



# MINNESOTA DEPARTMENT OF TRANSPORTATION

## METRO DIVISION - TRAFFIC ENGINEERING

### SIGNAL WARRANTS ANALYSIS

LOCATION: TH-61 & JAMAICA AVE., E RAMPS

COUNTY: WASHINGTON

REF. POINT: 124.300

DATE: 4/9/1996

OPERATOR: RE

Speed	Approach Description	Lanes
35	Major App1: JAMAICA AVE. EB, W OF E RAMPS OF TH-61	3
35	Major App3: JAMAICA AVE. WB, E OF E RAMPS OF TH-61	3
30	Minor App2: TH-61 NB RAMP TO JAMAICA AVE (COTTAGE GF	2
0	Minor App4: N/A	0

0.70 FACTOR USED? NO

POPULATION < 10,000? NO

EXISTING SIGNAL ? NO

HOUR	600/900			200/100			0/0		MET SAME HOURS
	MAJOR APP. 1	MAJOR APP. 3	TOTAL 1+3	WARRANT MET	MINOR APP. 2	MINOR APP. 4	WARRANT MET APP. 2	WARRANT MET APP. 4	
0:00 - 1:00	73	28	101	/	15	0	/	/	/
1:00 - 2:00	41	21	62	/	13	0	/	/	/
2:00 - 3:00	29	18	47	/	11	0	/	/	/
3:00 - 4:00	30	17	47	/	13	0	/	/	/
4:00 - 5:00	35	45	80	/	5	0	/	/	/
5:00 - 6:00	101	242	343	/	41	0	/	/	/
6:00 - 7:00	224	608	832	X/	78	0	/	/	/
7:00 - 8:00	324	634	958	X/X	86	0	/	/	/
8:00 - 9:00	268	410	678	X/	80	0	/	/	/
9:00 - 10:00	255	289	544	/	91	0	/	/	/
10:00 - 11:00	282	308	590	/	78	0	/	/	/
11:00 - 12:00	374	403	777	X/	117	0	/X	/	/
12:00 - 13:00	396	439	835	X/	109	0	/X	/	/
13:00 - 14:00	384	425	809	X/	94	0	/	/	/
14:00 - 15:00	442	469	911	X/X	110	0	/X	/	/X
15:00 - 16:00	585	485	1070	X/X	150	0	/X	/	/X
16:00 - 17:00	761	556	1317	X/X	160	0	/X	/	/X
17:00 - 18:00	804	509	1313	X/X	134	0	/X	/	/X
18:00 - 19:00	591	521	1112	X/X	143	0	/X	/	/X
19:00 - 20:00	471	410	881	X/	116	0	/X	/	/
20:00 - 21:00	350	343	693	X/	74	0	/	/	/
21:00 - 22:00	294	229	523	/	49	0	/	/	/
22:00 - 23:00	177	150	327	/	36	0	/	/	/
23:00 - 24:00	110	66	176	/	25	0	/	/	/

	Met (Hr)	Required (Hr)	
Warrant 1	0	8	Not satisfied
Warrant 2	5	8	Not satisfied
Warrant 6	10	8	Satisfied, check accident record
Warrant 8	1	8	Not satisfied
Warrant 9	2	4	Not satisfied
Warrant 11	0	1	Not satisfied

LOCATION: TH-61 & JAMAICA AVE., E RAMPS

COUNTY: WASHINGTON

REF. POINT: 124.300

DATE: 4/9/1996

OPERATOR: RE

0.70 FACTOR USED? NO  
 POPULATION < 10,000? NO  
 EXISTING SIGNAL ? NO

Speed	Approach Description	Lanes
35	Major App1: JAMAICA AVE. EB, W OF E RAMPS OF TH-61	3
35	Major App3: JAMAICA AVE. WB, E OF E RAMPS OF TH-61	3
30	Minor App2: TH-61 NB RAMP TO JAMAICA AVE (COTTAGE GF	2
0	Minor App4: N/A	0

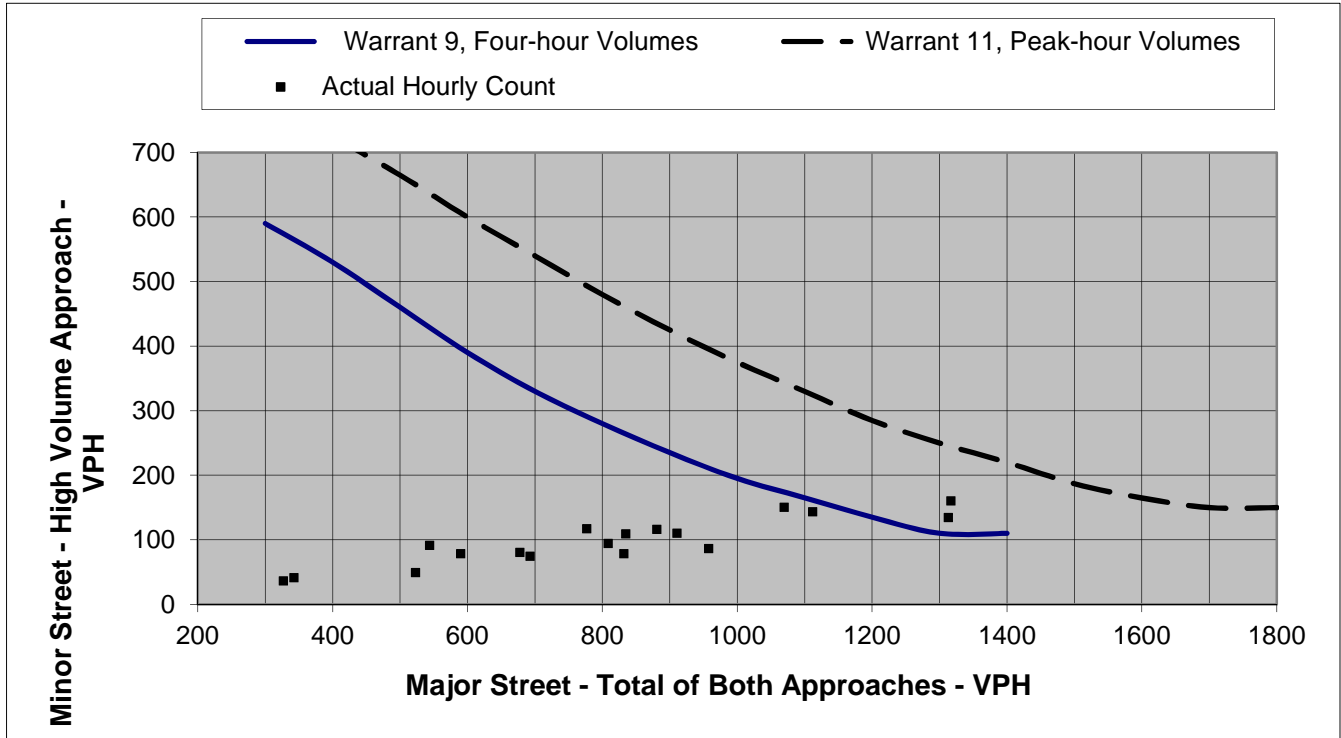


Figure 1. Four Hour and Peak Hour Warrant Analysis

Note: For data points outside the graph range, check the minor street volume against the lower thresholds

Major	Warrant Criteria		Actual Hourly Count	
	Warrant 9, F	Warrant 11, P	Major	Actual Hourly Count
200			101	15
300	590		62	13
400	530	725	47	11
500	460	665	47	13
600	390	600	80	5
700	330	540	343	41
800	280	480	832	78
900	235	425	958	86
1000	195	375	678	80
1100	165	330	544	91
1200	135	285	590	78
1300	110	250	777	117
1400	110	220	835	109
1500		187	809	94
1600		165	911	110
1700		150	1070	150
1800		150	1317	160
			1313	134
			1112	143
			881	116
			693	74
			523	49
			327	36
			176	25

Four Hour Warrant

Major App	Minor App		
	1 & 1	2 & 1	2 & 2
300	360	440	590
400	310	390	530
500	260	340	460
600	215	290	390
700	180	245	330
800	150	205	280
900	125	170	235
1000	100	145	195
1100	85	120	165
1200	80	100	135
1300	80	83	110
1400	80	80	110

Peak Hour

Major App	1 & 1
400	475
500	425
600	370
700	330
800	280
900	240
1000	204
1100	175
1200	150
1300	130
1400	115
1500	100
1600	100
1700	100
1800	100

Four Hour Warrant Factored

Major App	Minor App		
	1 & 1	2 & 1	2 & 2
200	250	320	420
300	210	265	350
400	170	215	285
500	130	170	230
600	93	130	175
700	70	100	135
800	60	80	103
900	60	65	80
1000	60	60	80

Peak Hour

Major App	1 & 1
300	320
400	270
500	225
600	180
700	145
800	115
900	90
1000	75
1100	75
1200	75
1300	75



Warrant

Minor App

2 & 1	2 & 2
570	725
520	665
465	600
420	540
370	480
330	425
285	375
250	330
220	285
190	250
160	220
140	187
115	165
100	150
100	150

Warrant Factored

Minor App

2 & 1	2 & 2
380	500
335	435
285	370
240	315
200	260
160	215
135	175
110	140
95	115
75	100
75	100



# MINNESOTA DEPARTMENT OF TRANSPORTATION

## METRO DIVISION - TRAFFIC ENGINEERING

### ALL WAY STOP WARRANT

LOCATION: TH-61 & JAMAICA AVE., E RAMPS

COUNTY: WASHINGTON

REF. POINT: 124.300

DATE:

OPERATOR: RE

Speed	Approach Description	Lanes
35	Major App1: JAMAICA AVE. EB, W OF E RAMPS OF TH-61	3
35	Major App3: JAMAICA AVE. WB, E OF E RAMPS OF TH-61	3
30	Minor App2: TH-61 NB RAMP TO JAMAICA AVE (COTTAGE C	2
0	Minor App4: N/A	0

0.70 FACTOR USED? No

HOUR	MAJOR APP. 1	MAJOR APP. 3	MINOR APP. 2	MINOR APP. 4	500	200	WARRANT MET
					TOTAL Σ (APP.1 to APP. 4)	MINOR TOTAL APP. 2 + APP. 4	
0:00 - 1:00	73	28	15	0	116	15	/
1:00 - 2:00	41	21	13	0	75	13	/
2:00 - 3:00	29	18	11	0	58	11	/
3:00 - 4:00	30	17	13	0	60	13	/
4:00 - 5:00	35	45	5	0	85	5	/
5:00 - 6:00	101	242	41	0	384	41	/
6:00 - 7:00	224	608	78	0	910	78	X/
7:00 - 8:00	324	634	86	0	1044	86	X/
8:00 - 9:00	268	410	80	0	758	80	X/
9:00 - 10:00	255	289	91	0	635	91	X/
10:00 - 11:00	282	308	78	0	668	78	X/
11:00 - 12:00	374	403	117	0	894	117	X/
12:00 - 13:00	396	439	109	0	944	109	X/
13:00 - 14:00	384	425	94	0	903	94	X/
14:00 - 15:00	442	469	110	0	1021	110	X/
15:00 - 16:00	585	485	150	0	1220	150	X/
16:00 - 17:00	761	556	160	0	1477	160	X/
17:00 - 18:00	804	509	134	0	1447	134	X/
18:00 - 19:00	591	521	143	0	1255	143	X/
19:00 - 20:00	471	410	116	0	997	116	X/
20:00 - 21:00	350	343	74	0	767	74	X/
21:00 - 22:00	294	229	49	0	572	49	X/
22:00 - 23:00	177	150	36	0	363	36	/
23:00 - 24:00	110	66	25	0	201	25	/

Allway Stop Warrant: Met (Hr) 0 Required (Hr) 8 Not satisfied

REMARKS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



# MINNESOTA DEPARTMENT OF TRANSPORTATION

## METRO DIVISION - TRAFFIC ENGINEERING

### TRAFFIC COUNT DATA

ROUTE #: JAMAICA AVE. EB, W OF E RAMPS OF TH-61

COUNTY: WASHINGTON

REF. PT.: 124.300

SITE CODE: APPROACH

OPERATOR: RE

FOR COUNTS BEGINNING: **April 9, 1996**

DATE HOUR \ DAY	8 MON.	9 TUE.	10 WED.	11 THU.	12 FRI.	13 SAT.	14 SUN.	AVE. WK.DAY	AVE. WKEND
0:00 - 1:00			67	80				73	
1:00 - 2:00			40	42				41	
2:00 - 3:00			26	32				29	
3:00 - 4:00			32	28				30	
4:00 - 5:00			39	31				35	
5:00 - 6:00			99	103				101	
6:00 - 7:00		249	211	212				224	
7:00 - 8:00		311	343	320				324	
8:00 - 9:00		245	264	295				268	
9:00 - 10:00		262	258	245				255	
10:00 - 11:00		271	293	282				282	
11:00 - 12:00		372	385	367				374	
12:00 - 13:00		380	417	393				396	
13:00 - 14:00		392	376					384	
14:00 - 15:00		452	433					442	
15:00 - 16:00		596	574					585	
16:00 - 17:00		771	752					761	
17:00 - 18:00		777	832					804	
18:00 - 19:00		590	593					591	
19:00 - 20:00		520	423					471	
20:00 - 21:00		349	351					350	
21:00 - 22:00		282	306					294	
22:00 - 23:00		163	191					177	
23:00 - 24:00		109	112					110	
<b>TOTAL</b>		7091	7417	2430				7401	

24 HOURS FACTOR:

FACTORED ADT:

REMARKS:

CORRECTED AADT:

DATA FILE --> A:\61JAMAER.da1



# MINNESOTA DEPARTMENT OF TRANSPORTATION

## METRO DIVISION - TRAFFIC ENGINEERING

### TRAFFIC COUNT DATA

ROUTE #: TH-61 NB RAMP TO JAMAICA AVE (COTTAGE GROVE)

COUNTY: WASHINGTON

REF. PT.: 124.300

SITE CODE: APPROACH

OPERATOR: RE

FOR COUNTS BEGINNING: **April 9, 1996**

DATE HOUR \ DAY	8 MON.	9 TUE.	10 WED.	11 THU.	12 FRI.	13 SAT.	14 SUN.	AVE. WK.DAY	AVE. WKEND
0:00 - 1:00			17	14				15	
1:00 - 2:00			11	15				13	
2:00 - 3:00			11	11				11	
3:00 - 4:00			13	14				13	
4:00 - 5:00			6	4				5	
5:00 - 6:00			43	39				41	
6:00 - 7:00		68	93	75				78	
7:00 - 8:00		83	93	82				86	
8:00 - 9:00		77	77	88				80	
9:00 - 10:00		79	90	105				91	
10:00 - 11:00		78	75	83				78	
11:00 - 12:00		114	124	113				117	
12:00 - 13:00		111	103	114				109	
13:00 - 14:00		83	106					94	
14:00 - 15:00		114	107					110	
15:00 - 16:00		145	156					150	
16:00 - 17:00		164	156					160	
17:00 - 18:00		131	137					134	
18:00 - 19:00		131	155					143	
19:00 - 20:00		108	124					116	
20:00 - 21:00		71	77					74	
21:00 - 22:00		51	47					49	
22:00 - 23:00		26	47					36	
23:00 - 24:00		20	31					25	
<b>TOTAL</b>		1654	1899	757				1828	

24 HOURS FACTOR:

FACTORED ADT:

REMARKS:

CORRECTED AADT:

DATA FILE --> A:\61JAMAER.da2





# MINNESOTA DEPARTMENT OF TRANSPORTATION

## METRO DIVISION - TRAFFIC ENGINEERING

### TRAFFIC COUNT DATA

ROUTE #: JAMAICA AVE. WB, E OF E RAMPS OF TH-61

COUNTY: WASHINGTON

REF. PT.: 124.300

SITE CODE: APPROACH

OPERATOR: RE

FOR COUNTS BEGINNING: **April 9, 1996**

DATE HOUR \ DAY	8 MON.	9 TUE.	10 WED.	11 THU.	12 FRI.	13 SAT.	14 SUN.	AVE. WK.DAY	AVE. WKEND
0:00 - 1:00			27	29				28	
1:00 - 2:00			24	19				21	
2:00 - 3:00			20	17				18	
3:00 - 4:00			16	18				17	
4:00 - 5:00			48	42				45	
5:00 - 6:00			240	244				242	
6:00 - 7:00		615	595	616				608	
7:00 - 8:00		639	633	630				634	
8:00 - 9:00		403	406	423				410	
9:00 - 10:00		302	290	275				289	
10:00 - 11:00		317	297	311				308	
11:00 - 12:00		384	419	406				403	
12:00 - 13:00		462	430	425				439	
13:00 - 14:00		413	437					425	
14:00 - 15:00		483	456					469	
15:00 - 16:00		471	500					485	
16:00 - 17:00		573	540					556	
17:00 - 18:00		492	527					509	
18:00 - 19:00		498	545					521	
19:00 - 20:00		408	412					410	
20:00 - 21:00		317	369					343	
21:00 - 22:00		207	252					229	
22:00 - 23:00		144	156					150	
23:00 - 24:00		62	71					66	
<b>TOTAL</b>		7190	7710	3455				7625	

24 HOURS FACTOR:

FACTORED ADT:

REMARKS:

CORRECTED AADT:

DATA FILE --> A:\61JAMAER.da3



# MINNESOTA DEPARTMENT OF TRANSPORTATION

## METRO DIVISION - TRAFFIC ENGINEERING

### TRAFFIC COUNT DATA

ROUTE #: N/A  
COUNTY: WASHINGTON  
REF. PT.: 124.300

SITE CODE: APPROACH

OPERATOR: RE

FOR COUNTS BEGINNING:

DATE HOUR DAY	MON.	TUE.	WED.	THU.	FRI.	SAT.	SUN.	AVE. WK.DAY	AVE. WKEND
0:00 - 1:00									
1:00 - 2:00									
2:00 - 3:00									
3:00 - 4:00									
4:00 - 5:00									
5:00 - 6:00									
6:00 - 7:00									
7:00 - 8:00									
8:00 - 9:00									
9:00 - 10:00									
10:00 - 11:00									
11:00 - 12:00									
12:00 - 13:00									
13:00 - 14:00									
14:00 - 15:00									
15:00 - 16:00									
16:00 - 17:00									
17:00 - 18:00									
18:00 - 19:00									
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									

TOTAL

24 HOURS FACTOR:

FACTORED ADT:

REMARKS: \_\_\_\_\_

CORRECTED AADT: \_\_\_\_\_

DATA FILE --> A:\61JAMAER.da4