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# Memorandum

The City of Traverse City  
Engineering Department



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TO: Timothy J. Lodge, P.E., City Engineer  
FROM: Abhishek Deora, Engineering Aide  
DATE: August 17th, 2017  
SUBJECT: Union St (Bridge) Between State St & 7th St Classification Count

This memo is to formalize City Engineering's initial findings and observations in regard to the class of vehicles traveling on Union St between State St and 7<sup>th</sup> St.

City Engineering performed a 24-hour classification count of Union St began at 2:25 pm on August 15th, 2017 and ended at 4:51 pm on August 16th, 2017. The data was gathered using a Jamar Traffic Counter which collected traffic data, including vehicle classification, for each lane of traffic (northbound and southbound) using two parallel tubes that are placed on the road and are connected to the device. This information was then analyzed and the data for each lane compiled into one report, regardless of direction, using TraxPro. The TraxPro report organized the classification of the vehicles into groups. The report shows how many vehicles were within the specified class during one hour intervals as indicated by the report.

A total of 7053 vehicles traveled on Union St during the 24-hour class count. The vehicle class count showed that 405 vehicles, 5.3 percent, traveling on Union St during the count were a class 6 (FHA Scheme F) or higher. This means that 5.3 percent of the vehicles traveling on the road have at least three axels (not including buses or class 14).

1613 vehicles, 21.0 percent, fell into class 14 which is for bicycles and unknown vehicles. This number suggests that many people use this section of Union St as a bicycling route. This number could also be partially due to vehicles parking on the tubes for the traffic counter.

## Summary:

- Number of Vehicles: 7053 vehicles
- Class 6 or Higher: 5.3%
- Class 1 to 5: 73.7%
- Class 14 (Unknown/Bicycles): 21.0%

Encl.: Detailed TraxPro Classification Report

Union St(Bridge)  
Btw 7th St and State St  
Class

Site Code: 00000000000  
Station ID:

Latitude: 0' 0.0000 South

A to B

Start Time	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8	Class 9	Class 10	Class 11	Class 12	Class 13	Class 14	Total
08/15/17	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	0	140	79	0	21	1	0	15	0	0	0	2	1	26	285
16:00	2	158	92	6	27	1	1	18	0	3	0	2	3	14	327
17:00	1	153	82	2	31	0	1	18	0	3	1	2	4	20	318
18:00	2	88	80	1	23	0	0	12	0	2	0	1	0	9	218
19:00	0	65	59	1	20	0	1	4	0	0	0	0	0	5	155
20:00	0	76	51	2	12	0	0	7	0	0	0	0	0	6	154
21:00	0	40	39	0	7	0	0	1	0	0	0	0	0	1	88
22:00	1	16	18	0	5	0	0	2	0	0	0	0	0	0	42
23:00	0	15	13	0	2	0	0	0	0	0	0	0	0	0	30
Total	6	751	513	12	148	2	3	77	0	8	1	7	8	81	1617
Percent	0.4%	46.4%	31.7%	0.7%	9.2%	0.1%	0.2%	4.8%	0.0%	0.5%	0.1%	0.4%	0.5%	5.0%	
AM Peak Vol.															
PM Peak Vol.	16:00	16:00	16:00	16:00	17:00	15:00	16:00	16:00		16:00	17:00	15:00	17:00	15:00	16:00
	2	158	92	6	31	1	1	18		3	1	2	4	26	327

Union St(Bridge)  
Btw 7th St and State St  
Class

Site Code: 00000000000  
Station ID:

Latitude: 0' 0.0000 South

A to B

Start Time	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8	Class 9	Class 10	Class 11	Class 12	Class 13	Class 14	Total
08/16/17	0	4	7	0	1	0	0	0	0	0	0	0	0	0	12
01:00	0	5	12	0	2	0	0	1	0	0	0	0	0	0	20
02:00	0	4	4	0	0	0	0	0	0	0	0	0	0	0	8
03:00	0	1	2	1	0	0	0	0	0	0	0	0	0	0	4
04:00	0	2	3	1	2	0	0	1	0	0	0	0	0	1	10
05:00	0	5	13	2	7	0	0	2	0	0	0	0	0	0	29
06:00	0	16	27	2	19	0	0	2	0	0	0	0	0	0	66
07:00	1	59	57	1	24	1	0	5	0	0	0	0	0	1	149
08:00	1	95	102	4	30	0	0	11	1	1	0	0	1	3	249
09:00	1	79	102	1	33	0	1	12	0	0	1	2	1	10	243
10:00	0	103	80	2	31	0	0	19	0	1	0	0	0	18	254
11:00	0	104	93	1	22	0	1	21	0	1	1	0	5	17	266
12 PM	4	122	89	3	26	0	2	22	0	5	0	0	1	25	299
13:00	1	14	11	1	4	0	0	3	0	1	0	0	1	1	37
14:00	0	33	34	1	9	0	1	7	0	0	0	0	0	4	89
15:00	4	108	113	5	35	1	4	22	0	1	0	0	1	21	315
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	12	754	749	25	245	2	9	128	1	10	2	2	10	101	2050
Percent	0.6%	36.8%	36.5%	1.2%	12.0%	0.1%	0.4%	6.2%	0.0%	0.5%	0.1%	0.1%	0.5%	4.9%	
AM Peak Vol.	07:00	11:00	08:00	08:00	09:00	07:00	09:00	11:00	08:00	08:00	09:00	09:00	11:00	10:00	11:00
PM Peak Vol.	12:00	12:00	15:00	15:00	15:00	15:00	15:00	12:00		12:00			12:00	12:00	15:00
Grand Total Percent	18	1505	1262	37	393	4	12	205	1	18	3	9	18	182	3667
	0.5%	41.0%	34.4%	1.0%	10.7%	0.1%	0.3%	5.6%	0.0%	0.5%	0.1%	0.2%	0.5%	5.0%	

Union St(Bridge)  
Btw 7th St and State St  
Class

Site Code: 00000000000  
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B to A

Start Time	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8	Class 9	Class 10	Class 11	Class 12	Class 13	Class 14	Total
08/15/17	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	2	168	22	3	0	0	3	5	0	2	0	0	0	35	240
16:00	1	151	33	4	2	0	3	9	1	2	1	2	1	36	246
17:00	2	162	21	3	4	1	1	2	0	2	0	0	5	45	248
18:00	1	116	19	4	3	0	0	2	0	0	0	1	0	29	175
19:00	2	78	11	4	1	0	1	3	0	0	0	0	0	9	109
20:00	1	77	15	3	4	0	1	1	0	0	1	0	0	10	113
21:00	0	75	11	1	1	0	0	1	0	0	0	0	0	3	92
22:00	0	38	5	0	1	0	0	1	0	0	0	0	0	1	46
23:00	0	22	5	0	0	0	0	0	0	0	0	0	0	2	29
Total	9	887	142	22	16	1	9	24	1	6	2	3	6	170	1298
Percent	0.7%	68.3%	10.9%	1.7%	1.2%	0.1%	0.7%	1.8%	0.1%	0.5%	0.2%	0.2%	0.5%	13.1%	
AM Peak Vol.															
PM Peak Vol.	15:00	15:00	16:00	16:00	17:00	17:00	15:00	16:00	16:00	15:00	16:00	16:00	17:00	17:00	17:00
	2	168	33	4	4	1	3	9	1	2	1	2	5	45	248

Union St(Bridge)  
Btw 7th St and State St  
Class

Site Code: 00000000000  
Station ID:

Latitude: 0' 0.0000 South

B to A

Start Time	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8	Class 9	Class 10	Class 11	Class 12	Class 13	Class 14	Total
08/16/17	2	23	0	0	1	0	0	0	0	0	0	0	0	1	27
01:00	0	14	2	0	0	0	0	0	0	0	0	0	0	1	17
02:00	0	6	1	0	0	0	0	0	0	0	0	0	0	0	7
03:00	0	2	0	1	0	0	0	0	0	0	0	0	0	0	3
04:00	0	3	2	0	0	0	0	0	0	0	0	0	0	0	5
05:00	0	2	3	0	0	0	0	0	0	0	0	0	0	0	5
06:00	1	14	13	1	1	1	0	0	0	1	0	0	0	3	35
07:00	0	78	17	1	2	0	0	1	1	0	0	2	1	8	111
08:00	0	134	29	1	1	1	0	1	0	0	0	0	0	21	188
09:00	1	121	25	5	1	1	1	5	0	0	0	1	2	59	222
10:00	1	172	32	5	6	0	3	4	0	0	0	1	0	34	258
11:00	0	142	18	5	5	0	4	9	0	1	0	0	5	117	306
12 PM	2	156	23	8	6	0	4	11	1	3	0	1	1	87	303
13:00	0	20	2	0	1	0	1	1	0	2	0	0	0	511	538
14:00	0	49	4	1	1	0	0	0	0	0	0	0	1	388	444
15:00	2	157	32	3	2	0	2	8	1	0	0	0	0	31	238
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	9	1093	203	31	27	3	15	40	3	7	0	5	10	1261	2707
Percent	0.3%	40.4%	7.5%	1.1%	1.0%	0.1%	0.6%	1.5%	0.1%	0.3%	0.0%	0.2%	0.4%	46.6%	
AM Peak	00:00	10:00	10:00	09:00	10:00	06:00	11:00	11:00	07:00	06:00		07:00	11:00	11:00	11:00
Vol.	2	172	32	5	6	1	4	9	1	1		2	5	117	306
PM Peak	12:00	15:00	15:00	12:00	12:00		12:00	12:00	12:00	12:00		12:00	12:00	13:00	13:00
Vol.	2	157	32	8	6		4	11	1	3		1	1	511	538
Grand Total	18	1980	345	53	43	4	24	64	4	13	2	8	16	1431	4005
Percent	0.4%	49.4%	8.6%	1.3%	1.1%	0.1%	0.6%	1.6%	0.1%	0.3%	0.0%	0.2%	0.4%	35.7%	

Union St(Bridge)  
Btw 7th St and State St  
Class

Site Code: 00000000000  
Station ID:

Latitude: 0' 0.0000 South

A to B, B to A

Start Time	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8	Class 9	Class 10	Class 11	Class 12	Class 13	Class 14	Total
08/15/17	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	2	308	101	3	21	1	3	20	0	2	0	2	1	61	525
16:00	3	309	125	10	29	1	4	27	1	5	1	4	4	50	573
17:00	3	315	103	5	35	1	2	20	0	5	1	2	9	65	566
18:00	3	204	99	5	26	0	0	14	0	2	0	2	0	38	393
19:00	2	143	70	5	21	0	2	7	0	0	0	0	0	14	264
20:00	1	153	66	5	16	0	1	8	0	0	1	0	0	16	267
21:00	0	115	50	1	8	0	0	2	0	0	0	0	0	4	180
22:00	1	54	23	0	6	0	0	3	0	0	0	0	0	1	88
23:00	0	37	18	0	2	0	0	0	0	0	0	0	0	2	59
Total	15	1638	655	34	164	3	12	101	1	14	3	10	14	251	2915
Percent	0.5%	56.2%	22.5%	1.2%	5.6%	0.1%	0.4%	3.5%	0.0%	0.5%	0.1%	0.3%	0.5%	8.6%	
AM Peak Vol.															
PM Peak Vol.	16:00	17:00	16:00	16:00	17:00	15:00	16:00	16:00	16:00	16:00	16:00	16:00	17:00	17:00	16:00
	3	315	125	10	35	1	4	27	1	5	1	4	9	65	573

Union St(Bridge)  
Btw 7th St and State St  
Class

Site Code: 00000000000  
Station ID:

Latitude: 0' 0.0000 South

A to B, B to A

Start Time	Class 1	Class 2	Class 3	Class 4	Class 5	Class 6	Class 7	Class 8	Class 9	Class 10	Class 11	Class 12	Class 13	Class 14	Total
08/16/17	2	27	7	0	2	0	0	0	0	0	0	0	0	1	39
01:00	0	19	14	0	2	0	0	1	0	0	0	0	0	1	37
02:00	0	10	5	0	0	0	0	0	0	0	0	0	0	0	15
03:00	0	3	2	2	0	0	0	0	0	0	0	0	0	0	7
04:00	0	5	5	1	2	0	0	1	0	0	0	0	0	1	15
05:00	0	7	16	2	7	0	0	2	0	0	0	0	0	0	34
06:00	1	30	40	3	20	1	0	2	0	1	0	0	0	3	101
07:00	1	137	74	2	26	1	0	6	1	0	0	2	1	9	260
08:00	1	229	131	5	31	1	0	12	1	1	0	0	1	24	437
09:00	2	200	127	6	34	1	2	17	0	0	1	3	3	69	465
10:00	1	275	112	7	37	0	3	23	0	1	0	1	0	52	512
11:00	0	246	111	6	27	0	5	30	0	2	1	0	10	134	572
12 PM	6	278	112	11	32	0	6	33	1	8	0	1	2	112	602
13:00	1	34	13	1	5	0	1	4	0	3	0	0	1	512	575
14:00	0	82	38	2	10	0	1	7	0	0	0	0	1	392	533
15:00	6	265	145	8	37	1	6	30	1	1	0	0	1	52	553
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	21	1847	952	56	272	5	24	168	4	17	2	7	20	1362	4757
Percent	0.4%	38.8%	20.0%	1.2%	5.7%	0.1%	0.5%	3.5%	0.1%	0.4%	0.0%	0.1%	0.4%	28.6%	
AM Peak Vol.	00:00	10:00	08:00	10:00	10:00	06:00	11:00	11:00	07:00	11:00	09:00	09:00	11:00	11:00	11:00
PM Peak Vol.	12:00	12:00	15:00	12:00	15:00	15:00	12:00	12:00	12:00	12:00		12:00	12:00	13:00	12:00
Grand Total Percent	36	3485	1607	90	436	8	36	269	5	31	5	17	34	1613	7672
	0.5%	45.4%	20.9%	1.2%	5.7%	0.1%	0.5%	3.5%	0.1%	0.4%	0.1%	0.2%	0.4%	21.0%	

Union St  
Btw 7th St and State St  
Speed

Site Code: 00000000000  
Station ID:

Latitude: 0' 0.0000 South

Start Time	14-Aug-17 Mon	15-Aug-17 Tue	16-Aug-17 Wed	17-Aug-17 Thu	18-Aug-17 Fri	Weekday Average	19-Aug-17 Sat	20-Aug-17 Sun
12:00 AM	*	*	39	*	*	39	*	*
01:00	*	*	37	*	*	37	*	*
02:00	*	*	15	*	*	15	*	*
03:00	*	*	7	*	*	7	*	*
04:00	*	*	15	*	*	15	*	*
05:00	*	*	34	*	*	34	*	*
06:00	*	*	101	*	*	101	*	*
07:00	*	*	260	*	*	260	*	*
08:00	*	*	437	*	*	437	*	*
09:00	*	*	465	*	*	465	*	*
10:00	*	*	512	*	*	512	*	*
11:00	*	*	572	*	*	572	*	*
12:00 PM	*	*	602	*	*	602	*	*
01:00	*	*	575	*	*	575	*	*
02:00	*	*	533	*	*	533	*	*
03:00	*	525	553	*	*	539	*	*
04:00	*	573	*	*	*	573	*	*
05:00	*	566	*	*	*	566	*	*
06:00	*	393	*	*	*	393	*	*
07:00	*	264	*	*	*	264	*	*
08:00	*	267	*	*	*	267	*	*
09:00	*	180	*	*	*	180	*	*
10:00	*	88	*	*	*	88	*	*
11:00	*	59	*	*	*	59	*	*
Total	0	2915	4757	0	0		0	0
Percentage	0.0%	40.9%	66.7%	0.0%	0.0%		0.0%	0.0%
AM Peak	-	-	11:00	-	-	-	-	-
Vol.	-	-	572	-	-	-	-	-
PM Peak	-	16:00	12:00	-	-	-	-	-
Vol.	-	573	602	-	-	-	-	-
Total		2915	4757					



Union St  
Btw 7th St and State St  
Speed

Site Code: 00000000000  
Station ID:

Latitude: 0' 0.0000 South

A to B

Start Time	0	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace Speed	Number in Pace
08/15/17	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	20	34	137	67	17	0	1	2	1	0	0	0	0	6	285	21-30	205
16:00	34	71	147	61	5	0	2	0	0	1	0	1	2	3	327	16-25	219
17:00	31	46	128	90	13	0	0	1	0	1	0	1	0	7	318	21-30	219
18:00	5	15	100	79	12	1	1	0	0	0	0	1	0	4	218	21-30	179
19:00	8	20	60	50	14	1	0	0	0	0	0	0	0	2	155	21-30	110
20:00	8	20	62	52	9	1	0	0	0	0	0	1	0	1	154	21-30	114
21:00	1	8	43	34	1	0	0	0	0	0	1	0	0	0	88	21-30	77
22:00	0	2	19	15	4	2	0	0	0	0	0	0	0	0	42	21-30	34
23:00	0	0	16	12	2	0	0	0	0	0	0	0	0	0	30	21-30	28
Total	107	216	712	460	77	5	4	3	1	2	1	4	2	23	1617		
Percent	6.6%	13.4%	44.0%	28.4%	4.8%	0.3%	0.2%	0.2%	0.1%	0.1%	0.1%	0.2%	0.1%	1.4%			
AM Peak Vol.																	
PM Peak Vol.	16:00	16:00	16:00	17:00	15:00	22:00	16:00	15:00	15:00	16:00	21:00	16:00	16:00	17:00	16:00		
	34	71	147	90	17	2	2	2	1	1	1	1	2	7	327		

Union St  
Btw 7th St and State St  
Speed

Site Code: 000000000000  
Station ID:

Latitude: 0' 0.0000 South

A to B

Start Time	0	16	21	26	31	36	41	46	51	56	61	66	71	76	9999	Total	Pace Speed	Number in Pace
08/16/17	0	1	6	2	2	1	0	0	0	0	0	0	0	0	0	12	21-30	8
01:00	0	4	8	6	2	0	0	0	0	0	0	0	0	0	0	20	20-29	14
02:00	0	0	3	4	1	0	0	0	0	0	0	0	0	0	0	8	21-30	7
03:00	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	4	26-35	2
04:00	1	2	4	3	0	0	0	0	0	0	0	0	0	0	0	10	21-30	7
05:00	0	1	7	15	5	1	0	0	0	0	0	0	0	0	0	29	21-30	22
06:00	2	1	18	31	13	1	0	0	0	0	0	0	0	0	0	66	21-30	49
07:00	1	5	41	78	20	2	0	2	0	0	0	0	0	0	0	149	21-30	119
08:00	8	26	83	101	24	2	1	1	1	0	0	0	1	1	1	249	21-30	184
09:00	9	18	108	85	16	2	0	0	0	2	0	0	0	3	3	243	21-30	193
10:00	15	55	104	57	12	1	4	1	1	0	0	1	0	3	3	254	21-30	162
11:00	31	65	124	36	3	1	0	0	1	0	2	0	0	3	3	266	16-25	190
12 PM	32	87	118	47	2	0	1	0	0	2	1	0	0	9	9	299	16-25	206
13:00	4	13	16	3	1	0	0	0	0	0	0	0	0	0	0	37	16-25	29
14:00	4	21	38	21	2	0	0	0	0	0	0	1	0	2	2	89	21-30	59
15:00	18	52	141	85	4	2	1	2	1	1	1	0	0	7	7	315	21-30	227
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	126	351	820	575	108	13	7	6	4	5	4	2	1	28	28	2050		
Percent	6.1%	17.1%	40.0%	28.0%	5.3%	0.6%	0.3%	0.3%	0.2%	0.2%	0.2%	0.1%	0.0%	1.4%	1.4%			
AM Peak	11:00	11:00	11:00	08:00	08:00	07:00	10:00	07:00	08:00	09:00	11:00	10:00	08:00	09:00	11:00			
Vol.	31	65	124	101	24	2	4	2	1	2	2	1	1	3	3	266		
PM Peak	12:00	12:00	15:00	15:00	15:00	15:00	12:00	15:00	15:00	12:00	12:00	14:00		12:00	15:00			
Vol.	32	87	141	85	4	2	1	2	1	2	1	1		9	315			
Total	233	567	1532	1035	185	18	11	9	5	7	5	6	3	51	3667			
Percent	6.4%	15.5%	41.8%	28.2%	5.0%	0.5%	0.3%	0.2%	0.1%	0.2%	0.1%	0.2%	0.1%	1.4%	1.4%			

15th Percentile : 17 MPH  
50th Percentile : 23 MPH  
85th Percentile : 28 MPH  
95th Percentile : 31 MPH

Stats  
10 MPH Pace Speed : 21-30 MPH  
Number in Pace : 2577  
Percent in Pace : 70.3%  
Number of Vehicles > 25 MPH : 1335  
Percent of Vehicles > 25 MPH : 36.4%  
Mean Speed(Average) : 24 MPH

Union St  
Btw 7th St and State St  
Speed

Site Code: 00000000000  
Station ID:

Latitude: 0' 0.0000 South

B to A

Start Time	0	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace Speed	Number in Pace
08/15/17	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	<b>40</b>	104	81	3	0	0	<b>1</b>	0	0	0	0	<b>1</b>	0	<b>10</b>	240	16-25	187
16:00	31	<b>116</b>	86	2	<b>2</b>	0	0	<b>1</b>	0	0	0	1	<b>1</b>	6	246	16-25	204
17:00	29	89	<b>108</b>	7	1	0	1	1	0	0	<b>1</b>	1	0	10	<b>248</b>	16-25	199
18:00	12	62	88	4	0	0	1	0	0	0	1	1	1	5	175	16-25	151
19:00	9	37	50	7	1	<b>1</b>	0	0	0	<b>1</b>	0	0	1	2	109	16-25	87
20:00	9	43	51	7	0	0	0	0	0	0	0	0	0	3	113	16-25	94
21:00	5	38	43	5	0	0	1	0	0	0	0	0	0	0	92	16-25	81
22:00	3	17	18	8	0	0	0	0	0	0	0	0	0	0	46	16-25	35
23:00	1	7	11	<b>10</b>	0	0	0	0	0	0	0	0	0	0	29	21-30	21
Total	139	513	536	53	4	1	4	2	0	1	2	4	3	36	1298		
Percent	10.7%	39.5%	41.3%	4.1%	0.3%	0.1%	0.3%	0.2%	0.0%	0.1%	0.2%	0.3%	0.2%	2.8%			
AM Peak Vol.																	
PM Peak Vol.	15:00	16:00	17:00	23:00	16:00	19:00	15:00	16:00		19:00	17:00	15:00	16:00	15:00	17:00		
	40	116	108	10	2	1	1	1		1	1	1	1	10	248		

Union St  
Btw 7th St and State St  
Speed

Site Code: 00000000000  
Station ID:

Latitude: 0' 0.0000 South

B to A

Start Time	0	16	21	26	31	36	41	46	51	56	61	66	71	76	9999	Total	Pace Speed	Number in Pace
08/16/17	0	4	18	5	0	0	0	0	0	0	0	0	0	0	0	27	19-28	23
01:00	0	3	12	2	0	0	0	0	0	0	0	0	0	0	17	16-25	15	
02:00	0	1	4	2	0	0	0	0	0	0	0	0	0	0	7	19-28	6	
03:00	0	1	0	1	1	0	0	0	0	0	0	0	0	0	3	24-33	2	
04:00	2	2	1	0	0	0	0	0	0	0	0	0	0	0	5	16-25	3	
05:00	0	0	3	2	0	0	0	0	0	0	0	0	0	0	5	20-29	5	
06:00	2	5	21	6	0	0	0	0	0	0	0	0	0	1	35	21-30	27	
07:00	2	17	75	15	1	0	0	0	0	0	0	0	0	1	111	16-25	92	
08:00	4	37	114	28	0	0	0	0	1	0	0	1	0	3	188	16-25	151	
09:00	48	53	100	11	1	1	0	0	1	0	0	1	1	5	222	16-25	155	
10:00	29	122	91	7	2	0	0	0	0	0	0	1	0	6	258	16-25	215	
11:00	118	103	73	3	1	0	0	1	0	1	1	0	0	5	306	16-25	180	
12 PM	113	112	56	6	2	2	0	0	0	0	0	1	1	10	303	16-25	172	
13:00	514	14	8	0	0	0	0	0	0	0	0	0	0	2	538	1-10	342	
14:00	387	25	27	2	0	0	0	0	0	0	1	0	0	2	444	1-10	256	
15:00	20	113	93	6	1	0	1	0	1	1	0	1	1	0	238	16-25	207	
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	1239	612	696	96	9	3	1	1	3	2	2	5	3	35	2707			
Percent	45.8%	22.6%	25.7%	3.5%	0.3%	0.1%	0.0%	0.0%	0.1%	0.1%	0.1%	0.2%	0.1%	1.3%				
AM Peak	11:00	10:00	08:00	08:00	10:00	09:00		11:00	08:00	11:00	11:00	08:00	09:00	10:00	11:00			
Vol.	118	122	114	28	2	1		1	1	1	1	1	1	6	306			
PM Peak	13:00	15:00	15:00	12:00	12:00	12:00	15:00		15:00	15:00	14:00	12:00	12:00	12:00	13:00			
Vol.	514	113	93	6	2	2	1		1	1	1	1	1	10	538			
Total	1378	1125	1232	149	13	4	5	3	3	3	4	9	6	71	4005			
Percent	34.4%	28.1%	30.8%	3.7%	0.3%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%	1.8%				

15th Percentile : 6 MPH  
50th Percentile : 17 MPH  
85th Percentile : 23 MPH  
95th Percentile : 25 MPH

Stats  
10 MPH Pace Speed : 16-25 MPH  
Number in Pace : 2410  
Percent in Pace : 60.2%  
Number of Vehicles > 25 MPH : 270  
Percent of Vehicles > 25 MPH : 6.7%  
Mean Speed(Average) : 17 MPH

Union St  
Btw 7th St and State St  
Speed

Site Code: 00000000000  
Station ID:

Latitude: 0' 0.0000 South

A to B, B to A

Start Time	0	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace Speed	Number in Pace
08/15/17	*	*	*	*	*	*	*	*	*	*	*	*	*	*	9999	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	60	138	218	70	17	0	2	2	1	0	0	1	0	16	525	16-25	359
16:00	65	187	233	63	7	0	2	1	0	1	0	2	3	9	573	16-25	423
17:00	60	135	236	97	14	0	1	2	0	1	1	2	0	17	566	16-25	374
18:00	17	77	188	83	12	1	2	0	0	0	1	2	1	9	393	21-30	272
19:00	17	57	110	57	15	2	0	0	0	1	0	0	1	4	264	16-25	168
20:00	17	63	113	59	9	1	0	0	0	0	0	1	0	4	267	16-25	177
21:00	6	46	86	39	1	0	1	0	0	0	1	0	0	0	180	16-25	132
22:00	3	19	37	23	4	2	0	0	0	0	0	0	0	0	88	21-30	60
23:00	1	7	27	22	2	0	0	0	0	0	0	0	0	0	59	21-30	49
Total	246	729	1248	513	81	6	8	5	1	3	3	8	5	59	2915		
Percent	8.4%	25.0%	42.8%	17.6%	2.8%	0.2%	0.3%	0.2%	0.0%	0.1%	0.1%	0.3%	0.2%	2.0%			
AM Peak Vol.																	
PM Peak Vol.	16:00	16:00	17:00	17:00	15:00	19:00	15:00	15:00	15:00	16:00	17:00	16:00	16:00	17:00	16:00		
	65	187	236	97	17	2	2	2	1	1	1	2	3	17	573		

Union St  
Btw 7th St and State St  
Speed

Site Code: 00000000000  
Station ID:

Latitude: 0' 0.0000 South

A to B, B to A

Start Time	0	16	21	26	31	36	41	46	51	56	61	66	71	76	9999	Total	Pace Speed	Number in Pace
08/16/17	0	5	24	7	2	1	0	0	0	0	0	0	0	0	0	39	20-29	31
01:00	0	7	20	8	2	0	0	0	0	0	0	0	0	0	0	37	19-28	28
02:00	0	1	7	6	1	0	0	0	0	0	0	0	0	0	0	15	21-30	13
03:00	1	1	1	2	2	0	0	0	0	0	0	0	0	0	0	7	26-35	4
04:00	3	4	5	3	0	0	0	0	0	0	0	0	0	0	0	15	16-25	9
05:00	0	1	10	17	5	1	0	0	0	0	0	0	0	0	0	34	21-30	27
06:00	4	6	39	37	13	1	0	0	0	0	0	0	0	1	101	21-30	76	
07:00	3	22	116	93	21	2	0	2	0	0	0	0	0	1	260	21-30	209	
08:00	12	63	197	129	24	2	1	1	2	0	0	1	1	4	437	21-30	327	
09:00	57	71	208	96	17	3	0	0	1	2	0	1	1	8	465	21-30	306	
10:00	44	177	195	64	14	1	4	1	1	0	0	2	0	9	512	16-25	374	
11:00	149	168	197	39	4	1	0	1	1	1	3	0	0	8	572	16-25	371	
12 PM	145	199	174	53	4	2	1	0	0	2	1	1	1	19	602	16-25	379	
13:00	518	27	24	3	1	0	0	0	0	0	0	0	0	2	575	6-15	343	
14:00	391	46	65	23	2	0	0	0	0	0	1	1	0	4	533	6-15	256	
15:00	38	165	234	91	5	2	2	2	2	2	1	1	1	7	553	16-25	401	
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	1365	963	1516	671	117	16	8	7	7	7	6	7	4	63	4757			
Percent	28.7%	20.2%	31.9%	14.1%	2.5%	0.3%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	1.3%				
AM Peak	11:00	10:00	09:00	08:00	08:00	09:00	10:00	07:00	08:00	09:00	11:00	10:00	08:00	10:00	11:00			
Vol.	149	177	208	129	24	3	4	2	2	2	3	2	1	9	572			
PM Peak	13:00	12:00	15:00	15:00	15:00	12:00	15:00	15:00	15:00	12:00	12:00	12:00	12:00	12:00	12:00			
Vol.	518	199	234	91	5	2	2	2	2	2	1	1	1	19	602			
Total	1611	1692	2764	1184	198	22	16	12	8	10	9	15	9	122	7672			
Percent	21.0%	22.1%	36.0%	15.4%	2.6%	0.3%	0.2%	0.2%	0.1%	0.1%	0.1%	0.2%	0.1%	1.6%				

15th Percentile : 11 MPH  
50th Percentile : 20 MPH  
85th Percentile : 26 MPH  
95th Percentile : 29 MPH

Stats  
10 MPH Pace Speed : 16-25 MPH  
Number in Pace : 4516  
Percent in Pace : 58.9%  
Number of Vehicles > 25 MPH : 1605  
Percent of Vehicles > 25 MPH : 20.9%  
Mean Speed(Average) : 20 MPH