
From: malcolm@kenward.me.uk <[REDACTED]>

Sent: 01 March 2021 23:13

To: Paul High <paul.high@westsussex.gov.uk>; Liz Kitchen <liz.kitchen@westsussex.gov.uk>; Noel Atkins <Noel.Atkins@westsussex.gov.uk>; Andrew Baldwin <Andrew.Baldwin@westsussex.gov.uk>; Andrew Barrett-Miles <andrew.barrett-miles@westsussex.gov.uk>; Richard Burrett <richard.burrett@westsussex.gov.uk>; Richard Burrett <richard.burrett@westsussex.gov.uk>; Louise Goldsmith <louise.goldsmith@westsussex.gov.uk>; Sean McDonald <Sean.Mcdonald@westsussex.gov.uk>; Morwen Millson <morwen.millson@westsussex.gov.uk>; Pieter Montyn <pieter.montyn@westsussex.gov.uk>; Simon Oakley <simon.oakley@westsussex.gov.uk>; Ashvin Patel <Ashvin.Patel@westsussex.gov.uk>; Karen Sudan <Karen.Sudan@westsussex.gov.uk>

Subject: WSCC/045/20, Proposal to Remove drilling fluids and carry out an extended well test at Lower Stumble Exploration Site, off London Road, Balcombe

I apologise if you have been inundated with emails and letters regarding this matter, but I believe the information below and attached is of relevance to the debate on this planning application, and I am concerned that you may not be aware of these points.

The short notice between the release of the latest report from the Planning Department and the meeting has made it difficult for me to respond sooner, prior to the meeting tomorrow.

Firstly, earlier today I sent a copy of a document entitled **FFBRA Supplementary Traffic Objection WSCC/045/20** to a number of the senior officers of WSCC, which was submitted during the comments period for this application. I also sent them a copy of the **WSCC Transport Assessment Methodology**.

This highlighted a significant issue with regards to all planning applications for this site, from Cuadrilla's initial application to today.

The key finding was the use of an incorrect definition of what constituted "significant" HGV movements. Although the document is on the WSCC planning portal, I attach both my report and the WSCC Transport Assessment Methodology.

The key section in the WSCC Transport Assessment Methodology starts on page 2:

2. Thresholds for Requiring a Transport Assessment.

2.1.2 "Significant HGV movements per day" is defined as 20 or more one-way HGV movements per day.

My report highlights in detail where this has been taken as "in excess of 20 **two way** movements" in these planning applications.

- **Cuadrilla Planning Application – 2017 (WSCC/040/17/BA)**
- **Angus Planning Application – 2019 (WSCC/071/19)**
- **Angus Planning Application – 2020 (WSCC/045/20)**

My report highlights the impact of the use of this erroneous definition from each of the above.

Having raised this issue many months ago, I have had to wait until the planning department's latest report was issued, a little over a week ago, to discover that my report has either not been read or has simply been ignored.

The fact that WSCC has failed to apply one of its own policies for many years, is worrying and may have far reaching consequences, beyond the planning applications mentioned above.

Secondly, I have also attached a document in response to the Planning Department's further set of questions to Angus Energy, seeking additional information from them, documents which were not open for public comment. This suggests that the initial flowrate reported by Angus Energy, is no guarantee of production flowrates, as demonstrated by figures from the UKOG site at Horse Hill, Surrey, where the geology is similar.

If you have been made aware of my concerns, I apologise for the repetition.

My particular concern on the traffic issue is due to the fact that both my grandchildren, Sam (7) and Emma (5), attend Balcombe Primary school. My daughter, Sarah, is a teacher at Ardingly College, pre-prep school.

I am a member and shareholder of Repower Balcombe, a community cooperative that has now installed 7 solar systems in and around Balcombe. 5 of these installations, are on local schools, with batteries installed at Turners Hill. At a Repower session with our MP, Jeremy Quin, he expressed his support for Repower's activities and I suggest, proud of such an initiative taking place in his constituency. The cooperative was set up as an answer to the fossil fuel activities in Balcombe, for we knew there were better, more environmentally friendly, solutions to the UK's

and indeed the world's energy needs.

Malcolm Kenward (aged 72, a Balcombe resident since 1988)

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

FFBRA Supplementary Traffic Objection WSCC/045/20

Introduction

Whilst reviewing the documentation from previous applications and responses, I came upon a reference to the definition of “significant” HGV movements per day in Balcombe Parish Council’s 2019 response, which suggested a fundamental error in each of the last three planning applications, submitted firstly by Cuadrilla and subsequently by Angus Energy.

Upon further detailed analysis I found that WSCC Highways had been negligent in its responses to each of these three planning applications, by adopting the “significant” definition that both Cuadrilla and Angus Energy had stated.

This report is an analysis of each of the three planning applications and WSCC Highways’ responses to them.

I have included relevant extracts from each in italics, with my observations and comments, outlined in text boxes.

I have included two attachments to illustrate some of the consequences of this flawed interpretation of “significant” HGV movements per day. I refer to these in my report.

Attachment A

This is based on Table 1: Balcombe 2z Hydrocarbon Well Testing – Estimated HGV Movements, on page 4 of Angus Energy’s document **Traffic and Transport Effects**. Two additional columns show the **Maximum daily HGVs (one-way movements)** and a resultant **%age increase on 96 average**, 96 being the average one-way movements on the B2036 London Road, as reported in the WSCC Highways traffic survey of January 2018, by Kemps Farm, a short distance towards the village from the site.

Attachment B

This was downloaded from the WSCC Highways online system. I have amended it to show only those vehicles in Bin 5 - 2 axle, to Bin 13 - \geq 7Axle multi. The actual vehicle counts have then been expressed as a percentage of the relevant total for each of the 4 time periods. This shows that 2 axle vehicles form 83% of all HGV traffic, with 3 axle forming 10%.

M Kenward
Troy Cottage
Deanland Road
Balcombe
West Sussex
RH17 6LX

Cuadrilla Planning Application – 2017 (WSCC/040/17/BA)

Ref: Cuadrilla - Planning Statement

This refers traffic matters to the Environmental Report below.

Ref: Cuadrilla – Environmental Report

8.2 **Legislation, Policy and Guidance**

8.2.1 *The relevant guidance which has been used to assess the effects of the proposed development comprises the following:*

- *National Planning Policy Framework (DCLG, 2012);*
- *Planning Practice Guidance (DCLG, 2016); and*
- *WSCC Transport Assessment Methodology*

8.2.1.1 *National guidance recommends that a transport assessment should be submitted where a development generates significant amounts of transport movements. Referring to the WSCC methodology, this defines significant to be in excess of 20 HGV movements per day.*

The above does not report the exact wording on that contained in the WSCC Transport Assessment Methodology. See below for the full definition.

From this point on Cuadrilla and then Angus Energy have relied on this being two-way rather than one-way. And WSCC Highways have gone along with this incorrect definition of “significant HGV movements per day”. At best this was an oversight by WSCC Highways.

Ref: Cuadrilla - Appendix 8.2 – Predicted Traffic Movements

This contains a Gantt chart laying out the predicted HGV traffic over the flow test period.

Ref: WSCC Highways response 2

Transport Assessment

A Transport Assessment (TA) has not been submitted in support of the application as the applicant considers that the site will not generate a significant number of vehicular or HGV movements. Appendix (b) of the Department for Transport publication ‘Guidance on Transport Assessments’ indicates that a Transport Assessment should be submitted where there a development generates a ‘significant number of HGV movements’. This document has been recently archived and replaced by guidance in paragraph 32 of the National Planning Policy Framework and paragraph 13 of the Planning Practice Guidance which requires a TA to be submitted where developments generate significant amounts of transport movements. In the absence of a clear definition from the National guidance, the LHA uses the definition set out in the WSCC Transport Assessment Methodology where significant is considered to be in excess of 20 HGV movements per day.

The environmental report details that only on two days would the site would be expected to generate 20 or more two way HGV trips on 2 days during the construction period.

This last paragraph is where the mistake was made by WSCC Highways. It states *20 or more two way HGV trips*, whereas the WSCC Transport Assessment Methodology specifically states in section **2 Thresholds for requiring a Transport Assessment**

"Significant HGV movements per day" is defined as 20 or more one-way HGV movements per day

This should therefore have triggered the need for a full **Transport Assessment** meeting all the additional criteria it defines which are required for seeking planning approval.

This document also states:

10.6 Environmental Impact of Development Traffic 10.6.1 The TA must comment on environmental impacts of traffic including noise, vibration and emissions where increases in traffic flow of over 20% are predicted on any highway or where the development generates any additional HGV flows through a residential area or on a rural lane or where the development is within or adjacent to a designated Air Quality Management Area (AQMA).

The report takes no account of traffic composition; the sizes of the HGVs Cuadrilla will be using versus those that typically appear on that stretch of the road, applying a simple total HGV %age increase.

Consequently, WSCC Highways should have objected to this planning application.

Angus Planning Application – 2019 (WSCC/071/19)

Ref: Angus Energy – Planning Statement

9.3 *Other Material Considerations National Planning Policy Framework (February 2019)*

9.3.30 *PPG: Air Quality notes that when deciding whether air quality is relevant to a planning application, considerations could include whether the development would (in summary): significantly affect traffic (through congestion, volumes, speed, or traffic composition on local roads); introducing new point sources of air pollution; give rise to potentially unacceptable impact (such as dust) during construction; or affect biodiversity (paragraph 5).*

Note the term “traffic composition” which should require a proper comparison of typical classifications of vehicles with those proposed rather than a simple comparison of volumes. A six axle articulated HGV is not directly comparable with the smallest two axle HGV classification in terms of both impact on local traffic and noise and air pollution levels.

10.2 *Highways Capacity and Road Safety*

Policy Context and Consideration of Previous Planning Application

10.2.1 *With regards to transport, Policy M20 of the JMLP sets out planning policy regarding highway capacity and road safety.*

10.2.2 *Policy M20 part c criteria (ii) sets out that where the need for road transport is needed: “vehicle movements associated with the development will not have an unacceptable impact on the capacity of the highway network”. It should be noted that, West Sussex County Council Highways did not raise any objections for the previous scheme (ref: WSCC/040/17/BA), subject to a condition requiring a Transport Management Plan. Within the response it was considered that increase in vehicle movements is not sufficient to materially impact on the operation of the highway network safety.*

10.2.3 *Vehicle movements as part of this application are largely the same as the previous application and therefore, will not materially impact on the capacity or safety of the highway network. In terms of phase 1 vehicle movements, these are anticipated to be Angus Energy Weald Basin No.3 Ltd Balcombe Hydrocarbon Exploration Site Supporting Planning Statement 34 September 2019 less than that approved under planning application ref: WSCC/040/17/BA as they will not include the full testing kit, only a minimal spread until the phase 1 operations are complete. However, as a maximum case scenario, the movements have been assessed in the accompanying Transport Technical Note (discussed below) as the same as approved under the previous application.*

Technical Report – Traffic and Transport Summary

10.2.8 *A technical note was produced by RSK consultants Ltd – dated 16th August 2019, which sets out the effects that the proposed development is likely to have on traffic flows within the local area. A summary of the report is as follows:*

10.2.9 *This Technical Report provides a summary of the likely increase in traffic flows associated with the proposed development. Utilising data provided by Angus it is considered that the proposed operations will have a negligible effect on the local road network and no greater than that previously approved for flow testing operations.*

10.4.4 *In terms of planning application ref: WSCC/040/17/BA with regards air quality, the Council considered that the development has the potential to result in impacts on air quality through the*

flare, and an increase in vehicles travelling to and from the site. However, emissions from the flare are controlled by the Environmental Permit which applies to the operations. The potential impact upon amenity and air quality as a result of increased vehicle numbers is not considered to be significant, as numbers are relatively low, on B- and A-roads, and for a temporary period.

10.6.1 The TA must comment on environmental impacts of traffic including noise, vibration and emissions where increases in traffic flow of over 20% are predicted on any highway or where the development generates any additional HGV flows through a residential area or on a rural lane or where the development is within or adjacent to a designated Air Quality Management Area (AQMA).

Ref: Angus Energy – Traffic and Transport Effects

1.3 Legislation, Policy and Guidance

The relevant guidance which has been used to assess the effects of the proposed development comprises the following: • National Planning Policy Framework (DCLG, 2019); • Planning Practice Guidance (DCLG, 2016); and • WSCC Transport Assessment Methodology 2 National guidance recommends that a transport assessment should be submitted where a development generates significant amounts of transport movements. Referring to the WSCC methodology, this defines significant to be in excess of 20 HGV movements per day.

1.6 Mitigation

Although there is no discernible effect on the traffic flow as a result of the proposed operations a TMP has been developed (Appendix 1) to ensure that HGVs only use appropriate routes to access the site.

1.7 Predicted Effects

(Note: A table provides estimated HGV movements plus the maximum daily HGV movements, which are: 20 / 23 / 20 / 23 / 4 two-way vehicle movements)

As discussed above, these figures were examined to identify the maximum volume of HGVs on any given day with consideration for the duration of such an effect. They have also been compared with the previous consent to determine the scale of impact with what has already been considered acceptable.

Given that these vehicle movements are the same as previously consented, it is considered that the existing site access could accommodate the proposed development without any further improvements. It is also expected that the level of traffic generated by the proposed development would be likely to have a negligible impact on the local highway network.

1.8 Conclusion

This assessment provides a summary of the likely increase in traffic flows associated with the proposed development. Utilising data provided by Angus it is considered that the proposed operations will have a negligible effect on the local road network and no greater than that previously approved for flow testing operations.

The proposed mitigation measures, comprising good practice preparation of a TMP, should be sufficient to overcome any concerns raised over increased HGV and non-HGV movements generated during the proposed operations.

All the above points from this application rely on a previous WSCC Highways 'no objection' response, which, as demonstrated early, was based on an incorrect definition of "significant" HGV movements per day.

Question

4.1.4 Heavy goods vehicles are those over 7.5 tonnes and can be identified by the high visibility markers (red and orange stripes) on the rear of the vehicles.

The above line is from Appendix 1 – Traffic Management Plan

Are the 83% 2 axle vehicles from the WSCC traffic survey all HGVs, given this 7.5 Tonnes definition by Angus Energy? Or indeed the 3 axle vehicles?

Ref: WSCC Highways response

Summary

Having reviewed the technical documents submitted in support of the application, and in utilising documents relating to previous applications/permissions on the site, no objection is raised subject to conditions.

Transport Assessment

A traffic and transport technical note has been submitted by the applicant. The report details that the trip generation would be largely the same as those approved under planning ref WSCC/040/17/BA .

Existing Traffic/Trip Generation

A January 2018 traffic survey ref: 00004431 in close proximity to the site access is available to view on the WSCC Traffic Monitoring database. The survey details the 5 day average flow is 3122 vehicles over a 24 hr period. Of the average 3122 vehicles, 96 daily movements are by HGVs.

The following table replicates the information that which has been provided for previous applications on the site.

Activity	Timescale	Total two way movements	Maximum Per Day (two way movements)	% increase in HGV flows
Mobilisation / equipment set up	1 week	65	20	21
Pumping (removal of drilling fluid)	1 week	97	23	24
Mobilisation / equipment set up	1 week	65	20	21
Flow Test	52 to 156 weeks	When Flowing: Approximately 97 two-way movements. This equates to an average of 6 two-way vehicle movements per day. When Shut-in: Approximately 8 two-way movements. This equates to an average of 2 two-way vehicle movements per day.	23 4	24 Average 5 4

Given the temporary nature of the movement and the limited average increase on existing HGV traffic for the duration of the flow test it is not considered that the proposal will have a material impact on the operation of the network.

All the above points rely on a previous WSCC Highways 'no objection' response, which, as demonstrated early, was based on an incorrect definition of "significant" HGV movements per day.

Despite this error being pointed out by Balcombe Parish Council in its response to the now withdrawn planning application, both Angus Energy and WSCC Highways have continued to take "significant" HGV movements as meaning in excess of 20 two-way rather than the 20 or more one-way, as defined in WSCC Transport Assessment Methodology.

Is this an attempt by WSCC Highways to cover up for its earlier mistake simply by perpetuating the problem, hoping that no one will spot it, or have they applied insufficient expertise to their response?

The % increase in HGV flows in the table above are all out. Each should be double to: 42% ; 48% ; 42% ; 48% ; 8%.

Two-way movements have been calculated as a percentage of the 96 one-way movements per day from the WSCC Traffic survey, which shows a combination of both North and South vehicle movements.

WSCC Highways should have objected to this application as it is based on the incorrect interpretation of "significant" HGV movements.

WSCC Highways should have objected to this application on the grounds that it met the criteria for a full TA.

WSCC should have refused this application based on the erroneous use of an incorrect definition of what constitutes "significant" HGV movements per day.

WSCC should refuse this application as WSCC Highways have incorrectly calculated the % increase in HGV flows.

Angus Planning Application – 2020 (WSCC/045/20)

Ref: Angus Energy- Planning Statement

8.6.4 Previous application, WSCC/071/19, Committee Report, 24th March 2020 concluded that, “the increase in HGV traffic would not be significant in highways terms, and would not result in an unacceptable impact on highway safety, or a severe impact on the road network. WSCC Highways Officers raise no objection to the proposal, concluding that the increase in vehicle movements is not sufficient to materially impact on the operation of the highway network in safety or capacity terms, subject to the imposition of a condition requiring the submission and approval of a Traffic Management Plan.”

Note there is no reference to 20 HGV movements; instead Angus Energy are relying on the flawed response from WSCC Highway on WSCC/071/19, the withdrawn application.

This incorrect interpretation of “significant” is also used to claim that *the impact of operational phase traffic on local air quality have been considered to be negligible*. This would have to be included in a full Traffic Assessment

Ref: Angus Energy Traffic and Transport Effects

1.5 Legislation, Policy and Guidance

The relevant guidance which has been used to assess the effects of the proposed development comprises the following:

- National Planning Policy Framework (DCLG, 2019);
- Planning Practice Guidance (DCLG, 2016); and
- WSCC Transport Assessment Methodology

National guidance recommends that a transport assessment should be submitted where a development generates significant amounts of transport movements. Referring to the WSCC methodology, this defines significant to be in excess of 20 HGV movements per day.

As in Cuadrilla’s 2017 application, this continues to wrongly state WSCC Highway’s definition of “significant” HGV movements per day.

A further error with this application is that their document entitled **Appendix 1 – Traffic Management Plan**, is identical to that submitted as part of the 2019 application. It therefore does not reflect the changes made to HGV movements in the **Traffic and Transport Effects** document. Approval of the application presumably means approval of this Appendix., which still refers to:

Stage 2 – Flow Testing – 52 -156 weeks

i.e. It still refers to a **3 year testing period**.

Ref: WSCC Highways response 2

The application is for the removal of drilling fluids and to carry out an extended well test at Lower Stumble Exploration Site, off London Road, Balcombe. The application is similar to form to that of ref: WSCC/071/19 1) Pumping out previously used drilling fluids to ascertain any oil flow (up to 4 weeks), 2) Should oil be seen to flow, an extended well test at Lower Stumble Exploration Site. London Road, Balcombe in which the highway authority raised no objection subject to conditions. The application was withdrawn prior to determination.

Having reviewed the technical documents submitted in support of the application, and in utilising documents relating to previous applications/permissions on the site, no objection is raised subject to conditions.

A transport note has been submitted with the application which details the trip generation, this would largely be the same as accepted and approved with regard to a previous application at the site ref WSCC/040/17/BA.

There are significant differences between this planning application and the 2019 application and yet WSCC ignores this fact.

I find it hard to believe that WSCC Highways has read this application, or if so, has failed to compare it with the 2017 and 2019 applications to identify any differences.

Trip Generation The estimated HGV movements are detailed within Table 1 of the Transport Note. The maximum daily HGV two-way movements per day are 16 during 3 weeks of the 86week timescale, during 62 weeks of the timescale HGV flows would be at or below 4 HGV two-way movements.

Given the temporary nature of the movement and the limited average increase on existing HGV traffic for the duration of the flow test it is not considered that the proposal will have a material impact on the operation of the network.

WSSC Highways notes the maximum daily HGV two-way movements as 16, but has failed to recognize that this represents 32 one-way movements, exceeding their own definition of “significant” by 12, a 60% increase on what is deemed “significant” by WSSC.

See attachment A for a corrected Estimated HGV movements table.

The average increase on existing HGV traffic fails to take into account that by far the majority of typical HGV movements comprises of 83% of 2 axle HGVs, the smallest classification, and 10% of 3 axle HGVs, the 2nd smallest classification.

See attachment B for a table of %age of HGVs by classification, based on a WSSC Highways traffic survey.

This application should be objected to by WSSC Highways:

- **It fails to apply the correct meaning of “significant” to HGV traffic movements, as defined in their own document - WSSC Transport Assessment Methodology.**
- **The application meets the criteria for requiring a full TA.**
- **The application includes an Appendix 1 – Traffic Management Plan which gives different HGV movements to that in the Traffic and Transport Effects document.**

WSSC should therefore reject this application for the following reasons:

- **Angus Energy have incorrectly stated WSSC’s methodology for assessing “significant” HGV movements.**
- **The application includes a document, Appendix 1 – Traffic Management Plan, which does not match with the contents of the Traffic and Transport Effects document, for doing so would seem to approve a 3 year testing period.**
- **WSSC Highways has failed in its duty to apply its own methods correctly when assessing “significant” HGV traffic movements**
- **WSSC Highways has failed to assess how this application will alter the traffic composition on local roads; i.e. that by far the majority of existing HGV traffic is of the smallest 2 axle and 3 axle classifications, being 83% and 10% respectively, based on a WSSC Traffic survey in January 2018.**
- **WSSC Highways has simply relied upon its previous approvals using the same flawed interpretation of its own methodology for assessing “significant” and has not assessed the application correctly.**
- **WSSC Highways has been negligent in not noticing that Appendix 1 – Traffic Management Plan, contains details that are counter to that in Angus Energy’s Traffic and Transport Effects document.**

I suggest there are grounds for a formal complaint on the performance of WSSC Highways in regard to their assessment of this application and of the previous applications in 2017 and 2019.

Attachment A

Phase	Activity	Approximate Timescale (weeks)	Estimated HGVs over period (two-way movements)	Maximum daily HGVs (two-way movements)	Average HGVs per week (two way movements)	Maximum daily HGVs (one-way movements) <i>See Note 1</i>	%age increase on 96 average <i>See Note 2</i>
1	Mobilisation / equipment set-up	1	56	16	56	32	33%
	Pumping (removal of drilling fluids)	2	40	4	20	8	8%
	Demobilisation of equipment	1	56	14	56	28	29%
2	Mobilisation of civil engineering	1	34	14	34	28	29%
	Earthworks and membrane installation	7	112	4	16	8	8%
	Demobilisation of civil engineering	1	34	8	34	16	17%
3	Mobilisation of well test equipment	1	56	16	56	32	33%
	Mechanically lift well / natural flow	53	424	2	8	4	4%
	Contingency N2 lift	2	72	12	36	24	25%
	Contingency treatment (acid wash)	2	65	12	34	24	25%
	Contingency install (install plug)	2	60	12	30	24	25%
	Demobilisation of well test equipment	1	56	16	56	32	33%
4	Plug and decommission well	4	168	12	42	24	25%
	Restoration	8	352	10	10	20	21%
Total estimated HGV two-way movements			1,585				
Total estimated HGV one-way movements			3,170				
Notes:							
1. "Significant HGV movements per day" is defined as 20 or more one-way HGV movements per day							
<i>Source: WSCC Transport Assessment Methodology</i>							
Percentages in red are those that are deemed "Significant" using the above criteria.							
2. The 96 '5 day average' is over a 24 hr period.							
<i>Source: WSCC Consultation, Highways Authority. WSCC/071/19 (Application withdrawn by Angus energy)</i>							
HGV movements occur 07:30hrs - 18:30hrs Weekdays, less 45mins each @school opening & closing, = 11.5 hrs							
Saturdays 08:00 - 13 00. No movements on Sundays and Bank holidays							
The percentage increase figures shown are therefore probably an under-estimate of the real increase.							

Attachment B

Site Number		00004431	Site Refer		B2036007L01	Grid Ref		531097,128925		
BALCOMBE, B2036, LONDON RD, S. OF KEMPS FARM										
Classification Report (FHWA 13)				08 January 2018				Channel: Total Flow		
	Bin 5 2AxSng	Bin 6 3AxSng	Bin 7 4AxSng	Bin 8 <=4AxDbI	Bin 9 5AxDbI	Bin 10 >=6AxDbI	Bin 11 5AxMulti	Bin 12 6AxMulti	Bin 13 >=7AxMul	
00:00	1%	0	0	0	0	0	0	0	0	0
01:00	0	0	0	1%	0	0	0	0	0	0
02:00	1%	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0
04:00	1%	0	0	0	0	0	0	0	0	0
05:00	1%	0	0	0	0	0	0	0	0	0
06:00	0	0	0	1%	0	0	0	0	0	0
07:00	13%	1%	0	0	0	0	0	0	0	0
08:00	8%	2%	0	0	0	0	0	0	1%	0
09:00	4%	3%	0	1%	0	0	0	0	0	0
10:00	4%	3%	0	0	1%	0	0	0	0	0
11:00	6%	0	0	0	0	0	0	0	0	0
12:00	8%	0	0	1%	0	0	0	0	0	0
13:00	4%	0	0	0	0	0	0	0	0	0
14:00	6%	2%	0	1%	0	0	0	0	0	0
15:00	12%	0	0	1%	0	0	0	0	0	0
16:00	5%	0	0	0	0	0	0	0	0	0
17:00	4%	0	0	0	0	0	0	0	0	0
18:00	3%	0	0	0	0	0	0	0	0	0
19:00	2%	0	0	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0	0	0	0
23:00	1%	0	0	0	0	0	0	0	0	0
Totals										
12H(7-19)	83%	11%	0	4%	1%	0	0	0	1%	
16H(6-22)	83%	10%	0	5%	1%	0	0	0	1%	
18H(6-24)	83%	10%	0	5%	1%	0	0	0	1%	
24H(0-24)	83%	10%	0	5%	1%	0	0	0	1%	
AM Peak	07:00	10:00	11:00	09:00	10:00	11:00	11:00	11:00	08:00	
	14	3	0	1	1	0	0	0	1	
PM Peak	15:00	14:00	23:00	15:00	23:00	23:00	23:00	23:00	23:00	
	13	2	0	1	0	0	0	0	0	
West Sussex County Council						VDA-net R2 17/09/2020				
%age of each type of HGV during the WSCC survey period.										

West Sussex County Council: Transport Assessment Methodology

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1. Introduction

- 1.1 This guidance is specific to the preparation of transport assessments within West Sussex. It complements the national guidance provided by [PPG13](#) and the Department for Transport (DfT) and Department for Communities and Local Government's (DCLG) [Guidelines for Transport Assessment](#) (March 2007) and should be read alongside these documents. Within this framework, this guidance seeks to establish a standardised methodology, which will help developers to comply with the policies in the [West Sussex Transport Plan](#) and development plans. This will include provision of a consistent multi-mode approach to sustainable accessibility, managing travel demand, and impact on the transport network.
- 1.2 When an incoming Transport Assessment (TA) complies with the methodology it should help County Council Officers to make a speedy response. The guidance is also intended to provide clarity on the requirements of West Sussex County Council (WSSCC) in areas where the national guidance leaves some flexibility or scope for interpretation.
- 1.3 For the avoidance of doubt, any TA received which appears to largely consist of a Traffic Impact Assessment to the 1994 IHT guidelines, with additional paragraphs on alternative modes bolted on, will not be acceptable. **The County Council reserves the right to send non-compliant documents back to the author to be rewritten according to these guidelines before we will assess their content in detail.** This will not extend to documents written prior to the publication of this guidance, provided they comply with the March 2007 national guidance.
- 1.4 **Multi-mode approach:**
- 1.4.1 **You should seek to identify total travel demand by all modes.** Within this you should identify predicted private vehicle trips, alongside the mode share of sustainable modes. You should avoid going straight to motor vehicle trip rates and using this as a sole basis, although these will continue to be important to the highway part of the assessment.
- 1.4.2 **A Travel Plan should be prepared alongside the TA** and should be a key part of establishing the targets for sustainable mode share and reducing private car trip generation. This should feed into the analysis of impact on the transport network contained within the TA, **such that the two combine to form a unified whole.**
- 1.5 **Identified impacts on the transport network must be addressed according to the following hierarchy:**
- 1.5.1 First reduce the total demand to travel as much as possible through sustainable location and travel plan measures including services provided on and to the site.
- 1.5.2 Secondly, maximise mode share by sustainable modes and minimise mode share by private car by travel plan measures and also by provision of walking, cycling, and public transport (PT) infrastructure and services.

- 1.5.3 Thirdly, seek to spread or time-shift travel demand away from impacting on the peak hours of congestion on the highway network – and on PT services if these are near to being fully occupied locally – towards hours where spare network capacity exists.
- 1.5.4 Lastly, if there is still an adverse material impact on the highway network after the above has been done, this must be offset through highway improvements, which must be achieved with no adverse impact on highway safety or to users of sustainable modes.
- 1.6 A development which does not overcome any material impact to the transport network through application of the above hierarchy will be recommended for refusal. “Material Impact” is defined in section 10.5 below.
- 1.7 The TA should demonstrate how the development, through its accessibility to key services, maximises mode share by sustainable modes and minimises private vehicle trips.
- 1.8 All TAs will be checked against these guidelines by WSCC officers. If areas are missing or further site specific factors apply, then officers may ask for further information or analysis to be provided.
- 1.9 All TAs should be preceded by a pre-application scoping study, which will enable site-specific advice on how best to comply with the methodology. You are also encouraged to submit your full TA at pre-application in order that any further information required can be supplied without delay to determination of the planning application.
- 1.10 This guidance is intended to be a “living document”, periodically updated in the light of experience with its operation and of new information received and new national or local policy changes. **The current version will be accessible via the [WSCC website](#).** The issue date is at the bottom of each page.
- 1.11 All TA, Travel Plan (TP), and Transport Statement (TS) documents should be submitted in electronic format, such as PDF. You should also submit a paper copy. The paper copy may omit technical appendices, such as junction model runs and TRICS printouts, provided these are submitted electronically. Paper copies must be supplied of all detail scale plans, in particular those from which geometry of highway junctions for capacity assessment is measured.

2. Thresholds for Requiring a Transport Assessment

- 2.1 The [Guidance on Transport Assessment](#) (DfT/DCLG 03/2007) provides indicative thresholds for Transport Statements, Transport Assessments, and Travel Plans at Appendix B. The County Council sees no reason to vary from these standards within West Sussex, with the exception of the following variations to the second table, “Thresholds based on other considerations”:
 - 2.1.1 All transport assessments in West Sussex must be accompanied by a travel plan. See section 8 below for guidance.

- 2.1.2 "Significant HGV movements per day" is defined as 20 or more one-way HGV movements per day.
- 2.1.3 "Any development that is likely to increase accidents or conflicts" is likely to result in a recommendation for refusal rather than the need for a TA/TP. An increase in conflicting movements can be acceptable where these are demonstrated to be safely managed at low speeds, such that no increase in accidents is expected. An example would be provision of shared surfaces within a Home Zone development complying with the [IHIE Home Zone design guidance](#).
- 2.1.4 Developments that fall within category 17 "Others" within the table "Thresholds based on size or scale of land use" should gather and present evidence to consider how they are placed regarding considerations 2, 3, and 4 in the second table, regarding peak-hour generations, daily generations, and provision of parking.
- 2.2 Nonetheless, the application of these thresholds for all types of developments should always be discussed with WSCC officers at scoping stage in case of any site-specific factors.
- 2.3 Where this guidance refers to "larger developments", this should be interpreted as those at least double the scale of the relevant threshold for requiring a TA. The term "strategic development" normally refers to a development area – or within an area of search – allocated in the [West Sussex Structure Plan](#) and/or the [South East Plan](#) and/or as a Supplementary Planning Document (SPD) area within a Local Development Framework (LDF). These can normally be expected to exceed the TA thresholds by five times in size.

3. Layout of your Transport Assessment

- 3.1 All incoming TAs should follow the basic layout and the headings presented in this guidance, as listed below. This will help officers to find the critical information within your TA quickly and to respond accordingly. It should also help those preparing TAs for West Sussex to ensure that they have covered all matters required by WSCC and minimise the likelihood that you will be subsequently asked to provide additional information.
- 3.2 **All TAs and Transport Statements must start with a title page setting out:**
- the site location;
 - the existing use of the site, including planning use classes by gross floor area (GFA);
 - whether the permitted site use is active or on what date it fell vacant;
 - the proposed use of the site, including planning use classes and GFA for each use;
 - any other unit measurements should also be provided for land uses where GFA is not necessarily the most reliable indicator to generation

of travel demand, e.g. number of employees and number of dwelling units.

3.3 Although the development will be described in more detail later in the report, including any more individual characteristics, it is highly useful to officers to have these headlines provided at the head of the document. In particular, this should immediately establish whether the thresholds for the level of assessment required have been correctly applied.

3.4 Following this title page, you should follow the principal headings below this point in the guidance note:

- The Site;
- Policy Context;
- Accessibility to Key Services;
- Total Travel Demand;
- Travel Plan;
- Access by Sustainable Modes;
- Bus Access;
- Rail Access;
- Walking;
- Cycling;
- Sustainable Mode Share;
- Traffic Access;
- Existing Network Traffic;
- Network Traffic Growth;
- Vehicular Traffic Generation;
- Traffic Distribution and Assignment;
- Highway Capacity Impact;
- Environmental Impact of Development Traffic;
- Road Traffic Accidents;
- Conclusions.

4. The Site

4.1 This section will include any further details of your proposals not covered by the summary in the title page, including reference to location plans and site layout plans to be provided in appendices.

4.2 The section can include a general description of the location and area but analysis of existing travel conditions must be left to the relevant section below.

5. Policy Context

- 5.1 A short section should follow setting out the most relevant policies to the site and proposed use in terms of its transport needs and effects on travel patterns and the transport network from PPG13, other relevant National Policies, the South East Plan, the West Sussex Transport Plan, the West Sussex Structure Plan, the adopted Local Plan, and emerging Local Development Framework for the District or Borough concerned, including reference to any SPD for the area in question.
- 5.2 This section should not copy large sections of text from the above documents, but simply present the relevant policies with which this site is expected to demonstrate compliance.

6. Accessibility to Key Services

- 6.1 You must fully consider how accessible the site is by sustainable modes to key services. This is compulsory for residential development, but is also useful for staff employed at other types of development, whether office, industrial, retail, leisure, etc.
- 6.2 The four key services for which Government has set targets for local authorities are food retail, health, employment, and education. Your TA will be expected to demonstrate the service locations that residents and/or employees at your development can access by walking, cycling and public transport within 60, 45, 30, and 15 minutes at peak and off-peak periods.
- 6.3 Sustainable accessibility information is also welcomed for other services, including non-food retail, sports and leisure facilities, entertainment, and worship. For non-food retail, the analysis should show access to main and neighbourhood shopping centres and not isolated specialist stores. Many non-food retail centres may of course also be adjacent to food retail.
- 6.4 To demonstrate this, locations of these services should be plotted on a map background and travel-time isochrones by walk, cycle, and PT modes overlaid. Isochrones should be according to real travel routes on the ground and not concentric circles relating to crow-fly distances.
- 6.5 PT travel time includes walking and waiting time and the walk distance must not exceed 400m at either end of the journey.
- 6.6 Cycling speeds vary widely according to the fitness and experience of the individual, type of bike, loads carried, highway network, gradients, and winds. 12km/h is a useful average speed, reducing to 10km/h for steeper gradients, frequent signalled junctions or crossings, or vulnerable cyclists.
- 6.7 Walking speeds for fit healthy adults can be calculated by application of [Naismith's Rule](#), which specifies one hour per five kilometres forward plus 30 minutes for every 300m of ascent. 25% can be added to times so calculated if a high proportion of walkers are elderly, accompanying young children, or carrying heavy bags, or 50% for any combination of the above.
- 6.8 Use of the [Accession](#) software for accessibility planning is strongly encouraged in particular for larger residential developments, defined as those which are over twice the size of the relevant TA threshold value and

is required for strategic developments. All Accession work must use the “aggressive interpolation” option and the “road network distances” option and must provide evidence that correct input values have been used for all variables.

- 6.9 Relaxations in sustainable accessibility are limited to appropriate reuse of existing sites in rural areas to maintain the rural economy in full accordance with [PPS7](#), such as farm diversification projects.
- 6.10 Food retail accessibility must consider access to stores where, between them or together, shoppers can obtain fresh fruit and vegetables and all the major food groups required in order to prepare at home a nutritionally balanced diet. Shops selling only snack foods, restaurants, and prepared food takeaways should not be considered.
- 6.11 Health accessibility must consider access to doctors’ and dentists’ surgeries and hospital services. Information on other clinics and healthcare providers is also welcomed.
- 6.12 Education accessibility must consider access to primary and secondary education. Information on access to pre-school nursery education and to further and higher education is also welcomed where appropriate.
- 6.13 Analysis of access to employment is only required for residential developments. It should include major local employers and areas where there are clusters of smaller employers. For the purpose of assessment, employment refers to fulltime non-seasonal employment, although additional information on access to more flexible employment is also welcomed, provided it is clearly differentiated.

7. Total Travel Demand

- 7.1 Your TA should identify the total demand for movement of people in and out of the site by all modes for the existing and proposed uses.
- 7.2 Agree with WSCC at scoping stage what times of day should be taken forward for analysis. Where direct surveys of the existing use are available these should be used.
- 7.3 For the proposed use and retrospective estimation of a recent use, where sufficient data is available, this should be through the multi-modal trip generation rates available on [TRICS](#). Where sufficient multi-modal data is not available, alternative methods of estimating total all-mode travel demand should be discussed with WSCC at scoping stage. Vehicular trip rates from TRICS combined with mode shares from [2001 Census journey to work](#) may be applicable. WSCC does not have a regular monitor of mode share for each local area, although we do collect figures for the County as whole by household survey.
- 7.4 Further guidance on the appropriate use of TRICS data is included below at paragraph 10.3 below under the heading of “Vehicular Traffic Generation” and this will generally apply to multi-modal trip rates in the same way as to vehicular trip rates, within the constraints of data availability. Follow the guidance in the latest edition of the [TRICS Good Practice Guide](#).

8. Travel Plan

- 8.1 A full travel plan must be included in accordance with the West Sussex Travel Plan Guidance. Email planninghighways@westsussex.gov.uk for guidance.
- 8.2 Targets for trip generation and mode share must be realistic and not merely designed to minimise the highway capacity impact that is identified in the TA analysis. The development will be monitored against achievements of these targets and the developer will be required to take remedial measures should monitoring reveal a shortfall.
- 8.3 Where the final occupier is not yet known, it is recognised that some matters must be left flexible to determine with them, but these should not significantly affect the final mode share, but rather be alternative ways in which to reach the identified targets for mode share and vehicle trip generation.
- 8.4 The Travel Plan must commit that a Travel Plan coordinator is to be appointed.
- 8.5 Where the transport impact is primarily in the form of goods vehicle movements, a significant part of the Travel Plan will be showing how the capacity and environmental impact of these vehicles in the peak hour will be minimised by:
- scheduling of movements away from peaks where possible;
 - efficient routing for multiple destinations;
 - using an efficient and appropriate size of vehicle for the operation of the site and the nature of the local highway network.
- 8.6 The Travel Plan should compare proposed parking levels to the West Sussex and District/Borough [Maximum Standards](#) and set out how any provision below the standard can be managed such that it does not result in illegal/inappropriate parking on the site or in the surrounding area, but by demand management. It may be useful to calculate predicted car parking accumulation through the day based on vehicular trip generations.
- 8.7 An appropriate monitoring regime must be identified for vehicle trips and total travel (all modes).
- 8.8 There must be a commitment to interventions, should travel-plan monitoring show shortfall against targets, designed to address the deficit.
- 8.9 Please see the [West Sussex Travel Plan Guidelines](#) for more detail.

9. Access by Sustainable Modes

9.1 Bus Access

- 9.1.1 Bus access to your development must be analysed considering the following:
- Destinations served by direct routes and available with a change of bus with reasonable waiting time.
 - State bus service frequencies and hours of operation. These should be compared with the opening hours of site. For

example, if use of offices is only expected during the day then information on evening services is not required. However for a use such as cinema or hotel then details of evening and weekend services are essential.

- Assess whether service frequencies and availability are sufficient to fully or partially meet the needs of the development for all or part of the time. If there is a shortfall, how can this be addressed in a sustainable way?
- For example, if the site caters for evening activities, such as a cinema, theatre or concert hall then it is important to identify if services run late enough to enable people to use bus for the return as well as the outward journey.
- The above service details should be provided both for currently existing services – [check with operators](#) for latest timetable alterations – and for proposed services to serve the development. You should check with bus operators whether any proposed amendments to routes required to serve the development are acceptable, in particular if travel times for through bus passengers may be adversely affected and/or if changes to layover/turnaround times may affect route efficiency and reliability.
- Positions of bus stops relative to site must be detailed and shown on a scale plan. Walking distance to bus stops should be as short as practicable and must be within 400m of all parts of the site.
- Walking route to bus stops must be adequate in terms of convenience, comfort, social safety – including lighting and inter-visibility – and road safety. Road crossings to reach bus stops must be safe and convenient.
- Assessment of the quality of the waiting facilities and service information available at the bus stops serving the site. Are facilities attractive to passengers, offering adequate actual and perceived social safety? Attractive, high-quality bus shelters and facilities should be provided wherever practicable. Provision of real-time information is required on routes that already have this facility and strongly welcomed as an improvement elsewhere.
- How accessible local bus services are to physically disabled people and people with visual or aural impairments and how your development can address any shortfalls.
- If any capacity issues are experienced on the local bus network at the times of day when people will wish to travel to and from your site. Does the [bus operator](#) have any plans to address this issue and can your development assist with this? What effect will your development have on any overcrowding on bus services and will any overcrowding adversely affect the attractiveness and uptake of bus as a travel mode to access your site?

- Whether any of the bus routes to your site are threatened with possible withdrawal due to low patronage levels. Can passenger revenue from your development help to contribute to the continued viability of local bus services?

9.2 Rail Access

9.2.1 Rail access to your development must be analysed considering the following:

- Whether the nearest rail station is within walking distance and if there is a suitable walk route, which meets the criteria in the walk section of this guidance below. If the station is within a reasonable walk distance but the walking route is substandard, what proposals are there to address this?
- Whether the nearest rail station is within cycling distance and if there is a suitable route for cyclists, which meets the criteria in the Cycling section below. If the station is within a reasonable cycling distance but the routes available to cyclists are substandard, what proposals are there to address this?
- If the nearest station is beyond a reasonable walking distance from the site, whether there is a convenient bus link to the station. Does the bus route meet the criteria in the Bus Access section above or can it be improved so that it does?
- Which principal destinations are served from the rail station. List first those destinations with direct frequent trains, then other important destinations where a change of train may be required.
- List the service frequencies and hours of operation to the principal destinations identified – and compare with opening hours of site.
- Whether capacity issues are experienced on the local rail network at the times of day when people will wish to travel to and from your site. Does the [rail operator](#) have any plans to address this issue? What effect will your development have on any overcrowding on rail services and will any overcrowding adversely affect the attractiveness and uptake of rail as a travel mode to access your site? Peak-hour crowding is known to be common on the Brighton to London main line and from Horsham northwards on Arun Valley trains. It may also be relevant on busier sections of the West Coastway route such as east of Worthing.
- Whether the station offer attractive waiting facilities and a good level of actual and perceived social safety.
- Whether the station is fully accessible to people with a mobility impairment.
- For some sites, it may be necessary to consider more than one rail station. This would typically arise where either (a) the two nearest stations are on different rail lines serving different destinations or (b) the nearest station offers a

limited rail service and facilities, but there is a larger station with a fuller range of train services and accessible facilities within a reasonable distance, ideally linked to the site by a regular bus service.

9.3 Walking

9.3.1 Walk access to your development must be analysed considering the following:

- Identify the key destinations within the walk time isochrone from the accessibility analysis and the walking routes to reach them from all parts of the development site. Are the identified routes adequate for the needs of the development site users?
- Actively consider and comment on available widths, quality of surfaces, provision of convenient and safe road crossings, provision and quality of lighting, social safety, and road safety.
- Are the walking routes to local destinations suitable for all? Consider whether they cater for the needs of the elderly, disabled, visually impaired, children, use of buggies, prams, wheelchairs, etc.
- Identify any shortfalls against these standards along these routes. Are any walking improvements already identified/programmed and is it appropriate for the development to provide these or contribute financially to their provision?
- All new walking infrastructure to be provided should be designed in accordance with the principles of [Manual for Streets](#) and [DfT draft Local Transport Note 1/04 on "Policy Planning and Design for Walking and Cycling"](#).

9.4 Cycling

9.4.1 Cycle access to your development must be analysed considering the following:

- Identify the key destinations within the cycling time isochrone from the accessibility analysis and the best routes to reach them by bicycle from all parts of the development site.
- Analyse the identified routes to assess whether they are adequate for the needs of the cyclist users. The principal factors to take into account in this fall under the headings of coherence, directness, safety, attractiveness, and comfort.
- In your analysis and proposals you should allow that different types of cyclists will have different needs. Adult commuter cyclists may often use a more direct trafficked road with less give-way points, in preference to a more circuitous quiet or off-road route typically used by more vulnerable or less experienced cyclists and leisure cyclists.

- Guidance on how to provide adequately for cyclists is provided in the WSCC Guidance Note ["The Design and Implementation of Cycle Infrastructure in West Sussex"](#) (2006) and this should be followed. This document draws on National guidance notably including [DfT draft Local Transport Notes 1/04 "Policy Planning and Design for Walking and Cycling"](#) and [2/04 "Adjacent and Shared Use Facilities for Pedestrians and Cyclists"](#).
- Whether any dedicated provision on routes to/from site exists or is required. This should take account of the hierarchy of provision at paragraph 2.1.5 of the WSCC cycle infrastructure design guidelines.
- Identify the locations in this area where cyclists are most likely to encounter problems and what interventions could address this.
- Whether any relevant schemes are already identified or programmed. Consider whether the development should be looking to provide these or make a financial contribution towards them.
- Secure and convenient cycle parking/storage will be an important part of any development. Provision must comply with the [West Sussex Parking Standards](#) along with any relevant District/Borough Council Parking Standards. Location, design, and implementation of cycle parking must follow the [WSCC Cycle Parking Guidelines Design and Installation Standards \(2006\)](#).

9.5 Sustainable Mode Share

- 9.5.1 At this point in the assessment you should put together all the analysis and proposals above and the "soft" (i.e. non-infrastructure) measures that you are proposing to include in your travel plan, to reconsider the site generation of total person trips and the share by all the relevant modes.
- 9.5.2 Will the travel plan and sustainable transport infrastructure and service measures progressed with your development make a significant change to the mode shares to be expected from your development compared to your starting calculation? Does this justify any adjustment to the vehicular trip rates (see section 10.3 below) to be used in your highway capacity analysis?

10. Traffic Access

10.1 Existing Network Traffic

- 10.1.1 Agree the study area and surveys required with WSCC at scoping stage.
- 10.1.2 Consider what survey information to provide on the existing road conditions. It should be comprehensive over the area where development traffic would impact on the network. [Traffic flow](#)

[data](#) used in a TA should be up to date, meaning under two years old. Where a network transport model is to be used, the journey origin-destination survey information should be no more than five years old.

- 10.1.3 The dates on which surveys carried out should be shown to be representative of average conditions. ATC survey(s) near to site access will help to confirm if manual survey days are representative of overall conditions. If surveys are undertaken away from the recognised neutral months of March to May and September to November then seasonal adjustment may be required unless a “worst case” assessment of summer tourist traffic or Christmas shopper traffic is required.
- 10.1.4 Where junctions in the study area are known to be congested, queue length surveys should be provided alongside manual classified turning counts, so that these can be used to validate your junction analysis.
- 10.1.5 Where traffic signal junctions with pedestrian facilities or signalled crossings near to other junctions are proposed pedestrian surveys will also be required to inform the capacity analysis.
- 10.1.6 Barrier and queue surveys are required for any railway level crossings within the study area.

10.2 Network Traffic Growth

- 10.2.1 Analysis must be carried out for the identified opening year for the development and for five years from date of lodging a planning application. This rises to 10 years in the case of the Strategic Road Network, which is defined in Figure 6.11 of the West Sussex Transport Plan.
- 10.2.2 Larger developments such as strategic housing and employment developments to be built in phases over a longer time scale may require additional assessment years, to be discussed with WSCC officers at scoping stage.
- 10.2.3 Traffic growth should be taken from National Road Traffic Forecast (NRTF) central growth, constrained to local trip ends from TEMPRO. NRTF central growth rates for specific road types may be used where it is more appropriate to do so, such as congested main roads in urban areas. The TA must state clearly the derivation of the growth rates.

10.3 Vehicular Traffic Generation

- 10.3.1 Vehicle trip generation rates are to be agreed at scoping stage where possible to avoid need for reruns of analysis where figures are disputed. Trip rates will generally be taken from appropriate use of the [TRICS](#) trip generation database. An exception is an extension to an existing use, where the trip generation can be derived from surveys of the existing development, with any appropriate adjustments.

- 10.3.2 For transport network analysis, we principally look at hourly trip rates for the periods where the highway network is most congested (network peak) and for the periods when the development trip generations are greatest (development peak). Assessment of the development peak will typically be relevant for larger developments of types such as retail or leisure where the development trips peak at early or mid-afternoon on Friday or Saturday and could increase traffic towards network capacities at these times. Development Planning also look at the daily trip rate with regard to TA thresholds, [parking accumulation, and provision](#).
- 10.3.3 Some land uses are not fully represented on TRICS and the trip generation methodology will have to be agreed with WSCC officers on an individual basis. For more specialist uses, surveys from other sites with the same operator and similar characteristics can be used where available.
- 10.3.4 If any reduction from the trip rates typical for this type of development is proposed, this should be justified – see section 9.5 above – on the basis of the analysis of all person trips and mode share taking into account the sustainable infrastructure and travel plan measures proposed. This information will often not be available at scoping stage, so this would need to be a technically justified adjustment to the non-discounted trip rates agreed at scoping. Make appropriate allowance that the trip rates from TRICS may already include sites with high levels of public transport access, restricted car parking, and/or successful travel plans.
- 10.3.5 Net trip generation will properly take into account trips from the previous use of the site, where it has been active in recent years. If the previous land use is still operational and available for survey its generation should be based on this. If the popularity of this use has recently declined, evidence must be supplied to back any adjustments made to survey data. Otherwise the generation should be based on TRICS in the same way as the proposed use.
- 10.3.6 Please note that where the site has been vacant for over five years, or a long enough period for traffic growth on the adjacent highway network to equal potential trip generations, any permitted use for the land cannot be considered in trip generation calculations. The site must instead be treated as a vacant use, unless there is direct evidence that the “fall back” scenario of the permitted use is likely to materialise. This approach has recently been backed at planning appeal.
- 10.3.7 All use of TRICS must be clearly demonstrated to follow methodology fully in accordance with the latest issue of the [TRICS Good Practice Guidelines](#). This includes the choice of whether to use average or 85th percentile trip rates. In particular, all TRICS site selections must follow the advice in chapter 4 on the use of location parameters in preference to

regional selections. For most sites in West Sussex, use of regional selection can be limited to exclusion of data from Greater London. It is also acceptable to exclude data from Ireland and the Isle of Man, particularly if this falls outside the range of rates from mainland UK sites.

- 10.3.8 The TRICS survey site selection must be representative with regard to main and optional parameters such as, type of location, size of development, local population and car ownership, balanced against maintaining a healthy sample size. For clarification, use of the "optional parameters" should no longer be regarded as optional, where sample size permits. Full printouts must be supplied in electronic format to demonstrate how these parameters have been used.
- 10.3.9 Multiple survey days from sites collected with ATC data can produce bias in a sample that also contains manual surveys, so such duplication must be eliminated. Within TRICS this can be done by simply clicking in and out of the "selected days" screen.
- 10.3.10 The population within one and five miles screens are useful tools for excluding sites which are unsuitable due to being located in a major conurbation or a remote mountain area, which may previously have dropped out at the regional selection stage.
- 10.3.11 For most locations in West Sussex, [local car ownership](#) is higher than the national average, so sites where car ownership is below 0.5 per household should be excluded.
- 10.3.12 The TA must present its analysis clearly to demonstrate that the numbers of vehicle movements generated in the relevant time periods clearly match the trip rates per unit, from which they are derived.
- 10.3.13 The TA must demonstrate that the car parking capacity is in proportion to the parking accumulation predicted by the production and attraction of vehicle trips predicted through the day after allowance for travel plan measures, such as car clubs and office cars, and any use of shared or public car parking, e.g. town centre sites. This is to ensure that developments do not either lead to problems of off-site parking in inappropriate places or provide excessive on-site parking by building to the maximum standard irrespective of individual circumstances. Residential developments are encouraged to keep a proportion of parking provision unallocated to allow for efficient and flexible use for visitor parking and deliveries.

10.4 **Traffic Distribution and Assignment**

- 10.4.1 The TA must explain and justify the basis for the split of traffic between different origins/destinations. Analysis must be provided to support any assertions.
- 10.4.2 For larger applications a plan of population bands and road watersheds is preferred. Analysis of census journey to work figures may be appropriate for peak hour trips. For smaller sites on a very simple road network, use of observed turning

proportions may suffice, however this approach cannot legitimately be extended to junctions remote from the site where through traffic may well take different routes from local development traffic.

- 10.4.3 The TA must provide clear diagrams to demonstrate that the traffic flows assigned to roads match the stated distribution
- 10.4.4 TAs for large developments, those at town centre sites and where a number of developments are planned close to each other, are encouraged to – and may be required to – include assessment on a network transport model using specialist transport modelling software, such as [SATURN](#), [TRIPS/CUBE](#), [OmniTRANS](#), [PARAMICS](#), [VISSIM](#) and [VISUM](#), and [AIMSUN](#). Existing models suitable for TA work exist in some areas of the County, such as Crawley, but not others. Some existing models are jointly-owned with the [Highways Agency](#) and agreement with a model steering group is required to use them. Email WSCC Development Planning at planning.highways@westsussex.gov.uk to enquire about the terms and conditions that apply to the use of our existing models and to agree whether or not use of a network model is appropriate for your site.
- 10.4.5 The size of development at which a network model is required for a TA can vary according to a range of factors including: whether an up-to-date existing model is already available; whether the development interacts with other proposed or committed developments in the area; the complexity of the local transport and highway network; and the levels of congestion experienced on the local transport network.
- 10.4.6 The largest strategic developments may be required to build a model if no suitable model is available. This should be discussed individually with WSCC at the earliest opportunity. In some cases WSCC may need to employ another consultant to assist in checking the model.
- 10.4.7 Where a network model is used, this may not obviate the need to use individual junction models to look at key junctions in the study area in more detail.

10.5 Highway Capacity Impact

- 10.5.1 The junctions to be assessed should be identified and agreed with WSCC at scoping stage. In order for WSCC to agree the study area boundary we will first need to know the scale of net vehicular trip generations and have agreed the basic distribution. Alongside knowledge of whether and at what times there is existing congestion at the location, this will enable the junctions where there is a possibility of material impact from development flows to be identified. **Generally the study area will include all junctions where there is a predicted increase in total entry flows of 30 or more vehicles in any hour – or if the junction already experiences peak period congestion an increase of 10 or more vehicles – as a result of the development proposals.**

- 10.5.2 It is recognised that sometimes at scoping stage these details are yet to be confirmed. In this case “most likely” and/or “worst case” scenarios are to be agreed with WSCC for assessment.
- 10.5.3 The times of day when the impact will be highest and when road network conditions are most sensitive must be identified and agreed with WSCC at scoping stage. This will be agreed when the trip generations are discussed. Capacity analysis is to be undertaken on the junctions within the study area for these periods.
- 10.5.4 The TA should clearly show that the assessment years and traffic growth factors agreed have been correctly applied and that the base traffic flow and HGV inputs to each capacity assessment are correct.
- 10.5.5 The TA must also show that the development traffic flows used accurately reflect the trip generations and distribution.
- 10.5.6 Traffic flow diagrams of the study network will normally be required for each of the following scenarios for each analysis time period.

Scenario	Description
a	Base year observed (and/or modelled) traffic
b	Traffic generated from existing site use
c	Opening year do-nothing traffic = a + growth
d	Opening year committed development traffic
e	Opening year do-minimum traffic = c + d
f	Opening year proposed development traffic
g	Opening year total traffic = f + e - b
h	Assessment year do-nothing traffic = c + growth
i	Assessment year committed development traffic
j	Assessment year do-minimum traffic = h + i
k	Assessment year proposed development traffic
l	Assessment year total traffic = j + k - b

- 10.5.7 HGV flows may be shown in parentheses on the same diagrams or on a duplicate set of diagrams if this improves clarity. Alternatively, all flows may be shown as Passenger Car Units (PCU) if the capacity analysis is done on this basis. Each of these diagrams must be clearly labelled as to which flows it contains.
- 10.5.8 Full details of junction model ([ARCADY](#), [PICADY](#), [OSCADY](#), [LinSig](#), [TRANSYT](#)) runs must be provided so that input traffic flows, methodology and junction geometry can be checked as well as output examined in detail. Junction-based traffic analyses should be validated against queue length surveys where there is existing congestion.

- 10.5.9 Accurate large-scale plans, e.g. 1:200 or 1:250, must be provided of each junction whose capacity has been analysed, whether existing, proposed, or modified. It is most helpful if working lines used in constructing effective flare length, entry angle, and visibility distances are shown on the plans. Provision of this information will generally speed up analysis of your TA by WSCC officers.
- 10.5.10 Junction assessments must fully take into account pedestrian/cyclist facilities at or adjacent to the junction, including pedestrian phases at traffic signal junctions, advanced stop lines for cyclists, and pelican/puffin/toucan crossings close to other junctions.
- 10.5.11 Please ensure that you obtain details of any programmed highway schemes within the study area from WSCC and take any planned changes to road layout into account for assessment of future years.
- 10.5.12 Development Planning generally check ARCADY (roundabouts) and PICADY (priority junctions) themselves but where traffic signals junctions are included, Traffic Signals team advice is sought on LinSig and TRANSYT assessments. For larger strategic developments with multiple junction analyses required, WSCC may employ a consultant to assist with resource.
- 10.5.13 The TA should include a summary table of the results for each junction arm in each test scenario for Ratio of Flow to Capacity (RFC) or Saturation, queue length, and average delay per vehicle. If a network model is used, then a summary table must be provided of the results for network performance as well as the plots of the modelled traffic flows and delays.
- 10.5.14 **The analysis must identify whether the development results in a material impact to highway network performance.**
- 10.5.15 **Material impact is defined by WSCC as an increase in congestion at any junction within the study area agreed at scoping stage after the effects of the travel plan, sustainable infrastructure/services and highway mitigation measures have been taken into account.**
- 10.5.16 **Whether congestion is material must be assessed by reference to the following points.**
- 10.5.17 **Any queue lengths long enough to block another junction or traffic stream will constitute a material impact.** Where existing peak queues already have this effect, nil-detriment or better must be achieved.
- 10.5.18 **Average delay per vehicle increases (see Table 1).** Between 90 and 120 seconds, minor increases of under 5 seconds will not be regarded as material, except on the [Strategic Road Network](#). 120 seconds is an absolute criterion for congestion. Above this figure any impact is considered material and so nil-detriment must be achieved, however minor the road.

On the Strategic Road Network, using up reserve capacity is an issue for the continued efficient functioning of the network and so, for delays over 30 seconds, any increases must be mitigated in accordance with the hierarchy of measures at paragraph 1.5 to achieve nil-detriment.

Table 1: Average delay per vehicle and material impact

Delay in Assessment Year Do-Minimum Scenario	Delay in Assessment Year Do-Something Scenario	Material Impact on Non-Strategic Road?	Material Impact on Strategic Road Network?
Any value	Under 30 seconds	No	No
Under 90 seconds	Between 30 and 90 seconds but an increase to do-minimum	No	Yes
Under 90 seconds	90 seconds or over	Yes	Yes
90 seconds or over	Increase of less than 5 seconds and under 120 seconds	No	Yes
90 seconds or over	Increase of 5 seconds or more	Yes	Yes
120 seconds or over	Any increase to do-minimum	Yes	Yes

- 10.5.19 The RFC is a more technical measure of congestion that relates less directly to the road user's experience than average delay, so a fixed criterion has not been set for this measure. As a guide, increases in RFC to 1.0 or above will generally point to an increase in average delay that must be assessed according to Table 1.
- 10.5.20 **Developments that result in a material impact that is not fully mitigated by demand management, sustainable transport, and highway measures, applied according to the [hierarchy](#) at paragraph 1.5, will generally be recommended for refusal.**
- 10.5.21 **The above applies to any single entry arm of a junction.** WSCC may apply some flexibility where a very small over-capacity increase to one arm of a junction is outweighed by larger decreases to other congested arms, but would generally first seek a solution where the benefits were more equally shared amongst the junction entry arms.
- 10.5.22 Any new highway infrastructure on non-strategic roads with a speed limit of 30mph or less must comply with the principles and guidance within the [Manual for Streets](#), other than any individual departures of detail agreed with WSCC officers.

10.6 Environmental Impact of Development Traffic

- 10.6.1 The TA must comment on environmental impacts of traffic including noise, vibration, and emissions where increases in traffic flow of over 20% are predicted on any highway or where the development generates any additional HGV flows through a residential area or on a rural lane or where the development is within or adjacent to a designated [Air Quality Management Area \(AQMA\)](#).
- 10.6.2 **Developments that cause any increase in traffic flow within an AQMA not mitigated by demand management, sustainable transport, or highway measures will be generally recommended for refusal.**
- 10.6.3 The Environmental Impact Statement for the planning application should cover the environmental impacts of off-site traffic. If this has been done correctly, the TA may only need to refer to the information from the EIS.
- 10.6.4 If there is an increase in vehicular movement, the increase in production of greenhouse gases should be calculated according to a formula for increases in vehicle mileage. The [National Energy Foundation's CO₂ Calculator](#) uses a figure of 0.36kg of CO₂ produced per mile in a typical petrol car averaging 29mpg, derived from statistics from DEFRA. WSCC will not generally base any recommendation for refusal on the outcome of this calculation, as we are not aware of any commonly accepted thresholds in this field, but will pass on the information to the Local Planning Authority for them to take into account alongside the other environmental factors in their decision.

10.7 Road Traffic Accidents

- 10.7.1 Analysis is to be provided over a five-year period in the form of a plot on a map background showing locations and severities, plus a table giving dates and times and other details.
- 10.7.2 Any junctions, bends, or links with an accident rate greater than expected for the road type and traffic flows are to be identified.
- 10.7.3 Any patterns indicating safety issues, particularly with vulnerable road users, which should be resolved prior to development, are to be identified.
- 10.7.4 Desirable and appropriate reductions in speeds should be considered.
- 10.7.5 The development will be expected to mitigate road safety problems that would arise from the development or will be worsened by an increase in traffic from the development or where vulnerable road users travelling to and from the development may be endangered.
- 10.7.6 The development will not be expected to resolve road safety problems on local roads where there is no net increase in traffic flow and where it does not adversely affect vulnerable road users using the development.

11. Conclusions

11.1 Your TA should conclude with a summary stating:

- the net impact of your development on the highway, public transport, walking and cycling networks;
- how the development meets the criteria for sustainable accessibility;
- any changes to public infrastructure and/or transport services required to mitigate impact and how these will be progressed;
- any additional benefits of the development and associated transport proposals for the efficient operation of local transport and increase in sustainable transport accessibility in the area.

12. Issues and Contact Information

Issue Date	Contact
21 June 2007	Guy Perfect, Principal Transport Planner, Development Planning Email: guy.perfect@westsussex.gov.uk Phone: 0330 222 6442

Following the announcement of the decision date for Angus Planning Application – 2020 (WSCC/045/20), I found I document containing further questions from WSCC Planning to Angus energy, seeking some additional information. The documents related to this were not open for comment, and I am therefore concerned that this may have unduly influenced the Planning department's report without public scrutiny.

I have picked up just one of the points raised, concerning the reliability of the flowrates achieved by Angus Energy. I suggest it is worth comparing this with UKOG's initially reported test flowrate versus the reality of production flowrates. See below.

Regards

M Kenward

Troy Cottage
Deanland Rd
Balcombe
RH17 6LX
07951900996

With regards to Angus Energy’s (AE) “flowrates of 1599.6 bbls/day (254 m3/day) per day”, it would seem prudent to compare this with the figure reported by UKOG at Horse Hill. I quote below from their website, [Horse Hill Developments](#)

HHDL originally drilled the Horse Hill-1 (HH-1) oil discovery well in 2014 and followed with flow testing in February and March 2016. HH-1 tested at a commercial aggregate stable dry oil rate of 1,688 barrels of oil per day from the Portland and two Kimmeridge Limestone reservoir horizons.

(Note the similarity in these figures.)

However, the figures released subsequently by HHDL show the reality of the situation, with actual yields substantially lower

The table below was copied from the drill or drop website:

[Horse Hill oil production drops during workover – latest data – DRILL OR DROP?](#)

Month	Oil Production Mass (tonnes)	Oil Production Volume (m3)	Oil production barrels/day
March	755	893	181
April	981	1160	243
May	737	871	177
June	637	753	158
July	508	600	122
August	536	633	128
September	376	445	93
October	197	233	47

Horse Hill oil production, March-October 2020. Source: Oil & Gas Authority

NB. October does not represent a full month’s production, as further work was underway in an attempt to improve flow rates.

Note that the actual bpd is significantly lower than the first reported flow rate of 1,688 bpd.

The largest T1-class oil supertankers have a capacity of 3,166,353 bpd ([T1-class supertanker - Wikipedia](#))

At the April flow rate (the highest reported), it would take over **35 years of continuous production** to replace just one such tanker shipment. Using the September figures, this would translate to **in excess of 90 years**.

It is also worth noting that the March 2016 announcement reported dry oil; i.e., no formation water. In June 2020 a peak of 235 tonnes of formation water in one month, was reported.

Associated gas in September 2020, for just one month, was reported at 15.5 tonnes.

This suggests the Planning depart is right to be sceptical about AE’s reported flow rate, for test flowrates are no guarantee of production flow rates. The industry has a history of over promising on flow rates, one suspects as a means of ‘influencing’ share prices and attracting more investors.

Given the length of time (beyond 2050) and energy needed to replace just one tanker load, it is clearly wrong to claim that locally extracted oil, at such low volumes, has a lower carbon footprint than imported oil.

M Kenward