Memorandum

The City of Traverse City
Engineering Department

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

FROM: Brogan Beyette, Engineering Intern

DATE: July 23, 2013

SUBJECT: Speed count on 8th St., E of Grant St.

The City of Traverse City Engineering Department conducted an on-site speed count beginning Friday, July 19, 2013 at 3:00pm and ending Tuesday, July 23, 2013 at 2:00pm on 8th St., E of Grant St.

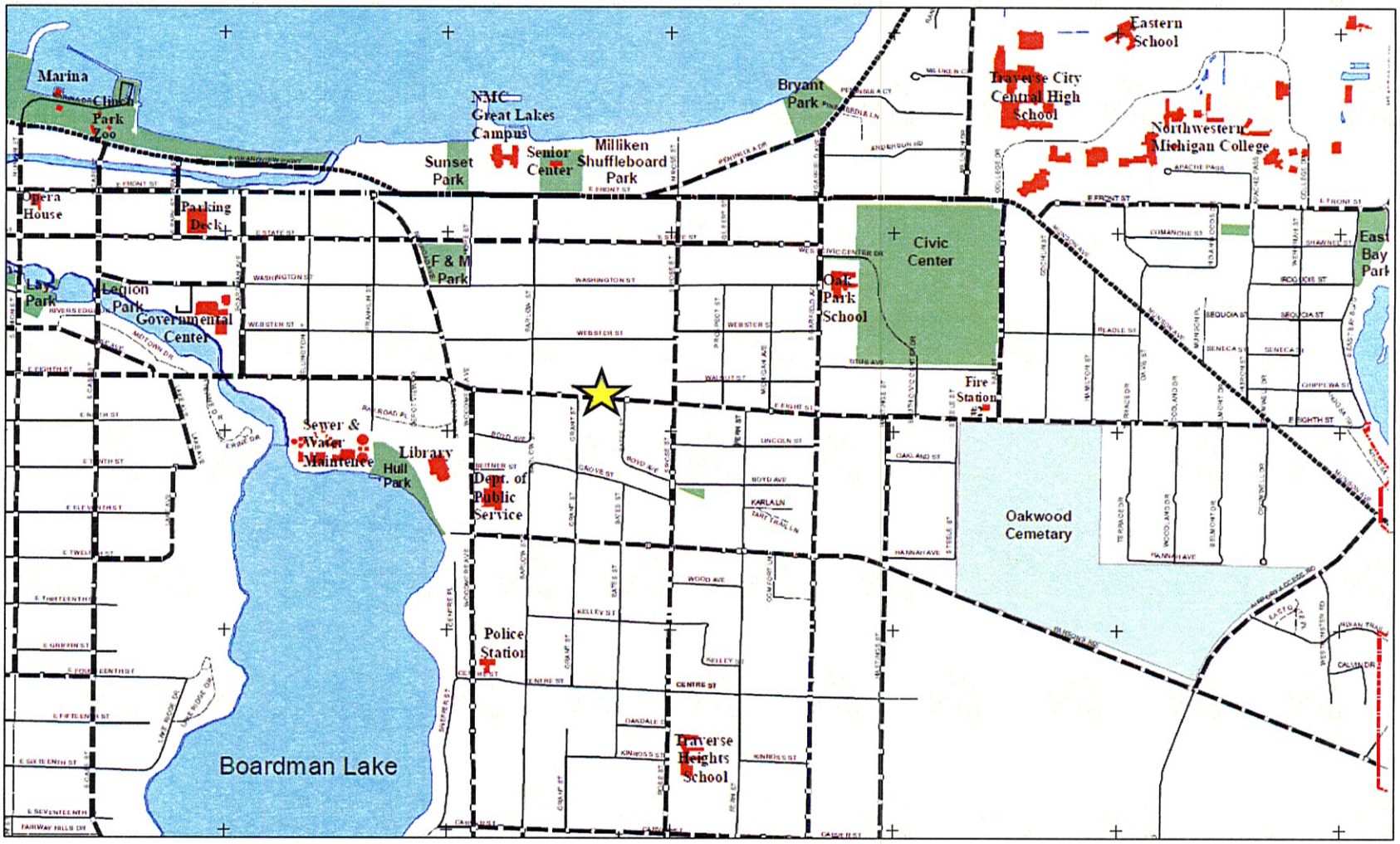
The Jamar Radar Recorder gathered data for each lane of traffic; one lane east bound and one lane west bound. The speeds of each vehicle were recorded in the device and then compiled into TraxPro where the lanes were combined into one report, regardless of direction. The report divided the speeds into 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 8th St. at this location is 25 mph. According to the enclosed detailed speed report, the average speed of the vehicles was 29 mph. 12.1% of the vehicles were at 25 mph and less with 57.4% of all vehicles at 30 mph and less.

Summary:

- Speed Limit: 25 mph
- Average Speed: 29 mph
- Total Number of Vehicles: 40,796
- 24-hr ADT Weekday: 8,333 vehicles
- 24-hr ADT Weekend: 12,648 vehicles
- 15th Percentile: 24 mph
- 50th Percentile: 29 mph
- 85th Percentile: 34 mph
- 95th Percentile: 36 mph

Enclosed: Detailed TraxPro Speed Report
Location Map


Marina
Clinch Park Zoo
Opera House
Parking Deck
Lay Park
Legion Park
Governmental Center
NMC Great Lakes Campus
Sunset Park
Senior Center
Milliken Shuffleboard Park
Bryant Park
Eastern School
Traverse City Central High School
Northwestern Michigan College
Civic Center
Oak Park School
East Bay Park
F & M Park
Fire Station
Sewer & Water Maintenance
Library
Hull Park
Dept. of Public Service
Oakwood Cemetary
Police Station
Traverse Heights School
Boardman Lake

8th St
(E of Grant St)
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
07/19/13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
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	5	**24**	97	**433**	327	70	5	0	0	0	0	0	0	0	961	34	36
16:00	3	9	**102**	413	**384**	67	5	0	0	0	0	0	0	0	**983**	34	36
17:00	**16**	24	90	371	371	**76**	**7**	0	0	0	0	0	0	0	955	34	37
18:00	11	3	52	284	292	68	6	0	0	0	0	0	0	0	716	34	37
19:00	6	11	41	229	202	27	3	**1**	0	0	0	0	0	0	520	33	36
20:00	3	3	33	179	129	34	3	1	0	0	0	0	0	0	385	34	37
21:00	8	3	35	174	106	15	2	0	0	0	0	0	0	0	343	33	36
22:00	5	10	30	131	80	13	1	0	0	0	0	0	0	0	270	33	36
23:00	2	8	20	83	57	6	2	0	0	0	0	0	0	0	178	33	35
Total	59	95	500	2297	1948	376	34	2	0	0	0	0	0	0	5311		
Percent	1.1%	1.8%	9.4%	43.2%	36.7%	7.1%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak Vol.																	
PM Peak Vol.	17:00 16	15:00 24	16:00 102	15:00 433	16:00 384	17:00 76	17:00 7	19:00 1							16:00 983		

8th St
(E of Grant St)
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
07/20/13	0	2	8	48	30	5	0	0	0	0	0	0	0	0	93	33	36
01:00	0	1	4	27	21	3	0	0	0	0	0	0	0	0	56	33	36
02:00	1	1	5	19	17	3	0	0	0	0	0	0	0	0	46	33	36
03:00	0	0	1	11	3	1	0	0	0	0	0	0	0	0	16	32	36
04:00	0	0	1	18	2	2	0	0	0	0	0	0	0	0	23	31	37
05:00	1	0	3	23	17	4	4	0	0	0	0	0	0	0	52	35	41
06:00	1	0	15	48	40	16	3	0	0	0	0	0	0	0	123	35	39
07:00	6	3	10	79	78	28	**5**	**1**	0	0	0	0	0	0	210	35	39
08:00	7	7	31	166	132	24	4	0	0	0	0	0	0	0	371	34	36
09:00	13	12	51	257	148	51	5	0	0	0	0	0	0	0	537	34	37
10:00	5	**13**	**65**	326	229	37	3	0	0	0	0	0	0	0	678	33	36
11:00	**14**	12	59	**358**	**236**	**57**	3	0	**1**	0	0	0	0	0	**740**	34	37
12 PM	3	8	**86**	**371**	245	61	7	0	0	0	0	0	0	0	**781**	34	37
13:00	**12**	**11**	75	325	188	**70**	6	0	0	0	0	0	0	0	687	34	37
14:00	7	11	37	311	283	39	4	0	0	0	0	0	0	0	692	34	36
15:00	5	5	45	305	**287**	52	4	0	0	0	0	0	0	0	703	34	36
16:00	11	6	40	276	270	61	2	0	0	0	0	0	0	0	666	34	37
17:00	1	4	34	280	249	52	**12**	0	0	0	0	0	0	0	632	34	38
18:00	7	4	41	233	227	50	5	1	0	0	0	0	0	0	568	34	37
19:00	6	8	28	210	175	37	6	0	0	0	0	0	0	0	470	34	37
20:00	4	5	36	153	133	19	3	0	0	0	0	0	0	0	353	33	36
21:00	5	5	30	138	112	17	0	0	0	0	0	0	0	0	307	33	36
22:00	11	4	21	141	95	19	1	**2**	**1**	0	0	0	0	0	295	33	37
23:00	3	6	15	98	64	15	4	0	0	0	0	0	0	0	205	34	37
Total	123	128	741	4221	3281	723	81	4	2	0	0	0	0	0	9304		
Percent	1.3%	1.4%	8.0%	45.4%	35.3%	7.8%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	10:00	10:00	11:00	11:00	11:00	07:00	07:00	11:00						11:00		
Vol.	14	13	65	358	236	57	5	1	1						740		
PM Peak	13:00	13:00	12:00	12:00	15:00	13:00	17:00	22:00	22:00						12:00		
Vol.	12	11	86	371	287	70	12	2	1						781		

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(E of Grant St)
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
07/21/13	3	1	11	51	27	12	0	0	0	0	0	0	0	0	105	34	37
01:00	0	1	8	37	16	2	1	0	0	0	0	0	0	0	65	32	35
02:00	2	0	4	23	15	4	1	0	0	0	0	0	0	0	49	34	38
03:00	0	0	4	12	9	1	0	0	0	0	0	0	0	0	26	33	35
04:00	1	0	2	7	5	0	0	0	0	0	0	0	0	0	15	32	34
05:00	0	1	4	12	10	1	1	**1**	0	0	0	0	0	0	30	34	42
06:00	1	1	7	34	35	8	1	1	0	0	0	0	0	0	88	34	38
07:00	6	3	14	55	48	16	1	0	0	0	0	0	0	0	143	34	37
08:00	10	5	21	108	99	18	2	0	0	0	0	0	0	0	263	34	36
09:00	4	4	20	146	139	25	**6**	0	0	0	0	0	0	0	344	34	37
10:00	**11**	9	**47**	238	181	27	3	0	0	0	0	0	0	0	516	33	36
11:00	8	**17**	40	**261**	**195**	**35**	0	0	0	0	0	0	0	0	**556**	33	36
12 PM	7	7	57	287	230	**52**	**5**	0	0	0	0	0	0	0	**645**	34	37
13:00	**12**	12	55	**291**	204	48	4	0	0	0	0	0	0	0	626	34	37
14:00	7	7	**62**	286	212	36	5	0	0	0	0	0	0	0	615	33	36
15:00	5	9	43	236	208	44	3	0	0	0	0	0	0	0	548	34	37
16:00	7	4	34	227	**237**	41	1	0	0	0	0	0	0	0	551	34	36
17:00	7	9	28	197	185	34	4	0	0	0	0	0	0	0	464	34	37
18:00	8	**15**	47	219	167	32	1	0	0	0	0	0	0	0	489	33	36
19:00	2	6	27	181	126	25	3	0	0	0	0	0	0	0	370	34	36
20:00	5	3	27	139	112	17	2	0	0	0	0	0	0	0	305	33	36
21:00	1	3	23	132	89	11	3	0	0	0	0	0	0	0	262	33	36
22:00	8	7	16	94	51	8	3	0	0	0	0	0	0	0	187	33	36
23:00	0	1	9	44	41	5	0	0	0	0	0	0	0	0	100	33	36
Total	115	125	610	3317	2641	502	50	2	0	0	0	0	0	0	7362		
Percent	1.6%	1.7%	8.3%	45.1%	35.9%	6.8%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	10:00	11:00	10:00	11:00	11:00	11:00	09:00	05:00							11:00		
Vol.	11	17	47	261	195	35	6	1							556		
PM Peak	13:00	18:00	14:00	13:00	16:00	12:00	12:00								12:00		
Vol.	12	15	62	291	237	52	5								645		

8th St
(E of Grant St)
Speed

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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
07/22/13	1	4	4	27	9	6	0	0	0	0	0	0	0	0	51	33	37
01:00	0	0	6	6	3	1	0	0	0	0	0	0	0	0	16	32	36
02:00	0	2	5	7	6	1	0	0	0	0	0	0	0	0	21	33	35
03:00	0	0	3	4	4	1	0	0	0	0	0	0	0	0	12	34	36
04:00	0	0	2	13	12	2	0	0	0	0	0	0	0	0	29	34	36
05:00	4	2	13	40	30	7	1	0	0	0	0	0	0	0	97	33	37
06:00	6	3	8	78	108	20	3	0	**1**	0	0	0	0	0	227	34	38
07:00	**12**	8	49	240	199	36	4	0	0	0	0	0	0	0	548	34	36
08:00	6	13	46	339	293	36	3	**1**	0	0	0	0	0	0	737	33	36
09:00	7	13	61	327	290	**62**	1	1	0	0	0	0	0	0	762	34	37
10:00	5	9	59	342	**326**	57	3	0	0	0	0	0	0	0	801	34	36
11:00	6	**15**	**80**	**387**	311	61	**6**	1	0	0	0	0	0	0	**867**	34	36
12 PM	1	16	110	**532**	318	48	4	0	0	0	0	0	0	0	1029	33	36
13:00	8	10	125	458	336	60	3	**1**	0	0	0	0	0	0	1001	33	36
14:00	3	18	89	405	317	57	7	0	0	0	0	0	0	0	896	34	36
15:00	8	6	97	409	347	53	3	1	0	0	0	0	0	0	924	33	36
16:00	17	16	73	434	**380**	60	4	0	0	0	0	0	0	0	984	34	36
17:00	**21**	**23**	**132**	477	308	**69**	**8**	0	0	0	0	0	0	0	**1038**	33	36
18:00	14	5	40	286	294	65	5	0	0	0	0	0	0	0	709	34	37
19:00	6	5	47	224	208	35	6	0	0	0	0	0	0	0	531	34	37
20:00	2	8	29	201	149	36	7	1	0	0	0	0	0	0	433	34	38
21:00	13	10	43	128	94	20	2	0	0	0	0	0	0	0	310	33	36
22:00	2	5	30	94	63	16	1	1	0	0	0	0	0	0	212	34	37
23:00	5	3	13	58	32	2	0	0	0	0	0	0	0	0	113	32	34
Total	147	194	1164	5516	4437	811	71	7	1	0	0	0	0	0	12348		
Percent	1.2%	1.6%	9.4%	44.7%	35.9%	6.6%	0.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	11:00	11:00	11:00	10:00	09:00	11:00	08:00	06:00						11:00		
Vol.	12	15	80	387	326	62	6	1	1						867		
PM Peak	17:00	17:00	17:00	12:00	16:00	17:00	17:00	13:00							17:00		
Vol.	21	23	132	532	380	69	8	1							1038		

8th St
(E of Grant St)
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
07/23/13	2	0	6	15	16	6	0	0	0	0	0	0	0	0	45	35	38
01:00	2	0	5	12	6	2	0	0	0	0	0	0	0	0	27	33	36
02:00	**42**	6	7	3	5	2	0	0	0	0	0	0	0	0	65	21	31
03:00	0	0	2	8	5	0	0	0	0	0	0	0	0	0	15	32	34
04:00	0	0	6	24	4	4	0	0	0	0	0	0	0	0	38	32	37
05:00	0	6	17	55	22	4	1	**2**	1	0	0	0	0	0	108	33	38
06:00	4	1	12	106	89	23	1	0	0	0	0	0	0	0	236	34	37
07:00	12	7	50	276	181	38	3	1	0	0	0	0	0	0	568	33	36
08:00	12	15	87	364	225	34	**4**	1	**2**	0	0	0	0	0	744	33	36
09:00	10	19	56	349	260	43	4	0	0	0	0	0	0	0	741	33	36
10:00	6	12	70	360	266	41	3	0	0	0	0	0	0	0	758	33	36
11:00	9	**21**	**102**	**470**	**320**	**45**	2	0	0	0	0	0	0	0	**969**	33	35
12 PM	14	**28**	**146**	**549**	**309**	**52**	**7**	0	0	0	0	0	0	0	**1105**	33	36
13:00	**19**	8	126	545	308	40	6	0	0	0	0	0	0	0	1052	33	35
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	132	123	692	3136	2016	334	31	4	3	0	0	0	0	0	6471		
Percent	2.0%	1.9%	10.7%	48.5%	31.2%	5.2%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	02:00	11:00	11:00	11:00	11:00	11:00	08:00	05:00	08:00						11:00		
Vol.	42	21	102	470	320	45	4	2	2						969		
PM Peak	13:00	12:00	12:00	12:00	12:00	12:00	12:00								12:00		
Vol.	19	28	146	549	309	52	7								1105		
Grand Total	576	665	3707	18487	14323	2746	267	19	6	0	0	0	0	0	40796		
Percent	1.4%	1.6%	9.1%	45.3%	35.1%	6.7%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile :	24 MPH
50th Percentile :	29 MPH
85th Percentile :	34 MPH
95th Percentile :	36 MPH

Statistics

10 MPH Pace Speed :	26-35 MPH
Number in Pace :	29082
Percent in Pace :	71.3%
Number of Vehicles > 25 MPH :	35848
Percent of Vehicles > 25 MPH :	87.9%
Mean Speed(Average) :	29 MPH

Statistics

Mean Speed(Average) :	29 MPH
10 MPH Pace Speed :	26-35 MPH
Number in Pace :	29082
Percent in Pace :	71.3%
Number of Vehicles > 25 MPH :	35848
Percent of Vehicles > 25 MPH :	87.9%