

DECEMBER 2018



**WIM #32  
US 52, MP 66.0  
ORONOCO, MN**

**MONTHLY  
REPORT**



*Your Destination...Our Priority*



## WIM Site Location

WIM #32 is located on US 52 near Oronoco in Olmsted county.

## System Operation

WIM #32 was operational for the entire month of December 2018. Volume was computed using all monthly data.

## System Calibration

WIM #32 was most recently calibrated on 2017-05-05. Table 1 summarizes the front axle weights of class 9s by lane <sup>1</sup>. Table 1 indicates that the class 9 front axle weights were all within +/- 9% of baseline calibration values for all lanes except lanes 1 and 3. Figure 1 shows the distribution of gross vehicle weights (GVW) in Class 9 vehicles at this site for the last 12 months of operation <sup>2</sup>. Figure 2 depicts the average front axle weight as a percent difference from the first full month following calibration.

## Summary of Volume Statistics

Total Monthly Volume: 864651 | Passenger Vehicles: 801570 | Heavy Commercial Vehicles: 63081

Monthly Average Daily Traffic (MADT): 28822 | Monthly Heavy Commercial Average Daily Traffic (MHCADT): 2035

See Table 2 for vehicle class breakdown

## Passenger Vehicles (PVs) and Heavy Commercial Vehicles (HCVs)

**Volume trends.** NB vehicles typically reached highest volume levels on Fridays, with lowest volumes reported on Sundays. SB vehicles typically reached highest volume levels on Fridays, with lowest volumes reported on Thursdays (see Figure 3 and 4).

### Passenger Vehicles (PVs)

**Volume trends.** On an average 24-hour day (see Figure 5), NB PVs generally reached peak volume levels between 03 PM and 05 PM. Similarly, SB PVs peaked in volume between 03 PM and 05 PM

### Heavy Commercial Vehicles (HCVs)

**Volume trends.** On an average 24-hour day, HCVs traveling NB typically reached peak volume levels between 03 PM and 05 PM, while volume going SB peaked between 03 PM and 05 PM. See Figure 6. Out of all HCVs, the two highest traffic volumes were generated by Class 9's and Class 5's.

## Overweight HCVs

**Volume trends.** Of a total of 63081 HCVs, 719 of them were overweight<sup>3</sup>. These overweight HCVs contributed to 0.1% of total monthly volume, and 1.1% of total monthly HCV volume. NB overweight vehicles typically reached highest numbers on Wednesdays, with lowest volumes reported on Saturdays. SB overweight vehicles tended to reach highest volumes on Wednesdays, with lowest volumes reported on Saturdays. See Figure 3 .

The top two overweight violators by class were the class 9 and class 5 vehicles . Overall, overweight vehicles tended to reach peak volume concentrations during typical business hours, with 65.8% of all overweight vehicles traveling NB this month (see Figure 7 & 8). Figure 9 shows the number of vehicles exceeding 88,000 pounds that crossed the WIM over the last 12 months. The highest number of 88,000+ vehicles within the last 12 months occurred in June.

WIMs are currently used as a screening tool for weight enforcement, and it is estimated that the WIM scales can measure gross vehicle weights (GVW) within 90-95% of static weight scale measurements. Due to the possibility of measurement error, vehicles exceeding 10% of their legal weight limits (or 1.1 times their legal weight limits) are considered overweight in this report<sup>4</sup>.

Using normal load limits ,31 NB vehicles exceeded 88,000 pounds (18 vehicles were Class 13's; 6 vehicles were Class 9's). Of vehicles traveling SB,

35 NB vehicles exceeded 88,000 pounds (28 vehicles were Class 13's; 5 vehicles were Class 10's). Refer to Table 3 for the Top 10 highest recorded GVWs from Classes 9 and 10 from December 2018.

**Loaded vs. Unloaded HCVs.** Figure 10 shows the GVW distributions of Class 9s and 10s in December 2018. Data suggests that there were greater numbers of empty Class 9's than fully\_loaded Class 9's traveling NB, while there were more empty Class 9's than fully\_loaded traveling SB. Data also suggests that there were more fully\_loaded Class 10's than empty traveling in the NB direction. In the SB direction, there were more fully\_loaded class 10 vehicles.

**Freight Totals.** A total of 404797 tons of freight was recorded to have crossed the WIM. More freight was shipped NB (51.2%) than SB (48.8%). See Table 4 and Figure 11 for more freight information.

## Infrastructure Considerations

**Bridge.** Bridge No. 55X13 (a box culvert) is approximately 1/3 of a mile north of WIM #32, and Bridge No. 8960 (a box culvert) is approximately 1 ¾ miles south of WIM #32. WIM #32 recorded a total of 864651 vehicles with a combined GVW of 5626811 kips (1 kip = 1,000 pounds = 0.5 tons) in December 2018. See Table 5 and Figures 12-13 for GVW information by vehicle class and lane.

**Pavement Design.** A total of 28217 equivalent single axle loads (ESALs) passed over the pavement at this site. Approximately 51.1% of all ESALs were recorded NB while 48.9% was observed SB. In particular, 78% of all ESALs were generated by the Class 9's (Class 9's

were also responsible for generating 34% of total GVW observed this month). See Table 6 and Figures 14-15 for more information on ESALs (Table 6 also provides flexible ESAL factors for each vehicle class using a terminal serviceability of 2.5 and a structural number of 5).

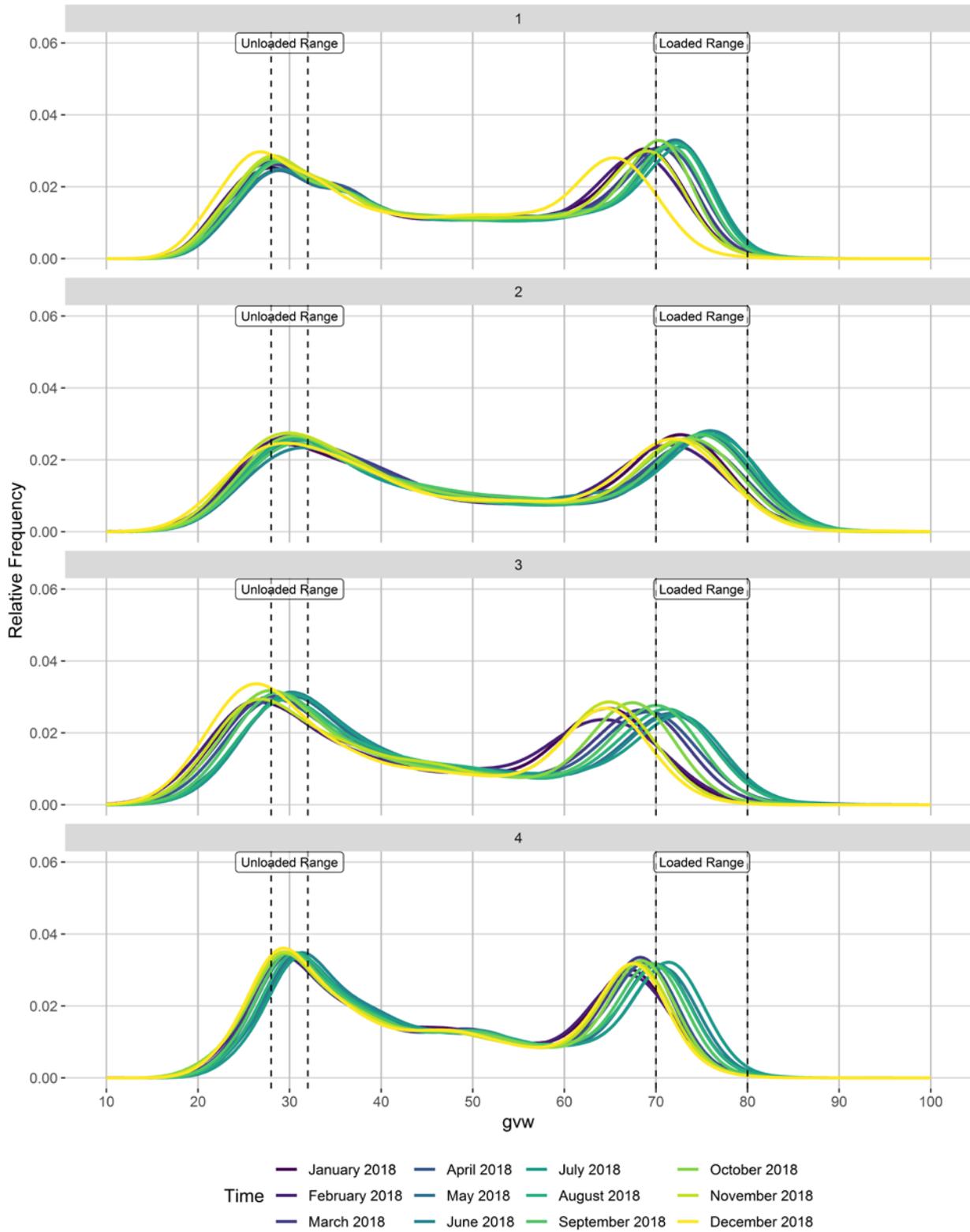
*WIM monthly reports can be found at: <http://www.dot.state.mn.us/traffic/data/reports-monthly-wim.html>*

MnDOT's vehicle classification scheme and vehicle class groupings for traffic forecasting can be found at: <http://www.dot.state.mn.us/traffic/data/data-products.html#weight>

- <sup>1</sup> Front axle weights of Class 9s are monitored on a monthly basis to assure performance between calibrations. The current goal of the WIM scale calibration is to have each individual axle weight stay within a range of ±9% of baseline calibration values
- <sup>2</sup> Previous WIM research indicates that unloaded Class 9s typically weigh 28-32 kips, while loaded Class 9s generally fall in the 70-80 kip range. More recent data from several WIM sites suggests that the unloaded Class 9 range may have moved a little higher over time (due to increased presence of sleeper cabs, etc.), although these ranges are also thought to be site-specific.
- <sup>3</sup> An HCV is considered overweight during normal load limits in this report if they satisfy any of the following 1) exceed a gross vehicle weight (GVW) of 80,000 pounds, 2) exceed any of the legal weight maximums on any axle configurations (legal maximums are: single axle = 20,000 pounds; tandem axles spaced 8' or less = 34,000 pounds; tridem axles spaced 9' or less = 43,000 pounds; quad axles spaced 13' or less = 51,000 pounds). Monthly reports use this standard regardless of the time of year however, the Winter Load Increase (WLI) allows a 10% across the board increase in axle and gross vehicle weights without a permit on US, state routes, and county roads. An HCV is considered overweight during Winter Load Increase(WLI) if they satisfy any of the following 1) exceed a gross vehicle weight (GVW) of 88,000 pounds, 2) exceed any of the legal weight maximums on any axle configurations (legal maximums are: single axle = 22,000 pounds; tandem axles spaced 8' or less = 37,400 pounds; tridem axles spaced 9' or less = 47,300 pounds; quad axles spaced 13' or less = 56,100 pounds). An overweight HCV is only included once in the overweight volume calculations regardless of how many of the aforementioned conditions are violated. For information on MN weight limit dates and statutes: [http://www.mrr.dot.state.mn.us/research/seasonal\\_load\\_limits/sllindex.asp](http://www.mrr.dot.state.mn.us/research/seasonal_load_limits/sllindex.asp)
- <sup>4</sup> For example, Class 9s and 10s can legally have gross vehicle weights up to 80,000 lbs (with the exception of permitted loads) during normal load limits. To account for measurement error on the WIM scales, those exceeding 10% of the legal GVW maximum (or 1.1 times the legal GVW) should be screened (e.g., 80,000 lbs + 8,000 lbs = 88,000 lbs). Similarly during WLI vehicles weighing 96,800 lbs should be screened.

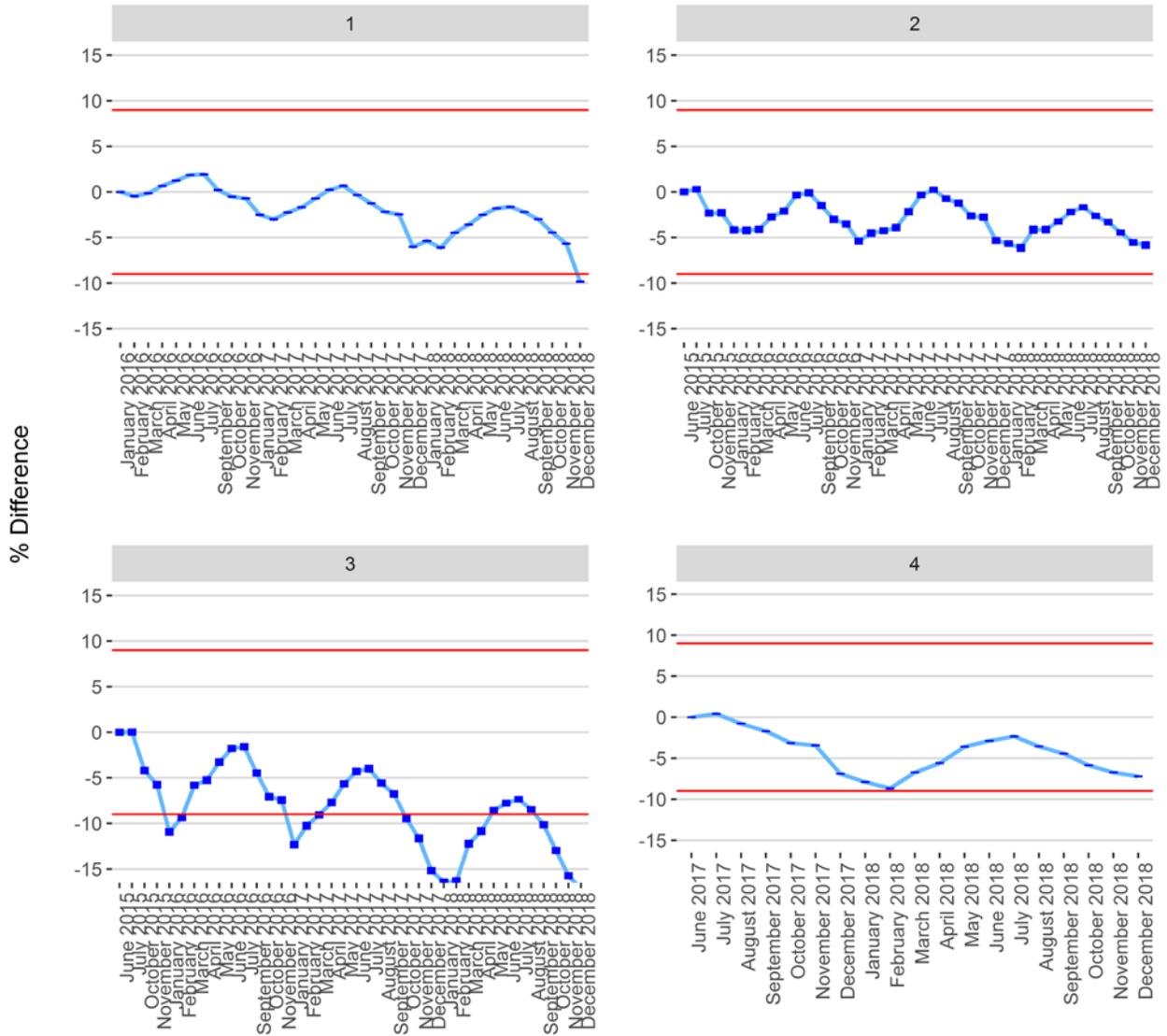
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Figure 1 - Monthly Class 9 GVW Histogram



Months that have not passed QC parameters are not displayed

Figure 2 - Percent Difference of Front Axle Weight from Last Calibration (+/- 95% CI)



Months that have not passed QC parameters are not displayed

Figure 2 - Average Vehicle Volume vs. Day of the Week

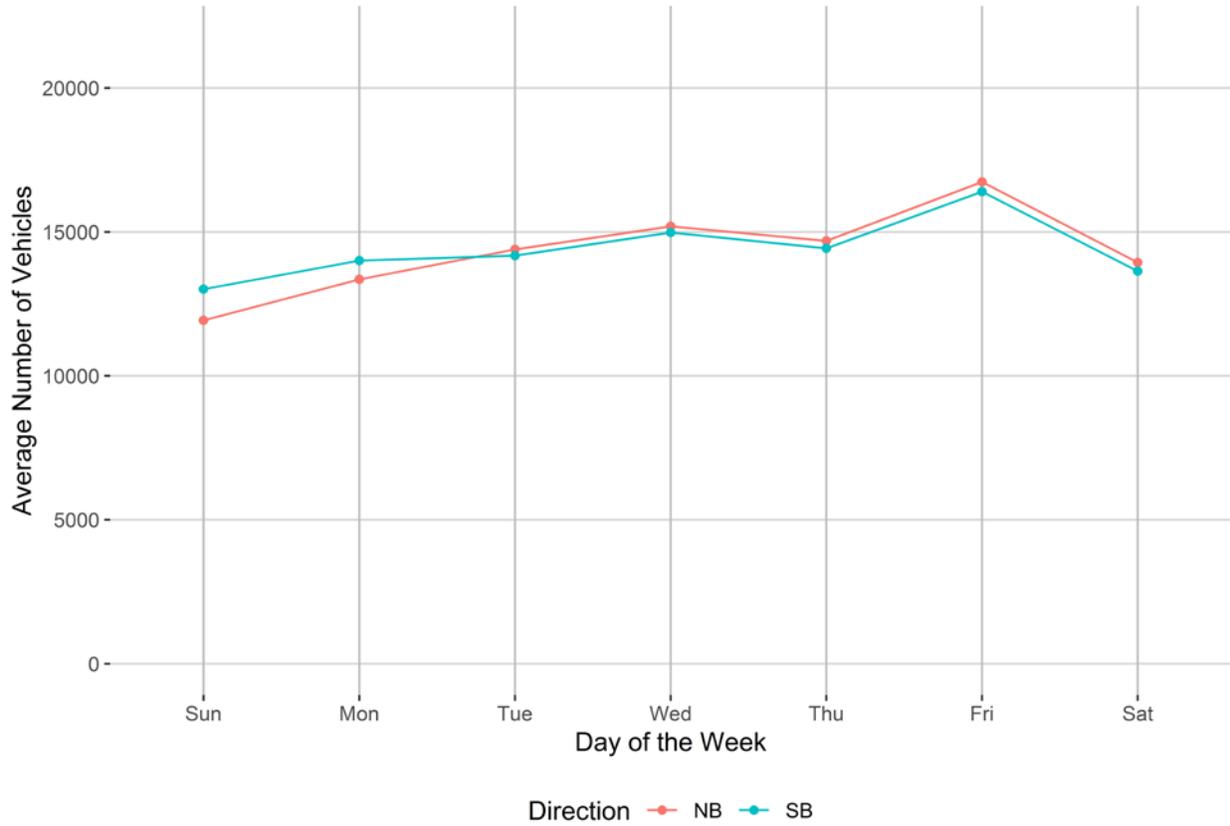


Figure 3 - Average Overweight Vehicle Volume vs. Day of the Week

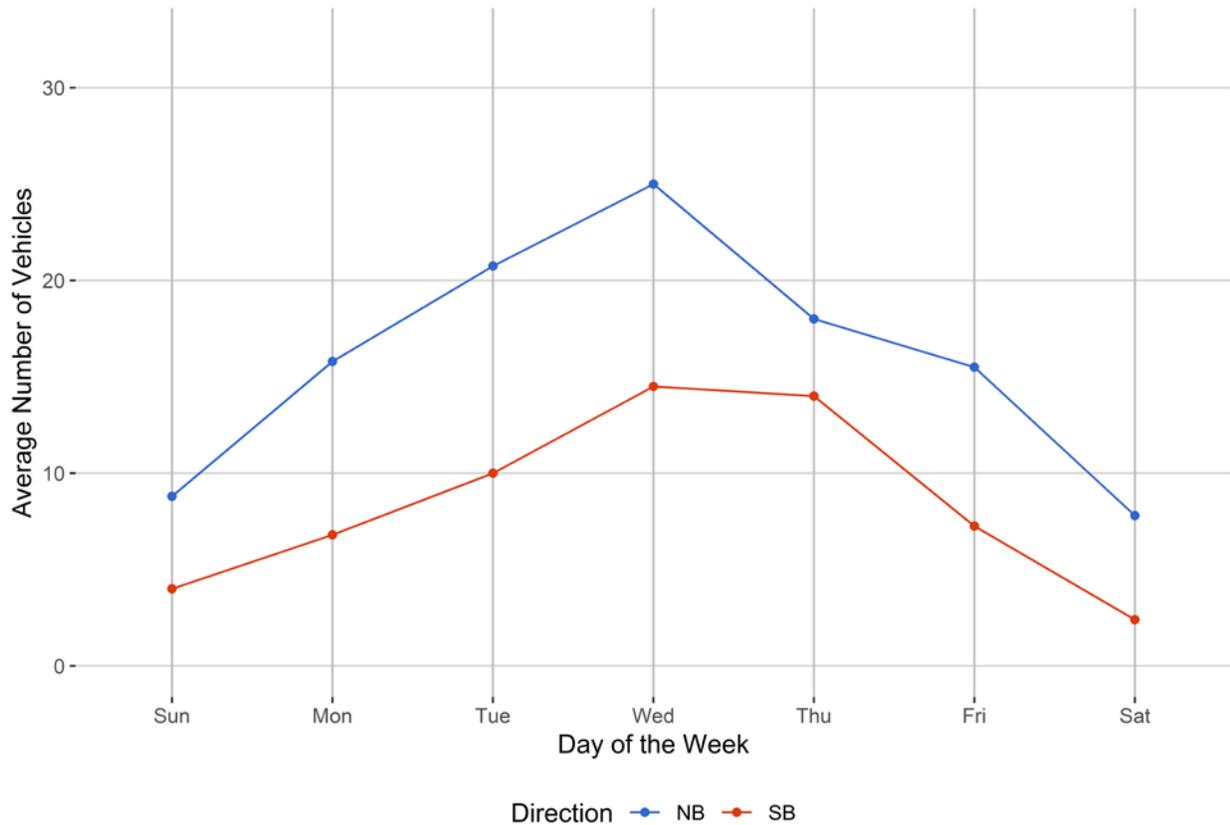


Figure 4 - Passenger Vehicles vs. Hour of the Day

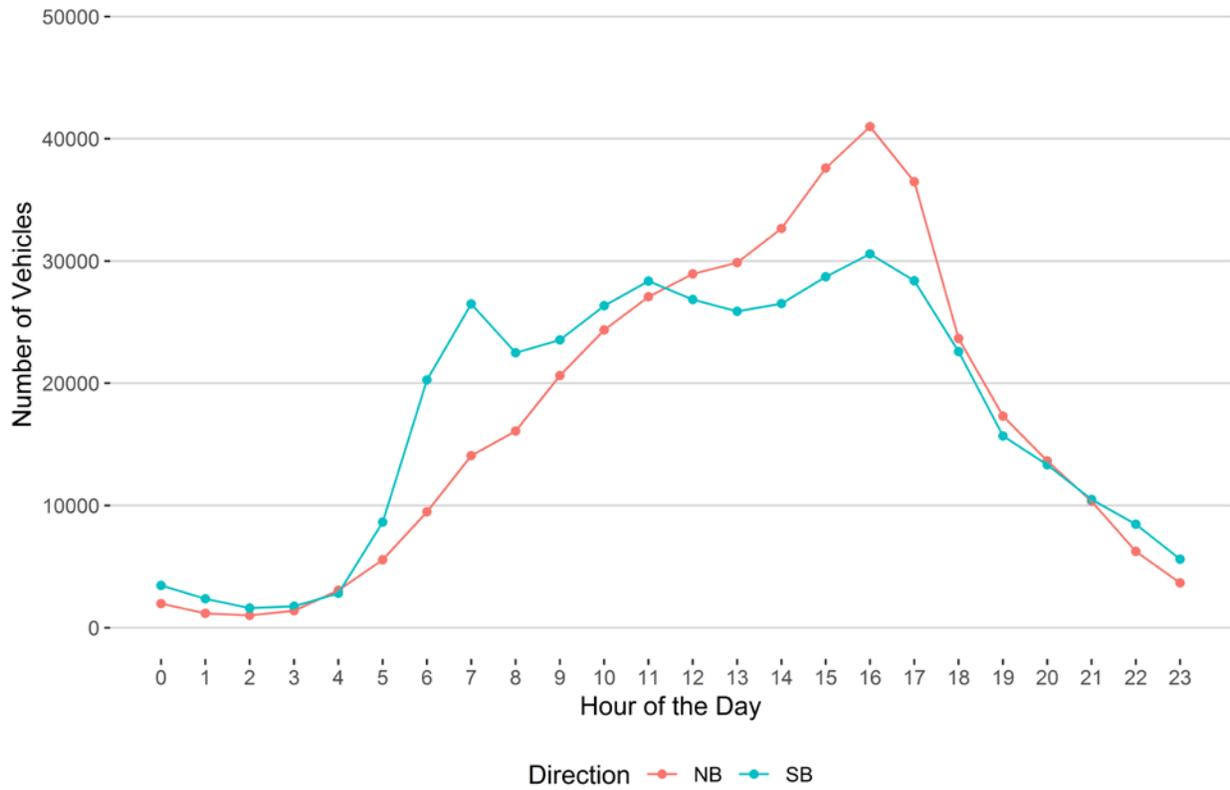


Figure 5 - Heavy Commercial Vehicles vs. Hour of the Day

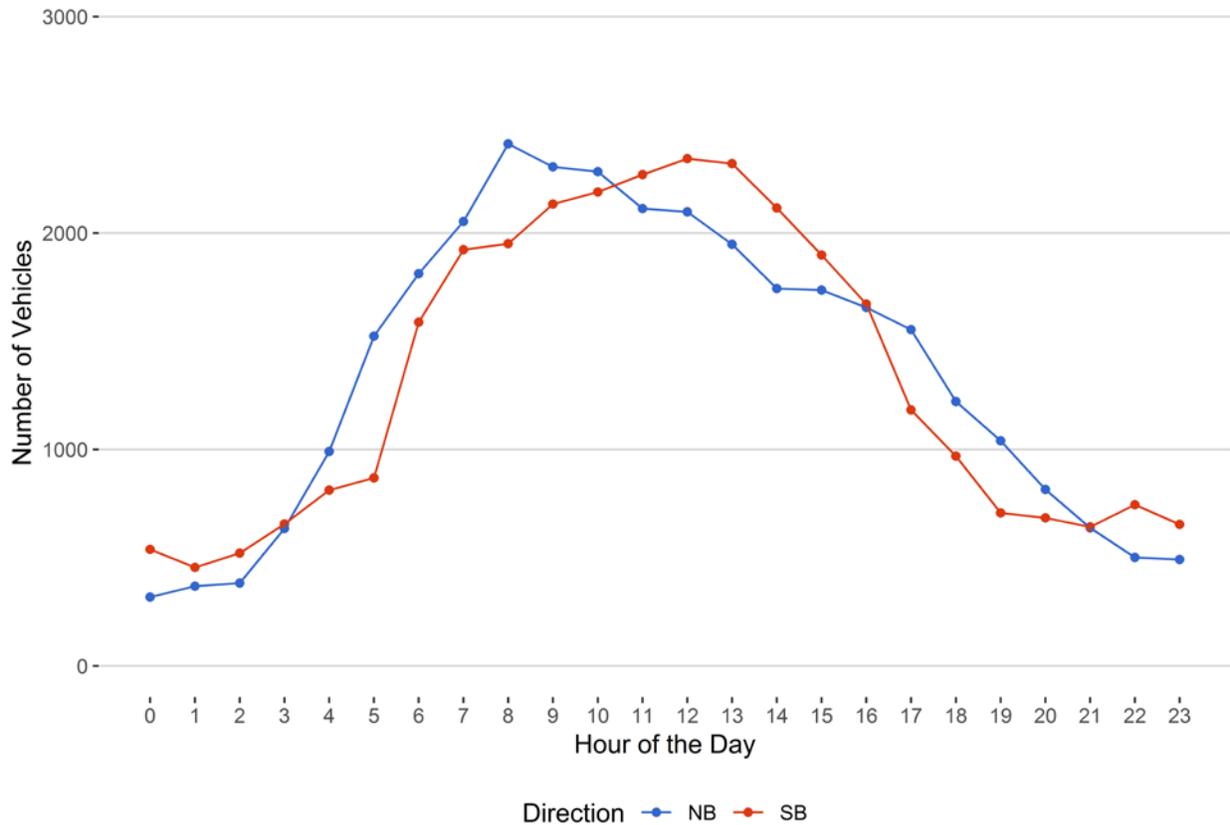


Figure 6 - Overweight Vehicles by Class vs. Hour of the Day

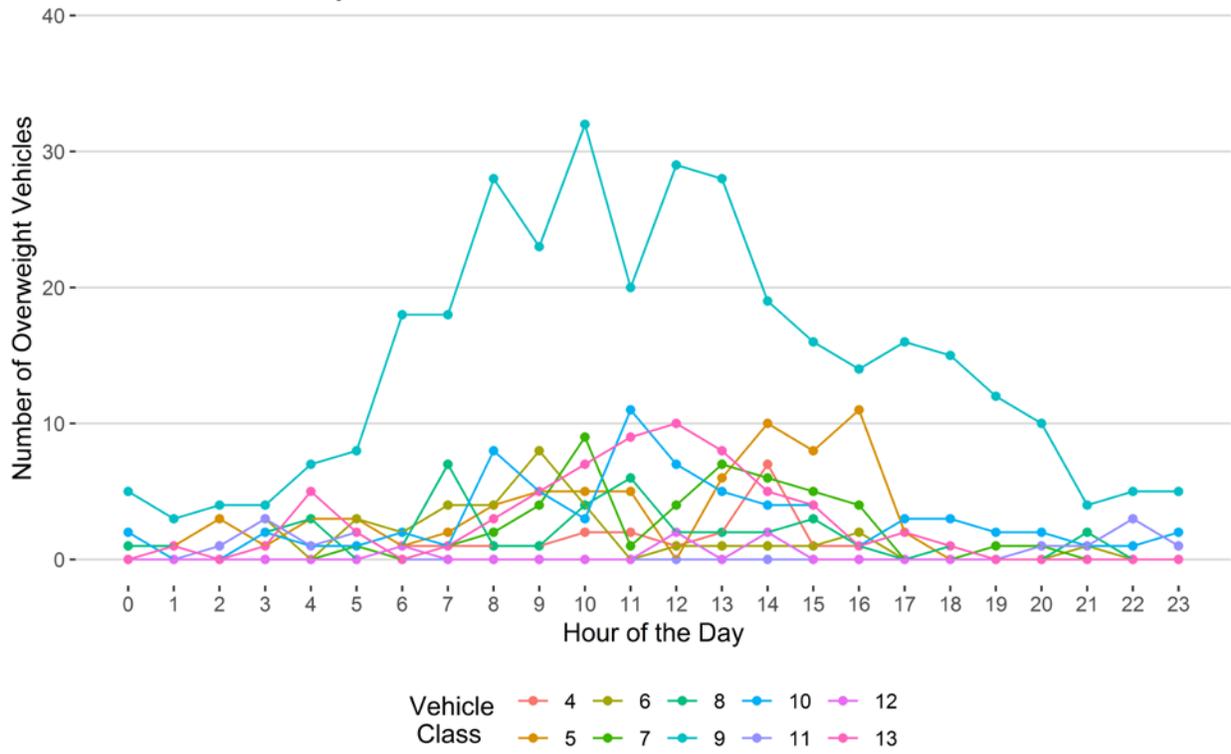


Figure 7 - Overweight Vehicles by Direction  
Hour of the Day

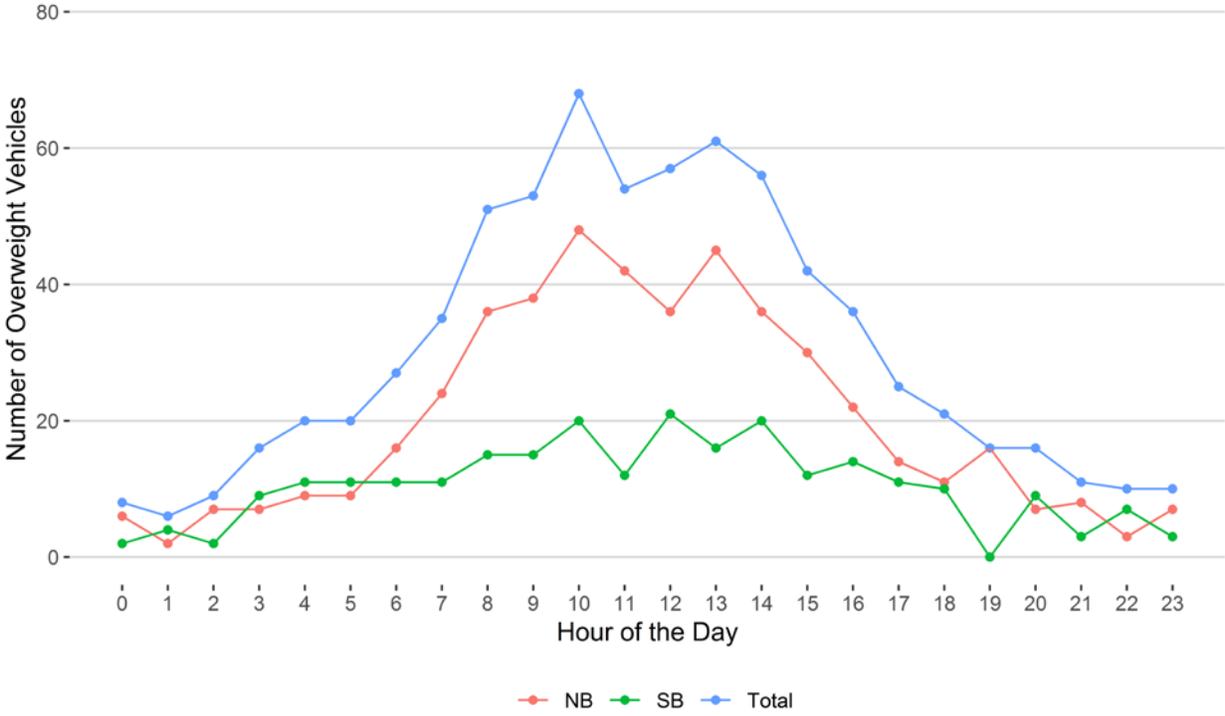
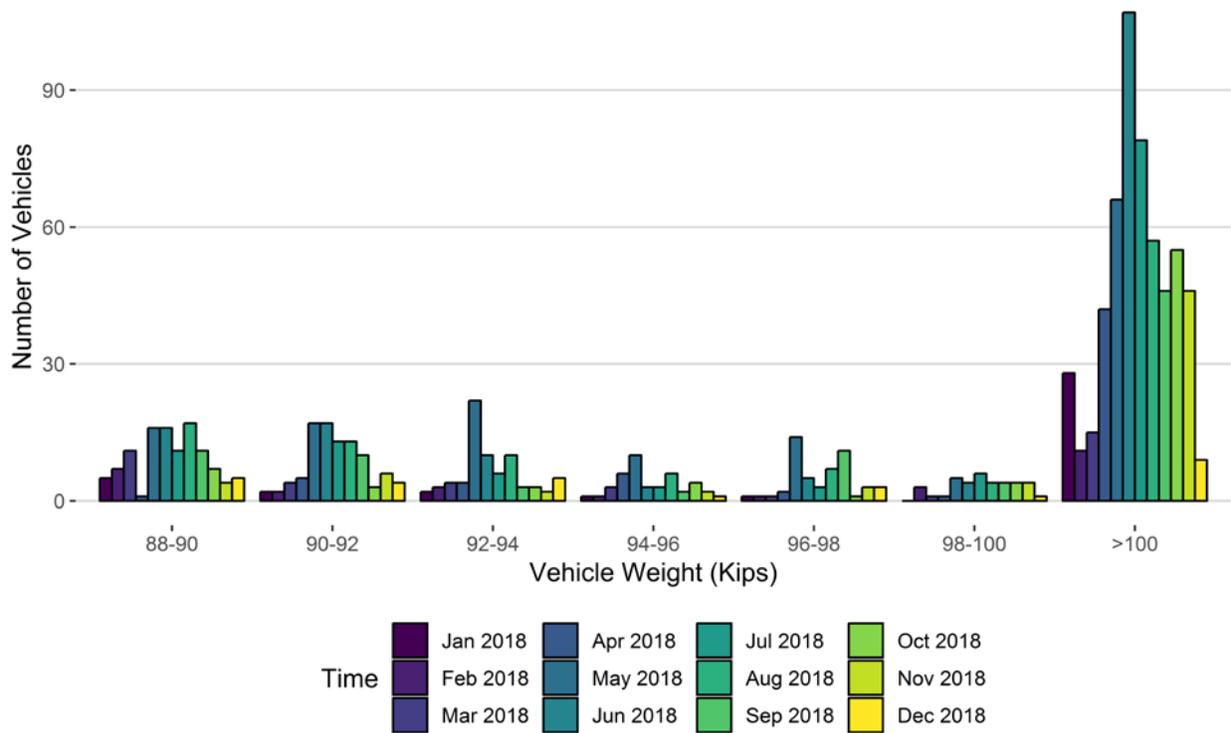
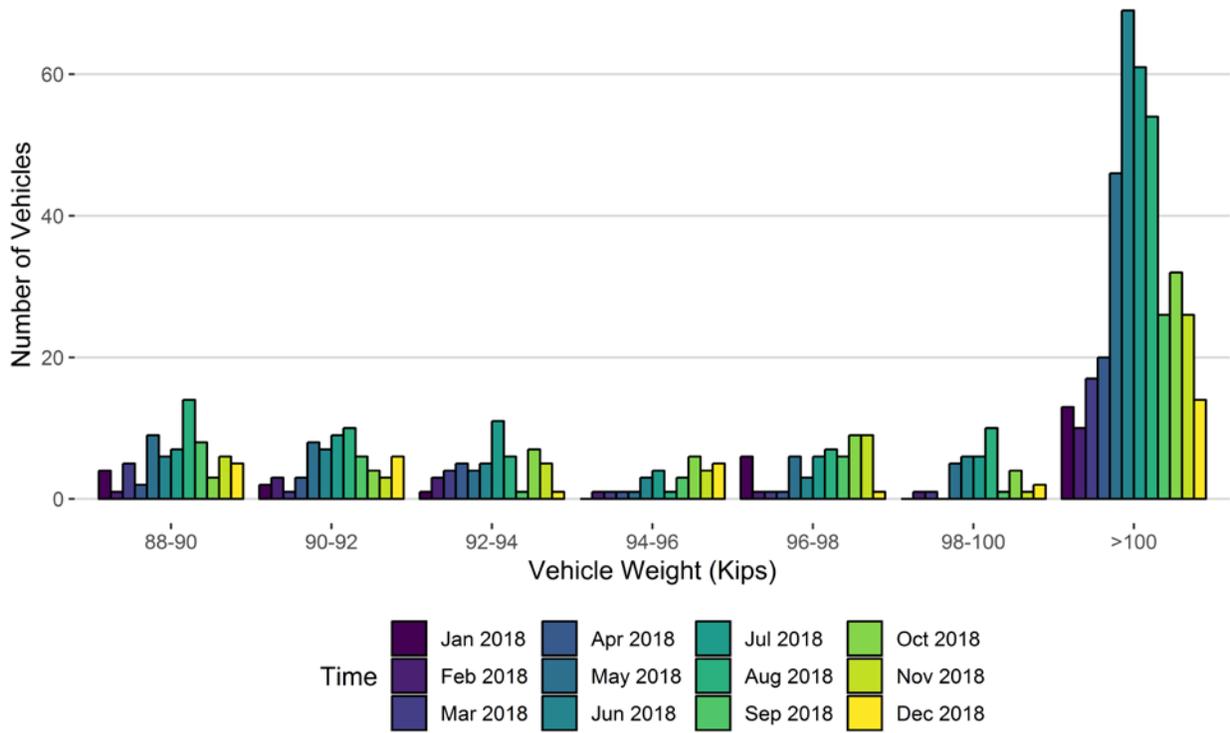


Figure 8 - Histogram of NB Vehicles Over 88,000 Pounds for Current Month



Vehicle Weights (Kips)	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	Jun 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018
88-90	5	7	11	1	16	16	11	17	11	7	4	5
90-92	2	2	4	5	17	17	13	13	10	3	6	4
92-94	2	3	4	4	22	10	6	10	3	3	2	5
94-96	1	1	3	6	10	3	3	6	2	4	2	1
96-98	1	1	1	2	14	5	3	7	11	1	3	3
98-100	0	3	1	1	5	4	6	4	4	4	4	1
>100	28	11	15	42	66	107	79	57	46	55	46	9
Total	39	28	39	61	150	162	121	114	87	77	67	28

Figure 8 - Histogram of SB Vehicles Over 88,000 Pounds for Current Month



Vehicle Weights (Kips)	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	Jun 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018
88-90	4	1	5	2	9	6	7	14	8	3	6	5
90-92	2	3	1	3	8	7	9	10	6	4	3	6
92-94	1	3	4	5	4	5	11	6	1	7	5	1
94-96	0	1	1	1	1	3	4	1	3	6	4	5
96-98	6	1	1	1	6	3	6	7	6	9	9	1
98-100	0	1	1	0	5	6	6	10	1	4	1	2
>100	13	10	17	20	46	69	61	54	26	32	26	14
Total	26	20	30	32	79	99	104	102	51	65	54	34

Figure 8 - Class 9's and 10's by Direction vs Gross Vehicle Weight

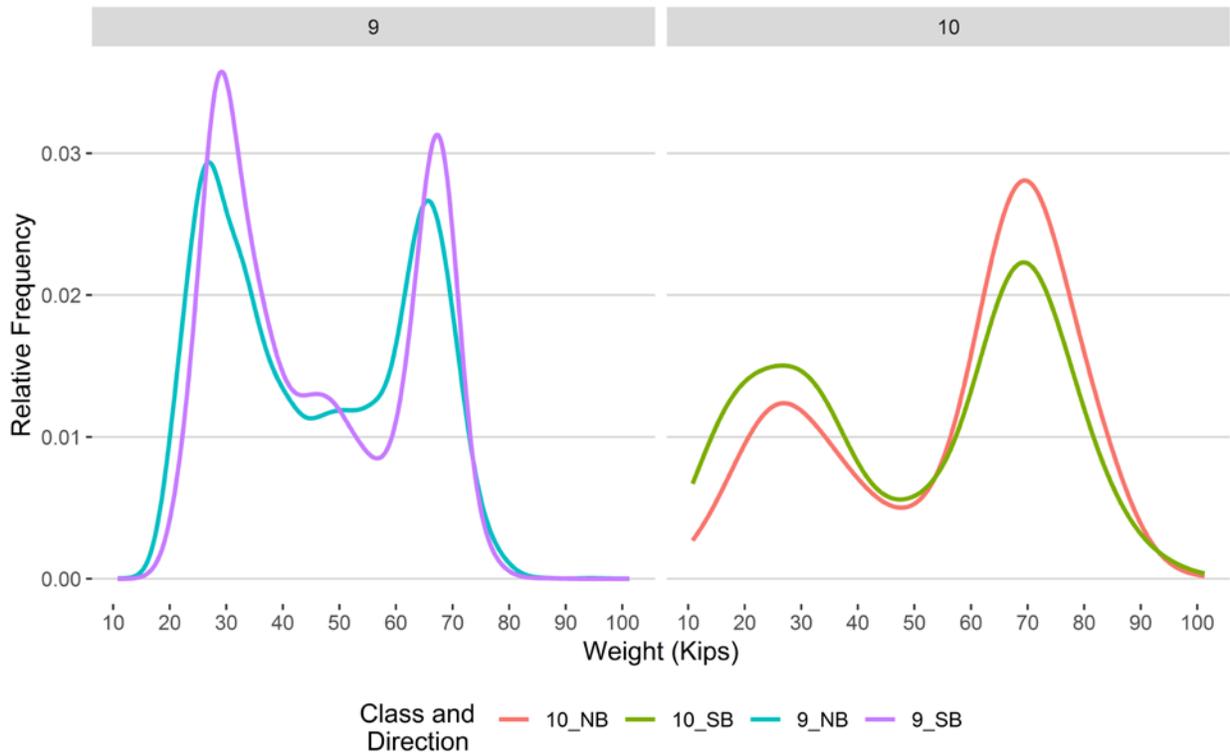


Figure 9 - Freight Percentage by Direction and Class

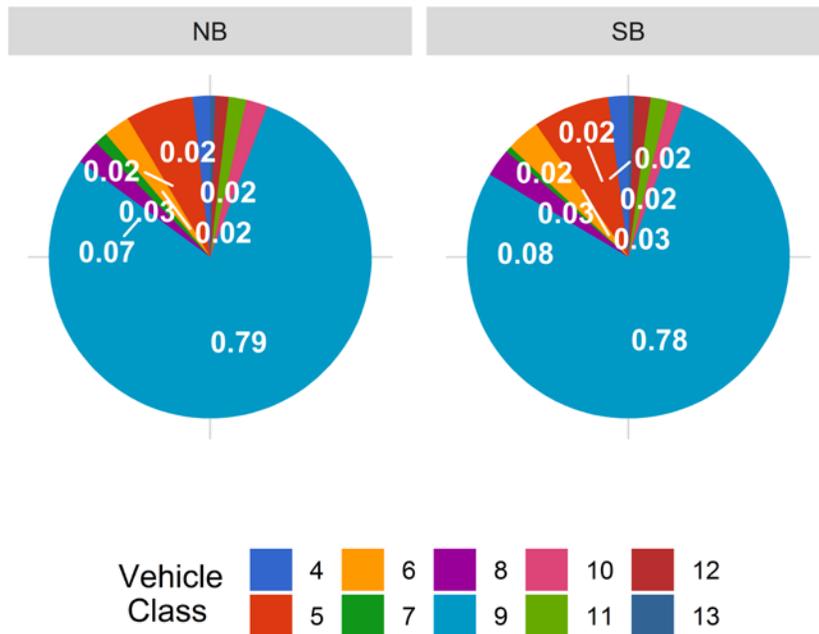


Figure 10 - Total Gross Vehicle Weight Percentage by Class and Lane

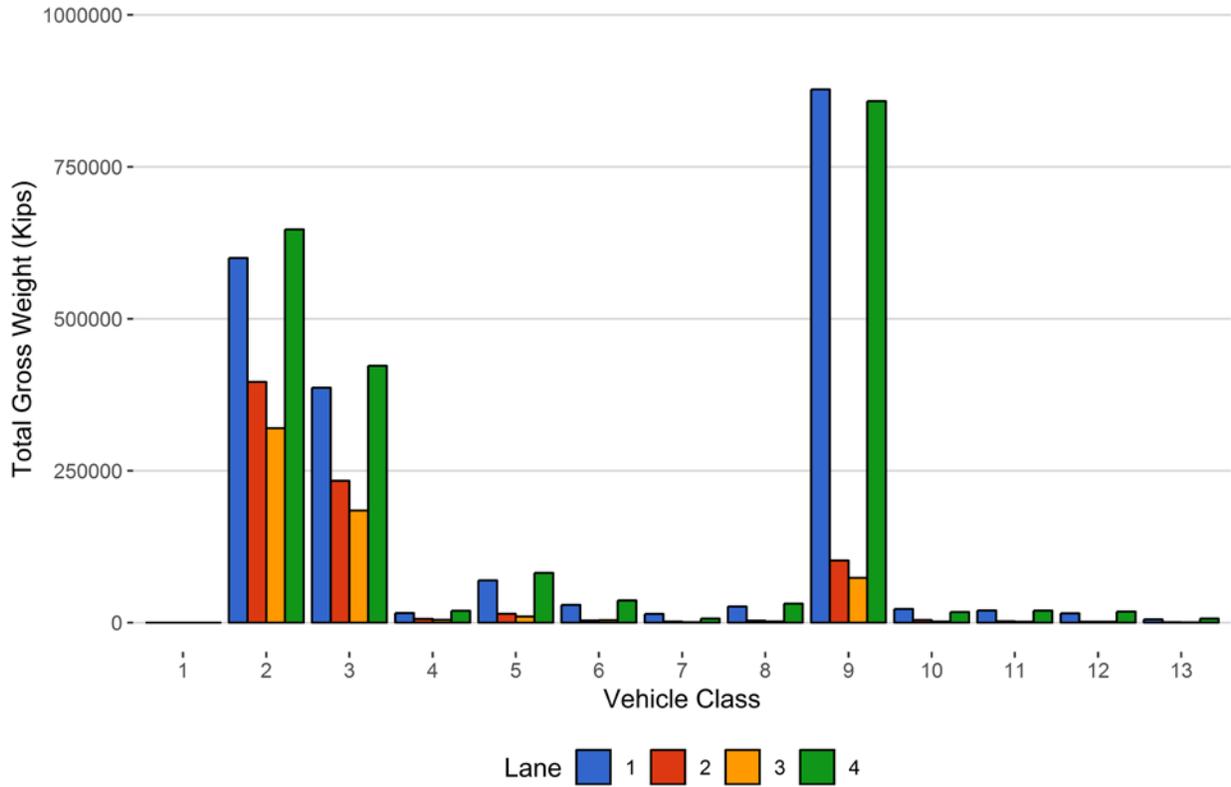


Figure 11 - Total Gross Vehicle Weight t

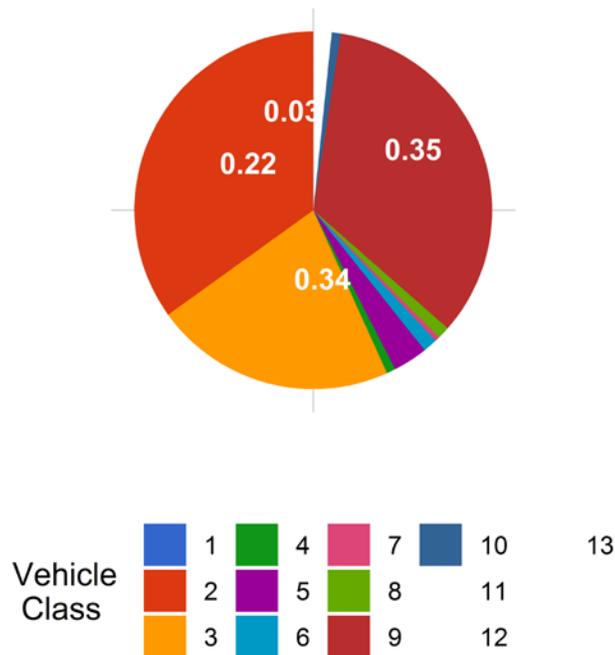


Figure 12 - Total ESALs by Class and Lane

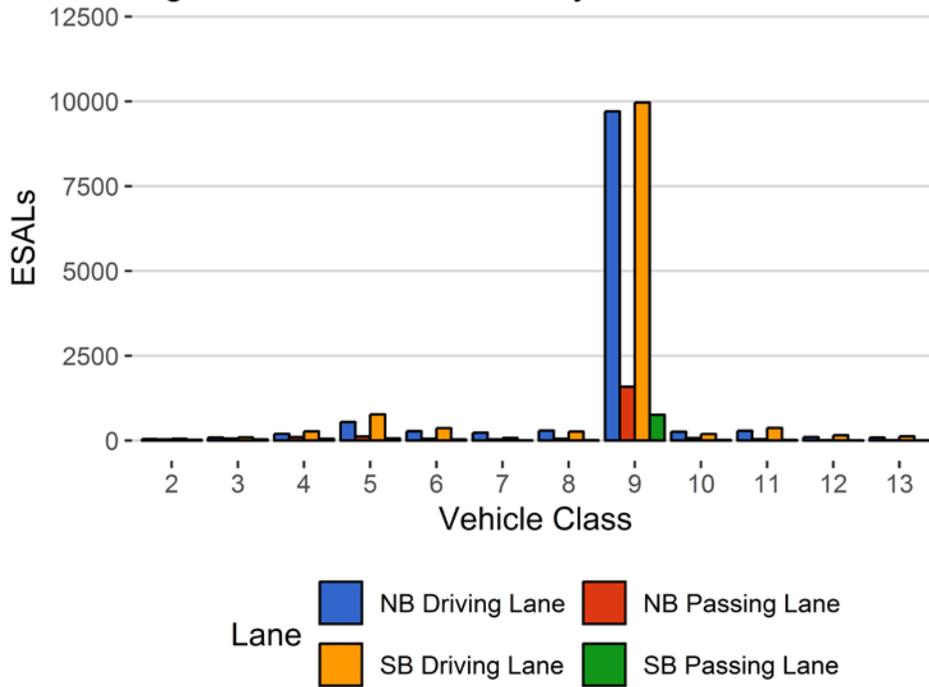
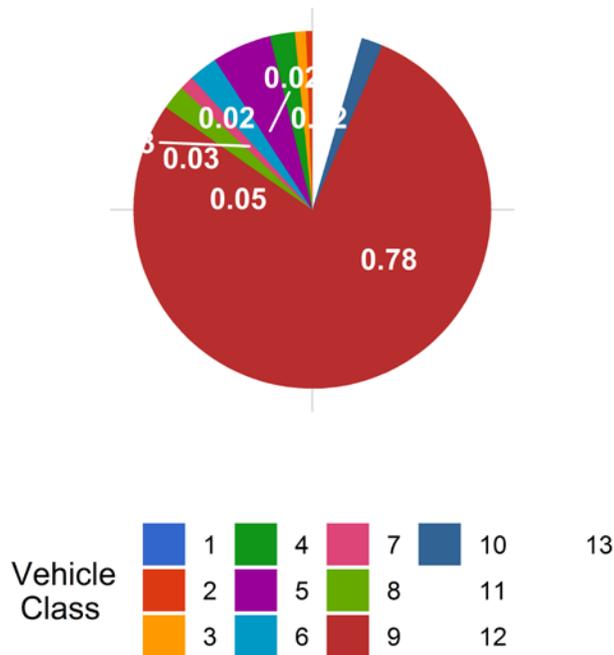


Figure 13 - ESALs by Class



**Table 1 Class 9 Front Axle Weight by Lane**

<i>Month</i>	<i>Lane 1 (Kips)</i>	<i>Front Axle +/- 9%</i>	<i>Lane 2 (Kips)</i>	<i>Front Axle +/- 9%</i>	<i>Lane 3 (Kips)</i>	<i>Front Axle +/- 9%</i>	<i>Lane 4 (kips)</i>	<i>Front Axle +/- 9%</i>
June 2015	NA	NA	11.20	0.00	11.34	0.00	NA	NA
July 2015	NA	NA	11.23	0.30	11.35	0.02	NA	NA
October 2015	NA	NA	10.93	-2.33	10.87	-4.19	NA	NA
November 2015	NA	NA	10.94	-2.29	10.69	-5.77	NA	NA
January 2016	10.55	0.00	10.73	-4.17	10.10	-10.94	NA	NA
February 2016	10.50	-0.47	10.72	-4.22	10.29	-9.33	NA	NA
March 2016	10.53	-0.14	10.74	-4.11	10.68	-5.82	NA	NA
April 2016	10.62	0.67	10.89	-2.75	10.75	-5.26	NA	NA
May 2016	10.68	1.24	10.96	-2.10	10.97	-3.27	NA	NA
June 2016	10.74	1.86	11.16	-0.34	11.14	-1.78	NA	NA
July 2016	10.75	1.92	11.18	-0.10	11.16	-1.59	NA	NA
September 2016	10.57	0.21	11.03	-1.49	10.84	-4.47	NA	NA
October 2016	10.49	-0.52	10.86	-3.01	10.54	-7.07	NA	NA
November 2016	10.47	-0.71	10.80	-3.51	10.50	-7.44	NA	NA
January 2017	10.28	-2.51	10.59	-5.39	9.94	-12.34	NA	NA
February 2017	10.23	-2.99	10.69	-4.53	10.18	-10.26	NA	NA
March 2017	10.31	-2.25	10.72	-4.26	10.32	-9.07	NA	NA
April 2017	10.37	-1.68	10.76	-3.92	10.47	-7.71	NA	NA
May 2017	10.47	-0.72	10.95	-2.16	10.70	-5.67	NA	NA
June 2017	10.57	0.24	11.16	-0.34	10.86	-4.30	10.78	0.00
July 2017	10.62	0.68	11.22	0.24	10.89	-4.00	10.82	0.42
August 2017	10.51	-0.35	11.11	-0.73	10.71	-5.58	10.69	-0.78
September 2017	10.41	-1.25	11.06	-1.23	10.58	-6.78	10.60	-1.70
October 2017	10.31	-2.19	10.90	-2.63	10.27	-9.46	10.44	-3.15
November 2017	10.29	-2.46	10.89	-2.77	10.02	-11.64	10.41	-3.43
December 2017	9.91	-6.02	10.60	-5.33	9.62	-15.19	10.04	-6.89

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January 2018	9.98	-5.37	10.56	-5.67	9.48	-16.42	9.93	-7.89
February 2018	9.90	-6.10	10.51	-6.15	9.48	-16.39	9.84	-8.68
March 2018	10.07	-4.48	10.73	-4.14	9.96	-12.23	10.05	-6.73
April 2018	10.17	-3.58	10.73	-4.13	10.11	-10.86	10.18	-5.59
May 2018	10.28	-2.51	10.83	-3.25	10.37	-8.56	10.39	-3.60
June 2018	10.36	-1.80	10.95	-2.19	10.46	-7.78	10.47	-2.88
July 2018	10.37	-1.65	11.01	-1.69	10.51	-7.36	10.53	-2.34
August 2018	10.31	-2.21	10.90	-2.63	10.38	-8.46	10.39	-3.56
September 2018	10.23	-3.00	10.82	-3.32	10.19	-10.15	10.30	-4.43
October 2018	10.08	-4.46	10.70	-4.45	9.87	-12.98	10.15	-5.86
November 2018	9.95	-5.67	10.57	-5.55	9.56	-15.75	10.05	-6.73
December 2018	9.51	-9.84	10.54	-5.83	9.40	-17.17	10.00	-7.20

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**Table 2 Vehicle Classification Data**

<i>Vehicle Class</i>	<i>Monthly Average Daily Volume</i>	<i>Monthly Total Volume</i>	<i>Monthly Total Volume Percentage</i>	<i>Monthly Total Overweight Vehicles</i>	<i>Monthly Total Overweight Percentage</i>
1	0	1	0	0	0
2	18267	566272	65.5	0	0
3	7590	235297	27.2	0	0
4	50	1543	0.2	24	3.3
5	420	13027	1.5	76	10.6
6	92	2855	0.3	36	5
7	13	404	0	46	6.4
8	71	2208	0.3	40	5.6
9	1308	40543	4.7	343	47.7
10	27	824	0.1	71	9.9
11	27	834	0.1	13	1.8
12	22	684	0.1	5	0.7
13	5	159	0	65	9
<b>TOTAL</b>	<b>27892</b>	<b>864651</b>	<b>100</b>	<b>719</b>	<b>100</b>

**Table 3 Top 10 Gross Vehicle Weight, Class 9 and 10**

<i>Date</i>	<i>Day of Week</i>	<i>Time</i>	<i>Vehicle Class</i>	<i>Direction</i>	<i>Lane</i>	<i>GVW (lbs)</i>
2018-12-11	Tuesday	13:58:49	9	SB	4	106.13
2018-12-28	Friday	09:03:19	10	NB	1	104.23
2018-12-28	Friday	05:11:51	9	NB	1	101.58
2018-12-09	Sunday	18:43:08	9	NB	1	101.28
2018-12-10	Monday	20:18:10	10	NB	1	100.74
2018-12-28	Friday	08:06:43	9	NB	1	99.78
2018-12-14	Friday	19:04:38	9	NB	1	96.71
2018-12-18	Tuesday	23:53:29	10	NB	1	96.17
2018-12-20	Thursday	11:48:20	10	SB	4	95.86
2018-12-15	Saturday	00:07:05	10	NB	1	94.91

**Table 4 Freight Summary**

<i>Vehicle Class</i>	<i>Direction</i>	<i>Weight of Empty Vehicle (Kips)</i>	<i>Total Number of Vehicles</i>	<i>Number of Empty Vehicles</i>	<i>Percentage of Empty Vehicles</i>	<i>Total Weight of Vehicles with Freight (Kips)</i>	<i>Total Weight of Empty Vehicles (Kips)</i>	<i>Total Weight of Freight (Tons)</i>
4	NB	15	746	105	14.1	20461	1297	5423
5	NB	8	6550	1426	21.8	74055	9888	16531
6	NB	19	1344	442	32.9	25825	6723	4343
7	NB	11.5	266	1	0.4	16083	11	6518
8	NB	31	1075	755	70.2	12203	17519	1141
9	NB	33	21329	7076	33.2	790936	188954	160294
10	NB	33.5	467	107	22.9	23900	2611	5920
11	NB	36.5	451	40	8.9	20859	1348	2929
12	NB	36.5	339	56	16.5	14733	1810	2202
13	NB	31.5	79	0	0	6103	0	1807
<b>TOTAL</b>	<b>****</b>	<b>****</b>	<b>32646</b>	<b>10008</b>	<b>****</b>	<b>1005157</b>	<b>****</b>	<b>207108</b>
<i>Vehicle Class</i>	<i>Direction</i>	<i>Weight of Empty Vehicle (Kips)</i>	<i>Total Number of Vehicles</i>	<i>Number of Empty Vehicles</i>	<i>Percentage of Empty Vehicles</i>	<i>Total Weight of Vehicles with Freight (Kips)</i>	<i>Total Weight of Empty Vehicles (Kips)</i>	<i>Total Weight of Freight (Tons)</i>
4	SB	15	831	120	14.4	22418	1528	5876
5	SB	8	6768	1576	23.3	80720	10867	19592
6	SB	19	1575	423	26.9	33651	6765	5881
7	SB	11.5	147	0	0	7218	0	2764
8	SB	31	1182	830	70.2	13088	20095	1088
9	SB	33	20119	6514	32.4	748974	182724	150004
10	SB	33.5	375	132	35.2	15814	3082	3837
11	SB	36.5	402	39	9.7	19806	1242	3278
12	SB	36.5	360	26	7.2	18473	860	3141
13	SB	31.5	84	0	0	7101	0	2227
<b>TOTAL</b>	<b>****</b>	<b>****</b>	<b>31843</b>	<b>9660</b>	<b>****</b>	<b>967262</b>	<b>****</b>	<b>197689</b>
<b>GRAND TOTAL</b>	<b>****</b>	<b>****</b>	<b>64489</b>	<b>19668</b>	<b>440</b>	<b>1972419</b>	<b>457323</b>	<b>404797</b>

**Table 5 Gross Vehicle Weight by Class and Lane**

<i>Vehicle Class</i>	<i>NB Driving Lane</i>	<i>NB Passing Lane</i>	<i>SB Passing Lane</i>	<i>SB Driving Lane</i>	<i>Total</i>	<i>Percentage</i>
1	0	0	0	1	1	0
2	600003	396143	319895	647049	1963090	34.9
3	386728	233276	184412	422735	1227151	21.8
4	15765	5993	4564	19381	45703	0.8
5	69370	14573	9795	81791	175530	3.1
6	28975	3572	4067	36349	72963	1.3
7	14308	1787	655	6563	23313	0.4
8	26423	3299	1998	31185	62905	1.1
9	877694	102196	73503	858194	1911588	34
10	22315	4196	1727	17170	45407	0.8
11	19934	2273	1466	19581	43254	0.8
12	15189	1354	1402	17931	35876	0.6
13	5373	730	487	6613	13204	0.2
<b>TOTAL</b>	<b>2082076</b>	<b>769391</b>	<b>603972</b>	<b>2164545</b>	<b>5619984</b>	<b>100</b>
<b>GVW/LANE</b>	<b>37.05</b>	<b>13.69</b>	<b>10.75</b>	<b>38.52</b>	<b>100</b>	<b>0</b>

**Table 6 ESALs by Class and Lane and Flexible ESAL Factors**

<i>Vehicle Class</i>	<i>NB Driving Lane</i>	<i>NB Passing Lane</i>	<i>SB Passing Lane</i>	<i>SB Driving Lane</i>	<i>Total</i>	<i>Percentage</i>	<i>Flexible ESAL Factor</i>
1	0	0	0	0	0	0	0.5
2	48	37	23	53	160	0.57	6e-04
3	93	57	34	97	281	1	0.0024
4	202	104	53	273	632	2.25	0.8
5	548	121	65	774	1508	5.36	0.23
6	281	51	35	367	734	2.61	0.5
7	236	36	6	82	362	1.29	1.74
8	294	51	12	267	624	2.22	0.56
9	9709	1590	767	9967	22034	78.31	1.07
10	260	74	17	195	546	1.94	1.3
11	289	44	21	377	731	2.6	1.71
12	104	15	10	160	289	1.03	0.83
13	91	12	8	124	236	0.84	2.76
<b>TOTAL</b>	<b>12155</b>	<b>2191</b>	<b>1052</b>	<b>12738</b>	<b>28136</b>	<b>100</b>	<b>12</b>
<b>ESALS/LANE</b>	<b>43.2</b>	<b>7.8</b>	<b>3.7</b>	<b>45.3</b>	<b>100</b>	<b>-</b>	<b>-</b>

**Table 7 Site Summary: Volume and Vehicle Class**

<i>Month</i>	<i>Total Volume</i>	<i>Monthly ADT</i>	<i>Monthly HCAD T</i>	<i>Passenger Vehicles</i>	<i>Passenger Vehicles %</i>	<i>Heavy Commercial Vehicles</i>	<i>Heavy Commercial Vehicles %</i>	<i>Heavy Commercial Vehicles in Driving Lane %</i>	<i>Heavy Commercial Vehicles in Passing Lane %</i>
Jan 2018	777133	25069	2126	711218	91.5	65915.4	8.5	87.3	12.7
Feb 2018	732422	26158	2181	671341	91.7	61080.7	8.3	89.1	10.9
Mar 2018	899645	29021	2200	831445	92.4	68199.7	7.6	90.2	9.8
Apr 2018	850664	28356	2215	784220	92.2	66444	7.8	89.5	10.5
May 2018	1039431	33530	2662	956910	92.1	82521.5	7.9	87.5	12.5
Jun 2018	1097500	36583	2770	1014403	92.4	83097.5	7.6	87.6	12.4
Jul 2018	1120144	36134	2761	1034542	92.4	85602.1	7.6	87.3	12.7
Aug 2018	1096236	35362	2766	1010488	92.2	85748.4	7.8	87.8	12.2
Sep 2018	975288	32510	2516	899811	92.3	75477.3	7.7	88.6	11.4
Oct 2018	1005115	32423	2741	920135	91.5	84980	8.5	89	11
Nov 2018	807078	31042	2150	742577	92	64501	8	88.3	11.7
Dec 2018	864651	28822	2035	801570	92.7	63081.4	7.3	89.2	10.8
<b>TOTAL</b>	<b>11265307</b>	<b>-</b>	<b>-</b>	<b>10378660</b>	<b>-</b>	<b>886649</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>AVERA GE</b>	<b>938776</b>	<b>31251</b>	<b>2427</b>	<b>864888</b>	<b>92</b>	<b>73887</b>	<b>8</b>	<b>88</b>	<b>12</b>

## ESALS

<i>Month</i>	<i>ESALS NB Passing Lane</i>	<i>ESALS NB Driving Lane</i>	<i>ESALS SB Driving Lane</i>	<i>ESALS SB Passing Lane</i>	<i>Total ESALS</i>	<i>Driving Lane ESALS %</i>	<i>Passing Lane ESALS %</i>	<i>Pavement Life Decrease Months</i>
Jan 2018	15526	2839	1441	13237	33043	87	13	1.2
Feb 2018	14098	2042	1177	12253	29570	89	11	0.5
Mar 2018	17718	2055	1307	14249	35330	90	10	1.1
Apr 2018	17911	2401	1428	13971	35711	89	11	1.5
May 2018	22396	3529	2349	18747	47020	88	12	2
Jun 2018	23012	3694	2374	19307	48387	87	13	2.4
Jul 2018	22415	3858	2407	21343	50024	87	13	1.7
Aug 2018	22748	3715	2300	19232	47995	87	13	1.7
Sep 2018	19416	3002	1725	16380	40523	88	12	1.2
Oct 2018	20621	3073	1569	17666	42930	89	11	1.1
Nov 2018	16547	2620	1352	14453	34973	89	11	1.2
Dec 2018	12208	2206	1054	12749	28217	88	12	0.2
<b>TOTAL</b>	<b>224617</b>	<b>35033</b>	<b>20484</b>	<b>193588</b>	<b>473722</b>	-	-	-
<b>AVERAGE</b>	<b>18718</b>	<b>2919</b>	<b>1707</b>	<b>16132</b>	<b>39477</b>	<b>88</b>	<b>12</b>	<b>1</b>

## Gross Vehicle Weight

<i>Month</i>	<i>GVW NB Passing Lane</i>	<i>GVW NB Driving Lane</i>	<i>GVW SB Passing Lane</i>	<i>GVW SB Driving Lane</i>	<i>Total GVW Kips</i>
Jan 2018	2084390	711458	548906	2059562	5404317
Feb 2018	1903489	608683	470517	1846133	4828823
Mar 2018	2337771	771441	616757	2244953	5970921
Apr 2018	2259387	759393	600722	2164611	5784113
May 2018	2707830	1023785	857182	2663473	7252270
Jun 2018	2805374	1107547	932861	2734606	7580388
Jul 2018	2846033	1123846	955181	2884472	7809531
Aug 2018	2838230	1095512	906826	2780943	7621510
Sep 2018	2508245	912624	761584	2459287	6641740
Oct 2018	2663414	939774	748845	2610840	6962873
Nov 2018	2335826	846388	669420	2308649	6160283
Dec 2018	2086264	770010	604432	2166104	5626811
<b>TOTAL</b>	<b>29376253</b>	<b>10670462</b>	<b>8673233</b>	<b>28923633</b>	<b>77643580</b>
<b>AVERAGE</b>	<b>2448021</b>	<b>889205</b>	<b>722769</b>	<b>2410303</b>	<b>6470298</b>

## Overweight Vehicles

<i>Month</i>	<i>Total Number of Overweight Vehicles</i>	<i>Overweight / Total Volume</i>	<i>Overweight / Heavy Commercial Volume</i>	<i>Number Over 88,000 lbs</i>	<i>Number Over 98,000 lbs</i>
Jan 2018	1147	0.1	1.8	65	41
Feb 2018	1019	0.1	1.7	49	26
Mar 2018	1066	0.1	1.6	70	34
Apr 2018	1338	0.2	2	93	63
May 2018	2314	0.2	2.8	232	122
Jun 2018	2666	0.2	3.2	261	186
Jul 2018	2866	0.3	3.4	226	152
Aug 2018	2383	0.2	2.8	216	125
Sep 2018	1785	0.2	2.4	138	77
Oct 2018	1564	0.2	1.9	142	95
Nov 2018	1176	0.1	1.6	125	77
Dec 2018	728	0.1	1.1	66	27
<b>TOTAL</b>	<b>20052</b>	<b>-</b>	<b>-</b>	<b>1683</b>	<b>1025</b>
<b>AVERAGE</b>	<b>1671</b>	<b>0.2</b>	<b>2.2</b>	<b>140.2</b>	<b>85.4</b>

## Freight

<i>Month</i>	<i>NB Freight Tons</i>	<i>SB Freight Tons</i>	<i>Total Freight</i>	<i>NB Freight %</i>	<i>SB Freight %</i>
Jan 2018	243904	210402	454307	53.7	46.3
Feb 2018	214845	184994	399839	53.7	46.3
Mar 2018	259219	219426	478646	54.2	45.8
Apr 2018	262841	213385	476226	55.2	44.8
May 2018	329620	285332	614952	53.6	46.4
Jun 2018	339294	288144	627438	54.1	45.9
Jul 2018	337328	317763	655090	51.5	48.5
Aug 2018	338350	290850	629200	53.8	46.2
Sep 2018	289856	250391	540246	53.7	46.3
Oct 2018	321475	280646	602121	53.4	46.6
Nov 2018	261150	229123	490273	53.3	46.7
Dec 2018	207108	197689	404797	51.2	48.8
<b>TOTAL</b>	<b>3404990</b>	<b>2968145</b>	<b>6373135</b>	-	-
<b>AVERAGE</b>	<b>283749.1</b>	<b>247345.4</b>	<b>531094.6</b>	<b>53.4</b>	<b>46.6</b>