

**Project:** M1 Luton Airport DCO

**Stage** Deadline 9 (30<sup>th</sup> January 2024)

**Subject:** National Highways updated position on 'Accounting for Covid-19 in Transport Modelling'

**On Behalf of:** National Highways

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### 1. Introduction

In response to the Department for Transport (DfT) updated modelling guidance (Transport Appraisal Guidance (TAG) Unit M4 – Forecasting and Uncertainty, May 2023 which was issued after the modelling was undertaken as part of the DCO submission, the Examining Authority (ExA) issued a Rule 9 Letter to the Applicant to take account of the potential impacts of COVID-19 on the traffic modelling.

National Highways and its technical consultant, Jacobs, reviewed the Applicant's Response to Issue Specific Hearing 7 Action 2 – '*Accounting for Covid-19 in Transport Modelling Final Report (ACTMFR)*' submitted by the Applicant on 15<sup>th</sup> December 2023 and provided the ExA with a response at Deadline 7 (REP7-093).

The Applicant provided responses to the comments at Deadline 8 (REP8-039). This Technical Note summarises National Highways updated position on the ACTMFR and the Applicants response and provides a summary of the outstanding concerns.

National Highways/Jacobs have reviewed the following in order to inform their position;

- Applicant's Response to Issue Specific Hearing 7 Action 2 - Accounting for Covid-19 in Transport Modelling Final Report (TRO20001/APP/8.148);
- Applicant's Response to Deadline 5 Submissions Appendix E - National Highways (TRO20001/APP/8.127); and
- Applicant's Response to Comments from the Highway Authorities on the Accounting for Covid-19 in Transport Modelling Final Report (REP8-039).

The following Luton Rising VISSIM Do-minimum (DM) and Do-something (DS) models have been reviewed:

- 2027 DM and DS;
- 2039 DM and DS; and
- 2043 DM and DS.

Issue/Reference	Luton Rising Response (Deadline 8)	National Highways (NH) Response (Deadline 9)
<b>Saturn Modelling</b>		
REP7-093, Ref 2.2 – Queues and delays	The Applicant has re-produced Tables 4.1 to 4.2 in the Applicant’s Response to Issue Specific Hearing 7 Action 2 - Accounting for Covid-19 in Transport Modelling Final Report [AS-159] and included queues and delay information as requested.	NH is content with the information provided by the Applicant.
REP7-093, Ref 2.3 – Strategic Road Network (SRN) Flow Differences	The Applicant has provided the necessary information.	Difference in flows for 2043 PM as shown in Figure 1 and Figure 2 of the response is not the same as those shown in ACTMFR. In particular, for the M1 NB diverge, the difference in flows between with and without Luton expansion in ACTMFR is 1525, whereas the difference shown in the latest response document is 132 PCU/hr (1547-1415). NH is still unclear why there are significant differences in the SRN flows.
REP7-093, Ref 2.4 – LRN Flow Differences	<p>The Applicant has indicated that only the A1081 (New Airport Way) site from LBC count sites was unusable. Whereas the count site for the A1081 between Junction 10 and Junction 10a sourced from the National Highways WebTRIS have been used and informed the trend analysis.</p> <p>The Applicant provided justification and rationale behind not undertaking adjustments to traffic forecasts and for the flow differences on the LRN.</p>	<p>NH believes that the missing count site is important because the majority of flows with Luton expansion will use this link and the count between J10 and 10a is not on the A1081. This puts doubts on validity of flows on the A1081.</p> <p>NH is content with the forecast adjustments as they stand and the flows on the LRN not being adjusted.</p>
REP7-093, Ref 2.5 – M1 Junction 9	The Applicant has indicated that the tables associated with the M1 Junction 9 results were not correct in terms of labelling. ARCADY was run using the ‘demand’ flows from the strategic model. The results show there would be no future forecast issues at M1 Junction 9 affecting the operation of the SRN.	NH is content with the information provided by the Applicant.
REP7-093, Ref 2.6 – Model convergence	For the updated runs, the applicant reported the results in Table 5, Figure 3 and Table 6 for the Without Expansion scenario, and Table 7, Figure 4 and Table 8 showing the Without Expansion scenario.	NH is content with the information provided by the Applicant.

Issue/Reference	Luton Rising Response (Deadline 8)	National Highways (NH) Response (Deadline 9)
REP7-093, Ref 3.2 – Transfer of Vehicle Trips from SATURN to VISSIM	The Applicant has confirmed that Demand flows have been obtained from the SATURN model. The Applicant has provided a table to support the claim that there is a minor amount of suppressed demand in the modelling.	Without receipt of the SATURN models, NH is unable to verify that the full level of development trips has been included in the SATURN model and then transferred to the VISSIM. National Highways considers that it should be able to verify the SATURN model runs and inputs.
REP7-093, Ref 3.3 – Demand-Supply Convergence	The Applicant has stated that the micro-simulation model is not a “simplified” highway assignment model and is not a “lower tier” model. In addition, both models were calibrated and validated for different base years using different set of data and parameters.	NH do not agree with applicant’s position as the traffic flows supplied to the micro-simulation model are heavily dependent on the outputs of the strategic model and there is a need to check the consistency between the two models as set out in TAG.
<b>VISSIM Modelling</b>		
REP7-093, Ref 3.4 – Isolation of Development Trip Impact	The Applicant states that the methodology that has been used to develop the VISSIM models was agreed during the scoping stages of the DCO. The applicant has not provided DM VISSIM models with development trips and without uncommitted network changes, as requested by NH.	The Applicant has not provided a transparent set of information from the VISSIM modelling that would enable NH to isolate the impact of development trips. This issue has been raised consistently by National Highways since pre-application and has not been satisfactorily addressed. It is necessary to understand the impact of the development in any decision on the application.
REP7-093, Ref 3.5 – Assignment and Convergence	The Applicant has demonstrated that they have assessed convergence relative to traffic flows, but not journey times.	This issue has not been satisfactorily addressed due to the lack of journey time analysis.
REP7-093, Ref 3.6 – Slip Road Coding	The applicant has undertaken a sensitivity test in the VISSIM model to assess the impact of harmonising the desired speed markers. This test shows that the change has little impact.	NH is content with the information provided by the Applicant.
REP7-093, Ref 3.7 – VISSIM Model Outputs Part 1 – 2043 DM AM	The Applicant acknowledges that congestion occurs at the southbound merge but has the position that there are no notable delays at the northbound lane drop.	NH considers that there is a risk that the operation of the southbound merge at Junction 10 and the northbound lane drop on the M1 is worsened due to development traffic within the VISSIM forecast scenario. This is due to the congestion evident at these locations in the DS VISSIM models. For the impacts if the development to be properly addressed, this must be mitigated.
REP7-093, Ref 3.7 – VISSIM Model Outputs Part 2 – 2043 DS AM	As per response for 2043 DM AM. The Applicant’s position is that the proposed mitigation will accommodate the proposed development demand.	
REP7-093, Ref 3.7 – VISSIM Model Outputs	The Applicant has provided a qualitative summary of model operation in the 2043 DM PM scenario. The Applicant’s position	NH disagrees with the Applicant’s assessment of the M1 northbound carriageway in the 2043 DM PM and considers that slow moving and

Issue/Reference	Luton Rising Response (Deadline 8)	National Highways (NH) Response (Deadline 9)
Part 3 – 2043 DM PM model operation	is that there is no notable congestion at the southbound merge at Junction 10 or northbound lane drop on the M1.	stationary vehicles are present in the modelling. In determining the application, this matter needs to be properly resolved.
REP7-093, Ref 3.7 – VISSIM Model Outputs Part 4 – 2043 DS PM	The Applicant response reaches similar conclusion to 2043 DM PM response above.	NH accept that the desired speed markers in this modelled scenario do not require further amendment. NH does not accept the Applicant’s position that the northbound lane drop has not significant impact on the operation of the M1 mainline.
REP7-093, Ref 3.4 - Conclusion	The Applicant provides a summary of the proposed highway mitigation measures. The applicant reiterates their position that these measures will adequately mitigate the SRN impact of the proposed development.	Based on analysis of the VISSIM models, NH considers that the proposed highway mitigation measures do not fully mitigate the impact of the proposed development on the SRN.  NH considers that there is a risk that the operation of the southbound merge at Junction 10 and the northbound lane drop on the M1 is worsened due to development traffic.

## 2. Summary

National Highways has a number of outstanding VISSIM and Saturn concerns as set out in this Technical Note. National Highways remains uncertain about the development impact and is not certain that all the development impacts from the proposed expansion of Luton Airport will be mitigated, or when the mitigation would be required based on the updated modelling to take account of the potential impacts of COVID-19. As a result of the uncertainties with the modelling there is a risk of a residual development impact from Luton Airport on the M1 junction 10 (the northbound mainline and the southbound merge). The key outstanding concerns that National Highways have with the modelling are summarised as;

### Saturn Modelling

- Significant SRN flow differences;
- The lack of post covid traffic count on A1081 going to/from Luton Airport;
- The transfer of Vehicle Trips from SATURN to VISSIM; and
- The demand-supply convergence.

### VISSIM Modelling

- The isolation of development trip impact (no future scenario without mitigation);
- The lack of journey time data for the assignment and convergence of the model; and
- The operation of the southbound merge at Junction 10 and the northbound lane drop on the M1 is worsened due to development traffic within the VISSIM forecast scenario as indicated by congestion at these locations in the VISSIM models.