Memorandum

The City of Traverse City
Engineering Department

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

FROM: Brogan Beyette, Engineering Intern

DATE: June 27, 2013

SUBJECT: Speed count on Cass St., N of 13th St

The City of Traverse City Engineering Department conducted an on-site speed count beginning Tuesday, June 18, 2013 at 9:00am and ending Friday, June 21, 2013 at 7:00am on Cass St., N of 13th St.

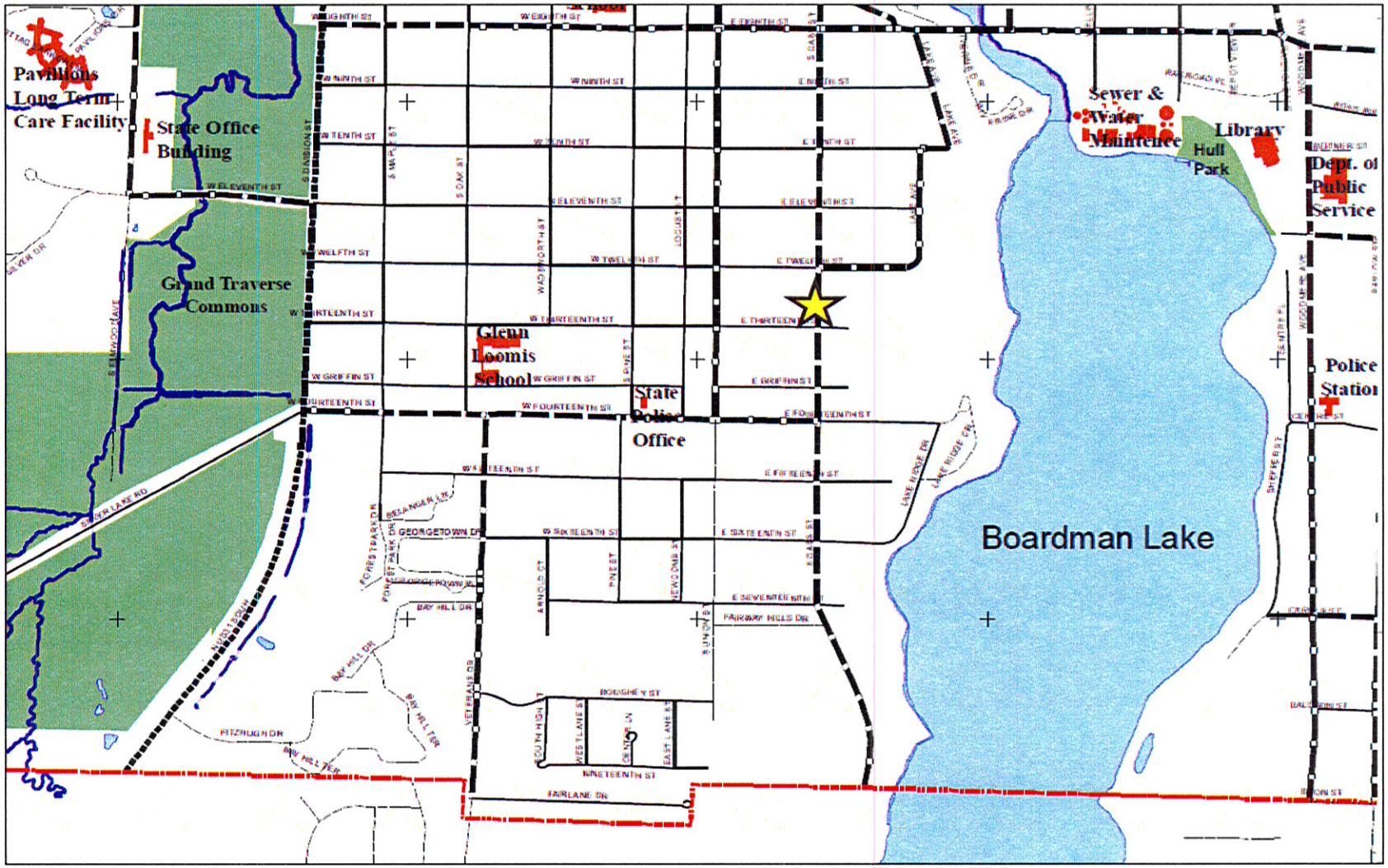
The Jamar Radar Recorder gathered data for each lane of traffic; one lane north bound and one lane south bound. The speeds of each vehicle were recorded in the device and then compiled into TraxPro where the lanes were combined into one report, regardless of direction. The report divided the speeds into 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 Cass St. at this location is 25 mph. According to the enclosed detailed speed report, the average speed of the vehicles was 21 mph. 79.8% of the vehicles were at 25 mph and less with 98.6% of all vehicles at 30 mph and less.

Summary:

- Speed Limit: 25 mph
- Average Speed: 21 mph
- Total Number of Vehicles: 26,292
- 24-hr ADT Weekday: 9,067 vehicles
- 15th Percentile: 13 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 Maintenance
Library
Hull Park
Dept. of Public Service
Police Station
Boardman Lake
W NINTH ST
W TENTH ST
W ELEVENTH ST
W TWELFTH ST
W THIRTEENTH ST
W GRIFFIN ST
W FOURTEENTH ST
W FIFTEENTH ST
W SIXTEENTH ST
E SIXTEENTH ST
E SEVENTEENTH ST
E FIFTEENTH ST
E FOURTEENTH ST
E GRIFFIN ST
E THIRTEENTH ST
E TWELFTH ST
E ELEVENTH ST
E TENTH ST
E NINTH ST
E EIGHTH ST
W EIGHTH ST
S DIVISION ST
S MAPLE ST
S OAK ST
WASHWORTH ST
LOCUST ST
S PINE ST
S CASS ST
LAKE AVE
LAKE RIDGE DR
SHEFFER ST
CENTRE PL
WOODMERE AVE
SILVER LAKE RD
S ELMWOOD AVE
NUSS SOUH
FORESTPARK DR
BELANGER LN
GEORGETOWN DR
BAY HILL DR
BAY HILL TER
FITZHUGH DR
VETERANS DR
ARNOLD CT
PINE ST
NEWCOMB ST
SUNCO ST
FAIRWAY HILLS DR
BOUGHEY ST
SOUTH HIGH ST
WEST LANE ST
CENTER LN
EAST LANE ST
NINETEENTH ST
FAIRLANE DR
BALDWIN ST
BRON ST

Cass St

N of 13th 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
06/18/13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	16	78	**328**	96	**7**	**1**	0	0	0	0	0	0	0	0	526	26	29
10:00	17	103	304	**131**	6	0	0	0	0	0	0	0	0	0	561	26	29
11:00	**59**	**175**	290	91	7	0	0	0	0	0	0	0	0	0	**622**	25	28
12 PM	72	189	343	79	10	0	0	0	0	0	0	0	0	0	693	24	27
13:00	33	178	363	118	6	1	0	0	0	0	0	0	0	0	699	25	28
14:00	37	**194**	376	98	10	0	0	0	0	0	0	0	0	0	715	25	28
15:00	49	171	**402**	117	6	0	0	0	0	0	0	0	0	0	**745**	25	28
16:00	78	175	357	112	7	0	0	0	0	0	0	0	0	0	729	25	28
17:00	**88**	180	363	95	6	0	0	0	0	0	0	0	0	0	732	24	27
18:00	23	72	260	**137**	9	**2**	0	0	0	0	0	0	0	0	503	27	29
19:00	14	54	207	86	**11**	1	0	0	0	0	0	0	0	0	373	27	30
20:00	7	37	210	89	10	2	0	0	0	0	0	0	0	0	355	27	30
21:00	10	47	152	56	4	2	0	0	0	0	0	0	0	0	271	26	29
22:00	0	23	96	39	2	0	0	0	0	0	0	0	0	0	160	26	29
23:00	3	16	50	30	2	0	0	0	0	0	0	0	0	0	101	27	29
Total	506	1692	4101	1374	103	9	0	0	0	0	0	0	0	0	7785		
Percent	6.5%	21.7%	52.7%	17.6%	1.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	11:00	09:00	10:00	09:00	09:00									11:00		
Vol.	59	175	328	131	7	1									622		
PM Peak	17:00	14:00	15:00	18:00	19:00	18:00									15:00		
Vol.	88	194	402	137	11	2									745		

Cass St

N of 13th 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
06/19/13	1	6	18	15	3	0	0	0	0	0	0	0	0	0	43	28	31
01:00	0	3	10	4	0	0	0	0	0	0	0	0	0	0	17	26	29
02:00	3	3	13	4	2	1	0	0	0	0	0	0	0	**2**	28	28	33
03:00	0	1	10	2	1	0	0	0	0	0	0	0	0	0	14	27	31
04:00	0	5	9	1	1	0	0	0	0	0	0	0	0	0	16	25	30
05:00	3	7	31	21	3	0	0	0	0	0	0	0	0	0	65	28	30
06:00	2	13	103	44	**10**	0	0	0	0	0	0	0	0	0	172	28	31
07:00	8	63	285	104	4	0	0	0	0	0	0	0	0	0	464	26	29
08:00	23	120	302	124	9	0	0	0	0	0	0	0	0	0	578	26	29
09:00	20	**146**	**332**	83	6	0	0	0	0	0	0	0	0	0	**587**	25	28
10:00	**27**	113	302	115	10	**2**	0	0	0	0	0	0	0	0	569	26	29
11:00	26	84	297	**128**	10	1	0	0	0	0	0	0	0	0	546	26	29
12 PM	40	**176**	360	100	5	0	0	0	0	0	0	0	0	0	681	25	28
13:00	30	157	379	97	5	0	0	0	0	0	0	0	0	0	668	25	28
14:00	30	115	**389**	101	**8**	0	0	0	0	0	0	0	0	0	643	25	28
15:00	51	161	364	114	5	0	0	0	0	0	0	0	0	0	695	25	28
16:00	**65**	165	344	114	6	0	0	0	0	0	0	0	0	0	694	25	28
17:00	61	167	372	113	4	0	0	0	0	0	0	0	0	0	**717**	25	28
18:00	21	76	309	**130**	5	0	0	0	0	0	0	0	0	0	541	26	29
19:00	1	72	270	107	5	0	0	0	0	0	0	0	0	0	455	26	29
20:00	6	27	192	90	6	0	0	0	0	0	0	0	0	0	321	27	29
21:00	2	33	154	59	4	**1**	0	0	0	0	0	0	0	0	253	26	29
22:00	6	24	98	44	4	0	0	0	0	0	0	0	0	0	176	27	29
23:00	2	11	62	28	4	0	0	0	0	0	0	0	0	0	107	27	30
Total	428	1748	5005	1742	120	5	0	0	0	0	0	0	0	2	9050		
Percent	4.7%	19.3%	55.3%	19.2%	1.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	10:00	09:00	09:00	11:00	06:00	10:00								02:00	09:00		
Vol.	27	146	332	128	10	2								2	587		
PM Peak	16:00	12:00	14:00	18:00	14:00	21:00									17:00		
Vol.	65	176	389	130	8	1									717		

Cass St

N of 13th 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
06/20/13	2	4	28	13	1	0	0	0	0	0	0	0	0	0	48	27	29
01:00	0	5	18	9	0	0	0	0	0	0	0	0	0	0	32	27	29
02:00	0	8	15	12	0	0	0	0	0	0	0	0	0	0	35	27	29
03:00	0	2	9	5	0	0	0	0	0	0	0	0	0	0	16	27	29
04:00	0	2	6	4	0	0	0	0	0	0	0	0	0	0	12	27	29
05:00	1	7	32	21	4	0	0	0	0	0	0	0	0	0	65	28	31
06:00	3	16	88	49	**8**	0	0	0	0	0	0	0	0	0	164	28	30
07:00	10	67	268	92	6	**1**	0	0	0	0	0	0	0	0	444	26	29
08:00	18	116	276	117	8	0	0	0	0	0	0	0	0	0	535	26	29
09:00	18	113	**344**	99	6	0	0	0	0	0	0	0	0	0	580	25	28
10:00	18	111	320	**119**	6	0	0	0	0	0	0	0	0	0	574	26	29
11:00	**34**	**148**	330	87	3	1	0	0	0	0	0	0	0	0	**603**	25	28
12 PM	**90**	170	299	99	8	**1**	0	0	0	0	0	0	0	0	667	25	28
13:00	52	171	331	112	8	0	0	0	0	0	0	0	0	0	674	25	28
14:00	25	162	363	**131**	12	0	0	0	0	0	0	0	0	0	693	26	29
15:00	39	185	375	109	5	0	0	0	0	0	0	0	0	0	713	25	28
16:00	50	147	353	108	11	0	0	0	0	0	0	0	0	0	669	25	28
17:00	66	**186**	**382**	99	2	0	0	0	0	0	0	0	0	0	**735**	25	27
18:00	21	85	297	128	5	0	0	0	0	0	0	0	0	0	536	26	29
19:00	6	45	250	85	**13**	0	0	0	0	0	0	0	0	0	399	27	30
20:00	4	53	187	79	5	0	0	0	0	0	0	0	0	0	328	26	29
21:00	11	39	131	78	7	0	0	0	0	0	0	0	0	0	266	27	30
22:00	7	28	114	44	0	0	0	0	0	0	0	0	0	0	193	26	28
23:00	9	13	48	30	2	0	0	0	0	0	0	0	0	0	102	27	29
Total	484	1883	4864	1729	120	3	0	0	0	0	0	0	0	0	9083		
Percent	5.3%	20.7%	53.6%	19.0%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	11:00	09:00	10:00	06:00	07:00									11:00		
Vol.	34	148	344	119	8	1									603		
PM Peak	12:00	17:00	17:00	14:00	19:00	12:00									17:00		
Vol.	90	186	382	131	13	1									735		

Cass St

N of 13th 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
06/21/13	0	9	20	8	**4**	0	0	0	0	0	0	0	0	0	41	28	32
01:00	0	6	18	5	1	0	0	**1**	**1**	0	0	0	0	0	32	27	46
02:00	0	2	15	7	0	0	**1**	0	0	0	0	0	0	0	25	27	30
03:00	0	0	13	4	1	0	0	0	0	0	0	0	0	0	18	27	31
04:00	0	3	9	3	0	0	0	0	0	0	0	0	0	0	15	26	28
05:00	1	6	42	25	1	0	0	0	0	0	0	0	0	0	75	27	29
06:00	**2**	**15**	**109**	**39**	3	0	0	0	0	0	0	0	0	0	**168**	26	29
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
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	3	41	226	91	10	0	1	1	1	0	0	0	0	0	374		
Percent	0.8%	11.0%	60.4%	24.3%	2.7%	0.0%	0.3%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	06:00	06:00	06:00	06:00	00:00		02:00	01:00	01:00						06:00		
Vol.	2	15	109	39	4		1	1	1						168		
PM Peak Vol.																	
Grand Total	1421	5364	14196	4936	353	17	1	1	1	0	0	0	0	2	26292		
Percent	5.4%	20.4%	54.0%	18.8%	1.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile :	13 MPH
50th Percentile :	21 MPH
85th Percentile :	26 MPH
95th Percentile :	29 MPH

Statistics

10 MPH Pace Speed :	18-27 MPH
Number in Pace :	16930
Percent in Pace :	64.4%
Number of Vehicles > 25 MPH :	5311
Percent of Vehicles > 25 MPH :	20.2%
Mean Speed(Average) :	21 MPH