

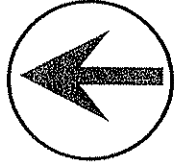
Date : 08/18/10

Count Number : TMC1031

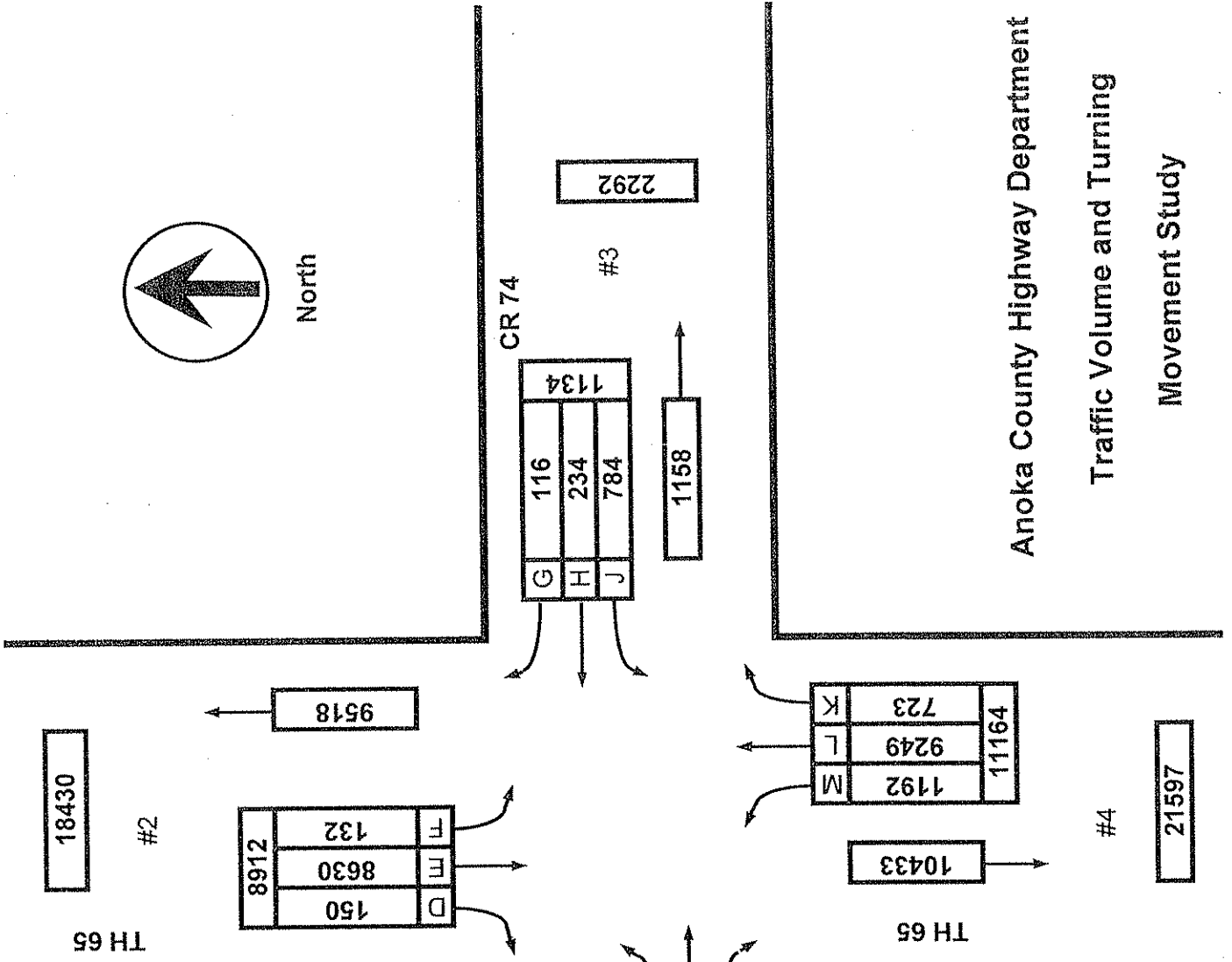
Location : TH 65 (Central Ave.)

@ CR 74 (221st Ave.)

Collection Period : 6:00AM - 10:00PM



North



EXISTING LANES OF APPROACH				TOTAL
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	
#1	0	0	1	1
#2	1	1	2	4
#3	0	0	1	1
#4	1	1	2	4

Anoka County Highway Department
 Traffic Volume and Turning
 Movement Study

Date : 08/19/10

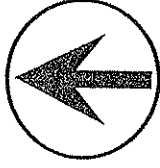
Count Number : TMC1031

Location : TH 65 (Central Ave.)

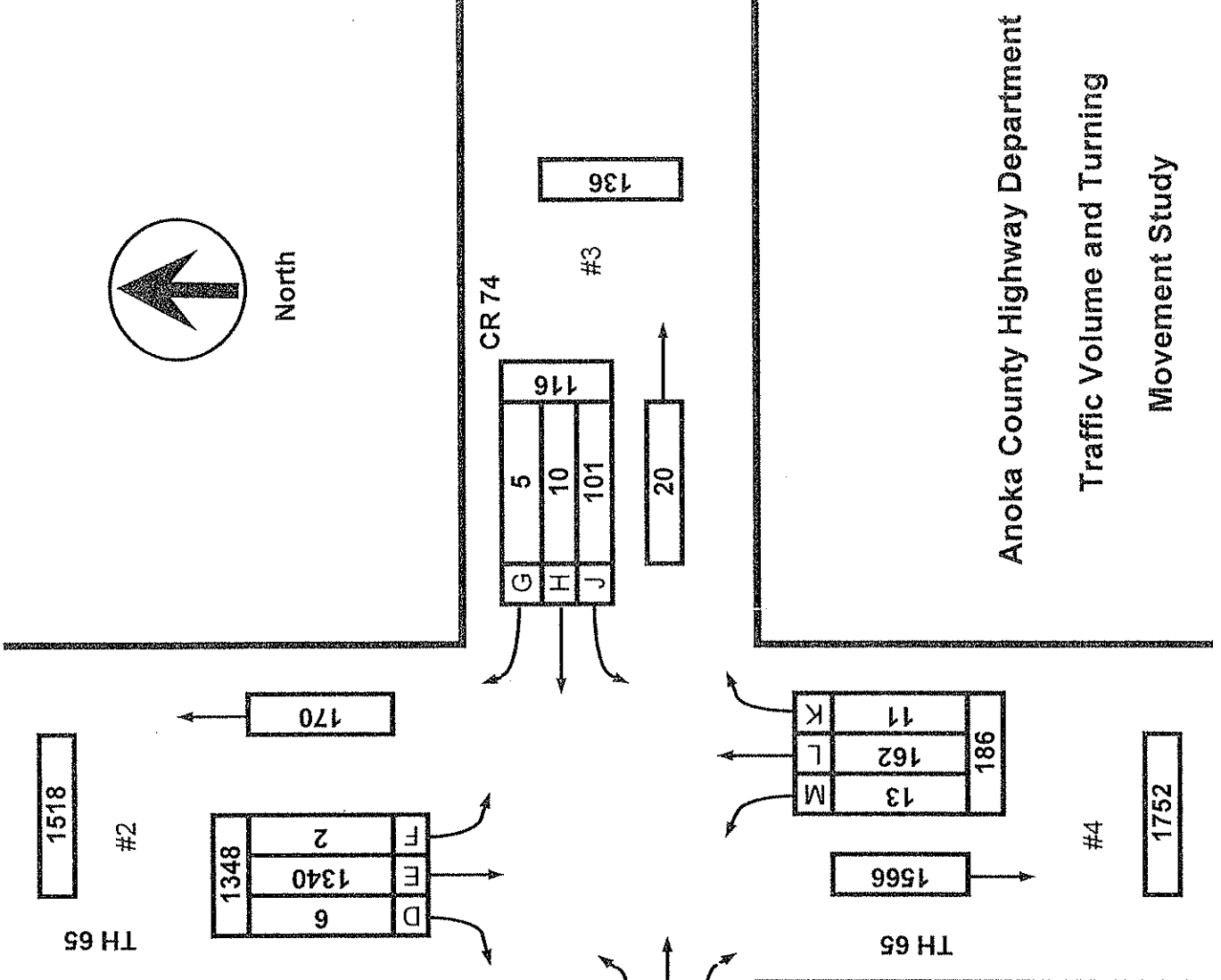
@ CR 74 (221st Ave.)

Collection Period : AM PEAK

Hour : 6:00-7:00 AM



North



	EXISTING LANES OF APPROACH			TOTAL
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	
#1	0	0	1	1
#2	1	1	2	4
#3	0	0	1	1
#4	1	1	2	4

Anoka County Highway Department
 Traffic Volume and Turning
 Movement Study

Date : 08/18/10

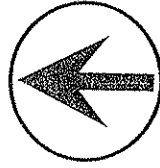
Count Number : TMC1031

Location : TH 65 (Central Ave.)

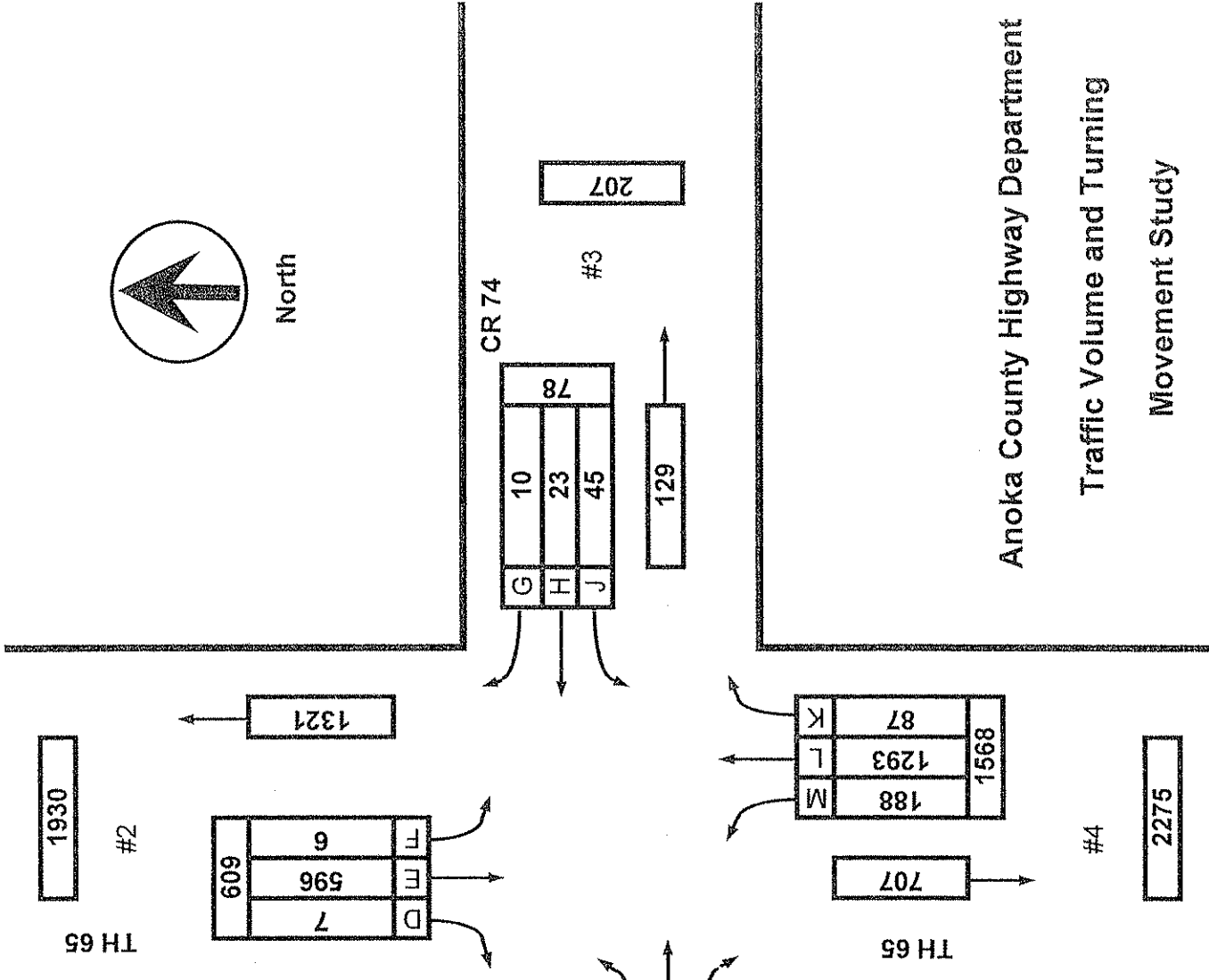
@ CR 74 (221st Ave.)

Collection Period : PM PEAK

Hour : 4:30-5:30 PM



North



	EXISTING LANES OF APPROACH			TOTAL
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	
#1	0	0	1	1
#2	0	1	2	3
#3	0	0	1	1
#4	0	1	2	3

Anoka County Highway Department
 Traffic Volume and Turning
 Movement Study



Anoka County Highway Department

Traffic Engineering Section

Traffic Volume and Turning Movement Study

File Name : TMC1031
 Site Code : 10310202
 Start Date : 08/18/2010
 Page No : 2

Weather: Warm and Sunny
 Counter: DB-400
 Counted by: Andy/Brett

Groups Printed- Unshifted

Start Time	TH 65 Southbound					CR 74 Westbound					TH 65 Northbound					CR 74 Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Heavy	App. Total	Left	Thru	Right	Heavy	App. Total	Left	Thru	Right	Heavy	App. Total	Left	Thru	Right	Heavy	App. Total			
18:00	5	95	4	1	104	6	5	1	0	12	55	298	24	2	377	2	9	17	0	28	3	521	524
18:15	2	84	5	1	91	9	7	2	0	18	44	231	25	12	300	1	7	16	0	24	13	433	446
18:30	0	82	0	1	82	8	3	1	0	12	18	209	19	4	246	7	4	23	0	34	5	374	379
18:45	6	81	3	1	90	15	6	2	0	23	42	192	22	5	256	9	8	19	0	36	6	405	411
Total	13	342	12	4	367	38	21	6	0	65	159	930	90	23	1179	19	28	75	0	122	27	1733	1760
19:00	5	71	2	2	78	12	3	1	0	16	18	139	27	6	184	1	5	15	0	21	8	299	307
19:15	5	87	3	3	95	7	5	3	0	15	28	171	16	4	215	1	4	12	0	17	7	342	349
19:30	4	73	4	4	81	4	4	0	0	8	15	134	12	2	161	1	7	14	1	22	7	272	279
19:45	2	49	1	1	52	13	2	4	0	19	25	141	12	1	178	3	3	14	0	20	2	269	271
Total	16	280	10	10	306	36	14	8	0	58	86	585	67	13	738	6	19	55	1	80	24	1182	1206
20:00	2	44	0	2	46	9	4	1	0	14	18	134	14	1	166	4	6	10	0	20	3	246	249
20:15	4	59	1	0	64	13	6	3	0	22	13	118	14	0	145	3	6	10	0	19	0	250	250
20:30	2	61	2	2	65	8	4	0	0	12	25	120	17	0	162	2	6	10	1	18	3	257	260
20:45	2	60	2	2	64	6	5	2	0	13	25	119	10	6	154	4	13	13	0	30	8	261	269
Total	10	224	5	6	239	36	19	6	0	61	81	491	55	7	627	13	31	43	1	87	14	1014	1028
21:00	4	75	4	1	83	13	2	6	0	21	14	134	14	1	162	1	5	14	0	20	2	286	288
21:15	3	68	3	3	74	6	3	0	0	9	20	122	9	1	151	4	5	17	0	26	4	260	264
21:30	1	58	4	0	63	6	1	2	0	9	12	95	9	0	116	2	2	10	0	14	0	202	202
21:45	1	37	1	0	39	5	3	2	0	10	24	80	9	0	113	0	3	7	0	10	0	172	172
Total	9	238	12	4	259	30	9	10	0	49	70	431	41	2	542	7	15	48	0	70	6	920	926
Grand Total	132	8630	150	359	8912	784	234	116	22	1134	1192	9249	723	392	11164	153	303	1019	42	1475	815	22685	23500
orch %	1.5	96.8	1.7			69.1	20.6	10.2			10.7	82.8	6.5			10.4	20.5	69.1					
otal %	0.6	38	0.7		39.3	3.5	1	0.5		5	5.3	40.8	3.2		49.2	0.7	1.3	4.5		6.5	3.5	96.5	

Start Time	TH 65 Southbound				CR 74 Westbound				TH 65 Northbound				CR 74 Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 to 11:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 06:00																	
06:00	0	358	0	358	28	2	1	31	0	18	1	19	1	2	28	31	439
06:15	0	364	3	367	25	0	1	26	4	38	2	44	1	1	42	44	481
06:30	2	317	1	320	24	4	0	28	6	66	4	76	0	1	27	28	452
06:45	0	301	2	303	24	4	3	31	3	40	4	47	1	3	28	32	413
Total Volume	2	1340	6	1348	101	10	5	116	13	162	11	186	3	7	125	135	1785
% App. Total	0.1	99.4	0.4		87.1	8.6	4.3		7	87.1	5.9		2.2	5.2	92.6		
PHF	.250	.920	.500	.918	.902	.625	.417	.935	.542	.614	.688	.612	.750	.583	.744	.767	.928
Peak Hour Analysis From 12:00 to 21:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:30																	
16:30	2	122	1	125	12	7	3	22	46	336	25	407	5	9	17	31	585
16:45	0	164	1	165	7	3	2	12	42	337	18	397	4	6	16	26	600
17:00	2	193	3	198	10	4	3	17	48	321	22	391	5	10	15	30	636
17:15	2	117	2	121	16	9	2	27	52	299	22	373	4	11	18	33	554
Total Volume	6	596	7	609	45	23	10	78	188	1293	87	1568	18	36	66	120	2375
% App. Total	1	97.9	1.1		57.7	29.5	12.8		12	82.5	5.5		15	30	55		
PHF	.750	.772	.583	.769	.703	.639	.833	.722	.904	.959	.870	.963	.900	.818	.917	.909	.934

**ANOKA COUNTY HIGHWAY
PC-WARRANTS
TRAFFIC SIGNAL WARRANT ANALYSIS**

Study Name : TMC1031
Study Date : 08/23/10
Page No. : 1

Signal Warrants - Summary

Major Street Approaches

Northbound: TH 65
Number of Lanes: 2
Approach Speed: 65
Total Approach Volume: 11,164

Southbound: TH 65
Number of Lanes: 2
Approach Speed: 65
Total Approach Volume: 8,912

Minor Street Approaches

Eastbound: CR 74
Number of Lanes: 1
Total Approach Volume: 1,475

Westbound: CR 74
Number of Lanes: 1
Total Approach Volume: 1,134

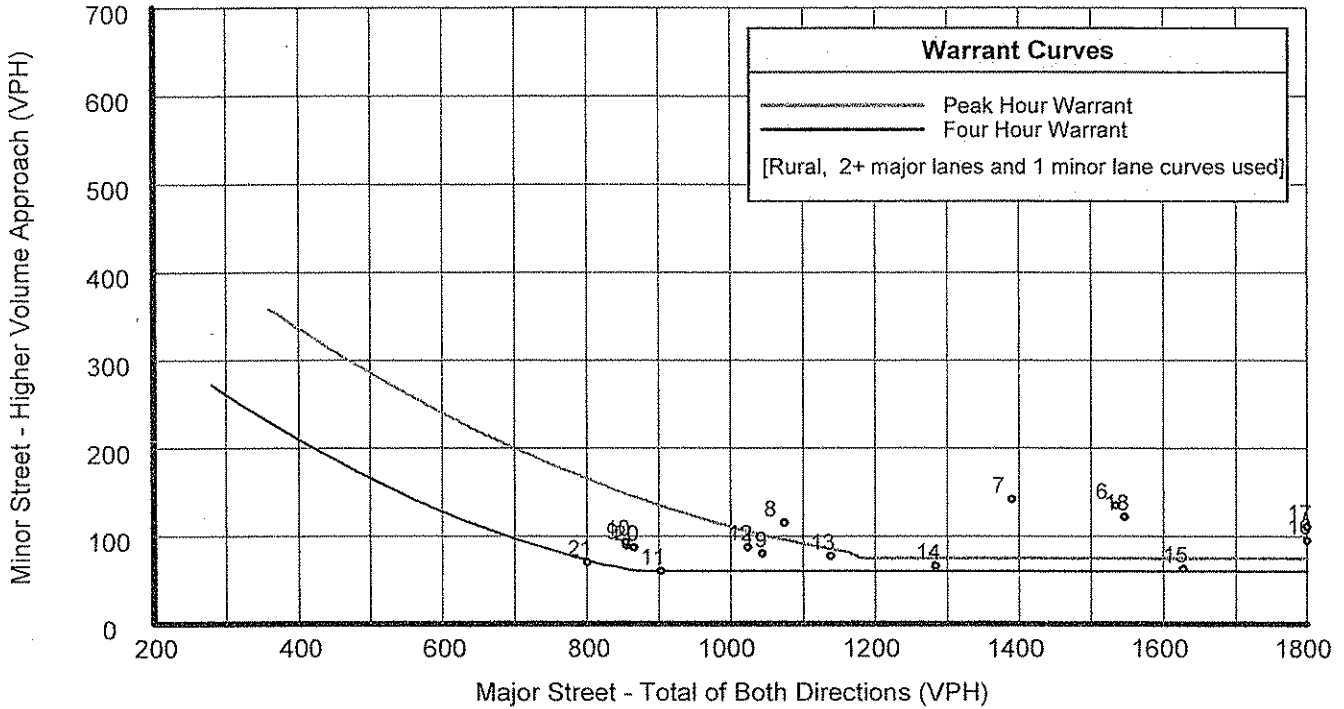
Warrant Summary (Rural values apply.)

Warrant 1 - Eight Hour Vehicular Volumes	Satisfied
Warrant 1A - Minimum Vehicular Volume	Not Satisfied
Required volumes reached for 5 hours, 8 are needed	
Warrant 1B - Interruption of Continuous Traffic	Satisfied
Required volumes reached for 16 hours, 8 are needed	
Warrant 1 A&B - Combination of Warrants	Satisfied
Required volumes reached for 10 hours, 8 are needed	
 Warrant 2 - Four Hour Volumes	 Satisfied
Number of hours (15) volumes exceed minimum >= minimum required (4).	
 Warrant 3 - Peak Hour	 Satisfied
Warrant 3A - Peak Hour Delay	Satisfied
Number of hours (21) volumes exceed minimum >= required (1). Delay data not evaluated.	
Warrant 3B - Peak Hour Volumes	Satisfied
Volumes exceed minimums for at least one hour.	
 Warrant 4 - Pedestrian Volumes	 Not Evaluated
 Warrant 5 - School Crossing	 Not Evaluated
 Warrant 6 - Coordinated Signal System	 Not Evaluated
 Warrant 7 - Crash Experience	 Not Evaluated
 Warrant 8 - Roadway Network	 Not Evaluated

**ANOKA COUNTY HIGHWAY
PC-WARRANTS
TRAFFIC SIGNAL WARRANT ANALYSIS**

Study Name : TMC1031
Study Date : 08/23/10
Page No. : 2

Signal Warrants - Summary



Analysis of 8-Hour Volume Warrants:

Hour Begin	Major Total	Higher Minor		War-1A			War-1B			War-1A&B		
		Vol	Dir	Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?
00:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
01:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
02:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
03:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
04:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
05:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
06:00	1,534	135	EB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
07:00	1,390	142	EB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
08:00	1,074	115	EB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
09:00	855	89	EB	420-Yes	105-No	Major	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
10:00	854	93	EB	420-Yes	105-No	Major	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
11:00	903	60	EB	420-Yes	105-No	Major	630-Yes	53-Yes	Both	504-Yes	84-No	Major
12:00	1,024	87	EB	420-Yes	105-No	Major	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
13:00	1,138	77	WB	420-Yes	105-No	Major	630-Yes	53-Yes	Both	504-Yes	84-No	Major
14:00	1,284	66	EB	420-Yes	105-No	Major	630-Yes	53-Yes	Both	504-Yes	84-No	Major
15:00	1,627	63	WB	420-Yes	105-No	Major	630-Yes	53-Yes	Both	504-Yes	84-No	Major
16:00	2,024	95	EB	420-Yes	105-No	Major	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
17:00	2,112	111	EB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
18:00	1,546	122	EB	420-Yes	105-Yes	Both	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
19:00	1,044	80	EB	420-Yes	105-No	Major	630-Yes	53-Yes	Both	504-Yes	84-No	Major
20:00	866	87	EB	420-Yes	105-No	Major	630-Yes	53-Yes	Both	504-Yes	84-Yes	Both
21:00	801	70	EB	420-Yes	105-No	Major	630-Yes	53-Yes	Both	504-Yes	84-No	Major
22:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---
23:00	0	0	EB	420-No	105-No	---	630-No	53-No	---	504-No	84-No	---

**ANOKA COUNTY HIGHWAY
PC-WARRANTS
TRAFFIC SIGNAL WARRANT ANALYSIS**

Study Name : TMC1031
Study Date : 08/23/10
Page No. : 1

Multi-Way Stop Warrant Report

Major Street Approaches

Northbound: TH 65
Total Approach Volume: 11,164
Approach Speed: 65

Southbound: TH 65
Total Approach Volume: 8,912
Approach Speed: 65

Minor Street Approaches

Eastbound: CR 74
Total Approach Volume: 1,475

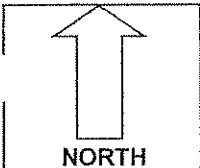
Westbound: CR 74
Total Approach Volume: 1,134

Warrant Summary

- Criteria A - Interim Measure** Not Evaluated
If traffic signals are justified, stop signs can be installed as an interim measure.
- Criteria B - Crash Experience** Not Evaluated
- Criteria C - Minimum Volumes and Delays** Satisfied
Delay data not evaluated
Required volumes reached for 14 hours, 8 are needed
- Criteria D - 80% of Volumes, Delays, and Crashes** Not Evaluated
Delay data not evaluated
Number of crashes (-1) is less than the minimum required (4).
Required volumes reached for 0 hours, 8 are needed

Analysis of 8 Hour Volume Warrants:

Time	Major Total	Minor Total	Crit C			Crit D		
			Major	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?
05:45 - 06:45	1,184	188	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
06:45 - 07:45	1,417	238	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
07:45 - 08:45	1,138	224	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
08:45 - 09:45	909	143	210-Yes	140-Yes	Both	240-Yes	160-No	Major
09:45 - 10:45	870	153	210-Yes	140-Yes	Both	240-Yes	160-No	Major
11:30 - 12:30	977	141	210-Yes	140-Yes	Both	240-Yes	160-No	Major
12:30 - 13:30	1,072	154	210-Yes	140-Yes	Both	240-Yes	160-No	Major
14:30 - 15:30	1,428	141	210-Yes	140-Yes	Both	240-Yes	160-No	Major
15:45 - 16:45	1,920	151	210-Yes	140-Yes	Both	240-Yes	160-No	Major
16:45 - 17:45	2,182	185	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
17:45 - 18:45	1,692	178	210-Yes	140-Yes	Both	240-Yes	160-Yes	Both
18:45 - 19:45	1,160	158	210-Yes	140-Yes	Both	240-Yes	160-No	Major
19:45 - 20:45	878	144	210-Yes	140-Yes	Both	240-Yes	160-No	Major
20:45 - 21:45	867	142	210-Yes	140-Yes	Both	240-Yes	160-No	Major
05:15 - 06:15	377	62	210-Yes	140-No	Major	240-Yes	160-No	Major
05:30 - 06:30	788	132	210-Yes	140-No	Major	240-Yes	160-No	Major
10:45 - 11:45	843	128	210-Yes	140-No	Major	240-Yes	160-No	Major
11:00 - 12:00	903	109	210-Yes	140-No	Major	240-Yes	160-No	Major
11:15 - 12:15	940	118	210-Yes	140-No	Major	240-Yes	160-No	Major
13:30 - 14:30	1,150	108	210-Yes	140-No	Major	240-Yes	160-No	Major
13:45 - 14:45	1,239	118	210-Yes	140-No	Major	240-Yes	160-No	Major
14:00 - 15:00	1,284	129	210-Yes	140-No	Major	240-Yes	160-No	Major
14:15 - 15:15	1,330	139	210-Yes	140-No	Major	240-Yes	160-No	Major
15:30 - 16:30	1,831	137	210-Yes	140-No	Major	240-Yes	160-No	Major



COUNT LOCATION:

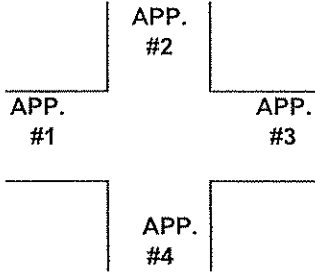
TH 65 (Central Ave.)

DATE:

08/19/2010

@ CR 74 (221st Ave.)

APP. #1 = CR 74
APP. #2 = TH 65
APP. #3 = CR 74
APP. #4 = TH 65



HEAVY VEHICLE- ANY VEHICLE HAVING MORE THAN FOUR TIRES TOUCHING THE PAVEMENT

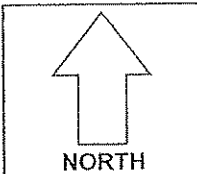
A. TRUCKS- A HEAVY VEHICLE INVOLVED PRIMARILY IN THE TRANSPORT OF GOODS OR IN THE DELIVERY OF A SERVICE.

B. RV- A HEAVY VEHICLE OPERATED BY A PRIVATE MOTORIST AND INVOLVED IN THE TRANSPORT OF RECREATIONAL EQUIPMENT OR FACILITIES.

C. BUSES- A HEAVY VEHICLE INVOLVED IN THE TRANSPORTATION OF GROUPS OF PEOPLE.

TIME	PEDESTRIANS					HEAVY VEHICLES		
	APP. #1	APP. #2	APP. #3	APP. #4	15 MIN TOT	TRUCKS	RV	BUS
6:00-6:15AM						9		
6:15-6:30						11		
6:30-6:45						19		
6:45-7:00						16		
HOURLY TOTAL						HOURLY TOTAL		55
7:00-7:15						14		
7:15-7:30						15		
7:30-7:45						10		
7:45-8:00						28		
HOURLY TOTAL						HOURLY TOTAL		67
8:00-8:15						13		1
8:15-8:30						14		
8:30-8:45						15		
8:45-9:00						17		
HOURLY TOTAL						HOURLY TOTAL		60
9:00-9:15						19		
9:15-9:30						15	1	
9:30-9:45						14		
9:45-10:00						19	1	
HOURLY TOTAL						HOURLY TOTAL		69
10:00-10:15						17		
10:15-10:30						19		
10:30-10:45						15		
10:45-11:00						14		
HOURLY TOTAL						HOURLY TOTAL		65
11:00-11:15						17		
11:15-11:30						10		
11:30-11:45						16		
11:45-12:00						13		
HOURLY TOTAL						HOURLY TOTAL		56
12:00-12:15						28		
12:15-12:30						15		
12:30-12:45						15		
12:45-1:00						20		
HOURLY TOTAL						HOURLY TOTAL		78
1:00-1:15						20		
1:15-1:30						16	1	
1:30-1:45						12		
1:45-2:00						20	1	
HOURLY TOTAL						HOURLY TOTAL		70
					TOTAL		TOTAL	520

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COUNT LOCATION:

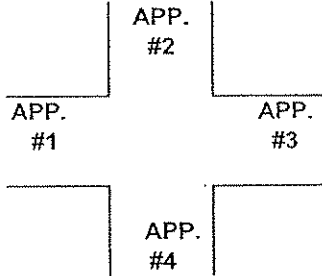
TH 65 (Central Ave.)

DATE:

08/18/2010

@ CR 74 (221st Ave.)

APP. #1 = CR 74
APP. #2 = TH 65
APP. #3 = CR 74
APP. #4 = TH 65



- HEAVY VEHICLE- ANY VEHICLE HAVING MORE THAN FOUR TIRES TOUCHING THE PAVEMENT
- A. TRUCKS- A HEAVY VEHICLE INVOLVED PRIMARILY IN THE TRANSPORT OF GOODS OR IN THE DELIVERY OF A SERVICE.
 - B. RV- A HEAVY VEHICLE OPERATED BY A PRIVATE MOTORIST AND INVOLVED IN THE TRANSPORT OF RECREATIONAL EQUIPMENT OR FACILITIES.
 - C. BUSES- A HEAVY VEHICLE INVOLVED IN THE TRANSPORTATION OF GROUPS OF PEOPLE.

TIME	PEDESTRIANS					HEAVY VEHICLES		
	APP. #1	APP. #2	APP. #3	APP. #4	15 MIN TOT	TRUCKS	RV	BUS
2:00-2:15PM						16		
2:15-2:30						15		
2:30-2:45						23		
2:45-3:00						25		
HOURLY TOTAL						HOURLY TOTAL		79
3:00-3:15						12		
3:15-3:30						15		
3:30-3:45						8		
3:45-4:00						15		
HOURLY TOTAL						HOURLY TOTAL		50
4:00-4:15						11		
4:15-4:30						10		1
4:30-4:45						13		
4:45-5:00						10		1
HOURLY TOTAL						HOURLY TOTAL		46
5:00-5:15						11		
5:15-5:30						13		2
5:30-5:45						10		
5:45-6:00						10		
HOURLY TOTAL						HOURLY TOTAL		46
6:00-6:15						3		
6:15-6:30						13		
6:30-6:45						5		
6:45-7:00						6		
HOURLY TOTAL						HOURLY TOTAL		27
7:00-7:15						8		
7:15-7:30						7		
7:30-7:45						7		
7:45-8:00						2		
HOURLY TOTAL						HOURLY TOTAL		24
8:00-8:15						3		
8:15-8:30								
8:30-8:45						3		
8:45-9:00						8		
HOURLY TOTAL						HOURLY TOTAL		14
9:00-9:15						2		
9:15-9:30						3		1
9:30-9:45								
9:45-10:00								
HOURLY TOTAL						HOURLY TOTAL		6
					TOTAL		TOTAL	812

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