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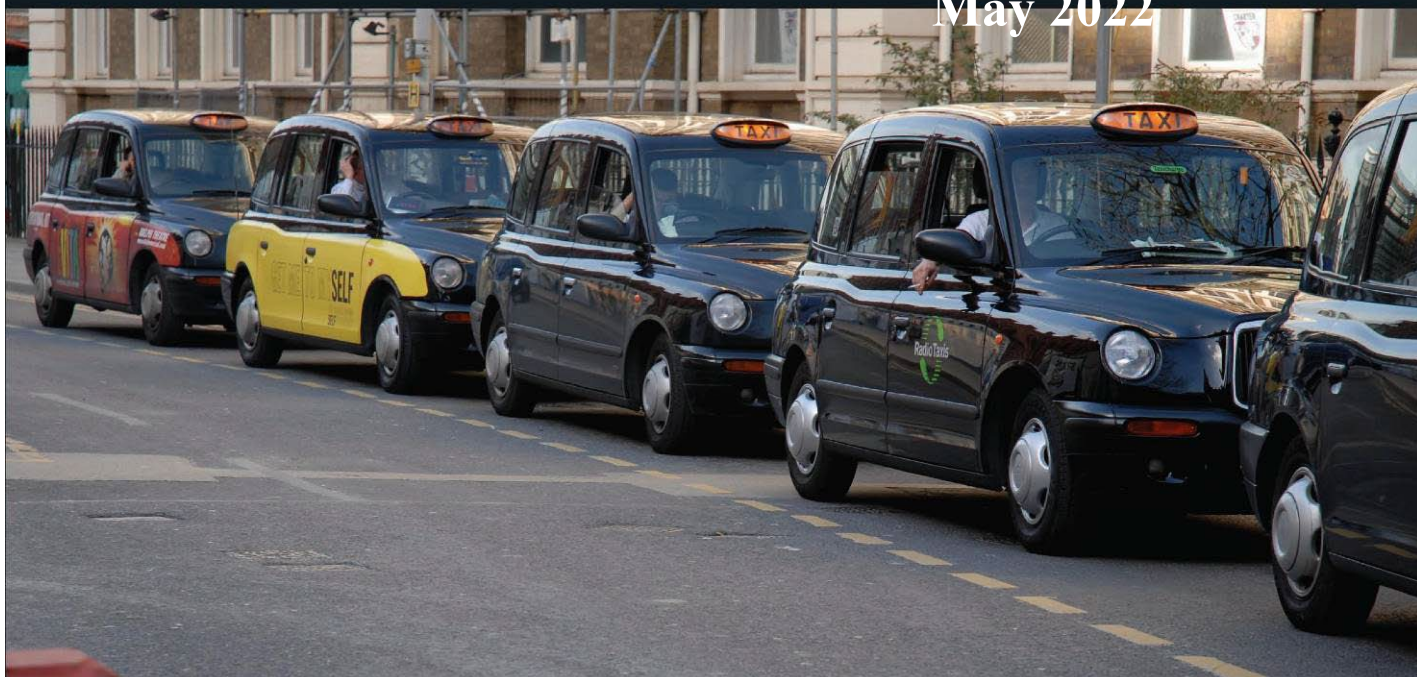
THE DATA COLLECTION SPECIALISTS

Mellor Homes Ltd

50413 – Simmondley Lane,
Glossop

Traffic, Speed, Volume and
Junction Review

May 2022



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1. Data Quality Assurance:

Data Revision: Rev. 1

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Date: 18 May 2022

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Date: 18 May 2022

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2. Methodology Background:

The formal Department for Transport overarching advice on collection and understanding of speed information was formerly based on the Design Manual for Roads and Bridges, Volume 5, Section 1, TA 22/81. This covered measures of instantaneous speed either collected by inductive loops or radar speed meters.

This was superseded in November 2019 by CA 185 Revision 0 – Vehicle Speed Measurement. This is confirmed in the Highways England DMRB Briefing Note dated 29th July 2020. The principal change was removal of the concept of wet weather journey speeds mainly as that concept was not included in any other DMRB document.

When design parameters for anything other than speed limits and traffic signal installations are to be determined based on speed measurement, journey speeds of all motor vehicle types shall be used. Speed measurements shall be taken on the approaches to the scheme extents. They shall also be in free flow conditions unless they are taken in connection with changes to an existing feature that naturally impacts the free flow of traffic. They should not be used for alignment revisions. Where there is persistent parking this can be taken as a feature that naturally impacts the free flow of traffic. Measurements should be taken in dry weather conditions.

The 85th percentile dry weather spot speed value is the speed only exceeded by 15% of the vehicles within the sample. If the sample is partially or entirely in wet weather conditions, 8kph should be added for dual carriageways and 4kph for single carriageways. (CA 185 para 3.1.1). This is because people tend to drive more slowly to account for reduced adhesion in wet weather, a fact confirmed by research.

Manual for Streets 2 (MFS2) Chapter 10 discusses calculation of stopping sight distances (SSD's). The formula to calculate SSD is:

$$Vt + v^2/2 (d+0.1a)$$

Where

V= speed m/s

t= driver perception reaction time (seconds)

d=deceleration m/s²

a=longitudinal gradient (+ for upgrades and – for downgrades)

MfS values are t=1.5 and d=0.45g (4.41 m/s) (0.375g for hgv and bus).

However, where average speeds exceed 60kph (37.5 mph), MFS2 para 10.1.13 requires the reaction time, t used to be 2.0 seconds and deceleration rates based on 0.375g (3.68 m/s) to allow for the different traffic conditions that apply.

Para 10.1.8 guides that bus/hgv SSD should not need to be assessed when the combined proportion of bus and hgv is less than 5% of traffic flow but subject to consideration of local circumstances. If speeds are over 37.5 mph there is no requirement to check regarding hgv levels since all calculations use the more pessimistic deceleration rates in any event.

3. Survey Details:

Classified volume and speed data was collected via an ATC unit positioned on Simmondley Lane just south of its roundabout junction with Dinting Vale and adjacent to the proposed access point for the development.

This location was considered to be the most appropriate and secure place for undertaking the speed survey. Data was collected from **Tuesday 3rd May 2022 until midnight on Monday 9th May 2022**. Data is shown in **hourly intervals** and by direction. A full week of information was gathered for both speed and traffic volumes.

The Vehicle Classifications used in this survey numbered in the data are as follows:

1. Pedal Cycles
2. Motorcycles
3. Passenger cars with or without trailers
4. LGVs with or without trailers
5. 2 axles rigid HGV
6. 3 axles rigid HGV
7. 4 axles rigid HGV
8. 3 axles articulated HGV
9. 4 axles articulated HGV
10. 5 or more axles articulated HGV
11. Buses and coaches

Vehicle speeds were gathered in 5mph bins for each hour, with a mean average, a standard deviation and the 85th percentile speeds calculated for each hour and for various agglomerations of hours.

4. Incidents Encountered During Surveys:

There were no known incidents with the survey. However, there was heavy traffic on the Monday morning in the area, reported on local radio.

5. Weather Conditions:

Weather conditions were fair without any significant periods of rain.

6. Map of Survey Location:

Appendix 1 provides a record of the location of the ATC tube.

Appendix 2 provides a record of the vehicle types counted in pictogram format.

Appendix 3 provides the detailed traffic and speed results by day and hour.

7. ATC Speed Survey Results:

The table below provides a summary of the observed and estimated 85th percentile speed survey results providing the range of speeds identified through each day, the all-day average and an average for the full week.

Following standard advice (CA 185 para 3.1.1) the dry 85th percentile speeds have been used – there was no evidence that the surveys had been affected by wet weather.

The table below presents a summary of the data received and the results of the analysis undertaken using the industry standard software evaluation package provided with the equipment. The count quotes 85th percentile values given that most hours have sufficient levels of traffic to enable this value to be calculated by hour.

Access Point Survey	North East bound			South West bound		
Day	Min	Max	24 hr av 85th %ile	Min	Max	24 hr av 85th %ile
Monday	17.7	21.9	19.9	18.3	21.3	19.5
Tuesday	18.8	23.5	20.3	18.6	21.7	19.7
Wednesday	17.9	23.3	19.9	17.4	21.7	19.7
Thursday	18.3	23.3	20.4	18.6	21.9	19.7
Friday	18.3	23.7	20.1	18.1	22.8	20.1
Saturday	18.8	21.9	20.8	19.2	22.6	20.4
Sunday	19	23.3	21	19.2	26.8	20.1
Average, 5-day	18.2	23.1	20.1	18.2	21.9	19.7
Average, 7-day	18.4	23.0	20.3	18.5	22.7	19.9
Average, two-way, 85th percentile	20.1					

The resulting two-way 85th percentile average speed at the point of access is 20.1 mph. This is around what might be expected given the nature of the road. The variation between directions sees south-west bound slower at 19.9 mph and north-east bound faster at 20.3 mph. North-east bound traffic is heading down-hill but towards the nearby roundabout junction for which it has to slow. Both speeds are affected by the nearby slight speed table just south of the proposed access point.

Given average speeds are below 37.5mph, there is need to consider hgv proportions, but the higher reaction time of two seconds otherwise needed can be reduced to 1.5 seconds. Hgv proportion are under 5% (just 2%) and do not need to be considered, although the road is rising to the south west at an estimated 3.37%, for which the splay length is amended.

8. Implications for Visibility Splay Requirements:

For this site, the observed average speeds in any hour are less than 37.5 mph which following guidance suggests the standards in MfS2 for higher speed roads do not need to be used.

The required SSD at the site access are therefore values of 23m to the north and 23m to the south, which are therefore the maximum that can be required. Both are much less than the speed limit related distance of 47m for a road with a 30mph speed limit.

It is normal to require that the full length of the visibility splay is within either highway land or that under the control (not necessarily direct ownership) of the developer / land owner. However, some councils are aware that implying planning blight by adhering strictly to visibility splay requirements can be hard for a council to defend at Appeal.

A footway exists although it is only about 1m wide. The road has a faintly marked centre line and has a white line painted across the current access and for some distance in front of the current property, as far as the northbound bus stop at this point. Parking is permitted on both sides of the street although in practice only the side of the development, northbound, sees parked vehicles. This further slows traffic as the road is not wide enough to allow parked vehicles and two-way traffic.

Manual for Streets 2 para 10.7.1 provides a diagram that explains how the common issue parking in visibility splays does not appear to lead to significant problems in practice.

Further detail of the application of these splays will be provided on the developing access diagrams for the proposed development and in the following Transport Statement.

9. Local Traffic Flows

The week ATC found average 5-day 24 hour flows on the road past the site some 2,475 away from the roundabout and 2,277 towards. Taking the seven day values, these reduce slightly to 2,357 and 2,192 respectively, suggesting relatively little difference between overall weekday and weekly flows. The table below provides the 24-hour flows by day.

Day	SW bound (away from roundabout)	NE bound (into roundabout)
Monday	2995	2442
Tuesday	2160	2030
Wednesday	2299	2221
Thursday	2444	2326
Friday	2478	2365
Saturday	2297	2150
Sunday	1829	1811

For the survey period, Monday flows were much higher than other days in both directions. Flows away from the roundabout are always higher than in the opposite direction. Towards the roundabout the morning peak hour was always 08:00 in the week, whereas away from the roundabout this was generally true, with the exception of 10:00 on the Tuesday.

Evening peak hours were more variable for both directions, ranging from 15:00 to 17:00 but again always higher away from the roundabout. The Thursday evening peak was at 13:00 for some reason.

The peak hourly flow into the roundabout observed was 230 in the 08:00 hour on the Thursday then 216 on the Monday. PM peak flows into the roundabout were always lower.

10. Junction Performance

Videos for the junction were observed from 06:00 to 19:00 on the Monday (the overall busiest day), and from 08:00 to 16:00 on the Saturday to understand if and when traffic into the roundabout blocked back across the proposed development entrance. During the hours observed, there was only one instance when blocking back occurred. This saw six vehicles queueing around 10:00 on the Saturday, blocking the exit for no more than a minute.

During all remaining observed periods, maximum vehicle queues did not exceed four, and usually cleared very quickly. Part of this was due to the ability for two vehicles to wait at the stop line, one turning left and the other turning right, which maximised capacity. This was the case even when there was queueing traffic on the main road in the Eastbound direction.

There is therefore no evidence that the proposed exit will be significantly affected by any blocking back. This is discussed further in the Transport Statement.