Fleet Road Pedestrianisation Traffic Data Technical Note

Summary

This technical note is an addendum to the data summary report. It presents an overview of the findings of the traffic data collected in order to assess the impact of traffic on local roads as a result of the pedestrianisation scheme.

A comparison of the traffic flow data before and after scheme implementation has been undertaken. Overall, average hourly traffic flows and mean speed have remained relatively stable and at similar levels to Week 3. This equates to approximately 1-2 additional vehicle a minute and generally a notable reduction in motorists speed. The capacity at junctions are also considered to be within acceptable limits at the Reading South Road junctions with Albert Street, Clarence Road and Connaught Road. These findings have been validated by weekly site visits undertaken at peak periods to assess the impact of traffic on local roads and collaborated by the findings of the gateway reviews undertaken by Hampshire County Council.

It was found that the traffic from Fleet Road had redistributed over a number of local roads, with a higher proportion using Albert Street. However, when comparing the current flows with the highway capacity of each of these roads, it can be seen that they are more than capable of sustaining increased levels of traffic. A 30% in traffic in Albert Street takes the average hourly flow from 395 vehicles in 2016 to 509 vehicles in October 2020. This is an increase of 114 cars per hour; of less than 2 cars per minute.

Using historic data from 2016 provided by HCC, it was found that traffic levels along Clarence Road and Connaught Road have returned to 2016 levels and have spare capacity to accommodate additional traffic flow. The traffic flows on Albert Street have shown a slightly different scenario whereby there has been an increase of approximately 30% above levels recorded in 2016.

It should be noted that as with Clarence Road and Connaught Road, the highway capacity of the road can accommodate further traffic flow increases and when a growth factor is applied to increase the baseline to 2020 traffic flows, the increase in traffic from the scheme is not as significant.

Comparison of traffic flows recorded in Hart with the nationally recorded figures also shows that traffic within urban roads is running at approximately 75% to 85% of pre-Covid levels, whereas rural primary roads [A30] are closely aligned with the national levels. Both types of road are following the national trend, which is showing a downward trend in flows.

It has been found that traffic within Hart is following the national trend, and whilst traffic volumes are lower along Fleet Road, the peaks are in-line nationally.

It is also seen that traffic flows are currently on a downward trend locally and nationally, which follows government announcements about continuation of working from home. This practice is currently being recognised as the ‘new norm’ with

companies realising the potential for offering home working and improved wellbeing of staff.

Road capacity

For the purposes of assessment traffic engineering and highway design, roads are categorised by various types, which have corresponding capacity dependent on road width and number of lanes. These are defined in TA 79/99.

The table below shows the roads within Fleet adjacent to the Covid-19 pedestrianisation scheme against the road types and associated hourly capacity. Also shown are the maximum 2-way average 12-hour flows, as surveyed.

Road	Road type	Capacity	Average 12-hour 2-way flow
A3013 Fleet Road	UAP4	1920	929
Church Road	UAP3	1500 & 1850	165 & 162
Albert Street	UAP3	2166	626
Clarence Road	UAP3	2166	168
Connaught Road	UAP3	2166	132

As can be seen from the table above, all roads within central Fleet area are operating within capacity.

Queuing & Junction throughput and performance

Queues lengths at junctions have a daily variability, even with the same traffic flows.

Variability in queues at junctions [and therefore capacity] is due to a number of factors: the number of vehicles attempting to turn right out of the junction that are being stopped by queues and higher flows on the main road; traffic composition, larger vehicles require more time and space to manoeuvre; traffic flow profile [uneven spread of hourly flows]; and junction geometry.

It is generally accepted that the maximum throughput for a minor arm of a priority junction is 700 vehicles per hour.

Using a simple calculation of assessment of throughput of vehicles per hour from Albert Street to Reading Road South, the expected throughput would be 609 vehicles per hour.

As can be seen from the traffic surveys, the average hourly flow towards Reading Road South along Albert Street is 234 vehicles per hour, which is well within its maximum throughput of 609 vehicles per hour. This represents a volume to capacity of ratio of 38%, which is well within acceptable capacity limits of 85%.

The same can be seen for both Clarence Road [96 vehicles per hour] and Connaught Road [50 vehicles per hour] priority junctions with Reading Road South and Aldershot Road. These represent volume to capacity ratios of 15% and 8%, which are well within acceptable capacity limits of 85%.

Traffic Flows

Overall, average hourly traffic flows and mean speed have remained relatively stable and at similar levels to Week 3.

Further analysis has been undertaken on comparing total vehicle numbers during 2020 with historic flows, to determine the effect of Covid-19 on travel behaviour.

2020-v-2016 Traffic Data Comparison

Hampshire County Council have provided traffic survey data from 2016, which was undertaken during March 2016 as part of the Residential 20mph trial.

The average hourly flows and mean speed from the March 2016 data are provided in the table below, and for comparison, the Before and During Covid-19 Pedestrian scheme data is provided separately.

Residential 20mph Pilot Traffic Data March 2016

	Average hourly flows			Speed	
	North	South	Total	North	South
Albert St	197	198	395	25.6	25.4
Clarence Rd	64	80	144	22.6	24.1
Connaught Rd	76	52	128	26.3	25.9

Before Covid-19 pedestrian scheme 2020

	Average hourly flows			Speed	
	North	South	Total	North	South
Albert St	149	123	272	25.4	26
Clarence Rd	44	54	98	26.8	26.1
Connaught Rd	57	40	97	30.6	28.7

During Covid-19 pedestrian scheme 2020 [Week 7]

	Average hourly flows			Speed	
	North	South	Total	North	South
Albert St	275	234	509	23.4	23.9
Clarence Rd	62	79	148	25.9	25.7
Connaught Rd	73	54	127	30.2	29.1

Comparing the Before Covid-19 Pedestrian scheme with March 2016, traffic flows on Albert Street and Clarence Road were 68% and Connaught Road 75% of flows measured in 2016. Speeds on Albert Street are the same, whilst Clarence Road experienced lower speed, but higher speeds were experienced on Connaught Road.

Comparing Week 7 of the Covid-19 Pedestrian scheme with March 2016, traffic flows along Albert Street increase by 29%, whilst mean speeds reduced. However, by this time, Clarence Road and Connaught Road traffic flows have returned to 2016 levels; speeds are still higher than in 2016.

Comparison of use of all vehicles: Great Britain-v-Hart

Since 1 March 2020, the government has been collecting traffic data from 275 permanent sites across the UK.

Traffic flow data captured as part of the survey for the Covid-19 Pedestrian scheme have been compared with neutral years where historic traffic data exists.

Fleet Road between Kings Road and Fleet rail station, and the A30 London Road adjacent to Blackbushe Airport have been used in this comparison. These sites have been chosen due to the availability of data.

This analysis investigates changes in traffic flows within Fleet and Hart, and whether there has been an impact in overall flows as a direct result of the scheme, or if changes are in-line with national trends.

It has been found that traffic within Hart is following the national trend, and whilst traffic volumes are lower along Fleet Road, the peaks are in-line nationally.

It is also seen that traffic flows are currently on a downward trend locally and nationally, which follows government announcements about continuation of working from home.