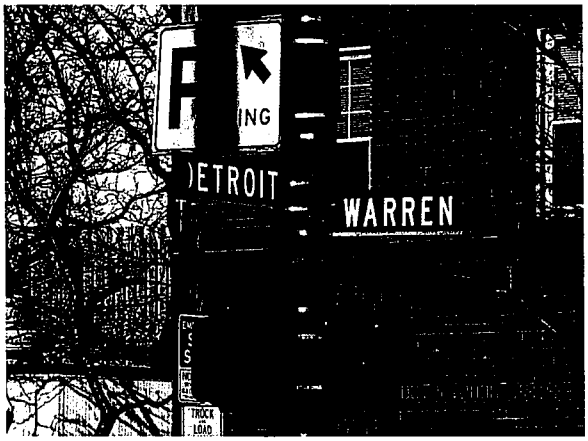
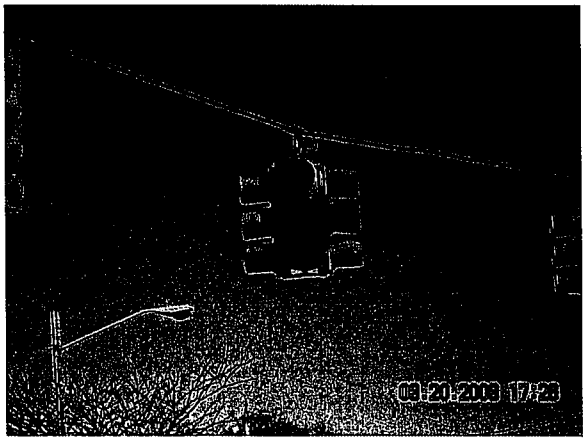
Detroit Avenue Signal Warrant Report





Prepared for

The City of Lakewood
12650 Detroit Avenue
Lakewood, Ohio 44107

Prepared by

HNTB

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December 2008

Detroit Avenue, Part 1 - Signal Warrant Analyses

HNTB Ohio, Inc. has analyzed thirteen intersections included in the City of Lakewood's Detroit Avenue Signal Upgrade Project to determine if they warrant their existing signals. The following warrants, from ODOT's Ohio Manual of Uniform Traffic Control Devices (OMUTCD) were analyzed:

Warrant 1: Eight Hour Volume
Warrant 2: Four Hour Volume
Warrant 3: Peak Hour
Warrant 4: Pedestrian Volume
Warrant 5: School Crossing
Warrant 6: Coordinated Signal System
Warrant 7: Crash Experience
Warrant 8: Roadway Network

Counts were taken in October and December by HNTB personnel. The counts and other information gathered during field visits, such as school crossing locations, were used to complete the analysis. The following table shows the results of the Signal Warrant Analyses for each intersection:

Table 1: Summary of Signal Warrant Analyses

Intersection with Detroit Avenue	WARRANT #1 EIGHT-HOUR	WARRANT #2 FOUR-HOUR	WARRANT #3 PEAK HOUR	WARRANT #4 PEDESTRIAN	WARRANT #5 SCHOOL CROSSING	WARRANT #6 COORDINATED SIGNAL SYSTEM	WARRANT #7 CRASH EXPERIENCE	WARRANT #8 ROADWAY NETWORK	**WARRANTED**
Arthur Ave.	N	N	N	N	Y	N	N	N	**Y**
Mars Ave.	N	N	N	N	N	N	N	N	**N**
Andrews Ave. / Elmwood Ave.	N	N	N	N	Y	N	N	N	**Y**
Cook Ave. / City Center Plaza	N	Y	N	N	N	N	N	N	**Y**
Warren Rd.	Y	Y	Y	N	Y	N	N	N	**Y**
St. Charles Ave.	N	N	Y	N	N	N	N	N	**Y**
Belle Ave.	Y	N	N	N	N	N	N	N	**Y**
Marlowe Ave.	N	N	N	N	N	N	N	N	**N**
Manor Park / Blossom Park	N	N	N	N	N	N	N	N	**N**
Bunts Rd.	Y	N	N	N	Y	N	N	N	**Y**
Waterbury Ave. / St. Edward High School	N	N	N	N	Y	N	N	N	**Y**
Nicholson Ave.	N	N	N	N	N	N	N	N	**N**
Cohasset Ave. / Garfield School	N	N	N	N	Y	N	N	N	**Y**

As part of the Detroit Avenue Signal Project, Part 1, the City of Lakewood plans to replace all of the existing traffic signal installations. The nine signals at warranted intersections will be replaced at project cost. The city intends to retain the four signals at the unwarranted intersections; however they will replace the unwarranted signals at 100% local costs. The city will replace these unwarranted signals to the same specifications as the warranted signals. The following signals do not meet warrants:

- Mars Ave,
- Marlowe Ave,
- Manor Park / Blossom Park,
- Nicholson Ave.

APPENDIX A

Intersection Traffic Counts

THIRTEEN HOUR COUNT

Date: Tuesday, 10/14/2004
Time: 6 AM - 7 PM
Northbound and Southbound Approach: Arthur Avenue
Eastbound and Westbound Approach: Detroit Avenue
Performed By: PPA & RAW

Trucks: 3.1%
Buses: 1.7%
13 Hour to 24 Hour Multiplier: 1.24
Seasonal Adjustment Factor: 0.948
Peak Hour =

	Arthur SB APPROACH			Detroit WB APPROACH			Arthur NB APPROACH			Detroit EB APPROACH			TOTAL	HR TOTAL
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
6:00 AM	0	0	0	0	9	0	1	0	2	2	21	0	35	245
6:15 AM	0	0	0	0	17	1	0	0	2	1	33	0	54	299
6:30 AM	0	0	0	0	18	0	1	0	1	2	41	0	63	356
6:45 AM	0	0	0	1	25	0	2	3	0	3	59	0	93	437
7:00 AM	0	0	0	1	15	0	1	0	2	2	68	0	89	547
7:15 AM	0	0	0	0	22	0	4	2	0	5	77	1	111	607
7:30 AM	1	0	0	1	35	1	8	4	1	1	91	1	144	672
7:45 AM	0	0	0	1	58	3	9	6	5	3	117	1	203	704
8:00 AM	0	2	2	1	64	3	3	1	3	4	65	1	149	696
8:15 AM	2	1	0	2	55	4	4	7	8	4	87	2	176	718
8:30 AM	0	1	1	0	64	2	1	6	3	2	93	3	176	684
8:45 AM	2	2	0	5	60	2	2	9	3	6	99	4	194	672
9:00 AM	4	1	1	2	68	0	1	5	4	3	81	2	172	657
9:15 AM	6	3	0	4	49	3	1	4	4	6	60	2	142	659
9:30 AM	2	1	2	3	61	4	3	4	5	2	74	3	164	720
9:45 AM	6	2	0	3	74	7	2	4	6	8	82	3	179	767
10:00 AM	7	1	1	2	64	4	5	6	4	4	75	1	174	783
10:15 AM	2	2	3	9	70	4	2	3	8	10	82	8	203	815
10:30 AM	3	3	1	2	87	8	2	3	8	5	84	5	211	833
10:45 AM	3	1	3	3	76	3	6	5	2	6	80	8	196	822
11:00 AM	5	4	2	4	78	1	2	3	9	5	86	7	206	811
11:15 AM	2	0	0	3	89	6	0	5	4	4	101	7	221	795
11:30 AM	6	1	3	7	80	2	4	4	4	3	75	11	200	795
11:45 AM	8	2	0	5	66	4	0	6	5	1	84	3	184	864
12:00 PM	2	1	0	4	81	3	1	4	3	3	83	5	190	939
12:15 PM	4	1	1	6	71	3	6	7	4	4	109	5	221	940
12:30 PM	6	3	3	5	89	6	4	10	7	9	119	8	269	939
12:45 PM	8	4	2	5	101	6	2	4	7	10	99	11	259	910
1:00 PM	1	9	1	7	65	4	2	1	2	7	83	9	191	863
1:15 PM	1	3	2	4	89	2	2	6	2	1	102	6	220	865
1:30 PM	5	2	3	8	104	2	4	4	3	3	97	5	240	845
1:45 PM	4	2	3	6	87	3	2	4	4	3	84	8	212	788
2:00 PM	6	1	3	7	67	7	2	1	10	7	73	9	193	725
2:15 PM	4	1	1	8	80	4	3	0	9	3	82	5	200	760
2:30 PM	3	0	0	11	76	1	4	6	5	1	65	9	183	779
2:45 PM	7	2	0	6	48	1	0	7	5	2	61	10	149	792
3:00 PM	5	4	3	9	84	4	4	5	9	3	80	8	218	860
3:15 PM	6	2	2	6	102	2	2	6	9	7	72	13	229	821
3:30 PM	10	2	0	7	73	3	2	7	4	1	74	13	196	739
3:45 PM	9	2	1	7	99	3	4	4	4	2	75	7	217	789
4:00 PM	3	4	0	7	87	2	2	5	7	3	55	4	179	817
4:15 PM	3	1	0	9	54	3	3	4	10	2	55	3	147	926
4:30 PM	7	6	3	10	93	4	5	10	10	8	80	10	246	1043
4:45 PM	12	10	2	7	95	1	5	5	13	9	79	7	245	985
5:00 PM	17	5	2	9	126	4	4	8	7	6	91	7	288	960
5:15 PM	5	6	0	8	108	6	10	7	12	5	88	9	264	877
5:30 PM	15	5	2	11	61	2	4	4	3	5	68	8	188	795
5:45 PM	3	3	4	6	109	5	3	3	7	8	54	15	220	823
6:00 PM	15	4	2	11	96	3	2	3	5	2	50	12	205	801
6:15 PM	8	2	0	4	73	3	0	5	7	4	64	12	182	0
6:30 PM	4	3	6	10	80	7	3	5	6	3	83	6	216	0
6:45 PM	2	4	0	11	70	4	1	1	6	1	85	13	198	0
13 HR TOTAL	236	119	66	270	3673	160	160	228	273	214	4005	310	9703	
24 HR TOTAL	277	140	76	317	4318	188	176	268	321	252	4708	364	11406	

Intersection Peak Hours

AM Peak 8:15	8	5	2	9	247	8	8	27	18	15	360	11		
PM Peak 4:30	41	27	7	34	424	15	24	30	42	28	336	33		
MID Peak 12:15	19	17	7	23	326	19	14	22	20	30	410	33		

Corridor Peak Hours

AM Peak 7:30	3	3	2	5	212	11	24	18	17	12	360	5		
PM Peak 5:00	40	19	8	34	406	17	21	22	29	24	301	39		
MID Peak 12:00	20	9	6	20	342	18	13	25	21	26	410	29		

THIRTEEN HOUR PEDESTRIAN COUNT
Date: Tuesday, 10/14/2004
Time: 6 AM - 7 PM
Northbound and Southbound Approach: Arthur Avenue
Eastbound and Westbound Approach: Detroit Avenue

	North to South		East to West		South to North		West to East		Hourly Total Across Detroit Ave.
Start Time	Total	Hourly Total	Total	Hourly Total	Total	Hourly Total	Total	Hourly Total	
6:00 AM	0	0	0	6	0	0	0	8	0
6:15 AM	0	0	3	7	0	0	0	10	
6:30 AM	0	0	1	6	0	1	4	12	
6:45 AM	0	2	2	5	0	1	2	22	
7:00 AM	0	2	1	4	0	1	4	23	3
7:15 AM	0	2	2	4	1	1	2	20	
7:30 AM	2	2	0	3	0	0	14	23	
7:45 AM	0	2	1	5	0	0	3	24	
8:00 AM	0	9	1	7	0	1	1	31	10
8:15 AM	0	10	1	8	0	1	5	44	
8:30 AM	2	12	2	20	0	3	15	47	
8:45 AM	7	12	3	22	1	3	10	36	
9:00 AM	1	5	2	24	0	3	14	34	8
9:15 AM	2	5	13	28	2	3	8	22	
9:30 AM	2	3	4	20	0	1	4	18	
9:45 AM	0	4	5	18	1	1	8	20	
10:00 AM	1	5	6	21	0	1	2	16	6
10:15 AM	0	5	5	21	0	1	4	18	
10:30 AM	3	5	2	21	0	1	6	18	
10:45 AM	1	2	8	23	1	3	4	21	
11:00 AM	1	2	6	18	0	3	4	21	5
11:15 AM	0	2	5	15	0	3	4	20	
11:30 AM	0	2	4	13	2	4	9	17	
11:45 AM	1	5	3	15	1	3	4	14	
12:00 PM	1	6	3	21	0	2	3	14	8
12:15 PM	0	6	3	26	1	5	1	14	
12:30 PM	3	48	6	35	1	5	6	60	
12:45 PM	2	46	9	38	0	5	4	58	
1:00 PM	1	48	8	33	3	9	3	57	57
1:15 PM	42	48	12	37	1	8	47	62	
1:30 PM	1	6	9	38	1	8	4	22	
1:45 PM	4	5	4	78	4	48	3	20	
2:00 PM	1	1	12	83	2	45	8	30	46
2:15 PM	0	1	13	81	1	45	7	29	
2:30 PM	0	2	49	95	41	57	2	27	
2:45 PM	0	4	9	71	1	19	13	41	
3:00 PM	1	5	10	76	2	21	7	40	26
3:15 PM	1	10	27	76	13	20	5	38	
3:30 PM	2	9	25	64	3	7	16	40	
3:45 PM	1	8	14	67	3	9	12	35	
4:00 PM	6	15	10	69	1	6	5	30	21
4:15 PM	0	12	15	75	0	6	7	30	
4:30 PM	1	15	28	74	5	13	11	30	
4:45 PM	8	14	16	47	0	8	7	29	
5:00 PM	3	10	16	39	1	10	5	32	20
5:15 PM	3	13	14	29	7	12	7	32	
5:30 PM	0	10	1	26	0	5	10	29	
5:45 PM	4	10	8	34	2	7	10	24	
6:00 PM	6	9	6	38	3	8	5	23	17
6:15 PM	0		11		0		4		
6:30 PM	0		9		2		5		
6:45 PM	3		12		3		9		
13 HR TO	117		439		110		357		

TWELVE HOUR COUNT

Date: Tuesday, 10/07/2004
Time: 7 AM - 7 PM
Northbound and Southbound Approach: Mars Avenue
Eastbound and Westbound Approach: Detroit Avenue
Performed By: JTS & MJG

Trucks:	2.2%
Buses:	1.6%
12 Hour to 24 Hour Multiplier:	1.31
Seasonal Adjustment Factor:	0.948
Peak Hour =	

	SB APPROACH			Detroit WB APPROACH			Mars NB APPROACH			Detroit EB APPROACH			TOTAL	HR TOTAL
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	101
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	222
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	398
7:00 AM	0	0	0	0	22	0	11	0	0	3	65	0	101	622
7:15 AM	0	0	0	0	34	2	12	0	2	1	70	0	121	726
7:30 AM	0	0	0	0	42	7	10	0	0	2	115	0	176	768
7:45 AM	0	0	0	0	65	1	12	0	6	3	136	0	224	773
8:00 AM	0	0	0	0	85	8	13	0	2	1	96	0	205	763
8:15 AM	0	0	0	0	53	8	13	0	3	2	84	0	163	725
8:30 AM	0	0	0	0	68	7	8	0	3	6	89	0	181	728
8:45 AM	0	0	0	0	87	8	10	0	5	6	98	0	214	701
9:00 AM	0	0	0	0	68	5	7	0	0	4	83	0	167	656
9:15 AM	0	0	0	0	65	6	7	0	4	4	80	0	166	658
9:30 AM	0	0	0	0	58	7	11	0	3	4	71	0	154	675
9:45 AM	0	0	0	0	76	9	8	0	3	2	70	0	168	710
10:00 AM	0	0	0	0	80	7	7	0	2	1	73	0	170	743
10:15 AM	0	0	0	0	81	13	7	0	1	4	77	0	183	772
10:30 AM	0	0	0	0	80	11	7	0	2	3	86	0	189	775
10:45 AM	0	0	0	0	79	10	10	0	5	6	91	0	201	800
11:00 AM	0	0	0	1	73	13	13	0	10	6	83	0	199	782
11:15 AM	0	0	0	0	67	10	10	0	7	6	86	0	186	810
11:30 AM	0	0	0	0	87	10	12	0	4	8	93	0	214	817
11:45 AM	0	0	0	0	77	8	9	0	6	3	80	0	183	826
12:00 PM	0	0	0	0	98	10	16	0	6	7	90	0	227	890
12:15 PM	0	0	0	0	70	12	13	0	7	7	84	0	193	874
12:30 PM	0	0	0	0	97	7	15	0	3	8	93	0	223	900
12:45 PM	0	0	0	0	105	10	9	0	7	3	113	0	247	908
1:00 PM	0	0	0	0	87	9	14	0	7	8	86	0	211	890
1:15 PM	0	0	0	0	102	19	9	0	6	6	75	0	219	924
1:30 PM	0	0	0	0	86	10	17	0	8	8	102	0	231	933
1:45 PM	0	0	0	0	84	13	13	0	7	5	107	0	229	960
2:00 PM	0	0	0	2	98	9	17	0	6	5	108	0	245	985
2:15 PM	0	0	0	3	95	9	17	0	10	5	89	0	228	1006
2:30 PM	0	0	0	0	121	10	18	0	6	8	95	0	258	1053
2:45 PM	0	0	0	0	103	12	15	0	6	2	116	0	254	1033
3:00 PM	0	0	0	0	127	15	16	0	6	10	92	0	266	1044
3:15 PM	0	0	0	0	134	16	7	0	5	5	108	0	275	1027
3:30 PM	0	0	0	0	97	11	21	0	6	3	100	0	238	1029
3:45 PM	0	0	0	0	110	13	14	0	11	5	112	0	265	1047
4:00 PM	0	0	0	0	99	22	15	0	5	11	97	0	249	1041
4:15 PM	0	0	0	0	109	15	22	0	14	11	106	0	277	1071
4:30 PM	0	0	0	0	105	12	13	0	10	3	113	0	256	1076
4:45 PM	0	0	0	0	108	20	19	0	6	6	100	0	259	1128
5:00 PM	0	0	0	0	128	9	17	0	11	9	105	0	279	1128
5:15 PM	0	0	0	0	122	19	17	0	5	4	115	0	282	1153
5:30 PM	0	0	0	0	143	15	18	0	10	8	114	0	308	1161
5:45 PM	0	0	0	0	113	16	18	0	6	10	96	0	259	1135
6:00 PM	0	0	0	0	137	19	19	0	7	8	114	0	304	1157
6:15 PM	0	0	0	0	122	19	11	0	9	10	119	0	290	0
6:30 PM	0	0	0	0	131	15	18	0	10	6	102	0	282	0
6:45 PM	0	0	0	0	117	21	19	0	8	6	110	0	281	0
12 HR TOTAL	0	0	0	6	4395	537	634	0	277	262	4589	0	10700	
24 HR TOTAL	0	0	0	7	5439	665	785	0	343	324	5679	0	13242	

Intersection Peak Hour

AM Peak 7:45	0	0	0	0	271	24	46	0	13	12	407	0	
PM Peak 5:30	0	0	0	0	515	69	66	0	32	36	443	0	
MID Peak 12:4	0	0	0	0	380	48	49	0	30	25	376	0	

Corridor Peak Hour

AM Peak 7:30	0	0	0	0	245	24	48	0	10	8	433	0	
PM Peak 5:00	0	0	0	0	506	59	70	0	32	31	430	0	
MID Peak 12:00	0	0	0	0	370	39	53	0	23	25	380	0	

TWELVE HOUR PEDESTRIAN COUNT
Date: Tuesday, 10/07/2004
Time: 7 AM - 7 PM
Northbound and Southbound Approach: Mars Avenue
Eastbound and Westbound Approach: Detroit Avenue

Start Time	North to South		East to West		South to North		West to East		Hourly Total Across Detroit Ave.
	Total	Hourly Total	Total	Hourly Total	Total	Hourly Total	Total	Hourly Total	
6:00 AM	0	0	0	0	0	0	0	0	0
6:15 AM	0	1	0	2	0	0	0	5	
6:30 AM	0	1	0	3	0	0	0	13	
6:45 AM	0	1	0	3	0	0	0	26	
7:00 AM	1	1	2	3	0	0	5	39	1
7:15 AM	0	0	1	1	0	0	8	38	
7:30 AM	0	0	0	0	0	0	13	40	
7:45 AM	0	1	0	4	0	0	13	44	
8:00 AM	0	1	0	5	0	0	4	44	1
8:15 AM	0	4	0	6	0	0	10	42	
8:30 AM	1	4	4	11	0	1	17	33	
8:45 AM	0	5	1	9	0	2	13	22	
9:00 AM	3	6	1	9	0	4	2	12	10
9:15 AM	0	5	5	13	1	6	1	21	
9:30 AM	2	6	2	13	1	9	6	28	
9:45 AM	1	8	1	18	2	11	3	30	
10:00 AM	2	12	5	26	2	13	11	36	25
10:15 AM	1	12	5	25	4	13	8	33	
10:30 AM	4	13	7	23	3	14	8	31	
10:45 AM	5	14	9	27	4	13	9	26	
11:00 AM	2	13	4	20	2	11	8	26	24
11:15 AM	2	17	3	28	5	14	6	30	
11:30 AM	5	21	11	35	2	13	3	29	
11:45 AM	4	20	2	30	2	14	9	30	
12:00 PM	6	21	12	32	5	18	12	28	39
12:15 PM	6	17	10	26	4	16	5	21	
12:30 PM	4	16	6	22	3	14	4	26	
12:45 PM	5	18	4	29	6	17	5	27	
1:00 PM	2	19	6	30	3	17	7	30	36
1:15 PM	5	26	6	42	2	18	10	30	
1:30 PM	6	28	13	46	6	19	5	23	
1:45 PM	6	29	5	46	6	17	8	32	
2:00 PM	9	27	18	45	4	12	7	28	39
2:15 PM	7	27	10	46	3	14	3	32	
2:30 PM	7	37	13	75	4	16	14	39	
2:45 PM	4	35	4	106	1	17	4	36	
3:00 PM	9	42	19	119	8	18	11	43	60
3:15 PM	17	45	39	122	5	17	10	42	
3:30 PM	5	33	44	93	5	14	11	44	
3:45 PM	11	35	17	55	2	15	11	46	
4:00 PM	12	31	22	50	5	17	10	40	48
4:15 PM	5	27	10	36	2	18	12	47	
4:30 PM	7	32	6	46	6	20	13	48	
4:45 PM	7	32	12	47	4	24	5	49	
5:00 PM	8	28	8	36	8	30	17	49	58
5:15 PM	10	22	20	30	4	26	13	40	
5:30 PM	7	17	7	12	10	27	14	40	
5:45 PM	3	16	1	7	10	20	5	34	
6:00 PM	2	22	2	12	2	21	8	35	43
6:15 PM	5		2		5		13		
6:30 PM	6		2		3		8		
6:45 PM	9		6		11		6		
12 HR TOTAL	223		387		151		408		

NINE HOUR COUNT

Date: Tuesday, 10/07/2008
Time: 7-10 AM, 11 AM - 2 PM, 3 - 6 PM
Northbound and Southbound Approach: Andrews Avenue / Elmwood Avenue
Eastbound and Westbound Approach: Detroit Avenue
Permormed By: RAW

Trucks:	2.7%
Buses:	1.4%
9 Hour to 24 Hour Multiplier:	1.71
Seasonal Adjustment Factor:	0.948
Intersection Peak Hour =	

	Andrews SB APPROACH			Detroit WB APPROACH			Elmwood NB APPROACH			Detroit EB APPROACH			TOTAL	HR TOTAL
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
7:00 AM	1	4	6	3	21	4	6	0	0	4	63	6	118	741
7:15 AM	3	5	7	1	31	6	5	5	2	8	63	6	142	855
7:30 AM	5	4	7	8	39	6	11	6	1	13	104	6	210	922
7:45 AM	3	9	11	4	63	7	8	11	2	7	142	4	271	897
8:00 AM	8	11	8	8	74	11	10	7	2	10	74	9	232	880
8:15 AM	5	11	3	2	80	6	6	6	3	6	92	9	209	854
8:30 AM	4	3	6	6	58	8	3	6	3	18	63	7	185	844
8:45 AM	8	9	11	2	71	6	10	4	9	24	95	5	254	843
9:00 AM	3	9	4	4	72	12	9	6	4	7	74	2	206	746
9:15 AM	4	5	6	3	87	5	4	2	3	5	92	3	199	
9:30 AM	5	7	6	5	59	6	5	9	5	7	66	4	184	
9:45 AM	4	6	6	11	56	3	3	4	6	4	53	1	157	
10:00 AM														
10:15 AM														
10:30 AM														
10:45 AM														
11:00 AM	7	0	3	13	76	16	9	6	8	5	87	8	238	955
11:15 AM	2	9	5	6	82	6	3	11	2	10	79	8	223	977
11:30 AM	5	3	8	9	103	9	3	5	3	12	103	6	269	1014
11:45 AM	5	7	13	6	78	6	15	4	7	3	77	4	225	1011
12:00 PM	6	2	6	10	113	3	7	8	2	5	95	3	260	1069
12:15 PM	2	5	7	16	96	12	8	4	5	4	97	4	260	1087
12:30 PM	7	1	9	8	101	10	10	1	8	6	96	9	266	1126
12:45 PM	4	6	14	7	101	11	12	6	5	11	102	4	283	1120
1:00 PM	5	15	17	11	92	16	4	1	5	3	105	4	278	1074
1:15 PM	9	10	15	10	129	8	4	6	2	9	90	7	299	
1:30 PM	3	6	18	5	83	8	9	0	8	7	109	4	260	
1:45 PM	6	3	14	7	83	5	6	2	3	1	102	5	237	
2:00 PM														
2:15 PM														
2:30 PM														
2:45 PM														
3:00 PM	8	10	7	6	135	5	7	4	11	11	115	4	323	1235
3:15 PM	9	16	9	8	136	12	6	8	7	13	99	3	326	1217
3:30 PM	1	5	7	5	100	8	5	7	7	4	111	6	266	1196
3:45 PM	6	9	3	11	128	6	10	12	6	12	111	8	320	1226
4:00 PM	6	4	6	7	125	7	6	10	8	6	116	4	305	1224
4:15 PM	6	14	6	8	115	8	9	9	5	9	109	7	305	1272
4:30 PM	10	7	13	12	100	8	9	14	7	7	102	7	296	1285
4:45 PM	7	9	11	11	129	11	5	13	5	3	103	11	318	1282
5:00 PM	8	10	12	9	129	8	6	17	9	7	123	15	353	1317
5:15 PM	11	13	7	10	128	16	8	6	4	3	106	6	318	
5:30 PM	9	9	6	10	114	10	5	6	5	3	106	10	293	
5:45 PM	11	9	17	17	140	12	6	11	7	4	109	10	353	
9 HR TOTAL	206	265	314	279	3287	301	252	237	179	271	3433	217	9241	
24 HR TOTAL	334	430	509	452	5328	488	409	384	290	439	5566	352	14980	

Intersection Peak Hours

AM Peak 7:30	21	35	29	22	236	30	35	30	8	36	412	28
PM Peak 5:00	39	41	42	46	511	46	25	40	25	17	444	41
MID Peak 12:3(	25	32	55	36	423	45	30	14	20	29	393	24

Corridor Peak Hours

AM Peak 7:30	21	35	29	22	236	30	35	30	8	36	412	28
PM Peak 5:00	39	41	42	46	511	46	25	40	25	17	444	41
MID Peak 12:0(	19	14	36	41	411	36	37	19	20	26	390	20

NINE HOUR PEDESTRIAN COUNT
Date: Tuesday, 10/07/2008
Time: 7-10 AM, 11 AM - 2 PM, 3 - 6 PM
Northbound and Southbound Approach: Andrews Avenue / Elmwood Avenue
Eastbound and Westbound Approach: Detroit Avenue

Start Time	North to South		East to West		South to North		West to East		Hourly Total Across Detroit Ave.
	Total	Hourly Total	Total	Hourly Total	Total	Hourly Total	Total	Hourly Total	
6:00 AM									
6:15 AM									
6:30 AM									
6:45 AM									
7:00 AM	1	9	3	8	1	2	7	52	11
7:15 AM	5	12	1	7	0	2	15	50	
7:30 AM	3	9	1	10	1	4	18	51	
7:45 AM	0	6	3	16	0	6	12	57	
8:00 AM	4	10	2	26	1	7	5	64	17
8:15 AM	2	6	4	33	2	6	16	71	
8:30 AM	0	5	7	41	3	7	24	57	
8:45 AM	4	6	13	43	1	4	19	40	
9:00 AM	0	2	9	33	0	4	12	23	6
9:15 AM	1		12		3		2		
9:30 AM	1		9		0		7		
9:45 AM	0		3		1		2		
10:00 AM									
10:15 AM									
10:30 AM									
10:45 AM									
11:00 AM	3	5	13	60	1	7	10	36	12
11:15 AM	0	7	15	66	0	10	10	44	
11:30 AM	2	13	17	72	1	10	7	51	
11:45 AM	0	14	15	62	5	12	9	54	
12:00 PM	5	19	19	56	4	10	18	67	29
12:15 PM	6	15	21	48	0	8	17	61	
12:30 PM	3	12	7	46	3	11	10	57	
12:45 PM	5	10	9	53	3	10	22	56	
1:00 PM	1	6	11	73	2	28	12	49	34
1:15 PM	3		19		3		13		
1:30 PM	1		14		2		9		
1:45 PM	1		29		21		15		
2:00 PM									
2:15 PM									
2:30 PM									
2:45 PM									
3:00 PM	0	11	46	196	10	45	22	84	56
3:15 PM	4	16	63	171	23	36	30	77	
3:30 PM	1	19	57	120	8	19	17	54	
3:45 PM	6	20	30	84	4	11	15	48	
4:00 PM	5	15	21	80	1	9	15	45	24
4:15 PM	7	12	12	77	6	13	7	50	
4:30 PM	2	6	21	86	0	8	11	54	
4:45 PM	1	4	26	75	2	10	12	57	
5:00 PM	2	10	18	73	5	11	20	63	21
5:15 PM	1		21		1		11		
5:30 PM	0		10		2		14		
5:45 PM	7		24		3		18		
6:00 PM									
6:15 PM									
6:30 PM									
6:45 PM									
9 HR TOTAL	87		605		123		483		

TWELVE HOUR COUNT

Date: Wednesday, 10/08/2004
Time: 7 AM - 7 PM
Northbound and Southbound Approach: Cook Avenue / City Center Plaza
Eastbound and Westbound Approach: Detroit Avenue
Performed By: RAW

Trucks: 1.9%
Buses: 1.4%
12 Hour to 24 Hour Multiplier: 1.31
Seasonal Adjustment Factor: 0.948
Peak Hour =

	Cook SB APPROACH			Detroit WB APPROACH			City Center NB APPROACH			Detroit EB APPROACH			TOTAL	HR TOTAL
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	114
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	277
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	458
7:00 AM	1	0	4	2	26	1	0	0	0	2	77	1	114	699
7:15 AM	3	0	3	8	47	1	0	0	1	2	91	7	163	778
7:30 AM	4	0	5	5	47	2	0	0	1	2	109	6	181	762
7:45 AM	5	0	10	14	67	4	0	0	1	0	126	14	241	748
8:00 AM	8	1	10	11	65	2	2	3	2	4	80	5	193	703
8:15 AM	4	0	7	5	45	0	3	1	2	3	64	13	147	660
8:30 AM	6	1	5	5	57	5	3	1	1	2	78	3	167	686
8:45 AM	8	0	9	4	59	6	4	1	2	2	90	11	196	684
9:00 AM	6	1	10	2	57	3	3	0	3	2	59	4	150	674
9:15 AM	4	2	11	8	57	0	2	1	5	5	73	5	173	726
9:30 AM	7	0	6	6	59	0	3	3	6	6	63	6	165	764
9:45 AM	6	1	2	4	70	7	3	5	6	4	71	7	186	822
10:00 AM	5	0	6	2	80	3	11	4	5	10	74	2	202	885
10:15 AM	7	2	5	12	90	1	7	2	8	14	63	0	211	886
10:30 AM	5	2	10	7	75	3	5	1	11	10	89	5	223	908
10:45 AM	2	0	3	8	84	9	7	3	11	6	94	2	229	905
11:00 AM	3	0	4	3	73	11	7	1	9	17	91	4	223	892
11:15 AM	4	1	5	13	81	6	7	2	10	14	83	7	233	940
11:30 AM	5	0	5	1	87	8	7	3	9	7	85	3	220	992
11:45 AM	8	4	5	4	78	5	13	0	13	5	78	3	216	1001
12:00 PM	3	3	9	4	114	11	13	3	10	13	85	3	271	1059
12:15 PM	9	2	10	7	89	15	16	2	23	11	96	5	285	1045
12:30 PM	9	1	3	2	83	6	8	3	14	16	81	3	229	1025
12:45 PM	6	1	5	3	106	5	12	2	11	15	104	4	274	1038
1:00 PM	8	3	7	6	76	9	24	5	11	11	92	3	257	1041
1:15 PM	3	1	6	3	87	9	12	2	13	17	106	6	265	1067
1:30 PM	5	3	6	6	82	12	12	4	8	20	82	2	242	1086
1:45 PM	5	2	1	3	87	8	13	4	23	13	111	7	277	1157
2:00 PM	6	4	9	7	97	11	15	5	21	13	94	1	283	1184
2:15 PM	4	4	10	10	94	11	18	7	18	5	102	1	284	1219
2:30 PM	9	3	9	9	129	9	14	4	22	10	90	5	313	1272
2:45 PM	5	2	9	11	125	5	8	1	25	8	97	8	304	1252
3:00 PM	7	0	9	8	110	8	11	3	11	22	119	10	318	1230
3:15 PM	14	4	13	10	136	8	11	1	11	10	113	6	337	1212
3:30 PM	6	1	11	11	107	3	8	2	13	5	110	16	293	1113
3:45 PM	5	1	6	10	126	14	10	2	12	9	77	10	282	1097
4:00 PM	9	4	5	10	121	9	9	3	14	18	93	5	300	1112
4:15 PM	7	0	7	5	91	7	11	1	19	3	82	5	238	1130
4:30 PM	8	1	11	9	117	12	8	3	12	2	87	7	277	1183
4:45 PM	8	1	13	7	131	7	4	5	10	4	103	4	297	1241
5:00 PM	7	0	13	4	144	8	10	2	5	4	119	2	318	1266
5:15 PM	10	0	14	13	110	13	17	2	10	13	84	5	291	1296
5:30 PM	7	1	6	14	128	11	10	5	16	12	118	7	335	1318
5:45 PM	17	3	9	9	120	9	14	4	20	13	99	5	322	1300
6:00 PM	7	2	8	5	133	12	17	4	23	20	115	2	348	1295
6:15 PM	7	4	7	4	122	9	12	5	17	9	117	0	313	0
6:30 PM	8	4	7	7	117	8	13	2	23	16	108	4	317	0
6:45 PM	9	7	11	7	103	14	9	5	22	15	110	5	317	0
12 HR TOTAL	309	77	359	328	4391	340	426	122	543	444	4432	249	12020	
24 HR TOTAL	382	95	444	406	5434	421	527	151	672	549	5485	308	14876	

Intersection Peak Hour

AM Peak 7:15	20	1	28	38	226	9	2	3	5	8	406	32	
PM Peak 5:30	38	10	30	32	503	41	53	18	76	54	449	14	
MID Peak 12:0	27	7	27	16	392	37	49	10	58	55	366	15	

Corridor Peak Hour

AM Peak 7:30	21	1	32	35	224	8	5	4	6	9	379	38	
PM Peak 5:00	41	4	42	40	502	41	51	13	51	42	420	19	
MID Peak 12:0	27	7	27	16	392	37	49	10	58	55	366	15	

TWELVE HOUR PEDESTRIAN COUNT
Date: Wednesday, 10/08/2004
Time: 7 AM - 7 PM
Northbound and Southbound Approach: Cook Avenue / City Center Plaza
Eastbound and Westbound Approach: Detroit Avenue

Start Time	North to South		East to West		South to North		West to East		Hourly Total Across Detroit Ave.
	Total	Hourly Total	Total	Hourly Total	Total	Hourly Total	Total	Hourly Total	
6:00 AM	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	3	
6:30 AM	0	3	0	2	0	0	0	10	
6:45 AM	0	4	0	2	0	1	0	21	
7:00 AM	0	9	0	4	0	2	3	41	11
7:15 AM	3	10	2	6	0	2	7	48	
7:30 AM	1	7	0	3	1	5	11	44	
7:45 AM	5	6	2	4	1	4	20	39	
8:00 AM	1	1	1	3	0	3	8	24	4
8:15 AM	0	1	0	2	3	3	5	18	
8:30 AM	0	4	1	7	0	0	6	13	
8:45 AM	0	4	1	8	0	0	5	9	
9:00 AM	1	7	0	11	0	6	2	9	13
9:15 AM	3	7	5	12	0	12	0	13	
9:30 AM	0	9	2	16	0	15	2	18	
9:45 AM	3	13	4	22	6	17	5	20	
10:00 AM	1	10	1	22	6	12	6	21	22
10:15 AM	5	9	9	22	3	8	5	15	
10:30 AM	4	4	8	13	2	5	4	12	
10:45 AM	0	3	4	8	1	6	6	8	
11:00 AM	0	7	1	5	2	8	0	4	15
11:15 AM	0	7	0	12	0	8	2	9	
11:30 AM	3	9	3	20	3	8	0	10	
11:45 AM	4	9	1	24	3	6	2	23	
12:00 PM	0	6	8	28	2	4	5	30	10
12:15 PM	2	10	8	26	0	3	3	29	
12:30 PM	3	12	7	18	1	3	13	28	
12:45 PM	1	10	5	17	1	8	9	31	
1:00 PM	4	11	6	23	1	11	4	35	22
1:15 PM	4	16	0	27	0	25	2	38	
1:30 PM	1	21	6	31	6	29	16	47	
1:45 PM	2	25	11	28	4	27	13	38	
2:00 PM	9	32	10	27	15	25	7	31	57
2:15 PM	9	31	4	23	4	17	11	36	
2:30 PM	5	37	3	49	4	18	7	33	
2:45 PM	9	40	10	68	2	27	6	38	
3:00 PM	8	32	6	77	7	29	12	39	61
3:15 PM	15	32	30	84	5	22	8	40	
3:30 PM	8	19	22	61	13	28	12	43	
3:45 PM	1	17	19	47	4	19	7	45	
4:00 PM	8	27	13	47	0	17	13	52	44
4:15 PM	2	25	7	51	11	17	11	42	
4:30 PM	6	24	8	52	4	7	14	35	
4:45 PM	11	23	19	58	2	8	14	27	
5:00 PM	6	17	17	49	0	10	3	21	27
5:15 PM	1	12	8	35	1	10	4	32	
5:30 PM	5	14	14	34	5	10	6	29	
5:45 PM	5	12	10	28	4	7	8	28	
6:00 PM	1	7	3	24	0	5	14	31	12
6:15 PM	3		7		1		1		
6:30 PM	3		8		2		5		
6:45 PM	0		6		2		11		
12 HR TOTAL	166		320		132		338		

THIRTEEN HOUR COUNT
Date: Tuesday, 10/14/2004
Time: 6 AM - 7 PM
Northbound and Southbound Approach: Warren Road
Eastbound and Westbound Approach: Detroit Avenue
Performed By: MJG & RAW

Trucks: 2.1%
Buses: 1.4%
13 Hour to 24 Hour Multiplier: 1.24
Seasonal Adjustment Factor: 0.948
Peak Hour =

	Warren SB APPROACH			Detroit WB APPROACH			Warren NB APPROACH			Detroit EB APPROACH			TOTAL	HR TOTAL
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
6:00 AM	0	12	0	1	6	3	8	10	3	12	21	1	77	543
6:15 AM	0	13	0	1	15	6	20	10	9	14	22	1	111	665
6:30 AM	1	21	0	0	14	2	44	10	11	22	28	3	156	821
6:45 AM	0	12	0	1	20	8	60	28	17	17	36	0	199	988
7:00 AM	1	29	1	3	16	12	25	27	13	28	44	0	199	1194
7:15 AM	1	32	0	2	29	20	41	30	17	39	55	1	267	1329
7:30 AM	1	37	0	2	32	23	54	49	16	32	76	1	323	1372
7:45 AM	2	48	0	3	52	29	63	43	47	29	87	2	405	1328
8:00 AM	1	52	1	4	49	30	40	36	34	28	53	3	334	1224
8:15 AM	1	34	0	1	41	20	51	43	33	28	55	3	310	1174
8:30 AM	3	32	1	2	47	13	35	34	31	30	49	2	279	1155
8:45 AM	1	24	1	4	50	25	54	33	20	32	54	3	301	1175
9:00 AM	2	33	1	3	53	17	36	44	13	16	59	7	284	1177
9:15 AM	5	29	0	4	49	30	52	29	18	24	51	2	291	1171
9:30 AM	2	28	0	2	50	21	47	32	19	33	62	3	299	1175
9:45 AM	2	36	0	0	67	15	51	34	22	25	47	4	303	1192
10:00 AM	4	27	0	4	48	32	41	29	20	26	46	2	278	1193
10:15 AM	4	27	0	5	65	28	22	23	25	31	64	1	295	1228
10:30 AM	8	30	0	7	68	19	43	24	20	22	71	4	316	1263
10:45 AM	1	20	0	2	64	21	40	31	27	29	66	3	304	1287
11:00 AM	4	26	1	2	62	17	32	37	25	18	82	7	313	1310
11:15 AM	2	21	0	3	82	29	35	36	21	26	71	4	330	1342
11:30 AM	4	23	0	6	80	33	30	31	20	32	77	4	340	1375
11:45 AM	3	27	0	4	75	19	44	24	26	26	78	1	327	1395
12:00 PM	6	24	0	7	79	28	40	38	25	29	61	8	345	1441
12:15 PM	4	21	0	5	81	27	53	43	18	24	80	7	363	1477
12:30 PM	3	29	0	3	86	25	41	28	18	20	100	7	360	1480
12:45 PM	3	23	0	7	90	40	29	39	21	30	87	4	373	1473
1:00 PM	4	25	0	6	78	31	49	46	15	40	82	5	381	1464
1:15 PM	5	30	0	5	78	27	48	32	18	38	81	4	366	1414
1:30 PM	4	25	2	5	98	29	33	25	24	34	69	5	353	1405
1:45 PM	6	30	0	3	65	29	35	37	22	40	93	4	364	1400
2:00 PM	5	31	0	4	68	24	41	41	19	28	68	4	331	1407
2:15 PM	3	25	1	5	86	37	39	29	35	32	64	1	357	1509
2:30 PM	1	21	0	2	67	43	36	29	34	29	79	7	348	1572
2:45 PM	2	33	0	3	72	26	49	33	40	30	77	6	371	1644
3:00 PM	3	42	1	2	92	47	44	36	33	46	84	3	433	1697
3:15 PM	1	39	0	3	100	48	39	36	38	42	73	1	420	1655
3:30 PM	2	39	1	2	77	63	33	39	39	34	85	6	420	1609
3:45 PM	3	44	0	3	104	50	26	33	39	36	78	8	424	1584
4:00 PM	3	48	0	4	77	39	29	45	46	32	65	3	391	1588
4:15 PM	1	35	0	2	79	37	40	33	45	36	61	5	374	1645
4:30 PM	6	43	0	4	86	46	29	38	41	38	62	2	395	1717
4:45 PM	4	44	1	2	69	59	53	44	40	37	69	6	428	1753
5:00 PM	6	48	1	5	102	57	25	54	39	36	69	6	448	1769
5:15 PM	8	54	0	8	99	55	25	51	36	25	81	4	446	1730
5:30 PM	6	53	0	3	94	38	43	31	36	45	74	8	431	1657
5:45 PM	3	45	0	5	99	40	39	41	42	42	79	9	444	1591
6:00 PM	3	40	0	4	101	34	39	34	48	38	66	2	409	1485
6:15 PM	6	27	0	1	86	31	23	33	35	44	80	7	373	0
6:30 PM	3	26	0	3	80	27	33	40	35	35	77	6	365	0
6:45 PM	4	15	1	2	85	26	19	32	29	34	89	2	338	0
13 HR TOTAL	161	1632	14	174	3510	1535	2003	1767	1415	1593	3486	202	17492	
24 HR TOTAL	189	1918	16	205	4126	1804	2355	2077	1663	1873	4098	237	20562	

Intersection Peak Hour

AM Peak 7:30	5	171	1	10	174	102	211	171	130	117	271	9
PM Peak 5:00	23	200	1	21	394	190	132	177	153	148	303	27
MID Peak 12:30	15	107	0	21	332	123	167	145	72	128	350	20

Corridor Peak Hour

AM Peak 7:30	5	171	1	10	174	102	211	171	130	117	271	9
PM Peak 5:00	23	200	1	21	394	190	132	177	153	148	303	27
MID Peak 12:00	16	97	0	22	336	120	163	148	82	103	328	26

THIRTEEN HOUR PEDESTRIAN COUNT
Date: Tuesday, 10/14/2004
Time: 6 AM - 7 PM
Northbound and Southbound Approach: Warren Road
Eastbound and Westbound Approach: Detroit Avenue

Start Time	North to South		East to West		South to North		West to East		Hourly Total Across Detroit Ave.
	Total	Hourly Total	Total	Hourly Total	Total	Hourly Total	Total	Hourly Total	
6:00 AM	0	1	1	4	0	3	0	8	4
6:15 AM	0	3	1	6	1	9	0	10	
6:30 AM	1	3	0	5	1	8	4	12	
6:45 AM	0	4	2	9	1	9	4	24	
7:00 AM	2	11	2	12	6	9	2	30	20
7:15 AM	0	15	1	14	0	4	2	41	
7:30 AM	2	19	4	19	2	7	16	52	
7:45 AM	7	19	5	19	1	9	10	39	
8:00 AM	6	18	4	23	1	12	13	46	30
8:15 AM	4	19	6	22	3	15	13	47	
8:30 AM	2	17	4	26	4	18	3	42	
8:45 AM	6	18	9	31	4	15	17	49	
9:00 AM	7	19	3	30	4	14	14	41	33
9:15 AM	2	17	10	30	6	11	8	34	
9:30 AM	3	20	9	30	1	9	10	36	
9:45 AM	7	18	8	31	3	14	9	35	
10:00 AM	5	16	3	30	1	14	7	42	30
10:15 AM	5	17	10	33	4	16	10	44	
10:30 AM	1	16	10	27	6	18	9	39	
10:45 AM	5	21	7	28	3	13	16	37	
11:00 AM	6	23	6	33	3	12	9	38	35
11:15 AM	4	26	4	50	6	16	5	44	
11:30 AM	6	26	11	66	1	12	7	61	
11:45 AM	7	27	12	70	2	25	17	84	
12:00 PM	9	32	23	70	7	32	15	81	64
12:15 PM	4	24	20	60	2	35	22	81	
12:30 PM	7	34	15	52	14	44	30	72	
12:45 PM	12	35	12	52	9	34	14	49	
1:00 PM	1	39	13	55	10	35	15	46	74
1:15 PM	14	42	12	44	11	32	13	40	
1:30 PM	8	34	15	42	4	33	7	40	
1:45 PM	16	30	15	40	10	32	11	47	
2:00 PM	4	22	2	37	7	31	9	50	53
2:15 PM	6	23	10	43	12	26	13	56	
2:30 PM	4	31	13	62	3	33	14	62	
2:45 PM	8	29	12	79	9	42	14	62	
3:00 PM	5	25	8	82	2	37	15	65	62
3:15 PM	14	26	29	89	19	36	19	63	
3:30 PM	2	19	30	75	12	20	14	60	
3:45 PM	4	20	15	58	4	15	17	62	
4:00 PM	6	23	15	63	1	16	13	57	39
4:15 PM	7	28	15	66	3	17	16	57	
4:30 PM	3	25	13	58	7	15	16	54	
4:45 PM	7	34	20	57	5	11	12	44	
5:00 PM	11	33	18	46	2	9	13	55	42
5:15 PM	4	30	7	38	1	9	13	49	
5:30 PM	12	33	12	47	3	10	6	45	
5:45 PM	6	23	9	48	3	7	23	49	
6:00 PM	8	18	10	42	2	5	7	50	23
6:15 PM	7		16		2		9		
6:30 PM	2		13		0		10		
6:45 PM	1		3		1		24		
13 HR TOTAL	280		527		229		609		

NINE HOUR COUNT

Date: Wednesday, 10/08/2008
Time: 7-10 AM, 11 AM - 2 PM, 3 - 6 PM
Northbound and Southbound Approach: St. Charles Avenue
Eastbound and Westbound Approach: Detroit Avenue
Permormed By: MJG

Trucks: 1.7%
Buses: 1.5%
9 Hour to 24 Hour Multiplier: 1.71
Seasonal Adjustment Factor: 0.93
Intersection Peak Hour =

	St Charles SB APPROACH			Detroit WB APPROACH			St Charles NB APPROACH			Detroit EB APPROACH			TOTAL	HR TOTAL
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
7:00 AM	1	12	1	2	31	3	2	11	1	3	67	25	159	866
7:15 AM	1	6	3	4	40	2	8	20	2	7	70	22	185	925
7:30 AM	1	11	4	5	64	3	4	14	3	7	96	27	239	941
7:45 AM	3	11	6	7	70	5	8	19	0	5	117	32	283	919
8:00 AM	4	5	7	2	67	5	5	22	2	2	70	27	218	853
8:15 AM	2	7	4	3	51	7	6	20	2	9	61	29	201	813
8:30 AM	4	8	1	10	63	4	7	20	2	5	72	21	217	828
8:45 AM	4	8	1	4	61	9	5	9	3	2	85	26	217	789
9:00 AM	3	3	3	6	60	9	10	7	4	4	57	12	178	767
9:15 AM	6	9	6	2	71	6	6	13	3	6	81	7	216	
9:30 AM	5	4	5	4	60	7	3	9	4	6	59	12	178	
9:45 AM	6	9	4	2	60	6	7	8	4	13	67	9	195	
10:00 AM														
10:15 AM														
10:30 AM														
10:45 AM														
11:00 AM	6	7	5	5	70	3	7	9	4	5	91	10	222	928
11:15 AM	8	6	3	2	73	6	3	3	6	12	86	6	214	985
11:30 AM	6	10	2	1	105	9	4	7	4	1	87	8	244	1024
11:45 AM	7	10	5	5	95	7	6	4	9	7	79	14	248	1026
12:00 PM	15	12	12	7	107	5	5	3	4	7	98	4	279	1021
12:15 PM	5	9	3	5	87	5	7	4	1	9	109	9	253	990
12:30 PM	10	6	8	6	90	4	5	6	3	6	97	7	248	986
12:45 PM	13	8	3	4	81	5	11	8	7	6	93	12	241	982
1:00 PM	10	9	9	4	90	3	0	7	1	13	95	7	248	997
1:15 PM	7	6	5	6	97	5	3	7	4	6	95	8	249	
1:30 PM	17	7	7	9	97	3	2	4	2	5	83	8	244	
1:45 PM	6	10	4	6	84	10	8	4	4	9	101	10	256	
2:00 PM														
2:15 PM														
2:30 PM														
2:45 PM														
3:00 PM	8	8	8	7	117	6	3	10	3	12	106	8	294	1197
3:15 PM	10	6	6	6	125	10	8	13	6	10	115	9	324	1185
3:30 PM	16	24	11	2	92	9	7	16	10	8	102	9	306	1119
3:45 PM	23	13	13	4	116	11	5	6	4	1	67	10	273	1118
4:00 PM	20	14	9	6	109	8	7	2	12	3	81	11	282	1163
4:15 PM	16	11	10	2	91	6	7	5	3	8	95	4	258	1256
4:30 PM	26	23	8	3	112	8	6	11	4	4	94	6	305	1330
4:45 PM	18	24	4	6	123	12	5	11	9	5	94	6	318	1332
5:00 PM	44	19	9	7	138	10	4	3	7	8	110	16	375	1342
5:15 PM	37	15	11	8	118	4	2	9	3	3	117	5	332	
5:30 PM	18	12	9	0	132	6	2	10	1	4	108	5	307	
5:45 PM	13	11	7	9	143	6	5	7	3	4	108	11	328	
9 HR TOTAL	399	371	216	171	3190	227	195	341	144	225	3203	452	9134	
24 HR TOTAL	635	590	344	272	5073	361	310	542	229	358	5094	719	14526	

Intersection Peak Hours

AM Peak 7:30	10	34	21	17	252	20	23	75	7	23	344	115	
PM Peak 5:00	112	57	36	24	531	26	14	29	14	19	443	37	
MID Peak 11:4	37	37	28	23	379	21	23	17	17	29	383	34	

Corridor Peak Hours

AM Peak 7:30	10	34	21	17	252	20	23	75	7	23	344	115	
PM Peak 5:00	112	57	36	24	531	26	14	29	14	19	443	37	
MID Peak 12:0	43	35	26	22	365	19	26	21	15	28	387	32	

NINE HOUR PEDESTRIAN COUNT
Date: Wednesday, 10/08/2008
Time: 7-10 AM, 11 AM - 2 PM, 3 - 6 PM
Northbound and Southbound Approach: St. Charles Avenue
Eastbound and Westbound Approach: Detroit Avenue

Start Time	North to South Total	North to South Hourly Total	East to West Total	East to West Hourly Total	South to North Total	South to North Hourly Total	West to East Total	West to East Hourly Total	Hourly Total Across Detroit Ave.
6:00 AM									
6:15 AM									
6:30 AM									
6:45 AM									
7:00 AM	3	16	2	16	7	19	6	29	35
7:15 AM	3	21	5	21	1	14	7	32	
7:30 AM	10	18	2	18	7	13	6	26	
7:45 AM	0	13	7	23	4	9	10	28	
8:00 AM	8	20	7	20	2	8	9	29	28
8:15 AM	0	14	2	19	0	11	1	24	
8:30 AM	5	18	7	21	3	14	8	27	
8:45 AM	7	15	4	19	3	13	11	21	
9:00 AM	2	22	6	26	5	16	4	24	38
9:15 AM	4		4		3		4		
9:30 AM	2		5		2		2		
9:45 AM	14		11		6		14		
10:00 AM									
10:15 AM									
10:30 AM									
10:45 AM									
11:00 AM	3	12	7	26	0	11	3	24	23
11:15 AM	5	15	3	41	7	16	5	24	
11:30 AM	2	15	8	46	3	16	10	31	
11:45 AM	2	24	8	53	1	20	8	36	
12:00 PM	6	24	22	59	5	27	3	41	51
12:15 PM	5	25	8	52	7	29	12	44	
12:30 PM	11	27	15	54	7	28	14	43	
12:45 PM	2	24	14	55	8	27	12	43	
1:00 PM	7	27	15	54	7	32	6	45	59
1:15 PM	7		10		6		11		
1:30 PM	8		16		6		14		
1:45 PM	5		13		13		14		
2:00 PM									
2:15 PM									
2:30 PM									
2:45 PM									
3:00 PM	5	18	15	93	3	22	10	42	40
3:15 PM	10	18	39	94	8	21	17	43	
3:30 PM	1	12	27	68	10	18	9	45	
3:45 PM	2	22	12	59	1	16	6	57	
4:00 PM	5	24	16	67	2	17	11	63	41
4:15 PM	4	22	13	69	5	17	19	62	
4:30 PM	11	20	18	71	8	13	21	52	
4:45 PM	4	9	20	65	2	6	12	42	
5:00 PM	3	6	18	55	2	8	10	44	14
5:15 PM	2		15		1		9		
5:30 PM	0		12		1		11		
5:45 PM	1		10		4		14		
6:00 PM									
6:15 PM									
6:30 PM									
6:45 PM									
9 HR TOT	169		416		160		341		

THIRTEEN HOUR COUNT
Date: Tuesday, 10/14/2004
Time: 6 AM - 7 PM
Northbound and Southbound Approach: Belle Road
Eastbound and Westbound Approach: Detroit Avenue
Performed By: JTS & RAW

Trucks: 2.2%
Buses: 1.6%
13 Hour to 24 Hour Multiplier: 1.24
Seasonal Adjustment Factor: 0.948
Peak Hour =

	Belle SB APPROACH			Detroit WB APPROACH			Belle NB APPROACH			Detroit EB APPROACH			TOTAL	HR TOTAL
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
6:00 AM	2	0	2	3	9	1	0	2	0	0	19	0	38	235
6:15 AM	1	4	1	0	18	1	2	3	1	1	26	3	61	313
6:30 AM	1	3	1	3	13	2	3	5	1	3	21	6	62	421
6:45 AM	7	4	0	1	16	2	2	10	1	6	19	6	74	581
7:00 AM	4	7	2	7	28	3	3	7	2	8	38	7	116	768
7:15 AM	2	6	5	10	50	2	2	16	3	6	59	8	169	879
7:30 AM	7	12	7	11	47	4	5	24	2	7	84	12	222	915
7:45 AM	4	14	5	11	60	3	9	36	6	6	98	9	261	901
8:00 AM	9	12	8	8	59	3	12	28	9	10	60	9	227	845
8:15 AM	8	15	4	6	59	5	8	16	6	5	67	6	205	844
8:30 AM	9	16	6	4	53	6	3	21	6	11	69	4	208	850
8:45 AM	10	10	0	4	72	3	3	8	2	15	69	9	205	876
9:00 AM	7	17	9	6	71	8	5	11	6	13	69	4	226	890
9:15 AM	8	7	5	4	68	8	9	9	7	15	66	5	211	879
9:30 AM	5	14	5	6	62	10	8	5	9	17	83	10	234	918
9:45 AM	13	12	5	2	68	8	8	10	6	13	68	8	219	950
10:00 AM	8	13	3	6	75	6	12	13	4	6	66	3	215	979
10:15 AM	19	13	7	5	74	9	11	12	8	16	71	5	250	968
10:30 AM	9	9	3	8	87	10	6	10	9	14	94	7	266	963
10:45 AM	6	10	2	6	69	4	12	11	16	15	90	7	248	942
11:00 AM	6	12	6	6	52	5	13	4	14	6	75	5	204	995
11:15 AM	9	9	5	4	84	6	5	8	7	10	96	3	245	1063
11:30 AM	6	18	3	4	80	3	8	7	16	5	87	8	245	1066
11:45 AM	8	12	2	2	113	6	10	12	6	10	110	10	301	1097
12:00 PM	13	11	8	6	96	7	11	9	7	13	88	3	272	1079
12:15 PM	11	13	5	8	72	4	10	7	13	10	86	9	248	1049
12:30 PM	13	15	7	6	100	5	4	5	14	13	87	7	276	1039
12:45 PM	16	11	1	5	107	4	5	7	10	7	99	11	283	1042
1:00 PM	4	17	4	11	76	3	6	7	7	13	89	5	242	1001
1:15 PM	11	17	6	2	69	9	5	10	9	14	79	7	238	1039
1:30 PM	12	18	4	4	99	6	4	11	13	14	89	5	279	1093
1:45 PM	3	16	5	3	74	7	5	8	11	14	89	7	242	1076
2:00 PM	7	14	3	5	101	10	12	11	9	10	89	9	280	1113
2:15 PM	18	11	8	1	109	5	8	19	14	11	82	6	292	1132
2:30 PM	14	10	12	6	67	6	12	10	12	9	101	3	262	1150
2:45 PM	11	7	6	6	102	6	8	13	10	13	93	5	279	1184
3:00 PM	11	20	12	6	119	3	4	14	8	5	90	7	299	1182
3:15 PM	13	16	7	4	112	2	12	12	8	12	108	4	310	1139
3:30 PM	8	24	13	4	97	5	11	9	6	15	98	6	296	1080
3:45 PM	16	15	5	6	96	2	8	10	11	5	95	8	277	1074
4:00 PM	9	23	2	4	91	9	9	8	8	7	82	4	256	1008
4:15 PM	13	12	12	6	71	5	9	11	11	14	82	5	251	1066
4:30 PM	10	27	8	9	86	5	12	13	5	8	104	3	290	1103
4:45 PM	13	22	10	6	66	3	7	8	5	5	60	6	211	1122
5:00 PM	14	25	16	6	119	1	4	10	11	7	97	4	314	1225
5:15 PM	10	32	7	1	97	4	11	12	7	2	93	12	288	1231
5:30 PM	19	17	4	4	93	5	3	20	5	11	118	10	309	1193
5:45 PM	15	30	9	6	105	8	8	15	5	9	97	7	314	1156
6:00 PM	13	25	9	6	107	7	9	16	3	6	113	6	320	1022
6:15 PM	12	19	3	6	91	5	1	5	4	5	91	8	250	0
6:30 PM	11	19	5	6	87	6	4	11	7	6	103	7	272	0
6:45 PM	10	10	4	6	64	0	3	8	4	0	71	0	180	0
13 HR TOTAL	498	745	290	276	3960	260	364	587	384	476	4174	328	12342	
24 HR TOTAL	585	876	341	324	4655	306	428	690	451	560	4907	386	14508	

Intersection Peak Hour

AM Peak 7:30	28	63	24	36	225	15	34	104	23	28	309	36	
PM Peak 5:15	57	104	29	17	402	24	31	63	20	28	421	35	
MID Peak 11:45	45	51	22	22	381	22	35	33	40	46	371	29	

Corridor Peak Hour

AM Peak 7:30	28	53	24	36	225	15	34	104	23	28	309	36	
PM Peak 5:00	58	104	36	17	414	18	26	57	28	29	405	33	
MID Peak 12:00	53	50	21	25	375	20	30	28	44	43	360	30	

THIRTEEN HOUR PEDESTRIAN COUNT
Date: Tuesday, 10/14/2004
Time: 6 AM - 7 PM
Northbound and Southbound Approach: Belle Road
Eastbound and Westbound Approach: Detroit Avenue

Start Time	North to South		East to West		South to North		West to East		Hourly Total Across Detroit Ave.
	Total	Hourly Total	Total	Hourly Total	Total	Hourly Total	Total	Hourly Total	
6:00 AM	5	55	0	3	0	1	0	2	56
6:15 AM	7	77	3	5	0	1	0	8	
6:30 AM	12	91	0	3	0	2	1	13	
6:45 AM	31	96	0	7	1	4	1	18	
7:00 AM	27	87	2	11	0	5	6	18	92
7:15 AM	21	83	1	13	1	9	5	21	
7:30 AM	17	72	4	16	2	9	6	18	
7:45 AM	22	66	4	20	2	10	1	14	
8:00 AM	23	56	4	20	4	10	9	18	66
8:15 AM	10	39	3	16	1	10	2	12	
8:30 AM	11	36	9	17	3	11	2	13	
8:45 AM	12	33	4	10	2	9	5	19	
9:00 AM	6	26	0	19	4	9	3	26	35
9:15 AM	7	32	4	24	2	14	3	28	
9:30 AM	8	37	2	31	1	15	8	30	
9:45 AM	5	37	13	37	2	18	12	29	
10:00 AM	12	37	5	27	9	21	5	25	58
10:15 AM	12	28	11	24	3	24	5	28	
10:30 AM	8	18	8	18	4	27	7	29	
10:45 AM	5	17	3	12	5	27	8	33	
11:00 AM	3	14	2	12	12	30	8	35	44
11:15 AM	2	20	5	20	6	23	6	37	
11:30 AM	7	28	2	25	4	23	11	52	
11:45 AM	2	38	3	37	8	24	10	65	
12:00 PM	9	45	10	48	5	21	10	50	66
12:15 PM	10	46	10	45	6	29	21	72	
12:30 PM	15	38	14	43	5	34	14	61	
12:45 PM	11	30	14	52	5	47	5	57	
1:00 PM	10	26	7	48	13	49	32	55	75
1:15 PM	2	27	8	45	11	43	10	27	
1:30 PM	7	33	23	75	18	38	10	27	
1:45 PM	7	33	10	62	7	21	3	26	
2:00 PM	11	38	4	58	7	22	4	28	60
2:15 PM	8	33	38	75	4	20	10	30	
2:30 PM	7	29	10	63	3	63	9	31	
2:45 PM	12	25	6	69	8	87	5	35	
3:00 PM	6	16	21	71	5	91	6	34	107
3:15 PM	4	13	26	56	47	104	11	38	
3:30 PM	3	11	16	42	27	70	13	36	
3:45 PM	3	10	8	29	12	60	4	30	
4:00 PM	3	14	6	21	18	54	10	31	68
4:15 PM	2	14	12	17	13	42	9	25	
4:30 PM	2	13	3	8	17	34	7	23	
4:45 PM	7	13	0	9	6	31	5	22	
5:00 PM	3	12	2	9	6	28	4	21	40
5:15 PM	1	14	3	13	5	24	7	24	
5:30 PM	2	13	4	10	14	19	6	19	
5:45 PM	6	11	0	6	3	6	4	14	
6:00 PM	5	5	6	6	2	3	7	13	8
6:15 PM	0		0		0		2		
6:30 PM	0		0		1		1		
6:45 PM	0		0		0		3		
13 HR TOTAL	431		353		344		356		

NINE HOUR COUNT

Date: Thursday, 10/09/2008
Time: 7-10 AM, 11 AM - 2 PM, 3 - 6 PM
Northbound and Southbound Approach: Marlowe Avenue
Eastbound and Westbound Approach: Detroit Avenue
Permormed By: JTS

Trucks: 2.6%
Buses: 1.8%
9 Hour to 24 Hour Multiplier: 1.71
Seasonal Adjustment Factor: 0.921
Intersection Peak Hour =

	Marlowe SB APPROACH			Detroit WB APPROACH			Marlowe NB APPROACH			Detroit EB APPROACH			TOTAL	HR TOTAL
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
7:00 AM	4	7	1	2	29	0	2	7	2	1	47	2	104	696
7:15 AM	2	8	3	0	49	0	2	8	1	3	50	2	128	801
7:30 AM	3	6	6	4	52	5	3	9	4	0	88	3	183	836
7:45 AM	6	12	7	5	93	5	7	14	3	3	119	7	281	812
8:00 AM	6	6	5	1	84	7	3	3	2	5	82	5	209	716
8:15 AM	0	8	2	2	70	3	2	3	3	1	65	4	163	707
8:30 AM	4	7	2	3	52	4	0	6	3	0	74	4	159	732
8:45 AM	5	7	3	3	71	2	3	10	2	2	74	3	185	717
9:00 AM	9	6	3	8	67	6	3	8	2	4	73	11	200	692
9:15 AM	7	6	4	1	78	3	4	5	3	7	67	4	188	
9:30 AM	4	4	4	3	59	3	1	2	2	4	53	5	144	
9:45 AM	6	8	2	0	55	8	1	5	3	2	65	5	160	
10:00 AM														
10:15 AM														
10:30 AM														
10:45 AM														
11:00 AM	4	6	4	3	84	4	4	5	0	5	76	2	197	876
11:15 AM	6	2	2	2	90	4	6	3	7	8	91	4	225	926
11:30 AM	10	9	6	3	94	2	4	1	3	3	92	2	229	939
11:45 AM	3	5	2	3	86	5	4	3	6	3	98	7	225	976
12:00 PM	4	3	7	4	85	3	0	7	6	8	114	8	247	979
12:15 PM	5	9	3	4	88	3	7	3	2	6	104	4	238	951
12:30 PM	6	8	5	7	108	4	3	6	3	7	98	13	266	932
12:45 PM	3	4	4	6	107	5	2	3	1	2	86	5	228	923
1:00 PM	1	4	5	4	83	3	8	5	4	7	90	5	219	952
1:15 PM	2	5	5	4	89	5	1	6	0	1	99	2	219	
1:30 PM	4	6	2	2	113	5	0	2	4	7	108	4	257	
1:45 PM	2	6	2	4	109	1	6	7	6	8	101	5	257	
2:00 PM														
2:15 PM														
2:30 PM														
2:45 PM														
3:00 PM	5	13	5	5	112	5	1	3	2	3	109	3	266	1131
3:15 PM	1	5	4	6	133	3	2	9	7	5	110	6	291	1085
3:30 PM	8	7	9	8	120	4	3	9	2	6	106	7	285	1049
3:45 PM	5	4	5	8	118	4	4	12	2	3	123	1	289	1024
4:00 PM	1	6	3	9	96	4	2	5	2	2	87	3	220	971
4:15 PM	2	6	4	7	90	4	2	6	2	2	124	6	255	1014
4:30 PM	3	10	5	7	121	5	4	2	1	3	95	4	260	1012
4:45 PM	3	15	4	2	101	0	2	7	2	4	94	2	236	990
5:00 PM	7	13	7	10	87	1	4	5	2	7	117	3	263	1013
5:15 PM	5	8	2	4	95	5	2	8	2	4	116	2	253	
5:30 PM	2	15	3	2	100	5	2	8	2	2	96	1	238	
5:45 PM	3	12	5	3	114	3	3	4	2	2	105	3	259	
9 HR TOTAL	149	265	145	147	3180	133	107	209	100	140	3296	155	8026	
24 HR TOTAL	235	417	228	232	5008	209	169	329	157	220	5191	244	12640	

Intersection Peak Hour

AM Peak 7:30	15	32	20	12	299	20	15	29	12	9	354	19	
PM Peak 3:15	17	29	23	25	483	16	10	33	13	17	448	17	
MID Peak 12:00	18	24	19	21	386	15	12	19	12	23	402	28	

Corridor Peak Hour

AM Peak 7:30	15	32	20	12	299	20	15	29	12	9	354	19	
PM Peak 5:00	17	48	17	19	396	14	11	25	8	15	434	9	
MID Peak 12:00	18	24	19	21	386	15	12	19	12	23	402	28	

NINE HOUR PEDESTRIAN COUNT
Date: Thursday, 10/09/2008
Time: 7-10 AM, 11 AM - 2 PM, 3 - 6 PM
Northbound and Southbound Approach: Marlowe Avenue
Eastbound and Westbound Approach: Detroit Avenue

Start Time	North to South		East to West		South to North		West to East		Hourly Total Across Detroit Ave.
	Total	Hourly Total	Total	Hourly Total	Total	Hourly Total	Total	Hourly Total	
6:00 AM									
6:15 AM									
6:30 AM									
6:45 AM									
7:00 AM	0	2	1	14	0	0	4	22	2
7:15 AM	0	2	3	15	0	2	7	19	
7:30 AM	0	3	5	21	0	3	4	17	
7:45 AM	2	4	6	23	0	3	7	17	
8:00 AM	0	3	2	23	2	3	1	11	6
8:15 AM	1	3	9	27	1	1	5	13	
8:30 AM	1	2	7	24	0	0	4	12	
8:45 AM	1	1	5	19	0	0	1	11	
9:00 AM	0	0	6	20	0	0	3	15	0
9:15 AM	0		6		0		4		
9:30 AM	0		2		0		3		
9:45 AM	0		6		0		5		
10:00 AM									
10:15 AM									
10:30 AM									
10:45 AM									
11:00 AM	0	8	6	20	0	3	5	34	11
11:15 AM	0	9	6	28	2	4	5	45	
11:30 AM	2	11	4	39	0	3	6	53	
11:45 AM	6	9	4	46	1	4	18	60	
12:00 PM	1	6	14	56	1	3	16	36	9
12:15 PM	2	7	17	63	1	3	13	30	
12:30 PM	0	5	10	58	1	4	3	24	
12:45 PM	3	11	15	64	0	6	4	28	
1:00 PM	2	8	21	59	1	7	10	39	15
1:15 PM	0		12		2		7		
1:30 PM	6		16		3		7		
1:45 PM	0		10		1		15		
2:00 PM									
2:15 PM									
2:30 PM									
2:45 PM									
3:00 PM	4	10	12	72	1	6	11	53	16
3:15 PM	2	7	31	71	4	5	17	48	
3:30 PM	1	8	16	55	1	4	12	53	
3:45 PM	3	9	13	49	0	3	13	55	
4:00 PM	1	6	11	45	0	6	6	53	12
4:15 PM	3	6	15	55	3	6	22	57	
4:30 PM	2	6	10	55	0	5	14	43	
4:45 PM	0	5	9	53	3	5	11	44	
5:00 PM	1	9	21	54	0	4	10	42	13
5:15 PM	3		15		2		8		
5:30 PM	1		8		0		15		
5:45 PM	4		10		2		9		
6:00 PM									
6:15 PM									
6:30 PM									
6:45 PM									
9 HR TOT	52		363		32		305		

NINE HOUR COUNT

Date: Thursday, 10/09/2008
Time: 7-10 AM, 11 AM - 2 PM, 3 - 6 PM
Northbound and Southbound Approach: Manor Park Avenue / Blossom Park Avenue
Eastbound and Westbound Approach: Detroit Avenue
Permormed By: RAW

Trucks: 3.2%
Buses: 1.7%
9 Hour to 24 Hour Multiplier: 1.71
Seasonal Adjustment Factor: 0.921
Intersection Peak Hour =

	Manor Park SB APPROACH			Detroit WB APPROACH			Blossom Park NB APPROACH			Detroit EB APPROACH			TOTAL	HR TOTAL
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
7:00 AM	1	5	2	3	34	1	1	3	0	2	43	9	104	763
7:15 AM	7	9	5	3	53	2	1	5	0	0	46	10	141	918
7:30 AM	11	5	12	3	43	4	4	5	1	1	88	11	188	961
7:45 AM	10	9	26	10	99	4	12	7	3	5	128	17	330	945
8:00 AM	9	6	14	9	101	1	3	8	0	1	91	16	259	801
8:15 AM	4	6	6	7	71	3	5	6	2	1	58	15	184	726
8:30 AM	6	5	4	4	57	0	1	8	0	0	77	10	172	719
8:45 AM	10	8	2	5	60	1	4	6	1	3	73	13	186	699
9:00 AM	13	3	8	2	72	3	0	1	2	0	71	9	184	668
9:15 AM	9	4	0	2	77	0	6	1	2	0	67	9	177	
9:30 AM	6	3	2	2	71	1	2	2	0	2	55	6	152	
9:45 AM	4	3	7	7	48	4	3	3	2	1	67	6	155	
10:00 AM														
10:15 AM														
10:30 AM														
10:45 AM														
11:00 AM	4	4	5	2	79	1	5	5	2	2	76	8	193	861
11:15 AM	5	6	4	2	99	3	1	1	0	5	80	14	220	913
11:30 AM	8	1	6	6	96	0	2	3	0	1	96	8	227	902
11:45 AM	12	1	6	5	85	0	4	4	0	0	96	8	221	889
12:00 PM	2	6	5	3	97	0	1	2	1	2	115	11	245	887
12:15 PM	7	5	3	1	80	2	7	3	0	3	92	6	209	860
12:30 PM	14	6	1	5	92	1	3	4	3	1	74	10	214	856
12:45 PM	6	4	5	4	97	0	5	0	1	1	90	6	219	877
1:00 PM	2	1	6	7	77	5	4	6	2	3	93	12	218	873
1:15 PM	8	2	3	2	87	1	1	3	1	1	92	4	205	
1:30 PM	4	1	3	3	107	1	3	3	1	2	99	8	235	
1:45 PM	4	3	5	4	104	0	2	0	0	1	84	8	215	
2:00 PM														
2:15 PM														
2:30 PM														
2:45 PM														
3:00 PM	8	3	6	8	126	1	7	2	4	1	106	16	288	1130
3:15 PM	12	10	7	6	127	3	1	5	5	1	110	10	297	1079
3:30 PM	5	3	6	11	127	3	4	1	2	2	100	15	279	1046
3:45 PM	9	3	7	11	110	2	2	2	1	2	100	17	266	1032
4:00 PM	3	11	5	3	98	2	3	8	1	0	95	8	237	1016
4:15 PM	7	7	6	11	101	1	7	4	1	0	107	12	264	1026
4:30 PM	7	4	1	3	117	4	4	14	2	2	94	13	265	1050
4:45 PM	8	12	5	4	104	1	1	5	1	2	93	14	250	1041
5:00 PM	7	5	3	5	92	1	4	6	0	2	115	7	247	1095
5:15 PM	8	4	9	12	108	0	0	3	0	0	133	11	288	
5:30 PM	5	4	5	7	121	0	5	7	0	2	87	13	256	
5:45 PM	11	13	9	11	124	2	4	7	1	4	106	12	304	
9 HR TOTAL	256	185	209	193	3241	58	122	153	42	56	3197	382	8094	
24 HR TOTAL	403	291	329	304	5104	91	192	241	66	88	5035	602	12747	

Intersection Peak Hours

AM Peak 7:30	34	26	58	29	314	12	24	26	6	8	365	59	
PM Peak 3:00	34	19	26	36	490	9	14	10	12	6	416	58	
MID Peak 11:1	27	14	21	16	377	3	8	10	1	8	387	41	

Corridor Peak Hours

AM Peak 7:30	34	26	58	29	314	12	24	26	6	8	365	59	
PM Peak 5:00	31	26	26	35	445	3	13	23	1	8	441	43	
MID Peak 12:00	29	21	14	13	386	3	16	9	5	7	371	33	

NINE HOUR PEDESTRIAN COUNT
Date: Thursday, 10/09/2008
Time: 7-10 AM, 11 AM - 2 PM, 3 - 6 PM
Northbound and Southbound Approach: Manor Park Avenue / Blossom Park Avenue
Eastbound and Westbound Approach: Detroit Avenue

Start Time	North to South		East to West		South to North		West to East		Hourly Total Across Detroit Ave.
	Total	Hourly Total	Total	Hourly Total	Total	Hourly Total	Total	Hourly Total	
6:00 AM									
6:15 AM									
6:30 AM									
6:45 AM									
7:00 AM	1	13	2	19	0	6	6	31	19
7:15 AM	3	13	3	20	1	9	6	38	
7:30 AM	3	11	7	23	1	8	5	35	
7:45 AM	6	9	7	23	4	9	14	38	
8:00 AM	1	3	3	19	3	5	13	26	8
8:15 AM	1	5	6	21	0	3	3	15	
8:30 AM	1	6	7	28	2	7	8	17	
8:45 AM	0	6	3	28	0	8	2	15	
9:00 AM	3	8	5	29	1	11	2	19	19
9:15 AM	2		13		4		5		
9:30 AM	1		7		3		6		
9:45 AM	2		4		3		6		
10:00 AM									
10:15 AM									
10:30 AM									
10:45 AM									
11:00 AM	2	8	7	30	1	13	4	36	21
11:15 AM	2	10	7	35	3	15	11	39	
11:30 AM	1	11	9	35	6	14	8	32	
11:45 AM	3	15	7	35	3	9	13	31	
12:00 PM	4	13	12	44	3	8	7	24	21
12:15 PM	3	13	7	46	2	8	4	28	
12:30 PM	5	10	9	50	1	8	7	31	
12:45 PM	1	9	16	52	2	9	6	29	
1:00 PM	4	13	14	51	3	11	9	27	24
1:15 PM	0		11		2		9		
1:30 PM	4		11		2		5		
1:45 PM	5		15		4		4		
2:00 PM									
2:15 PM									
2:30 PM									
2:45 PM									
3:00 PM	5	18	27	96	7	36	12	64	54
3:15 PM	2	16	30	81	15	33	15	63	
3:30 PM	5	20	20	74	10	23	12	63	
3:45 PM	6	18	19	68	4	17	25	68	
4:00 PM	3	16	12	62	4	17	11	51	33
4:15 PM	6	14	23	67	5	18	15	47	
4:30 PM	3	8	14	63	4	12	17	46	
4:45 PM	4	6	13	63	4	11	8	42	
5:00 PM	1	3	17	64	3	7	7	46	10
5:15 PM	0		19		1		14		
5:30 PM	1		14		3		13		
5:45 PM	1		14		0		12		
6:00 PM									
6:15 PM									
6:30 PM									
6:45 PM									
9 HR TOTAL	95		414		114		324		

THIRTEEN HOUR COUNT
Date: Thursday, 10/16/2004
Time: 6 AM - 7 PM
Northbound and Southbound Approach: Bunts Avenue
Eastbound and Westbound Approach: Detroit Avenue
Performed By: PPA & RAW

Trucks: 3.6%
Buses: 2.0%
13 Hour to 24 Hour Multiplier: 1.24
Seasonal Adjustment Factor: 0.921
Peak Hour = [redacted]

	Bunts SB APPROACH			Detroit WB APPROACH			Bunts NB APPROACH			Detroit EB APPROACH			TOTAL	HR TOTAL
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
6:00 AM	0	5	1	0	11	3	1	4	1	1	10	2	39	339
6:15 AM	1	9	2	1	16	1	4	7	7	7	20	3	78	453
6:30 AM	2	9	1	3	21	5	5	9	6	10	22	6	99	609
6:45 AM	1	14	2	8	20	6	6	17	10	10	24	5	123	816
7:00 AM	4	18	6	1	24	8	7	21	8	11	40	5	153	913
7:15 AM	1	25	7	5	51	16	8	21	12	14	63	11	234	964
7:30 AM	8	42	4	8	64	22	12	23	24	31	70	8	306	915
7:45 AM	0	19	6	5	48	12	5	27	17	8	69	4	220	834
8:00 AM	2	11	12	3	56	13	5	15	9	8	65	3	204	782
8:15 AM	3	19	3	6	63	6	5	12	10	7	44	7	185	734
8:30 AM	8	21	6	4	41	6	7	32	23	9	66	2	225	727
8:45 AM	7	16	10	5	32	6	5	9	19	7	44	8	168	666
9:00 AM	4	12	4	1	42	9	6	11	17	14	30	6	156	672
9:15 AM	5	9	2	7	53	6	5	14	11	13	48	5	178	722
9:30 AM	2	3	3	2	56	1	6	12	12	7	58	2	164	727
9:45 AM	8	12	5	4	45	5	8	15	14	13	42	3	174	768
10:00 AM	9	12	4	6	60	15	1	11	18	13	52	5	206	839
10:15 AM	4	10	7	5	45	2	1	27	17	10	50	5	183	864
10:30 AM	6	9	7	4	55	8	7	33	17	8	43	8	205	930
10:45 AM	8	14	10	5	55	7	8	24	23	16	70	5	245	974
11:00 AM	7	18	7	4	54	9	15	21	12	15	63	6	231	964
11:15 AM	8	16	6	5	73	12	8	11	22	12	68	8	249	971
11:30 AM	7	14	8	10	62	19	9	20	14	10	74	2	249	958
11:45 AM	6	17	9	7	63	5	9	16	19	18	62	4	235	947
12:00 PM	11	34	10	8	52	6	0	14	13	17	72	1	238	934
12:15 PM	3	27	4	3	74	7	2	16	16	18	64	2	236	891
12:30 PM	13	22	13	9	58	6	6	13	26	14	52	6	238	904
12:45 PM	9	12	10	4	67	9	7	10	17	12	61	4	222	893
1:00 PM	4	11	12	8	59	7	2	8	15	8	57	6	195	891
1:15 PM	5	17	10	3	76	9	5	15	21	20	64	4	249	931
1:30 PM	6	12	8	4	53	10	4	19	24	12	73	2	227	913
1:45 PM	11	13	6	4	63	9	3	16	17	18	59	1	220	926
2:00 PM	4	10	11	3	70	8	6	14	20	21	62	6	235	922
2:15 PM	2	13	10	8	56	6	2	13	19	22	70	11	231	976
2:30 PM	8	14	4	7	72	8	2	14	19	15	73	4	240	1025
2:45 PM	13	15	9	4	56	15	3	23	18	12	39	9	216	1059
3:00 PM	8	18	6	11	63	27	3	19	25	12	94	3	289	1068
3:15 PM	5	30	6	5	49	27	2	20	25	24	82	5	280	1065
3:30 PM	5	30	8	6	60	19	5	19	28	15	76	3	274	1050
3:45 PM	9	27	3	4	51	13	4	14	22	18	57	3	225	1035
4:00 PM	5	27	2	6	74	22	7	25	32	22	58	6	286	1048
4:15 PM	10	22	6	6	71	20	5	19	19	22	63	2	265	1008
4:30 PM	12	25	4	3	71	18	1	21	25	24	49	6	259	1046
4:45 PM	7	27	7	2	58	9	2	27	26	14	54	5	238	1087
5:00 PM	4	27	7	8	55	20	6	15	19	19	60	6	246	1148
5:15 PM	8	31	13	10	75	17	8	31	23	18	65	4	303	1150
5:30 PM	10	31	9	5	83	17	5	33	28	21	52	6	300	1093
5:45 PM	10	23	15	12	70	16	8	28	26	15	69	7	299	1048
6:00 PM	3	20	10	6	62	10	7	17	29	18	58	8	248	962
6:15 PM	5	19	12	4	62	13	3	20	33	16	53	6	246	0
6:30 PM	6	30	10	6	63	14	6	29	27	14	44	6	255	0
6:45 PM	4	23	11	5	53	14	1	18	17	19	43	5	213	0
13 HR TOTAL	311	964	368	271	2877	578	268	942	971	752	2920	260	11482	
24 HR TOTAL	355	1101	420	309	3286	660	306	1076	1109	859	3335	297	13113	

Intersection Peak Hours

AM Peak 7:15	11	97	29	21	211	63	30	88	62	61	267	26	
PM Peak 5:15	31	105	47	33	290	60	28	109	106	72	244	25	
MID Peak 10:45	30	62	31	24	244	47	40	76	71	53	275	21	

Corridor Peak Hours

AM Peak 7:30	13	91	25	22	223	53	27	77	60	54	248	22	
PM Peak 5:00	32	112	44	36	283	70	27	107	96	73	246	23	
MID Peak 12:00	36	95	37	24	251	28	15	53	72	61	249	13	

THIRTEEN HOUR PEDESTRIAN COUNT
Date: Thursday, 10/16/2004
Time: 6 AM - 7 PM
Northbound and Southbound Approach: Bunts Avenue
Eastbound and Westbound Approach: Detroit Avenue

Start Time	North to South Total	North to South Hourly Total	East to West Total	East to West Hourly Total	South to North Total	South to North Hourly Total	West to East Total	West to East Hourly Total	Hourly Total Across Detroit Ave.
6:00 AM	0	3	0	6	0	0	0	2	3
6:15 AM	1	4	3	10	0	1	1	4	
6:30 AM	2	5	0	8	0	1	0	4	
6:45 AM	0	11	3	12	0	1	1	4	
7:00 AM	1	15	4	13	1	3	2	4	18
7:15 AM	2	15	1	11	0	2	1	3	
7:30 AM	8	14	4	16	0	4	0	5	
7:45 AM	4	7	4	13	2	4	1	5	
8:00 AM	1	4	2	12	0	8	1	11	12
8:15 AM	1	7	6	14	2	8	3	12	
8:30 AM	1	8	1	10	0	6	0	9	
8:45 AM	1	7	3	13	6	6	7	10	
9:00 AM	4	11	4	20	0	0	2	4	11
9:15 AM	2	8	2	16	0	1	0	3	
9:30 AM	0	6	4	15	0	3	1	6	
9:45 AM	5	6	10	19	0	5	1	5	
10:00 AM	1	1	0	13	1	5	1	6	6
10:15 AM	0	1	1	18	2	8	3	13	
10:30 AM	0	1	8	22	2	7	0	12	
10:45 AM	0	2	4	18	0	5	2	17	
11:00 AM	1	4	5	16	4	6	8	15	10
11:15 AM	0	6	5	15	1	4	2	11	
11:30 AM	1	7	4	13	0	3	5	12	
11:45 AM	2	7	2	12	1	4	0	7	
12:00 PM	3	7	4	12	2	3	4	8	10
12:15 PM	1	5	3	12	0	1	3	5	
12:30 PM	1	7	3	10	1	2	0	7	
12:45 PM	2	7	2	12	0	1	1	10	
1:00 PM	1	5	4	19	0	1	1	10	6
1:15 PM	3	5	1	17	1	2	5	11	
1:30 PM	1	3	5	19	0	12	3	13	
1:45 PM	0	2	9	21	0	13	1	10	
2:00 PM	1	12	2	31	1	22	2	12	34
2:15 PM	1	24	3	45	11	32	7	26	
2:30 PM	0	25	7	48	1	44	0	30	
2:45 PM	10	25	19	46	9	43	3	33	
3:00 PM	13	17	16	32	11	34	18	34	51
3:15 PM	2	7	6	22	23	26	9	26	
3:30 PM	0	12	5	20	0	6	3	19	
3:45 PM	2	12	5	15	0	6	4	16	
4:00 PM	3	10	6	12	3	6	10	15	16
4:15 PM	7	7	4	10	3	3	2	5	
4:30 PM	0	0	0	8	0	2	0	3	
4:45 PM	0	0	2	14	0	5	3	7	
5:00 PM	0	0	4	19	0	5	0	15	5
5:15 PM	0	1	2	18	2	7	0	16	
5:30 PM	0	3	6	23	3	11	4	17	
5:45 PM	0	3	7	26	0	8	11	16	
6:00 PM	1	3	3	25	2	8	1	6	11
6:15 PM	2		7		6		1		
6:30 PM	0		9		0		3		
6:45 PM	0		6		0		1		
13 HR TOTAL	92		230		101		142		

NINE HOUR COUNT

Date: Wednesday, 10/15/2008
Time: 7-10 AM, 11 AM - 2 PM, 3 - 6 PM
Northbound and Southbound Approach: Waterbury Avenue / St. Edward HS
Eastbound and Westbound Approach: Detroit Avenue
Permormed By: RAW

Trucks:	2.7%
Buses:	1.9%
9 Hour to 24 Hour Multiplier:	1.71
Seasonal Adjustment Factor:	0.93
Intersection Peak Hour =	

	St Edward HS SB APPROACH			Detroit WB APPROACH			Waterbury NB APPROACH			Detroit EB APPROACH			TOTAL	HR TOTAL
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
7:00 AM	5	3	1	3	28	6	7	7	1	5	30	7	103	804
7:15 AM	2	7	4	4	35	7	7	14	8	4	57	7	156	958
7:30 AM	10	13	3	3	37	6	16	26	12	5	70	20	223	973
7:45 AM	17	22	6	4	62	12	25	36	15	7	95	21	322	880
8:00 AM	10	18	1	3	67	6	14	17	8	8	94	11	257	682
8:15 AM	2	2	0	2	68	5	8	0	3	6	72	3	171	513
8:30 AM	1	0	0	1	42	6	10	2	6	8	52	2	130	470
8:45 AM	0	0	1	0	44	7	7	0	5	6	54	0	124	450
9:00 AM	0	0	0	0	33	4	3	1	2	7	38	0	88	455
9:15 AM	0	1	0	0	54	3	6	1	1	3	58	1	128	
9:30 AM	0	0	0	0	51	3	5	0	4	2	45	0	110	
9:45 AM	1	0	0	0	56	4	2	0	9	4	52	1	129	
10:00 AM														
10:15 AM														
10:30 AM														
10:45 AM														
11:00 AM	3	2	0	0	82	2	1	2	8	3	71	5	179	775
11:15 AM	6	3	2	0	60	6	8	3	12	8	50	3	161	776
11:30 AM	12	7	2	2	77	4	11	6	7	6	71	9	214	813
11:45 AM	15	3	3	1	82	1	2	4	18	9	70	13	221	819
12:00 PM	2	5	2	0	70	4	9	5	3	8	68	6	180	770
12:15 PM	4	8	2	1	80	7	7	9	5	5	68	2	198	776
12:30 PM	7	6	0	0	88	7	4	2	12	13	76	5	220	754
12:45 PM	1	2	0	0	67	5	6	2	5	4	76	4	172	718
1:00 PM	1	3	1	0	75	2	9	1	4	7	83	0	186	730
1:15 PM	1	1	0	0	80	9	7	2	6	9	81	0	176	
1:30 PM	3	1	2	0	68	9	6	4	7	4	77	3	184	
1:45 PM	2	0	0	0	72	8	7	1	7	8	78	1	184	
2:00 PM														
2:15 PM														
2:30 PM														
2:45 PM														
3:00 PM	20	9	2	3	116	19	11	6	18	9	87	8	308	1140
3:15 PM	7	8	1	0	102	13	13	13	11	16	109	7	300	1039
3:30 PM	11	8	1	0	130	10	12	3	9	7	98	4	293	864
3:45 PM	0	1	0	2	103	12	15	1	5	15	83	2	239	751
4:00 PM	0	1	0	0	109	12	9	1	4	7	64	0	207	707
4:15 PM	0	0	0	0	56	11	5	0	3	6	44	0	125	718
4:30 PM	2	0	0	0	86	15	12	0	2	9	54	0	180	796
4:45 PM	3	2	0	1	83	16	14	1	8	8	57	2	195	851
5:00 PM	2	0	1	1	96	8	11	1	7	12	77	2	218	902
5:15 PM	3	1	1	0	98	15	11	1	10	6	57	0	203	
5:30 PM	4	2	1	5	93	20	9	8	6	8	68	11	235	
5:45 PM	9	5	0	0	104	20	8	3	4	9	77	7	246	
9 HR TOTAL	166	144	37	36	2634	306	317	183	255	261	2459	167	6965	
24 HR TOTAL	264	229	59	57	4189	487	504	291	406	415	3911	266	11076	

Intersection Peak Hours

AM Peak 7:30	39	55	10	12	234	31	63	79	38	26	331	55		
PM Peak 3:00	38	26	4	5	451	54	51	23	43	47	377	21		
MID Peak 11:4	28	22	7	2	320	19	22	20	38	35	280	26		

Corridor Peak Hours

AM Peak 7:30	39	55	10	12	234	31	63	79	38	26	331	55		
PM Peak 5:00	18	8	3	6	391	63	39	13	27	35	279	20		
MID Peak 12:0	14	21	4	1	305	23	26	18	25	30	286	17		

NINE HOUR PEDESTRIAN COUNT
Date: Wednesday, 10/15/2008
Time: 7-10 AM, 11 AM - 2 PM, 3 - 6 PM
Northbound and Southbound Approach: Waterbury Avenue / St. Edward HS
Eastbound and Westbound Approach: Detroit Avenue

Start Time	North to South		East to West		South to North		West to East		Hourly Total Across Detroit Ave.
	Total	Hourly Total	Total	Hourly Total	Total	Hourly Total	Total	Hourly Total	
6:00 AM									
6:15 AM									
6:30 AM									
6:45 AM									
7:00 AM	1	16	2	51	3	63	4	46	79
7:15 AM	2	16	8	59	9	75	9	56	
7:30 AM	7	15	5	54	4	68	9	59	
7:45 AM	6	8	36	53	47	69	24	59	
8:00 AM	1	2	10	22	15	24	14	37	26
8:15 AM	1	1	3	13	2	9	12	23	
8:30 AM	0	3	4	17	5	7	9	12	
8:45 AM	0	4	5	18	2	2	2	7	
9:00 AM	0	7	1	19	0	0	0	8	7
9:15 AM	3		7		0		1		
9:30 AM	1		5		0		4		
9:45 AM	3		6		0		3		
10:00 AM									
10:15 AM									
10:30 AM									
10:45 AM									
11:00 AM	8	46	2	30	0	18	10	59	84
11:15 AM	9	40	5	37	2	25	7	55	
11:30 AM	22	33	8	36	3	25	29	52	
11:45 AM	7	11	16	36	13	22	13	26	
12:00 PM	2	4	9	24	7	12	6	17	16
12:15 PM	2	2	6	16	2	5	4	14	
12:30 PM	0	3	6	13	0	5	3	12	
12:45 PM	0	5	3	14	3	5	4	15	
1:00 PM	0	5	1	14	0	5	3	16	10
1:15 PM	3		3		2		2		
1:30 PM	2		7		0		6		
1:45 PM	0		3		3		5		
2:00 PM									
2:15 PM									
2:30 PM									
2:45 PM									
3:00 PM	25	41	11	42	0	4	26	63	45
3:15 PM	9	17	9	40	3	4	20	40	
3:30 PM	4	9	17	31	0	2	10	23	
3:45 PM	3	5	5	29	1	2	7	20	
4:00 PM	1	8	9	24	0	1	3	16	9
4:15 PM	1	8	0	24	1	5	3	17	
4:30 PM	0	7	15	31	0	4	7	20	
4:45 PM	6	9	0	21	0	4	3	19	
5:00 PM	1	4	9	27	4	7	4	30	11
5:15 PM	0		7		0		6		
5:30 PM	2		5		0		6		
5:45 PM	1		6		3		14		
6:00 PM									
6:15 PM									
6:30 PM									
6:45 PM									
9 HR TOTAL	133		253		134		292		

TWELVE HOUR COUNT

Date: Wednesday, 10/15/2004
Time: 7 AM - 7 PM
Northbound and Southbound Approach: Nicholson Avenue
Eastbound and Westbound Approach: Detroit Avenue
Performed By: MJG

Trucks: 2.7%
Buses: 1.9%
12 Hour to 24 Hour Multiplier: 1.31
Seasonal Adjustment Factor: 0.948
Peak Hour =

	Nicholson SB APPROACH			Detroit WB APPROACH			NB APPROACH			Detroit EB APPROACH			TOTAL	HR TOTAL
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	88
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	228
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	425
7:00 AM	8	0	5	3	27	0	0	0	0	0	31	14	88	693
7:15 AM	16	0	10	11	34	0	0	0	0	0	49	20	140	831
7:30 AM	18	0	17	12	32	0	0	0	0	0	75	43	197	887
7:45 AM	27	0	26	23	58	0	0	0	0	0	97	37	268	846
8:00 AM	9	0	20	25	66	0	0	0	0	0	80	26	226	747
8:15 AM	10	0	14	21	67	0	0	0	0	0	70	14	196	643
8:30 AM	12	0	17	18	42	0	0	0	0	0	48	19	156	582
8:45 AM	20	0	25	11	37	0	0	0	0	0	60	16	169	546
9:00 AM	13	0	9	10	38	0	0	0	0	0	43	9	122	523
9:15 AM	5	0	9	4	50	0	0	0	0	0	57	10	135	542
9:30 AM	5	0	4	3	55	0	0	0	0	0	48	5	120	546
9:45 AM	6	0	6	3	70	0	0	0	0	0	56	5	146	552
10:00 AM	7	0	4	3	56	0	0	0	0	0	61	10	141	546
10:15 AM	4	0	8	9	64	0	0	0	0	0	50	4	139	575
10:30 AM	13	0	6	5	45	0	0	0	0	0	55	2	126	633
10:45 AM	10	0	6	5	48	0	0	0	0	0	66	5	140	740
11:00 AM	9	0	13	4	67	0	0	0	0	0	68	9	170	803
11:15 AM	16	0	15	12	73	0	0	0	0	0	66	15	197	815
11:30 AM	28	0	17	9	86	0	0	0	0	0	83	10	233	801
11:45 AM	16	0	14	15	77	0	0	0	0	0	71	10	203	779
12:00 PM	15	0	8	7	64	0	0	0	0	0	74	14	182	738
12:15 PM	17	0	7	5	82	0	0	0	0	0	62	10	183	747
12:30 PM	21	0	16	13	71	0	0	0	0	0	77	13	211	759
12:45 PM	10	0	8	8	71	0	0	0	0	0	55	10	162	736
1:00 PM	10	0	9	11	65	0	0	0	0	0	79	17	191	757
1:15 PM	14	0	6	9	63	0	0	0	0	0	98	7	195	748
1:30 PM	18	0	16	8	68	0	0	0	0	0	73	5	188	756
1:45 PM	14	0	12	6	65	0	0	0	0	0	73	13	183	772
2:00 PM	3	0	2	12	67	0	0	0	0	0	80	16	180	830
2:15 PM	22	0	13	6	66	0	0	0	0	0	83	15	205	891
2:30 PM	13	0	10	13	61	0	0	0	0	0	94	13	204	934
2:45 PM	8	0	7	20	120	0	0	0	0	0	72	14	241	932
3:00 PM	18	0	17	23	85	0	0	0	0	0	80	18	241	906
3:15 PM	19	0	31	7	88	0	0	0	0	1	86	16	248	874
3:30 PM	12	0	10	12	75	0	0	0	0	1	82	10	202	820
3:45 PM	25	0	12	13	75	0	0	0	0	0	72	18	215	819
4:00 PM	22	0	7	12	99	0	0	0	0	0	57	12	209	814
4:15 PM	19	0	11	10	80	0	0	0	0	0	60	14	194	817
4:30 PM	25	0	11	16	78	0	0	0	0	0	47	22	201	826
4:45 PM	24	0	9	15	85	0	0	0	0	0	59	18	210	838
5:00 PM	17	0	4	15	92	0	0	0	0	0	69	15	212	868
5:15 PM	25	0	7	15	86	0	0	0	0	0	54	16	203	886
5:30 PM	31	0	8	11	85	0	0	0	0	0	61	17	213	852
5:45 PM	33	0	16	12	94	0	0	0	0	0	65	20	240	804
6:00 PM	25	0	13	10	91	0	0	0	0	0	71	20	230	756
6:15 PM	14	0	11	13	58	0	0	0	0	0	58	15	169	0
6:30 PM	16	0	6	12	69	0	0	0	0	0	49	13	165	0
6:45 PM	24	0	7	10	69	0	0	0	0	0	63	19	192	0
12 HR TOTAL	766	0	539	532	3264	0	0	0	0	2	3165	693	8961	
24 HR TOTAL	948	0	667	658	4040	0	0	0	0	2	3942	858	11115	

Intersection Peak Hour

AM Peak 7:30	64	0	77	81	223	0	0	0	0	0	322	120		
PM Peak 2:30	58	0	65	63	354	0	0	0	0	1	332	81		
MID Peak 11:15	75	0	54	43	300	0	0	0	0	0	294	49		

Corridor Peak Hour

AM Peak 7:30	64	0	77	81	223	0	0	0	0	0	322	120		
PM Peak 5:00	106	0	35	53	357	0	0	0	0	0	249	68		
MID Peak 12:00	63	0	39	33	288	0	0	0	0	0	268	47		

TWELVE HOUR PEDESTRIAN COUNT
Date: Wednesday, 10/15/2004
Time: 7 AM - 7 PM
Northbound and Southbound Approach: Nicholson Avenue
Eastbound and Westbound Approach: Detroit Avenue

	North to South		East to West		South to North		West to East		Hourly Total Across
Start Time	Total	Hourly Total	Total	Hourly Total	Total	Hourly Total	Total	Hourly Total	Detroit Ave.
6:00 AM	0	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	2	0	0	0	3	
6:30 AM	0	1	0	7	0	1	0	11	
6:45 AM	0	3	0	16	0	2	0	22	
7:00 AM	0	3	2	28	0	5	3	52	8
7:15 AM	1	4	5	35	1	18	8	72	
7:30 AM	2	3	9	37	1	18	11	76	
7:45 AM	0	4	12	33	3	18	30	68	
8:00 AM	1	4	9	23	13	15	23	42	19
8:15 AM	0	3	7	19	1	2	12	21	
8:30 AM	3	3	5	21	1	1	3	12	
8:45 AM	0	0	2	21	0	0	4	15	
9:00 AM	0	0	5	33	0	0	2	16	0
9:15 AM	0	0	9	35	0	0	3	16	
9:30 AM	0	0	5	30	0	1	6	16	
9:45 AM	0	0	14	28	0	1	5	13	
10:00 AM	0	0	7	16	0	2	2	10	2
10:15 AM	0	1	4	10	1	2	3	11	
10:30 AM	0	11	3	11	0	1	3	15	
10:45 AM	0	13	2	15	1	1	2	19	
11:00 AM	1	13	1	13	0	2	3	21	15
11:15 AM	10	18	5	15	0	4	7	21	
11:30 AM	2	8	7	15	0	4	7	16	
11:45 AM	0	8	0	13	2	7	4	13	
12:00 PM	6	9	3	17	2	5	3	15	14
12:15 PM	0	3	5	16	0	3	2	14	
12:30 PM	2	3	5	21	3	4	4	17	
12:45 PM	1	1	4	20	0	1	6	17	
1:00 PM	0	3	2	19	0	1	2	15	4
1:15 PM	0	3	10	18	1	1	5	18	
1:30 PM	0	4	4	10	0	1	4	15	
1:45 PM	3	6	3	12	0	2	4	20	
2:00 PM	0	23	1	61	0	2	5	18	25
2:15 PM	1	27	2	84	1	5	2	19	
2:30 PM	2	29	6	88	1	7	9	35	
2:45 PM	20	28	52	96	0	9	2	34	
3:00 PM	4	8	24	47	3	9	6	39	17
3:15 PM	3	4	6	27	3	6	18	37	
3:30 PM	1	1	14	24	3	5	8	24	
3:45 PM	0	0	3	21	0	3	7	23	
4:00 PM	0	2	4	20	0	3	4	20	5
4:15 PM	0	2	3	26	2	3	5	21	
4:30 PM	0	2	11	29	1	2	7	21	
4:45 PM	2	2	2	21	0	1	4	14	
5:00 PM	0	1	10	23	0	1	5	23	2
5:15 PM	0	3	6	16	1	1	5	25	
5:30 PM	0	3	3	16	0	0	0	24	
5:45 PM	1	4	4	14	0	0	13	25	
6:00 PM	2	3	3	11	0	1	7	14	4
6:15 PM	0		6		0		4		
6:30 PM	1		1		0		1		
6:45 PM	0		1		1		2		
12 HR TOTAL	69		311		46		285		

NINE HOUR COUNT

Date: Tuesday, 10/21/2008
Time: 7-10 AM, 11 AM - 2 PM, 3 - 6 PM
Northbound and Southbound Approach: Cohassett Avenue / Garfield School
Eastbound and Westbound Approach: Detroit Avenue
Permormed By: RAW

Trucks: 3.4%
Buses: 2.1%
9 Hour to 24 Hour Multiplier: 1.71
Seasonal Adjustment Factor: 0.948
Intersection Peak Hour =

	SB APPROACH			Detroit WB APPROACH			Cohassett NB APPROACH			Detroit EB APPROACH			TOTAL	HR TOTAL
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
7:00 AM	0	0	0	2	25	1	7	0	1	1	46	2	85	560
7:15 AM	0	0	0	2	45	4	2	3	0	0	61	3	120	726
7:30 AM	0	0	0	5	50	1	1	2	2	1	79	16	157	863
7:45 AM	0	0	0	15	58	3	3	8	5	0	85	21	198	839
8:00 AM	0	0	0	20	43	2	3	32	2	8	90	51	251	782
8:15 AM	0	0	0	26	54	1	4	31	9	4	95	33	257	646
8:30 AM	0	0	0	1	52	7	4	3	2	2	60	2	133	485
8:45 AM	0	0	0	4	53	3	2	0	2	1	74	2	141	470
9:00 AM	0	0	0	1	52	3	2	1	2	1	50	3	115	447
9:15 AM	0	0	0	0	33	4	6	2	2	0	46	3	96	
9:30 AM	0	0	0	0	46	4	2	0	3	3	60	0	118	
9:45 AM	0	0	0	0	46	3	4	1	4	3	56	1	118	
10:00 AM														
10:15 AM														
10:30 AM														
10:45 AM														
11:00 AM	0	0	0	0	60	2	4	0	1	2	54	0	123	551
11:15 AM	0	0	0	0	59	5	1	0	3	0	62	5	135	578
11:30 AM	0	0	0	0	51	1	2	0	4	1	73	3	135	588
11:45 AM	0	0	0	1	76	2	0	0	2	1	70	6	158	600
12:00 PM	0	0	0	1	68	3	4	1	1	3	65	4	150	620
12:15 PM	0	0	0	0	55	2	2	0	0	2	82	2	145	662
12:30 PM	1	0	0	0	63	3	2	2	3	0	72	1	147	663
12:45 PM	0	0	0	1	70	6	5	0	1	1	91	3	178	686
1:00 PM	0	0	0	0	78	2	2	0	3	3	96	8	192	664
1:15 PM	0	0	0	0	57	5	5	1	2	5	66	5	146	
1:30 PM	0	0	0	0	77	3	3	0	1	2	80	4	170	
1:45 PM	1	0	0	2	74	4	2	4	3	1	57	8	156	
2:00 PM														
2:15 PM														
2:30 PM	0	0	0	8	94	7	5	5	11	3	86	12	231	838
2:45 PM	0	0	0	9	78	3	7	9	17	9	86	8	226	782
3:00 PM	0	0	0	2	78	6	2	1	5	1	91	7	195	733
3:15 PM	1	0	0	4	62	6	5	5	5	4	89	5	186	700
3:30 PM	0	0	0	3	58	2	3	2	2	6	94	5	175	700
3:45 PM	1	0	0	2	82	1	2	0	2	4	79	4	177	703
4:00 PM	0	0	0	1	84	5	3	0	2	2	63	2	162	722
4:15 PM	0	0	0	0	100	3	0	1	3	2	77	0	186	778
4:30 PM	0	0	0	1	95	7	2	0	6	0	64	3	178	786
4:45 PM	0	0	0	2	95	5	5	2	7	2	71	7	196	800
5:00 PM	0	0	0	4	127	6	8	0	3	2	86	2	218	838
5:15 PM	0	0	0	0	89	8	3	2	1	5	79	7	194	
5:30 PM	0	0	0	4	87	7	1	7	8	4	59	15	192	
5:45 PM	0	0	0	2	110	5	3	6	4	7	77	20	234	
9 HR TOTAL	4	0	0	106	2412	137	109	117	106	84	2579	263	5917	
24 HR TOTAL	6	0	0	172	3910	222	177	190	172	136	4181	426	9592	

Intersection Peak Hours

AM Peak 7:30	0	0	0	66	205	7	11	73	18	13	349	121	
PM Peak 5:00	0	0	0	10	413	26	15	15	16	18	281	44	
MID Peak 12:45	0	0	0	1	282	16	15	1	7	11	333	20	

Corridor Peak Hours

AM Peak 7:30	0	0	0	66	205	7	11	73	18	13	349	121	
PM Peak 5:00	0	0	0	10	413	26	15	15	16	18	281	44	
MID Peak 12:00	1	0	0	2	256	14	13	3	5	6	310	10	

NINE HOUR PEDESTRIAN COUNT
Date: Tuesday, 10/21/2008
Time: 7-10 AM, 11 AM - 2 PM, 3 - 6 PM
Northbound and Southbound Approach: Cohassett Avenue / Garfield School
Eastbound and Westbound Approach: Detroit Avenue

Start Time	North to South		East to West		South to North		West to East		Hourly Total Across Detroit Ave.
	Total	Hourly Total	Total	Hourly Total	Total	Hourly Total	Total	Hourly Total	
6:00 AM									
6:15 AM									
6:30 AM									
6:45 AM									
7:00 AM	0	3	2	28	0	5	3	52	8
7:15 AM	1	4	5	35	1	18	8	72	
7:30 AM	2	3	9	37	1	18	11	76	
7:45 AM	0	4	12	33	3	18	30	68	
8:00 AM	1	4	9	23	13	15	23	42	19
8:15 AM	0	3	7	19	1	2	12	21	
8:30 AM	3	3	5	21	1	1	3	12	
8:45 AM	0	0	2	21	0	0	4	15	
9:00 AM	0	0	5	33	0	0	2	16	0
9:15 AM	0		9		0		3		
9:30 AM	0		5		0		6		
9:45 AM	0		14		0		5		
10:00 AM									
10:15 AM									
10:30 AM									
10:45 AM									
11:00 AM	1	13	1	13	0	2	3	21	15
11:15 AM	10	18	5	15	0	4	7	21	
11:30 AM	2	8	7	15	0	4	7	16	
11:45 AM	0	6	0	13	2	7	4	13	
12:00 PM	6	9	3	17	2	5	3	15	14
12:15 PM	0	3	5	14	0	3	2	12	
12:30 PM	2	3	5	19	3	4	4	15	
12:45 PM	1	1	4	18	0	1	6	15	
1:00 PM	0	3	0	17	0	1	0	13	4
1:15 PM	0		10		1		5		
1:30 PM	0		4		0		4		
1:45 PM	3		3		0		4		
2:00 PM									
2:15 PM									
2:30 PM	3	132	2	55	2	13	1	64	145
2:45 PM	122	130	23	67	5	14	39	71	
3:00 PM	4	8	24	47	3	9	6	39	17
3:15 PM	3	4	6	27	3	6	18	37	
3:30 PM	1	1	14	24	3	5	8	24	
3:45 PM	0	0	3	21	0	3	7	23	
4:00 PM	0	2	4	20	0	3	4	20	5
4:15 PM	0	2	3	26	2	3	5	21	
4:30 PM	0	2	11	29	1	2	7	21	
4:45 PM	2	2	2	21	0	1	4	14	
5:00 PM	0	1	10	23	0	1	5	23	2
5:15 PM	0		6		1		5		
5:30 PM	0		3		0		0		
5:45 PM	1		4		0		13		
6:00 PM									
6:15 PM									
6:30 PM									
6:45 PM									
9 HR TOTAL	168		246		48		281		

APPENDIX B

Intersection Signal Warrant Analyses

		ADJUSTED HOURLY VOLUMES			WARRANT #1A				WARRANT #1B				WARRANT #4			
					100%		80%		100%		80%		4 HOUR		PEAK HOUR	
CONDITION	NO. LANE	MAJOR ST 2-WAY	MINOR ST 1-WAY	MINOR ST 1-WAY	MAJ	MIN	MAJ	MIN	MAJ	MIN	MAJ	MIN	GAPS	PED	GAPS	PED
*	1	X	X	X	500	150	400	120	750	75	600	60	60	100	60	190
NORM	2+				600	200	480	160	900	100	720	80				
*	1				350	105	280	84	525	53	420	42	60	50**	60	95**
70%	2+				420	140	336	112	630	70	504	56				
MID-1AM.																
1AM.-2AM.																
2																
3																
4																
5																
6		233	0	12												
7		504	1	42	X		X									
8		632	13	50	X		X				X					
9		584	30	43	X		X									
10		699	30	54	X		X				X					
11		732	33	46	X		X				X					
NOON-1PM.		845	35	59	X		X		X		X					
1PM.-2PM.		791	36	36	X		X		X		X					
2		643	28	54	X		X				X					
3		754	46	60	X		X		X		X	X				
4		687	51	79	X		X			X	X	X				
5		821	67	72	X		X		X		X	X				
6		707	50	44	X		X				X					
7																
8																
9																
10																
11																
HOURS MET					12	0	12	0	4	1	10	3				
WARRANT SATISFIED ?					NO		NO		NO		NO					

Warrants numbered 1A and 1B are each met at the 80% level: YES – (NO)

* CONDITION IS DETERMINED BY ENVIRONMENT: USE 70% VALUES IF 85 PERCENTILE SPEED EXCEEDS 40 MPH ON THE MAJOR APPROACH OR IF LOCATION IS IN THE BUILT-UP AREA OF AN ISOLATED COMMUNITY WITH A POPULATION OF LESS THAN 10,000.

** MAY BE USED IF PEDESTRIAN SPEED IS LESS THAN 4 FT/SEC

WARRANT #5 (SCHOOL CROSSING)

On approved school route ? . . . . . (YES) – NO

Gap analysis mode during period from 2:30 PM to 3:30 PM

Number of vehicles during analysis period: 628

Pedestrian crossing time (1): 14.5

Number of gaps greater than (1) during period: 50.07

Approximate vehicular speed: . . . . . 35 MPH

Number of children crossing during period: 59

Warrant Satisfied ? . . . . . (YES)-NO

WARRANT #6 (COORDINATED SIGNAL SYSTEM)

Major street is: . . . . . ONE WAY – (TWO WAY)

Distance to nearest signal in each direction on major street: 355' and ____

Time space diagram (attached) shows that this location can be implemented into a system: . . . . . YES-NO

Warrant Satisfied ? . . . . . YES-(NO)

WARRANT #7 (CRASH HAZARD)

Adequate trial of less restrictive measures: . . . . . YES-(NO)

Number of accidents per year of a type which could be prevented by signalization: . . . . . ____

80% of warrant #1 or #2 satisfied: . . . . . YES-NO

Will signalization disrupt progressive movement ? . . . . . YES-NO

Warrant Satisfied ? . . . . . YES-(NO)

WARRANT #8 (ROADWAY NETWORK)

Both streets are considered major routes: . . . . . YES-(NO)

At least 800 VPH during weekday peak hour: . . . . . YES-NO

At least 800 VPH for any 5 hrs. on a saturday or sunday: YES-NO

Warrant Satisfied ? . . . . . YES-(NO)

INTERSECTION: DETROIT AVENUE AND ARTHUR AVENUE

LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD

NO. OF LANES PER APPROACH: N: 1 S: 1 E: 1 W: 1

PRESENTLY SIGNALIZED ? (YES)-NO DOES 70% WARRANT APPLY ? NO

MAINTAINING AGENCY CITY OF LAKEWOOD

CO. ____ RTE. ____ SECT. ____

CONSULTANT: ____

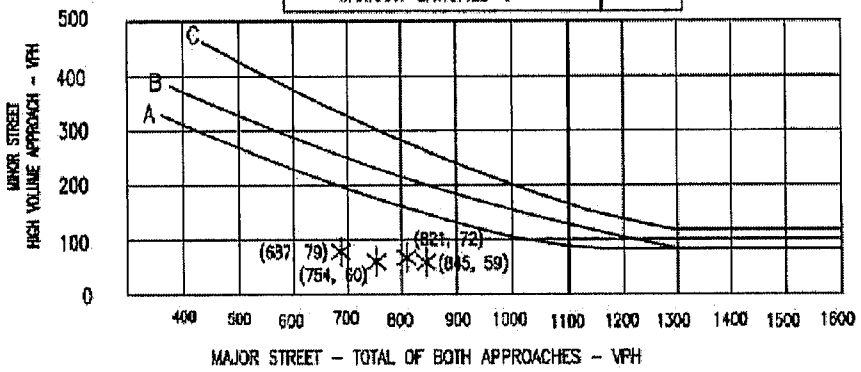
CALC BY: ____ CHKD BY: ____

INTERSECTION: DETROIT AVENUE AND ARTHUR AVENUE	CO.____ RTE.____ SECT.____
LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD	CONSULTANT:____
NO. OF LANES PER APPROACH: N: 1 S: 1 E: 1 W: 1	CALC BY:____ CHKD BY:____
PRESENTLY SIGNALIZED ? (YES) NO ____ DOES 70% WARRANT APPLY ? NO	
MAINTAINING AGENCY CITY OF LAKEWOOD	

WARRANT #2
FOUR HOUR VOLUME

☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES

WARRANT SATISFIED ?	NO

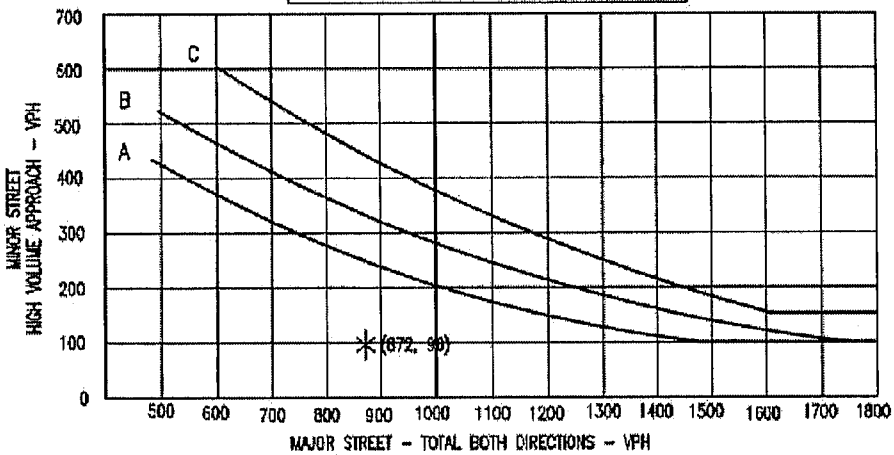


*NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

WARRANT #3
PEAK HOUR VOLUME

☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES

WARRANT SATISFIED ?	NO



*NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

WARRANT #5 SCHOOL CROSSING WARRANT

INTERSERCTION:	Detroit Ave.	AND	Arthur Ave.				
LOCATED IN:	City of Lakewood						
# OF LANES PER APPROACH:	NORTH: 1	SOUTH:	1	EAST:	1	WEST:	1
PRESENTLY SIGNALIZED	Yes	DOES 70% WARRANT APPLY		No			
MAINTAINING AGENCY:	City of Lakewood						

ON APPROVED SCHOOL ROUTE	Yes		
GAP ANALYSIS MADE DURING PERIOD	14:30	TO	15:30
NUMBER OF VEHICLES DURING ANALYSIS PERIOD	628		
PEDESTRIAN CROSSING TIME	14.5		
NUMBER OF GAPS GREATER THAN (1) DURING PERIOD	50.07		
APPROXIMATE VEHICULAR SPEED	35 MPH		
NUMBER OF CHILDREN CROSSING DURING PERIOD	59		
WARRANT SATISIFIED	YES		

Calculation Sheet

t - REQUIRED GAP TIME

T - LENGTH OF TIME PERIOD FOR WHICH VOLUME **V** APPLIES (SECONDS)

V - TWO WAY VEHICLUAR VOLUME ACROSS THE CROSSING PATH IN TIME PERIOD **T**

e - BASE OF THE NATURAL SYSTEM OF LOGARITHM, HAVING AN APPROXIMATE VALUE OF 2.718

CROSSWALK DISTANCE (FEET)		68	ft
WALKING SPEED (FEET/SEC)		4	ft/sec
t = CD / WS		14.5	sec
T (min):	60	3600	sec
V:		628	

NUMBER OF EXPECTED GAPS EQUAL OR GREATER THAN **t**: 50.06679358

$= Ve^{(-(V/T))}$

NUMBER OF **t**-SECOND INTERVALS PER HOUR FREE OF CARS: 19.7935929

$= (T/t)e^{(-(V/T))}$

Count Sheet

Start Time	Detroit Ave. WB APPROACH Right	Thru	Left	Detroit Ave. EB APPROACH Right	Thru	Left	Pedestrians Crossing Detroit
2:30 PM	11	76	1	1	65	9	41
2:45 PM	6	48	1	2	61	10	1
3:00 PM	9	84	4	3	80	8	3
3:15 PM	6	102	2	2	72	13	14
HOURLY TOTALS	32	310 350	8	8	278 326	40	59

EAST CROSSWALK HOURLY TOTALS

Detroit Ave. Total
628

Pedestrain Total
59

WEST CROSSWALK HOURLY TOTALS

Detroit Ave. Total
636

Pedestrian Total
0

CONDITION	NO. LANE	ADJUSTED HOURLY VOLUMES: MAJOR ST 2-WAY	MINOR ST 1-WAY	MINOR ST 1-WAY	WARRANT #1A 100% MAJ	WARRANT #1A 100% MIN	WARRANT #1A 80% MAJ	WARRANT #1A 80% MIN	WARRANT #1B 100% MAJ	WARRANT #1B 100% MIN	WARRANT #1B 80% MAJ	WARRANT #1B 80% MIN	WARRANT #4 4 HOUR GAPS	WARRANT #4 4 HOUR PED	WARRANT #4 PEAK HOUR GAPS	WARRANT #4 PEAK HOUR PED
* NORM	1	X	X	X	500	150	400	120	750	75	600	60	60	100	60	190
	2+				600	200	480	160	900	100	720	80				
* 70%	1				350	105	280	84	525	53	420	42	60	50**	60	95**
	2+				420	140	336	112	630	70	504	56				
MID-1AM.																
1AM.-2AM.																
2																
3																
4																
5																
6																
7		570	52		X		X									
8		706	57		X		X				X					
9		612	43		X		X				X					
10		702	41		X		X				X					
11		712	71		X		X				X	X				
NOON-1PM.		814	76		X		X		X	X	X	X				
1PM.-2PM.		807	83		X		X		X	X	X	X				
2		890	95		X		X		X	X	X	X				
3		958	86		X		X		X	X	X	X				
4		937	104		X		X		X	X	X	X				
5		1026	102		X		X		X	X	X	X				
6		1056	101		X		X		X	X	X	X				
7																
8																
9																
10																
11																
HOURS MET					12	0	12	0	7	7	11	8				
WARRANT SATISFIED ?					NO		NO		NO		YES					

Warrants numbered 1A and 1B are each met at the 80% level: YES – (NO)

* CONDITION IS DETERMINED BY ENVIRONMENT: USE 70% VALUES IF 85 PERCENTILE SPEED EXCEEDS 40 MPH ON THE MAJOR APPROACH OR IF LOCATION IS IN THE BUILT-UP AREA OF AN ISOLATED COMMUNITY WITH A POPULATION OF LESS THAN 10,000.

** MAY BE USED IF PEDESTRIAN SPEED IS LESS THAN 4 FT/SEC

WARRANT #5 (SCHOOL CROSSING)

On approved school route ? . . . . . YES – (NO)

Gap analysis made during period from _____ to _____

Number of vehicles during analysis period: . . . . . _____

Pedestrian crossing time (1): . . . . . _____

Number of gaps greater than (1) during period: . . . . . _____

Approximate vehicular speed: . . . . . _____

Number of children crossing during period: . . . . . _____

Warrant Satisfied ? . . . . . YES-(NO)

WARRANT #6 (COORDINATED SIGNAL SYSTEM)

Major street is: . . . . . ONE WAY – (TWO WAY)

Distance to nearest signal in each direction on major street: 355' and 310'

Time space diagram (attached) shows that this location can be implemented into a system: . . . . . YES-NO

Warrant Satisfied ? . . . . . YES-(NO)

WARRANT #7 (CRASH HAZARD)

Adequate trial of less restrictive measures; . . . . . YES-(NO)

Number of accidents per year of a type which could be prevented by signalization: . . . . . _____

80% of warrant #1 or #2 satisfied: . . . . . YES-NO

Will signalization disrupt progressive movement ? . . . . . YES-NO

Warrant Satisfied ? . . . . . YES-(NO)

WARRANT #8 (ROADWAY NETWORK)

Both streets are considered major routes: . . . . . YES-(NO)

At least 800 VPH during weekday peak hour: . . . . . YES-NO

At least 800 VPH for any 5 hrs. on a saturday or sunday: YES-NO

Warrant Satisfied ? . . . . . YES-(NO)

INTERSECTION: DETROIT AVENUE AND MARS AVENUE

LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD

NO. OF LANES PER APPROACH: N: 0 S: 1 E: 1 W: 1

PRESENTLY SIGNALIZED ? (YES)-NO DOES 70% WARRANT APPLY ? NO

MAINTAINING AGENCY CITY OF LAKEWOOD

CO. _____ RTE. _____ SECT. _____

CONSULTANT: _____

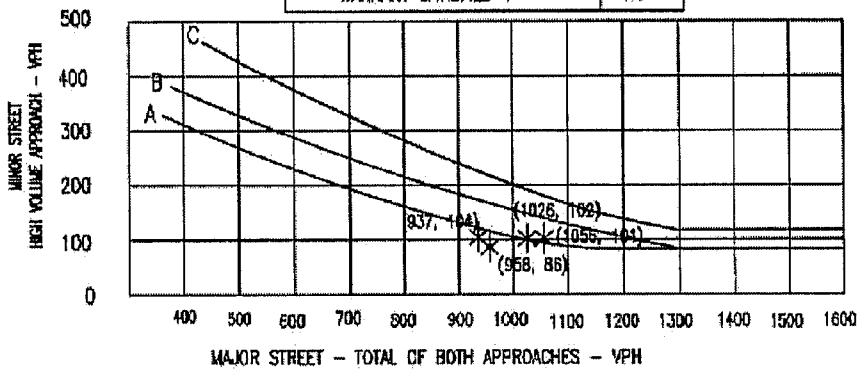
CALC BY: _____ CHKD BY: _____

INTERSECTION: DETROIT AVENUE AND MARS AVENUE	CO.____ RTE.____ SECT.____
LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD	CONSULTANT:____
NO. OF LANES PER APPROACH: N: 0 S: 1 E: 1 W: 1	CALC BY:____ CHKD BY:____
PRESENTLY SIGNALIZED ? (YES)-NO____ DOES 70% WARRANT APPLY ? NO	
MAINTAINING AGENCY CITY OF LAKEWOOD	

WARRANT #2
FOUR HOUR VOLUME

☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES

WARRANT SATISFIED ?	NO

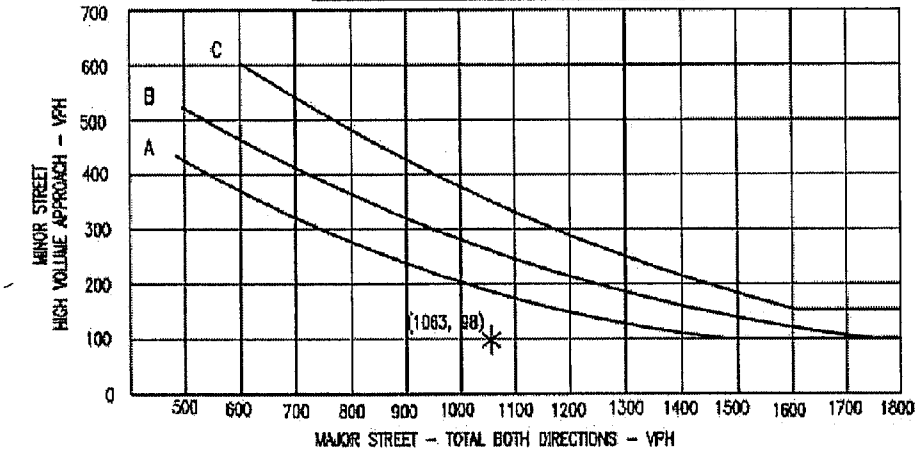


*NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

WARRANT #3
PEAK HOUR VOLUME

☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES

WARRANT SATISFIED ?	NO



*NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

		ADJUSTED HOURLY VOLUMES			WARRANT #1A				WARRANT #1B				WARRANT #4			
					100%		80%		100%		80%					
CONDITION	NO. LANE	MAJOR ST 2-WAY	MINOR ST 1-WAY	MINOR ST 1-WAY	MAJ	MIN	MAJ	MIN	MAJ	MIN	MAJ	MIN	4 HOUR GAPS	4 HOUR PED	PEAK HOUR GAPS	PEAK HOUR PED
*	1	X	X	X	500	150	400	120	750	75	600	60	60	100	60	190
NORM	2+				600	200	480	160	900	100	720	80				
*	1				350	105	280	84	525	53	420	42	60	50**	60	95**
70%	2+				420	140	336	112	630	70	504	56				
MID-1AM.																
1AM.-2AM.																
2																
3																
4																
5																
6																
7		619	65	57	X		X				X	X				
8		724	87	69	X		X			X	X	X				
9		621	65	60	X		X				X	X				
10																
11		812	67	76	X		X		X	X	X	X				
NOON-1PM.		924	69	76	X		X		X	X	X	X				
1PM.-2PM.		903	121	50	X		X	X	X	X	X	X				
2																
3		1055	90	90	X		X		X	X	X	X				
4		1025	99	100	X		X		X	X	X	X				
5		1105	122	90	X		X	X	X	X	X	X				
6																
7																
8																
9																
10																
11																
HOURS MET					9	0	9	2	6	7	9	9				
WARRANT SATISFIED ?					NO		NO		NO		YES					

Warrants numbered 1A and 1B are each met at the 80% level: YES – (NO)

* CONDITION IS DETERMINED BY ENVIRONMENT: USE 70% VALUES IF 85 PERCENTILE SPEED EXCEEDS 40 MPH ON THE MAJOR APPROACH OR IF LOCATION IS IN THE BUILT-UP AREA OF AN ISOLATED COMMUNITY WITH A POPULATION OF LESS THAN 10,000.

** MAY BE USED IF PEDESTRIAN SPEED IS LESS THAN 4 FT/SEC

WARRANT #5 (SCHOOL CROSSING)

On approved school route ? . . . . . (YES) – NO

Gap analysis made during period from 3:00 PM to 4:00 PM

Number of vehicles during analysis period: 996

Pedestrian crossing time (1): 13

Number of gaps greater than (1) during period: 27.32

Approximate vehicular speed: . . . . . 35 MPH

Number of children crossing during period: 56

Warrant Satisfied ? . . . . . (YES)–NO

WARRANT #6 (COORDINATED SIGNAL SYSTEM)

Major street is: . . . . . ONE WAY – (TWO WAY)

Distance to nearest signal in each direction on major street: 310' and 485'

Time space diagram (attached) shows that this location can be implemented into a system: . . . . . YES–NO

Warrant Satisfied ? . . . . . YES–(NO)

WARRANT #7 (CRASH HAZARD)

Adequate trial of less restrictive measures: . . . . . YES–(NO)

Number of accidents per year of a type which could be prevented by signalization: . . . . . _____

80% of warrant #1 or #2 satisfied: . . . . . YES–NO

Will signalization disrupt progressive movement ? . . . . . YES–NO

Warrant Satisfied ? . . . . . YES–(NO)

WARRANT #8 (ROADWAY NETWORK)

Both streets are considered major routes: . . . . . YES–(NO)

At least 800 VPH during weekday peak hour: . . . . . YES–NO

At least 800 VPH for any 5 hrs. on a saturday or sunday: YES–NO

Warrant Satisfied ? . . . . . YES–(NO)

INTERSECTION: DETROIT AVENUE AND ANDREWS/ELMWOOD AVENUE

LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD

NO. OF LANES PER APPROACH: N: 1 S: 1 E: 1 W: 1

PRESENTLY SIGNALIZED ? (YES)–NO DOES 70% WARRANT APPLY ? NO

MAINTAINING AGENCY CITY OF LAKEWOOD

CO. RTE. SECT.

CONSULTANT:

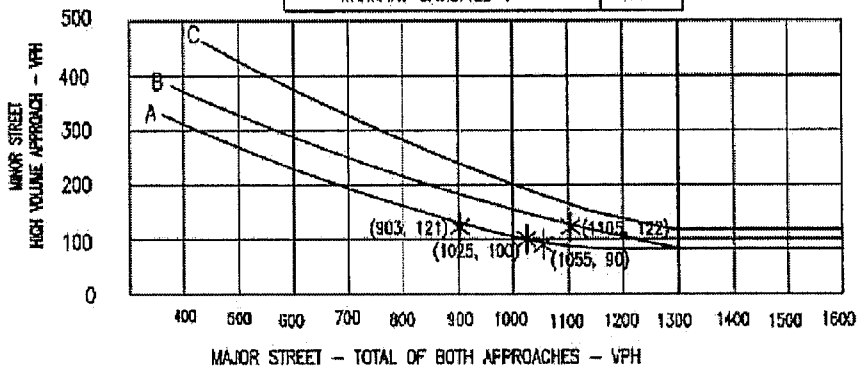
CALC BY: CHKD BY:

INTERSECTION: DETROIT AVENUE AND ANDREWS/ELMWOOD AVENUE	CO.____ RTE.____ SECT.____
LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD	CONSULTANT:____
NO. OF LANES PER APPROACH: N: 1 S: 1 E: 1 W: 1	CALC BY:____ CHKD BY:____
PRESENTLY SIGNALIZED ? (YES)-NO____ DOES 70% WARRANT APPLY ? NO	
MAINTAINING AGENCY CITY OF LAKEWOOD	

WARRANT #2
FOUR HOUR VOLUME

☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES

WARRANT SATISFIED ?	NO

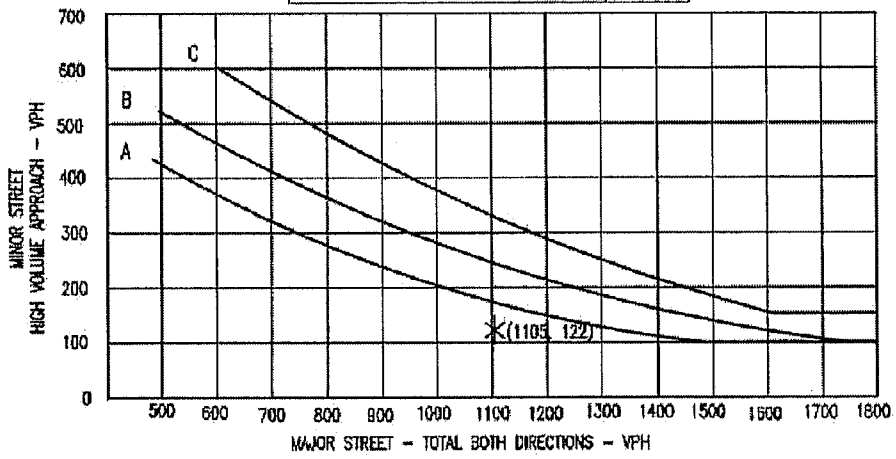


*NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
80 VPH APPLIES AS THE LOWER THRES-HOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

WARRANT #3
PEAK HOUR VOLUME

☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES

WARRANT SATISFIED ?	NO



*NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

WARRANT #5 SCHOOL CROSSING WARRANT

INTERSERCTION:	Detroit Ave.	AND	Andrews Ave.				
LOCATED IN:	City of Lakewood						
# OF LANES PER APPROACH:	NORTH:	1	SOUTH:	1	EAST:	1	WEST: 1
PRESENTLY SIGNALIZED	Yes	DOES 70% WARRANT APPLY		No			
MAINTAINING AGENCY:	City of Lakewood						

ON APPROVED SCHOOL ROUTE	Yes		
GAP ANALYSIS MADE DURING PERIOD	15:00	TO	16:00
NUMBER OF VEHICLES DURING ANALYSIS PERIOD	996		
PEDESTRIAN CROSSING TIME	13		
NUMBER OF GAPS GREATER THAN (1) DURING PERIOD	27.32		
APPROXIMATE VEHICULAR SPEED	35 MPH		
NUMBER OF CHILDREN CROSSING DURING PERIOD	56		
WARRANT SATISIFIED	YES		

Calculation Sheet

t - REQUIRED GAP TIME

T - LENGTH OF TIME PERIOD FOR WHICH VOLUME **V** APPLIES (SECONDS)

V - TWO WAY VEHICLUAR VOLUME ACROSS THE CROSSING PATH IN TIME PERIOD **T**

e - BASE OF THE NATURAL SYSTEM OF LOGARITHM, HAVING AN APPROXIMATE VALUE OF 2.718

CROSSWALK DISTANCE (FEET)		62	ft
WALKING SPEED (FEET/SEC)		4	ft/sec
t = CD / WS		13	sec
T (min):	60	3600	sec
V:		996	

NUMBER OF EXPECTED GAPS EQUAL OR GREATER THAN t: 27.3154782

$= Ve^{(-Vt/T)}$

NUMBER OF t-SECOND INTERVALS PER HOUR FREE OF CARS: 7.594664931

$= (T/t)e^{(-Vt/T)}$

Count Sheet

Start Time	Detroit Ave. WB APPROACH Right	Thru	Left	Detroit Ave. EB APPROACH Right	Thru	Left	Pedestrians Crossing Detroit
3:00 PM	6	135	5	11	115	4	10
3:15 PM	8	136	12	13	99	3	27
3:30 PM	5	100	8	4	111	6	9
3:45 PM	11	128	6	12	111	6	10
HOURLY TOTALS	30	499 560	31	40	436 495	19	56

EAST CROSSWALK HOURLY TOTALS

Detroit Ave. Total
996

Pedestrain Total
56

WEST CROSSWALK HOURLY TOTALS

Detroit Ave. Total
994

Pedestrian Total
0

		ADJUSTED HOURLY VOLUMES			WARRANT #1A				WARRANT #1B				WARRANT #4			
					100%		80%		100%		80%		4 HOUR		PEAK HOUR	
CONDITION	NO. LANE	MAJOR ST 2-WAY	MINOR ST 1-WAY	MINOR ST 1-WAY	MAJ	MIN	MAJ	MIN	MAJ	MIN	MAJ	MIN	GAPS	PED	GAPS	PED
* NORM	1	X	X	X	500	150	400	120	750	75	600	60	50	100	60	190
	2+				600	200	480	160	900	100	720	80				
* 70%	1				350	105	280	84	525	53	420	42	50	50**	60	95**
	2+				420	140	336	112	630	70	504	56				
MID-1AM.																
1AM.-2AM.																
2																
3																
4																
5																
6																
7		661	35	3	X		X				X					
8		619	59	25	X		X				X					
9		578	56	40	X		X									
10		743	47	75	X		X			X	X	X				
11		767	44	81	X		X		X	X	X	X				
NOON-1PM.		881	61	117	X		X		X	X	X	X				
1PM.-2PM.		860	50	131	X		X	X	X	X	X	X				
2		952	74	158	X	X	X	X	X	X	X	X				
3		1058	77	96	X		X		X	X	X	X				
4		939	74	99	X		X		X	X	X	X				
5		1064	87	115	X		X		X	X	X	X				
6		1062	81	152	X		X	X	X	X	X	X				
7																
8																
9																
10																
11																
HOURS MET					11	1	11	3	8	9	11	9				
WARRANT SATISFIED ?					NO		NO		YES		YES					

Warrants numbered 1A and 1B are each met at the 80% level: YES – (NO)

* CONDITION IS DETERMINED BY ENVIRONMENT: USE 70% VALUES IF 85 PERCENTILE SPEED EXCEEDS 40 MPH ON THE MAJOR APPROACH OR IF LOCATION IS IN THE BUILT-UP AREA OF AN ISOLATED COMMUNITY WITH A POPULATION OF LESS THAN 10,000.

** MAY BE USED IF PEDESTRIAN SPEED IS LESS THAN 4 FT/SEC

WARRANT #5 (SCHOOL CROSSING)

On approved school route ? . . . . . YES – (NO)

Gap analysis made during period from _____ to _____

Number of vehicles during analysis period: . . . . . _____

Pedestrian crossing time (1): . . . . . _____

Number of gaps greater than (1) during period: . . . . . _____

Approximate vehicular speed: . . . . . _____

Number of children crossing during period: . . . . . _____

Warrant Satisfied ? . . . . . YES-(NO)

WARRANT #6 (COORDINATED SIGNAL SYSTEM)

Major street is: . . . . . ONE WAY – (TWO WAY)

Distance to nearest signal in each direction on major street: 485' and 350'

Time space diagram (attached) shows that this location can be implemented into a system: . . . . . YES-NO

Warrant Satisfied ? . . . . . YES-(NO)

WARRANT #7 (CRASH HAZARD)

Adequate trial of less restrictive measures: . . . . . YES-(NO)

Number of accidents per year of a type which could be prevented by signalization: . . . . . _____

80% of warrant #1 or #2 satisfied: . . . . . YES-NO

Will signalization disrupt progressive movement ? . . . . . YES-NO

Warrant Satisfied ? . . . . . YES-(NO)

WARRANT #8 (ROADWAY NETWORK)

Both streets are considered major routes: . . . . . YES-(NO)

At least 800 VPH during weekday peak hour: . . . . . YES-NO

At least 800 VPH for any 5 hrs. on a saturday or sunday: YES-NO

Warrant Satisfied ? . . . . . YES-(NO)

INTERSECTION: DETROIT AVENUE AND COOK AVENUE

LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD

NO. OF LANES PER APPROACH: N: 1 S: 1 E: 1 W: 1

PRESENTLY SIGNALIZED ? (YES)-NO DOES 70% WARRANT APPLY ? NO

MAINTAINING AGENCY CITY OF LAKEWOOD

CO. _____ RTE. _____ SECT. _____

CONSULTANT: _____

CALC BY: _____ CHKD BY: _____

INTERSECTION: DETROIT AVENUE AND COOK AVENUE

LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD

NO. OF LANES PER APPROACH: N: 1 S: 1 E: 1 W: 1

PRESENTLY SIGNALIZED ? (YES) NO DOES 70% WARRANT APPLY ? NO

MAINTAINING AGENCY CITY OF LAKEWOOD

CO. RTE. SECT.

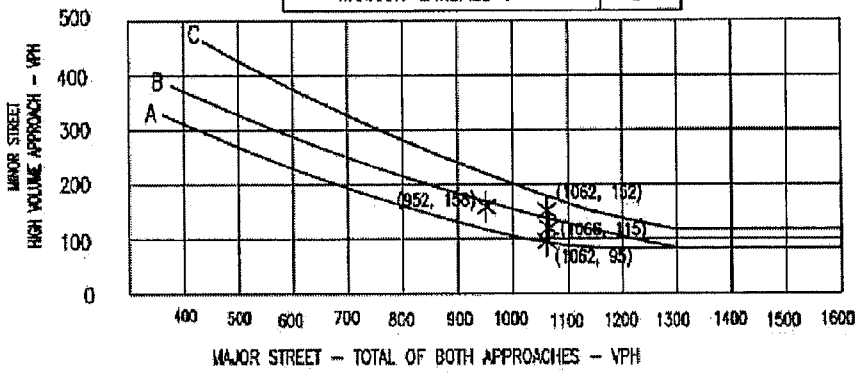
CONSULTANT:

CALC BY: CHKD BY:

WARRANT #2
FOUR HOUR VOLUME

☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES

WARRANT SATISFIED ? YES

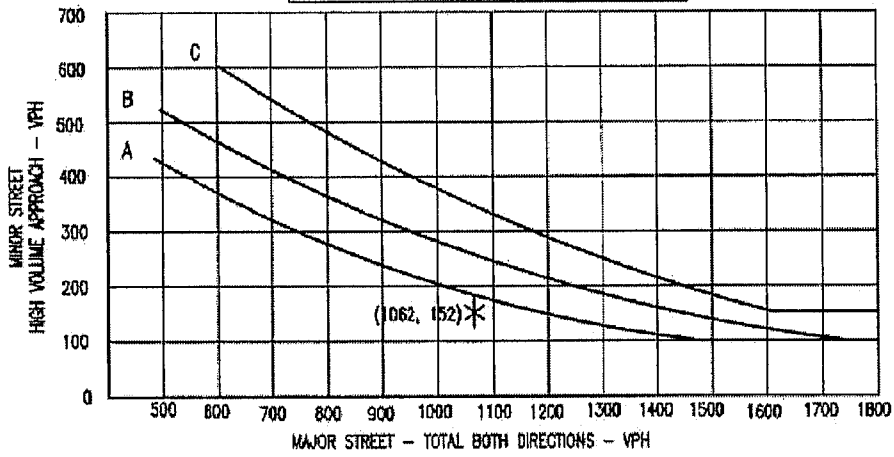


*NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

WARRANT #3
PEAK HOUR VOLUME

☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES

WARRANT SATISFIED ? NO



*NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

		ADJUSTED HOURLY VOLUMES			WARRANT #1A				WARRANT #1B				WARRANT #4			
					100%		80%		100%		80%		4 HOUR		PEAK HOUR	
CONDITION	NO. LANE	MAJOR ST 2-WAY	MINOR ST 1-WAY	MINOR ST 1-WAY	MAJ	MIN	MAJ	MIN	MAJ	MIN	MAJ	MIN	GAPS	PED	GAPS	PED
* NORM	1	X	X	X	500	150	400	120	750	75	600	60	60	100	60	190
	2+				600	200	480	160	900	100	720	80				
* 70%	1				350	105	280	84	525	53	420	42	60	50**	60	95**
	2+				420	140	336	112	630	70	504	56				
MID-1AM.																
1AM.-2AM.																
2																
3																
4																
5																
6		254	59	230		X		X		X		X				
7		617	152	425	X	X	X	X		X	X	X				
8		626	151	447	X	X	X	X		X	X	X				
9		644	138	395	X	X	X	X		X	X	X				
10		727	121	345	X	X	X	X		X	X	X				
11		838	111	361	X	X	X	X	X	X	X	X				
NOON-1PM.		935	113	393	X	X	X	X	X	X	X	X				
1PM.-2PM.		949	131	384	X	X	X	X	X	X	X	X				
2		860	122	425	X	X	X	X	X	X	X	X				
3		1087	175	435	X	X	X	X	X	X	X	X				
4		920	185	483	X	X	X	X	X	X	X	X				
5		1083	224	462	X	X	X	X	X	X	X	X				
6		960	125	400	X	X	X	X	X	X	X	X				
7																
8																
9																
10																
11																
HOURS MET					12	13	12	13	8	13	12	13				
WARRANT SATISFIED ?					YES		YES		YES		YES		NO		NO	

Warrants numbered 1A and 1B are each met at the 80% level: (YES) – NO

* CONDITION IS DETERMINED BY ENVIRONMENT: USE 70% VALUES IF 85 PERCENTILE SPEED EXCEEDS 40 MPH ON THE MAJOR APPROACH OR IF LOCATION IS IN THE BUILT-UP AREA OF AN ISOLATED COMMUNITY WITH A POPULATION OF LESS THAN 10,000.

** MAY BE USED IF PEDESTRIAN SPEED IS LESS THAN 4 FT/SEC

WARRANT #5 (SCHOOL CROSSING)

On approved school route ? . . . . . (YES) – NO

Gap analysis made during period from 3:00 PM to 4:00 PM

Number of vehicles during analysis period; 911

Pedestrian crossing time (1): 14.25

Number of gaps greater than (1) during period: 24.75

Approximate vehicular speed: . . . . . 35 MPH

Number of children crossing during period: 62

Warrant Satisfied ? . . . . . (YES)-NO

WARRANT #6 (COORDINATED SIGNAL SYSTEM)

Major street is: . . . . . ONE WAY – (TWO WAY)

Distance to nearest signal in each direction on major street: ____ and ____

Time space diagram (attached) shows that this location can be implemented into a system: . . . . . YES-NO

Warrant Satisfied ? . . . . . YES-(NO)

WARRANT #7 (CRASH HAZARD)

Adequate trial of less restrictive measures; . . . . . YES-(NO)

Number of accidents per year of a type which could be prevented by signalization: . . . . . ____

80% of warrant #1 or #2 satisfied: . . . . . YES-NO

Will signalization disrupt progressive movement ? . . . . . YES-NO

Warrant Satisfied ? . . . . . YES-(NO)

WARRANT #8 (ROADWAY NETWORK)

Both streets are considered major routes: . . . . . YES-(NO)

At least 800 VPH during weekday peak hour: . . . . . YES-NO

At least 800 VPH for any 5 hrs. on a saturday or sunday: YES-NO

Warrant Satisfied ? . . . . . YES-(NO)

INTERSECTION: DETROIT AVENUE AND WARREN ROAD

LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD

NO. OF LANES PER APPROACH: N: 1 S: 1 E: 1 W: 1

PRESENTLY SIGNALIZED ? (YES)-NO ____ DOES 70% WARRANT APPLY ? NO

MAINTAINING AGENCY CITY OF LAKEWOOD

CO. ____ RTE. ____ SECT. ____

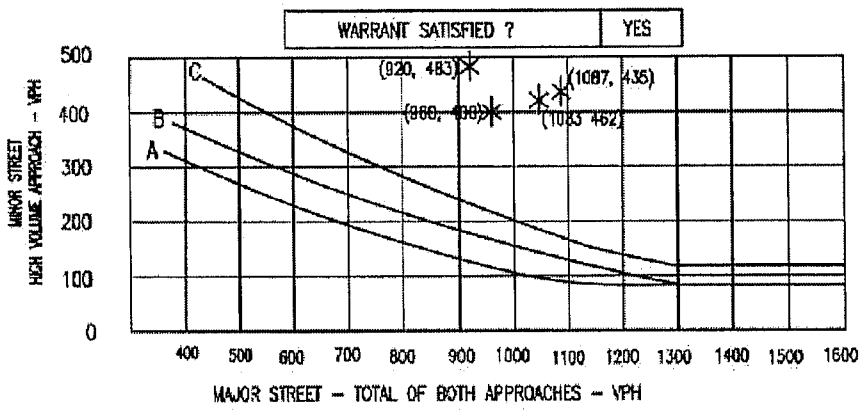
CONSULTANT: ____

CALC BY: ____ CHKD BY: ____

INTERSECTION: DETROIT AVENUE AND WARREN ROAD	CO.____ RTE.____ SECT.____
LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD	CONSULTANT:____
NO. OF LANES PER APPROACH: N: 1 S: 1 E: 1 W: 1	CALC BY:____ CHKD BY:____
PRESENTLY SIGNALIZED ? (YES) NO____ DOES 70% WARRANT APPLY ? NO	
MAINTAINING AGENCY CITY OF LAKEWOOD	

WARRANT #2
FOUR HOUR VOLUME

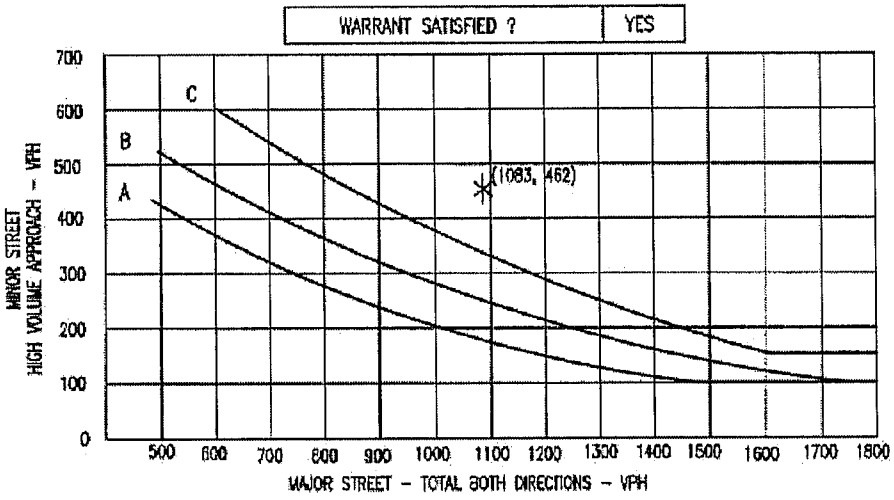
☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES



*NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

WARRANT #3
PEAK HOUR VOLUME

☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES



*NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

WARRANT #5 SCHOOL CROSSING WARRANT

INTERSERCTION:	Detroit Ave.	AND	Warren Rd.				
LOCATED IN:	City of Lakewood						
# OF LANES PER APPROACH:	NORTH:	1	SOUTH:	1	EAST:	1	WEST: 1
PRESENTLY SIGNALIZED	Yes	DOES 70% WARRANT APPLY	No				
MAINTAINING AGENCY:	City of Lakewood						

ON APPROVED SCHOOL ROUTE	Yes		
GAP ANALYSIS MADE DURING PERIOD	15:00	TO	16:00
NUMBER OF VEHICLES DURING ANALYSIS PERIOD	911		
PEDESTRIAN CROSSING TIME	14.25		
NUMBER OF GAPS GREATER THAN (1) DURING PERIOD	24.75		
APPROXIMATE VEHICULAR SPEED	35 MPH		
NUMBER OF CHILDREN CROSSING DURING PERIOD	62		
WARRANT SATISIFIED	YES		

Calculation Sheet

t - REQUIRED GAP TIME

T - LENGTH OF TIME PERIOD FOR WHICH VOLUME **V** APPLIES (SECONDS)

V - TWO WAY VEHICLUAR VOLUME ACROSS THE CROSSING PATH IN TIME PERIOD **T**

e - BASE OF THE NATURAL SYSTEM OF LOGARITHM, HAVING AN APPROXIMATE VALUE OF 2.718

CROSSWALK DISTANCE (FEET)		57	ft
WALKING SPEED (FEET/SEC)		4	ft/sec
t = CD / WS		14.25	sec
T (min):	60	3600	sec
V:		911	

NUMBER OF EXPECTED GAPS EQUAL OR GREATER THAN **t**: 24.75122841

$= Ve^{(-(V/T))}$

NUMBER OF **t**-SECOND INTERVALS PER HOUR FREE OF CARS: 6.883822078

$= (T/t)e^{(-(V/T))}$

Count Sheet

	Detroit Ave. WB APPROACH				Detroit Ave. EB APPROACH			Pedestrians Crossing Detroit
Start Time	Right	Thru	Left		Right	Thru	Left	
3:00 PM	2	92	47		46	84	3	7
3:15 PM	3	100	48		42	73	1	33
3:30 PM	2	77	63		34	85	6	14
3:45 PM	3	104	50		36	78	8	8
HOURLY TOTALS	10	373 591	208		158	320 496	18	62

EAST CROSSWALK HOURLY TOTALS

Detroit Ave. Total
911

Pedestrain Total
62

WEST CROSSWALK HOURLY TOTALS

Detroit Ave. Total
869

Pedestrian Total
0

		ADJUSTED HOURLY VOLUMES			WARRANT #1A				WARRANT #1B				WARRANT #4			
					100%		80%		100%		80%		4 HOUR		PEAK HOUR	
CONDITION	NO. LANE	MAJOR ST 2-WAY	MINOR ST 1-WAY	MINOR ST. 1-WAY	MAJ	MIN	MAJ	MIN	MAJ	MIN	MAJ	MIN	GAPS	PED	GAPS	PED
* NORM	1	X	X	X	500	150	400	120	750	75	600	60	60	100	60	190
	2+				800	200	480	160	900	100	720	80				
* 70%	1				350	105	280	84	525	53	420	42	60	50**	60	95**
	2+				420	140	336	112	630	70	504	56				
MID-1AM.																
1AM.-2AM.																
2																
3																
4																
5																
6																
7		714	60	92	X		X			X	X	X				
8		695	55	103	X		X			X	X	X				
9		626	63	78	X		X			X	X	X				
10																
11		787	75	66	X		X		X	X	X	X				
NOON-1PM.		853	104	64	X		X		X	X	X	X				
1PM.-2PM.		854	97	46	X		X		X	X	X	X				
2																
3		962	144	91	X		X	X	X	X	X	X				
4		897	183	83	X	X	X	X	X	X	X	X				
5		1080	205	57	X	X	X	X	X	X	X	X				
6																
7																
8																
9																
10																
11																
HOURS MET					9	2	9	3	6	9	9	9				
WARRANT SATISFIED ?					NO		NO		NO		YES					

Warrants numbered 1A and 1B are each met at the 80% level: YES – (NO)

* CONDITION IS DETERMINED BY ENVIRONMENT: USE 70% VALUES IF 85 PERCENTILE SPEED EXCEEDS 40 MPH ON THE MAJOR APPROACH OR IF LOCATION IS IN THE BUILT-UP AREA OF AN ISOLATED COMMUNITY WITH A POPULATION OF LESS THAN 10,000.

** MAY BE USED IF PEDESTRIAN SPEED IS LESS THAN 4 FT/SEC

WARRANT #5 (SCHOOL CROSSING)

On approved school route ? . . . . . YES – (NO)

Gap analysis made during period from _____ to _____

Number of vehicles during analysis period: . . . . . _____

Pedestrian crossing time (1): . . . . . _____

Number of gaps greater than (1) during period: . . . . . _____

Approximate vehicular speed: . . . . . _____

Number of children crossing during period: . . . . . _____

Warrant Satisfied ? . . . . . YES-(NO)

WARRANT #6 (COORDINATED SIGNAL SYSTEM)

Major street is: . . . . . ONE WAY – (TWO WAY)

Distance to nearest signal in each direction on major street: 330' and 335'

Time space diagram (attached) shows that this location can be implemented into a system: . . . . . YES-NO

Warrant Satisfied ? . . . . . YES-(NO)

WARRANT #7 (CRASH HAZARD)

Adequate trial of less restrictive measures: . . . . . YES-(NO)

Number of accidents per year of a type which could be prevented by signalization: . . . . . _____

80% of warrant #1 or #2 satisfied: . . . . . YES-NO

Will signalization disrupt progressive movement ? . . . . . YES-NO

Warrant Satisfied ? . . . . . YES-(NO)

WARRANT #8 (ROADWAY NETWORK)

Both streets are considered major routes: . . . . . YES-(NO)

At least 800 VPH during weekday peak hour: . . . . . YES-NO

At least 800 VPH for any 5 hrs. on a saturday or sunday: YES-NO

Warrant Satisfied ? . . . . . YES-(NO)

INTERSECTION: DETROIT AVENUE AND ST. CHARLES AVENUE

LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD

NO. OF LANES PER APPROACH: N: 1 S: 1 E: 1 W: 1

PRESENTLY SIGNALIZED ? (YES)-NO _____ DOES 70% WARRANT APPLY ? NO

MAINTAINING AGENCY CITY OF LAKEWOOD

CO. _____ RTE. _____ SECT. _____

CONSULTANT: _____

CALC BY: _____ CHKD BY: _____

INTERSECTION: DETROIT AVENUE AND ST. CHARLES AVENUE

LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD

NO. OF LANES PER APPROACH: N: 1 S: 1 E: 1 W: 1

PRESENTLY SIGNALIZED ? (YES)-NO ____ DOES 70% WARRANT APPLY ? NO

MAINTAINING AGENCY CITY OF LAKEWOOD

CO.____ RTE.____ SECT.____

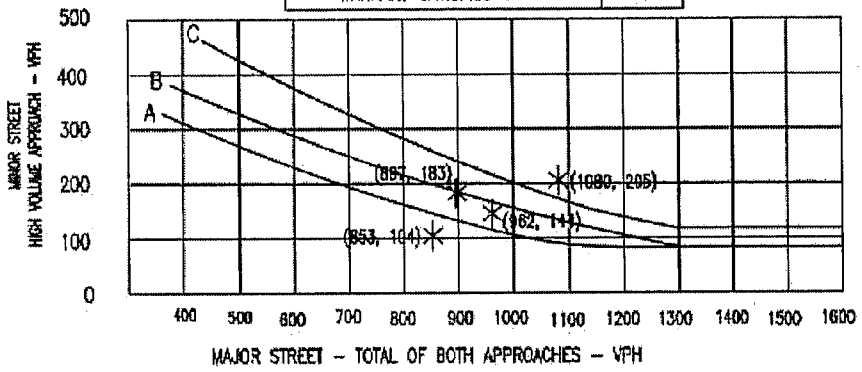
CONSULTANT:____

CALC BY:____ CHKD BY:____

WARRANT #2
FOUR HOUR VOLUME

☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES

WARRANT SATISFIED ?	NO

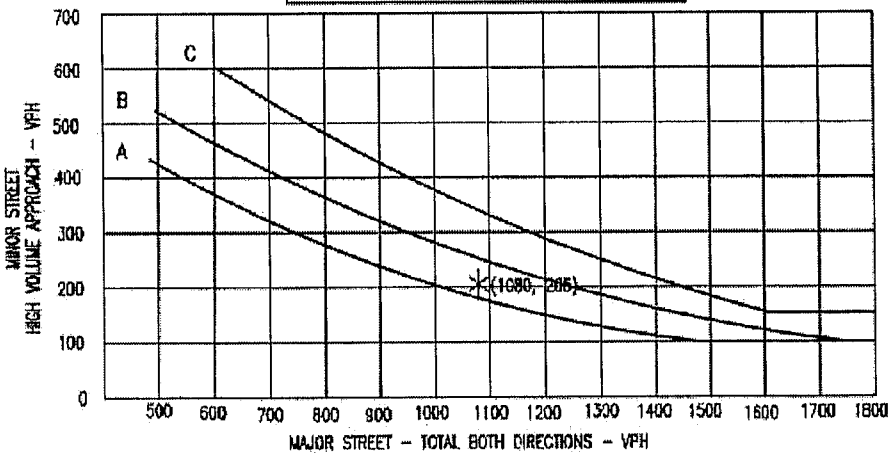


*NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

WARRANT #3
PEAK HOUR VOLUME

☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES

WARRANT SATISFIED ?	YES



*NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

		ADJUSTED HOURLY VOLUMES			WARRANT #1A				WARRANT #1B				WARRANT #4			
					100%		80%		100%		80%		4 HOUR		PEAK HOUR	
CONDITION	NO. LANE	MAJOR ST 2-WAY	MINOR ST 1-WAY	MINOR ST 1-WAY	MAJ	MIN	MAJ	MIN	MAJ	MIN	MAJ	MIN	GAPS	PED	GAPS	PED
*	1	X	X	X	500	150	400	120	750	75	600	60	60	100	60	190
NORM	2+				600	200	480	160	900	100	720	80				
* 70%	1				350	105	280	84	525	53	420	42	60	50**	60	95**
	2+				420	140	336	112	630	70	504	56				
MID-1AM.																
1AM.-2AM.																
2																
3																
4																
5																
6		179	26	30												
7		578	75	115	X		X			X		X				
8		616	107	122	X		X	X		X	X	X				
9		690	107	93	X		X			X	X	X				
10		753	102	124	X		X	X	X	X	X	X				
11		789	96	110	X		X		X	X	X	X				
NOON-1PM.		853	124	102	X		X	X	X	X	X	X				
1PM.-2PM.		788	117	98	X		X		X	X	X	X				
2		855	120	138	X		X	X	X	X	X	X				
3		909	160	113	X	X	X	X	X	X	X	X				
4		741	161	106	X	X	X	X	X	X	X	X				
5		916	198	111	X	X	X	X	X	X	X	X				
6		807	140	75	X	X	X	X	X	X	X	X				
7																
8																
9																
10																
11																
HOURS MET					12	4	12	8	9	12	11	12				
WARRANT SATISFIED ?					NO		YES		YES		YES					

Warrants numbered 1A and 1B are each met at the 80% level: (YES) – NO

* CONDITION IS DETERMINED BY ENVIRONMENT: USE 70% VALUES IF 85 PERCENTILE SPEED EXCEEDS 40 MPH ON THE MAJOR APPROACH OR IF LOCATION IS IN THE BUILT-UP AREA OF AN ISOLATED COMMUNITY WITH A POPULATION OF LESS THAN 10,000.

** MAY BE USED IF PEDESTRIAN SPEED IS LESS THAN 4 FT/SEC

WARRANT #5 (SCHOOL CROSSING)

On approved school route ? . . . YES – (NO)

Gap analysis made during period from _____ to _____

Number of vehicles during analysis period: _____

Pedestrian crossing time (1): _____

Number of gaps greater than (1) during period: _____

Approximate vehicular speed: _____

Number of children crossing during period: _____

Warrant Satisfied ? . . . YES-(NO)

WARRANT #6 (COORDINATED SIGNAL SYSTEM)

Major street is: . . . ONE WAY – (TWO WAY)

Distance to nearest signal in each direction on major street: 335' and 400'

Time space diagram (attached) shows that this location can be implemented into a system: . . . YES–NO

Warrant Satisfied ? . . . YES-(NO)

WARRANT #7 (CRASH HAZARD)

Adequate trial of less restrictive measures: . . . YES-(NO)

Number of accidents per year of a type which could be prevented by signalization: _____

80% of warrant #1 or #2 satisfied: . . . YES–NO

Will signalization disrupt progressive movement ? . . . YES–NO

Warrant Satisfied ? . . . YES-(NO)

WARRANT #8 (ROADWAY NETWORK)

Both streets are considered major routes: . . . YES-(NO)

At least 800 VPH during weekday peak hour: . . . YES–NO

At least 800 VPH for any 5 hrs. on a saturday or sunday: YES–NO

Warrant Satisfied ? . . . YES-(NO)

INTERSECTION: DETROIT AVENUE AND BELLE AVENUE

LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD

NO. OF LANES PER APPROACH: N: 1 S: 1 E: 1 W: 1

PRESENTLY SIGNALIZED ? (YES)–NO DOES 70% WARRANT APPLY ? NO

MAINTAINING AGENCY CITY OF LAKEWOOD

CO. RTE. SECT.

CONSULTANT:

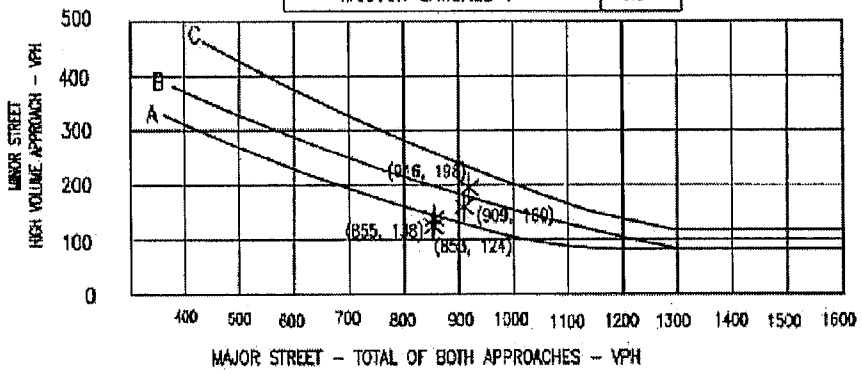
CALC BY: CHKD BY:

INTERSECTION: DETROIT AVENUE AND BELLE AVENUE	CO.____ RTE.____ SECT.____
LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD	CONSULTANT:____
NO. OF LANES PER APPROACH: N: 1 S: 1 E: 1 W: 1	CALC BY:____ CHKD BY:____
PRESENTLY SIGNALIZED ? (YES) NO ____ DOES 70% WARRANT APPLY ? NO	
MAINTAINING AGENCY CITY OF LAKEWOOD	

WARRANT #2
FOUR HOUR VOLUME

☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES

WARRANT SATISFIED ?	NO

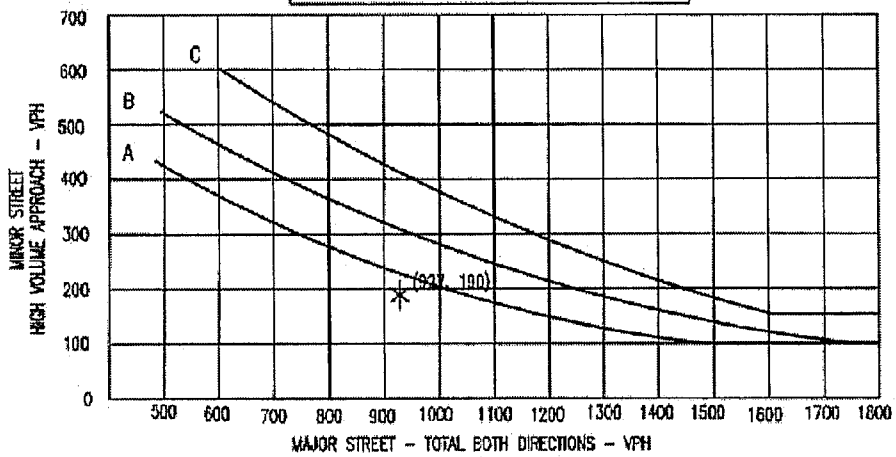


*NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

WARRANT #3
PEAK HOUR VOLUME

☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES

WARRANT SATISFIED ?	NO



*NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

		ADJUSTED HOURLY VOLUMES			WARRANT #1A				WARRANT #1B				WARRANT #4			
					100%		80%		100%		80%		4 HOUR		PEAK HOUR	
CONDITION	NO. LANE	MAJOR ST 2-WAY	MINOR ST 1-WAY	MINOR ST 1-WAY	MAJ	MIN	MAJ	MIN	MAJ	MIN	MAJ	MIN	GAPS	PED	GAPS	PED
* NORM	1	X	X	X	500	150	400	120	750	75	600	60	60	100	60	190
	2+				600	200	480	160	900	100	720	80				
* 70%	1				350	105	280	84	525	53	420	42	60	50**	60	95**
	2+				420	140	336	112	630	70	504	56				
MID-1AM.																
1AM.-2AM.																
2																
3																
4																
5																
6																
7		569	65	62	X		X					X				
8		621	55	40	X		X				X					
9		591	62	39	X		X					X				
10																
11		771	59	46	X		X		X		X					
NOON-1PM.		875	61	43	X		X		X		X	X				
1PM.-2PM.		859	44	49	X		X		X		X					
2																
3		1006	69	56	X		X		X		X	X				
4		872	62	37	X		X		X		X	X				
5		887	82	44	X		X		X	X	X	X				
6																
7																
8																
9																
10																
11																
HOURS MET					9	0	9	0	6	1	7	6				
WARRANT SATISFIED ?					NO		NO		NO		NO					

Warrants numbered 1A and 1B are each met at the 80% level: YES – (NO)

* CONDITION IS DETERMINED BY ENVIRONMENT; USE 70% VALUES IF 85 PERCENTILE SPEED EXCEEDS 40 MPH ON THE MAJOR APPROACH OR IF LOCATION IS IN THE BUILT-UP AREA OF AN ISOLATED COMMUNITY WITH A POPULATION OF LESS THAN 10,000.

** MAY BE USED IF PEDESTRIAN SPEED IS LESS THAN 4 FT/SEC

WARRANT #5 (SCHOOL CROSSING)

On approved school route ? . . . YES – (NO)

Gap analysis made during period from _____ to _____

Number of vehicles during analysis period: . . . _____

Pedestrian crossing time (1): . . . _____

Number of gaps greater than (1) during period: . . . _____

Approximate vehicular speed: . . . _____

Number of children crossing during period: . . . _____

Warrant Satisfied ? . . . YES – (NO)

WARRANT #6 (COORDINATED SIGNAL SYSTEM)

Major street is: . . . ONE WAY – (TWO WAY)

Distance to nearest signal in each direction on major street: 400' and 770'

Time space diagram (attached) shows that this location can be implemented into a system: . . . YES–NO

Warrant Satisfied ? . . . YES – (NO)

WARRANT #7 (CRASH HAZARD)

Adequate trial of less restrictive measures: . . . YES – (NO)

Number of accidents per year of a type which could be prevented by signalization: . . . _____

80% of warrant #1 or #2 satisfied: . . . YES–NO

Will signalization disrupt progressive movement ? . . . YES–NO

Warrant Satisfied ? . . . YES – (NO)

WARRANT #8 (ROADWAY NETWORK)

Both streets are considered major routes: . . . YES – (NO)

At least 800 VPH during weekday peak hour: . . . YES–NO

At least 800 VPH for any 5 hrs. on a saturday or sunday: YES–NO

Warrant Satisfied ? . . . YES – (NO)

INTERSECTION: DETROIT AVENUE AND MARLOWE AVENUE

LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD

NO. OF LANES PER APPROACH: N: 1 S: 1 E: 1 W: 1

PRESENTLY SIGNALIZED ? (YES)–NO DOES 70% WARRANT APPLY ? NO

MAINTAINING AGENCY CITY OF LAKEWOOD

CO. _____ RTE. _____ SECT. _____

CONSULTANT: _____

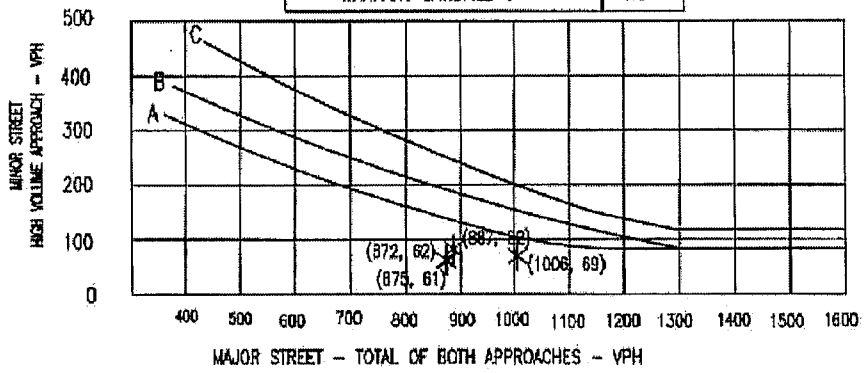
CALC BY: _____ CHKD BY: _____

INTERSECTION: DETROIT AVENUE AND MARLOWE AVENUE	CO.____ RTE.____ SECT.____
LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD	CONSULTANT:____
NO. OF LANES PER APPROACH: N: 1 S: 1 E: 1 W: 1	CALC BY:____ CHKD BY:____
PRESENTLY SIGNALIZED ? (YES)-NO ____ DOES 70% WARRANT APPLY ? NO	
MAINTAINING AGENCY CITY OF LAKEWOOD	

WARRANT #2
FOUR HOUR VOLUME

☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES

WARRANT SATISFIED ?	NO

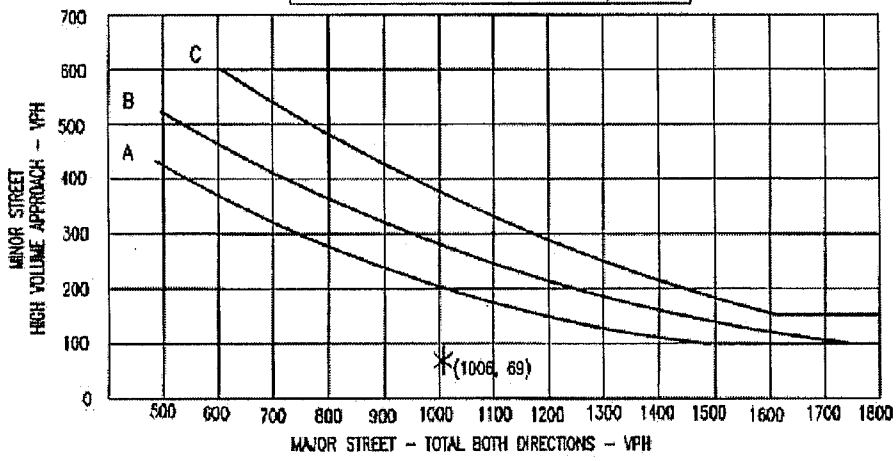


*NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

WARRANT #3
PEAK HOUR VOLUME

☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES

WARRANT SATISFIED ?	NO



*NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

		ADJUSTED HOURLY VOLUMES			WARRANT #1A				WARRANT #1B				WARRANT #4			
					100%		80%		100%		80%		4 HOUR		PEAK HOUR	
CONDITION	NO. LANE	MAJOR ST 2-WAY	MINOR ST 1-WAY	MINOR ST 1-WAY	MAJ	MIN	MAJ	MIN	MAJ	MIN	MAJ	MIN	GAPS	PED	GAPS	PED
* NORM	1	X	X	X	500	150	400	120	750	75	600	60	60	100	60	190
	2+				600	200	480	160	900	100	720	80				
* 70%	1				350	105	280	84	525	53	420	42	60	50**	60	95**
	2+				420	140	336	112	630	70	504	56				
MID-1AM.																
1AM.-2AM.																
2																
3																
4																
5																
6																
7		619	102	42	X		X			X	X	X				
8		677	80	44	X		X			X	X	X				
9		582	62	24	X		X					X				
10																
11		772	62	27	X		X		X		X	X				
NOON-1PM.		793	64	30	X		X		X		X	X				
1PM.-2PM.		805	42	26	X		X		X		X					
2																
3		1015	79	36	X		X		X	X	X	X				
4		889	76	51	X		X		X	X	X	X				
5		975	83	37	X		X		X	X	X	X				
6																
7																
8																
9																
10																
11																
HOURS MET					9	0	9	0	6	5	8	8				
WARRANT SATISFIED ?					NO		NO		NO		NO					

Warrants numbered 1A and 1B are each met at the 80% level: YES – (NO)

* CONDITION IS DETERMINED BY ENVIRONMENT: USE 70% VALUES IF 85 PERCENTILE SPEED EXCEEDS 40 MPH ON THE MAJOR APPROACH OR IF LOCATION IS IN THE BUILT-UP AREA OF AN ISOLATED COMMUNITY WITH A POPULATION OF LESS THAN 10,000.

** MAY BE USED IF PEDESTRIAN SPEED IS LESS THAN 4 FT/SEC

WARRANT #5 (SCHOOL CROSSING)

On approved school route ? . . . YES – (NO)

Gap analysis made during period from _____ to _____

Number of vehicles during analysis period: . . . _____

Pedestrian crossing time (1): . . . _____

Number of gaps greater than (1) during period: . . . _____

Approximate vehicular speed: . . . _____

Number of children crossing during period: . . . _____

Warrant Satisfied ? . . . YES – (NO)

WARRANT #6 (COORDINATED SIGNAL SYSTEM)

Major street is: . . . ONE WAY – (TWO WAY)

Distance to nearest signal in each direction on major street: 770' and 905'

Time space diagram (attached) shows that this location can be implemented into a system: . . . YES–NO

Warrant Satisfied ? . . . YES – (NO)

WARRANT #7 (CRASH HAZARD)

Adequate trial of less restrictive measures: . . . YES – (NO)

Number of accidents per year of a type which could be prevented by signalization: . . . _____

80% of warrant #1 or #2 satisfied: . . . YES–NO

Will signalization disrupt progressive movement ? . . . YES–NO

Warrant Satisfied ? . . . YES – (NO)

WARRANT #8 (ROADWAY NETWORK)

Both streets are considered major routes: . . . YES – (NO)

At least 800 VPH during weekday peak hour: . . . YES–NO

At least 800 VPH for any 5 hrs. on a saturday or sunday: YES–NO

Warrant Satisfied ? . . . YES – (NO)

INTERSECTION: DETROIT AVENUE AND MANOR PARK/BLOSSOM PARK

LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD

NO. OF LANES PER APPROACH: N: 1 S: 1 E: 1 W: 1

PRESENTLY SIGNALIZED ? (YES)–NO DOES 70% WARRANT APPLY ? NO

MAINTAINING AGENCY CITY OF LAKEWOOD

CO. RTE. SECT.

CONSULTANT:

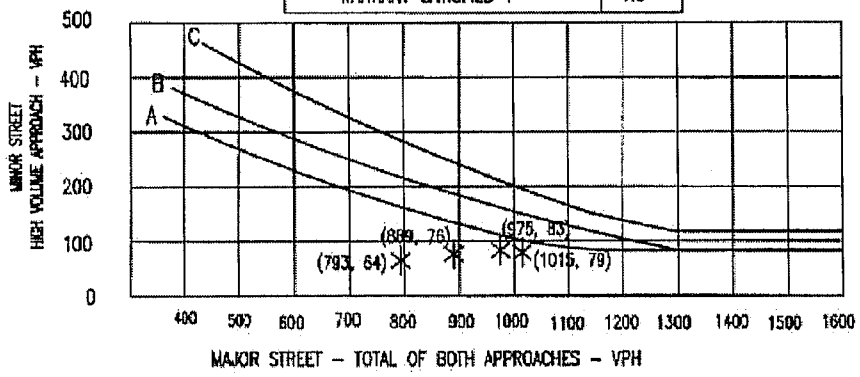
CALC BY: CHKD BY:

INTERSECTION: DETROIT AVENUE AND MANOR PARK/BLOSSOM PARK	CO.____ RTE.____ SECT.____
LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD	CONSULTANT:____
NO. OF LANES PER APPROACH: N: 1 S: 1 E: 1 W: 1	CALC BY:____ CHKD BY:____
PRESENTLY SIGNALIZED ? (YES)-NO____ DOES 70% WARRANT APPLY ? NO	
MAINTAINING AGENCY CITY OF LAKEWOOD	

WARRANT #2
FOUR HOUR VOLUME

☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES

WARRANT SATISFIED ?	NO

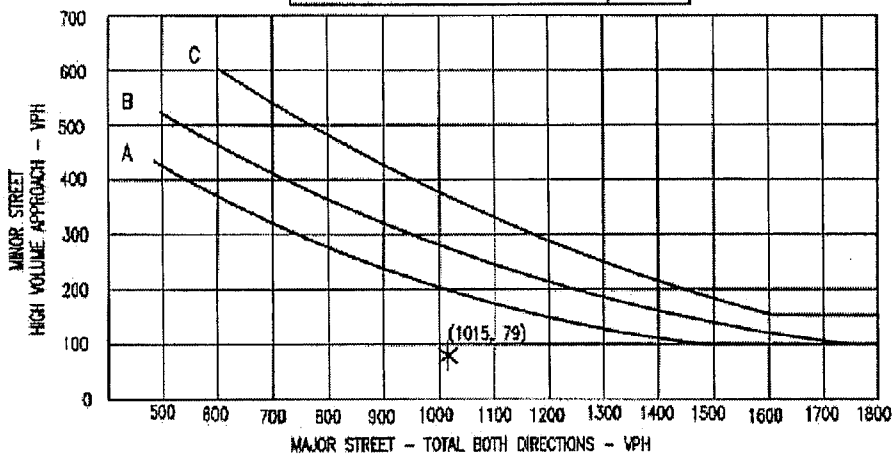


*NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

WARRANT #3
PEAK HOUR VOLUME

☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES

WARRANT SATISFIED ?	NO



*NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

		ADJUSTED HOURLY VOLUMES			WARRANT #1A				WARRANT #1B				WARRANT #4			
					100%		80%		100%		80%		4 HOUR		PEAK HOUR	
CONDITION	NO. LANE	MAJOR ST 2-WAY	MINOR ST 1-WAY	MINOR ST 1-WAY	MAJ	MIN	MAJ	MIN	MAJ	MIN	MAJ	MIN	GAPS	PED	GAPS	PED
* NORM	1	X	X	X	500	150	400	120	750	75	600	60	60	100	60	190
	2+				600	200	480	160	900	100	720	80				
* 70%	1				350	105	280	84	525	53	420	42	60	50**	60	95**
	2+				420	140	336	112	630	70	504	56				
MID-1AM.																
1AM.-2AM.																
2																
3																
4																
5																
6		215	47	77						X		X				
7		588	140	185	X	X	X	X		X		X				
8		513	118	151	X	X	X	X		X		X				
9		472	59	131			X	X		X		X				
10		552	100	187	X	X	X	X		X		X				
11		665	123	176	X	X	X	X		X	X	X				
NOON-1PM.		626	168	140	X	X	X	X		X	X	X				
1PM.-2PM.		627	115	149	X		X	X		X	X	X				
2		656	113	153	X	X	X	X		X	X	X				
3		727	155	186	X	X	X	X		X	X	X				
4		685	154	209	X	X	X	X		X	X	X				
5		730	188	230	X	X	X	X		X	X	X				
6		602	153	207	X	X	X	X		X	X	X				
7																
8																
9																
10																
11																
HOURS MET					11	10	12	12	0	13	8	13				
WARRANT SATISFIED ?					YES		YES		NO		YES					

Warrants numbered 1A and 1B are each met at the 80% level: (YES) – NO

* CONDITION IS DETERMINED BY ENVIRONMENT: USE 70% VALUES IF 85 PERCENTILE SPEED EXCEEDS 40 MPH ON THE MAJOR APPROACH OR IF LOCATION IS IN THE BUILT-UP AREA OF AN ISOLATED COMMUNITY WITH A POPULATION OF LESS THAN 10,000.

** MAY BE USED IF PEDESTRIAN SPEED IS LESS THAN 4 FT/SEC

WARRANT #5 (SCHOOL CROSSING)

On approved school route ? . . . . . (YES) – NO

Gap analysis made during period from 3:00 PM to 4:00 PM

Number of vehicles during analysis period: 644

Pedestrian crossing time (1): 19.75

Number of gaps greater than (1) during period: 18.82

Approximate vehicular speed: . . . . . 35 MPH

Number of children crossing during period: 51

Warrant Satisfied ? . . . . . (YES)–NO

WARRANT #6 (COORDINATED SIGNAL SYSTEM)

Major street is: . . . . . ONE WAY – (TWO WAY)

Distance to nearest signal in each direction on major street: 905' and 1580'

Time space diagram (attached) shows that this location can be implemented into a system: . . . . . YES–NO

Warrant Satisfied ? . . . . . YES–(NO)

WARRANT #7 (CRASH HAZARD)

Adequate trial of less restrictive measures: . . . . . YES–(NO)

Number of accidents per year of a type which could be prevented by signalization: . . . . . ____

80% of warrant #1 or #2 satisfied: . . . . . YES–NO

Will signalization disrupt progressive movement ? . . . . . YES–NO

Warrant Satisfied ? . . . . . YES–(NO)

WARRANT #8 (ROADWAY NETWORK)

Both streets are considered major routes: . . . . . YES–(NO)

At least 800 VPH during weekday peak hour: . . . . . YES–NO

At least 800 VPH for any 5 hrs. on a saturday or sunday: YES–NO

Warrant Satisfied ? . . . . . YES–(NO)

INTERSECTION: DETROIT AVENUE AND BUNTS ROAD

LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD

NO. OF LANES PER APPROACH: N: 1 S: 1 E: 1 W: 1

PRESENTLY SIGNALIZED ? (YES)–NO DOES 70% WARRANT APPLY ? NO

MAINTAINING AGENCY CITY OF LAKEWOOD

CO. ____ RTE. ____ SECT. ____

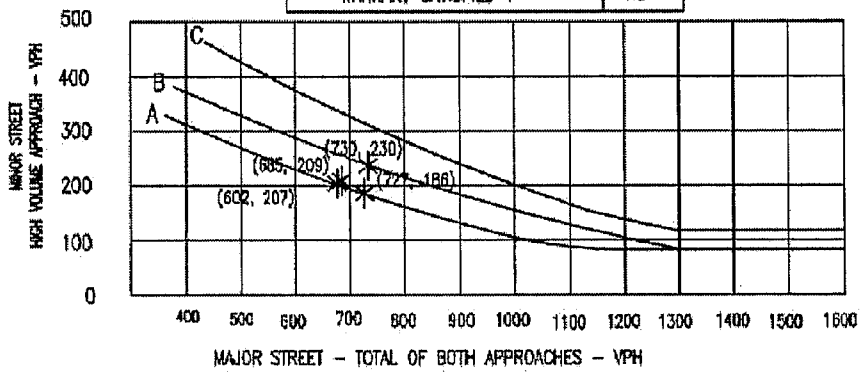
CONSULTANT: ____ CALC BY: ____ CHKD BY: ____

INTERSECTION: DETROIT AVENUE AND BUNTS ROAD	CO. ____ RTE. ____ SECT. ____
LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD	CONSULTANT: ____
NO. OF LANES PER APPROACH: N: 1 S: 1 E: 1 W: 1	CALC BY: ____ CHKD BY: ____
PRESENTLY SIGNALIZED ? (YES) - NO ____ DOES 70% WARRANT APPLY ? NO	
MAINTAINING AGENCY CITY OF LAKEWOOD	

WARRANT #2
FOUR HOUR VOLUME

☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES

WARRANT SATISFIED ?	NO

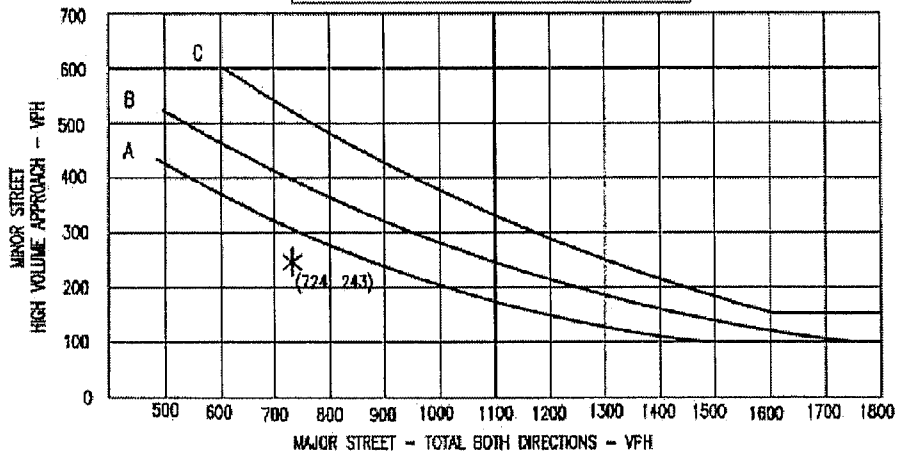


*NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

WARRANT #3
PEAK HOUR VOLUME

☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES

WARRANT SATISFIED ?	NO



*NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

WARRANT #5 SCHOOL CROSSING WARRANT

INTERSERCTION:	Detroit Ave.	AND	Bunts Rd.				
LOCATED IN:	City of Lakewood						
# OF LANES PER APPROACH:	NORTH:	1	SOUTH:	1	EAST:	1	WEST: 1
PRESENTLY SIGNALIZED	Yes	DOES 70% WARRANT APPLY	No				
MAINTAINING AGENCY:	City of Lakewood						

ON APPROVED SCHOOL ROUTE	Yes		
GAP ANALYSIS MADE DURING PERIOD	15:00	TO	16:00
NUMBER OF VEHICLES DURING ANALYSIS PERIOD	644		
PEDESTRIAN CROSSING TIME	19.75		
NUMBER OF GAPS GREATER THAN (1) DURING PERIOD	16.82		
APPROXIMATE VEHICULAR SPEED	35 MPH		
NUMBER OF CHILDREN CROSSING DURING PERIOD	51		
WARRANT SATISIFIED	YES		

Calculation Sheet

t - REQUIRED GAP TIME

T - LENGTH OF TIME PERIOD FOR WHICH VOLUME V APPLIES (SECONDS)

V - TWO WAY VEHICLUAR VOLUME ACROSS THE CROSSING PATH IN TIME PERIOD T

e - BASE OF THE NATURAL SYSTEM OF LOGARITHM, HAVING AN APPROXIMATE VALUE OF 2.718

CROSSWALK DISTANCE (FEET)		79	ft
WALKING SPEED (FEET/SEC)		4	ft/sec
t = CD / WS		19.75	sec
T (min):	60	3600	sec
V:		644	

NUMBER OF EXPECTED GAPS EQUAL OR GREATER THAN t: 18.82168181

$= Ve^{(-(Vt/T))}$

NUMBER OF t-SECOND INTERVALS PER HOUR FREE OF CARS: 5.327309891

$= (T/t)e^{(-(Vt/T))}$

Count Sheet

Start Time	Detroit Ave. WB APPROACH Right	Thru	Left	Detroit Ave. EB APPROACH Right	Thru	Left	Pedestrians Crossing Detroit
3:00 PM	11	63	27	12	94	3	24
3:15 PM	5	49	27	24	82	5	25
3:30 PM	6	60	19	15	76	3	0
3:45 PM	4	51	13	16	57	3	2
HOURLY TOTALS	26	223	86	69	309	14	51
		335			392		

EAST CROSSWALK HOURLY TOTALS

Detroit Ave. Total
644

Pedestrain Total
51

WEST CROSSWALK HOURLY TOTALS

Detroit Ave. Total
615

Pedestrian Total
0

CONDITION	NO. LANE	ADJUSTED HOURLY VOLUMES: MAJOR ST 2-WAY	MINOR ST 1-WAY	MINOR ST 1-WAY	WARRANT #1A 100% MAJ	100% MIN	80% MAJ	80% MIN	WARRANT #1B 100% MAJ	100% MIN	80% MAJ	80% MIN	WARRANT #4 4 HOUR GAPS	4 HOUR PED	PEAK HOUR GAPS	PEAK HOUR PED
*	1	X	X	X	500	150	400	120	750	75	600	60	60	100	60	190
NORM	2+				600	200	480	160	900	100	720	80				
*	1				350	105	280	84	525	53	420	42	60	50**	60	95**
70%	2+				420	140	336	112	630	70	504	56				
MID-1AM.																
1AM.-2AM.																
2																
3																
4																
5																
6																
7		537	93	174	X	X	X	X		X		X				
8		567	35	80	X		X			X		X				
9		419	2	34			X									
10																
11		635	58	82	X		X			X	X	X				
NOON-1PM.		662	39	69	X		X				X	X				
1PM.-2PM.		654	15	61	X		X				X	X				
2																
3		955	68	117	X		X		X	X	X	X				
4		640	8	59	X		X				X					
5		794	29	79	X		X		X	X	X	X				
6																
7																
8																
9																
10																
11																
HOURS MET					8	1	9	1	2	5	6	7				
WARRANT SATISFIED ?					NO		NO		NO		NO					

Warrants numbered 1A and 1B are each met at the 80% level: YES - (NO)

* CONDITION IS DETERMINED BY ENVIRONMENT: USE 70% VALUES IF 85 PERCENTILE SPEED EXCEEDS 40 MPH ON THE MAJOR APPROACH OR IF LOCATION IS IN THE BUILT-UP AREA OF AN ISOLATED COMMUNITY WITH A POPULATION OF LESS THAN 10,000.

** MAY BE USED IF PEDESTRIAN SPEED IS LESS THAN 4 FT/SEC

WARRANT #5 (SCHOOL CROSSING)

On approved school route ? . . . . . (YES) - NO

Gap analysis made during period from 3:00 PM to 4:00 PM

Number of vehicles during analysis period: 896

Pedestrian crossing time (1): 12

Number of gaps greater than (1) during period: 42.49

Approximate vehicular speed: . . . . . 35 MPH

Number of children crossing during period: 45

Warrant Satisfied ? . . . . . (YES)-NO

WARRANT #6 (COORDINATED SIGNAL SYSTEM)

Major street is: . . . . . ONE WAY - (TWO WAY)

Distance to nearest signal in each direction on major street: 1580' and 230'

Time space diagram (attached) shows that this location can be implemented into a system: . . . . . YES-NO

Warrant Satisfied ? . . . . . YES-(NO)

WARRANT #7 (CRASH HAZARD)

Adequate trial of less restrictive measures: . . . . . YES-(NO)

Number of accidents per year of a type which could be prevented by signalization: . . . . . _____

80% of warrant #1 or #2 satisfied: . . . . . YES-NO

Will signalization disrupt progressive movement ? . . . . . YES-NO

Warrant Satisfied ? . . . . . YES-(NO)

WARRANT #8 (ROADWAY NETWORK)

Both streets are considered major routes: . . . . . YES-(NO)

At least 800 VPH during weekday peak hour: . . . . . YES-NO

At least 800 VPH for any 5 hrs. on a saturday or sunday: YES-NO

Warrant Satisfied ? . . . . . YES-(NO)

INTERSECTION: DETROIT AVENUE AND WATERBURY AVE. / ST EDWARD

LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD

NO. OF LANES PER APPROACH: N: 1 S: 1 E: 1 W: 1

PRESENTLY SIGNALIZED ? (YES)-NO DOES 70% WARRANT APPLY ? NO

MAINTAINING AGENCY CITY OF LAKEWOOD

CO. _____ RTE. _____ SEQT. _____

CONSULTANT: _____

CALC BY: _____ CHKD BY: _____

INTERSECTION: DETROIT AVENUE AND WATERBURY AVE. / ST EDWARD

LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD

NO. OF LANES PER APPROACH: N: 1 S: 1 E: 1 W: 1

PRESENTLY SIGNALIZED ? (YES)-NO ____ DOES 70% WARRANT APPLY ? NO

MAINTAINING AGENCY CITY OF LAKEWOOD

CO. ____ RTE. ____ SECT. ____

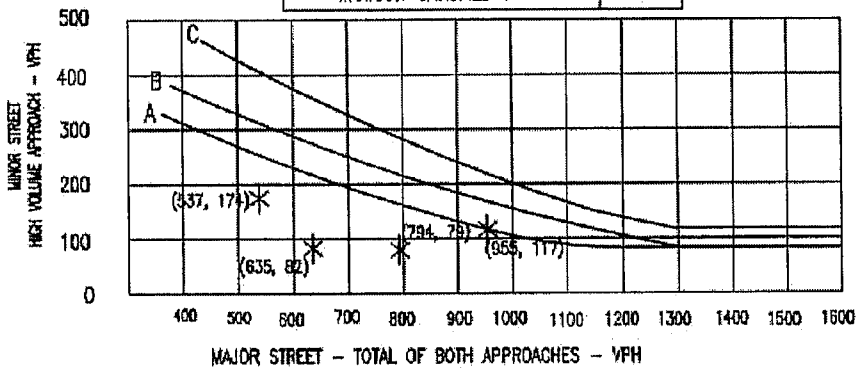
CONSULTANT: ____

CALC BY: ____ CHKD BY: ____

WARRANT #2
FOUR HOUR VOLUME

☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES

WARRANT SATISFIED ? NO

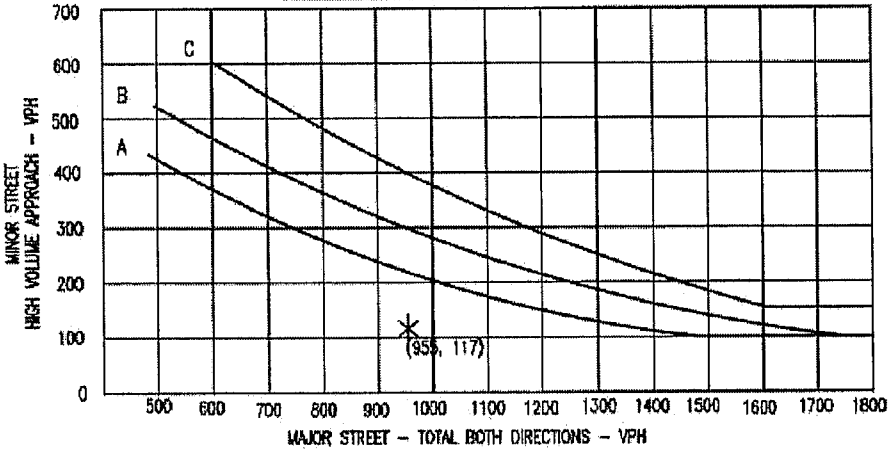


*NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

WARRANT #3
PEAK HOUR VOLUME

☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES

WARRANT SATISFIED ? NO



*NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

WARRANT #5 SCHOOL CROSSING WARRANT

INTERSERCTION:	Detroit Ave.	AND	Waterbury Ave.				
LOCATED IN:	City of Lakewood						
# OF LANES PER APPROACH:	NORTH:	1	SOUTH:	1	EAST:	1	WEST: 1
PRESENTLY SIGNALIZED	Yes	DOES 70% WARRANT APPLY	No				
MAINTAINING AGENCY:	City of Lakewood						

ON APPROVED SCHOOL ROUTE	Yes		
GAP ANALYSIS MADE DURING PERIOD	3:00 PM	TO	4:00 PM
NUMBER OF VEHICLES DURING ANALYSIS PERIOD	896		
PEDESTRIAN CROSSING TIME	12.25		
NUMBER OF GAPS GREATER THAN (1) DURING PERIOD	42.49		
APPROXIMATE VEHICULAR SPEED	35 MPH		
NUMBER OF CHILDREN CROSSING DURING PERIOD	45		
WARRANT SATISIFIED	No		

Calculation Sheet

t - REQUIRED GAP TIME

T - LENGTH OF TIME PERIOD FOR WHICH VOLUME **V** APPLIES (SECONDS)

V - TWO WAY VEHICLUAR VOLUME ACROSS THE CROSSING PATH IN TIME PERIOD **T**

e - BASE OF THE NATURAL SYSTEM OF LOGARITHM, HAVING AN APPROXIMATE VALUE OF 2.718

CROSSWALK DISTANCE (FEET)		48	ft
WALKING SPEED (FEET/SEC)		4	ft/sec
t = CD / WS		12.25	sec
T (min):	60	3600	sec
V:		896	

NUMBER OF EXPECTED GAPS EQUAL OR GREATER THAN t: 42.49420212

$= Ve^{(-(V/T))}$

NUMBER OF t-SECOND INTERVALS PER HOUR FREE OF CARS: 13.93760274

$= (T/t)e^{(-(V/T))}$

Count Sheet

Start Time	Detroit Ave. WB APPROACH Right	Thru	Left	Detroit Ave. EB APPROACH Right	Thru	Left	Pedestrians Crossing Detroit
3:00 PM	3	116	19	9	87	8	25
3:15 PM	0	102	13	16	109	7	12
3:30 PM	0	130	10	7	98	4	4
3:45 PM	2	103	12	15	83	2	4
HOURLY TOTALS	5	451 510	54	47	377 445	21	45

EAST CROSSWALK HOURLY TOTALS

Detroit Ave. Total
887

Pedestrain Total

WEST CROSSWALK HOURLY TOTALS

Detroit Ave. Total
896

Pedestrian Total
45

CONDITION	NO. LANE	ADJUSTED HOURLY VOLUMES: MAJOR ST 2-WAY	MINOR ST 1-WAY	MINOR ST 1-WAY	WARRANT #1A 100% MAJ	WARRANT #1A 100% MIN	WARRANT #1A 80% MAJ	WARRANT #1A 80% MIN	WARRANT #1B 100% MAJ	WARRANT #1B 100% MIN	WARRANT #1B 80% MAJ	WARRANT #1B 80% MIN	WARRANT #4 4 HOUR GAPS	WARRANT #4 4 HOUR PED	WARRANT #4 PEAK HOUR GAPS	WARRANT #4 PEAK HOUR PED
* NORM	1	X	X		500	150	400	120	750	75	600	60	60	100	60	190
	2+				600	200	480	160	900	100	720	80				
* 70%	1				350	105	280	84	525	53	420	42	60	50**	60	95**
	2+				420	140	336	112	630	70	504	56				
MID-1AM.																
1AM.-2AM.																
2																
3																
4																
5																
6																
7		566	127		X		X	X		X		X				
8		620	127		X		X	X		X	X	X				
9		466	57				X									
10		488	58				X									
11		675	128		X		X	X		X	X	X				
NOON-1PM.		636	102		X		X			X	X	X				
1PM.-2PM.		658	99		X		X			X	X	X				
2		752	78		X		X		X	X	X	X				
3		762	144		X		X	X	X	X	X	X				
4		686	128		X		X	X		X	X	X				
5		727	141		X		X	X		X	X	X				
6		640	116		X		X			X	X	X				
7																
8																
9																
10																
11																
HOURS MET					10	0	12	6	2	10	9	10				
WARRANT SATISFIED ?					NO		NO		NO		YES					

Warrants numbered 1A and 1B are each met at the 80% level: YES – (NO)

* CONDITION IS DETERMINED BY ENVIRONMENT: USE 70% VALUES IF 85 PERCENTILE SPEED EXCEEDS 40 MPH ON THE MAJOR APPROACH OR IF LOCATION IS IN THE BUILT-UP AREA OF AN ISOLATED COMMUNITY WITH A POPULATION OF LESS THAN 10,000.

** MAY BE USED IF PEDESTRIAN SPEED IS LESS THAN 4 FT/SEC

WARRANT #5 (SCHOOL CROSSING)

On approved school route ? . . . YES – (NO)

Gap analysis made during period from _____ to _____

Number of vehicles during analysis period: _____

Pedestrian crossing time (1): _____

Number of gaps greater than (1) during period: _____

Approximate vehicular speed: _____

Number of children crossing during period: _____

Warrant Satisfied ? . . . YES-(NO)

WARRANT #6 (COORDINATED SIGNAL SYSTEM)

Major street is: . . . ONE WAY – (TWO WAY)

Distance to nearest signal in each direction on major street: 230' and 1075'

Time space diagram (attached) shows that this location can be implemented into a system: . . .

Warrant Satisfied ? . . . YES-(NO)

WARRANT #7 (CRASH HAZARD)

Adequate trial of less restrictive measures: . . . YES-(NO)

Number of accidents per year of a type which could be prevented by signalization: _____

80% of warrant #1 or #2 satisfied: . . . YES-NO

Will signalization disrupt progressive movement ? . . . YES-NO

Warrant Satisfied ? . . . YES-(NO)

WARRANT #8 (ROADWAY NETWORK)

Both streets are considered major routes: . . . YES-(NO)

At least 800 VPH during weekday peak hour: . . . YES-NO

At least 800 VPH for any 5 hrs. on a saturday or sunday: YES-NO

Warrant Satisfied ? . . . YES-(NO)

INTERSECTION: DETROIT AVENUE AND NICHOLSON AVENUE

LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD

NO. OF LANES PER APPROACH: N: 1 S: 0 E: 1 W: 1

PRESENTLY SIGNALIZED ? (YES)-NO DOES 70% WARRANT APPLY ? NO

MAINTAINING AGENCY CITY OF LAKEWOOD

CO. RTE. SEC'T.

CONSULTANT:

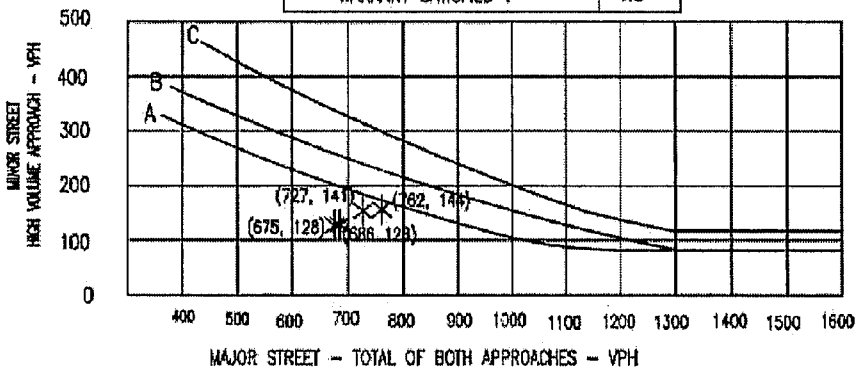
CALC BY: CHKD BY:

INTERSECTION: DETROIT AVENUE AND NICHOLSON AVENUE	CO.____ RTE.____ SECT.____
LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD	CONSULTANT:____
NO. OF LANES PER APPROACH: N: 1 S: 0 E: 1 W: 1	CALC BY:____ CHKD BY:____
PRESENTLY SIGNALIZED ? (YES) NO ____ DOES 70% WARRANT APPLY ? NO	
MAINTAINING AGENCY CITY OF LAKEWOOD	

WARRANT #2
FOUR HOUR VOLUME

☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES

WARRANT SATISFIED ?	NO

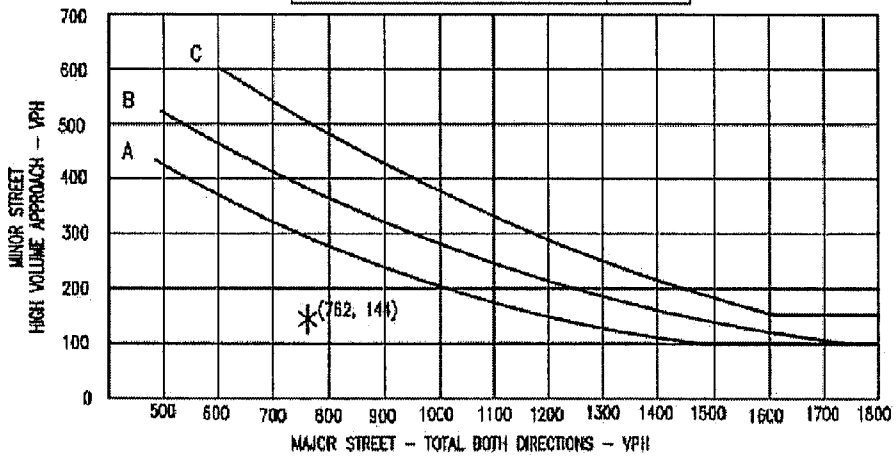


*NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

WARRANT #3
PEAK HOUR VOLUME

☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES

WARRANT SATISFIED ?	NO



*NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

CONDITION	NO. LANE	ADJUSTED HOURLY VOLUMES: MAJOR ST 2-WAY	MINOR ST 1-WAY	MINOR ST 1-WAY	WARRANT #1A 100% MAJ	100% MIN	80% MAJ	80% MIN	WARRANT #1B 100% MAJ	100% MIN	80% MAJ	80% MIN	WARRANT #4 4 HOUR GAPS	4 HOUR PED	PEAK HOUR GAPS	PEAK HOUR PED
* NORM	1	X	X		500	150	400	120	750	75	600	60	50	100	50	190
	2+				600	200	480	160	900	100	720	80				
* 70%	1				350	105	280	84	525	53	420	42	50	50**	50	95**
	2+				420	140	336	112	630	70	504	56				
MID-1AM.																
1AM.-2AM.																
2																
3																
4																
5																
6																
7		526	34		X		X									
8		688	94		X		X			X	X	X				
9		418	29				X									
10																
11		534	17		X		X									
NOON-1PM.		598	21		X		X									
1PM.-2PM.		637	26		X		X				X					
2																
3		697	34		X		X				X					
4		691	31		X		X				X					
5		792	46		X		X		X		X					
6																
7																
8																
9																
10																
11																
HOURS MET					8	0	9	0	1	1	5	1				
WARRANT SATISFIED ?					NO		NO		NO		NO					

Warrants numbered 1A and 1B are each met at the 80% level: YES – (NO)

* CONDITION IS DETERMINED BY ENVIRONMENT; USE 70% VALUES IF 85 PERCENTILE SPEED EXCEEDS 40 MPH ON THE MAJOR APPROACH OR IF LOCATION IS IN THE BUILT-UP AREA OF AN ISOLATED COMMUNITY WITH A POPULATION OF LESS THAN 10,000.

** MAY BE USED IF PEDESTRIAN SPEED IS LESS THAN 4 FT/SEC

WARRANT #5 (SCHOOL CROSSING)

On approved school route ? . . . . . (YES) – NO

Gap analysis made during period from 2:30 PM to 3:30 PM

Number of vehicles during analysis period: 711

Pedestrian crossing time (1): 12.25

Number of gaps greater than (1) during period: 63.28

Approximate vehicular speed: . . . . . 35 MPH

Number of children crossing during period: 145

Warrant Satisfied ? . . . . . (YES)-NO

WARRANT #6 (COORDINATED SIGNAL SYSTEM)

Major street is: . . . . . ONE WAY – (TWO WAY)

Distance to nearest signal in each direction on major street: 1075' and 1050'

Time space diagram (attached) shows that this location can be implemented into a system: . . . . . YES-NO

Warrant Satisfied ? . . . . . YES-NO

WARRANT #7 (CRASH HAZARD)

Adequate trial of less restrictive measures: . . . . . YES-(NO)

Number of accidents per year of a type which could be prevented by signalization: . . . . . _____

80% of warrant #1 or #2 satisfied: . . . . . YES-NO

Will signalization disrupt progressive movement ? . . . . . YES-NO

Warrant Satisfied ? . . . . . YES-(NO)

WARRANT #8 (ROADWAY NETWORK)

Both streets are considered major routes: . . . . . YES-(NO)

At least 800 VPH during weekday peak hour: . . . . . YES-NO

At least 800 VPH for any 5 hrs. on a saturday or sunday: YES-NO

Warrant Satisfied ? . . . . . YES-(NO)

INTERSECTION: DETROIT AVENUE AND COHASSETT AVE./GARFIELD SCHOOL

LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD

NO. OF LANES PER APPROACH: N: 0 S: 1 E: 1 W: 1

PRESENTLY SIGNALIZED ? (YES)-NO DOES 70% WARRANT APPLY ? NO

MAINTAINING AGENCY CITY OF LAKEWOOD

CO. RTE. SECT.

CONSULTANT:

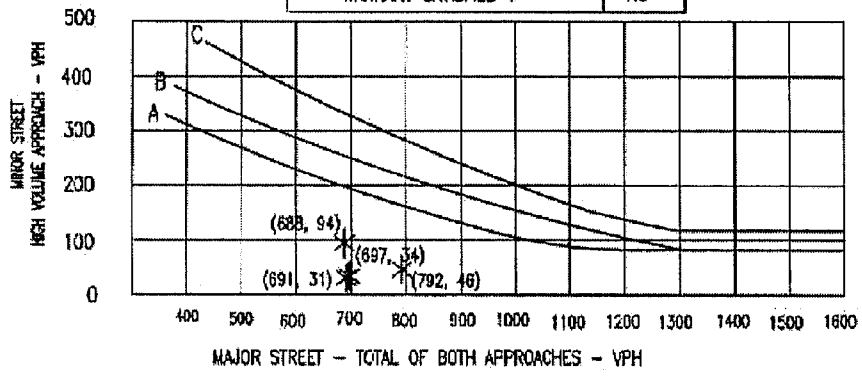
CALC BY: CHKD BY:

INTERSECTION: DETROIT AVENUE AND COHASSETT AVE./GARFIELD SCHOOL	CO.____ RTE.____ SECT.____
LOCATED IN CITY/VILLAGE/RURAL CITY OF LAKEWOOD	CONSULTANT:____
NO. OF LANES PER APPROACH: N: 0 S: 1 E: 1 W: 1	CALC BY:____ CHKD BY:____
PRESENTLY SIGNALIZED ? (YES) NO ____ DOES 70% WARRANT APPLY ? NO	
MAINTAINING AGENCY CITY OF LAKEWOOD	

WARRANT #2
FOUR HOUR VOLUME

☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES

WARRANT SATISFIED ?	NO

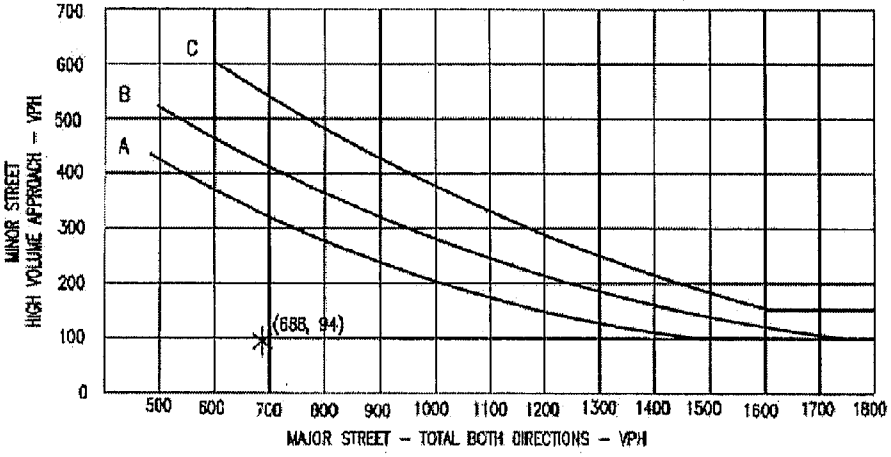


*NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

WARRANT #3
PEAK HOUR VOLUME

☒ A= 1 LANE & 1 LANE
☐ B= 2 OR MORE LANES & 1 LANE
☐ C= 2 OR MORE LANES & 2 OR MORE LANES

WARRANT SATISFIED ?	NO



*NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES.
100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH ONE LANE.

WARRANT #5 SCHOOL CROSSING WARRANT

INTERSERCTION:	Detroit Ave.	AND	Cohassett Ave.				
LOCATED IN:	City of Lakewood						
# OF LANES PER APPROACH:	NORTH:	0	SOUTH:	1	EAST:	1	WEST: 1
PRESENTLY SIGNALIZED	Yes	DOES 70% WARRANT APPLY	No				
MAINTAINING AGENCY:	City of Lakewood						

ON APPROVED SCHOOL ROUTE	Yes		
GAP ANALYSIS MADE DURING PERIOD	2:30 PM	TO	3:30 PM
NUMBER OF VEHICLES DURING ANALYSIS PERIOD	711		
PEDESTRIAN CROSSING TIME	12.25		
NUMBER OF GAPS GREATER THAN (1) DURING PERIOD	63.28		
APPROXIMATE VEHICULAR SPEED	35 MPH		
NUMBER OF CHILDREN CROSSING DURING PERIOD	145		
WARRANT SATISIFIED	YES		

Calculation Sheet

t - REQUIRED GAP TIME

T - LENGTH OF TIME PERIOD FOR WHICH VOLUME V APPLIES (SECONDS)

V - TWO WAY VEHICLUAR VOLUME ACROSS THE CROSSING PATH IN TIME PERIOD T

e - BASE OF THE NATURAL SYSTEM OF LOGARITHM, HAVING AN APPROXIMATE VALUE OF 2.718

CROSSWALK DISTANCE (FEET)		49	ft
WALKING SPEED (FEET/SEC)		4	ft/sec
t = CD / WS		12.25	sec
T (min):	60	3600	sec
V:		711	

NUMBER OF EXPECTED GAPS EQUAL OR GREATER THAN t: 63.27866844

$= Ve^{(-(Vt/T))}$

NUMBER OF t-SECOND INTERVALS PER HOUR FREE OF CARS: 26.154965

$= (T/t)e^{(-(Vt/T))}$

Count Sheet

Start Time	Detroit Ave. WB APPROACH Right	Thru	Left	Detroit Ave. EB APPROACH Right	Thru	Left	Pedestrians Crossing Detroit
2:30 PM	8	94	7	3	86	12	5
2:45 PM	9	78	3	9	86	8	127
3:00 PM	2	78	8	1	91	7	7
3:15 PM	4	62	6	4	89	5	6
HOURLY TOTALS	23	312 359	24	17	352 401	32	145

EAST CROSSWALK HOURLY TOTALS

Detroit Ave. Total
711

Pedestrain Total
145

WEST CROSSWALK HOURLY TOTALS

Detroit Ave. Total
713

Pedestrian Total