

Quarterly report on traffic and speed monitoring: July – September 2019

a) Nailstone Road, street lighting column 4, southbound vehicles 15th July – 19th August 2019

For Project: Nailstone Rd C4 Sbd
 Location/Name: Incoming Dir
 Report Generated: 19/08/2019 10:51:43
 Speed Intervals = 5 mph
 Time Intervals = 5 minutes

Traffic report from 15/07/2019 10:00:00 through 19/08/2019 09:15:00

85th Percentile Speed = 38.1 mph
 85th Percentile Vehicles = 21,645 counts
 Max Speed = 70.0 mph on 25/07/2019 at 18:45:00
 Total Vehicles = 25,465 counts
 AADT: 728.2

Volumes - weekly vehicle counts

	Time	5 Day	7 Day
Average Daily		783	709
AM peak	6:00 to 7:00	81	66
PM peak	4:00 to 5:00	71	59

Speed

Speed limit: 30 mph
 85th Percentile Speed: 38.1 mph
 Average Speed: 31.5 mph

	Mon	Tues	Wed	Thur	Fri	Sat	Sun
Count over limit	2471	2663	2665	2744	2652	1949	1391
% over limit	67.1	63.8	64.7	65.8	65.1	65.7	60.8
Avg speeder	35.3	35.5	35.4	35.6	35.2	35.1	35.0

The data set above includes six storm episodes:

24 th July	01:40-02:50	154	
27 th July	11:10-12:40	116	
28 th July	09:15-09:30	28	
30 th July	16:15-16:30	74	
	17:20-17:55	210	
1 st August	15:30-15:40	83	
TOTAL		665	vehicle counts (2.6%)

b) Barton Road, street lighting column 4, southbound vehicles 19th August to 25th September 2019

For Project: Barton Rd C4 Sbd
 Location/Name: Incoming Dir
 Report Generated: 25/09/2019 10:56:19
 Speed Intervals = 5 mph
 Time Intervals = 5 minutes

Traffic report from 19/08/2019 10:10:00 through 25/09/2019 09:20:00

85th Percentile Speed = 38.4 mph
 85th Percentile Vehicles = 11,426 counts
 Max Speed = 65.0 mph on 19/08/2019 18:40:00
 Total Vehicles = 13,442 counts
 AADT: 363.6

Volumes - weekly vehicle counts

	Time	5 Day	7 Day
Average Daily		375	353
AM peak	7:00 to 8:00	51	40
PM peak	2:00 to 3:00	30	27

Speed

Speed limit: 30 mph
 85th Percentile Speed: 38.4 mph
 Average Speed: 31.8 mph

	Mon	Tues	Wed	Thur	Fri	Sat	Sun
Count over limit	1285	1494	1287	1369	1354	959	844
% over limit	64.1	65.8	65.2	64.6	65.4	60.0	60.0
Avg speeder	35.7	35.5	35.7	35.5	35.7	35.5	35.4

The data set above includes one storm episode:

6th Sept 12:55-13:00 42 vehicle counts (0.3%)

c) Bosworth Road, street lighting column 6, northbound vehicles, 25th September – 8th October 2019

This analysis has been found to be incorrect – see d-g below.

For Project: Bosworth Rd C6 Nbd
 Location/Name: Incoming Dir
 Report Generated: 08/10/2019 10:28:30
 Speed Intervals = 5 mph
 Time Intervals = 5 minutes

Traffic Report from 25/09/2019 10:10:00 through 08/10/2019 09:15:00

85th Percentile Speed = 42.0 mph
 85th Percentile Vehicles = 15,308 counts
 Max Speed = 75.0 mph on 07/10/2019 12:10:00
 Total Vehicles = 18,010 counts
 AADT: 1389.5

Volumes - weekly vehicle counts

	Time	5 Day	7 Day
Average Daily		1,134	1,286
AM peak	7:00 to 8:00	136	109
PM peak	3:00 to 4:00	147	120

Speed

Speed limit: 30 mph
 85th Percentile Speed: 42.0 mph
 Average Speed: 25.6 mph

	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
Count over limit	1345	1055	1371	1605	1701	1067	809
% over limit	39.8	75.6	76.9	64.8	73.4	24.4	35.3
Avg speeder	38.7	39.0	38.9	39.0	39.4	39.3	39.4

d) Bosworth Road, street lighting column 6, northbound vehicles – effect of blue lines on speed

On 13th September, blocks of 5, 4, 3, 2, and 1 blue lines were laid across Bosworth Road in advance of the *dragon's teeth* markings as part of a package of signage measures intended to reduce the speed of vehicles entering the village (Carlton PC Minutes, July 2019, p. 1772/10 refers). The mobile speed indicator device (SID) was moved to street lighting column 6 on 25th September. The speed data from (c) above are here compared with data collected in May – July 2019 (Report 2019-19 (b)).

The figures from Sept 2019 (c above) were initially taken at face value, but on closer examination those in larger font, bold and underlined in the table below appeared anomalously low. This report was rejected by the Parish Council on 9th October (p.1781/4), pending further investigation – see below.

	May-July 2019	Sept 2019	Note
Time period	27/5 to 15/7	25/9 to 8/10	
85 th Percentile Speed	44.2	42.0 mph	1
85 th Percentile Vehicles	35,261 counts	15,308 counts	
Average speed	33.8	<u>25.6</u>	2
Maximum Speed	85.0 mph	75.0 mph	
Total Vehicles	41,484 counts	18,010 counts	3
Average daily no vehicles 5 days	1,014	1,134	
Average daily no vehicles 7 days	944	1,286	4
Morning peak 7-8 am (5 days)	98	136	4
Morning peak 7-8 am (7 days)	79	109	4
Evening peak (5 days)	[4-5 pm] 114	[3-4 pm] 147	
Evening peak (7 days)	[4-5 pm] 100	[3-4 pm] 120	4

May-July 2019

	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
Count over limit	4793	4789	4854	5001	4621	3635	2824
% over limit	80.2	73.2	71.0	78.2	71.3	70.5	69.0
Avg speeder	39.3	39.3	39.4	39.3	39.4	39.1	39.2

Sept 2019

	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
Count over limit	1345	1055	1371	1605	1701	1067	809
% over limit	<u>39.8</u>	75.6	76.9	64.8	73.4	<u>24.4</u>	<u>35.3</u>
Avg speeder	38.7	39.0	38.9	39.0	39.4	39.3	39.4

Notes

1. 85th percentile speed reduced by 2.2 mph.
2. Average speed markedly reduced from 33.8 to 25.6 mph.
3. Fewer vehicles because SID was in place for a shorter time.
4. Increased traffic and earlier evening peak might be due to greater amount of school traffic in September
5. % of vehicles above speed limit is markedly lower on Mondays, Saturdays and Sundays in September. Range in September (24.4-76.9%) is lower than range in May-July (69.0-80.2%), but wider with a markedly lower bound.
6. Average speed of vehicles exceeding the speed limit is the same in May-July and September.

e) Investigation of anomalous data from the SID

The traffic report from the SID on street lighting column 6 for northbound traffic on Bosworth Road from 25th September to 8th October had contained abnormally low figures for average speed, and for the percentage of vehicles exceeding the speed limit on Mondays, Saturdays and Sundays. Inspection of the raw data revealed records of large numbers of vehicles (up to 60 every 5 minutes) travelling at 5-10 and 10-15 mph during 18 discrete time periods as tabulated below:

Date	Time period	Total number of vehicles (5-15 mph)
27 th Sept	10:05-10:10	55
	10:30-11:20	174
28 th Sept	20:05-00:40	1589
29 th Sept	01:40-01:45	42
	06:05-07:25	304
30 th Sept	14:45-15:10	126
	15:35-19:15	2149
1 st Oct	06:15-06:50	43
3 rd Oct	18:00-18:25	50
	19:30-20:25	248
	21:05-21:50	84
	22:50-22:55	18
5 th Oct	21:45-01:15	1249
6 th Oct	02:55-03:00	18
7 th Oct	06:00-06:15	36
	07:00-07:40	252
	08:30-08:40	41
	14:10-14:15	32
TOTAL		6510

The number of spurious vehicle records (6,510) is 36% of the total records for this data set (18,010 vehicle counts), hence the significant effect on the uncorrected analysis.

The technical team at Westcotec Ltd confirmed that heavy rainstorms could generate these figures, and this was consistent with the severe weather experienced in late September and early October. It is not possible to edit the raw data collected by the SID, and unfortunately, the distribution of these events means that the longest period for which data could be selected for analysis was the three days from 10:10 on 25th to 10:10 on 27th September. This analysis is in (f) below.

The SID data sets for (a) and (b) above were scanned for storm episodes and the figures have been included in the reports. The analyses have not been corrected, as the vehicle numbers are not considered significant.

f) Bosworth Road, street lighting column 6, northbound vehicles, 25th – 27th September 2019

For Project: Bosworth Rd C6 Nbd
 Location/Name: Incoming Dir
 Report Generated: 12/10/2019 12:16:39
 Speed Intervals = 5 mph
 Time Intervals = 5 minutes

Traffic report from 25/09/2019 10:10:00 through 27/09/2019 10:10:00

85th Percentile Speed = 44.6 mph
 85th Percentile Vehicles = 1,757 counts
 Max Speed = 70.0 mph on 26/09/2019 05:50:00
 Total Vehicles = 2,067 counts
 AADT: 1033.5

Volumes - weekly vehicle counts

	Time	5 Day	7 Day
Average Daily		689	689
AM peak	7:00 to 8:00	46	32
PM peak	3:00 to 4:00	52	36

Speed

Speed limit: 30 mph
 85th Percentile Speed: 44.6 mph
 Average Speed: 35.2 mph

	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
Count over limit	N/A	N/A	554	800	240	N/A	N/A
% over limit	N/A	N/A	77.4	79.4	70.0	N/A	N/A
Avg speeder	N/A	N/A	39.3	39.1	40.1	N/A	N/A

These data show that the blue lines had no significant effect on vehicle speeds.

There are no storm episodes in these selected data.

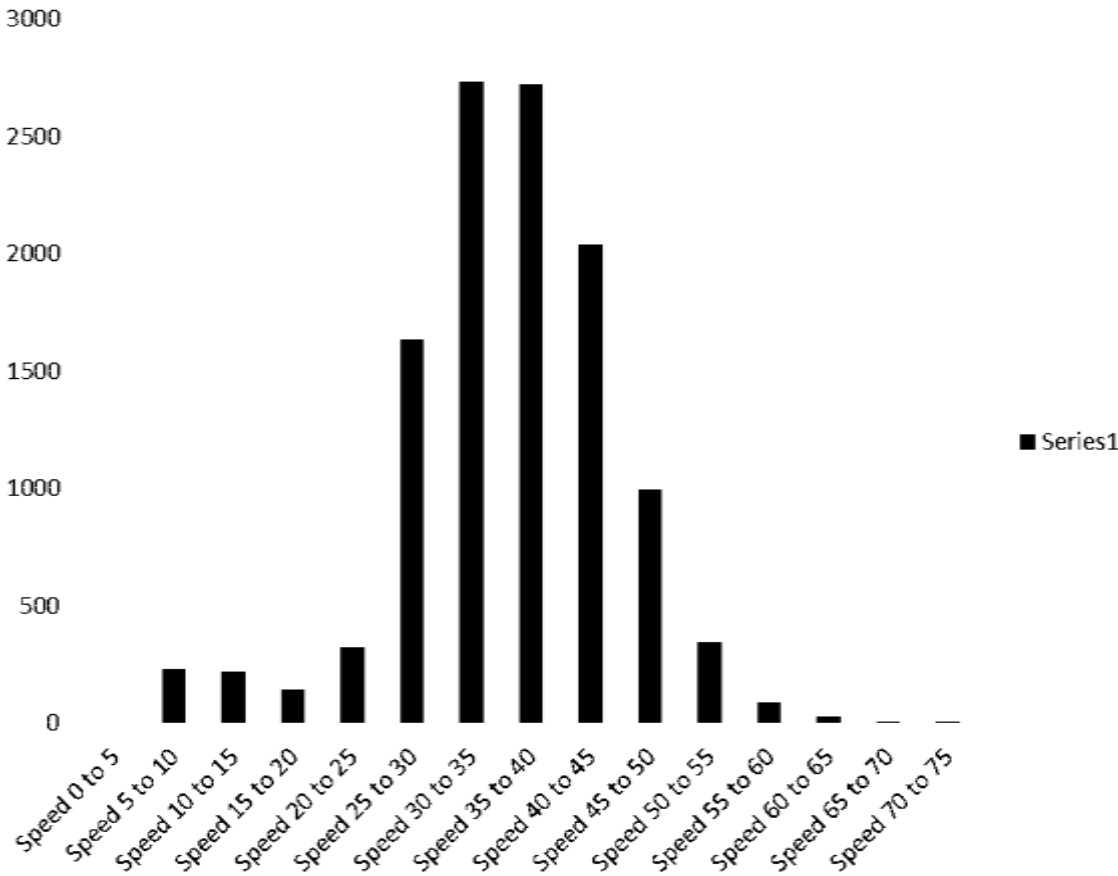
g) Analysis of exported SID data

Data from the SID can be exported to an Excel spreadsheet, which can then be edited and the data processed using spreadsheet tools. The edited data cannot be re-input to the Houston analysis software, and as the numbers are grouped, it is not possible to replicate the Houston analysis.

The counts of low-speed vehicles identified in (e) above were replaced with zeros, and a simple analysis carried out. The results are tabulated and charted below.

Speed mph	Number of vehicles
0-5	0
5-10	227
10-15	220
15-20	143

20-25	325
25-30	1632
30-35	2734
35-40	2720
40-45	2040
45-50	996
50-55	342
55-60	88
60-65	25
65-70	7
70-75	1
Total	11500*



Note that 11,500 + 6,510 = 18,010 (see e and c above).

C J Peat 12th October 2019