Memorandum

The City of Traverse City
Engineering Department

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

FROM: Brogan Beyette, Engineering Intern

DATE: July 11, 2013

SUBJECT: Speed count on Union St., at the 11th St. intersection

The City of Traverse City Engineering Department conducted an on-site speed count beginning Monday, July 8, 2013 at 3:00pm and ending Thursday, July 11, 2013 at 9:00am on Cass St., at the 11th St. intersection.

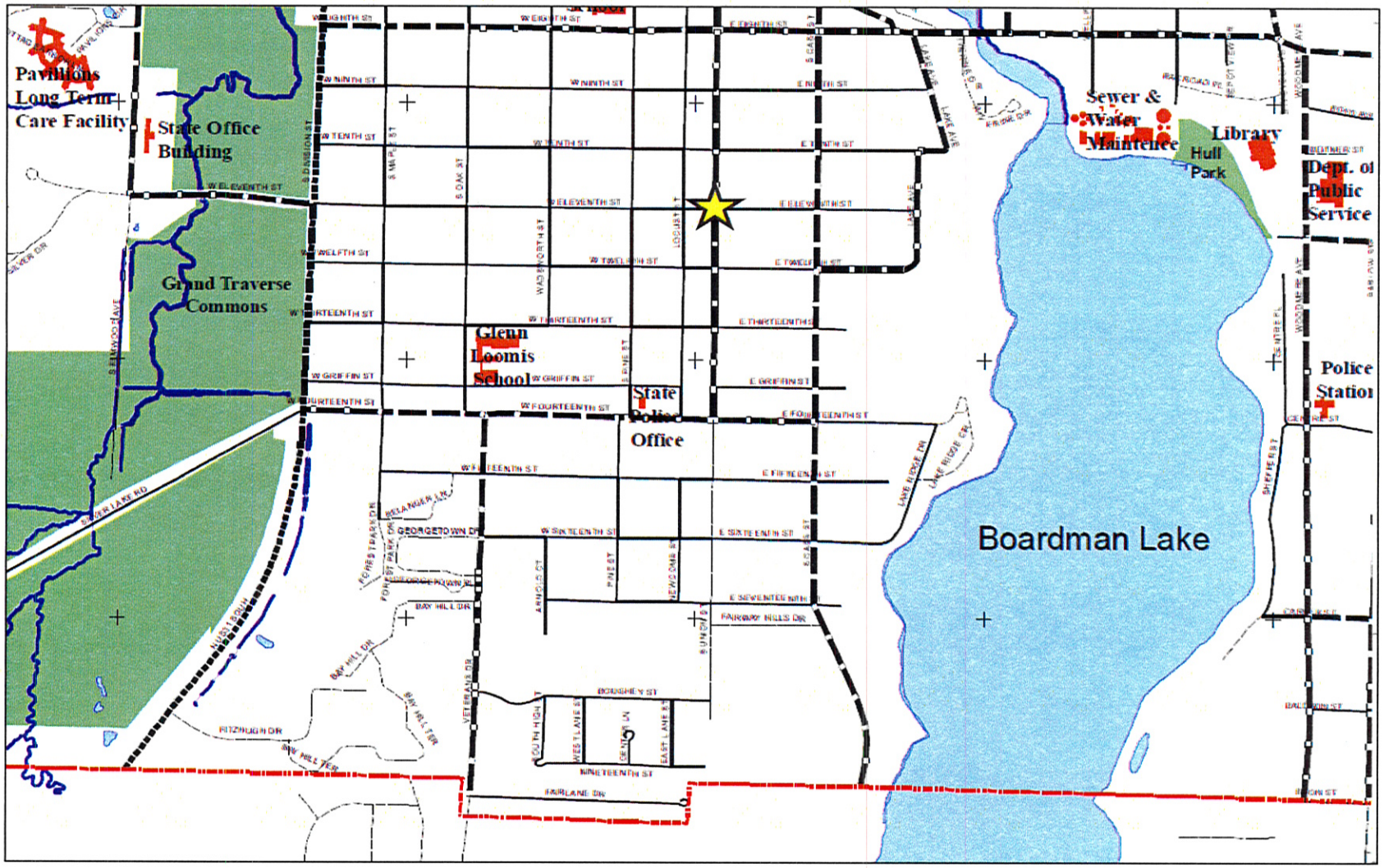
The Jamar Radar Recorder gathered data for each lane of traffic; one lane north bound and one lane south bound. The speeds of each vehicle were recorded in the device and then compiled into TraxPro where the lanes were combined into one report, regardless of direction. The report divided the speeds into 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 24 mph. 39.7% of the vehicles were at 25 mph and less with 86.2% of all vehicles at 30 mph and less.

Summary:

- Speed Limit: 25 mph
- Average Speed: 24 mph
- Total Number of Vehicles: 19,762
- 24-hr ADT Weekday: 7,616 vehicles
- 15th Percentile: 16 mph
- 50th Percentile: 25 mph
- 85th Percentile: 30 mph
- 95th Percentile: 33 mph

Enclosed: Detailed TraxPro Speed Report
Location Map


Pavilions Long Term Care Facility
State Office Building
Grand Traverse Commons
Glenn Loomis School
State Police Office
Sewer & Water Maintence
Library
Hull Park
Dept. of Public Service
Police Station
Boardman Lake

Union St.
(at 11th St intersection)
Speed

Site Code: 00000001
Station ID:

Latitude: 0' 0.0000 South

Direction 1, Direction 2

Start Time	0 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 9999	Total	85th Percent	95th Percent
07/08/13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
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	31	37	177	320	88	**10**	**1**	0	0	0	0	0	0	0	664	30	33
16:00	34	36	180	**328**	**101**	5	0	0	0	0	0	0	0	0	684	30	33
17:00	**48**	**43**	**195**	315	87	4	0	0	0	0	0	0	0	0	**692**	30	33
18:00	28	16	133	198	47	6	1	0	0	0	0	0	0	0	429	30	33
19:00	26	13	84	132	24	1	0	0	0	0	0	0	0	0	280	29	32
20:00	29	22	95	108	22	5	0	0	0	0	0	0	0	0	281	29	32
21:00	12	17	65	84	15	0	0	0	0	0	0	0	0	0	193	29	31
22:00	5	16	50	53	4	0	0	0	0	0	0	0	0	0	128	28	30
23:00	4	9	20	34	8	1	0	0	0	0	0	0	0	0	76	29	33
Total	217	209	999	1572	396	32	2	0	0	0	0	0	0	0	3427		
Percent	6.3%	6.1%	29.2%	45.9%	11.6%	0.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak Vol.																	
PM Peak Vol.	17:00 48	17:00 43	17:00 195	16:00 328	16:00 101	15:00 10	15:00 1								17:00 692		

Union St.
(at 11th St intersection)
Speed

Site Code: 00000001
Station ID:

Latitude: 0' 0.0000 South

Direction 1, Direction 2

Start Time	0 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 9999	Total	85th Percent	95th Percent
07/09/13	6	7	8	25	5	1	0	0	0	0	0	0	0	0	52	29	32
01:00	2	2	7	9	2	1	**1**	0	0	0	0	0	0	0	24	30	38
02:00	2	1	5	4	1	0	0	0	0	0	0	0	0	0	13	28	31
03:00	0	1	2	7	2	1	0	0	0	0	0	0	0	0	13	32	36
04:00	1	2	5	4	4	0	0	0	0	0	0	0	0	0	16	31	34
05:00	1	4	11	25	7	0	0	0	0	0	0	0	0	0	48	30	33
06:00	14	12	25	51	14	2	0	0	0	0	0	0	0	0	118	30	33
07:00	**44**	24	60	160	42	6	0	0	0	0	0	0	0	0	336	30	33
08:00	37	30	72	226	**77**	**8**	0	0	0	0	0	0	0	0	450	31	34
09:00	28	**45**	104	203	59	4	0	0	0	0	0	0	0	0	443	30	33
10:00	21	32	122	223	61	1	0	0	0	0	0	0	0	0	460	30	33
11:00	28	29	**157**	**229**	62	4	1	0	0	0	0	0	0	0	**510**	30	33
12 PM	23	35	**206**	294	73	5	0	0	0	0	0	0	0	0	636	30	33
13:00	22	39	172	261	68	11	0	0	0	0	0	0	0	0	573	30	33
14:00	30	30	155	263	61	6	**1**	0	0	0	0	0	0	0	546	30	33
15:00	34	39	180	244	66	4	0	0	0	0	0	0	0	0	567	29	32
16:00	33	**50**	190	298	**89**	9	0	0	0	0	0	0	0	0	669	30	33
17:00	**41**	41	194	**337**	82	**13**	1	0	0	0	0	0	0	0	**709**	30	33
18:00	22	22	95	214	62	3	0	0	0	0	0	0	0	0	418	30	33
19:00	18	21	89	133	42	4	1	0	0	0	0	0	0	0	308	30	33
20:00	25	18	62	117	23	2	0	0	0	0	0	0	0	0	247	29	32
21:00	20	15	62	95	26	1	1	0	0	0	0	0	0	0	220	29	33
22:00	5	13	61	64	17	0	0	0	0	0	0	0	0	0	160	29	32
23:00	18	9	32	24	7	1	0	0	0	0	0	0	0	0	91	28	31
Total	475	521	2076	3510	952	87	6	0	0	0	0	0	0	0	7627		
Percent	6.2%	6.8%	27.2%	46.0%	12.5%	1.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	09:00	11:00	11:00	08:00	08:00	01:00								11:00		
Vol.	44	45	157	229	77	8	1								510		
PM Peak	17:00	16:00	12:00	17:00	16:00	17:00	14:00								17:00		
Vol.	41	50	206	337	89	13	1								709		

Union St.
(at 11th St intersection)
Speed

Site Code: 00000001
Station ID:

Latitude: 0' 0.0000 South

Direction 1, Direction 2

Start Time	0 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 9999	Total	85th Percent	95th Percent
07/10/13	15	8	12	8	1	1	0	0	0	0	0	0	0	0	45	25	29
01:00	1	1	7	9	1	2	0	0	0	0	0	0	0	0	21	30	37
02:00	2	2	5	5	3	0	0	0	0	0	0	0	0	0	17	30	33
03:00	1	1	4	8	2	0	0	0	0	0	0	0	0	0	16	30	32
04:00	2	0	4	3	1	1	0	0	0	0	0	0	0	0	11	30	36
05:00	1	2	9	22	3	0	0	0	0	0	0	0	0	0	37	29	31
06:00	5	12	26	61	21	0	0	0	0	0	0	0	0	0	125	30	33
07:00	23	23	61	157	56	**6**	0	0	0	0	0	0	0	0	326	31	34
08:00	**45**	24	83	219	70	5	0	0	0	0	0	0	0	0	446	30	33
09:00	37	23	109	196	48	6	0	0	0	0	0	0	0	0	419	30	33
10:00	23	25	126	244	67	5	0	0	0	0	0	0	0	0	490	30	33
11:00	22	**30**	**138**	**267**	**83**	5	**1**	0	0	0	0	0	0	0	**546**	30	33
12 PM	20	38	157	280	72	1	0	0	0	0	0	0	0	0	568	30	32
13:00	26	26	151	287	72	**10**	0	0	0	0	0	0	0	0	572	30	33
14:00	26	26	157	285	78	5	0	0	0	0	0	0	0	0	577	30	33
15:00	25	37	164	265	**82**	10	0	0	0	0	0	0	0	0	583	30	33
16:00	23	**44**	184	**302**	81	8	0	0	0	0	0	0	0	0	642	30	33
17:00	**34**	42	**210**	300	78	5	1	0	0	0	0	0	0	0	**670**	30	33
18:00	25	25	120	200	48	7	**3**	0	0	0	0	0	0	0	428	30	33
19:00	16	26	105	163	40	3	1	0	0	0	0	0	0	0	354	30	33
20:00	15	13	80	127	21	0	0	0	0	0	0	0	0	0	256	29	31
21:00	12	17	52	86	22	0	0	0	0	0	0	0	0	0	189	29	32
22:00	17	21	56	65	12	1	0	0	0	0	0	0	0	0	172	28	31
23:00	11	10	33	35	4	1	0	0	0	0	0	0	0	0	94	28	31
Total	427	476	2053	3594	966	82	6	0	0	0	0	0	0	0	7604		
Percent	5.6%	6.3%	27.0%	47.3%	12.7%	1.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	11:00	11:00	11:00	11:00	07:00	11:00								11:00		
Vol.	45	30	138	267	83	6	1								546		
PM Peak	17:00	16:00	17:00	16:00	15:00	13:00	18:00								17:00		
Vol.	34	44	210	302	82	10	3								670		

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(at 11th St intersection)
Speed

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Direction 1, Direction 2

Start Time	0 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 9999	Total	85th Percent	95th Percent
07/11/13	6	5	17	22	2	1	0	0	0	0	0	0	0	0	53	28	31
01:00	2	1	11	10	1	0	0	0	0	0	0	0	0	0	25	28	30
02:00	3	0	9	13	4	0	0	**1**	0	0	0	0	0	0	30	30	34
03:00	0	4	5	10	2	0	0	0	0	0	0	0	0	0	21	29	32
04:00	3	1	9	7	2	0	0	0	0	0	0	0	0	0	22	28	31
05:00	2	3	11	24	9	1	0	0	0	0	0	0	0	0	50	31	34
06:00	13	7	22	59	22	1	0	0	0	0	0	0	0	0	124	30	33
07:00	**39**	24	**60**	148	65	**11**	0	0	0	0	0	0	0	0	347	31	34
08:00	37	**28**	55	**226**	**77**	9	0	0	0	0	0	0	0	0	**432**	31	34
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	105	73	199	519	184	23	0	1	0	0	0	0	0	0	1104		
Percent	9.5%	6.6%	18.0%	47.0%	16.7%	2.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	08:00	07:00	08:00	08:00	07:00		02:00							08:00		
Vol.	39	28	60	226	77	11		1							432		
PM Peak Vol.																	
Grand Total	1224	1279	5327	9195	2498	224	14	1	0	0	0	0	0	0	19762		
Percent	6.2%	6.5%	27.0%	46.5%	12.6%	1.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile :	16 MPH
50th Percentile :	25 MPH
85th Percentile :	30 MPH
95th Percentile :	33 MPH

Statistics

10 MPH Pace Speed :	22-31 MPH
Number in Pace :	12502
Percent in Pace :	63.3%
Number of Vehicles > 25 MPH :	11932
Percent of Vehicles > 25 MPH :	60.4%
Mean Speed(Average) :	24 MPH

Statistics

Mean Speed(Average) :	24 MPH
10 MPH Pace Speed :	22-31 MPH
Number in Pace :	12502
Percent in Pace :	63.3%
Number of Vehicles > 25 MPH :	11932
Percent of Vehicles > 25 MPH :	60.4%