The Chesham Society

5-July-2015

Environmental Statement - Traffic Survey Inadequacies

A report prepared for The Chesham Society,
by
Dr J E Conboy, C.Phys, M.Inst.P, MBCS

No meaningful discussion of traffic related issues took place at the Community Forum meetings (for areas 9 and 10), because 'the traffic survey has not been completed'. The survey was finally published as part of the Environmental Statement. However, it soon became apparent that the numbers presented could not be relied upon.

Peak hour traffic flows

In ES Vol 5 TA sections, the am and pm 'peak hour' traffic flows for construction routes are tabulated. Since numbers were only published for the actual construction routes, there were many cases where these did not reflect current experience of traffic conditions, but no further analysis was possible. However, the results for one junction were obviously incorrect. This was admitted by HS2 Ltd following FOI requests from the Chesham Society.

A404-A413 Junction

The A404 carries traffic between Amersham and High Wycombe, joining the A413 Amersham bypass adjacent to Amersham hospital and the proposed vent shaft site. HS2 traffic uses the A404 to access the vent shaft roadhead. In addition, HS2 traffic between the AONB worksites and the M40 (via Beaconsfield) or M25 (continuing on the A413) also passes through this junction, which consequently is one of those most affected by the proposed works.

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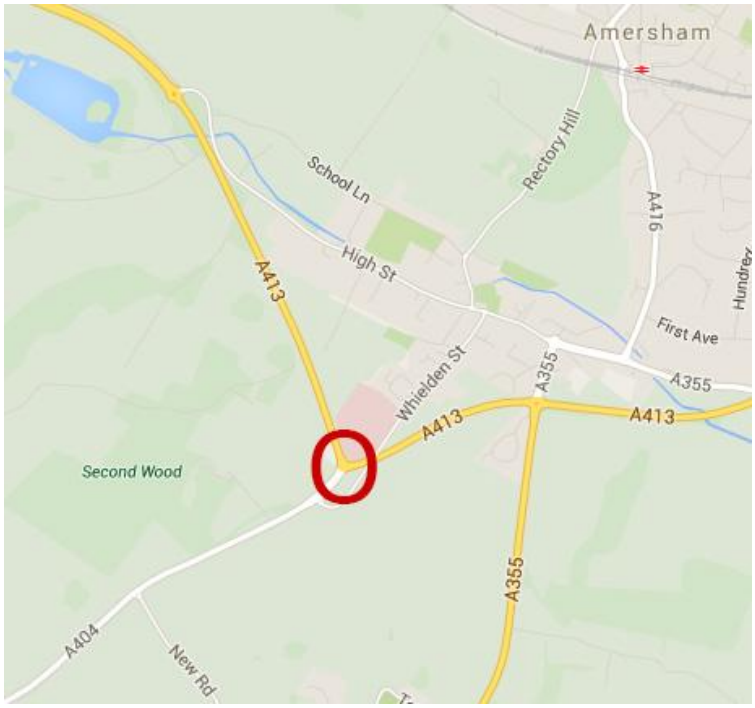


A413 – A404 junction

Table 7-30 in ES Vol 5 (TA County Assessment) gives the predicted am peak traffic flow through this junction –

Table 7-30: The Chalfonts and Amersham strategic road network construction traffic flows (vehicles) -AM peak

Location	Direction	2012 Base	2021 Base	**2021 With HS2 construction traffic**		With HS2 actual change from 2021 baseline		With HS2 % change from 2021 baseline	
		All vehicles		**All vehicles**	**HGV**	All vehicles	HGV	All vehicles	HGV
A413 Amersham Bypass, between A355 Gore Hill and A404 Whielden Lane (Amersham)	EB	1396	1539	**1556**	**101**	17	14	1%	15%
	WB	876	965	**1040**	**102**	75	14	8%	15%
A404 Whielden Lane, between A413 Amersham Bypass and Whielden Street (Amersham)	EB	874	964	**1026**	**55**	62	5	6%	11%
	WB	733	808	**813**	**11**	5	5	1%	97%
A413 Amersham Road, between A404 Whielden Lane and Hyde Lane (Little Missenden)	EB	1135	1237	**1264**	**43**	27	13	2%	44%
	WB	659	718	**839**	**26**	121	13	17%	102%

The numbers given in columns 5 & 6 ("2021 with HS2 traffic") are illustrated in figure 1

				Little Missenden	
				839 26 ^	1264 43 v
A404 Whielden Lane	1026 813	55 11	> <	122	62
				^ 102 1040	v 101 1556

Figure 1 junction traffic flows for all (blue) and HGV (red) traffic; arrows ">" show direction of flow

This shows that all three roads are predicted to carry more HGVs towards the junction than away from it; the HGV discrepancy (HGVs in – HGVs out = 62) is shown in the pale blue box, and represents 1/3rd of the 200 HGVs predicted to enter the junction. Since the feature under discussion is a junction, not a lorry park, a discrepancy close to zero would be expected.

An error of this magnitude clearly exceeds what might be expected from statistical sampling or rounding errors in a well executed survey, and reinforces the doubts which had arisen about the figures for other junctions surveyed. The reasons for the errors were investigated under the Freedom of Information act.

FOI requests 14-016.

This FOI (appendix 1) outlined the problem as stated above, and asked

> 1.Can you confirm the accuracy of the figures published in these two tables *(7-30 and 7-31),* and specifically the A413/404 junction rows ?
>
> 2.If these figures are correct, to what do you attribute the apparent sink of HGVs at this junction ?

In reply, HS2 stated

> These surveys are robust and cover an extended period…
>
> However, as identified in Annex B(iii), these counts are not, as assumed in your request for information, counts immediately adjacent to the junction of the A404/A413. In particular, the A413, London Road count is at Little Missenden, recording traffic in the vicinity of the proposed Little Missenden Vent Shaft. Consequently the calculation undertaken to assess the net flow changes at the junction of A404/A413 is not appropriate since there are a number of junctions between the A413 count at Little Missenden and the junction that would result in a significant difference between the counts.

Note that there is no reference to Annex B(iii) from the tables in Vol 5, which is in itself unhelpful in a 50000 page document set. However, the purported explanation does not hold water, since there are no roads between the junction and the survey point which could account for the discrepancy.

FOI complaint 14-016R

A complaint was submitted regarding the response to 14-106, pointing out that the discrepancy was unresolved (Appendix 2). In reply HS2 stated

> "As previously noted, the A413 count at London Road in Little Missenden and the A404 count at Whielden Lane were undertaken at the same time in September 2012 and therefore should be entirely consistent. The A413 (Amersham by-pass) count data was derived from Buckinghamshire County Council counts. Due to the primary counts used not distinguishing HGVs we had to use average HGV counts from April and May 2011.
>
> … the examination of the HGV counts shows substantial daily variation in the AM peak. For example, eastbound HGVs varied between 10 and 110 per hour and westbound between 10 and 142 per hour across the two month period examined. Although these should still present a reasonable average for the period they do show the potential week-to-week and month-to-month variation that can occur and are likely to be the cause of the differences that you have observed in the reported counts"

From which it appears that HS2 Ltd undertook a partial survey, and combined this with some results from a Bucks

CC survey taken at a different time, and which did not identify HGVs separately. Their quality control or document review processes then failed to observe that the results for one of the busiest junctions in the AONB were internally inconsistent.

Consequences

The lack of reliable traffic data has many consequences, such as

- Time which could have been spent considering ways to mitigate traffic impacts was instead spent trying to understand the discrepancies in the data
- The effect of removing HS2 traffic from the (narrower) section of the A413 between Great Missenden and Dunsmore could not be reliably calculated[1]
- Reliable figures for traffic through the hazardous Deep Mill bridge (over the A413) are not available.

Junction Assessment

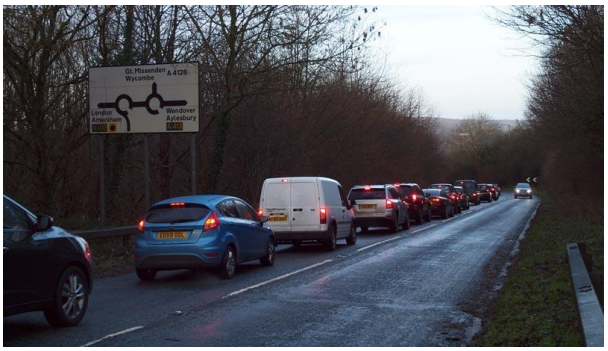
A small (and arbitrary) selection of junctions in the AONB have been assessed (see Vol 5 TR part 6), although the account of the methodology is rather vague.

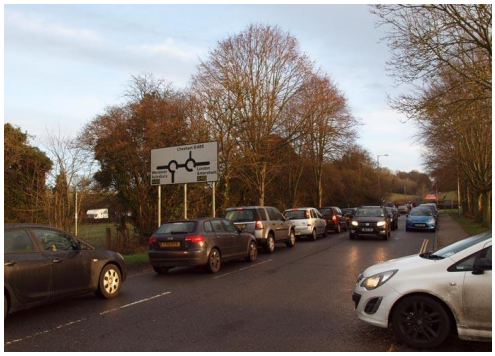
7.2.20 Junction modelling was generally undertaken using off-the-shelf traffic modelling software packages and data collected in specially commissioned surveys. However, this was not always possible and a 'rule of thumb' approach based upon professional judgment was used with junctions assessed quantitatively taking main road flow, side road flows and standard assumptions concerning, geometry, visibility, turning proportions and theoretical capacities into account. In practice, this involved relating main road flow, side road flow and 85 per cent saturation.

No junctions were assessed in CFA8, despite the heaviest peak traffic loads occurring on the Amersham Bypass. In CFA9 the A4128 (Link Road) & B485 / Frith Hill junctions have been assessed (7.5.81). The predicted maximum (AM peak) queue on the B485 increases from 1 to 2 vehicles, while the A4128 queue remains unchanged at 1 vehicle

[1] This might be done by routing traffic from Rocky Lane onwards towards the A4010, and from Bowood Lane to Mantles Wood along the A413 towards Amersham

[Tables 7-52, 7-50]. This represents a vast improvement on the current situation on these two roads –





where traffic on the B485 may back up for half a mile from the A413 roundabout.

Clearly these assessments are of no value whatsoever in predicting the congestion which will arise during the construction phase.

Conclusion

The predictions for peak hour traffic flows, and the junction assessments, are inconsistent and inadequate. There is no discussion of roads which are not construction routes, but are clearly going to be impacted by traffic seeking to avoid congestion. No attempt has been made to compare the predicted traffic flows with the nominal capacity of the roads[2].

Even this inadequate assessment indicates that HS2 construction will result in severe congestion in the AONB, yet the only mitigation considered is to encourage car sharing. This is a totally inadequate response to a situation which might have been foreseen, had a Strategic Environmental Impact Assessment been conducted before selecting the preferred route.

[2] As defined in the Design Manual for Roads and Bridges, TA 46/97 - http://www.dft.gov.uk/ha/standards/dmrb/vol5/section1/ta4697.pdf

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10/02/2014

Dear Mr Conboy,

FOI14-016

I am writing regarding your request for information received 19 January 2014. Your request has been considered under Environmental Information Regulations (EIR) 2004.

In your request you stated:

Dear HS2,

Can you clarify the peak traffic flow assessment of the A413-A404 junction, as presented in tables 7-30, 7-31 of Vol 5 TA part 6. See attached pdf for the figures in question.

At this junction, the A413 Eastbound from Little Missenden, Westbound from Gore Hill and A404 Eastbound from Whielden Street carry traffic towards the junction (roundabout). I would like to understand the predictions for '2012 with HS2 traffic' – columns F & G. I have calculated the net flow on each road, counting traffic into the junction as positive, for all traffic (column M) & for HGVs (Column N). Observe that during the AM peak, all 3 roads are predicted to carry a net flow of HGVs towards the junction. 200 HGVs flow into the junction, while only 138 flow out – a discrepancy of 30%. At the pm peak, there are 123 HGVs flowing in and 85 out, once again a 30% discrepancy.

Rows 17 (AM) & 27(PM) give the total flows for the junction, which would ideally be zero. Some sampling error is to be expected, but I regard a 30% error as excessive. If traffic flows were measured on all 3 roads at the same time, then (provided that HGVs were correctly identified), the total HGV flow across the junction would be zero, even for small sample sizes. Possibly the figures are derived from small samples taken at different times ? Alternatively, the published figures do not correctly describe your analysis ? In any event it would appear that any review of the document prior to publication has been inadequate.

My questions are -

1.Can you confirm the accuracy of the figures published in these two tables, and specifically the A413/404 junction rows ?

2.If these figures are correct, to what do you attribute the apparent sink of HGVs at this junction ?

I am sure you will appreciate that the impact of HGV traffic on local roads is of great concern to residents, and the A413-A404-A355 junctions are likely to

experience higher traffic flows than any others in the AoNB. However, it would be unwise to formulate a response to the ES based on data which appears to be internally inconsistent, so our work on the traffic assessment is severely hampered. A prompt response would allow this work to resume; if this is not possible, then we may approach the standing order committee to request an additional extension, until this and other problems with ES data are resolved.

Please be advised, the basis for the traffic counts set out in the Tables are Automatic Traffic Counts covering a two week period. These are detailed in Volume 5, Transport Assessment, Annex B(iii) (link below).

These surveys are robust and cover an extended period. The A404 and A413, London Road surveys were undertaken in September 2012, with the A413, Amersham Road survey undertaken in February 2013. Both of these periods are considered to be 'neutral' months and consequently no significant seasonal variation would be expected.

However, as identified in Annex B(iii), these counts are not, as assumed in your request for information, counts immediately adjacent to the junction of the A404/A413. In particular, the A413, London Road count is at Little Missenden, recording traffic in the vicinity of the proposed Little Missenden Vent Shaft. Consequently the calculation undertaken to assess the net flow changes at the junction of A404/A413 is not appropriate since there are a number of junctions between the A413 count at Little Missenden and the junction that would result in a significant difference between the counts.

It will be seen that in all cases there is an increase in HGV traffic due to HS2 construction – for example, in the AM peak northbound HGV traffic would be 87 HGVs without HS2 and would be 101 with the addition of HS2 construction traffic. The minimum increase in a peak period at the locations identified is 5 HGVs and the maximum increase is 14 (roundly one every four minutes). The "sink of HGVs at this junction" that is noted results from comparison of the counts from different locations and the only changes expected are these increases of 5-14 HGVs.

Figures relating to the above are set out in Table 7.23 and in Annex B(iii) of the Transport Assessment. Please find a link to this document below:

http://assets.dft.gov.uk/hs2-environmental-statement/volume-5/traffic/Vol_5_TA_%28Annex_B%28iii%29%29_BSR_CFA7-15_Part14_wm.pdf

If you are unhappy with the way we have handled your request or with the decisions made in relation to your request, you may complain in writing to HS2 Ltd at the above address. Please also see attached details of HS2 Ltd's complaints procedure and your right to complain to the Information Commissioner.

Please remember to quote reference number **FOI14-016** in any future communication relating to this request.

Kind Regards

Amber Corfield

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18/03/2014

Dear Mr Conboy,

I am writing in response to your concerns about HS2 Ltd's handling of your request for information, received on 19 January 2014 and which was responded to on 10 February 2014.

You have asked us to review the response on the basis of the following issues:

The substance of my enquiry is that the figures for traffic at the A413/A404 (Whielden Street) junction, presented in Tables 7-45 , 7-46 of Vol 5 TA part 6 do not add up, and in particular I refer here to the fact that 60 more HGVs enter the junction during the morning peak hour than leave, according to the tables. This is explained in more detail in the original submission.

In paragraph 3 of your reply, you point out that the A413 London Road count refers to the location of the proposed Little Missenden Vent Shaft, and there are a number of junctions between this location and the A404 junction. (I will leave aside any complaint at the lack of any reference to the maps in TA Annex B(iii) from the tables in Vol 5 part 6, which might have been of some assistance). On consulting a map, you will find the following junctions along the section of the A413 in question –

a) The turning into the Vent Shaft compound. It is unclear whether traffic to this compound was included in the counts

b) Mop End Lane. This rapidly degenerates into a bridleway

c)The unnamed road through Pipers Wood (locally known as Pipers Wood Lane) – which joins Weedon Hill, connecting Hyde Heath and Chesham Bois

d) Amersham High Street. This has traffic calming measures and a 7.5 T weight limit

e) A private road serving Shardeloes House and equestrian centre.

Of these only a) and c) are possible (if unlikely) destinations for the missing 60 HGVs.

The vent shaft is shown as having 55 HGV movements/day, so 15% of these during the AM peak might account for a reduction of 8 HGVs, if we assume all arrivals and no departures.

That still leaves in excess of 50 HGVs (nearly one a minute) turning off the A413 and up Pipers Wood Lane. If this is indeed a prediction of your analysis, then this unexpected shift in traffic patterns should have been bought to the attention of the affected communities (Hyde Heath and Chesham Bois) in Vol2(CFA9) section 12.

My contention is that the 5 junctions between Little Missenden and the A404 cannot be responsible for a significant difference between the HGV counts at your survey location and

the A404/413 junction, and so inconsistency in HGV numbers at that junction remains unexplained.

Paragraph 4 of your reply relates to the changes in traffic numbers caused by HS2 construction. This is not the point at issue. It makes no sense to discuss these changes when the basic numbers are inconsistent and so fail to present a credible picture of the traffic flows during the construction period.

I request an internal review of your response to FOI14-016, on the grounds that it was not adequately researched. A few minutes with Google Maps would show the explanation offered to be implausible.

As the official who dealt with this request I have re-considered the response sent, as per our complaints procedure (enclosed with our response of 10 February). The team at High Speed 2 (HS2) Ltd who provided the original information have looked again at the counts that you originally quoted and further questioned in your reply. As you highlight, further examination would suggest that the side-roads between Little Missenden and the A404/A413 junction are unlikely to fully account for the differences between the flows. Consequently, we have examined the detail of the automatic traffic counts.

As previously noted, the A413 count at London Road in Little Missenden and the A404 count at Whielden Lane were undertaken at the same time in September 2012 and therefore should be entirely consistent. The A413 (Amersham by-pass) count data was derived from Buckinghamshire County Council counts. Due to the primary counts used not distinguishing HGVs we had to use average HGV counts from April and May 2011. These were all adjusted to be consistent using standard growth factors but inevitably the precise growth along this corridor compared to these standard factors may have introduced some differences. More significantly, the examination of the HGV counts shows substantial daily variation in the AM peak. For example, eastbound HGVs varied between 10 and 110 per hour and westbound between 10 and 142 per hour across the two month period examined. Although these should still present a reasonable average for the period they do show the potential week-to-week and month-to-month variation that can occur and are likely to be the cause of the differences that you have observed in the reported counts. It should also be noted that the variation is total vehicles is much less than for HGVs.

In relation to your concern that our analysis may be predicting an "unexpected shift in traffic patterns", there are no measures being taken that would change general traffic patterns in this area. The only traffic impact of HS2 Ltd construction is of the additional HGVs and other vehicles as summarised in the response of 10 February.

Your initial query related to Tables 7-30 and 7-31 and the junction of the 404 and A413, but in your recent reply you quoted Table 7-45 and Table 7-46. We assume that you intended to refer to Tables 7-30 and 7-31. However if you have further queries relating to Tables 7-45 and 7-46 then do let us know.

If you are not content with the outcome of the internal review, you have the right to apply directly to the Information Commissioner for a decision. The Information Commissioner can be contacted at: Information Commissioner's Office, Wycliffe House, Water Lane, Wilmslow Cheshire, SK9 5AF

Please remember to quote reference number **FOI14-016R** in any future communication with us relating to this request.

Kind Regards

Amber Corfield