

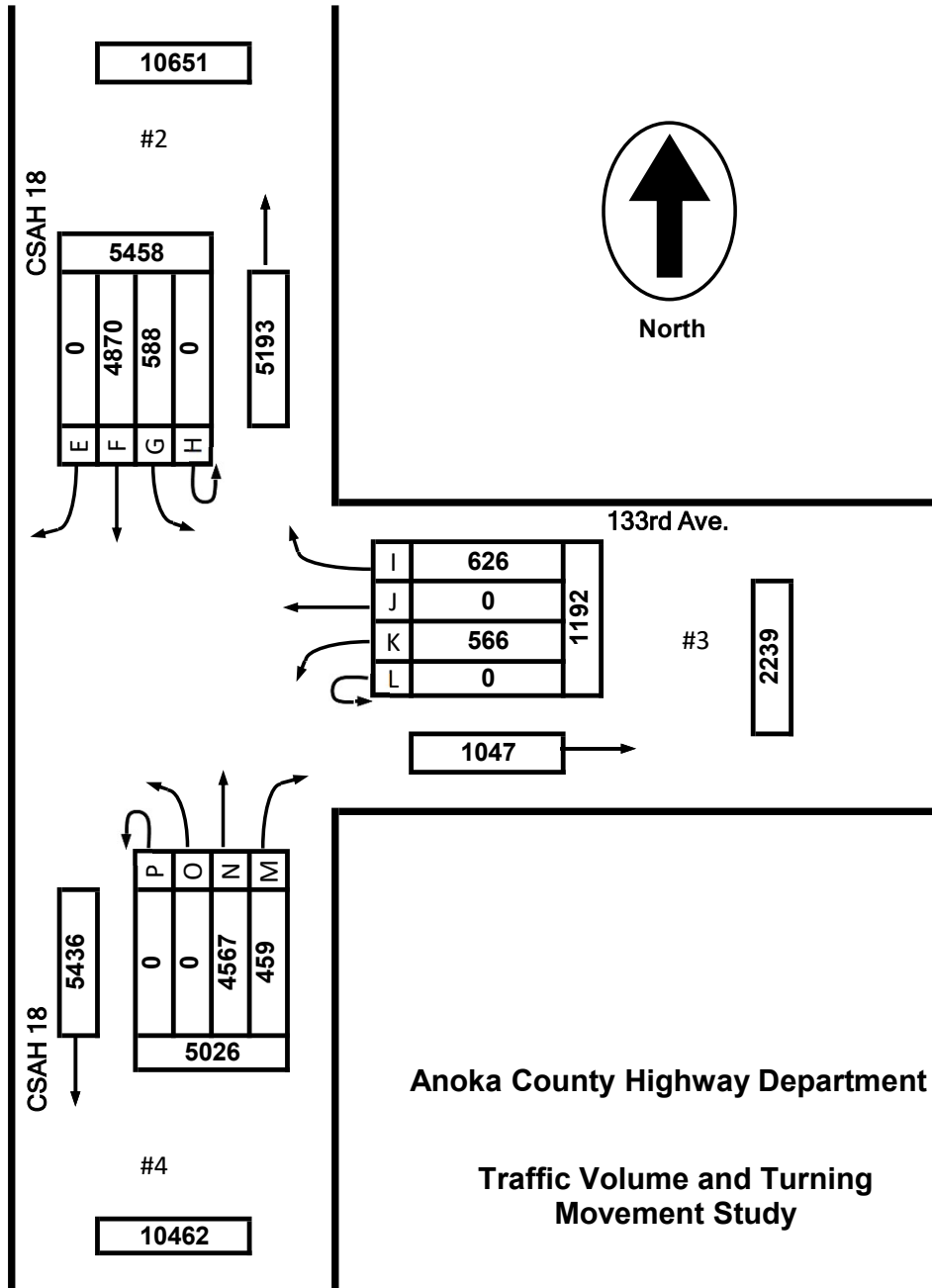
Date : 11/10/21

Count Number : TMC 2151

Location : CSAH 18 (Coon Creek Blvd.)  
@ 133rd Ave.

Collection Period : 24 Hours

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



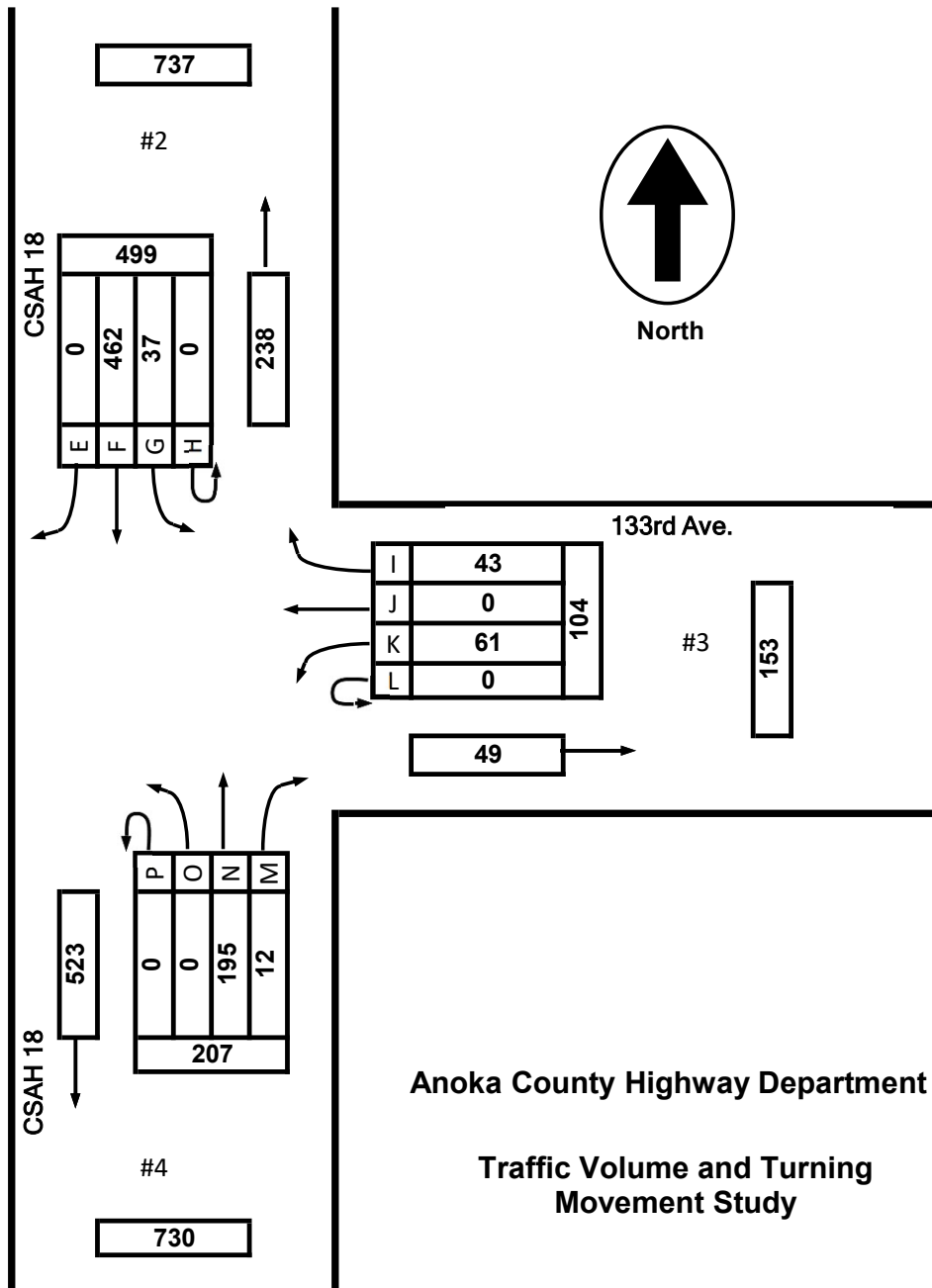
Date : 11/10/21

Count Number : TMC 2151

Location : CSAH 18 (Coon Creek Blvd.)  
@ 133rd Ave.

Collection Period : 7 AM - 8 AM  
 AM PEAK

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



Date : 11/10/21

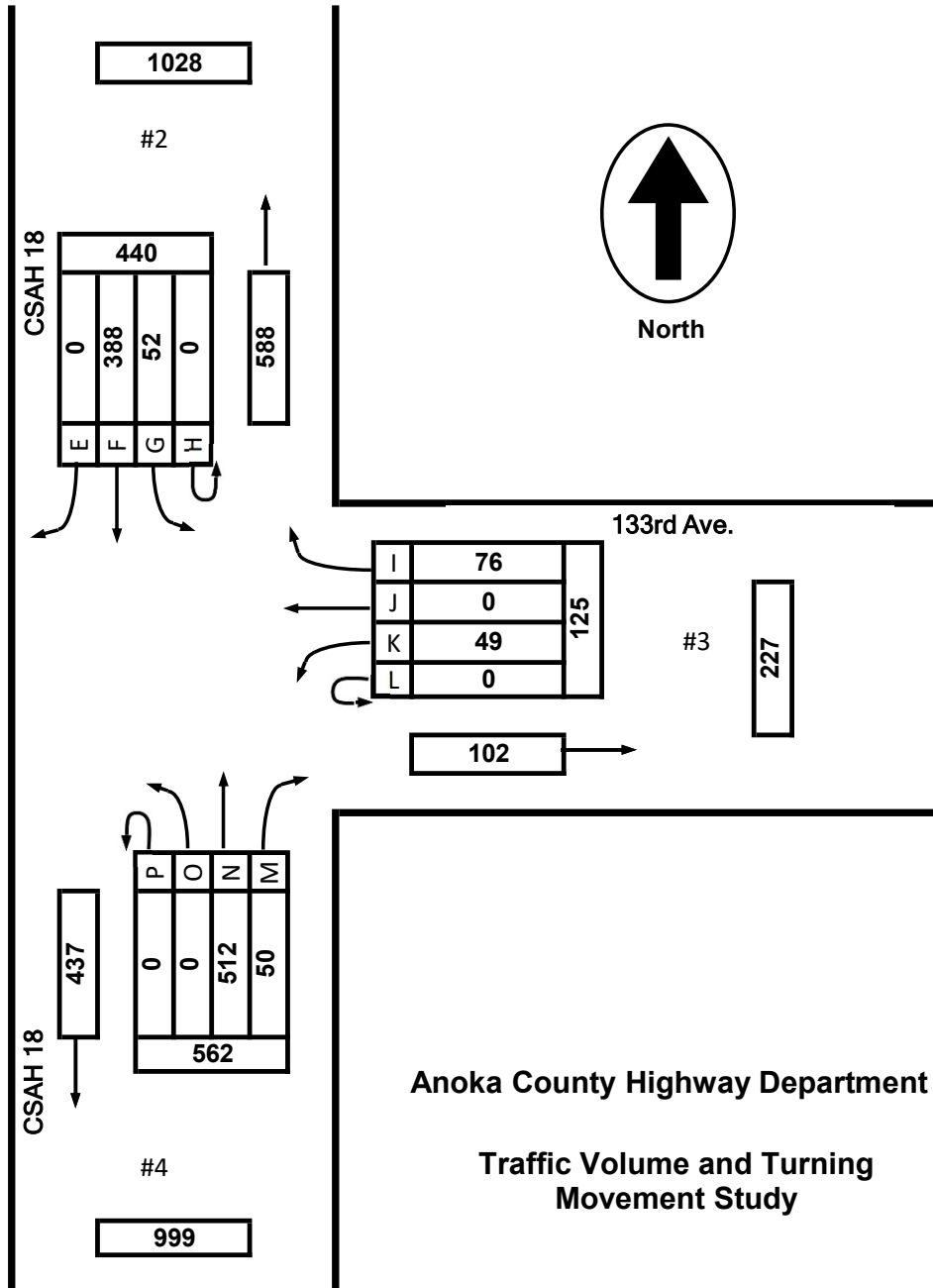
Count Number : TMC 2151

Location : CSAH 18 (Coon Creek Blvd.)  
@ 133rd Ave.

Collection Period : 3:45 - 4:45 PM

PM PEAK

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



Anoka County Highway Department

Traffic Volume and Turning Movement Study

**CSAH 18 @ 133rd Ave  
Coon Rapids MN  
Wednesday, November 10, 2021**

Time	Southbound CSAH 18						Westbound 133rd Ave						Northbound CSAH 18						Eastbound 0						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	
12:00 AM	0	0	4	0	0	4	0	0	0	1	0	1	0	0	2	2	0	4	0	0	0	0	0	0	9
12:15 AM	0	0	0	0	0	0	0	2	0	1	0	3	0	0	3	1	0	4	0	0	0	0	0	0	7
12:30 AM	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	0	4
12:45 AM	0	0	1	0	0	1	0	0	0	3	0	3	0	0	3	0	0	3	0	0	0	0	0	0	7
Hourly Total	0	0	6	0	0	6	0	2	0	5	0	7	0	0	10	4	0	14	0	0	0	0	0	0	27
1:00 AM	0	0	1	0	0	1	0	1	0	0	0	1	0	0	1	2	0	3	0	0	0	0	0	0	5
1:15 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	3
1:30 AM	0	0	4	0	0	4	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	7
1:45 AM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	0	1	0	0	0	0	0	0	2
Hourly Total	0	1	5	0	0	6	0	1	0	1	0	2	0	0	6	3	0	9	0	0	0	0	0	0	17
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3
2:15 AM	0	0	0	0	0	0	0	1	0	1	0	2	0	0	4	1	0	5	0	0	0	0	0	0	7
2:30 AM	0	1	1	0	0	2	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	6
2:45 AM	0	0	1	0	0	1	0	0	0	1	0	1	0	0	3	0	0	3	0	0	0	0	0	0	5
Hourly Total	0	1	2	0	0	3	0	1	0	2	0	3	0	0	14	1	0	15	0	0	0	0	0	0	21
3:00 AM	0	0	5	0	0	5	0	1	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	7
3:15 AM	0	0	2	0	0	2	0	1	0	1	0	2	0	0	1	0	0	1	0	0	0	0	0	0	5
3:30 AM	0	0	8	0	0	8	0	1	0	1	0	2	0	0	1	0	0	1	0	0	0	0	0	0	11
3:45 AM	0	0	4	0	0	4	0	0	0	2	0	2	0	0	3	2	0	5	0	0	0	0	0	0	11
Hourly Total	0	0	19	0	0	19	0	3	0	4	0	7	0	0	6	2	0	8	0	0	0	0	0	0	34
4:00 AM	0	0	5	0	0	5	0	1	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	7
4:15 AM	0	0	10	0	0	10	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	12
4:30 AM	0	0	16	0	0	16	0	3	0	1	0	4	0	0	6	0	0	6	0	0	0	0	0	0	26
4:45 AM	0	2	28	0	0	30	0	3	0	3	0	6	0	0	7	1	0	8	0	0	0	0	0	0	44
Hourly Total	0	2	59	0	0	61	0	7	0	4	0	11	0	0	16	1	0	17	0	0	0	0	0	0	89
5:00 AM	0	1	30	0	0	31	0	4	0	3	0	7	0	0	1	0	0	1	0	0	0	0	0	0	39
5:15 AM	0	0	34	0	0	34	0	9	0	5	0	14	0	0	5	1	0	6	0	0	0	0	0	0	54
5:30 AM	0	1	49	0	0	50	0	7	0	2	0	9	0	0	9	0	0	9	0	0	0	0	0	0	68
5:45 AM	0	1	46	0	0	47	0	7	0	1	0	8	0	0	7	2	0	9	0	0	0	0	0	0	64
Hourly Total	0	3	159	0	0	162	0	27	0	11	0	38	0	0	22	3	0	25	0	0	0	0	0	0	225
6:00 AM	0	0	49	0	0	49	0	7	0	0	0	7	0	0	16	2	0	18	0	0	0	0	0	0	74
6:15 AM	0	0	72	0	0	72	0	8	0	1	0	9	0	0	13	2	0	15	0	0	0	0	0	0	96
6:30 AM	0	8	91	0	0	99	0	14	0	5	0	19	0	0	30	2	0	32	0	0	0	0	0	0	150
6:45 AM	0	4	89	0	0	93	0	8	0	5	0	13	0	0	46	5	0	51	0	0	0	0	0	0	157
Hourly Total	0	12	301	0	0	313	0	37	0	11	0	48	0	0	105	11	0	116	0	0	0	0	0	0	477
7:00 AM	0	7	98	0	0	105	0	14	0	9	0	23	0	0	45	1	0	46	0	0	0	0	0	0	174
7:15 AM	0	7	131	0	0	138	0	19	0	18	0	37	0	0	49	5	2	54	0	0	0	0	0	0	229
7:30 AM	0	13	128	0	0	141	0	17	0	10	0	27	0	0	58	2	1	60	0	0	0	0	0	0	228
7:45 AM	0	10	105	0	0	115	0	11	0	6	0	17	0	0	43	4	0	47	0	0	0	0	0	0	179
Hourly Total	0	37	462	0	0	499	0	61	0	43	0	104	0	0	195	12	3	207	0	0	0	0	0	0	810

**CSAH 18 @ 133rd Ave  
Coon Rapids MN  
Wednesday, November 10, 2021**

Time	Southbound CSAH 18						Westbound 133rd Ave						Northbound CSAH 18						Eastbound 0						VEHICLE TOTAL
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	
8:00 AM	0	8	77	0	0	85	0	14	0	10	0	24	0	0	39	1	3	40	0	0	0	0	0	0	149
8:15 AM	0	9	82	0	0	91	0	5	0	6	0	11	0	0	51	3	1	54	0	0	0	0	0	0	156
8:30 AM	0	4	77	0	0	81	0	9	0	14	0	23	0	0	55	3	0	58	0	0	0	0	0	0	162
8:45 AM	0	4	76	0	0	80	0	6	0	13	0	19	0	0	57	3	0	60	0	0	0	0	0	0	159
Hourly Total	0	25	312	0	0	337	0	34	0	43	0	77	0	0	202	10	4	212	0	0	0	0	0	0	626
9:00 AM	0	7	62	0	0	69	0	11	0	11	0	22	0	0	38	2	0	40	0	0	0	0	0	0	131
9:15 AM	0	10	79	0	0	89	0	6	0	10	0	16	0	0	61	3	0	64	0	0	0	0	0	0	169
9:30 AM	0	8	89	0	0	97	0	4	0	6	0	10	0	0	47	5	0	52	0	0	0	0	0	0	159
9:45 AM	0	3	90	0	0	93	0	11	0	5	0	16	0	0	48	3	0	51	0	0	0	0	0	0	160
Hourly Total	0	28	320	0	0	348	0	32	0	32	0	64	0	0	194	13	0	207	0	0	0	0	0	0	619
10:00 AM	0	2	62	0	0	64	0	3	0	6	0	9	0	0	52	5	2	57	0	0	0	0	0	0	130
10:15 AM	0	9	85	0	0	94	0	15	0	8	0	23	0	0	45	0	0	45	0	0	0	0	0	0	162
10:30 AM	0	9	53	0	0	62	0	6	0	4	0	10	0	0	58	3	2	61	0	0	0	0	0	0	133
10:45 AM	0	7	64	0	0	71	0	11	0	11	0	22	0	0	61	7	0	68	0	0	0	0	0	0	161
Hourly Total	0	27	264	0	0	291	0	35	0	29	0	64	0	0	216	15	4	231	0	0	0	0	0	0	586
11:00 AM	0	6	81	0	0	87	0	3	0	7	0	10	0	0	59	8	0	67	0	0	0	0	0	0	164
11:15 AM	0	14	70	0	0	84	0	6	0	6	0	12	0	0	52	2	0	54	0	0	0	0	0	0	150
11:30 AM	0	8	77	0	0	85	0	13	0	8	0	21	0	0	65	5	0	70	0	0	0	0	0	0	176
11:45 AM	0	4	89	0	0	93	0	5	0	8	0	13	0	0	80	8	0	88	0	0	0	0	0	0	194
Hourly Total	0	32	317	0	0	349	0	27	0	29	0	56	0	0	256	23	0	279	0	0	0	0	0	0	684
12:00 PM	0	9	83	0	0	92	0	6	0	10	0	16	0	0	77	7	0	84	0	0	0	0	0	0	192
12:15 PM	0	11	75	0	0	86	0	5	0	7	0	12	0	0	67	7	0	74	0	0	0	0	0	0	172
12:30 PM	0	3	84	0	0	87	0	8	0	10	0	18	0	0	71	6	0	77	0	0	0	0	0	0	182
12:45 PM	0	11	97	0	0	108	0	12	0	10	0	22	0	0	76	6	1	82	0	0	0	0	0	0	212
Hourly Total	0	34	339	0	0	373	0	31	0	37	0	68	0	0	291	26	1	317	0	0	0	0	0	0	758
1:00 PM	0	6	73	0	0	79	0	6	0	8	0	14	0	0	81	2	0	83	0	0	0	0	0	0	176
1:15 PM	0	7	75	0	0	82	0	8	0	10	0	18	0	0	63	10	0	73	0	0	0	0	0	0	173
1:30 PM	0	13	73	0	0	86	0	10	0	6	0	16	0	0	79	7	0	86	0	0	0	0	0	0	188
1:45 PM	0	5	66	0	0	71	0	9	0	9	0	18	0	0	79	8	0	87	0	0	0	0	0	0	176
Hourly Total	0	31	287	0	0	318	0	33	0	33	0	66	0	0	302	27	0	329	0	0	0	0	0	0	713
2:00 PM	0	6	69	0	0	75	0	6	0	7	1	13	0	0	69	8	0	77	0	0	0	0	0	0	165
2:15 PM	0	16	76	0	0	92	0	10	0	7	0	17	0	0	83	4	0	87	0	0	0	0	0	0	196
2:30 PM	0	14	98	0	0	112	0	9	0	12	0	21	0	0	97	9	0	106	0	0	0	0	0	0	239
2:45 PM	0	14	57	0	0	71	0	8	0	17	0	25	0	0	134	3	0	137	0	0	0	0	0	0	233
Hourly Total	0	50	300	0	0	350	0	33	0	43	1	76	0	0	383	24	0	407	0	0	0	0	0	0	833
3:00 PM	0	18	76	0	0	94	0	6	0	11	0	17	0	0	105	13	0	118	0	0	0	0	0	0	229
3:15 PM	0	8	72	0	0	80	0	13	0	10	0	23	0	0	98	6	0	104	0	0	0	0	0	0	207
3:30 PM	0	20	94	0	0	114	0	10	0	13	0	23	0	0	117	12	0	129	0	0	0	0	0	0	266
3:45 PM	0	12	93	0	0	105	0	16	0	27	0	43	0	0	130	13	0	143	0	0	0	0	0	0	291
Hourly Total	0	58	335	0	0	393	0	45	0	61	0	106	0	0	450	44	0	494	0	0	0	0	0	0	993



**CSAH 18 @ 133rd Ave  
Coon Rapids MN  
Wednesday, November 10, 2021  
AM Peak Hour**

Time	Southbound						Westbound						Northbound						Eastbound						VEHICLE TOTAL						
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total							
7:00 AM	0	7	98	0	0	105	0	14	0	9	0	23	0	0	45	1	0	46	0	0	0	0	0	0	0	0	0	0	0	0	174
7:15 AM	0	7	131	0	0	138	0	19	0	18	0	37	0	0	49	5	2	54	0	0	0	0	0	0	0	0	0	0	0	0	229
7:30 AM	0	13	128	0	0	141	0	17	0	10	0	27	0	0	58	2	1	60	0	0	0	0	0	0	0	0	0	0	0	0	228
7:45 AM	0	10	105	0	0	115	0	11	0	6	0	17	0	0	43	4	0	47	0	0	0	0	0	0	0	0	0	0	0	0	179
Peak Hour Total PHF	0	37	462	0	0	499	0	61	0	43	0	104	0	0	195	12	3	207	0	0	0	0	0	0	0	0	0	0	0	0	810
	0.000	0.712	0.882	0.000	0.000	0.885	0.000	0.803	0.000	0.597	0.000	0.703	0.000	0.000	0.841	0.600	0.375	0.863	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.884	

**PM Peak Hour**

Time	Southbound						Westbound						Northbound						Eastbound						VEHICLE TOTAL						
	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total	U Turns	Left Turns	Straight Through	Right Turns	Crosswalk Crossings	Vehicle Approach Total							
3:45 PM	0	12	93	0	0	105	0	16	0	27	0	43	0	0	130	13	0	143	0	0	0	0	0	0	0	0	0	0	0	0	291
4:00 PM	0	16	103	0	0	119	0	6	0	15	0	21	0	0	123	12	1	135	0	0	0	0	0	0	0	0	0	0	0	0	275
4:15 PM	0	12	85	0	0	97	0	12	0	15	0	27	0	0	131	15	1	146	0	0	0	0	0	0	0	0	0	0	0	0	270
4:30 PM	0	12	107	0	0	119	0	15	0	19	0	34	0	0	128	10	0	138	0	0	0	0	0	0	0	0	0	0	0	0	291
Peak Hour Total PHF	0	52	388	0	0	440	0	49	0	76	0	125	0	0	512	50	2	562	0	0	0	0	0	0	0	0	0	0	0	0	1127
	0.000	0.813	0.907	0.000	0.000	0.924	0.000	0.766	0.000	0.704	0.000	0.727	0.000	0.000	0.977	0.833	0.500	0.962	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.968		

Total Vehicles On Leg		10651	
Vehicles Entering Intersection	5458	Vehicles Exiting Intersection	5193
<b>Southbound</b>			
Cars	0	4782	578
Heavy	0	88	10
<b>Total</b>	<b>0</b>	<b>4870</b>	<b>588</b>



Total Vehicles on Leg 0	Vehicles Entering Intersection 0	Eastbound	Cars	Heavy	Total	
			0	0	0	
	0		0	0		
	Vehicles Exiting Intersection 0		Cars	Heavy	Total	
	0		0	0	0	

Daily Volumes

Total Vehicles on Leg 2239	Vehicles Entering Intersection 1192	Westbound	Cars	Heavy	Total	
			621	5	626	
	0		0	0		
	Vehicles Exiting Intersection 1047		Cars	Heavy	Total	
	562		4	566	0	

Cars	14	0	0	4487	455
Heavy	0	0	0	80	4
<b>Total</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>4567</b>	<b>459</b>
<b>Northbound</b>					
Vehicles Entering Intersection			Vehicles Exiting Intersection		
5026			5436		
Total Vehicles On Leg			10462		

# Heavy Vehicles

Date	Time	Southbound					Westbound					Northbound					Eastbound				
		U Turns	Left Turns	Straight Through	Right Turns	Bicycles in Crosswalk	U Turns	Left Turns	Straight Through	Right Turns	Bicycles in Crosswalk	U Turns	Left Turns	Straight Through	Right Turns	Bicycles in Crosswalk	U Turns	Left Turns	Straight Through	Right Turns	Bicycles in Crosswalk
11/10/2021	0:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	5:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6:15	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
	6:30	0	0	6	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
	6:45	0	1	6	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	7:00	0	1	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0
	7:15	0	0	7	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0
	7:30	0	1	4	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
	7:45	0	1	1	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0	0
	8:00	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
	8:15	0	1	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
	8:30	0	0	4	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
	8:45	0	1	5	0	0	0	1	0	1	0	0	0	4	0	0	0	0	0	0	0
	9:00	0	0	3	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0
	9:15	0	0	1	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0
	9:30	0	0	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
	9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10:15	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
	10:30	0	0	2	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
	10:45	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	11:00	0	0	4	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
	11:15	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11:30	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	11:45	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0





# ANOKA COUNTY HIGHWAY

## PC-WARRANTS

### TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2151

Study Date : 12/09/2021

## Signal Warrants - Summary

---

### Major Street Approaches

Northbound: CSAH 18

Number of Lanes : 1

Total Approach Volume: 5,026

Southbound: CSAH 18

Number of Lanes : 1

Total Approach Volume: 5,458

### Minor Street Approaches

Westbound: 133rd Ave.

Number of Lanes : 1

Total Approach Volume: 1,192

---

### Warrant Summary (Rural Values Apply)

**Warrant 1 - Eight Hour Vehicular Volumes.....Satisfied**

**Warrant 1A - Minimum Vehicular Volume.....Not Satisfied**

Required volumes reached for 4 hours, 8 are needed

**Warrant 1B - Interruption of Continuous Traffic.....Satisfied**

Required volumes reached for 13 hours, 8 are needed

**Warrant 1C - Combination of Warrants.....Not Satisfied**

Required 1A volumes reached for 5 hours, 8 are needed

Required 1B volumes reached for 14 hours, 8 are needed

**Warrant 2 - Four Hour Volumes.....Satisfied**

Number of hours (7) volumes exceed minimum  $\geq$  minimum required (4).

**Warrant 3 - Peak Hour.....Satisfied**

**Warrant 3A - Peak Hour Delay.....Satisfied**

Number of one hour periods (13) volumes exceed minimum  $\geq$  required (1). Delay data not evaluated.

**Warrant 3B - Peak Hour Volumes.....Satisfied**

Volumes exceed minimums for at least one hour period.

**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**

**Warrant 9 - Intersection Near a Grade Crossing.....Not Evaluated**

# ANOKA COUNTY HIGHWAY

## PC-WARRANTS

### TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2151

Study Date : 12/09/2021

## Warrant 1A - Minimum Volumes

#### Description

Intended for sites where the volume of intersecting traffic is the principal reason for consideration of a signal installation.

#### Summary

Only 4 one hour periods meet minimums.  
Warrant is NOT met.

#### Site Data Required

Rural Settings Apply = **True**  
Number of Major Lanes = **1**  
Number of Minor Lanes = **1**

#### Volume Requirements

Rural Factor of 70 % applied  
Veh/Hr Major = **350**  
  
Veh/Hr Minor = **105**

Time	Major Road				Total	Minor Road		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
	<b>CSAH 18</b>					<b>133rd Ave.</b>		
16:00 - 17:00	557	+	440	=	997	0	106	Yes
15:00 - 16:00	494	+	393	=	887	0	106	Yes
17:00 - 18:00	471	+	366	=	837	0	105	Yes
07:15 - 08:15	201	+	479	=	680	0	105	Yes
14:45 - 15:45	488	+	359	=	847	0	88	No
14:30 - 15:30	465	+	357	=	822	0	86	No
14:15 - 15:15	448	+	369	=	817	0	80	No
14:00 - 15:00	407	+	350	=	757	0	76	No
13:45 - 14:45	357	+	350	=	707	0	69	No
07:00 - 08:00	207	+	499	=	706	0	104	No
18:00 - 19:00	374	+	325	=	699	0	77	No
12:00 - 13:00	317	+	373	=	690	0	68	No
06:45 - 07:45	211	+	477	=	688	0	100	No
11:45 - 12:45	323	+	358	=	681	0	59	No
12:45 - 13:45	324	+	355	=	679	0	70	No
12:15 - 13:15	316	+	360	=	676	0	66	No
11:30 - 12:30	316	+	356	=	672	0	62	No
12:30 - 13:30	315	+	356	=	671	0	72	No
13:30 - 14:30	337	+	324	=	661	0	64	No
11:15 - 12:15	296	+	354	=	650	0	62	No
13:00 - 14:00	329	+	318	=	647	0	66	No
13:15 - 14:15	323	+	314	=	637	0	65	No
18:15 - 19:15	337	+	294	=	631	0	59	No
11:00 - 12:00	279	+	349	=	628	0	56	No
06:30 - 07:30	183		435		618	0	92	No

# ANOKA COUNTY HIGHWAY

## PC-WARRANTS

### TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2151

Study Date : 12/09/2021

## Warrant 1B - Interruption of Continuous Traffic

#### Description

Intended for sites where the volume of the major street is so heavy that traffic on the minor street suffers excessive delay or hazard.

#### Summary

13 one hour periods meet minimums.  
Warrant IS met.

#### Site Data Required

Rural Settings Apply = **True**  
Number of Major Lanes = **1**  
Number of Minor Lanes = **1**

#### Volume Requirements

Rural Factor of 70 % applied  
Veh/Hr Major = **525**  
  
Veh/Hr Minor = **52**

Time	Major Road				Total	Minor Road		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
	<b>CSAH 18</b>					<b>133rd Ave.</b>		
15:30 - 16:30	553	+	435	=	988	0	114	Yes
16:30 - 17:30	545	+	413	=	958	0	114	Yes
14:30 - 15:30	465	+	357	=	822	0	86	Yes
17:30 - 18:30	409	+	359	=	768	0	90	Yes
11:30 - 12:30	316	+	356	=	672	0	62	Yes
12:30 - 13:30	315	+	356	=	671	0	72	Yes
13:30 - 14:30	337	+	324	=	661	0	64	Yes
07:30 - 08:30	201	+	432	=	633	0	79	Yes
06:30 - 07:30	183	+	435	=	618	0	92	Yes
18:30 - 19:30	308	+	253	=	561	0	56	Yes
10:30 - 11:30	250	+	304	=	554	0	54	Yes
09:30 - 10:30	205	+	348	=	553	0	58	Yes
08:30 - 09:30	222	+	319	=	541	0	80	Yes
06:15 - 07:15	144	+	369	=	513	0	64	No
06:00 - 07:00	116	+	313	=	429	0	48	No
19:30 - 20:30	235	+	178	=	413	0	38	No
19:45 - 20:45	220	+	156	=	376	0	40	No
05:45 - 06:45	74	+	267	=	341	0	43	No
20:00 - 21:00	205	+	122	=	327	0	38	No
20:15 - 21:15	197	+	106	=	303	0	26	No
20:30 - 21:30	181	+	106	=	287	0	23	No
05:30 - 06:30	51	+	218	=	269	0	33	No
20:45 - 21:45	160	+	95	=	255	0	25	No
21:00 - 22:00	143	+	92	=	235	0	17	No
05:15 - 06:15	42		180		222	0	38	No

# ANOKA COUNTY HIGHWAY

## PC-WARRANTS

### TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2151

Study Date : 12/09/2021

## Warrant 1C Combination of Warrants

#### Description

Intended for sites where the traffic volumes don't meet individual warrants but where Warrants 1A and 1B are both met to 80% of their stated values.

#### Summary

Only 5 hours meet 1A minimums.  
14 hours meet 1B minimums.  
Warrant is NOT met.

#### Site Data Required

Rural Settings Apply = **True**  
Number of Major Lanes = **1**  
Number of Minor Lanes = **1**

#### Volume Requirements

Rural Factor of 70% applied  
Warrant 1A 1B  
Veh/Hr Major = **280 420**

Veh/Hr Minor = **84 42**

#### Major Road CSAH 18

#### Minor Road 133rd Ave.

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1A?
15:30 - 16:30	553	+	435	=	988	0	114	Yes
16:30 - 17:30	545	+	413	=	958	0	114	Yes
14:30 - 15:30	465	+	357	=	822	0	86	Yes
17:30 - 18:30	409	+	359	=	768	0	90	Yes
06:30 - 07:30	183	+	435	=	618	0	92	Yes
14:15 - 15:15	448	+	369	=	817	0	80	No
14:00 - 15:00	407	+	350	=	757	0	76	No
13:45 - 14:45	357	+	350	=	707	0	69	No
12:00 - 13:00	317	+	373	=	690	0	68	No
11:45 - 12:45	323	+	358	=	681	0	59	No
12:45 - 13:45	324	+	355	=	679	0	70	No
12:15 - 13:15	316	+	360	=	676	0	66	No

Time	Major NB	+	Major SB	=	Total	Minor EB	Minor WB	Met1B?
16:00 - 17:00	557	+	440	=	997	0	106	Yes
15:00 - 16:00	494	+	393	=	887	0	106	Yes
17:00 - 18:00	471	+	366	=	837	0	105	Yes
14:00 - 15:00	407	+	350	=	757	0	76	Yes
07:00 - 08:00	207	+	499	=	706	0	104	Yes
18:00 - 19:00	374	+	325	=	699	0	77	Yes
12:00 - 13:00	317	+	373	=	690	0	68	Yes
13:00 - 14:00	329	+	318	=	647	0	66	Yes
11:00 - 12:00	279	+	349	=	628	0	56	Yes
09:00 - 10:00	207	+	348	=	555	0	64	Yes
08:00 - 09:00	212	+	337	=	549	0	77	Yes
10:00 - 11:00	231	+	291	=	522	0	64	Yes

# ANOKA COUNTY HIGHWAY

## PC-WARRANTS

### TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2151

Study Date : 12/09/2021

## Warrant 2 - Four Hour Volumes

#### Description

Intended for sites where the volume of intersecting traffic during any four hours of the day is the principal reason for consideration of a signal installation.

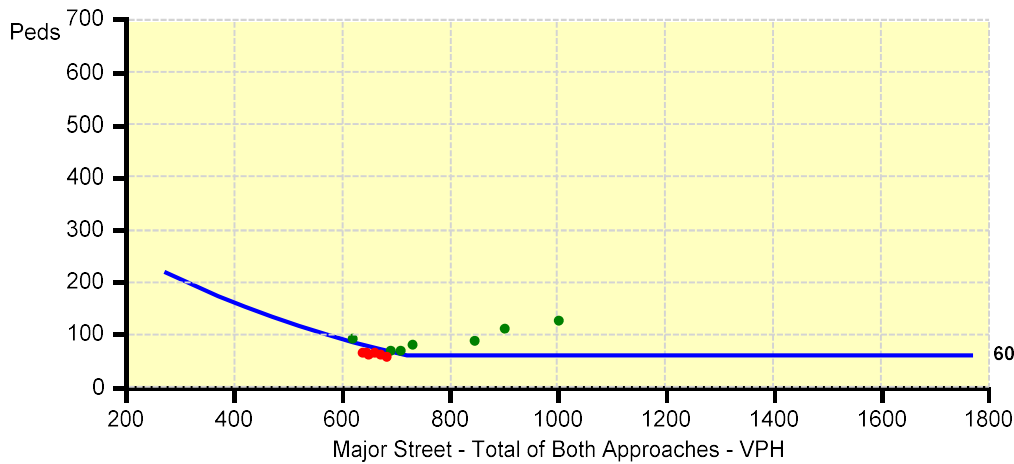
#### Summary

7 one hour periods meet minimums.  
Warrant IS met.

#### Site Data Required

Rural Settings Apply = **True**  
 Number of Major Lanes = **1**  
 Number of Minor Lanes = **1**

Time	Major Road CSAH 18				Total	Minor Road 133rd Ave.		Met?
	Major NB	+	Major SB	=		Minor EB	Minor WB	
15:45 - 16:45	562	+	440	=	1002	0	125	Yes
16:45 - 17:45	515	+	386	=	901	0	110	Yes
14:45 - 15:45	488	+	359	=	847	0	88	Yes
17:45 - 18:45	385	+	346	=	731	0	80	Yes
13:45 - 14:45	357	+	350	=	707	0	69	Yes
12:00 - 13:00	317	+	373	=	690	0	68	Yes
06:30 - 07:30	183	+	435	=	618	0	92	Yes
11:45 - 12:45	323	+	358	=	681	0	59	No
11:30 - 12:30	316	+	356	=	672	0	62	No
13:30 - 14:30	337	+	324	=	661	0	64	No
11:15 - 12:15	296	+	354	=	650	0	62	No
							66	No



# ANOKA COUNTY HIGHWAY

## PC-WARRANTS

### TRAFFIC SIGNAL WARRANT ANALYSIS

Study Name: TMC 2151

Study Date : 12/09/2021

## Warrant 3B - Peak Hour Volumes

#### Description

Intended for sites where the volume of intersecting traffic during one hour of the day is the principal reason for consideration of a signal installation.

#### Summary

8 one hour periods meet minimums.  
Warrant IS met.

#### Site Data Required

Rural Settings Apply = **True**  
 Number of Major Lanes = **1**  
 Number of Minor Lanes = **1**

Time	Major Road CSAH 18				=	Total	Minor Road 133rd Ave.		Met?
	Major NB	+	Major SB				Minor EB	Minor WB	
15:45 - 16:45	562	+	440	=	1002	0	125	Yes	
16:00 - 17:00	557	+	440	=	997	0	106	Yes	
15:30 - 16:30	553	+	435	=	988	0	114	Yes	
16:15 - 17:15	561	+	407	=	968	0	112	Yes	
16:30 - 17:30	545	+	413	=	958	0	114	Yes	
15:15 - 16:15	511	+	418	=	929	0	110	Yes	
16:45 - 17:45	515	+	386	=	901	0	110	Yes	
15:00 - 16:00	494	+	393	=	887	0	106	Yes	
14:45 - 15:45	488	+	359	=	847	0	88	No	
17:00 - 18:00	471	+	366	=	837	0	105	No	
14:30 - 15:30	465	+	357	=	822	0	86	No	
							80	No	

