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# London Luton Airport Expansion

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Volume 8 Additional Submissions (Examination)

**8.127 Applicant's Response to Deadline 5 Submissions**

**Appendix E - National Highways**

Infrastructure Planning (Examination Procedure) Rules 2010 Application

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**The Planning Act 2008**

**The Infrastructure Planning (Examination Procedure) Rules 2010**

**London Luton Airport Expansion Development Consent  
Order 202x**

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**8.127 APPLICANT'S RESPONSE TO DEADLINE 5 SUBMISSIONS  
APPENDIX E – NATIONAL HIGHWAYS**

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## Appendix E – National Highways [REP5-091 & REP5-093]

Table 1.1 Applicant's response to submission by National Highways [REP5-091] at Deadline 5

I.D	Topic	Deadline 5 submission (Verbatim)	Luton Rising's Response
1	Surface Access	<p>Overall, National Highways is concerned that there is not enough detail provided within the TRIMMA to enable the Applicant and key stakeholders such as National Highways and the Local Highway Authorities to accurately monitor and determine when the thresholds for mitigation are triggered at the M1 junction 10 and the local road network.</p> <p>This is particularly important for M1 junction 10 as the impacts on the SRN have so far been associated with the delivery of particular phases of the proposed development. At present, the working hypothesis is that mitigation should be provided in phases, when particular levels of Airport demand are reached, but this is not necessarily associated with the years modelled which are deemed to be indicative.</p> <p>It is noted that there are plans to produce a more detailed TRIMMA following approval of the DCO. However, this does not provide National Highways with sufficient assurance that the monitoring regime will be sufficiently robust and that the thresholds to trigger each intervention will be at a satisfactory level.</p>	<p>National Highways raised concern “that there is not enough detail provided within the TRIMMA to enable the Applicant and key stakeholders such as National Highways and the Local Highway Authorities to accurately monitor and determine when the thresholds for mitigation are triggered at the M1 junction 10 and the local road network”:</p> <ul style="list-style-type: none"> <li>It is proposed that the Applicant monitors traffic at J10 of the M1. It is not proposed that National Highways be responsible for this.</li> <li>The <b>OTRIMMA [REP5-041]</b> is not intended to provide a comprehensive level of detail on how to carry out the proposed monitoring. It is an ‘outline’ document that 1) expands on the original version of the <b>OTRIMMA [REP5-041]</b> submitted in the DCO application and 2) has incorporated feedback from National Highways and other highway authorities in engagement between the dates of the submission of the DCO application and the submission of the <b>OTRIMMA [REP5-041]</b> at Deadline 4. It is stated in the <b>OTRIMMA [REP5-041]</b> that exact details of monitoring (including triggers) and mitigation will be included in the final TRIMMA, which will be produced after the granting of the DCO and in advance of the airport exceeding its extant planning capacity.</li> </ul> <p>National Highways noted the proposal for a final TRIMMA, and states that “this does not provide National Highways with sufficient assurance that the monitoring regime will be sufficiently robust and that the thresholds to trigger each intervention will be at a satisfactory level”:</p> <ul style="list-style-type: none"> <li>Section 1.2.2 of the <b>OTRIMMA [REP5-041]</b> states that “The final TRIMMA must... be approved in writing by the relevant planning authority, following consultation with the relevant highway authority on matters related to its function.”</li> <li>Section 3.3.9 of the <b>OTRIMMA [REP5-041]</b> states that “The thresholds for each movement/junction will be agreed by the Applicant and applicable highway authorities.”</li> <li>These points clearly indicate that 1) National Highways will be consulted on the content of the final TRIMMA and 2) the monitoring thresholds will be agreed with National Highways.</li> </ul>
2	Surface Access	<p>National Highways considers that for the Applicant pausing monitoring if the airport is not growing (Section 3.2) is a flawed approach. Even if the mppa throughput at the airport does not increase, there is still a requirement to monitor the impact of the airport in case there is a modal shift over time which would trigger the need for additional mitigation despite the airport throughput not increasing. Similarly, the change in the traffic on the SRN may result in a need for mitigation so that even a constant level of airport throughput needed to be managed in terms of its impact with traffic.</p> <p>There are three levels of monitoring proposed. ML0 is the baseline monitoring and will establish the updated baseline against which traffic volumes will be compared. Total trips starting and/or ending at airport sites will be counted yearly, using data collected from existing data sources within the airport (ML1 and ML2). When the thresholds are met, ML3 will be triggered at which point further detailed monitoring and mitigation will be put into place.</p>	<p>National Highways state that “the Applicant pausing monitoring if the airport is not growing is a flawed approach”.</p> <ul style="list-style-type: none"> <li>The Applicant maintains that this approach is appropriate and clarifies that the proposal in the <b>OTRIMMA [REP5-041]</b> is to pause monitoring if it has been observed that “commercial passenger throughput has not increased for the most recent five-year period”. Any monitoring thresholds which have been exceeded before this point will be respected, so any necessary mitigation due to the airport’s growth before this point will be delivered.</li> <li>The Applicant also notes National Highway’s concern regarding a modal shift away from sustainable modes in the event that airport throughput does not increase. After the airport exceeds its extant planning capacity after the granting of the DCO, GCG limits on surface access mode shares must be met at all times – even if the airport is not growing. This ensures that there will be a minimum mode share for sustainable modes at all times, and therefore that airport traffic will also be limited.</li> </ul> <p>National Highways state that “the change in the traffic on the SRN may result in a need for mitigation” regardless of airport growth.</p> <ul style="list-style-type: none"> <li>The Applicant agrees that this scenario may necessitate mitigation, but maintains that the Applicant should only be responsible for mitigation necessary to mitigate the effect of the increase in airport traffic due to the airport’s growth. The <b>OTRIMMA [REP5-041]</b>’s proposals to</li> </ul>

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			1) compare surveyed flows around the date of DCO consent with flows from 2016 to inform monitoring thresholds and to 2) monitor and mitigate based on measured increases in airport traffic are reflective of this.
3	Surface Access	<p>M1 junction 10 is congested in the baseline and will be sensitive to any future additional traffic, which is likely to result in significant congestion issues at this key location on the SRN. The TRIMMA indicates that annual monitoring (ML1 and ML2) will take place at specific locations only if it exceeds MLO thresholds. Given National Highway's concerns about capacity at this junction and its lack of resilience, it is expected that monitoring should take place annually whether or not MLO (any difference from the baseline) is triggered.</p> <p>Figure 3.4 in the TRIMMA shows the locations that the traffic monitoring is proposed to be undertaken. For M1 junction 10, one location is proposed on the A1081. Based on this location it is unclear how the Applicant will monitor the capacity constraints and consequences of traffic growth at junction 10 as it will not be possible to determine the movements using each slip/the circulatory carriageway etc to determine when capacity has been reached at the junction. National Highways view is that more detail concerning the junction performance for example turning flows are required given the complexity of movements and potential patterns of congestion at the junction.</p>	<p>National Highways state that "monitoring should take place annually whether or not" there is any observed difference versus the baseline established at MLO.</p> <ul style="list-style-type: none"> <li>The Applicant understands "National Highway's concerns about capacity at [Junction 10 of the M1] and its lack of resilience". However, the Applicant disagrees that traffic at the junction needs to be monitored annually if airport traffic has not increased over the historic maximum volume; to do so would only demonstrate that traffic growth is not caused by the Proposed Development and therefore not the role of the Applicant to mitigate.</li> </ul> <p>National Highways raised a concern that the indicative locations of survey cameras associated with MT1 is insufficient to adequately monitor Junction 10 of the M1.</p> <ul style="list-style-type: none"> <li>The Applicant wishes to advise that the map will be updated to show a camera on each slip instead of one on the A1081 to the east of the junction, camera locations can be adjusted as part of the full TRIMMA.</li> </ul>
4	Surface Access	The TRIMMA provides that a spreadsheet tool (Section 3.3.8) will assign the airport traffic to the public highway network, based on the distribution derived from the ANPR (or similar) survey located on the A1081. It is unclear how the Applicant will be able to obtain distributional data for M1 junction 10 based on the location of on camera on the A1081. This severely constrains the ability to understand the impacts on junction 10 and the SRN and hence to deploy mitigation.	This is also a concern relating to the indicative locations of survey cameras associated with MT1. As stated at ID 3, the Applicant proposes a camera on each slip instead of one on the A1081 to the east of the junction.
5	Surface Access	A two-week survey conducted during a neutral month is currently proposed. The survey is proposed to be repeated every five years, so that the distribution of airport-related trips can be updated. Carrying out surveys for two weeks in a neutral month poses a significant risk to the usefulness of data collection. In practice, much richer data are required if survey data is to be relied upon. There can be significant fluctuations in traffic levels week by week (train strikes, broken ATC loops/ANPR cameras/weather conditions/road closures etc). Therefore, several weeks of surveying should be undertaken as a minimum and at more frequent intervals for such a large-scale development, to ensure that the surveys represent a neutral, average time period and provide an accurate picture of traffic movements related to airport demand.	<p>National Highways raised a concern regarding the proposed timing and frequency of the recurring ANPR surveys.</p> <ul style="list-style-type: none"> <li>The OTRIMMA [REP5-041] sets out the initial proposal for traffic collection surveys; it is likely that these surveys would be undertaken in October for consistency with the baseline survey data used in the traffic modelling and the forecast future year flight schedules. In addition, the Applicant will ensure that sufficient data is gathered, taking into account potential issues raised by National Highways such as train strikes, broken survey equipment, weather conditions and road closures. The detailed survey scope will be agreed with highway authorities.</li> <li>The Applicant wishes to reiterate that the aim of the recurring surveys is to update the geographic distribution of airport traffic, as an alternative to assuming that the equivalent distribution used in traffic modelling to support the application will be accurate in perpetuity. It is not proposed to use the measured flows to directly monitor junctions; the means of monitoring these is as per ML1 and ML2 as set out in the OTRIMMA [REP5-041], whereby airport traffic measured at airport sites will be estimated at junctions based on the distribution derived from the ANPR survey.</li> </ul>
6	Surface Access	Given the congested nature of junction 10, it is not clear to National Highways how the applicant will use the ANPR data to determine when each phase of the mitigation for the M1 has been triggered. Traffic volumes alone	The Applicant notes the point made by National Highways that "Traffic volumes alone will be insufficient to confirm whether the capacity has been exceeded and whether the junction performance

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		will be insufficient to confirm whether the capacity has been exceeded and whether the junction performance has deteriorated. National Highways consider that further data on queue lengths and the capacity of each lane on each arm of the junction will be required to determine when each phase of mitigation will be required.	has deteriorated". Monitoring Level 3' (ML3) is proposed as a means of addressing this issue, as stated in section 3.3.11 of the OTRIMMA [REP5-041].
7	Surface Access	It is indicated in the outline TRIMMA (paragraph 3.3.9) that any difference between the current (2016) 'baseline data and the non-airport traffic' will be analysed. However, National Highways considers that a justification is needed as to why the latest survey data available post covid should be used as the comparison as opposed to the 2016 data. This is because this is the most recently available data.	In response to National Highways assertion "that a justification is needed as to why the latest survey data available post covid should be used as the comparison as opposed to the 2016 data". The reason for undertaking a comparison between the 2016 baseline data and the non-airport traffic surveyed in ML0 as opposed to comparing post covid data with the ML0, is to understand changes between the baseline used in the traffic models, which form the basis upon which future year traffic flows have been forecast, impacts assessed and mitigation designed and tested. In addition, the post covid data is limited in geographic coverage unlike the comprehensive surveys that were undertaken as part of the model validation process for the CBLTM-LTN and VISSIM. The modelling methodology including the surveys undertaken are summarized in Chapter 9 of the Transport Assessment [APP-205].
8	Surface Access	Airport sites do not include third party off-site car parking facilities because the traffic associated with these (aside from any vehicles travelling between these facilities and the airport terminal, such as shuttle buses) are outside the airport's control (Section 3.4). Whilst it is noted that it is outside of the Applicant's control, this mode share has the potential to materially affect the overall mode shares that have been forecast and could have significant impact on the highway network. National Highways therefore considers that such movements should be included in the monitoring to verify that the forecasts are accurate in terms of the mode shares to the airport.	In response to National Highways statement regarding off-site parking facilities: <ul style="list-style-type: none"> <li>• The Applicant acknowledges that the growth of the airport will likely lead to a growth in traffic associated with off-site car parking facilities. This growth is represented in the traffic modelling to support the application, where the traffic is included as 'background' demand in recognition that 1) it is not within the control of the airport and 2) it is not associated with airport sites. This growth is also, therefore, represented in the proposed off-site highway mitigation measures.</li> <li>• In addition, it is considered inappropriate for the Applicant to have a relationship with operators of off-site parking facilities in which sensitive commercial data is shared. Monitoring of traffic associated with these facilities would require such a relationship.</li> <li>• The Applicant maintains this position and considers it appropriate and robust.</li> <li>• However, the forecast increase in this traffic will be monitored in another way, namely via CAA passenger surveys which will enable passengers to report whether they used off-site facilities. This data will be used to inform interventions and targets in future Travel Plans and monitoring against GCG surface access Limits.</li> </ul>
9	Surface Access	<p>The Residual Impact Fund proposed in the outline TRIMMA is a finite fund for the mitigation of residual airport-related traffic impacts. This fund will be secured in the section 106 agreement. National Highways concern in relation to the RIF is in relation to the process of allocating the fund.</p> <p>National Highways requires further clarification about how the RIF will operate in practice and be allocated (Section 4.1). The RIF will be a finite fund for the mitigation of residual airport-related traffic impacts, but it is unclear how this fund will be allocated. As the fund is finite, it is not clear what would happen: if further mitigation was required for any additional link or junction that had not previously been identified; what would occur if the anticipated cost of any mitigation exceeded the budgeted expenditure under or residue of the fund or if a cost overrun occurred in relation to any element and this required even a little more than anticipated in terms of a financial contribution. It is not clear how this would be managed if mitigation used up a higher proportion of the fund and left limited funding available for mitigation at other times or locations. Particularly where funding decisions are made on a voting basis, each stakeholder will have their own priorities and such that the RIF could result in an unbalanced allocation of funding, with insufficient</p>	National Highways raised concern regarding various matters relating to the terms of reference of the Residual Impacts Fund. As stated in section 4.1.2 of the OTRIMMA [REP5-041], details of the terms of reference of the ATF Steering Group which will govern the Residual Impacts Fund will be provided in the final TRIMMA and outline terms of reference are being developed. <i>The Applicant is committed to developing outline terms of reference and sharing these in future OTRIMMA [REP5-041] updates.</i>

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		available to meet all needs and in particular the need for mitigation on the SRN.	
10	Surface Access	National Highways remains concerned about the robustness of the outline TRIMMA in respect of monitoring and measuring critical airport-related traffic flows at M1 junction 10. It is also noted that the planning authority responsible for implementation of the TRIMMA, is also the Applicant. National Highways requires further details concerning the way in which traffic and performance of the junction will be monitored and measured at M1 junction 10 and seeks agreement to the triggers for mitigations to be implemented.	The Applicant considers that this is mostly a summary of previous comments made by National Highways on the <b>OTRIMMA [REP5-041]</b> . The Applicant therefore refers National Highways to the relevant responses provided above. The Applicant also wishes to clarify that the Applicant is not a planning authority.
11	Surface Access	From the data presented in paragraph 3.2.3, it appears that the traffic flow changes in 2027 on the LRN seem to be larger than those shown in 2039 and 2043 in all peak periods. Similarly, in Table 4.8 and Table 4.9, it is shown that there are large percentage differences in 2043 for Eaton Green Road, east of Wigmore EB in Inter Peak (IP), PM and daily. National Highways is concerned about why these flow changes exist in the modelling, as this could have a sequential effect on predicted traffic flows on the SRN as a result of congestion in this area.	Para. 3.2.3 provides a general statement on the differences between the Updated and Original runs, which is driven by the underlying changes in the future year forecasting assumptions, i.e. NTEM8/NRTP22 versus NTEM7.2/RTF18 and updated uncertainty log assumptions. The reason for the changes in 2027 being larger than in 2039 and 2043 has been mentioned in the paragraph as being 'attributed to the change in UL development assumptions as mentioned in Section 2.4'. Section 2.4 states 'East and North of Luton developments, along with Newlands Park, have changed in terms of certainty level and land quantum which would have a notable direct impact on traffic levels within the study area'. Furthermore, the 2027 flow plots also show traffic reassignment as an impact of reduced capacity at Vauxhall Way, related to the absence of dualling and associated junction improvements in the Updated 2027 model. This difference does not apply for 2039 and 2043. Tables 4.8 and 4.9 show the forecast changes in traffic as a result of the proposed airport expansion. The impact of the airport expansion is within the overall model runs and therefore also reflected in the forecasts for the SRN.
12	Surface Access	With the exception of two links in the AM peak (Table 6.2) and five links in the PM peak (Table 6.6), almost all LRN links fail the TAG criteria and it is not clear whether this is due to a re-assignment issue. The failure of TAG criteria on these links would probably result in the wrong level of traffic flow being allocated to these links by the model which could have a consequential effect on SRN flows.	The reason for the failure to meet the TAG recommended criteria is due to the impact of Covid-19 on the LRN, which has been reflected in the 2023 traffic counts being significantly lower than pre-Covid-19 levels. It is not due to re-assignment. It is worth noting that the TAG validation recommended criteria were used as a statistical method to compare the traffic, and this exercise is not for recalibration or validation of the 2023 forecast model.
13	Surface Access	In paragraph 7.1.8 of its Rule 9 response, the applicant asserts that the highways modelling (and therefore the proposed mitigation) is robust. However, having more modelled flows than observed flows could be the result of traffic re-assignment and this will depend on the level of congestion on the LRN, potentially suggesting otherwise. However, this information is not available in the Technical Note. National Highways is concerned that without knowing the level of congestion on different sections of LRN, it is difficult to identify the impact of traffic re-assignment on the SRN and whether the mitigation proposed is appropriate.	The paragraph is referring to the risk assessment. The risk assessment concludes that the published DCO application modelling is robust. This is because the Updated forecasts and trends analysis both lead to the conclusion that the forecasts used in the DCO application documents, to design the highway mitigation, are higher than the Updated forecasts. It can therefore be concluded that the proposed mitigation scheme(s) have been designed to accommodate higher traffic demands. National Highways should therefore not be concerned, as the demand levels on the SRN are lower than the design flows used to inform the proposed mitigation at M1 Junction 10.
14	Surface Access	It is suggested that downward adjustment could be applied to the LRN (paragraph 6.1.5), but in the conclusion it states that no adjustments will be made. Based on the information presented in Table 6.2 and Table 6.6, there seems to be a strong case that adjustments to LRN links are needed, as changes in LRN flows are bound to have a knock-on effect on traffic assignment and hence traffic flows on the SRN could be different to those presented.	The risk assessment concludes that the published DCO application modelling is robust. This is because the Updated forecasts and trends analysis both lead to the conclusion that the forecasts used in the DCO application documents, to design the highway mitigation, are higher than the Updated forecasts. A downward adjustment would likely make local routes more attractive than the SRN and draw traffic away from the SRN and as such the existing modelling continues to ensure that the impacts on the SRN remain robustly assessed. The Applicant therefore recommends no further adjustments are required to the Updated traffic forecasts, as the risk on the proposed mitigation is considered to be very low.

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15	Surface Access	There appear to be large percentage differences in 2039 and 2043 in the PM peak for M1 mainline carriageway between J9 and 10 in the southbound direction. As this stretch of motorway is owned and managed by National Highways, the authority is concerned that large flow changes could be the result of traffic congestion at this location. The Applicant should confirm whether there are any specific reasons for these large changes happening in the PM peak (paragraph 4.2.4).	The section '4.2 With vs without airport expansion' and this paragraph concern the comparisons of the with and without airport expansion in the Original published DCO documents and in the Update model runs. The large percentage differences are due to the mitigation for the M1 southbound on-slip which improves the capacity of the on-slip with the mainline and results in a forecast increase in traffic volumes associated with the proposed expansion of the airport in conjunction with a significant proportion of existing traffic rerouting to use the M1 corridor, for which the impacts are greater in the PM peak.
16	Surface Access	In Table 4.6, for M1 J10 southbound on-slip (original runs), in the PM peak, the percentage difference is -1% but in 2039 and 2043 these percentages go up to 53% and 46% respectively. This seems to be due to large delays for these forecast years. National Highways is concerned that the performance of the on/ off-slips for M1 M10 have not been assessed. This should be confirmed by including link volume over capacity (V/ C) metrics to understand the performance of this junction.	<p>The purpose of Table 4.6, and also of Table 4.7, is to compare trends between the Original and Update runs, to illustrate the change and level of impacts due to the modelling update. The section '4.2 With vs without airport expansion' and this table concern the comparisons of the with and without airport expansion in the Original published DCO documents and Update model runs. The -1% (which becomes 0% in the updated runs) small percentage change for 2027 indicates almost no change, whereas the large percentage differences for 2039 and 2043 are due to the forecast increase in traffic volumes associated with the proposed expansion of the airport, which are greater in the PM peak.</p> <p>The technical note does not report any delays and therefore the applicant does not agree with the conclusion that it is related to delays. The performance of the on/off-slips have been reflected and assessed within the SATURN model through the use of network coding to present the existing and proposed improvement measures in the form of number of lanes, saturation flows and gap acceptance, and then in the resulting capacity, although not reported in the technical note. The additional information will be provided in the Rule 9 'accounting for Covid-19 in transport modelling' final report. The forthcoming VISSIM modelling, which is the main assessment tool for Junction 10 and its slip roads, will be assessing the operational capacity, which will be reported in the Rule 9 'accounting for Covid-19 in transport modelling' final report.</p>
17	Surface Access	Comparisons of the level of queues and delays for all approaches on the M1 junctions and for different scenarios are not shown in this Technical Note. Although the microsimulation model will show the M1 junction 10 performance in detail, excessive junction delays in the strategic model could result in traffic re-assignment and hence the traffic flow information that is fed from the strategic model into the microsimulation model could be questionable. For different scenarios, information on queues and delays for approaches to the M1 junctions should be provided in a tabular form to enable the Examining Authority and National Highways to better understand the performance of SRN.	The strategic model does not show 'excessive junction delays' at M1/J10. The Applicant would be happy to discuss which locations to provide queues and delay information in a tabular form. It should, however, be noted that National Highways has not previously requested such information to be provided for the published DCO documents. Additional information extracted from the SATURN traffic model on V/C ratios, at M1 Junctions 9, 10 and 11 will be provided in the Rule 9 'accounting for Covid-19 in transport modelling' final report.
18	Surface Access	Based on the uncertainty log, there seem to be some large developments that are likely to generate a significant amount of traffic in future. Using this information, the forecast matrices have been derived by constraining the traffic growth at local authority district level from NTEM8. However, it is not clear as to whether this constraint has resulted in reducing traffic from non-development zones (paragraph 2.6.1). Also, has traffic from development zones been kept fixed in the process of matrix building (paragraph 3.2.3)? National Highways is raising these queries to ensure the appropriate level of traffic is allocated on SRN in model forecast years.	The demand forecasting methodology was not changed from the Original model runs, as reported in Appendix F of the Transport Assessment, Strategic Modelling Forecasting report. The methodology follows TAG guidance to constrain growth to DfT projections by area. The only change within the Updated modelling is to utilise the most up to date DfT projections of NTEM v8, compared with v7.2 which was used previously.
19	Surface Access	In creating the 2023 matrices, it is not clear as to whether matrix estimation has been undertaken, as part of creating updated matrices and whether this entailed updating SATURN SATPIJA files with the 2023 data and re-visiting	The 2023 matrices have been produced using the same processes used for 2027, 2039 and 2043. Paragraph 2.6.1 states 'A new forecast year 2023 model has been developed to provide a comparison with 2023 observed traffic count data to gain an understanding of how the forecast model reflects the



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		model calibration/ validation. This would give National Highways more confidence in the model outputs.	actual situation, given its 2016 pre-Covid-19 base year and the recent impact of the Covid-19 pandemic.' As 2023 is a 'future year' forecast (from the base year 2016 model), matrix estimation has therefore not been used.
20	Surface Access	The Applicant should provide confirmation of where the additional highway capacity on the network is, as this could have an impact on traffic assignment and therefore on the assignment of traffic on the SRN (paragraph 3.2.4).	Paragraph 3.2.4 states 'In comparing the impact of Updated vs Original, a mix of flow increases and reductions can be observed in the 2027 forecast year, whilst the 2039 and 2043 forecast years generally show reductions. This is due to, firstly, higher spare highway capacity available in 2027 and, secondly, the changes in the NTEM version which are more prevalent in 2039 and 2043 compared to 2027.' This is a general statement on 'spare capacity' in relation to overall traffic demand. There is no 'additional capacity', rather it is a 'spare capacity' due to the reduced overall traffic demand due to the update of growth projections.
21	Surface Access	National Highways requires additional information to help inform its position on the post-covid modelling work that has been carried out and considers that this would assist the ExA. This section sets out the additional information that it needs to review fully the modelling work undertaken to date.	The Original runs have already been documented in this format. Please see the <b>Strategic Modelling Forecasting Report (Transport Assessment Appendices - Part 2 of 3 (Appendix F) [APP-201])</b> , Appendix E – Link Based Volume to Capacity (V/C) for further information. The updated runs will also be documented in a similar format in the Rule 9 'accounting for Covid-19 in transport modelling' final report.
22	Surface Access	Plots of link percentage over capacity should be displayed from the highway model to demonstrate how congested the network is. These plots should be provided for original and updated runs and how these change between different scenarios and for different peak periods (paragraph 3.2.3). This would enable National Highways to have a better understanding of network performance and in particular delays and queues on M1 junctions.	The Original runs have already been documented in the requested format. Please see the <b>Strategic Modelling Forecasting Report (Transport Assessment Appendices - Part 2 of 3 (Appendix F) [APP-201])</b> , Appendix E – Link Based Volume to Capacity (V/C) for further information. The updated runs will also be documented in a similar format in the Rule 9 'accounting for Covid-19 in transport modelling' final report.
23	Surface Access	Tables 4.1 to 4.4 contain traffic flow data for original and updated scenarios. Information in these tables should be presented in terms of actual flows for these scenarios with and without expansion, together with percentage flow differences and GEH statistics, and finally a pass or fail rate. It is also necessary for Tables 4.5 and 4.7 to be structured in a similar way. This would provide a complete picture on traffic flow changes between different scenarios rather than showing a single number and percentage differences. A figure showing the location of sites should also be provided (paragraph 4.1.2).	The purpose of Tables 4.1 to 4.4 is to show how the overall demand has changed. They show that on the majority of the SRN, the Updated model runs show lower traffic demands when compared with the Original runs. The change in forecast flows has informed the Risk assessment. This is not an exercise to identify the statistical significance of the changes. However, the additional information will be provided in the Rule 9 'accounting for Covid-19 in transport modelling' final report.
24	Surface Access	Information on link percentage V/C is a good indication as to how congested the network is. It is necessary to include link V/C percentage changes in Table 4.6 to Table 4.9 to show link performance alongside link flows, to enable National Highways to have a full understanding of how the SRN is expected to operate.	The additional information will be provided in the Rule 9 'accounting for Covid-19 in transport modelling' final report.
25	Surface Access	As well as graphical form, the applicant should present the results of Figure 5.1 and Figure 5.2 in tabular form, to see the actual figures. When viewing the figures alone they do not enable National Highways to understand the magnitude/numerical representation of each line on the plot.	The additional information will be provided in the Rule 9 'accounting for Covid-19 in transport modelling' final report.
26	Surface Access	Overall, the analysis shows considerably higher modelled than observed flows for the Local Road Network (LRN). A comparison between 2023 modelled and observed flows shows that, for most links on SRN, the TAG criteria is achieved (with the modelled and observed flows being broadly comparative). However, no comparison has been made for turning flows at the approaches to the M1 junction 10 and without this information it is not possible to understand the performance of this junction. In addition, in the	Please see the above responses to ID 11 to 25.  The Applicant's recommendation of not adjusting the updated forecasts is based on assessment of the risks associated with the forecasts and therefore according the latest 31 May 2023 TAG Unit M4 guidance. In the case of the TA for the proposed airport expansion, the risk is in the triggering and sizing of the proposed improvements to highway infrastructure. Given the mitigation measures have been designed and programmed according to the forecasts contained in the submitted DCO

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		<p>Technical Note no information has been provided on queues and delays for the original and updated models at wider network level and this information is important to understand the impact of traffic re-assignment on SRN.</p> <p>Although the microsimulation model will be used to test the performance of the M1 junction 10, it is equally important to understand the impacts on the approaches to the M1 junction (i.e. V/ C%) to identify over-capacity links which could impact traffic routing on SRN.</p> <p>The analysis shows considerably higher modelled than observed flows for the LRN. In particular, with the exception of two links in the AM peak and five links in PM peak, almost all links fail the TAG criteria and could result in a re-assignment issue and hence an adverse impact on SRN. It is also suggested that downward adjustment could be applied to the LRN, but in the summary, it states that no adjustments will be made. The mismatch between the observed and modelled flows on LRN is likely to have an impact on SRN flows due to traffic re-assignment and this issue has not been addressed in the Technical Note.</p>	<p>documents, and these forecasts are higher than the recently updated forecasts and even higher if the updated forecasts were to be reduced due to Covid-19, the risk is 'very low'. The assessment in the DCO documents can be considered 'robust' and the Applicant therefore still recommends not reducing the traffic forecasts, as a result of Covid-19, and is proceeding on this basis.</p> <p>The additional information will be provided in the Rule 9 'accounting for Covid-19 in transport modelling' final report.</p>

Table 1.2 Applicant's response to submission by National Highways [REP5-093] at Deadline 5

I.D	Topic	Deadline 5 submission (Verbatim)	Luton Rising's Response
1	Surface Access	<p>National Highways' principal concern is the ability to accommodate additional development-related traffic at an already congested junction. Whilst it is acknowledged that the Applicant's proposals provide mitigation to the circulatory carriageway, congestion remains on the south facing slip roads and their interaction with the mainline carriageway. These safety issues are not addressed by the Applicant's proposals. To assist the Applicant in its DCO proposals,</p> <p>National Highways has given consideration to the timing of when the improvements to the south facing slips are likely to be required. As described in this Technical Note, only the Phase 2b (2043) demand scenarios were included in the VISSIM modelling undertaken to assess the need for these interventions to provide a worst case.</p> <p>The recent outputs from the Applicant's revised demand forecasting, using the SATURN model, have provided an opportunity to understand the expected change in flows utilising the south facing slip roads in the Phase 1, Phase 2a and Phase 2b scenarios. These flows are summarised in the tables below, which were shared with National Highways by Arup and Aecom on 13 October 2023.</p>	<p>The Applicant notes that the impact on the southbound on-slip was presented in the published Transport Assessment [APP-206]. The Transport Assessment considered the impact on the southbound on-slip for a sensitivity test scenario which did not include any upgrade to the motorway mainline capacity.</p> <p>It should be noted that the Applicant's scheme already includes measure to upgrade capacity of the southbound on-slip as part of the Assessment Phase 2a proposals. These improvements include an upgrade to the left-turn freeflow slip from a single lane to two lanes and amendments to the nosing and merge points with the M1 mainline to provide an increased capacity. These improvements were included within the sensitivity test.</p> <p>The Transport Assessment stated (para 14.3.28):  <i>"in PM peak hour, M1 Junction 10 is forecast to operate within capacity in the core scenario. In the sensitivity test, the A1081 left turn to the M1 south merge is seen to operate over-capacity in the future baseline. In the with assessment Phase 2b Proposed Development scenario, whilst the movement is forecast to operate over-capacity, the improvements implemented as part of the Proposed Development at M1 Junction 10 improve the operation of the movement and merge to better than nil-detriment. It is also noted that not only is the operation of the network improved but that this is accompanied by a substantial improvement in throughput."</i></p> <p>The Applicant therefore considers its impacts on the southbound merge have been addressed.</p>

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2	Surface Access	<table border="1" data-bbox="430 268 1439 451"> <thead> <tr> <th></th> <th colspan="2">AM Peak</th> <th colspan="2">PM Peak</th> </tr> <tr> <th>M1 J10 NB Off-Slip</th> <th>Do-minimum</th> <th>Do-something</th> <th>Do-minimum</th> <th>Do-something</th> </tr> </thead> <tbody> <tr> <td>2027</td> <td>1,400</td> <td>1,500 (+100)</td> <td>1,400</td> <td>1,400 (0)</td> </tr> <tr> <td>2039</td> <td>1,600</td> <td>1,700 (+100)</td> <td>1,400</td> <td>1,500 (+100)</td> </tr> <tr> <td>2043</td> <td>1,600</td> <td>1,900 (+300)</td> <td>1,400</td> <td>1,500(+100)</td> </tr> </tbody> </table> <table border="1" data-bbox="430 483 1439 665"> <thead> <tr> <th></th> <th colspan="2">AM Peak</th> <th colspan="2">PM Peak</th> </tr> <tr> <th>M1 J10 SB On-Slip</th> <th>Do-minimum</th> <th>Do-something</th> <th>Do-minimum</th> <th>Do-something</th> </tr> </thead> <tbody> <tr> <td>2027</td> <td>1,400</td> <td>1,400 (0)</td> <td>1,700</td> <td>1,700 (0)</td> </tr> <tr> <td>2039</td> <td>1,400</td> <td>1,500 (+100)</td> <td>1,700</td> <td>2,400 (+700)</td> </tr> <tr> <td>2043</td> <td>1,400</td> <td>1,600 (+200)</td> <td>1,700</td> <td>2,500 (+800)</td> </tr> </tbody> </table> <p data-bbox="409 697 1463 867">The tables show that the changes in demand in 2027 (Phase 1) are relatively small (noting that the figures have been rounded to the nearest hundred). Although the baseline conditions will be congested, National Highways accepts that the Phase 1 impacts are relatively small, and therefore believes it would be reasonable to accept growth in airport demand up to 21.5 mppa.</p> <p data-bbox="409 919 1463 1192">The tables further show that, beyond Phase 1 (2027), by the time Phase 2a is implemented in 2039), the increase in demand on the southbound on slip becomes significant, although it is not yet clear when the need for the southbound slip improvements would need to have been implemented. Nevertheless, is expected that the performance of the southbound on slip will exceed a tolerable level in advance of, and no later than, the implementation of Phase 2a, mitigation must have been provided by this point in order to enable further growth at the airport.</p> <p data-bbox="409 1245 1463 1413">Finally, the tables highlight that the traffic flows on the northbound slip will increase significantly by 2043, when Phase 2b is implemented and National Highways' view is that this increase will exceed tolerable levels of traffic in terms of congestion and safety. Therefore, improvements to the northbound off slip will need to have been implemented in advance of the delivery of Phase 2b.</p>		AM Peak		PM Peak		M1 J10 NB Off-Slip	Do-minimum	Do-something	Do-minimum	Do-something	2027	1,400	1,500 (+100)	1,400	1,400 (0)	2039	1,600	1,700 (+100)	1,400	1,500 (+100)	2043	1,600	1,900 (+300)	1,400	1,500(+100)		AM Peak		PM Peak		M1 J10 SB On-Slip	Do-minimum	Do-something	Do-minimum	Do-something	2027	1,400	1,400 (0)	1,700	1,700 (0)	2039	1,400	1,500 (+100)	1,700	2,400 (+700)	2043	1,400	1,600 (+200)	1,700	2,500 (+800)	<p data-bbox="1492 237 2279 279">National Highways position with regard to Phase 1 is noted.</p> <p data-bbox="1492 289 2709 321">National Highways concerns with regard to the increased impact for Phase 2a is also noted.</p> <p data-bbox="1492 331 2769 426">It should be noted that the Phase 2a modelling includes the Applicants proposed improvements to the southbound merge. These improvements provide additional capacity on the merge which results in traffic re-assignment of existing background traffic which contributes to this increase.</p> <p data-bbox="1492 436 2769 573">To put this into context, 80% of the additional traffic in 2039 on the southbound on-slip is associated with background/committed development traffic movements and not Airport related demand. These vehicles are able to use the southbound on-slip due to the improvements to the junction and slip already included within the Applicants scheme.</p> <p data-bbox="1492 583 2769 646">The Applicant would disagree that the increase in the 2043 figure for the northbound off-slip are significant.</p> <p data-bbox="1492 657 2769 720">National Highways position with regard to the impacts is noted however, we believe that the conclusions are premature until the Rule 9 work has been concluded.</p>
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3	Surface Access	<p data-bbox="409 1428 1463 1633">National Highways proposes that a Grampian requirement should be included in the Order for both of these mitigation phases; improvements to the southbound on slip needs to be in place, when traffic on the slip road exceeds an agreed level (at a point between Phase 1 and Phase 2a), and improvements to the northbound off slip need to have been implemented before the implementation of Phase 2b.</p> <p data-bbox="409 1686 1463 1896">A more detailed monitoring regime than that set out in the Applicant's Outline TRIMMA at Deadline 4 will be required to satisfy National Highways that the appropriate trigger points for additional mitigation on the slip roads can be measured in a timely manner. Specific comments on the TRIMMA are provided in a separate technical note as part of National Highways' Deadline 5 submission.</p>	<p data-bbox="1492 1428 2769 1564">National Highways position is noted however as set out above, the Applicant considers that the impacts of the Proposed Development on the road network are mitigated by the proposed mitigation and that other impacts arising from background traffic growth are for National Highways to address.</p> <p data-bbox="1492 1575 2769 1711">The Applicant would also note that the Rule 9 work has shown an overall reduction in the demand on the network in the future year matrices and associated with this is a substantial reduction in traffic movements through M1 Junction 10 – this is likely to reduce the risks on the National Highways network.</p> <p data-bbox="1492 1722 2769 1816">The Applicant note that as set out above, the Airport development only adds a relatively small proportion to the demand on the southbound on-slip. National Highways, as the responsible highway authority for the SRN should be the authority to address these wider impacts.</p> <p data-bbox="1492 1827 2769 1900">The Applicant is happy to discuss the monitoring regime for J10 and have responded to this against comments made on the OTRIMMA.</p>																																																		

I.D	Topic	Deadline 5 submission (Verbatim)	Luton Rising's Response
4	Surface Access	<p>National Highways is concerned about residual congestion and safety issues on the M1 junction 10 southbound slip roads and their interaction with the mainline carriageway following the implementation of the Applicant's proposed mitigation works associated with airport growth. Two interventions have been identified that would increase the capacity and journey reliability of M1 Junction 10 in 2043, thereby enabling with maximum airport growth with improved SRN performance.</p> <p>The interventions would deliver capacity increases in the Luton Rising VISSIM model with higher capacity DMRB CD 122 merge/ diverge layouts proposed than with the proposed Luton Rising layout.</p>	As ID3 above.
5	Surface Access	<p>Based on the VISSIM testing, it is clear that Intervention 1 could provide a substantial benefit to network operation by removing the lane drop on the northbound carriageway on the M1 and enabling Junction 10 to accommodate the released traffic and demand from the Luton Rising airport expansion.</p>	<p>As noted above, the Applicant considers the impacts of the Proposed Development have been mitigated. The Applicant also notes that the Rule 9 modelling is showing a substantial reduction in demands at M1 Junction 10.</p> <p>Baseline congestion should be a matter for National Highways as the responsible highway authority to address.</p>
6	Surface Access	<p>Due to the limitations of the VISSIM model, it is difficult to draw definite conclusions on the performance of Intervention 2. However, a deliverable solution to improve capacity at the Junction 10 southbound merge has been identified. This capacity upgrade leads to a slight improvement in network performance in the VISSIM model, with the model locking up later, allowing a longer period of free flowing traffic on the SRN. It is advised that the calibration of the M1 in this area of the model should be revisited so that the option can be fully assessed.</p>	<p>We would disagree on the status of the VISSIM model. This has been developed through extensive consultation with the respective highway authorities.</p> <p>Nevertheless, and as noted above, the Rule 9 modelling is showing a substantial reduction in demands at M1 Junction 10 and the updated modelling is likely to show significant reductions in associated impacts.</p>
7	Surface Access	<p>Following consideration of changes in forecast flows on the two slip roads arising from the post-covid demand work undertaken by the Applicant's consultants, National Highways considers that the mitigation to the southbound on slip will be required in advance of Phase 2a (at a point to be determined between phases 1 and 2a). The northbound slip will require additional mitigation in advance of Phase 2b. National Highways considers that a Grampian requirement will need to be in place for each of these mitigation phases and suitable drafting was included in National Highways' deadline 4 submission.</p>	<p>National Highway position is noted.</p> <p>As set out above, the Rule 9 modelling is showing a substantial reduction in demands at M1 Junction 10 and that any requirements for additional mitigation are premature. The applicant has also explained that the development already proposes mitigation to the southbound on-slip and that a significant proportion of the impact is associated with background traffic and not the development which should be a matter for National Highways to address as the responsible highway authority. The applicant believes that the Airport contribution of impact is mitigated.</p>