

## **Guildford Borough Local Plan: strategy and sites - Matters and Issues raised for version submitted for Examination**

**Hearing Statement submitted by Harry Eve (Respondent number 8573793) 8 May 2018**

Some Abbreviations :

GBC	Guildford Borough Council
GEH	A transport assessment statistic (invented by Geoffrey E. Havers)
LRN	Local Road Network
PCU	Passenger Car Unit
RFC	Ratio of Flow to Capacity
SCC	Surrey County Council
SHAR2016	Strategic Highway Assessment Report 2016
SRN	Strategic Road Network

The purpose of this additional written statement is to add further detail to some of the points raised in my original responses to the Consultations. I hope to be able to attend the hearing, and participate in the discussion, for all the matters raised under Issue 9.

I note that further transport evidence has been included after the final Consultation and updates have been made to that evidence following submission.

GBC did not answer my questions and requests for data raised during the Consultation period. I did finally receive some information via GBC (in March this year), concerning the extent of junction modelling, following a Freedom of Information Request to SCC and GBC.

### **Issue 9.2/9.3**

#### **Infrastructure and Constraints**

I have no professional experience in relation to transport assessment but I have been taking a detailed interest in the topic, and researching various aspects, since the GBC draft Local Plan emerged in 2013.

The transport modelling commissioned by GBC is not sufficiently detailed, is significantly understated, is now out of date, and consequently must be considered inadequate as a means of assessing suitability of sites for the Spatial Strategy and roads infrastructure requirements. Even so, it does indicate very significant issues arising from the proposed developments. The result is that **site selection and changes in Green Belt boundaries are being proposed without having carried out an adequate test that the sites in question are viable from the point of view of roads infrastructure**. I request a very significant constraint on the housing number in order to avoid saddling future generations with all the consequences of an understated roads infrastructure requirement as well as a reduced area of Green Belt. I request a constraint in order to retain existing Green Belt, instead of changing the boundaries and insetting villages.

I request a constraint to allow for other inadequacies in infrastructure that will be exacerbated by the proposed growth. An example of this is water supply. In this region we are under considerable, and increasing, risk of severe emergency measures being necessary simply to maintain drinking water supplies.

The consequences of failure to apply constraints include prolonged, and worsening, air pollution and an eventual demand to relieve traffic congestion by carving up Surrey's remaining countryside with new roads (at public expense), or attempting to widen existing roads through village centres and residential areas including those in neighbouring Boroughs. It is interesting to consider where such roads might go and what tourist destinations, housing, nature reserves, heritage assets and businesses would have to be sacrificed in the process of degrading Surrey's landscape. Such roads simply move the congestion on to the next pinch points – making those worse.

Strategic modelling has its limitations in any case but I have particular concerns regarding the SHAR2016, its associated Model Development Validation Report, and the Infrastructure Development Plan that is informed by it.

Turning to issues with the model itself, I have concentrated detailed examination on an area that I know best, for the time being, as it is impractical for one resident to tackle the whole area. The issues found are likely to be repeated around the Borough and especially where developments are proposed in the countryside.

#### 1. Observed data flows

I matched the observed data given in the Model Development Validation Report to local survey data in The Horsleys and Ockham for 12 links (the only links in the validation report for the B2039 (Ockham Road North & South) and Forest Road). They were based on single day surveys on 6 November 2012 (2 links) and 26 June 2014 (10 links).

For one link I was unable to match the observed flow to the three-hour average that I derived from the survey data, but only for the PM period. It might be a coincidence that I could arrive at the observed flow by summing the first two hours and dividing by three. This could have been a simple error in a vast number of calculations. The effect is that the peak hour flow is 71% higher than the observed flow input to the model.

For another link (AM period) the modelled and observed flows appeared to be transposed as the three-hour average corresponded with the modelled flow rather than the observed flow. Due to its nature, this would not affect the GEH statistic and hence the validation but it does draw attention to the fact that many of the modelled baselines flows in the links checked in this area are significantly lower than the observed flows.

Only 6 (50%) of these links passed the validation test AM and 10 (83%) PM. 85% would be required for a successful validation if this were treated as a local model validation report.

## 2. Averaging three hour flow data

Throughout the consultation I criticised the use of three-hour averaging because it severely understates peak hour flows. I note that Highways England object to the use of three-hour average flows in planning applications when considering the SRN and it is evident that the degree of understatement will be greater on the LRN because of the inclusion of the morning hour 09.00 to 10.00. GBC argue that the actual peak hour varies across the network and that is why they need to use an average. I disagree. The simplest solution would have been to model the most consistent peak hour. A far better solution would have been to model each hour, or even half hour, but this would have significant resource implications. That, however, is no excuse for relying on averages that severely understate the baseline conditions.

Congestion is only recognised when a threshold is reached and starting with a lower baseline due to three-hour averaging makes congestion less likely to appear. Where it does appear it must be assumed that it will be far worse over a peak hour. Analysis of traffic data for the LRN, where half hour periods are recorded, shows that higher peaks still are reached than those averaged over one hour.

It should be clear that if normal peak traffic conditions were modelled the forecasts would require far more mitigation than the transport assessment implies.

For the 12 links considered above, the peak hour flows in total exceeded the observed flow input to the model by 32% AM (30% allowing for the transposition) and 22% PM. The baseline modelled flows were lower still – exceeded by peak hour flows by 41% AM (43% allowing for the transposition) and 37% PM.

The model should (roughly) equate baseline modelled flows to observed flows input in total meaning that the model has further understated traffic on these local roads in the Horsleys and Ockham while making this up with an overstatement somewhere else in the Borough.

## 3. The Model Development Validation Report and junctions modelled

From my investigations into the junctions modelled, and links with observed data, for local roads I conclude that the Horsleys and Ockham area has not been modelled in sufficient detail. This is likely to be repeated throughout the Borough especially those with large model zones. This is a serious issue given the large number of sites proposed in the north-east area of the Borough which is being required to accommodate a very high proportion of the OAN.

The B2039 junctions with East Lane and Long Reach and the junction of East Lane with Long Reach are missing from the list of modelled junctions. Many of the links are missing from the validation report. The B2039 passes through the village centre with side roads to destinations including a railway station attracting peak hour traffic – but no junction is listed for this as having been modelled. East Lane does not appear in the validation report despite it serving significant amounts of existing housing and a substantial Primary School. These are serious omissions given the location of the sites proposed to be removed from the Green Belt to accommodate new housing estates in the Horsleys – in addition to the very large housing developments proposed in the Green Belt at nearby Ockham, Burnt Common and Gosden Hill.

A junction on an important cross border commuter route (involving a narrow, winding and hilly alternative to main roads, and passing through the AONB) that includes Ranmore Common Road, Crocknorth Road and Greedene is included but the associated links are missing. This suggests to me that the links exist in the model but either there is no observed data included for them, because it does not exist, or the model is still a work in progress.

Figures 4.7 and 4.8, though difficult to discern, do include a category “No count on link”. However, this does not include East Lane or Long Reach – important routes through The Horsleys - and Figures 4.7 and 4.8 suggest that these roads are not in the model at all. 135 homes proposed for site A38 have no access to the LRN according to this transport assessment. 100 homes for site A39 and 120 homes for site A40 are also close to the busy crossroads and are likely to want to use East Lane to travel to Guildford. The 40 homes for site A37 will want to use East Lane and the busy crossroads to reach East Horsley - and Long Reach as an alternative route for points to the north. Similarly, the 2000 homes proposed for site A35 will want to use East Lane and Long Reach (as well as the B2039) as routes to various destinations. The exact point at which this additional traffic will be added to the LRN within the zone is not identified – except for site A35 which has its own zone.

East Lane traffic will meet the A246 at a roundabout but this junction has not been modelled. Queuing occurs at this roundabout now, so the additional traffic will make matters far worse.

**Only 408 links appear in the validation report** whereas 275 junctions were listed in the information provided to me. I understand that some other, unidentified junctions will be in the model but without impeding flow. An ordinary road has two links between junctions – one for each direction so it is clear that only a fraction of the roads have been validated. An earlier transport assessment for GBC (dated 15 August 2013) stated in 5.8.2 that there are **1,025 modelled links** in the Borough. It seems that fewer than 40% of the modelled links have observed data that can be validated.

Tables 4.5 and 4.6 show baseline journey times, for a limited number of roads, comparing information derived from GPS-equipped vehicles with modelled times. The results show a bias towards significant understatement of journey times in the baseline model. In one example the time for a journey of less than 4km is understated by two and a half minutes. Perhaps this is due to the model not allowing for the effects of backblocking (where queuing back from one junction disrupts traffic movement at a junction or junctions upstream). This example relates to the A320 – a road connecting Guildford with Woking.

I do not see how this model can be regarded as valid. In fact the report states (4.2.4) that it fails the GEH test.

It is also important to remember that validation applies only to the baseline model. It tells us nothing about the validity of the work done in assigning new trips as a result of Local Plan developments or those arising outside the Borough.

Among the 275 junctions modelled, 68 are treated in a manner appropriate to merge junctions. However, I noticed that the 68 include the junction between Forest Road and Ockham Road South which should be a “Priority” junction with greater resistance to flow and a much earlier indication of congestion.

This type of strategic model can have the effect of diverting some traffic growth away from routes with detailed junction modelling onto routes that may be longer but are mainly link-based where the congestion is much less likely to be recognised.

#### 4. PM data

As 4.1.11 (SHAR2016) states, the PM forecasts were incomplete and an addendum report was expected at a later date. As far as I am aware this had still not appeared at the time of writing.

#### 5. Theoretical capacities

Table 4.3 Gives us RFC and flow from which we can derive the assumed capacity for the link. For Guileshill Lane the assumed capacity seems to be 1200vph but this road is single track with passing places for a considerable distance. 1200vph is one vehicle every three seconds in both directions ! Anomalies of this type mean that the model is assuming that this lane can absorb more traffic than is actually the case with consequences for identification of locations requiring mitigation.

From previous transport assessments revealing more information on link capacities it is clear that many roads on the LRN have been given capacities of 1200vph which are unachievable in reality. The consequence is that the model can soak up more traffic without having to react to congestion.

There is a curious disagreement between guidance on roads capacity and the Highway Code.

The Highway Code states (item 126) states “allow at least a two-second gap between you and the vehicle in front on roads carrying faster-moving traffic and in tunnels where visibility is reduced. The gap should be at least doubled on wet roads and increased still further on icy roads”. It seems that the transport assessment applies to fair weather only.

#### 6. Coverage

The HMA area also includes Waverley and Woking. SHAR2016 excludes information relating to the impacts on Woking. The traffic generated by this Local Plan is likely to have a serious impact on roads into the south and centre of Woking town as well as perimeter roads to reach destinations further afield.

#### Acknowledgements :

Before moving on I would like to stress that my criticisms in connection with the model should not be taken as a criticism of those who prepared it. I suspect that the situation we are in is a result of insufficient resources, modelling tools and data being available - due to lack of funding or the will to provide it. The authors of the report do identify the point that more detailed modelling should be undertaken. My own efforts to analyse the information make me fully aware that there must have been an enormous amount of work involved in acquiring data, processing it and populating the model. I thank those at SCC for the time they took to prepare the junctions modelling information received in March this year. Whenever I have requested the results of local traffic surveys from SCC this has been provided promptly if available.

Turning now to the report **“Study of Performance of A3 Trunk Road Interchanges in Guildford Urban Area to 2024 Under Development Scenarios”** (Mott MacDonald, April 2018)

In the limited time available I considered this report partly by making use of the data kindly made available to the public by Highways England (Webtris) – data that was also used by the authors of the report to supplement single day surveys.

These datasets (automatic traffic counts) do not provide comprehensive coverage but the more recent data includes flows and average speeds for fifteen minute intervals – for every day that the ATC data was collected. This reveals the period over which traffic speeds are reduced. Lower than average speeds for the link or slip road, during peak hours, imply that flow is impeded and the lowest speeds imply a slow-moving queue with blocks of traffic stationary waiting for vehicles ahead to shuffle forwards. Another consequence of lower speeds is that the flow rate is also constrained and the automatic traffic count does not reflect the traffic attempting to flow – merely the traffic that manages to pass the ATC point in the time available. A similar issue arises with junction surveys where the traffic flow is constrained.

It appears to me that data used in the report includes constrained traffic flows to which growth is added. This will also be the case for the SHAR2016 in relation to some sections of the SRN as there has been no mention of allowing for changes in queue lengths.

Given the queue lengths stated in the Mott McDonald report I am concerned that a static queue definition may have been used - counting only the maximum number of pcus (passenger car units) stationary at the front of a slow-moving queue. Clarification on this point would be appreciated. Other definitions of a queue – including the number of vehicles slowing due to stationary traffic ahead are much more realistic but difficult to measure. Such queues continue to grow while capacity is exceeded by traffic arriving at the end of the queue. The statement that mean maximum queue (MMQ) has been used needs clarification regarding the definition of the end of the queue and the period over which the mean is calculated.

The two A3 junction improvements amount to providing some extra space to park vehicles queuing to make their way into Guildford in the hope that this will be sufficient to reduce queuing back on to the A3 itself. It does nothing to ease congestion on the LRN. A particular concern is the impact of congestion on access to the Royal Surrey Hospital by ambulances (and visitors).

A difficulty with the Stoke crossroads is backblocking from other junctions to the west and south. For example traffic turning right towards Ladymead is often blocked by traffic tailing back from the Woodbridge Road junction. Traffic stranded in the Stoke junction often limits the number of vehicles that can progress westwards from the A25.

The main impacts of Local Plan developments appear to fall after 2024.

### **Issue 9.7 Creation of entirely new settlement area boundaries within the remaining Green Belt.**

In addition to my original representations opposing these aspects of the submitted Local Plan I would like to quote from the emerging Neighbourhood Plan for East Horsley with regard to Chalk Lane, a significant part of which is included within a new proposed settlement boundary described as Horsleys East Horsley (south) according to the maps in Local Plan Appendix H.

On Page 19 :

“In addition to trees and hedgerows, there are a range of other landscape features which contribute significantly to the visual beauty, appeal and interest of the rural countryside of East Horsley. These include:

- a) Sunken chalk lanes: the best example is in Chalk Lane, a single track residential road running off the A246 towards Sheepleas, where the lane has been worn down naturally over many centuries and offers a picturesque, bio-diverse and historic landscape feature, as illustrated in the photograph above; “

Incidentally, those are not my words but they are a good, concise description.

The photograph in the Neighbourhood Plan indicates the landscape quality, and the lack of footpaths and street lighting (both desirable features adding to its charm). I hope that the opportunity has been taken to visit this lane as part of the Examination process. Despite the lack of footpaths the lane is used by ramblers, and residents, as pedestrians. It is also very popular with cycling groups. However, there is no speed limit meaning that, in effect, the limit is 60mph. The lane is separated from the East Horsley settlement boundary by the very busy A246. I suggest that this area is unsuitable for additional residential development.

Given the landscape quality and biodiversity associated with this lane, and the wooded areas and open land around it, I consider that its protection should be strengthened rather than weakened. Any possible infilling opportunities are limited, if they exist at all, and would be extremely damaging to both the landscape and its biodiversity – directly contradicting the statement in section 4.6.35 concerning land that does not fall within a BOA.

I suspect that the choice of such settlement boundaries for the submitted Local Plan, for this location and others, was the result of a desktop exercise rather than detailed investigation on the ground. In my opinion this is a gratuitous reduction in planning protection in the Green Belt.

### **Issue 9.8 Impact of increasing the OAN**

An increased OAN would require a corresponding increase in the reduction to allow for constraints.