Oakley Traffic Information Survey

Report number 2

Survey location - St John's Road

February 2019

Revision number 3

Contents

1 Survey methodology

This survey was made using a Viacount ll device, known as OTIS (Oakley Traffic Information Surveyor), mounted on lamp post no 10 (GPS° 15.109' N, 001° 10.175' W) in St John's Road Road, Oakley.

St John's Road is one of the major routes into and out of the village on its eastern side. The survey point was beyond the point where all tributary roads bar one, join it so the traffic volume for the road was at its greatest. The road forms part of the no 11 bus route and several routes used by buses taking students to schools and colleges. It is also the natural route into the village for heavy goods vehicles too large to negotiate the low bridge (11ft 11in) in Oakley Lane.

Viacount ll uses a radar beam to detect and measure the vehicle's speed, length (which is used to determine vehicle type), direction of travel and separation gap between vehicles. A date/time stamp is added to each vehicle record. Every vehicle passing the survey point is recorded.

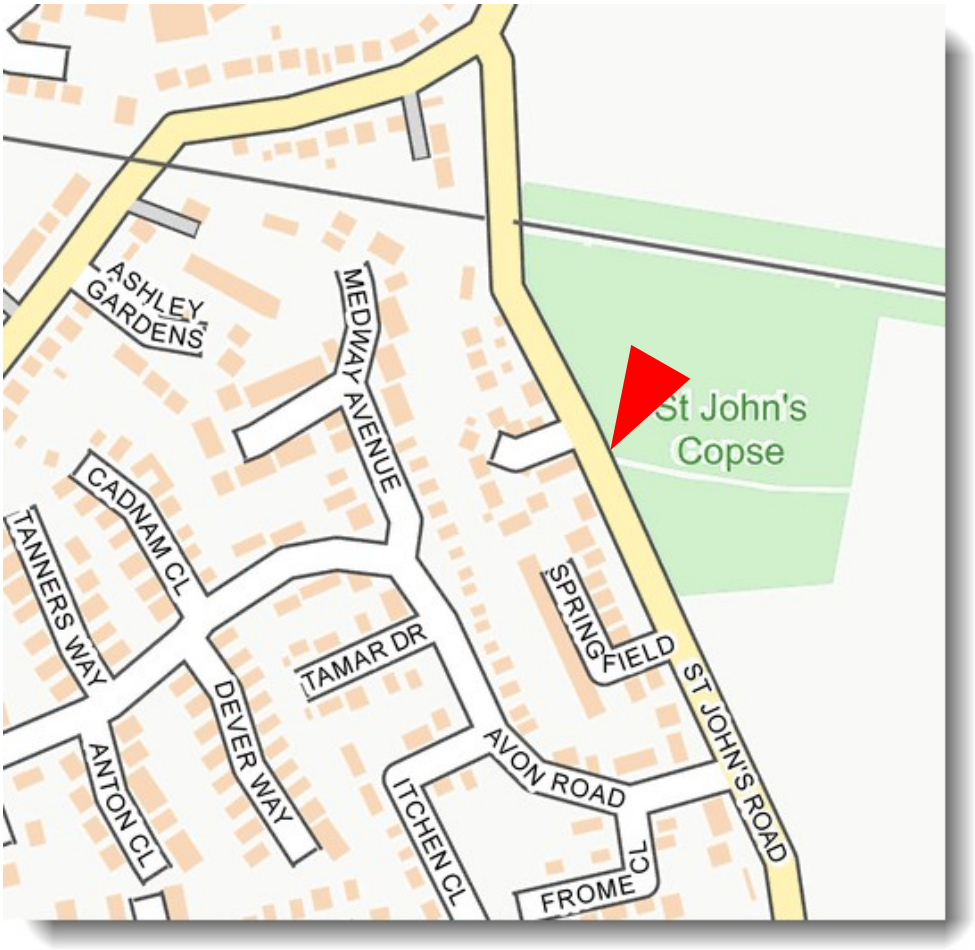

Figure 1: showing OTIS's location

Figure 2: OTIS on lamp post 10 in St John's Road

The survey was intended to run for two weeks starting on January 19th and finishing on February 1st 2019. Overnight on 24th January, there was a considerable snowfall which disrupted the traffic over the weekend. It also meant OTIS's battery could not be changed on 26th as planned so it ran on for a few days and then automatically switched off when the voltage fell below a certain level. It was then decided to run the survey for a further two weeks from 9th to 23rd February to capture data where abnormal weather did not affect traffic movements. In addition, the second week, 16th to 23rd February coincided with local schools' half term giving an opportunity to see whether this had any effect on traffic movements.

2 The survey data

2.1 Summary

Traffic volumes for the three weeks are broadly similar as shown in table 1. Interestingly, the week when snowfall would have been expected to affect traffic numbers had the highest number of vehicle movements. Of great significance, is the high proportion of traffic exceeding the speed limit in all three weeks.

	26th Jan - 2nd Feb	9 – 16 Feb	16 – 23 Feb
2 wheelers	1155	1473	1350
Cars	5911	6498	6080
Vans	1872	1647	1654
Rigid HGV	1518	1515	1542
Artic HGV	663	689	679
Total	11119	11822	11305
% speeding	52.20%	54.33%	56.14%

Table 1: vehicle count by type for each week and the percentage exceeding the speed limit

Not surprisingly, the majority of the traffic is made up of cars and vans. The traffic proportions for the three weeks are shown in figures 3, 4 and 5 below.

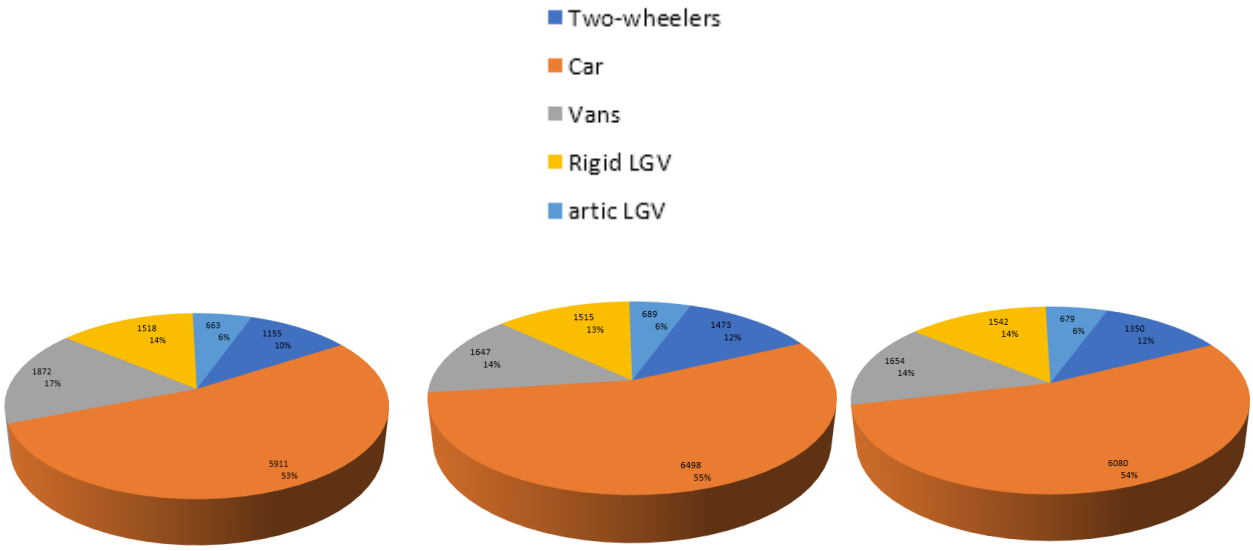

Figure 3: week 1 - breakdown of traffic by vehicle type

Figure 4: week 2 - breakdown of traffic by vehicle type

Figure 5: week 3 - breakdown of traffic by vehicle type

2.2 Week one, 20th to 26th January

Speeding is clearly an issue with over 50% of traffic exceeding the speed limit until the snowy weather at the end of the week. Table 2 shows the number of vehicles in each type exceeding the speed limit and the maximum speed (in miles per hour) recorded for each vehicle type. Sunday shows the worst figures with 73% of vehicles exceeding the speed limit. Overall, speeds between 38mph and 49mph are most common suggesting drivers are comfortable at this speed on this straight stretch of road.

	Sunday 27th Jan		Monday 28th Jan		Tuesday 29th Jan		Wednesday 30th Jan		Thursday 31st Jan		Friday 1st Feb		Saturday 2nd Feb	
	Number	Max speed	Number	Max speed	Number	Max speed	Number	Max speed	Number	Max speed	Number	Max speed	Number	Max speed
2 wheelers	67	44	186	57	228	57	200	49	215	50	39	37	5	21
Cars	159	44	843	52	1196	59	956	51	1253	52	351	48	24	34
Vans	29	47	232	48	379	54	300	44	431	52	131	43	13	29
Rigid HGV	41	41	114	50	266	55	267	57	357	53	132	39	18	30
Artic HGV	30	43	29	39	144	47	116	42	158	41	55	38	10	25
Total	326		1404		2213		1839		2414		708		70	
% speeding	47.24%%		65.1%%		54.2%%		53.0%%		49.7%%		10.3%%		2.86%%	

Table 2: week 1 – number of vehicles exceeding the speed limit and their maximum speed

Figure 6 shows the same information in a graph.

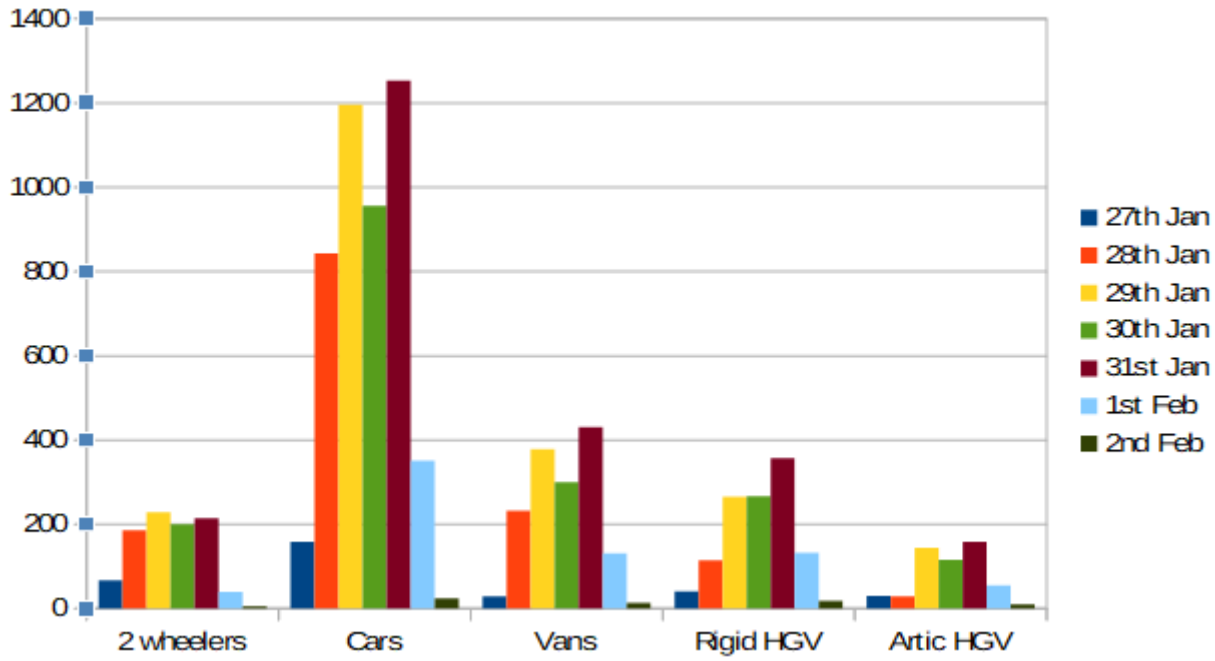

Figure 6: week 1 - number of vehicles by type exceeding the speed limit

2.3 The Snow days

Heavy snow fell overnight on Thursday 24th January making driving conditions difficult. Vehicle numbers fell to approximately a quarter of a normal day as can be seen in figures 7, 8 and table 2. On the Friday, it would not be unreasonable to expect vehicle numbers to be similar to those of Thursday but they were significantly lower. Roughly the same volume of traffic passed on Saturday and Sunday when conditions

were still difficult even though the road had been salted. By Monday, road conditions had nearly returned to normal and traffic volume rose to around 50% of the expected level. The lower level may be explained by the fact that several local schools were still closed and parents had to remain at home to look after their children.

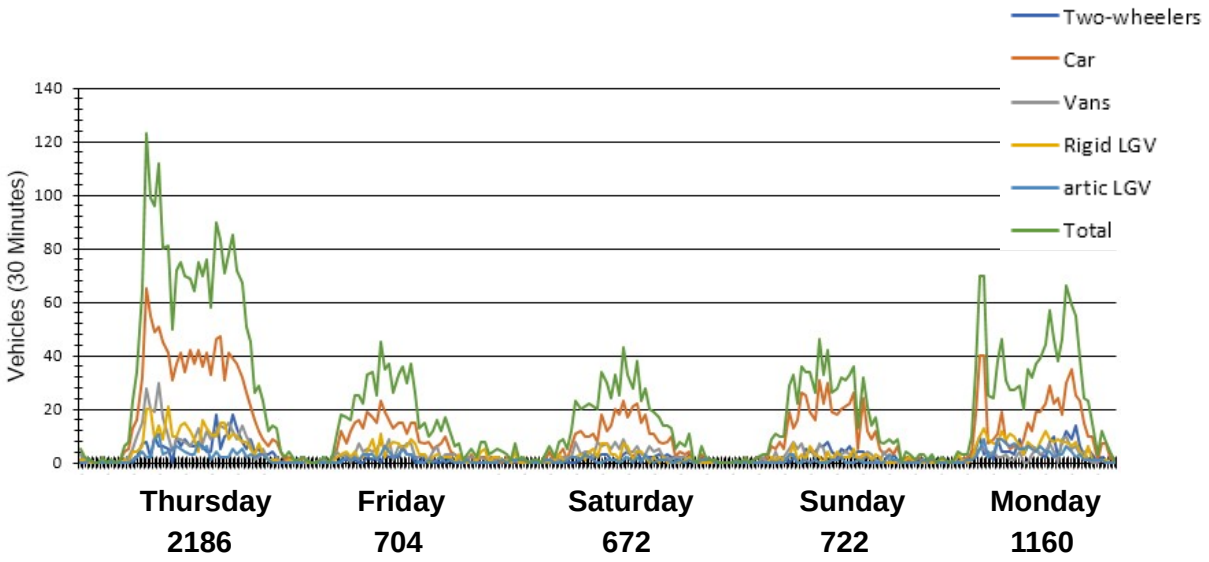

Figure 7: daily vehicle numbers during the snowy period

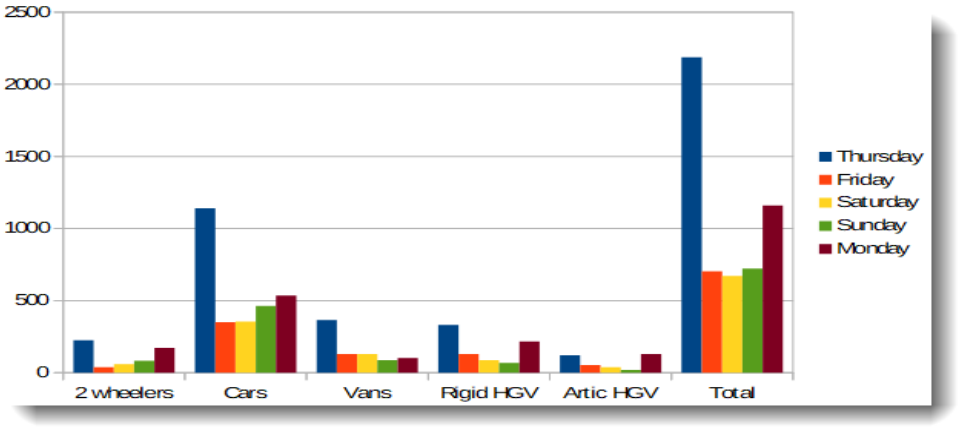

Figure 8: comparison of vehicle numbers by day during the snowy period

2.4 Week 2, 10th to 16th February

The second week showed figures much the same as the first week before the snowfall. Speeding is very much an issue with Saturday and Sunday recording the highest number of speeding traffic. Again, speeds between 38mph and 52mph are most common and slightly higher than week 1.

	Sunday 10th Feb		Monday 11th Feb		Tuesday 12th Feb		Wednesday 13th Feb		Thursday 14th Feb		Friday 15th Feb		Saturday 16th Feb	
	Number	Max speed	Number	Max speed	Number	Max speed	Number	Max speed	Number	Max speed	Number	Max speed	Number	Max speed
2 wheelers	72	43	161	52	250	47	219	56	254	51	269	53	12	36
Cars	263	58	778	55	1141	57	1187	56	988	52	1018	56	48	49
Vans	58	42	141	53	293	51	403	50	226	52	246	47	10	44
Rigid HGV	29	44	132	42	282	52	325	47	241	48	258	51	8	48
Artic HGV	14	38	31	38	131	46	149	50	104	47	112	51	4	35
Total	436		1243		2097		2283		1813		1903		82	
% speeding	65.14%		60.58%		51.90%		58.80%		58.20%		54.30%		63.40%	

Table 3: week 2 – number of vehicles exceeding the speed limit and their maximum speed

Figure 9 shows a graphical representation of table 3.

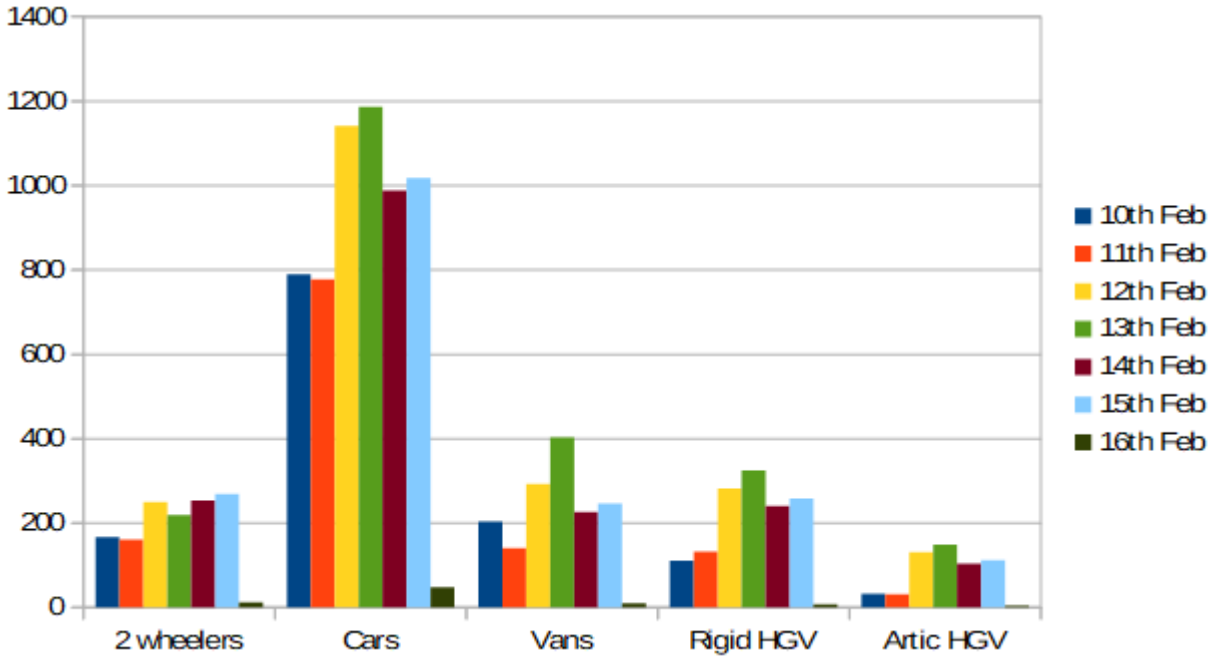

Figure 9: week 2 - number of vehicles by type exceeding the speed limit

2.5 Week 3, 16th to 23rd February

It was anticipated that results might show a difference for this week as it coincided with half term at local schools so parents may have taken holiday to be at home with their children. If this was the case, it did not show up in vehicle numbers which were slightly higher than the second week and moving slightly faster with a slightly higher proportion exceeding the speed limit. The highest recorded speed was a car travelling at 70mph on the Sunday: late for church?

	Sunday 17th Feb		Monday 18th Feb		Tuesday 19th Feb		Wednesday 20th Feb		Thursday 21st Feb		Friday 22nd Feb		Saturday 23rd Feb	
	Number	Max speed	Number	Max speed	Number	Max speed	Number	Max speed	Number	Max speed	Number	Max speed	Number	Max speed
2 wheelers	167	49	147	59	200	48	237	49	234	57	231	47	47	44
Cars	790	70	600	50	1001	55	1117	51	1022	51	1116	57	164	46
Vans	203	43	125	48	310	56	347	54	289	48	285	46	36	44
Rigid HGV	111	45	236	50	323	52	297	46	239	50	273	50	30	45
Artic HGV	33	37	114	44	121	44	120	46	119	47	134	51	18	47
Total	1304		1222		1955		2118		1903		2039		295	
% speeding	63.50%		56.50%		51.60%		58.70%		56.30%		53.30%		48.14%	

Table 4: week 3 – number of vehicles exceeding the speed limit and their maximum speed

Figure 10 shows a graphical representation of table 4.

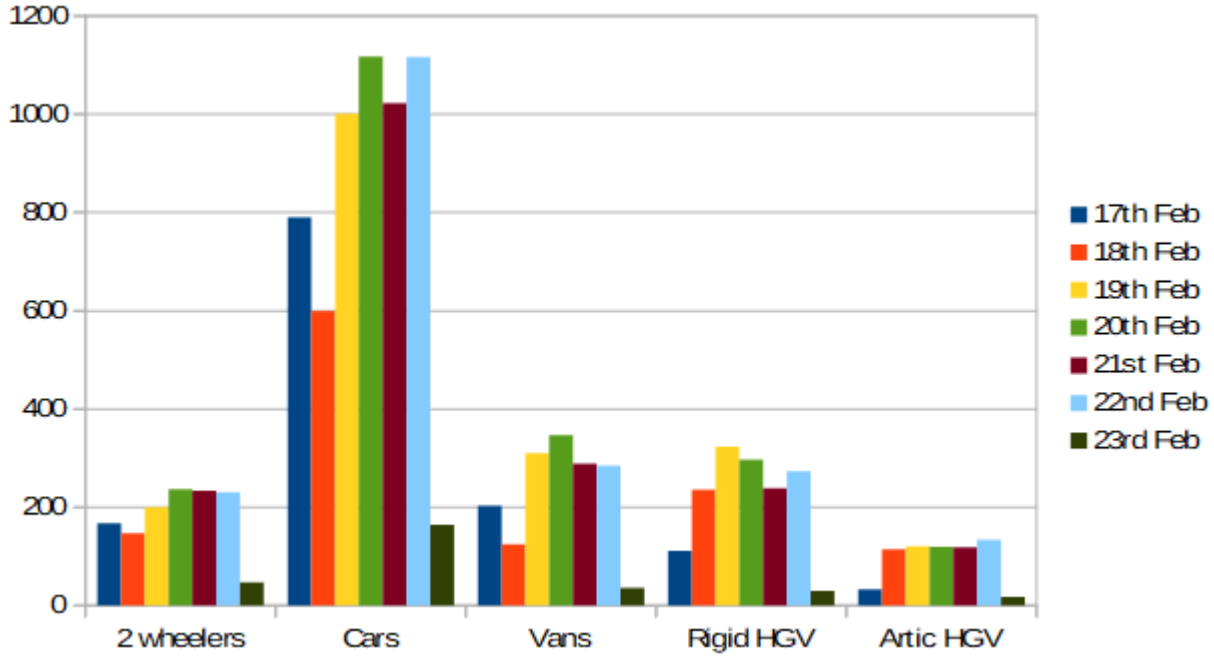

Figure 10: week 3 - number of vehicles by type exceeding the speed limit

3 Conclusions and recommendations

Speeding is clearly a significant problem with speeds in the mid 40s being common and with many speeds in the low 50s recorded. The maximum recorded speed was 70mph: over twice the speed limit! This is a stretch of straight road with good visibility as shown in figures 11 and 12. Being open to the countryside on one side, it gives the impression of not being a speed restricted road. Modern cars are easy to drive, have excellent braking and acceleration characteristics which can easily lull drivers into a false sense of security.

For drivers attempting to join St John's Road from Avon Road and Matthews Way, approaching traffic speed poses a problem. The sight line looking south from the junctions is very restricted as the road curves to the right as shown in figure 13. Consequently, traffic travelling north at speed can easily conflict with vehicles emerging from Avon Road or Matthews Way. Similar conditions exist at The Greenaways and Springfield but to a lesser extent because the sight lines are better.

Figure 11: St Johns Road looking north

Figure 12: St Johns Road looking south

Figure 13: looking south from the Avon Road junction

What can be done to address the problem? Drivers clearly need to be made aware that St John's Road is in a 30mph limit and they should moderate their speed accordingly. There is a case for the Police camera car to monitor the road with some drivers being prosecuted. However, the effect of this is likely to be limited to when the camera vehicle is present in the road, which probably has a lower priority than other roads in the area so is less likely to be visited by the camera car. Community speedwatches run on this stretch of road showed a marked moderating effect, which disappeared as soon as the equipment was removed from the

roadside. A semi-permanent deployment of an M-SID Vario on a lamp post and repeater 30mph speed limit signs at regular intervals along the road on poles or painted on the road surface may help keep drivers' awareness and moderate speeds, but as drivers get used to seeing them, speeds are likely to creep up again.

Physical restraints are likely to be most effective in controlling traffic speed. Two commonly used options are available:

- Sleeping policemen and road humps (such as are used in Pack Lane east of Fiveways Junction). These encourage drivers to slow down but have the disadvantages that vehicle suspension can be damaged and pollution is increased as drivers slow down to cross them and then accelerate away. They also require regular maintenance as traffic gradually breaks the surface down. Another disadvantage seen is some areas where humps have been deployed is that young drivers in particular, see them as an opportunity to have a "white knuckle ride" by driving over them at excessive speed.
- Pinch points are much more effective by restricting traffic flow in one direction. By using alternate pinch points with controlled traffic priority, traffic flowing in each direction is restricted. Figure 14 shows a typical example.

Figure 14: general view of a typical pinch point

These are cheaper to construct and require minimal maintenance. They can cause frustration during peak flow times with drivers having to wait for oncoming traffic. Figures 15 and 16 below show how traffic priorities are controlled.

Figure 15: traffic from this side has priority

Figure 16: traffic from this side must give way to oncoming vehicles

Construction of a pinch point is very simple. Kerb stones are laid to form a base which is filled with tarmac. Bollards are placed at each "corner" to emphasise the pinch and a pole mounted sign shows the traffic priorities. A through lane can be left clear for 2 wheelers and pedestrians.

Figure 17: showing pinch point construction and the two wheeler/pedestrian lane

It is suggested four pinch points be deployed in St John's Road as shown in figure 18. The exact position of each pinch point could be trialled using kerb stones temporarily laid on the road surface to restrict the road width. Traffic cones standing inside the barrier would make the restriction very clear. Once the optimum positions have been established, the pinch points can be made permanent.

In choosing the pinch point locations, it must be borne in mind that large agricultural vehicles and Baker's recovery lorries are regular users of this road and pinch point geometry would need to take this into account.

- The road surface should have SLOW painted on it either side of the bend where St John's Road joins The Drive. Also, the centre line of the road should be clearly marked because vehicles have a tendency to cut the corner.

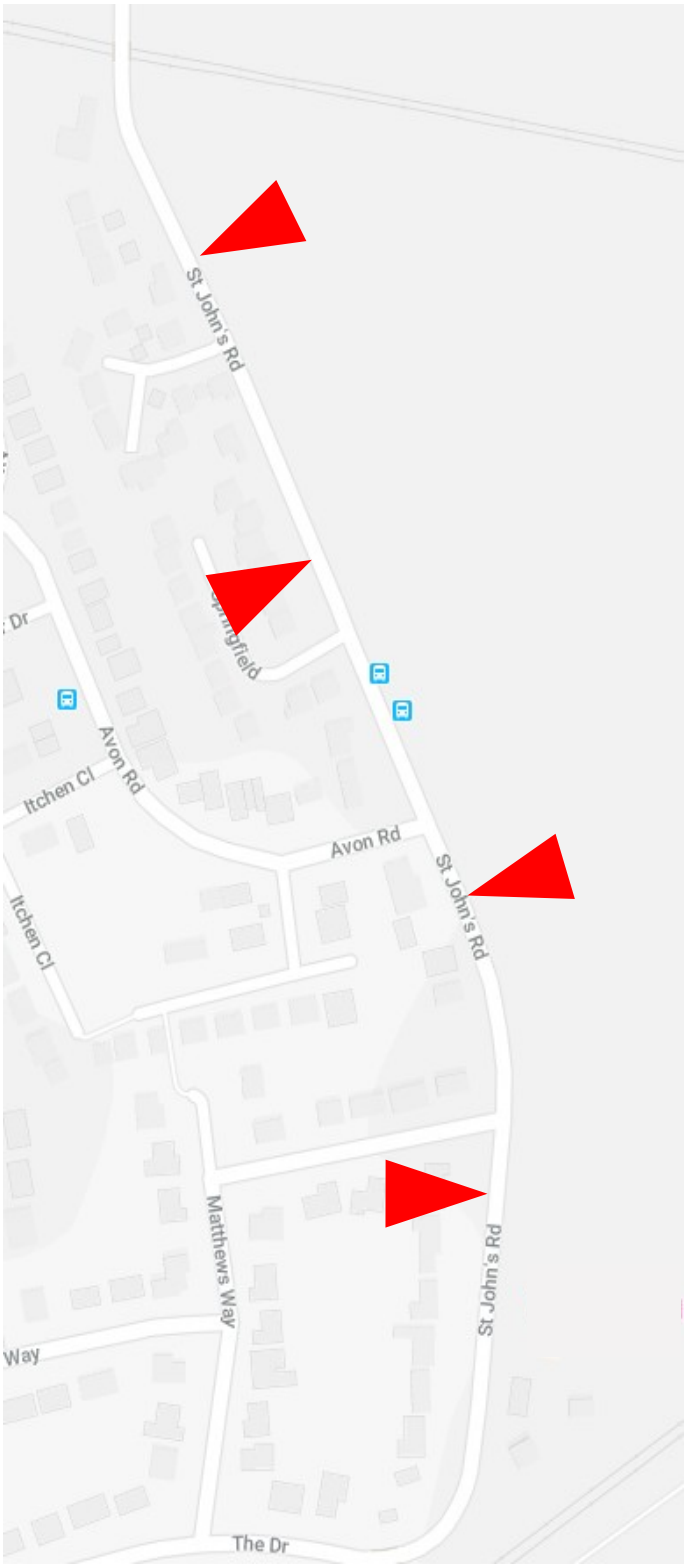

Figure 18: suggested pinch points in St John's Road

4 Viacount ll set up parameters

Default setting parameters for Viacount ll are as follows:

Mounting height – lower edge of Viacount ll device approximately 2.25m from ground level.

Distance from near kerb – approximately 1m

Measurement parameters (manufacturer's default):

	Bicycle/motor cycle	Car	Large van	Rigid HGV/bus	Artic HGV
Physical length	<2.5m	<5.2m	<9m	<12m	>12m
Measurement length on-coming traffic					
	<250	<450	<650	<870	>870
Measurement length departing traffic					
	<290	<500	<750	<850	>850

Table 5: set up parameters used in OTIS

5 Data sources

The following files were used to provide data for this report:

- vc090219.009 and vc090219.010 for the week of 26th January 2019 to 2nd February
- vc160219.011 and vc160219.012 for the week of 9th to 16th February 2019
- vc230219.013 and vc230219.014 for the week of 16th to 23rd February 2019

Data was extracted from the files using the app Viagraph 5, supplied by Via Traffic Controlling, the manufacturer of the Viacount ll device.

6 Revision history

Date	Revision no	Detail	Author
27/2/2019	1	Initial draft	Stephen Harding
6/3/2019	2	Conclusions and recommendations updated	Stephen Harding
8/3/2019	3	Statistical errors corrected. Caused by incorrect filter setting.	Stephen Harding