Memorandum

The City of Traverse City
Engineering Department

TO: Tim J. Lodge, P.E., City Engineer

FROM: Brogan Beyette, Engineering Intern

DATE: July 12, 2013

SUBJECT: Speed count on Union St., N of 10th St

The City of Traverse City Engineering Department conducted an on-site speed count beginning Tuesday, July 9, 2013 at 9:00am and ending Friday, July 12, 2013 at 1:00pm on Union St., N of 10th St.

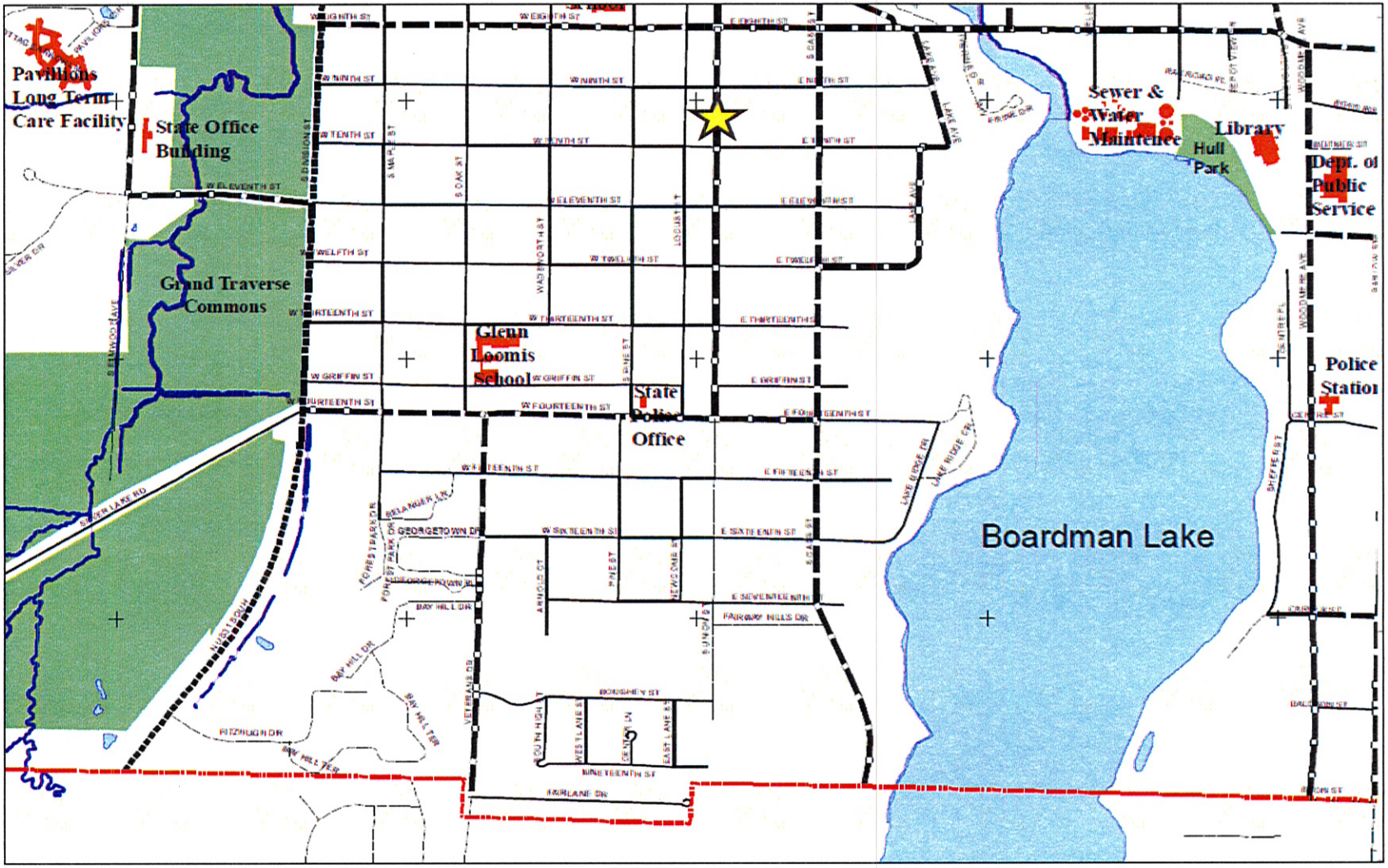
The Jamar Radar Recorder gathered data for each lane of traffic; one lane north bound and one lane south bound. The speeds of each vehicle were recorded in the device and then compiled into TraxPro where the lanes were combined into one report, regardless of direction. The report divided the speeds into groups starting with 1-15 mph and each successive group at 5 mph increments. Each group shows how many vehicles were within that specific range of speed and at what times.

The speed limit of Union St. is 25 mph. According to the enclosed detailed speed report, the average speed of the vehicles was 22 mph. 74.7% of the vehicles were at 25 mph and less with 97.4% of all vehicles at 30 mph and less.

Summary:

- Speed Limit: 25 mph
- Average Speed: 22 mph
- Total Number of Vehicles: 22,202
- 24-hr ADT Weekday: 6,859 vehicles
- 15th Percentile: 14 mph
- 50th Percentile: 21 mph
- 85th Percentile: 26 mph
- 95th Percentile: 29 mph

Enclosed: Detailed TraxPro Speed Report
Location Map


Pavillions Long Term Care Facility
State Office Building
Grand Traverse Commons
Glenn Loomis School
State Police Office
Sewer & Water Maintenee
Library
Hull Park
Dept. of Public Service
Police Station
Boardman Lake
W EIGHTH ST
E EIGHTH ST
W NINTH ST
E NINTH ST
W TENTH ST
E TENTH ST
W ELEVENTH ST
E ELEVENTH ST
W TWELFTH ST
E TWELFTH ST
W THIRTEENTH ST
E THIRTEENTH ST
W GRIFFIN ST
E GRIFFIN ST
W FOURTEENTH ST
E FOURTEENTH ST
W FIFTEENTH ST
E FIFTEENTH ST
W SIXTEENTH ST
E SIXTEENTH ST
E SEVENTEENTH ST
FAIRWAY HILLS DR
BOUGHEY ST
NINETEENTH ST
FAIRLANE DR
GEORGETOWN DR
BAY HILL DR
FITZHUGH DR
BAY HILL TER
FOREST PARK DR
BELANGER LN
S DIVISION ST
S MAPLE ST
S OAK ST
WADSWORTH ST
LOCUST ST
S PINE ST
ARNOLD CT
NEWCOMB ST
S SAGE ST
LAKE AVE
LAKE RIDGE DR
SHEFFER ST
WOODMERE AVE
CENTRE ST
BALDWIN ST
BATON ST
VETERANS DR
SOUTH HIGH ST
WEST LANE ST
CENTER LN
EAST LANE ST
SUNCH ST
S ELMWOOD AVE
SILVER LAKE RD
NUSSBAUM

Union St
(N of 10th St)
Speed

Site Code: 00000001
Station ID:

Latitude: 0' 0.0000 South

Direction 1, Direction 2

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
07/09/13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	8	62	215	110	**13**	0	0	0	0	0	0	0	0	0	408	27	30
10:00	10	87	**226**	91	9	0	0	0	0	0	0	0	0	0	423	26	29
11:00	**15**	**126**	225	**115**	6	0	0	0	0	0	0	0	0	0	**487**	26	29
12 PM	**35**	146	**260**	118	11	**1**	0	0	0	0	0	0	0	0	571	26	29
13:00	22	133	257	102	9	0	0	0	0	0	0	0	0	0	523	26	29
14:00	14	142	223	109	**15**	0	0	0	0	0	0	0	0	0	503	26	29
15:00	17	112	259	103	4	0	0	0	0	0	0	0	0	0	495	26	29
16:00	30	**165**	256	**122**	13	0	0	0	0	0	0	0	0	0	**586**	26	29
17:00	34	121	238	106	9	0	0	0	0	0	0	0	0	0	508	26	29
18:00	9	90	206	60	7	0	0	0	0	0	0	0	0	0	372	25	28
19:00	6	60	151	48	5	0	0	0	0	0	0	0	0	0	270	26	29
20:00	3	38	135	40	5	1	0	0	0	0	0	0	0	0	222	26	29
21:00	0	38	113	38	7	1	0	0	0	0	0	0	0	0	197	26	30
22:00	7	35	72	28	2	0	0	0	0	0	0	0	0	0	144	26	29
23:00	3	22	22	16	2	0	0	0	0	0	0	0	0	0	65	26	29
Total	213	1377	2858	1206	117	3	0	0	0	0	0	0	0	0	5774		
Percent	3.7%	23.8%	49.5%	20.9%	2.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	11:00	10:00	11:00	09:00										11:00		
Vol.	15	126	226	115	13										487		
PM Peak	12:00	16:00	12:00	16:00	14:00	12:00									16:00		
Vol.	35	165	260	122	15	1									586		

Union St
(N of 10th St)
Speed

Site Code: 00000001
Station ID:

Latitude: 0' 0.0000 South

Direction 1, Direction 2

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
07/10/13	0	9	12	6	0	0	0	0	0	0	0	0	0	0	27	26	28
01:00	0	8	7	3	2	0	0	0	0	0	0	0	0	0	20	27	32
02:00	0	4	8	5	2	0	0	0	0	0	0	0	0	0	19	28	32
03:00	0	3	12	2	0	0	0	0	0	0	0	0	0	0	17	25	27
04:00	0	3	3	1	2	0	0	0	0	0	0	0	0	0	9	30	33
05:00	1	8	20	11	1	0	0	0	0	0	0	0	0	0	41	27	29
06:00	0	11	57	43	4	0	0	0	0	0	0	0	0	0	115	28	30
07:00	4	24	134	117	**27**	**2**	0	0	0	0	0	0	0	0	308	29	32
08:00	8	46	184	**150**	13	2	0	0	0	0	0	0	0	0	403	28	30
09:00	7	71	209	105	11	0	0	0	0	0	0	0	0	0	403	27	30
10:00	6	**109**	**244**	90	9	0	0	0	0	0	0	0	0	0	458	26	29
11:00	**21**	101	241	113	10	0	0	0	0	0	0	0	0	0	**486**	26	29
12 PM	13	128	253	101	7	0	0	0	0	0	0	0	0	0	502	26	29
13:00	18	127	271	104	3	**1**	0	0	0	0	0	0	0	0	524	26	28
14:00	14	127	245	**117**	11	0	0	0	0	0	0	0	0	0	514	26	29
15:00	21	123	**279**	92	9	1	0	0	0	0	0	0	0	0	525	26	29
16:00	15	**165**	275	108	10	1	0	0	0	0	0	0	0	0	**574**	26	29
17:00	**34**	149	233	96	**24**	0	0	0	0	0	0	0	0	0	536	26	30
18:00	10	73	191	75	11	1	0	0	0	0	0	0	0	0	361	26	29
19:00	6	64	169	82	10	0	0	0	0	0	0	0	0	0	331	27	30
20:00	4	46	117	67	8	0	0	0	0	0	0	0	0	0	242	27	30
21:00	4	35	86	37	4	0	0	0	0	0	0	0	0	0	166	26	29
22:00	3	32	68	29	2	0	0	0	0	0	0	0	0	0	134	26	29
23:00	3	14	45	13	1	0	0	0	0	0	0	0	0	0	76	25	28
Total	192	1480	3363	1567	181	8	0	0	0	0	0	0	0	0	6791		
Percent	2.8%	21.8%	49.5%	23.1%	2.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	10:00	10:00	08:00	07:00	07:00									11:00		
Vol.	21	109	244	150	27	2									486		
PM Peak	17:00	16:00	15:00	14:00	17:00	13:00									16:00		
Vol.	34	165	279	117	24	1									574		

Union St
(N of 10th St)
Speed

Site Code: 00000001
Station ID:

Latitude: 0' 0.0000 South

Direction 1, Direction 2

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
07/11/13	0	11	27	9	0	0	0	0	0	0	0	0	0	0	47	26	28
01:00	0	5	19	7	0	0	0	0	0	0	0	0	0	0	31	26	29
02:00	0	3	15	5	2	0	0	0	0	0	0	0	0	0	25	28	31
03:00	3	1	13	3	1	0	0	0	0	0	0	0	0	0	21	26	30
04:00	0	7	12	2	0	0	0	0	0	0	0	0	0	0	21	24	26
05:00	0	3	27	17	4	0	0	0	0	0	0	0	0	0	51	29	31
06:00	1	11	63	30	3	0	0	0	0	0	0	0	0	0	108	27	30
07:00	3	29	143	116	11	0	0	0	0	0	0	0	0	0	302	28	30
08:00	7	35	213	123	**12**	0	0	0	0	0	0	0	0	0	390	27	30
09:00	9	59	219	87	8	0	0	0	0	0	0	0	0	0	382	26	29
10:00	**12**	86	225	98	8	0	0	0	0	0	0	0	0	0	429	26	29
11:00	11	**113**	**235**	**133**	8	0	0	0	0	0	0	0	0	0	**500**	27	29
12 PM	**31**	146	**272**	114	10	**1**	0	0	0	0	0	0	0	0	**574**	26	29
13:00	31	118	255	99	13	1	0	0	0	0	0	0	0	0	517	26	29
14:00	10	95	224	**115**	12	0	0	0	0	0	0	0	0	0	456	27	29
15:00	18	124	240	97	13	0	0	0	0	0	0	0	0	0	492	26	29
16:00	29	**148**	252	100	**16**	0	0	0	0	0	0	0	0	0	545	26	29
17:00	31	142	247	108	14	0	0	0	0	0	0	0	0	0	542	26	29
18:00	3	56	223	87	11	0	0	0	0	0	0	0	0	0	380	27	29
19:00	7	51	180	85	4	1	0	0	0	0	0	0	0	0	328	27	29
20:00	13	68	149	66	9	0	0	0	0	0	0	0	0	0	305	26	29
21:00	5	64	107	42	5	0	0	0	0	0	0	0	0	0	223	26	29
22:00	7	54	75	23	2	0	0	0	0	0	0	0	0	0	161	25	28
23:00	3	26	44	21	2	0	0	0	0	0	0	0	0	0	96	26	29
Total	234	1455	3479	1587	168	3	0	0	0	0	0	0	0	0	6926		
Percent	3.4%	21.0%	50.2%	22.9%	2.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	10:00	11:00	11:00	11:00	08:00										11:00		
Vol.	12	113	235	133	12										500		
PM Peak	12:00	16:00	12:00	14:00	16:00	12:00									12:00		
Vol.	31	148	272	115	16	1									574		

Union St
(N of 10th St)
Speed

Site Code: 00000001
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Latitude: 0' 0.0000 South

Direction 1, Direction 2

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	85th Percent	95th Percent
07/12/13	0	10	26	9	2	0	0	0	0	0	0	0	0	0	47	26	30
01:00	0	5	11	8	1	1	0	0	0	0	0	0	0	0	26	28	32
02:00	0	3	14	2	1	0	0	0	0	0	0	0	0	0	20	25	30
03:00	2	4	6	4	1	0	0	0	0	0	0	0	0	0	17	27	30
04:00	0	1	6	7	1	0	0	0	0	0	0	0	0	0	15	29	31
05:00	1	5	24	16	2	0	0	0	0	0	0	0	0	0	48	28	30
06:00	4	13	60	30	13	0	0	0	0	0	0	0	0	0	120	29	32
07:00	7	21	147	**107**	7	0	0	0	0	0	0	0	0	0	289	28	30
08:00	5	33	196	105	10	**2**	0	0	0	0	0	0	0	0	351	27	30
09:00	12	79	191	97	14	0	0	0	0	0	0	0	0	0	393	27	30
10:00	**18**	58	195	87	**15**	0	0	0	0	0	0	0	0	0	373	27	30
11:00	17	**113**	**241**	97	15	0	0	0	0	0	0	0	0	0	**483**	26	29
12 PM	**17**	**116**	**269**	**117**	**10**	0	0	0	0	0	0	0	0	0	**529**	26	29
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	83	461	1386	686	92	3	0	0	0	0	0	0	0	0	2711		
Percent	3.1%	17.0%	51.1%	25.3%	3.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	10:00	11:00	11:00	07:00	10:00	08:00									11:00		
Vol.	18	113	241	107	15	2									483		
PM Peak	12:00	12:00	12:00	12:00	12:00										12:00		
Vol.	17	116	269	117	10										529		
Grand Total	722	4773	11086	5046	558	17	0	0	0	0	0	0	0	0	22202		
Percent	3.3%	21.5%	49.9%	22.7%	2.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile :	14 MPH
50th Percentile :	21 MPH
85th Percentile :	26 MPH
95th Percentile :	29 MPH

Statistics

10 MPH Pace Speed :	19-28 MPH
Number in Pace :	14136
Percent in Pace :	63.7%
Number of Vehicles > 25 MPH :	5621
Percent of Vehicles > 25 MPH :	25.3%
Mean Speed(Average) :	22 MPH