

TECHNICAL NOTE

PROPOSED DWELLING AT LONG MEADOW, HUGMORE LANE, WREXHAM

4TH OCTOBER 2012

REF: DR/12231

1. We are instructed to provide access advice in connection with the proposal to construct a new dwelling on land between Long Meadow and 11 Hugmore Lane in Wrexham.
2. The site location is indicated on the aerial photograph below.



3. It is proposed that the new dwelling and the existing dwelling share the existing access to Long Meadow. Both the existing dwelling and the new dwelling would benefit from a turning area suitable to allow a car to turn within the site and hence be able to enter and exit the site in forward gear.
4. Hugmore Lane has recently undergone a very significant reduction in the volume of traffic using this road. It previously provided a primary access route to the Wrexham Industrial Estate area although the route has now been closed to the Industrial Estate, following the construction of a new link road which runs parallel to Hugmore Lane.
5. Hugmore Lane forms a junction on to the A534 between Wrexham and Holt. The junction is currently signal controlled, which is a remnant of when the junction provided a principal access route to the Wrexham Industrial Estate, but we understand that there are proposals to remove the signals now that the through route to the Industrial Estate has been closed.

6. The speed limit along the A534 is derestricted although in the vicinity of the junction the speeds are less than 60mph due to the impact of the traffic signals. This may change when the signals are removed but we anticipate that the Council will provide a safe standard of priority junction in replacement for the signals.
7. Hugmore Lane is subject to the national speed limit. There are no speed limit signs at the start of Hugmore Lane and, in theory, in the absence of any notification in a change in the speed limit then the 60mph speeds allowed on the A534 would also apply on Hugmore Lane. However, Hugmore Lane is a built-up area at its northern end and has street lights within this more urban section. The national speed limit in a built up area with street lighting is 30mph and with reference to the Highway Code it is to be expected that the speed limit in the vicinity of the site would be 30mph.
8. To confirm current speeds in the vicinity of the site, a sample speed survey was undertaken on Tuesday 28th August 2012. The survey is referred to as a sample survey on the basis that over a two hour period, only 15 vehicles were recorded northbound and 13 vehicles were recorded southbound. The results of the survey are attached to this report.
9. The speed survey recorded the vast majority of speeds passing the site access to be less than 25mph. This was a result of the absence of through traffic to the industrial estate and the fact that most trips recorded involved vehicles emerging from and travelling to driveways around the site. For the rare vehicle that travelled to and from the southern section of Hugmore Lane their speeds were recorded up to 37mph.
10. Whilst Hugmore Lane remains a through route to Francis Lane, Francis Lane is a single track lane that provides access only to 2 farm complexes. It runs parallel to the A534 and serves no useful purpose to extraneous traffic.
11. During the period of the speed survey from 2.00pm to 4.00pm, the total traffic flow along Hugmore Lane was less than 20 vehicles in each direction. We understand that this represents around a 95% reduction in traffic from that experienced when the road provided access to the industrial estate. The photograph below shows the type of traffic that has now been removed from the road, which includes the virtual elimination of HGV traffic:



12. In terms of visibility at the existing access, there is some 105m visibility to the right when exiting the site and some 28m to the left. These dimensions are taken from a set back of 2.4m and measured along the nearside kerbline. The photographs below show the existing visibility:





13. As can be seen from the photographs above, there is safe visibility from the existing access to the right when exiting the site. This exceeds the requirement for traffic travelling at 37mph. To the left, there is a restriction along the nearside carriageway edge caused by the overgrown hedge along the application site frontage. Traffic travelling in the southbound traffic lane towards the site can however be seen some 70m away along the centre line of the road and the access has been proven to operate safely, even when the traffic flows were high along this road.
14. Notwithstanding the excellent safety record and the reduced traffic flows, as part of the development proposals, the applicant will remove the hedge to overcome any future maintenance issues and provide a minimum of 60m visibility along the nearside carriageway edge. On this basis the existing access will serve both the existing dwelling and the additional new dwelling and be provided with an improved level of visibility. The proposed visibility improvement would more than mitigate the impact of the level of traffic associated with the new dwelling, which is not expected to be more than a single vehicle movement in the busiest hour of the day.
15. It should be noted that there is a further hedge which is set back some 2m behind the boundary hedge. This hedge will have no impact upon the visibility from the access but will provide the continued privacy for the existing dwelling. We are advised that the second hedge was planted to increase the noise barrier from the heavy traffic flows and the need for the double hedge has now been diminished.

16. With reference to Manual for Streets and the stopping distances set out in Table 7.1, it can be found that 60m visibility is suitable for speeds of up to 37mph and that for the majority of speeds of around 25mph the visibility requirement is only 33m.
17. Overall, subject to the hedge along the site frontage being removed there are no safety issues arising from the continued use of the existing access to serve both the new dwelling and the existing dwelling and the proposed visibility improvement, achieved by removing the hedge along the site frontage, would more than mitigate the traffic impact of the new dwelling, and the proposals should therefore be supported from a highway and traffic point of view.

Calculation of 85th%ile Speeds

Location: Hugmore Lane (Northbound)

Date: Tuesday 28th August 2012

Weather Dry

Speed (mph)	Frequency	
x	f	f*x
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0
15	1	15
16	1	16
17	1	17
18	0	0
19	1	19
20	1	20
21	0	0
22	1	22
23	0	0
24	2	48
25	1	25
26	0	0
27	0	0
28	0	0
29	0	0
30	0	0
31	1	31
32	1	32
33	0	0
34	1	34
35	2	70
36	0	0
37	1	37
38	0	0
39	0	0
40	0	0
41	0	0
42	0	0
43	0	0
44	0	0
45	0	0
46	0	0
47	0	0
48	0	0
49	0	0
50	0	0
51	0	0
52	0	0
53	0	0
54	0	0
55	0	0
56	0	0
57	0	0
58	0	0
59	0	0
60	0	0
61	0	0
62	0	0
63	0	0
64	0	0
65	0	0
66	0	0
67	0	0
68	0	0
69	0	0
70	0	0
71	0	0
72	0	0
Total	15	386

Table 1

Speed (mph)	Frequency	Class Mark	x - mean	
Band	f	x	e	e*f
6.5-7.4	0	7	350.94	0.00
7.5-8.4	0	8	314.47	0.00
8.5-9.4	0	9	280.00	0.00
9.5-10.4	0	10	247.54	0.00
10.5-11.4	0	11	217.07	0.00
11.5-12.4	0	12	188.60	0.00
12.5-13.4	0	13	162.14	0.00
13.5-14.4	0	14	137.67	0.00
14.5-15.4	1	15	115.20	115.20
15.5-16.4	1	16	94.74	94.74
16.5-17.4	1	17	76.27	76.27
17.5-18.4	0	18	59.80	0.00
18.5-19.4	1	19	45.34	45.34
19.5-20.4	1	20	32.87	32.87
20.5-21.4	0	21	22.40	0.00
21.5-22.4	1	22	13.94	13.94
22.5-23.4	0	23	7.47	0.00
23.5-24.4	2	24	3.00	6.01
24.5-25.4	1	25	0.54	0.54
25.5-26.4	0	26	0.07	0.00
26.5-27.4	0	27	1.60	0.00
27.5-28.4	0	28	5.14	0.00
28.5-29.4	0	29	10.67	0.00
29.5-30.4	0	30	18.20	0.00
30.5-31.4	1	31	27.74	27.74
31.5-32.4	1	32	39.27	39.27
32.5-33.4	0	33	52.80	0.00
33.5-34.4	1	34	68.34	68.34
34.5-35.4	2	35	85.87	171.74
35.5-36.4	0	36	105.40	0.00
36.5-37.4	1	37	126.94	126.94
37.5-38.4	0	38	150.47	0.00
38.5-39.4	0	39	176.00	0.00
39.5-40.4	0	40	203.54	0.00
40.5-41.4	0	41	233.07	0.00
41.5-42.4	0	42	264.60	0.00
42.5-43.4	0	43	298.14	0.00
43.5-44.4	0	44	333.67	0.00
44.5-45.4	0	45	371.20	0.00
45.5-46.4	0	46	410.74	0.00
46.5-47.4	0	47	452.27	0.00
47.5-48.4	0	48	495.80	0.00
48.5-49.4	0	49	541.34	0.00
49.5-50.4	0	50	588.87	0.00
50.5-51.4	0	51	638.40	0.00
51.5-52.4	0	52	689.94	0.00
52.5-53.4	0	53	743.47	0.00
53.5-54.4	0	54	799.00	0.00
54.5-55.4	0	55	856.54	0.00
55.5-56.4	0	56	916.07	0.00
56.5-57.4	0	57	977.60	0.00
57.5-58.4	0	58	1041.14	0.00
58.5-59.4	0	59	1106.67	0.00
59.5-60.4	0	60	1174.20	0.00
60.5-61.4	0	61	1243.74	0.00
61.5-62.4	0	62	1315.27	0.00
62.5-63.4	0	63	1388.80	0.00
63.5-64.4	0	64	1464.34	0.00
64.5-65.4	0	65	1541.87	0.00
65.5-66.4	0	66	1621.40	0.00
66.5-67.4	0	67	1702.94	0.00
67.5-68.4	0	68	1786.47	0.00
68.5-69.4	0	69	1872.00	0.00
69.5-70.4	0	70	1959.54	0.00
70.5-71.4	0	71	2049.07	0.00
71.5-72.4	0	72	2140.60	0.00
Total	15			818.93

Table 2

Therefore:

Mean Speed = $\sum(f \cdot x) / \sum f$ 25.73 mph
SD = $\sqrt{\sum(e \cdot f) / \sum f}$ 7.648 mph

85th%ile = Mean Speed + Standard Deviation

85th%ile Wet Condition 30.88 mph
or
49.69 kph

Calculation of 85th%ile Speeds

Location: Hugmore Lane (southbound)

Date: Tuesday 28th August 2012

Weather Dry

Speed (mph)	Frequency	
x	f	f*x
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	1	12
13	0	0
14	0	0
15	0	0
16	1	16
17	0	0
18	1	18
19	0	0
20	0	0
21	0	0
22	0	0
23	1	23
24	3	72
25	2	50
26	0	0
27	0	0
28	0	0
29	1	29
30	1	30
31	1	31
32	1	32
33	0	0
34	0	0
35	0	0
36	0	0
37	0	0
38	0	0
39	0	0
40	0	0
41	0	0
42	0	0
43	0	0
44	0	0
45	0	0
46	0	0
47	0	0
48	0	0
49	0	0
50	0	0
51	0	0
52	0	0
53	0	0
54	0	0
55	0	0
56	0	0
57	0	0
58	0	0
59	0	0
60	0	0
61	0	0
62	0	0
63	0	0
64	0	0
65	0	0
66	0	0
67	0	0
68	0	0
69	0	0
70	0	0
71	0	0
72	0	0
Total	13	313

Table 1

Speed (mph)	Frequency	Class Mark	x - mean	
Band	f	x	e	e*f
6.5-7.4	0	7	291.62	0.00
7.5-8.4	0	8	258.47	0.00
8.5-9.4	0	9	227.31	0.00
9.5-10.4	0	10	198.16	0.00
10.5-11.4	0	11	171.01	0.00
11.5-12.4	1	12	145.85	145.85
12.5-13.4	0	13	122.70	0.00
13.5-14.4	0	14	101.54	0.00
14.5-15.4	0	15	82.39	0.00
15.5-16.4	1	16	65.24	65.24
16.5-17.4	0	17	50.08	0.00
17.5-18.4	1	18	36.93	36.93
18.5-19.4	0	19	25.78	0.00
19.5-20.4	0	20	16.62	0.00
20.5-21.4	0	21	9.47	0.00
21.5-22.4	0	22	4.31	0.00
22.5-23.4	1	23	1.16	1.16
23.5-24.4	3	24	0.01	0.02
24.5-25.4	2	25	0.85	1.70
25.5-26.4	0	26	3.70	0.00
26.5-27.4	0	27	8.54	0.00
27.5-28.4	0	28	15.39	0.00
28.5-29.4	1	29	24.24	24.24
29.5-30.4	1	30	35.08	35.08
30.5-31.4	1	31	47.93	47.93
31.5-32.4	1	32	62.78	62.78
32.5-33.4	0	33	79.62	0.00
33.5-34.4	0	34	98.47	0.00
34.5-35.4	0	35	119.31	0.00
35.5-36.4	0	36	142.16	0.00
36.5-37.4	0	37	167.01	0.00
37.5-38.4	0	38	193.85	0.00
38.5-39.4	0	39	222.70	0.00
39.5-40.4	0	40	253.54	0.00
40.5-41.4	0	41	286.39	0.00
41.5-42.4	0	42	321.24	0.00
42.5-43.4	0	43	358.08	0.00
43.5-44.4	0	44	396.93	0.00
44.5-45.4	0	45	437.78	0.00
45.5-46.4	0	46	480.62	0.00
46.5-47.4	0	47	525.47	0.00
47.5-48.4	0	48	572.31	0.00
48.5-49.4	0	49	621.16	0.00
49.5-50.4	0	50	672.01	0.00
50.5-51.4	0	51	724.85	0.00
51.5-52.4	0	52	779.70	0.00
52.5-53.4	0	53	836.54	0.00
53.5-54.4	0	54	895.39	0.00
54.5-55.4	0	55	956.24	0.00
55.5-56.4	0	56	1019.08	0.00
56.5-57.4	0	57	1083.93	0.00
57.5-58.4	0	58	1150.78	0.00
58.5-59.4	0	59	1219.62	0.00
59.5-60.4	0	60	1290.47	0.00
60.5-61.4	0	61	1363.31	0.00
61.5-62.4	0	62	1438.16	0.00
62.5-63.4	0	63	1515.01	0.00
63.5-64.4	0	64	1593.85	0.00
64.5-65.4	0	65	1674.70	0.00
65.5-66.4	0	66	1757.54	0.00
66.5-67.4	0	67	1842.39	0.00
67.5-68.4	0	68	1929.24	0.00
68.5-69.4	0	69	2018.08	0.00
69.5-70.4	0	70	2108.93	0.00
70.5-71.4	0	71	2201.78	0.00
71.5-72.4	0	72	2296.62	0.00
Total	13			420.92

Table 2

Therefore:

Mean Speed = sum (f*x)/x

24.08 mph

SD = SQRT(sum(e*f))/sum(f)

5.923 mph

85th%ile = Mean Speed + Standard Deviation

85th%ile Wet Condition

27.50 mph

or

44.25 kph