
Memorandum

The City of Traverse City
Engineering Department



TO: Timothy J. Lodge, P.E., City Engineer
FROM: Abhishek Deora, Engineering Aide
DATE: August 30th, 2017
SUBJECT: Railroad at Grant St Classification Count

This memo is to formalize City Engineering's initial findings and observations in regard to the class of vehicles traveling on Grant St at Railroad.

City Engineering performed a 24-hour classification count of Grant St began at 11:16 am on August 29th, 2017 and ended at 12:20 pm on August 30th, 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 623 vehicles traveled on Grant St during the 24-hour class count. The vehicle class count showed that 8 vehicles, 1.3 percent, traveling on Grant St during the count were a class 6 (FHA Scheme F) or higher.

72 vehicles, 11.6 percent, fell into class 14 which is for bicycles and unknown vehicles. This number suggests that many people use this section of Grant 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: 623 vehicles
- Class 6 or Higher: 1.3%
- Class 1 to 5: 87.1%
- Class 14 (Unknown/Bicycles): 11.6%

Encl.: Detailed TraxPro Classification Report

Railroad at Grant 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
08/29/17	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	0	17	3	0	0	1	0	0	0	0	0	0	0	5	26
13:00	2	13	2	0	0	0	0	0	0	0	0	0	0	6	23
14:00	1	11	7	0	0	0	0	0	0	0	0	0	0	5	24
15:00	1	12	4	0	0	1	0	1	0	0	0	0	0	3	22
16:00	2	12	5	0	0	0	0	0	0	0	0	0	0	2	21
17:00	1	13	6	0	0	1	0	0	0	0	0	0	0	2	23
18:00	1	11	7	0	0	0	0	0	0	0	0	0	0	1	20
19:00	1	8	8	0	1	0	0	0	0	0	0	0	0	2	20
20:00	0	7	1	0	0	0	0	0	0	0	0	0	0	3	11
21:00	0	4	0	0	1	0	0	0	0	0	0	0	0	2	7
22:00	0	3	0	0	0	0	0	0	0	0	0	0	0	2	5
23:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2	4
Total	9	113	43	0	2	3	0	1	0	0	0	0	0	35	206
Percent	4.4%	54.9%	20.9%	0.0%	1.0%	1.5%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	17.0%	
AM Peak Vol.															
PM Peak Vol.	13:00	12:00	19:00		19:00	12:00		15:00						13:00	12:00
	2	17	8		1	1		1						6	26

Railroad at Grant 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
08/30/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00	0	3	0	0	1	0	0	0	0	0	0	0	0	0	4
06:00	0	1	1	0	1	1	0	0	0	0	0	0	0	1	5
07:00	3	9	3	0	0	0	0	0	0	0	0	0	0	5	20
08:00	4	9	1	0	1	1	0	0	0	0	0	0	0	2	18
09:00	1	13	4	0	0	2	0	0	0	0	0	0	0	3	23
10:00	1	5	6	1	0	0	0	0	0	0	0	0	0	1	14
11:00	2	6	3	0	1	0	0	0	0	0	0	0	0	5	17
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	11	49	18	1	4	4	0	0	0	0	0	0	0	18	105
Percent	10.5%	46.7%	17.1%	1.0%	3.8%	3.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	17.1%	
AM Peak	08:00	09:00	10:00	10:00	05:00	09:00								07:00	09:00
Vol.	4	13	6	1	1	2								5	23
PM Peak															
Vol.															
Grand Total	20	162	61	1	6	7	0	1	0	0	0	0	0	53	311
Percent	6.4%	52.1%	19.6%	0.3%	1.9%	2.3%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	17.0%	

Railroad at Grant 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
08/29/17	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	0	39	9	1	1	1	0	0	0	0	0	0	0	7	58
13:00	2	27	5	0	0	0	0	0	0	0	0	0	0	7	41
14:00	1	24	11	0	0	0	0	0	0	0	0	0	0	8	44
15:00	3	33	10	0	0	1	0	1	0	0	0	0	0	7	55
16:00	2	25	13	0	1	0	0	0	0	0	0	0	0	4	45
17:00	1	36	7	0	1	1	0	0	0	0	0	0	0	2	48
18:00	1	26	12	0	0	0	0	0	0	0	0	0	0	3	42
19:00	1	19	10	0	2	0	0	0	0	0	0	0	0	2	34
20:00	0	22	6	0	0	0	0	0	0	0	0	0	0	3	31
21:00	0	10	2	0	1	0	0	0	0	0	0	0	0	2	15
22:00	0	9	1	0	0	0	0	0	0	0	0	0	0	2	12
23:00	0	5	1	0	0	0	0	0	0	0	0	0	0	2	8
Total	11	275	87	1	6	3	0	1	0	0	0	0	0	49	433
Percent	2.5%	63.5%	20.1%	0.2%	1.4%	0.7%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	11.3%	
AM Peak Vol.															
PM Peak Vol.	15:00	12:00	16:00	12:00	19:00	12:00		15:00						14:00	12:00
	3	39	13	1	2	1		1						8	58

Railroad at Grant 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
08/30/17	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
02:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
05:00	0	5	0	0	1	0	0	0	0	0	0	0	0	0	6
06:00	0	2	5	0	1	1	0	0	0	0	0	0	0	1	10
07:00	4	14	4	0	0	0	0	0	0	0	0	0	0	6	28
08:00	4	21	9	0	2	1	0	0	0	0	0	0	0	3	40
09:00	1	21	6	0	0	2	0	0	0	0	0	0	0	4	34
10:00	2	12	11	1	0	0	0	0	0	0	0	0	0	3	29
11:00	2	19	3	0	1	0	0	0	0	0	0	0	0	5	30
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	13	106	38	1	5	4	0	0	0	0	0	0	0	23	190
Percent	6.8%	55.8%	20.0%	0.5%	2.6%	2.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	12.1%	
AM Peak	07:00	08:00	10:00	10:00	08:00	09:00								07:00	08:00
Vol.	4	21	11	1	2	2								6	40
PM Peak															
Vol.															
Grand Total	24	381	125	2	11	7	0	1	0	0	0	0	0	72	623
Percent	3.9%	61.2%	20.1%	0.3%	1.8%	1.1%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	11.6%	

Railroad at Grant St
Class

Site Code: 00000000000
Station ID:

Latitude: 0' 0.0000 South

Start Time	28-Aug-17 Mon	29-Aug-17 Tue	30-Aug-17 Wed	31-Aug-17 Thu	01-Sep-17 Fri	Weekday Average	02-Sep-17 Sat	03-Sep-17 Sun
12:00 AM	*	*	3	*	*	3	*	*
01:00	*	*	1	*	*	1	*	*
02:00	*	*	3	*	*	3	*	*
03:00	*	*	2	*	*	2	*	*
04:00	*	*	4	*	*	4	*	*
05:00	*	*	6	*	*	6	*	*
06:00	*	*	10	*	*	10	*	*
07:00	*	*	28	*	*	28	*	*
08:00	*	*	40	*	*	40	*	*
09:00	*	*	34	*	*	34	*	*
10:00	*	*	29	*	*	29	*	*
11:00	*	*	30	*	*	30	*	*
12:00 PM	*	58	*	*	*	58	*	*
01:00	*	41	*	*	*	41	*	*
02:00	*	44	*	*	*	44	*	*
03:00	*	55	*	*	*	55	*	*
04:00	*	45	*	*	*	45	*	*
05:00	*	48	*	*	*	48	*	*
06:00	*	42	*	*	*	42	*	*
07:00	*	34	*	*	*	34	*	*
08:00	*	31	*	*	*	31	*	*
09:00	*	15	*	*	*	15	*	*
10:00	*	12	*	*	*	12	*	*
11:00	*	8	*	*	*	8	*	*
Total	0	433	190	0	0		0	0
Percentage	0.0%	69.5%	30.5%	0.0%	0.0%		0.0%	0.0%
AM Peak	-	-	08:00	-	-	-	-	-
Vol.	-	-	40	-	-	-	-	-
PM Peak	-	12:00	-	-	-	-	-	-
Vol.	-	58	-	-	-	-	-	-
Total		433	190					

Railroad at Grant 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
08/29/17	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	6	12	8	4	2	0	0	0	0	0	0	0	0	0	32	16-25	20
13:00	2	3	4	6	3	0	0	0	0	0	0	0	0	0	18	21-30	10
14:00	5	8	3	3	1	0	0	0	0	0	0	0	0	0	20	16-25	11
15:00	5	10	8	7	1	0	0	1	0	1	0	0	0	0	33	16-25	18
16:00	3	7	11	2	1	0	0	0	0	0	0	0	0	0	24	16-25	18
17:00	1	5	13	5	1	0	0	0	0	0	0	0	0	0	25	21-30	18
18:00	2	11	4	4	0	1	0	0	0	0	0	0	0	0	22	16-25	15
19:00	1	3	4	4	2	0	0	0	0	0	0	0	0	0	14	21-30	8
20:00	8	5	3	3	1	0	0	0	0	0	0	0	0	0	20	16-25	8
21:00	1	3	3	1	0	0	0	0	0	0	0	0	0	0	8	16-25	6
22:00	2	0	1	3	0	1	0	0	0	0	0	0	0	0	7	21-30	4
23:00	0	0	1	2	1	0	0	0	0	0	0	0	0	0	4	20-29	3
Total	36	67	63	44	13	2	0	1	0	1	0	0	0	0	227		
Percent	15.9%	29.5%	27.8%	19.4%	5.7%	0.9%	0.0%	0.4%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%			
AM Peak Vol.																	
PM Peak Vol.	20:00	12:00	17:00	15:00	13:00	18:00		15:00		15:00					15:00		
	8	12	13	7	3	1		1		1					33		

Railroad at Grant 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
08/29/17	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	9	7	4	4	2	0	0	0	0	0	0	0	0	0	26	16-25	11
13:00	2	10	1	5	5	0	0	0	0	0	0	0	0	0	23	16-25	11
14:00	6	7	5	5	1	0	0	0	0	0	0	0	0	0	24	16-25	12
15:00	5	7	3	3	3	0	1	0	0	0	0	0	0	0	22	16-25	10
16:00	2	5	4	4	4	2	0	0	0	0	0	0	0	0	21	16-25	9
17:00	4	8	7	4	0	0	0	0	0	0	0	0	0	0	23	16-25	15
18:00	4	6	5	3	1	1	0	0	0	0	0	0	0	0	20	16-25	11
19:00	4	8	3	5	0	0	0	0	0	0	0	0	0	0	20	16-25	11
20:00	3	4	2	0	2	0	0	0	0	0	0	0	0	0	11	16-25	6
21:00	1	4	0	2	0	0	0	0	0	0	0	0	0	0	7	16-25	4
22:00	2	0	0	1	2	0	0	0	0	0	0	0	0	0	5	26-35	3
23:00	0	0	2	2	0	0	0	0	0	0	0	0	0	0	4	20-29	4
Total	42	66	36	38	20	3	1	0	0	0	0	0	0	0	206		
Percent	20.4%	32.0%	17.5%	18.4%	9.7%	1.5%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak Vol.																	
PM Peak Vol.	12:00	13:00	17:00	13:00	13:00	16:00	15:00								12:00		
	9	10	7	5	5	2	1								26		

Railroad at Grant 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
08/29/17	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	15	19	12	8	4	0	0	0	0	0	0	0	0	0	58	16-25	32
13:00	4	13	5	11	8	0	0	0	0	0	0	0	0	0	41	26-35	19
14:00	11	15	8	8	2	0	0	0	0	0	0	0	0	0	44	16-25	23
15:00	10	17	11	10	4	0	1	1	0	1	0	0	0	0	55	16-25	28
16:00	5	12	15	6	5	2	0	0	0	0	0	0	0	0	45	16-25	27
17:00	5	13	20	9	1	0	0	0	0	0	0	0	0	0	48	16-25	33
18:00	6	17	9	7	1	2	0	0	0	0	0	0	0	0	42	16-25	26
19:00	5	11	7	9	2	0	0	0	0	0	0	0	0	0	34	16-25	18
20:00	11	9	5	3	3	0	0	0	0	0	0	0	0	0	31	16-25	14
21:00	2	7	3	3	0	0	0	0	0	0	0	0	0	0	15	16-25	10
22:00	4	0	1	4	2	1	0	0	0	0	0	0	0	0	12	26-35	6
23:00	0	0	3	4	1	0	0	0	0	0	0	0	0	0	8	21-30	7
Total	78	133	99	82	33	5	1	1	0	1	0	0	0	0	433		
Percent	18.0%	30.7%	22.9%	18.9%	7.6%	1.2%	0.2%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%			
AM Peak Vol.																	
PM Peak Vol.	12:00	12:00	17:00	13:00	13:00	16:00	15:00	15:00		15:00					12:00		
	15	19	20	11	8	2	1	1		1					58		

