



BRIEFING NOTE

DATE:	09 December 2022	CONFIDENTIALITY:	Internal
SUBJECT:	WSP's Response to Comments		
PROJECT:	Land South of Station Road, Elsenham	AUTHOR:	[REDACTED]
CHECKED:	[REDACTED]	APPROVED:	[REDACTED]

1. INTRODUCTION

This Briefing Note sets out WSP's response to issues raised by Essex County Council (ECC) and their consultants Jacobs in their formal consultation response to an outline planning application for up to 200 dwellings at the Land East of Station Road, Elsenham (REF S62/2022/012).

ECC's consultation response is based on a review of the Transport Assessment (TA) and VISSIM model of Stansted Mountfitchet.

The remainder of this briefing note addresses issues raised by ECC and their consultants Jacobs.

2. RESPONSE TO ISSUES RAISED BY JACOBS

This section provides a response to the comments and recommendations raised by Jacobs within the document "**Stansted Mountfitchet Modelling Review_0v0.2.pptx**". This document provides a review of the VISSIM model which has been used to assess the predicted highway impact of the proposed development.

2.1. Validation of the VISSIM Model

Jacobs: The journey time validation of the AM peak hour is not at acceptable levels and should be revisited aiming for modelled journey time of both main routes to be within +/-15% of the observed.

Paragraph 6.9 of WSP's VISSIM Modelling Technical Note contained within Appendix N of the TA recognised that the travel time routes in the AM peak period fall outside +/- 15% of the observed time. As such, in accordance with Table 3 of TAG Unit 3.1, WSP sought to ensure that modelled travel times routes were within 60 seconds of the observed journey times.

Jacob's have stated that for microsimulation models such as that prepared for this application, the +/- 15% criterion should be used for at least 85% of routes in order to consider it successfully validated. WSP disagree with this statement for the following reasons:

1. **The guidance states that modelled times along routes should be within 15% of surveyed times OR 1 minute if higher than 15%.** Because the journey times along the whole route are greater than 15% of the surveyed times the second criteria has been applied. TAG Unit 3.1 does not say that the second 60 second criteria should not be used when calibrating and validating a microsimulation model.
2. **Guidance in TAG Unit M3.1 principally relates to the development and validation of strategic models, not microsimulation models.** This is evident in paragraph 4.3.3 of TAG Unit M3.1 which states "The Validation routes should neither be excessively long (greater than 15km) or excessively short (less than 3km)". Microsimulation models, such as that developed for this application, are often less than 3km in length, as such the criteria cannot be applied rigorously.

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3. **Information provided in Table 3 of TAG Unit M3.1 are guidelines.** They are not set thresholds that cannot be exceeded. The information provided in TAG Unit M3.1 is there to help practitioner in developing and validating a traffic model. As such, it is reasonable for a practitioner to deviate from the guidance in TAG Unit M3.1 if, based on their professional judgement and experience, they consider it appropriate.

It should be noted, the complexities of the operation of the highway network in Stansted Mountfitchet means that there is always likely to be day-to-day variation in journeys times. As such, because the journey times are a snapshot of the performance of the network on a single day, there was always a possibility that it would be challenging to get the modelled and observed data journey times to within 15% of each other. If the survey was repeated a number of times on different days then it would be expected that the modelled and observed profiles would match more closely.

It must also be remembered that the VISSIM model is a representation the highway network in Stansted Mountfitchet. A model will never be able to fully replicate the full intricacies of the highway network and driver behaviour. However, on balance WSP are confident that the model accurately reflects baseline conditions and is fit for purpose for assessing the cumulative impact of the development on the local highway network.

Issues validating a model using observed journey times along short sections of a highway network are evident in Tables 11 and 12 of WSP's VISSIM Modelling Technical Note – a very small absolute difference between the modelled and observed journey time results in a relatively significant percentage difference. For example, there is a difference of 4 seconds between the observed and modelled journey time along Travel Time Route Sub-Section "108 – B1051 (NB): Lower Rd turning to Farm" in the AM Peak. However, because the length of the route is so short, this equates to a 15.3% difference. In reality a four second difference would be imperceivable and is easily associated with small discrepancies between the synchronisation of cameras used to collect journey time information.

The above said, WSP recognised that it is best practice to apply the +/- 15% criteria for smaller microsimulation models – particularly those under 1km in length. However, because the model is approximately 1km in length, use of the 60 second criteria is considered appropriate. For this reason and given that the modelled and observed journey times are within 60s, WSP consider the model to be fit for purpose for assessing the impact of the proposed development.

2.2. Coding of the Give Way Sub-Section at Chapel Hill

Jacobs: The coding of the give-way mechanism at Chapel Hill (to replicate the narrow road, with vehicles from one direction passing at a time) needs to be recalibrated so that the westbound direction is slower, as observed journey times indicate.

Jacobs have raised issues with the coding of the sub-section at Chapel Hill. For the reasons set out in Section 2.1 above, WSP consider the model to successfully validate in the AM peak.



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As noted in Section 2.1 above, the complexities of the operation of the highway network in Stansted Mountfitchet means that there is always likely to be day-to-day variation in journey times. As such, because the journey times are a snapshot of the performance of the network on a single day, there was always a possibility that it would be challenging to get the modelled and observed data journey times to within 15% of each other, particularly when focusing on a very small sub-section of the model.

2.3. Future Year Scenario without Mitigation

Jacobs: The results without the mitigation would be useful to be included in the modelling report.

The results from the “future year model without mitigation” has not been provided as improvements to the signal controllers at the B1051 / Lower Street junction are a committed transport improvement that will be delivered prior to the proposed development at the Land East of Station Road, Elsenham coming forward.

The mitigation is improvements to signal detectors and increase of maximum green time for the approaches. This mitigation will be delivered by a committed development – Land West of Isabelle Drive (REF UTT/19/2470/OP).

There would not be a scenario whereby the development at the Land East of Station Road, Elsenham comes forward and the improvement scheme at the B1051 / Lower Street junction has not been delivered. This is referenced in paragraph 5.2.3 of the TA. As such the results of a “without mitigation” scenario is not considered to be relevant to the determination of this application.

2.4. Future Year Model – Queue Results

Jacobs: The changes at signal controller at Lower St / B1051 junction introduced in the future year models, as a mitigation, increase the queues at Lower St northbound with instances of queues extending back to Lower St / Chapel Hill / Church Rd mini roundabout.

The increase in the maximum queue length in the northbound direction at the B1055 / Lower Street junction is attributable to the introduction of a committed transport improvement scheme in the future model year (as described in section 2.3 above).

The increase in maximum queue length is not as a result of additional traffic generated by the proposed development. As shown in Table 15 of the VISSIM Modelling Technical note, the proposed development will have a negligible impact on queue lengths at this location.

Jacob's have compared the maximum queues reported in Table 15 of the VISSIM Modelling Technical Note and those reported in the VISSIM model. It should be noted that the maximum queue reported in Table 15 is the Mean Max Queue (MMQ). This is the maximum queue recorded after averaging the maximum queue of each time period across all of the model runs. The MMQ is a good indicator of highway conditions on a “typical” day and enables consistent comparison of the forecast impact of the development against the future year scenarios. It is standard practice to report MMQ as an indicator of junction

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performance. However, WSP recognises that due to day-to-day variation in traffic flows and driver behaviour, the maximum queue does vary between individual model runs.

2.5. Rerunning of the VISSIM Model

Jacobs: Following these changes the models should be reran and the new results should be used to inform on the impact of the proposed development at the network performance.

For the reasons set out in the above sub-sections, WSP does not agree that any changes are needed to the VISSIM model. The VISSIM modelling that has been undertaken validates well in both the AM and PM peaks in accordance with TAG guidance and is fit for purpose for representing the baseline highway conditions and assessing the predicted highway impact of the proposed and committed developments.

3. RESPONSE TO ISSUES RAISED BY ECC

This section provides a response to the comments and recommendations raised by ECC within the document **S62-2022-0012 Highways consultation response 11091 (AutoRecovered) (002).pdf**

3.1. VISSIM Modelling

ECC: 1. The application does not adequately demonstrate the cumulative impact of the proposal on the capacity of the highway network.

a. A Vissim model of the impact on Stansted Mountfitchet has been provided as part of the transport assessment. This model has been reviewed by Essex County Council's term consultants and the following deficiencies in the modelling found.

i. The validation of the base model showed the journey times to be outside the acceptable threshold. It should be recognised that on a short model such as this the journey times should be within in 15% of modelled time and cannot be accepted simply because the are under 60 second variation as would be the case in a larger strategic model.

ii. The observed journey times indicate that the eastbound direction in the AM is a lot faster than the westbound, while in the model they are very close. A similar issue is observed in the PM peak

iii. The journey time results show significant journey time improvements in the future year models compared to the base year model in both peak hours at Grove Hill south-west bound but the journey times and queues in the opposite direction only increase slightly. This does not fully reflect the results in the previous model that that was provided for the appeal site to the south of the

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development. As the results without the committed mitigation have not been provided it is difficult to fully understand the impact.

b. A modelling review is attached to this response, the issues in the report should be addressed and the model rerun and submitted for the review by the highway authority.

WSP addresses ECC's comments on the VISSIM model in Section 2 of this briefing paper.

In relation to point a. iii., and ECC's comparison with the VISSIM modelling results of the consented appeal site to the south, the VISSIM model for this application uses new 2022 base data collected for this application. As such, the VISSIM modelling results that accompanied the appeal site to the south cannot be directly compared to the VISSIM modelling results accompanying this application as the base data has been updated.

3.2. Land South of Vernon's Close

ECC: c. The approved application from Land South of Vernon's Close UTT/20/0604 has been omitted from the committed development and should be applied to the traffic flows, in order to fully understand the cumulative impact of the development.

WSP has established a robust future baseline scenario that includes vehicles trips associated with the following committed development sites:

- Land to the North West of Henham Road Elsenham – 350 dwellings and primary school that includes early years and childcare setting for up to 56 places (REF UTT/17/3573?OP);
- Land West of Hall Road – 130 dwellings (REF UTT/19/0462/FUL);
- Land to the West of Isabell Drive – 99 dwellings (REF UTT/19/2470/OP);
- Land South of Rush Lane – 40 dwellings (REF UTT/19/0437/OP);
- Land West of Parsonage Road – 120 dwellings (REF UTT 19/0398);
- Land East of Parsonage Road – 66 bed care home (UTT/19/0394);
- Garnetts – 155 dwellings (UTT/21/3311); and
- Land East of Parsonage Road Takely - 88 dwellings (UTT/21/2488).

This equates to an additional 479 additional vehicle trips on the local highway network in the future modelled year in the AM peak and an additional 501 vehicle trips in the PM peak. It is assumed all of the above developments will be delivered by the future modelled year, an approach WSP consider to be robust.

The TA states in paragraph 5.3.4 that committed development flows from the Land South of Vernon's Close were not included in the future baseline scenarios. This development is forecasts to generate 24 vehicle

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trips in the AM Peak and 25 vehicle trips in the PM Peak, of which 13 vehicle trips in the AM Peak and 15 trips in the PM Peak are expected to arrive from / depart towards Stansted Mountfitchet and Stansted Airport. The inclusion of vehicle trips associated with this committed development, on top of those already included in the future modelled year, will have a negligible impact on the conclusions of the junction modelling. As such WSP do not consider that there is any need to update the future years modelling. The future year scenarios demonstrate the cumulative impact of the proposal on the capacity of the highway network is not severe.

3.3. Hall Road / Coopers End Mini-Roundabout Sensitivity Test

ECC: *d. Hall Road/Cooper End Roundabout. The impact of Covid on the Stansted Airport has been significant, in order to understand the likely cumulative impact as the airport use returns to normal and then grows to permitted levels pre-covid flows should be assessed as a sensitivity test (these are available in previous applications assessed by WSP and others). Stansted Airport is highway authority for Coopers End roundabout so the applicant should liaise with them.*

WSP discussed the assessment methodology with ECC at a meeting on 21 September 2022. At this meeting, there was no discussion or identification of the requirement for an additional sensitivity test at Coopers End Mini-roundabout.

WSP do not believe that a sensitivity test based on a hypothetical future situation at Stansted Airport is required to demonstrate the proposed development will not have a severe cumulative impact on the road network. The proposed development is only expected to generate an additional 35 trips through the mini-roundabout in the AM peak and 36 trips in the PM peak. This equates to an average of one extra vehicle every 1 to 2 minutes and is within normally experienced daily variation in traffic flows.

The traffic impact of any increase in passenger numbers at Stansted Airport is likely to be concentrated around Strategic Road Network (i.e., the M11 and A120 junctions) – locations where the traffic impact of the proposed development would be negligible. The Coopers End access is likely to be mainly used by through traffic and airport employees. These trips are already accounted for in the future modelled year scenarios through the application addition of committed development vehicle trips and application of TEMPro growth factors.

If traffic flows through this junction increase significantly in the future as a result of increased trips to Stansted Airport, it will be for the Airport to mitigate their impact. It is not for the developer of this application to mitigate the impact caused by other committed developments.

As such, regardless of the future baseline flow through the junction, it is considered that the number of vehicle trips predicted to be generated by the development will not have a severe impact on the performance of the junction or road user safety (i.e., it will not result in a significant increase in driver delay or significantly higher levels of queueing).



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It should be noted that MAG in the TA for their application to increase passenger levels at Stansted Airport does not consider Cooper End. As such it's not possible to identify the vehicle numbers predicted to be attracted to the airport by an increase in passenger levels. This clearly suggests that MAG or ECC do not consider Coopers End junction as a passenger point of access/ egress. As such, given the absence of flow information, there is no reasonable way that WSP could accurately assess the impact of an increase in passenger levels at this roundabout.

3.3. Hailes Wood Pedestrian and Cycle Access

ECC: 2. Clarification should be provided on the statement in the TA that a potential pedestrian and cycle access via Hailes Wood has been identified as providing an additional connection to the Proposed Development (paragraph 4.5.36 and 7.2.7). There is no evidence within the application that this can be secured.

This statement is a reference to the access strategy for the consented Phase 1 development to the south of the site. This was identified as a "potential" access that will be "considered". Any improvement / connection via Hailes Wood would be delivered as a part of the consented Phase 1 development – not the Phase 2 development.

3.3. Accessibility of Local Facilities

ECC: 3. Table 4-4 provides distances to the and times for walking and cycling various destinations, from the access points. These should be provided from the centre of the site to provide a more realistic average distance that residents have to travel from the site.

Table 4-4 of the TA shows accessibility from the site's primary access. The centre of the site is approximately 150 to 200m from the site's primary access. This equates to an additional 2-3 minute walk or <1 minute cycle. As such it is considered that the data in Table 4-4 can be used to infer the general accessibility of local facilities by foot and cycle. This increase of an additional 2-3 minutes' walk or less than 1 minute cycle to local facilities does to alter the conclusions of the TA, that a range of local facilities and services are within a reasonable walk and cycle distance of the proposed development.

For completeness the accessibility of local facilities from the centre of the site via the site's primary and secondary accesses has been recalculated and is provided in the table below.

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Table 1 – Accessibility of Local Facilities from the Site’s Primary and Secondary Accesses

DESTINATION	NAME	ACCESS POINTS	DISTANCE IN KM	APPROX. WALKING TIME	APPROX. CYCLE TIME	BUS/TRAIN ACCESS
Leisure	Recreation Ground	Primary Access (via Henham Road)	2.1	25 mins	7 mins	N/A
		Secondary Access (Via Station Road)	1.4	17 mins	4.5 mins	N/A
	Stanstead Cricket Ground	Primary Access (via Henham Road)	5	N/A	18 mins	N/A
		Secondary Access (Via Station Road)	3.9	N/A	13.5 mins	N/A
	The Crown @ Elsenham	Primary Access (via Henham Road)	1.3	16 mins	4 mins	N/A
		Secondary Access (Via Station Road)	1.5	19 mins	4.5 mins	N/A
Shopping	Tesco Express	Primary Access (via Henham Road)	1.7	21 mins	5 mins	N/A
		Secondary Access (Via Station Road)	1.2	14 mins	3.5 mins	N/A
	Elsenham Post Office	Primary Access (via Henham Road)	1.8	21 mins	6 mins	N/A
		Secondary Access (Via Station Road)	1.1	14 mins	3.5 mins	N/A
	Standsted Mountfitchet	Primary Access (via Henham Road)	4.8	N/A	17 mins	Yes
		Secondary Access (Via Station Road)	4.2	N/A	15.5 mins	Yes
	Bishops Stortford	Primary Access (via Henham Road)	9.8	N/A	N/A	Yes
		Secondary Access (Via Station Road)	9.4	N/A	N/A	Yes
Education	The Ugly Duckling Pre-School (Ugley Green)	Primary Access (via Henham Road)	3.7	N/A	13 mins	No
		Secondary Access (Via Station Road)	2.6	N/A	8.5 mins	No
	Saplings Nursery (Henham)	Primary Access (via Henham Road)	5.4	N/A	17 mins	No
		Secondary Access (Via Station Road)	5.6	N/A	17.5 mins	No
	Rainbow Pre-School (Stansted Mountfitchet)	Primary Access (via Henham Road)	4.5	N/A	16 mins	Yes
		Secondary Access (Via Station Road)	4.0	N/A	14.5 mins	Yes
	Elsenham C of E Primary School	Primary Access (via Henham Road)	1.4	17 mins	4 min	N/A
		Secondary Access (Via Station Road)	1.5	18 mins	4.5 mins	N/A
		Primary Access (via Henham Road)	2.9	N/A	9 mins	Yes

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DESTINATION	NAME	ACCESS POINTS	DISTANCE IN KM	APPROX. WALKING TIME	APPROX. CYCLE TIME	BUS/TRAIN ACCESS
	Henham and Ugley Primary School and Nursery	Secondary Access (Via Station Road)	3.9	N/A	1.5 mins	Yes
		Primary Access (via Henham Road)	5.5	N/A	18mins	Yes
	Forest Hall School	Secondary Access (Via Station Road)	4.9	N/A	16.5 mins	Yes
		Primary Access (via Henham Road)	0.3	4 mins	2 Mins	-
	Primary School & Early Years Facility (Proposed as per Phase 1 Development)	Secondary Access (Via Station Road)	Accessible from Primary Access			
Health	Elsenham Surgery	Primary Access (via Henham Road)	1.9	24 mins	6 mins	N/A
		Secondary Access (Via Station Road)	0.9	11 mins	2.5 mins	N/A
	Princes Alexandra Hospital	Primary Access (via Henham Road)	23.1	N/A	N/A	Yes
		Secondary Access (Via Station Road)	22.7	N/A	N/A	Yes

4. CONCLUSION

In conclusion, it has been demonstrated in the TA and VISSIM modelling that the proposed development will not have an unacceptable impact on highway safety, or that the residual cumulative impact on the road network would be severe.

VISSIM modelling has been undertaken for the base and future years which demonstrates the proposed development will not have a severe impact on the operation of the local highway network. The base model has been validated in accordance with TAG guidelines, with all journey times within 60 seconds of observed journey times. The VISSIM model is fit for purpose in assessing the impact of the proposed scheme against future forecast network conditions, taking into account committed improvements.

Robust forecasts of future traffic flows on the local highway network have been established, against which the impact of the scheme proposals have been assessed.

The requested inclusion of Land South of Vernon's Close and additional sensitivity tests of the Hall Road / Coopers End Mini-Roundabout will not materially change the conclusions of the TA, as the committed development will result in minor increases in flows on the local network and the proposed development is



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predicted to result in a relatively small increase in peak hour movements through the Coopers End / Hall Road mini-roundabout.

The Hailes Wood link has been clarified and the update to the walk and cycle distances to local facilities demonstrate no material change in accessibility to and from the proposed development.