Yes	Yes	Yes	Yes	Yes
8:00 - 9:00 AM				0	No	No	No	No	No
9:00 - 10:00 AM				0	No	No	No	No	No
10:00 - 11:00 AM				0	No	No	No	No	No
11:00 - 12:00 AM				0	No	No	No	No	No
12:00 - 1:00 PM				0	No	No	No	No	No
1:00 - 2:00 PM				0	No	No	No	No	No
2:00 - 3:00 PM				0	No	No	No	No	No
3:00 - 4:00 PM				0	No	No	No	No	No
4:00 - 5:00 PM				0	No	No	No	No	No
5:00 - 6:00 PM	133	803	1369	2172	No	Yes	Yes	Yes	Yes
6:00 - 7:00 PM				0	No	No	No	No	No
					No	**No**	**No**	**No**	**Yes**
			Warrants Met?		**1**			**2**	**3**
					NO			**No**	**Yes**

*From the criteria described for the warrant in the MUTCD.

**If the operating speed is higher than 40mph then the volumes can be adjusted to 70%. (If no adjusted minimum, the minimum from the previous column is shown)

+If more than one approach, report the approach that has the higher volume.

NON-VOLUME-BASED WARRANTS

Warrant 4, Minimum Pedestrian Volume: No

Peak Four Hour Pedestrian Volumes: 0

(non-concurrent) 0

0

0

Warrant 5, School Crossing:

See MUTCD for details.

Warrant 7, Crash Experience: No

# of accidents "correctable by signalization" occuring in the last 12 months: 0

Warrant 6, Coordinated Signal System:

See MUTCD for details.

Warrant 8, Roadway Network:

See MUTCD for details.

Source: *Manual on Uniform Traffic Control Devices* (MUTCD); 2003 Edition [2003]

last updated: 08/05/05 [version]

2003 MUTCD

TRAFFIC SIGNAL WARRANT ANALYSIS (VOLUME BASED)

Intersection: Route 138 at Union Street

Major Street Direction: Northbound-Southbound

Year: **Condition:** Future

Operating speed on major roadway: 40 mph

Number of approaches: 3

Warrant 1	**EIGHT-HOUR VEHICULAR VOLUME**		Required approach volumes: Minimum*	Adjusted Minimum**
Warrant 1A	MINIMUM VEHICULAR VOLUME (8 hours of day)			
	Major Street :	2 Lane(s) on each approach	600	600
	Minor Street :	2 Lane(s) on each approach	200	200
Warrant 1B	INTERRUPTION OF CONTINUOUS TRAFFIC (8 hours of day)			
	Major Street :	2 Lane(s) on each approach	900	900
	Minor Street :	2 Lane(s) on each approach	100	100
80 PERCENT SATISFACTION OF WARRANT 1A **AND** WARRANT 1B			Warrant 1A	Warrant 1B
	Major Street :	2 Lane(s) on each approach	480	720
	Minor Street :	2 Lane(s) on each approach	160	80

Warrant 2	**FOUR HOUR VEHICULAR VOLUME**		
	Major Street :	2 Lane(s) on each approach	If "verify" indicated, see Figure 4C-1 or 4C-2.
	Minor Street :	2 Lane(s) on each approach	25 = accuracy of regression equations

Warrant 3	**PEAK HOUR VOLUME**		
	Major Street :	2 Lane(s) on each approach	If "verify" indicated, see Figure 4C-3 or 4C-4.
	Minor Street :	2 Lane(s) on each approach	25 = accuracy of regression equations

Hour	Entering Vol. Minor Road+	Entering Vol. on Major Road: Northbound	Southbound	Tot. Ent. Vol. On Major Rd	Meets the following volume-based warrants? 1A	1B	80%(1A&1B)	2	3
6:00 - 7:00 AM				0	No	No	No	No	No
7:00 - 8:00 AM	186	1528	492	2020	No	Yes	Yes	Yes	Yes
8:00 - 9:00 AM				0	No	No	No	No	No
9:00 - 10:00 AM				0	No	No	No	No	No
10:00 - 11:00 AM				0	No	No	No	No	No
11:00 - 12:00 AM				0	No	No	No	No	No
12:00 - 1:00 PM				0	No	No	No	No	No
1:00 - 2:00 PM				0	No	No	No	No	No
2:00 - 3:00 PM				0	No	No	No	No	No
3:00 - 4:00 PM				0	No	No	No	No	No
4:00 - 5:00 PM				0	No	No	No	No	No
5:00 - 6:00 PM	317	797	1361	2158	Yes	Yes	Yes	Yes	Yes
6:00 - 7:00 PM				0	No	No	No	No	No
					No	**No**	**No**	**No**	**Yes**
			Warrants Met?		**1**			**2**	**3**
					NO			**No**	**Yes**

*From the criteria described for the warrant in the MUTCD.

**If the operating speed is higher than 40mph then the volumes can be adjusted to 70%. (If no adjusted minimum, the minimum from the previous column is shown)

+If more than one approach, report the approach that has the higher volume.

NON-VOLUME-BASED WARRANTS

Warrant 4, Minimum Pedestrian Volume: No

Peak Four Hour Pedestrian Volumes: 0

(non-concurrent) 0

0

0

Warrant 5, School Crossing:

See MUTCD for details.

Warrant 7, Crash Experience: No

# of accidents "correctable by signalization" occuring in the last 12 months: 0

Warrant 6, Coordinated Signal System:

See MUTCD for details.

Warrant 8, Roadway Network:

See MUTCD for details.

Source: *Manual on Uniform Traffic Control Devices* (MUTCD); 2003 Edition [2003]

last updated: 08/05/05 [version]

2003 MUTCD

TRAFFIC SIGNAL WARRANT ANALYSIS (VOLUME BASED)

Intersection: Main Street at Center Street

Major Street Direction: Eastbound-Westbound

Year: **Condition:** Future

Operating speed on major roadway: 30 mph

Number of approaches: 3

		Required approach volumes	
Warrant 1	**EIGHT-HOUR VEHICULAR VOLUME**	Minimum*	Adjusted Minimum**
Warrant 1A	MINIMUM VEHICULAR VOLUME (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	500	500
	Minor Street : 1 Lane(s) on each approach	150	150
Warrant 1B	INTERRUPTION OF CONTINUOUS TRAFFIC (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	750	750
	Minor Street : 1 Lane(s) on each approach	75	75
	80 PERCENT SATISFACTION OF WARRANT 1A **AND** WARRANT 1B	Warrant 1A	Warrant 1B
	Major Street : 1 Lane(s) on each approach	400	600
	Minor Street : 1 Lane(s) on each approach	120	60

Warrant 2 **FOUR HOUR VEHICULAR VOLUME**

Major Street : 1 Lane(s) on each approach — If "verify" indicated, see Figure 4C-1 or 4C-2.

Minor Street : 1 Lane(s) on each approach — 25 = accuracy of regression equations

Warrant 3 **PEAK HOUR VOLUME**

Major Street : 1 Lane(s) on each approach — If "verify" indicated, see Figure 4C-3 or 4C-4.

Minor Street : 1 Lane(s) on each approach — 25 = accuracy of regression equations

Hour	Entering Vol. Minor Road+	Entering Vol. on Major Road Eastbound	Entering Vol. on Major Road Westbound	Tot. Ent. Vol. On Major Rd	Meets the following volume-based warrants? 1A	1B	80%(1A&1B)	2	3
6:00 - 7:00 AM				0	No	No	No	No	No
7:00 - 8:00 AM	209	504	330	834	Yes	Yes	Yes	Yes	No
8:00 - 9:00 AM				0	No	No	No	No	No
9:00 - 10:00 AM				0	No	No	No	No	No
10:00 - 11:00 AM				0	No	No	No	No	No
11:00 - 12:00 AM				0	No	No	No	No	No
12:00 - 1:00 PM				0	No	No	No	No	No
1:00 - 2:00 PM				0	No	No	No	No	No
2:00 - 3:00 PM				0	No	No	No	No	No
3:00 - 4:00 PM				0	No	No	No	No	No
4:00 - 5:00 PM				0	No	No	No	No	No
5:00 - 6:00 PM	158	291	1014	1305	Yes	Yes	Yes	Yes	Yes
6:00 - 7:00 PM				0	No	No	No	No	No
					No	**No**	**No**	**No**	**Yes**
			Warrants Met?		**1**			**2**	**3**
					NO			**No**	**Yes**

*From the criteria described for the warrant in the MUTCD.

**If the operating speed is higher than 40mph then the volumes can be adjusted to 70%. (If no adjusted minimum, the minimum from the previous column is shown)

+If more than one approach, report the approach that has the higher volume.

NON-VOLUME-BASED WARRANTS

Warrant 4, Minimum Pedestrian Volume: No

Peak Four Hour Pedestrian Volumes: 0

(non-concurrent) 0

0

0

Warrant 5, School Crossing:

See MUTCD for details.

Warrant 7, Crash Experience: No

# of accidents "correctable by signalization" occuring in the last 12 months: 0

Warrant 6, Coordinated Signal System:

See MUTCD for details.

Warrant 8, Roadway Network:

See MUTCD for details.

Source: *Manual on Uniform Traffic Control Devices* (MUTCD); 2003 Edition [2003]

last updated: 08/05/05 [version]

2003 MUTCD

TRAFFIC SIGNAL WARRANT ANALYSIS (VOLUME BASED)

Intersection: Route 138 at Wilbur Street

Major Street Direction: Northbound-Southbound

Year: **Condition:** Future

Operating speed on major roadway: 40 mph

Number of approaches: 3

		Required approach volumes	
			Adjusted
Warrant 1	**EIGHT-HOUR VEHICULAR VOLUME**	Minimum*	Minimum**
Warrant 1A	MINIMUM VEHICULAR VOLUME (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	500	500
	Minor Street : 1 Lane(s) on each approach	150	150
Warrant 1B	INTERRUPTION OF CONTINUOUS TRAFFIC (8 hours of day)		
	Major Street : 1 Lane(s) on each approach	750	750
	Minor Street : 1 Lane(s) on each approach	75	75
	80 PERCENT SATISFACTION OF WARRANT 1A **AND** WARRANT 1B	Warrant 1A	Warrant 1B
	Major Street : 1 Lane(s) on each approach	400	600
	Minor Street : 1 Lane(s) on each approach	120	60

Warrant 2	**FOUR HOUR VEHICULAR VOLUME**	
	Major Street : 1 Lane(s) on each approach	If "verify" indicated, see Figure 4C-1 or 4C-2.
	Minor Street : 1 Lane(s) on each approach	25 = accuracy of regression equations

Warrant 3	**PEAK HOUR VOLUME**	
	Major Street : 1 Lane(s) on each approach	If "verify" indicated, see Figure 4C-3 or 4C-4.
	Minor Street : 1 Lane(s) on each approach	25 = accuracy of regression equations

Hour	Entering Vol. Minor Road+	Entering Vol. on Major Road Northbound	Entering Vol. on Major Road Southbound	Tot. Ent. Vol. On Major Rd	Meets the following volume-based warrants? 1A	1B	80%(1A&1B)	2	3
6:00 - 7:00 AM				0	No	No	No	No	No
7:00 - 8:00 AM	12	1429	403	1832	No	No	No	No	No
8:00 - 9:00 AM				0	No	No	No	No	No
9:00 - 10:00 AM				0	No	No	No	No	No
10:00 - 11:00 AM				0	No	No	No	No	No
11:00 - 12:00 AM				0	No	No	No	No	No
12:00 - 1:00 PM				0	No	No	No	No	No
1:00 - 2:00 PM				0	No	No	No	No	No
2:00 - 3:00 PM				0	No	No	No	No	No
3:00 - 4:00 PM				0	No	No	No	No	No
4:00 - 5:00 PM				0	No	No	No	No	No
5:00 - 6:00 PM	10	648	1283	1931	No	No	No	No	No
6:00 - 7:00 PM				0	No	No	No	No	No
					No	**No**	**No**	**No**	**No**
			Warrants Met?		**1**			**2**	**3**
					NO			**No**	**No**

*From the criteria described for the warrant in the MUTCD.

**If the operating speed is higher than 40mph then the volumes can be adjusted to 70%. (If no adjusted minimum, the minimum from the previous column is shown)

+If more than one approach, report the approach that has the higher volume.

NON-VOLUME-BASED WARRANTS

Warrant 4, Minimum Pedestrian Volume: No

Peak Four Hour Pedestrian Volumes: 0

(non-concurrent) 0

0

0

Warrant 5, School Crossing:

See MUTCD for details.

Warrant 6, Coordinated Signal System:

See MUTCD for details.

Warrant 7, Crash Experience: No

# of accidents "correctable by signalization" occuring in the last 12 months: 0

Warrant 8, Roadway Network:

See MUTCD for details.

Source: *Manual on Uniform Traffic Control Devices* (MUTCD); 2003 Edition [2003]

last updated: 08/05/05 [version]