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## Hodder Grange – Highways Information and Speed Calculations

At an early stage in the project (June 2019) John Carruthers Highway & Transport Consultant visit the site to assess the access

It was confirmed that:

The existing access to the site is located on the outside of a bend on Chipping Road on the south-east side of the river bridge over the River Hodder. The existing access is 5 metres wide and set back 10 metres from the edge of the carriageway. The speed limit on Chipping Road is the national speed limit (60 mph for light vehicles on a single carriageway road), however, the road alignment (bends), serve to reduce traffic speeds to lower levels (estimated to be 30 – 40 mph, generally). The existing visibility for drivers emerging from the access is considered to be satisfactory when looking to the left across the bridge with 170 metres of visibility available at the driver's waiting position (2.4 metres from the edge of the carriageway). The visibility to the right is 55 metres when measured at the driver's waiting position because of the road curvature and vegetation.

Whilst the access (and layby) is already in use by agricultural traffic, anglers and others passing the site, it was recommended that speed surveys be undertaken at the access to confirm whether drivers were passing the site at 30mph.

Attached is the Traffic Speed Survey Calculations taken by John Carruthers on Friday 2nd August, 2019.

John Carruthers confirmed that:

Please find attached the results of the traffic speed survey showing that the design speed is 25.6 mph and, therefore, the existing visibility splay to the right at the existing access will be satisfactory (and the splay to the left is fine).

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**TRAFFIC SPEED SURVEY**

**Location : Chipping Road, Hodder Bridge**

**Date : Friday 2nd August, 2019**

**Time Period : 0930 - 1215 hrs.**

**Weather : Sunny**

**Road surface : Dry**

**Direction of Travel : South-Westbound (towards the bridge)**

Vehicle Speed (mph)	No. of Vehicles (n)	Sum of Speeds (v x n)	Sum of Speeds Squared (v <sup>2</sup> x n)
10	0	0	0
11	0	0	0
12	0	0	0
13	1	13	169
14	2	28	392
15	2	30	450
16	4	64	1024
17	6	102	1734
18	9	162	2916
19	11	209	3971
20	13	260	5200
21	15	315	6615
22	20	440	9680
23	19	437	10051
24	15	360	8640
25	17	425	10625
26	15	390	10140
27	14	378	10206
28	11	308	8624
29	9	261	7569
30	7	210	6300
31	3	93	2883
32	2	64	2048
33	1	33	1089
34	2	68	2312
35	0	0	0
36	1	36	1296
37	1	37	1369
38	0	0	0
39	0	0	0
40	0	0	0
41	0	0	0
42	0	0	0
43	0	0	0
44	0	0	0
45	0	0	0
46	0	0	0
47	0	0	0
48	0	0	0
49	0	0	0
<b>TOTAL</b>	<b>200</b>	<b>4723</b>	<b>115303</b>

**Mean Speed (m) = 23.6 mph**  
 3769.355  
 18.94148241

**Standard Deviation (s) = 4.4**

**85th Percentile Spot Speed = m+ 1.037 s = 28.1 mph**

**85th Percentile Wet Weather Journey Speed = 25.6 mph**