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REBUTTAL EVIDENCE

# Taylor Wimpey and Homes England

## Pickering's Farm Planning Appeal

August 2022

LPA Ref: 07/2021/00886/ORM and 07/2021/00887/ORM
PINS Ref: APP/F2360/W/22/3295498

VN211918 Transport and Mobility Rebuttal of Mr N. Stevens and Dr. D Price Evidence
Volume 2: Appendices

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## Appendices

# Appendix MARebuttal 1

Technical Note 14: Response to LCC Modelling Proof of Evidence

# South Ribble Paramics Modelling
# Response to LCC Traffic Modelling Comments

VM210430.TN014

## Introduction

1. Vectos has developed a micro-simulation model of the South Ribble area, which is being used to assist with the assessment of the "Pickerings Farm" site, a residential led development, adjacent to the A582 Penwortham Way.

2. The purpose of this note is to provide a detailed response to the traffic modelling concerns raised by Lancashire County Council (LCC) within their Proof of Evidence (PoE), received on the 27th July 2022. This response focuses entirely upon the matters related to the technical modelling and the information set out within the PoE on the Reason for Refusal 1 and 2: Modelling Methodology, and Transport Assessment and Technical Evidence respectively.

3. Additionally, within section 5 of the LCC PoE, LCC sets out their approach to assessing the development proposals via isolated junction modelling. Therefore the second half of this Technical Note contains a review of the LCC approach, identifying the synergies between the two approaches, the assumptions pertaining to traffic volumes and forecasting before providing comment on the outcome of the LCC assessment.

## Reasons for Refusal

4. LCC comments on the approach that we have adopted to complete traffic modelling of the development proposals are split between RfR1 and RfR2. The points raised within the LCC PoE have been reviewed and responded to in detail as follows:

**Reason for Refusal 1: Modelling Methodology**

Modelling Methodology

*5.* The first comment raised by LCC relates to the National Highways (NH)/WSP audit of the Paramics Base model. This NH/WSP audit was issued to Vectos on the 13th May 2022. The LCC comment (see Paragraph 4.1.6) states:

> *'The report as included I APPENDIX 3G highlights many issues and concludes, in para 5.1.13: "Given the comments raised during this review we cannot conclude that the model accurately reflects the operation of the wider model network and therefore the model is not suitable for assessment use" …..the level of additional work required to revise the traffic model would have run to a few months' worth of work.'*

6. This point is not substantiated. On receipt of the audit report from NH/WSP, each of the 72 points raised within the audit were addressed, with an updated model and response to the comments re-issued to NH/WSP on 27th May 2022.

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7. The files submitted to NH/WSP included an updated base, along with updated calibration and validation statistics from this model, demonstrating that once the changes had been applied, the model continued to meet the required criteria with regards to the representation of observed conditions.

8. Following the submission of these files, Vectos attempted to engage with NH/WSP a number of times to discuss whether these changes were now considered acceptable, but no response was forthcoming from NH/WSP.

9. It is important to note that the NH/WSP model audit was undertaken subsequent to an independent audit undertaken by Systra, which concluded that

> *"Systra have carried out an initial review of the South Ribble Paramics Discovery Model and identified a few issues for VM to address, it is noted that these are unlikely to significantly affect the calibration or validation of the model but it is recommended that changes are made to the model in advance of application*

10. This is a stark contrast to LCCs interpretation of the findings from the NH/WSP Audit. LCC has not undertaken any sort of review of the model operation themselves, and have entirely based their opinions on the model suitability on the NH/WSP Base Model review.

11. There is no reason to continue to state that the model is not accurately reflecting the operation of the network. All comments related to the NH/WSP audit were addressed within 2 weeks of receipt, rather than the additional months that LCC stated this would take.

The Weakness Underpinning the Appellants' Approach

12. Paragraph 4.1.10 of the LCC document states:

> *"the fundamental idea that underpins the appellant's transport modelling methodology is their Vision and Validate approach. The approach introduces the concept of 'traffic evaporation'….as a result of this approach the appellants'' modelling methodology is not considered reasonable as the assumptions they have made are not clearly based on local evidence and known travel behaviour"*

13. It is not clear which element of the traffic modelling we have completed reflects what LCC considers is the "Vision and Validate" methodology described. There has been no 'traffic evaporation' in the model.

14. The model has been developed using local OS and ariel imagery to inform the network configuration (with additional changes as identified as necessary within both the Systra and WSP Audit). Traffic flows are derived using survey data which has been collected at a large number of locations which have then been included within the model.

15. Movement across the network is derived via a combination of these 'observed' traffic flows and distribution information predominantly informed via local census travel to work distribution information and local land use data for distribution for other journey purposes. The model has been validated (i.e. independently checked) using journey time information across a large number of key corridors within the model network, this data was collected from satellite navigation data associated with vehicles.

16. It should be stressed that change to the model demands to reflect 'traffic evaporation' (LCCs term) **has not** been applied within the modelling. Although congestion is clearly demonstrated within the modelling, particularly within the PM period, the modelling is indicating that these effects will dissipate quickly outside of the peak time period, and as such no changes to the model demands has been applied to reflect the behavioural change that one would expect in the face of the occurrence of queues and increasing journey times within such a short period of time (i.e. the peak hours).

17. We created a 12 hour traffic model, to provide the means of assessing a potential re-timing of trips outside of the peak hours should this be required. It was not required in this instance and, instead, the conditions across the 12 hours have been reported, without adjustment to demands.

18. This demonstrates that 'congestion' is an issue contained within the peak hours only. An interpeak hour of 12:00 to 13:00 was validated as part of the checking process to ensure that one can have confidence in the outputs reported within this period equal to the peak hour reporting.

19. Results from the traffic modelling reported within the TA are based upon observed travel patterns within the busiest time periods (AM and PM peak hours) with no adjustment to the model demands within these periods applied.

20. It seems LCCs primary objection to the modelling is related to the traffic data, it is not 'busy' enough and therefore does not meet LCCs expectations. There are no elements within the NH/WSP audit that one could consider represent a fundamental flaw in the modelling. There is simply a disagreement on the appropriateness of the data which underpins the modelling.

21. There is no reason that LCC could not have assessed the modelling cognisant of their opinion that the data is a limitation within the modelling. Within LCCs own PoE (para 5.1.67) LCC does just that when appraising their own modelling outputs. In identifying what they consider to be a limitation with isolated junction modelling which underestimates the significance of junction delay (LCC words) they go on to state that the results can still be used to consider "the step difference" between scenarios, determined from the model outputs.

22. LCC has also completed a similar exercise within paras 4.1.78 onwards where LCC draw distinctions between outputs derived from the model scenarios. In these instances, LCC is not seeking to consider the step change between scenarios and is instead presuming that this represents a failure of the traffic modelling approach that we have adopted. This approach by LCC is inconsistent and also reveals that LCC could have engaged in more detail on the traffic modelling had they been willing to do so.

**Reason for Refusal 2: Transport Assessment and Technical Evidence**

Traffic Modelling

23. Paragraph 4.1.29 of the LCC document states;

> *"to be clear, I consider the modelling as presented is not acceptable to LCC. I consider the assumptions in the base scenario are flawed. The base model does not replicate known congestion and queueing".*

24. LCC has not provided evidence to support the statement that the 'assumptions' within the base scenario are flawed. Rather the inference here is that LCC considered that the model should be busier.

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25. However, this does not recognise that the model reflects the observed conditions as collected and reported within the LMVR in line with standard practice. Nor does it recognise that, within Systras audit, they concluded that the model reflected observed conditions well and that the routes chosen for journey time validation were sensible, achieved a good level of fit and exceeded TAG guidance.

26. Although a number of comments were raised on the model by NH/WSP within their audit, provided 13th May 2022, these were all addressed, with an updated model and outputs issued to NH/WSP by 27th May 2022. NH/WSP also concluded within para 2.6.3 of their audit that:

> *"The calibration of the morning and peak hours of 08:00-09:00 and 17:00-18:00 appears reasonable given the size of the model being calibrated."*

27. All comments raised during both the Systra and WSP audits have been responded to and changes made where necessary. Although the systra model has already concluded that the model was calibrated to an acceptable level, WSP comments were also addressed. In the majority of cases this was done via a direct amendment to the model although a small number of instances were dealt with via written responses. Updated modelling evidence submitted towards the end of this note is based on these updated models.

28. WSP continue to raise concerns around the use of April 2021 data but fundamentally these are two different points, whether the model is calibrated to the observed data which has been collected is a different point entirely to whether the data is accepted by all parties. NH/WSP has written an extensive audit note which, in para 5.1.4 concludes with 11 points requiring changes to the model and 39 points in total related to the network construct. All of these have been responded to and none had a significant effect on network operation. The network assumptions within the model cannot therefore be 'flawed'.

29. There has also been no evidence provided by LCC to demonstrate that the model does not replicate known congestion issues. LCCs comments comprise anecdotal assumptions on the network performance, rather than providing queue or journey time outputs to compare against the model we have produced.

30. The traffic model reflects queues at key junctions on the A582 corridor and this is demonstrated by the ability for the model to match journey time observations within the same network. Therefore, it is unclear whether LCC have reviewed the model operation in detail prior to determining that the model is not reflecting expected conditions.

31. Neither TfL, DMRB nor WebTAG provide any specific guidelines on queue assessments. DMRB actually states that "precise validation of queue lengths can be difficult because of the volatility of the observed data".

32. Likewise, TfL identify that "the level of accuracy in queue measurement surveys can often [sic] lower than for other surveys as the definition of a queue can be ambiguous as well as difficult to identify".

33. Therefore whilst queueing is used as a broad indicator of performance we consider delays along key corridors to be a more reliable measure with regards the operation of the network.

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Microsimulation Modelling

34. LCCs PoE refers to the NH/WSP base model audit, and the associated comments raised within that audit. As detailed above this audit report was received on the 13th May 2022, with the comments addressed and files re-issued by Vectos on 27th May 2022.

35. Paragraph 4.1.34 sets out a table which highlights the number of comments raised by NH/WSP on the model audit, with a grading of yellow, amber or red assigned to each comment. The audit included 7 yellow (minor) comments, 21 amber comments (narrative required/review required and make necessary changes) and 11 red comments (requires action).

36. Vectos have set out the table as reported in the Proof of Evidence below, with an additional comment provided which sets out how Vectos responded to each:

**Table 1 NH/WSP Audit Summary and Vectos Response**

| | Base Model Review and Vectos Response | | | |
|---|---|---|---|---|
| | Yellow (minor change) | Amber (review required) | Red (requires action) | No. of Vectos changes applied |
| Model Overlay | 0 | 1 | 0 | 0 |
| Link Coding | 0 | 2 | 3 | 5 |
| Visibility | 0 | 1 | 0 | 1 |
| Stopline Coding | 1 | 0 | 2 | 2 |
| Lane Points | 0 | 2 | 0 | 2 |
| Roundabout Lanes | 0 | 0 | 1 | 1 |
| Signal Coding | 2 | 3 | 4 | 9 |
| Pedestrian Crossings | 0 | 2 | 1 | 3 |
| Signpost Distance | 0 | 2 | 0 | 1 |
| Hazard Overrides | 0 | 6 | 0 | 4 |
| Priority Coding | 0 | 2 | 0 | 2 |
| Public Transport | 3 | 0 | 0 | 3 |
| Model Observations | 1 | 0 | 0 | 1 |
| Total | 7 | 21 | 11 | 34 |

37. The number of changes applied by Vectos in response to the model audit, as set out within the table above, indicates that most comments on the model were responded to with the exception of the minor comments on the model overlay and hazard overrides, which given our experience within this field would have no bearing on the model performance.

38. This does not mean we agreed every point was necessary but, in the interests of ensuring an agreement could be reached on the model network, as many comments were responded to as possible.

39. Paragraph 4.1.36 of the PoE refers to the NH/WSP audit, specifically coding issues not matching the satellite images, calling into question the reliability of the model to replicate the base scenario. Although the base model matches the observed data well across the entire network, the suggested edits were made by Vectos in response to the model audit, and the resultant calibration/validation of the model was revisited, to demonstrate how these changes had no resultant impact on the model performance. This was demonstrated within the pack of information issued to NH/WSP in response to the model audit on 27th May 2022.

40. Paragraph 4.1.36 of the PoE also refers to the NH/WSP audit with regards to the coding of signalised junctions and concerns over the use of signal timings. Upon the development of the base model, Vectos included signal staging/timings based upon controller specs, where available. Where this

information was not available, the staging/timings were included based upon the LinSig models used in the previous Transport Assessment submitted for this site. On the basis that LCC has agreed to the LinSig models produced by Croft it is not clear why LCC considers this to be unacceptable. This point was also made in our response to the NH/WSP audit whilst also acknowledging that we would happily update the signal timings based on more recent information if NH/WSP or LCC were able to make that information available (specifically in response to point 54 within the Audit Comments Log file issued to NH/WSP on 27th May 2022).

41. LCC has highlighted within the PoE the value of iterating between microsimulation and isolated junction modelling (Paragraph 4.1.94) and so we have undertaken a further round of testing, whereby the signal details included within the Paramics models have been updated based upon the LinSig models developed for the assessment. This approach addresses LCC's suggested approach. These timings have been used to optimise several junctions within the model within both the Reference and Development case. The result is an improvement in the changes identified within previously reported model outputs.

42. The audit also refers to the number of approach lanes not being included correctly at the A582/A6/M65 roundabout (see paragraph 4.1.37 of the PoE), where recent improvement features at this junction had not been included within the original model. Upon recent of this comment from NH/WSP the coding was refined by 27th May submission in line with the latest on-street layout, and the base model performance reviewed to ensure that observed conditions were still being reflected within the calibration/validation statistics.

Traffic Growth

43. Paragraph 4.1.75 details the concerns LCC have around the application of traffic growth, or lack of, within the Paramics modelling assessment. LCC states that the approach:

> *"assumes no other growth beyond the proposed site and the committed development sites".*

44. This is a key distinction between the approach that we have adopted within our modelling and that which is being promoted by LCC. LCC considers that traffic forecasting must fully conform to the guidelines set out within TAG. However, DfT states that:

> *Development of analysis using TAG guidance is a requirement for all interventions that require government approval. For interventions that do not require government approval this guidance would serve as a best practice guide. [Transport Analysis Guidance – An overview of Transport Appraisal , para 1.2.2]*

45. Therefore we consider that it is not necessarily the case that traffic forecasts need to fully conform to the approach outlined in TAG because, in this instance, we do not require government approval, we are not seeking public money and, most importantly, we are seeking to divorce the effects of the development proposals, on the transport network, from those elicited through the treatment of uncertainty within the traffic forecasting process.

46. It is usual for certain assessments to be undertaken without fully conforming to TAG requirements. DfT note within their own guidance on transport evidence basis in the plan making process that the full TAG assessment methodology "may not be appropriate" when considering the impact of Local

Plans which comprise significantly more development considerations than those contained within this assessment.

47. Within our forecasting approach we have omitted 'uncertain' influences on traffic growth in favour of 'known' pressures which are predicted to occur via the delivery of the committed developments and our development.

48. It is these demands, which are more easily estimated, which we consider within our assessment. It is questionable, given the performance of the model network within the peak hours, that even these forecasts result in network conditions which could be considered 'realistic and plausible'. LCC has demonstrated through their own isolated junction analysis that their treatment of uncertainty within the traffic modelling will manifest in an outcome which cannot be considered realistic. LCC has forecast chaos throughout the network without regard for behavioural response or other actors which naturally minimise traffic impact.

49. We have simplified our assessment such that one can draw a judgment on our development effect without conflating issues associated with uncertainty or, indeed, the manual estimation of the possible effect which may arise from the delivery of infrastructure which was not open at the time of LCCs survey collection (2018) but is accounted for within our traffic modelling namely the opening of the A582 Penwortham Bypass and the Cawsey Link (between Leyland Road and the A6)

50. The application of TEMPro forecasts, without intervention, will likely lead to model 'gridlock' which is a modelling concept which will never manifest, as in reality driver responses will kick in to mitigate the perceived issues (re-timing of trips, increase working from home, change of modes).

51. On this basis, the forecasting adopted in this assessment does not work on the assumption that the model must demonstrate continued capacity for future traffic growth which should be considered uncertain (beyond committed development trips) on an exponential basis. The forecasting procedure does involve a review of TEMPro growth factor in order to ensure that the model demands do not exceed TEMPRO projections.

52. The latest guidance around Forecasting and Uncertainty within TAG (Unit M4, Para 3.1.1) outlines that any forecasting should be realistic and plausible, and it is on this basis, that Vectos believe that the approach adopted, whereby uncertain background traffic growth is not included, in addition to committed development traffic, is justified.

53. This is not an unusual approach and we have submitted models in the past which do not include growth beyond that associated with committed developments or where growth has been capped so as to not exceed the figure outlined within TEMPRO. Often this accepted on the grounds that it is considered more realistic than would be the case if full growth is applied. This is demonstrated in LCCs analysis whereby the application of a high growth approach means the network is significantly over capacity before the development proposals can even be considered.

Technical Assessment Conclusions

54. Paragraph 4.1.93-4.1.96 summarises the LCC conclusions on our modelling, and details how the base model is not acceptable, (based upon the WSP audit) whilst stating that well validated microsimulation models can be used to support a traditional approach of modelling individual junction using traditional proprietary software.

55. We have demonstrated through the supporting documentation that the microsimulation model has exceeded the levels of calibration and validation outlined in TAG guidance. The model has been independently audited by Systra, before being audited by WSP (on behalf of NH).

56. All comments raised during these audits have been responded to and so there is no reason that the modelling tool itself be considered unacceptable.

57. Whilst isolated junction modelling can be useful in terms of understanding the operation of a single junction, in relation to a specific set of traffic flows, we consider that it is actually the case that isolated junction modelling should be seen as complimentary to the microsimulation modelling rather than, as is being suggested, the other way around.

58. There are several key benefits associated with the microsimulation modelling approach adopted, including the fact that the model allows for temporal reassignment in response to queueing and congestion (i.e. traffic will be more likely to avoid an area in busier periods than when the network is quiet) and fundamentally, it allows for an assessment of effect on a corridor basis, cognisant of the effects of interaction between junctions. Queue propagation from one junction to another can impede the operation of the network. Isolated junction modelling cannot capture any impact that upstream network function is inducing and, as such, can provide an oversimplified interpretation of how a network can accommodate traffic flows.

59. A key strength of isolated junction modelling is the ability to check the geometrical effect of any proposals and, furthermore, the ability to identify an optimum signal control strategy where a new junction is proposed, or where traffic flows are likely to change substantially.

60. One would not expect to rely on the LinSig models in isolation for example, as they would not allow for judgements to be made with regards the effect along an entire corridor which is more important to the overall user experience than the operation of a single junction

61. Therefore, there are flaws in the LCC assumptions and response on the microsimulation modelling used in the assessment. The comments received on the model audit are not as significant as implied by LCC. This has been demonstrated by the fact that we responded to each comment within 3 weeks of receipt, with updated model statistics demonstrating the model continued to reflect observed conditions. This is significantly quicker than the 'months' suggested by LCC.

62. LCC have also stated the model is invalid as it is based on the application of a 'vision and validate' approach and not based on local evidence and known travel behaviour. This is incorrect as is demonstrated by the role that traffic surveys and distribution information derived from census has served in the development of the traffic models as well as the inclusion of known local committed developments all of which is based on estimates and or observations for known local traffic trends.

## Correlation between Approaches

63. LCC draws significant distinction between their approach and our approach to the assessment of the development impacts.

64. LCC have undertaken their own technical assessment, which is documented within Section 5 of the PoE. This is predominantly based upon the build-up of traffic assumptions within an excel spreadsheet, before considering the outcomes via isolated junction models. LCC considers their approach to be more realistic as the LCC approach results in significantly higher traffic flows being considered within the assessment.

Areas of Synergy

65. There are synergies between the LCC approach and our approach. The inclusion of committed development traffic within both assessments are consistent, with the sites and resultant trip generation included in line with that in the previous applicants' Transport Assessment.

66. Both assessments have used TEMPRO to inform the level of traffic growth assumed within the modelling, albeit that the LCC TEMPRO growth assumptions are higher than those assumed in our assessment, and are considerably higher than would be the case when TEMPRO Version 8.0 is adopted. The initial outputs from TEMPRO Version 8.0 have been reviewed, which now account for 'behavioural change' (which considers trends observed through the pandemic and changing behaviour of young people etc). These outputs would result in around 15% reduction in the level of growth LCC have considered within their assessment.

67. The assessment scenarios are also consistent insofar as LCC considers a Base scenario, a Reference scenario (future year + committed development traffic) and a Development scenario (future year + committed development traffic + development traffic).

68. This is in line with our approach. However, it is the inclusions within each of these scenarios which differ. LCC includes significantly more elements within their assessment than is contained within our modelling. The effect of this is to conflate the impacts associated with LCCs treatment of uncertainty with the impacts associated with the development proposals.

69. LCC have focused their modelling assessment on key junctions on the A582 corridor and B5254 corridor. These junctions have all been included within the area of the Paramics model.

Areas of Difference

70. A review of the assumptions within the LCC modelling highlights key areas of difference in relation to the following elements:

- Background Traffic Flows
- Application of Background Traffic Growth (TEMPRO forecasting)
- Development Trip Generation
- Spreadsheet model/isolated junction models

Background Traffic Flows

71. The LCC modelling is underpinned by 2018 traffic survey data, whilst our model is based upon survey data collected within 2021.

72. Notwithstanding comments received from LCC related to the 2021 data not being accepted, the 2018 data is based upon a network in which the A582 Penwortham Bypass and the Cawsey Link (between Leyland Road and the A6) were not operational.

73. On this basis, the routing/assignment options within the network are fundamentally different at several junctions between the outdated LCC data and the 2021 Vectos data. Only the Paramics model has been calibrated to conditions which represent a point in time where the A582 Penwortham Bypass and the Cawsey Link (between Leyland Road and the A6) were operational.

74. LCC does not recognise this as a strength within the model. Choosing instead to believe that 2018 is a more reliable source of traffic flow information on the basis, it would appear, that LCC believes higher traffic flows are 'more realistic' even though they are unable to say, with confidence, that they have precisely reflected the effects that the A582 Penwortham Bypass and the Cawsey Link will have on traffic flows.

75. To compensate for this significant limitation in their approach, LCC has applied manual adjustments to their traffic flows to account for these two routes being open. The methodology or rationale for these changes is not clear.

76. This is particularly concerning for the A582 Penwortham Bypass, a large number of additional traffic flows have been included at the A59/A582 Golden Way roundabout, without this traffic appearing at other junctions on the LCC network diagrams, or any associated reduction in flows to demonstrate how this reassignment has been derived.

77. In order to document the differences between the background traffic data underpinning each assessment, the LCC and Vectos traffic flows have been reported for key links across the network, as presented within **Figure 1**, and reported within the following table.

78. This presents the LCC traffic flows, the Vectos 2021 traffic flow data. The intention here is to highlight any key differences in data sets by location. Within the flow analysis we have also presented a 10% uplift scenario whereby traffic volumes have been arbitrarily uplifted by 10% to assess the implications of such a change on network operation. Caution should be exercised when viewing these results as it is representing a significant over simplification of network operational effects. This point is discussed further towards the end of this note.

**Figure 1 Link Flow Analysis Locations**

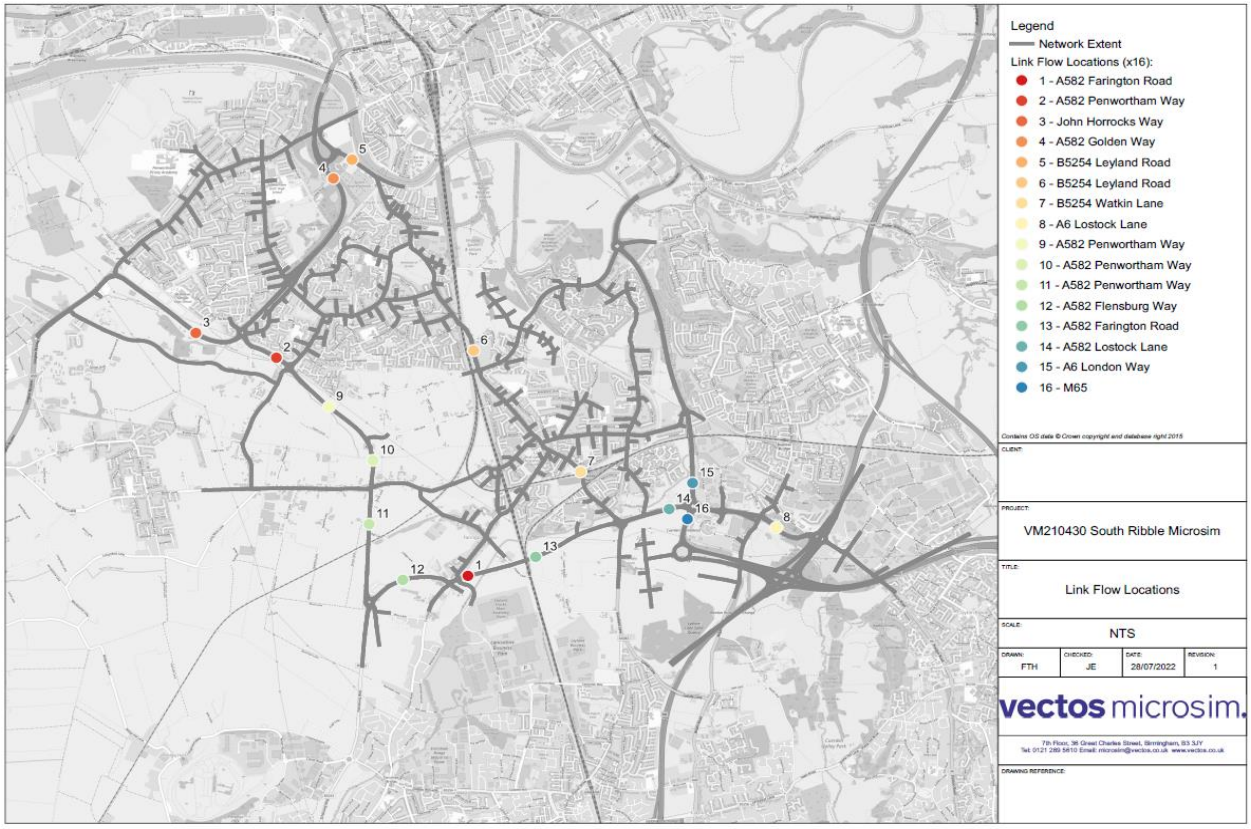

**Table 2 Background Traffic Link Flows - AM Peak Hour**

| Link Location | Road | Direction | LCC Modelled Flow | Vectos Modelled Flow | 10% Uplift Modelled Flows |
|---|---|---|---|---|---|
| 1 | A582 Farrington Road | 2-Way | 2376 | 2001 | 2116 |
| 2 | A582 Golden Way | 2-Way | 2054 | 1609 | 1735 |
| 3* | John Horrocks Way | 2-Way | 2380 | 1659 | 1786 |
| 4 | A582 Golden Way | 2-Way | 4070 | 2708 | 2984 |
| 5 | B5254 Leyland Road | 2-Way | 1680 | 1474 | 1473 |
| 6 | B5254 Leyland Road | 2-Way | 1751 | 1695 | 1669 |
| 7 | B5254 Watkin Lane | 2-Way | 1421 | 1317 | 1322 |
| 8 | A6 Lostock Lane | 2-Way | 2195 | 2053 | 2083 |
| 9 | A582 Penwortham Way | 2-Way | 2046 | 1588 | 1734 |
| 10 | A582 Penwortham Way | 2-Way | 2125 | 1597 | 1735 |
| 11 | A582 Penwortham Way | 2-Way | 2270 | 1995 | 2117 |
| 12 | A582 Flensburg Way | 2-Way | 1901 | 1833 | 1910 |
| 13 | A582 Farington Road | 2-Way | 2428 | 2012 | 2137 |
| 14 | A582 Lostock Lane | 2-Way | 4226 | 3505 | 3679 |
| 15 | A6 London Way | 2-Way | 3040 | 2178 | 2399 |
| 16 | M65 | 2-Way | 4598 | 3135 | 3551 |

**Table 3 Background Traffic Link Flows - PM Peak Hour**

| Link Location | Road | Direction | LCC Modelled Flow | Vectos Modelled Flow | 10% Uplift Modelled Flows |
|---|---|---|---|---|---|
| 1 | A582 Farington Road | 2-Way | 2401 | 2211 | 2288 |
| 2 | A582 Golden Way | 2-Way | 2149 | 1827 | 1918 |
| 3* | John Horrocks Way | 2-Way | 2469 | 1606 | 1773 |
| 4 | A582 Golden Way | 2-Way | 4249 | 2952 | 3240 |
| 5 | B5254 Leyland Road | 2-Way | 1566 | 1324 | 1319 |
| 6 | B5254 Leyland Road | 2-Way | 1597 | 1608 | 1679 |
| 7 | B5254 Watkin Lane | 2-Way | 1573 | 1021 | 1039 |
| 8 | A6 Lostock Lane | 2-Way | 2413 | 1861 | 1928 |
| 9 | A582 Penwortham Way | 2-Way | 1910 | 1855 | 1882 |
| 10 | A582 Penwortham Way | 2-Way | 2255 | 1818 | 1826 |
| 11 | A582 Penwortham Way | 2-Way | 2490 | 2141 | 2130 |
| 12 | A582 Flensburg Way | 2-Way | 2170 | 2023 | 2048 |

| | | | | | |
|---|---|---|---|---|---|
| 13 | A582 Farington Road | 2-Way | 2649 | 2211 | 2283 |
| 14 | A582 Lostock Lane | 2-Way | 4387 | 3357 | 3528 |
| 15 | A6 London Way | 2-Way | 3323 | 2656 | 2804 |
| 16 | M65 | 2-Way | 4201 | 3137 | 3328 |

**Location 3 is on the John Horrocks Way Bypass which was upgrades post 2018 – LCC flows for this link are estimated within the LCC spreadsheets provided*

79. The traffic link flow data presented for Vectos' modelled background traffic flow tends to be lower in the AM and PM peak hours than the data presented by LCC but this does not necessarily mean that the our traffic flows cannot be relied upon to assess the effects of the development traffic on the network. As is demonstrated by LCCs own analysis, the higher traffic flows results in a number of junctions reporting capacity exceedance prior to the development inclusion and so, subsequently it is very difficult to discern with any confidence what the additional effect of the development proposals is on the junction, particularly in those instances where the junction modelling has already predicted unrealistic outcomes within the reference case.

TEMPRO Approach

80. Upon review of the TEMPRO forecasting approach adopted by LCC within their assessment, it appears the forecasting calculations are inclusive of NTEM adjustments (for urban road types).

81. This has resulted in a higher level of growth than considered within the Vectos assessment. The LCC benchmark growth figures are 13.4% and 12.6% in the AM and PM respectively. In deriving these figures, growth between 2018 – 2035 has been calculated, with adjustments made to the housing assumptions within TEMPRO, to account for the development site, plus other committed development sites within the South Ribble district. It is important to note, that we have not been able to recreate these growth factors, and it is unclear which version of TEMPRO has been used to derive these factors. Within Paragraph 5.1.20 of the PoE is it stated:

> *The TEMPro version used is not the latest. LCC IT service who manages software updates has not yet made the update available to officers. If the latest version was applied would result in slightly higher growth rates*

82. Having applied the same assumptions within TEMPRO as LCC, using the latest version of TEMPRO (Version 7.2c), the growth factors derived are 12.2% in the AM and 11.1% in the PM, the LCC benchmark growth figures are 13.4% and 12.6%. LCC indicate within para 5.1.20 that, had they used the most recent version of TEMPRO the growth forecasts would have been "slightly higher". LCC appears to expect traffic growth forecasting to continue to result in higher and higher traffic growth projections when, demonstrably, this is not the case, and as now demonstrated by the 8th August issue of TEMPRO where the revised employment and economic projections has resulted in a further reduction in traffic growth projections.

83. LCC has elected to add on additional traffic demands in relation to both our development proposals and, critically, the committed developments. This means that on average, growth within LCCs assessment tends to be much higher and when compared to their baseline assumptions LCC application of adjustments for the Bypass/Cawsey link and addition of further TEMPRO growth results in traffic forecast increases of up to 37%.

**Table 4: LCC Modelled Flows by Link - Base vs. Total Flow – AM Peak Hour**

| Link Location | Road | Direction | LCC Baseline Flow | LCC Total Flow | Difference | % Diff Baseline vs Total Flows |
|---|---|---|---|---|---|---|
| 1 | A582 Farington Road | 2-Way | 2376 | 3460 | 1084 | 31% |
| 2 | A582 Golden Way | 2-Way | 2054 | 2761 | 707 | 26% |
| 3 | John Horrocks Way | 2-Way | 2380 | 2384 | 4 | 0% |
| 4 | A582 Golden Way | 2-Way | 4070 | 4786 | 716 | 15% |
| 5 | B5254 Leyland Road | 2-Way | 1680 | 2056 | 376 | 18% |
| 6 | B5254 Leyland Road | 2-Way | 1751 | 2295 | 544 | 24% |
| 7 | B5254 Watkin Lane | 2-Way | 1421 | 1788 | 367 | 21% |
| 8 | A6 Lostock Lane | 2-Way | 2195 | 2805 | 610 | 22% |
| 9 | A582 Penwortham Way | 2-Way | 2046 | 2837 | 791 | 28% |
| 10 | A582 Penwortham Way | 2-Way | 2125 | 2992 | 867 | 29% |
| 11 | A582 Penwortham Way | 2-Way | 2270 | 3179 | 909 | 29% |
| 12 | A582 Flensburg Way | 2-Way | 1901 | 2875 | 974 | 34% |
| 13 | A582 Farington Road | 2-Way | 2428 | 3522 | 1094 | 31% |
| 14 | A582 Lostock Lane | 2-Way | 4226 | 5692 | 1466 | 26% |
| 15 | A6 London Way | 2-Way | 3040 | 3802 | 762 | 20% |
| 16 | M65 | 2-Way | 4598 | 6132 | 1534 | 25% |

**Table 5: LCC Modelled Flows by Link - Base vs. Total Flow – PM Peak Hour**

| Link Location | Road | Direction | LCC Baseline Flow | LCC Total Flow | Difference | % Diff Baseline vs Total Flows |
|---|---|---|---|---|---|---|
| 1 | A582 Farington Road | 2-Way | 2401 | 3831 | 1430 | 37% |
| 2 | A582 Golden Way | 2-Way | 2149 | 2775 | 626 | 23% |
| 3 | John Horrocks Way | 2-Way | 2469 | 2471 | 2 | 0% |
| 4 | A582 Golden Way | 2-Way | 4249 | 4818 | 569 | 12% |
| 5 | B5254 Leyland Road | 2-Way | 1566 | 1914 | 348 | 18% |
| 6 | B5254 Leyland Road | 2-Way | 1597 | 2308 | 711 | 31% |
| 7 | B5254 Watkin Lane | 2-Way | 1573 | 1965 | 392 | 20% |
| 8 | A6 Lostock Lane | 2-Way | 2413 | 3063 | 650 | 21% |
| 9 | A582 Penwortham Way | 2-Way | 1910 | 2477 | 567 | 23% |
| 10 | A582 Penwortham Way | 2-Way | 2255 | 3122 | 867 | 28% |
| 11 | A582 Penwortham Way | 2-Way | 2490 | 3466 | 976 | 28% |

| | | | | | | |
|---|---|---|---|---|---|---|
| 12 | A582 Flensburg Way | 2-Way | 2170 | 3451 | 1281 | 37% |
| 13 | A582 Farington Road | 2-Way | 2649 | 4094 | 1445 | 35% |
| 14 | A582 Lostock Lane | 2-Way | 4387 | 6113 | 1726 | 28% |
| 15 | A6 London Way | 2-Way | 3323 | 4153 | 830 | 20% |
| 16 | M65 | 2-Way | 4201 | 6141 | 1940 | 32% |

84. Within our assessment, the growth included within the modelling, achieved through the inclusion of the committed development trips, amounts to 8.3% in the AM and 10.7% in the PM.

85. Our approach has been to review TEMPRO growth factors, to ensure the level of growth within the model (through the inclusion of committed development alone) does not exceed TEMPRO, thereby ensuring that only the growth considered more certain is included within the modelling. This is an approach which has been accepted elsewhere.

86. Less certain elements (i.e. the background growth predicted in TEMPRO) are not included within our assessment so that we can define, with more precision, the impact of development trips on the network.

87. The fundamental principle is that available capacity on the modelled network should not be taken up by the inclusion of uncertain background growth, at the expense of more certain elements of traffic flows such as those associated with our development. Doing so would inevitably lead to the over provision of capacity within the transport network as a result.

88. The TEMPRO factors adopted within our modelling were not adjusted by NTM and considered the period 2021-2035, which resulted in growth factors of 8.1% in the AM and 7.7% in the PM. This was lower than the amount of traffic included within the model through the inclusion of the committed development sites alone, and therefore no capping or adjustment of the model demands to reflect TEMPRO was applied. Traffic growth associated with Committed developments is already significant and the Pickerings Farm development is then assessed in addition to this baseline increase of over 8%.

**Table 6 TEMPRO Growth vs Vectos Modelled Growth Review**

| LCC Growth Factors | | Vectos TEMPRO Review | | Vectos Modelled Growth | |
|---|---|---|---|---|---|
| AM | PM | AM | PM | AM | PM |
| 13.4% | 12.6% | 8.1% | 7.7% | 8.3% | 10.7% |

89. Clearly the growth contained within our model is lower than that in the LCC assessment. This is a result of the differences in the approach adopted to derive TEMPRO factors. If the NTEM adjustment methodology was applied to derive factors from 2021-2035, the resultant growth factors in our assessment would be 11.7% in the AM period, and 11.3% in the PM period. Currently the modelled growth assumed within our modelling is around the predicted level of growth for the PM period, and is slightly below this predicted level in the AM period

90. This is also only one element of the LCC adjustment process. LCC has also sought to include traffic associated with committed developments and, since LCCs survey data was collected prior to the opening of the Penwortham Bypass and Cawsey Link, LCC has made a manual adjustment to the flows to estimate the effects of this infrastructure on traffic movement. This means that, in some link locations, traffic flows increase from the 2018 baseline by as 20% at the majority of links on the

network (following the LCC forecasting approach), and even as high as 30-50% at a number of locations.

Development Trip Inclusions

91. Within the LCC assessment, the trip rates assigned to our development site are notably higher than those assigned within our modelling. Our modelling contains a breakdown of the trips assigned to the model based upon the journey purpose, whilst the LCC assessment assigns one set of trip rates across the entire development.

92. The LCC trip rates are those that LCC required the previous applicants' assessment to contain. LCC states that these are lower than those that they have recently observed in 2022.

93. Concerns regarding the suitability of the LCC assumptions are contained within the main text of the Rebuttal document but the resultant impact on development traffic link flows are presented within the following table.

94. This compares the development traffic assigned within the LCC assessment against the development traffic assigned within the Vectos assessment (for each location as presented within **Figure 1**):

**Table 7 Development Traffic Flows by Link – AM Peak Hour**

| Link Location | Road | Direction | LCC Development Flow | Vectos Development Flow | Difference |
|---|---|---|---|---|---|
| 1 | A582 Farington Road | 2-Way | 196 | 133 | 63 |
| 2 | A582 Golden Way | 2-Way | 254 | 166 | 88 |
| 3 | John Horrocks Way | 2-Way | 2 | 44 | -42 |
| 4 | A582 Golden Way | 2-Way | 241 | 91 | 150 |
| 5 | B5254 Leyland Road | 2-Way | 8 | 1 | 7 |
| 6 | B5254 Leyland Road | 2-Way | 9 | 6 | 3 |
| 7 | B5254 Watkin Lane | 2-Way | 5 | 35 | -30 |
| 8 | A6 Lostock Lane | 2-Way | 16 | 11 | 5 |
| 9 | A582 Penwortham Way | 2-Way | 273 | 249 | 24 |
| 10 | A582 Penwortham Way | 2-Way | 335 | 236 | 99 |
| 11 | A582 Penwortham Way | 2-Way | 295 | 145 | 150 |
| 12 | A582 Flensburg Way | 2-Way | 229 | 131 | 98 |
| 13 | A582 Farington Road | 2-Way | 196 | 134 | 62 |
| 14 | A582 Lostock Lane | 2-Way | 185 | 130 | 55 |
| 15 | A6 London Way | 2-Way | 79 | 42 | 37 |
| 16 | M65 | 2-Way | 90 | 35 | 55 |

**Table 8 Development Traffic Flows by Link – PM Peak Hour**

| Link Location | Road | Direction | LCC Development Flow | Vectos Development Flow | Difference |
|---|---|---|---|---|---|
| 1 | A582 Farington Road | 2-Way | 198 | 103 | 95 |
| 2 | A582 Golden Way | 2-Way | 256 | 175 | 81 |
| 3 | John Horrocks Way | 2-Way | 2 | 18 | -16 |
| 4 | A582 Golden Way | 2-Way | 243 | 151 | 92 |
| 5 | B5254 Leyland Road | 2-Way | 8 | 8 | 0 |
| 6 | B5254 Leyland Road | 2-Way | 9 | 70 | -61 |
| 7 | B5254 Watkin Lane | 2-Way | 5 | 14 | -9 |
| 8 | A6 Lostock Lane | 2-Way | 16 | 12 | 4 |
| 9 | A582 Penwortham Way | 2-Way | 217 | 244 | -27 |
| 10 | A582 Penwortham Way | 2-Way | 338 | 143 | 195 |
| 11 | A582 Penwortham Way | 2-Way | 297 | 123 | 174 |
| 12 | A582 Flensburg Way | 2-Way | 231 | 105 | 126 |
| 13 | A582 Farington Road | 2-Way | 198 | 105 | 93 |
| 14 | A582 Lostock Lane | 2-Way | 186 | 100 | 86 |
| 15 | A6 London Way | 2-Way | 80 | 49 | 31 |
| 16 | M65 | 2-Way | 91 | 45 | 46 |

95. The development traffic flow data within our assessment is, in most instances lower than the data presented by LCC. There are a few instances in which the Vectos data is significantly higher than the LCC data, namely at location 3, John Horrocks Way, and location 7 B5254 Watkin Lane in both the AM and PM peaks. Additionally in the PM at location 6, B5254 Leyland Road, Vectos records 70 development vehicles whereas LCC record only 9.

96. Our development trips are afforded the opportunity to travel through the network based on the routing parameters defined within the traffic model. LCCs development trips, based on a higher initial projection, are constrained to only travel through the network via a predetermined route prescribed by LCC.

97. Additionally, our microsimulation model outputs are based on the average of multiple runs. These runs are intended to reflect the day-to-day variability of traffic conditions and, as such, introduce further variation insofar as development trips may elect to adopt alternative routes through the model depending upon the perceived cost of each route (based on distance and time calculations) at the point of entry in to the model network. Thus one would expect significant differences between the two. This does not render the LCC trip forecasts 'more realistic' as is implied within the LCC PoE.

98. Aside from the few locations already highlighted, LCC development flows are higher. There are a number of reasons for this, as set out below:

- LCC have assumed higher development trip rates
- LCC have assumed an alternative distribution

- LCC's modelling does not account for development traffic re-routing in response to congestion (as can be captured in the microsimulation modelling).

LCC Traffic Flows

99. Following the above review of the flows assigned, the total LCC flows assigned have been presented within **Table 12** and **Table 13**, with the proportion of the Pickerings Farm development trips that make up this total flow drawn out. The intention here is to indicate how small a proportion of the total flows that the development traffic accounts for even on the basis of the development flows used by LCC.

**Table 9: LCC Traffic Flows vs. Development Link Flows – AM Peak Hour**

| Link Location | Road | Direction | LCC Baseline Flows | LCC Total Flows | LCC Com Dev Flows | LCC Development Flows |
|---|---|---|---|---|---|---|
| 1 | A582 Farington Road | 2-Way | 2376 | 3460 | 569 | 196 |
| 2 | A582 Golden Way | 2-Way | 2054 | 2761 | 177 | 254 |
| 3 | John Horrocks Way | 2-Way | 2380 | 2384 | 0 | 2 |
| 4 | A582 Golden Way | 2-Way | 4070 | 4786 | 159 | 241 |
| 5 | B5254 Leyland Road | 2-Way | 1680 | 2056 | 142 | 8 |
| 6 | B5254 Leyland Road | 2-Way | 1751 | 2295 | 295 | 9 |
| 7 | B5254 Watkin Lane | 2-Way | 1421 | 1788 | 171 | 5 |
| 8 | A6 Lostock Lane | 2-Way | 2195 | 2805 | 300 | 16 |
| 9 | A582 Penwortham Way | 2-Way | 2046 | 2837 | 243 | 273 |
| 10 | A582 Penwortham Way | 2-Way | 2125 | 2992 | 246 | 335 |
| 11 | A582 Penwortham Way | 2-Way | 2270 | 3179 | 310 | 295 |
| 12 | A582 Flensburg Way | 2-Way | 1901 | 2875 | 490 | 229 |
| 13 | A582 Farington Road | 2-Way | 2428 | 3522 | 572 | 196 |
| 14 | A582 Lostock Lane | 2-Way | 4226 | 5692 | 709 | 185 |
| 15 | A6 London Way | 2-Way | 3040 | 3802 | 274 | 79 |
| 16 | M65 | 2-Way | 4598 | 6132 | 823 | 90 |

**Table 10: LCC Traffic Flows vs. Development Link Flows – PM Peak Hour**

| Link Location | Road | Direction | LCC Baseline Flows | LCC Total Flows | LCC Com Dev Flows | LCC Development Flows |
|---|---|---|---|---|---|---|
| 1 | A582 Farington Road | 2-Way | 2401 | 3831 | 616 | 198 |
| 2 | A582 Golden Way | 2-Way | 2149 | 2775 | 186 | 256 |
| 3 | John Horrocks Way | 2-Way | 2469 | 2471 | 0 | 2 |
| 4 | A582 Golden Way | 2-Way | 4249 | 4818 | 163 | 243 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 5 | B5254 Leyland Road | 2-Way | 1566 | 1914 | 142 | 8 |
| 6 | B5254 Leyland Road | 2-Way | 1597 | 2308 | 351 | 9 |
| 7 | B5254 Watkin Lane | 2-Way | 1573 | 1965 | 188 | 5 |
| 8 | A6 Lostock Lane | 2-Way | 2413 | 3063 | 329 | 16 |
| 9 | A582 Penwortham Way | 2-Way | 1910 | 2477 | 175 | 217 |
| 10 | A582 Penwortham Way | 2-Way | 2255 | 3122 | 265 | 338 |
| 11 | A582 Penwortham Way | 2-Way | 2490 | 3466 | 339 | 297 |
| 12 | A582 Flensburg Way | 2-Way | 2170 | 3451 | 525 | 231 |
| 13 | A582 Farington Road | 2-Way | 2649 | 4094 | 624 | 198 |
| 14 | A582 Lostock Lane | 2-Way | 4387 | 6113 | 770 | 186 |
| 15 | A6 London Way | 2-Way | 3323 | 4153 | 375 | 80 |
| 16 | M65 | 2-Way | 4201 | 6141 | 925 | 91 |

100. As indicated within the previous tables, the proportion of the total traffic flow made up by the development traffic is low. The development trips are also significantly lower that the total of the committed development trips assumed by LCC.

101. On the above basis, and the fact that the LCC flows contains a certain level of unknown growth through the inclusion of background traffic growth (informed by TEMPRO), it is likely that if this uncertain element of the flows was to be removed, there would clearly be sufficient space within the resultant flows to include the development trips, without exceeding the volume of traffic currently assumed within the LCC Reference Case scenarios.

Isolated Junction Modelling

102. The final key difference between the modelling approaches relates to the modelling methodology. LCC have undertaken the assessment using isolated junction models, whilst we have considered the operation and implication of traffic flow across entire study area within the Paramics microsimulation model.

103. Whilst isolated junction modelling is useful in terms of understanding the operation of a single junction, in relation to a specific set of traffic flows, we consider that it is actually the case that isolated junction modelling should be seen as complimentary to the microsimulation modelling in this instance.

104. This is predominantly related to the requirement to consider the entire A582 and B5254 corridor in a holistic manner, whereby the microsimulation model allows for temporal reassignment in response to queueing and congestion (i.e. traffic will be more likely to avoid an area in busier periods than when the network is quiet) and fundamentally, it allows for an assessment of effect on a corridor basis, cognisant of the effects of interaction between junctions.

105. Queue propagation from one junction to another can impede the operation of the network. Isolated junction modelling cannot capture any impact that upstream network function is inducing and, as such, can provide an oversimplified interpretation of how a network can accommodate traffic flows.

106. Given the congested nature of both the A582 and B5254, Vectos believe that the application of the microsimulation model is the correct approach to adopt for the purposes of this assessment, which can then be supplemented by isolated junction models where necessary.

# Junction Operational Assessment Analysis

107. Regardless of the issues identified related to the modelling approach adopted by LCC (i.e. the reliance on isolated junction models to consider the development impacts), Vectos have undertaken a high level review of the impacts reported within the LCC isolated junction assessments, and summarised the outputs within the following section. This review is based upon the LCC PoE Technical Assessment presented within Chapter 5.

108. Within their PoE, LCC have outlined various aspects of their modelling work, including the assessment year, growth factors, committed development and emerging development, trip generation and the assessment scenarios. This section culminates in the presentation of Junction Operational Assessments. The Junction Operational Assessments focuses on seven key junctions, as presented within **Figure 2**, that are located within South Ribble:

- Junction 1 - B5254 Leyland Road/Bee Lane/The Cawsey Roundabout
- Junction 2 - B5254 Watkin Lane/Brownedge Road and B5254 Leyland Road/Coote Lane Linked Signalised T-junctions
- Junction 3 - A582 Flensburg Way/A582 Croston Road/Fidler Lane/Croston Road Roundabout
- Junction 4 - A582 Croston Road/A582 Farington Road/Centurion Way Roundabout
- Junction 5 - A582 Lostock Lane/A582 Farington Road/A5083 Stanifield Lane/B5254 Watkin Lane Signalised Roundabout
- Junction 6 - A582 Penwortham Way/Chain House Lane Signalised Crossroads
- Junction 7 - M65/A6/A582 Signalised Roundabout

**Figure 2 Junction Operational Analysis Junctions**

109. Each junction has been assessed using either industry standard LinSig software (for signalised junctions) or Junctions 10 modelling software (for priority junctions).

110. The main modelling output considered by LCC when assessing priority junctions is the Ratio of Flow to Capacity (RFC). This ratio allows for judgement of junction operation, an RFC of <0.85 is considered to indicate satisfactory junction performance. An RFC of >1.0 indicates saturated conditions. It should be noted that it is stated by LCC in Paragraph 5.1.38 that:

> *"When an arm exceeds and RFC of 1.0 then queues will build exponentially and in these instances the queue and delay values should not be interpreted as absolute values, but an indication of poor performance."*

111. As part of the priority junction modelling assessment, LCC has also reported the Level of Service (LoS) derived from the model for each junction. The LoS rating is measured based on average vehicle delay and is defined as follows:

- A - free flowing
- B - reasonably free flowing
- C - stable flow
- D - approaching unstable flow
- E - unstable flow, operating at capacity
- F - forced or breakdown flow

112. An 'LoS' of E or F indicates that the arm of the junction is operating at or above intended capacity and LCC imply that some mitigation is therefore required.

113. For signalised junctions, LCC have utilised LinSig modelling software which provides as "Degree of Saturation (DoS) output" that allows for judgement of junction operation and design. The DoS is a ratio of the vehicle flow against capacity of the arm. A DoS of 90% is the threshold that indicates that a junction has reached capacity and becomes susceptible to increased queuing and delays.

114. The following section provides an overview of the most notable impacts identified through the LCC isolated junction modelling, for each of the 7 key junctions considered through the assessment. The Ratio of Flow to Capacity (RFC) or Degree of Saturation (DoS) is reported for the worst impacted arm of each of the junctions, with junction approaches reported as over-capacity highlighted in red.

**Table 11: Junction Impact Summary**

| Junction No. | Most Impacted Period | RFC or DoS (%) | 2018 Observed Year (Base) | 2025 Future Year (Reference) | 2025 Future Year with Dev. (Development) | Diff. between Dev and Ref Case DoS |
|---|---|---|---|---|---|---|
| 1 | PM | RFC | 0.74 | 0.99 | 0.99 | 0 |
| 2 | PM | DoS | **90.3%** | **115.6%** | **115.6%** | 0 |
| 3 | PM | RFC | **1.04** | **1.45** | **1.51** | 0.06 |
| 4 | PM | RFC | **1.18** | **1.67** | **1.77** | 0.10 |
| 5 | PM | DoS | **97.30%** | **102.60%** | **126.70%** | 24.1% |
| 6 | AM | DoS | 68.40% | 88.90% | **93.20%** | 4.3% |
| 7 | PM | DoS | **105.20%** | **117.50%** | **131.40%** | 13.9% |

115. Of the 7 junctions highlighted by LCC, the development impact appears notable at only two locations. Both of these already are predicted to operate unsatisfactorily according to LCC and the impacts at both junctions are likely to be considered unrealistic from the onset and overstated on the grounds that reassignment is not considered within the isolated junction modelling.

**Junction 1 - B5254 Leyland Road/Bee Lane/The Cawsey Roundabout**

*Modelled Junction Performance*

- The LCC modelling indicates that this junction is operating close to capacity in the AM period in the 2018 baseline scenario, most notably on the Leyland Road South approach.
- The LCC modelling suggests that the isolated junction modelling undertaken means than the results do not reflect the queuing that currently occurs at the Tardy Gate signalised junctions – noted to block back through the Bee Lane roundabout in the PM.
- Junction performance worsens in the 2035 Reference scenario, with Leyland Road North assigned a rating of F in the PM peak, and Leyland Road South assigned a rating of F in the AM and E in the PM.
- Upon including the Pickerings Farm development flows, the maximum queue increase is 2 PCUs and delay increase is 5 seconds on the arms considered to be most over-capacity.

*Development Impact*

- The inclusion of development trips has a negligible impact on a junction which the modelling is suggesting is already over capacity within the Reference Case scenario.

**Junction 2 - B5254 Watkin Lane/Brownedge Road & B5254 Leyland Road/Coote Lane Linked Signalised T-junctions**

*Modelled Junction Performance*

- The LCC LinSig modelling of this junction suggests that it is at or approaching capacity in the 2018 baseline scenario.
- Within the 2035 Reference scenario junctions are overcapacity with a negative PRC and DoS greater than 90% on all approaches in the PM period.
- Upon inclusion of the Pickerings Farm traffic in the Development Scenario, the DoS increases by a maximum of between 0.8% - 3.7%.
- The modelled queues reported for this junction suggest that the Coote Lane approach experiences a queue increase of 23 PCUs once the Pickerings Farm development trips are included (AM peak), although the impacts reported in the more congested PM peak are negligible.

*Development Impact*

- The reported queue increase on Coote Lane (23 vehicles as reported within Table 12, Paragraph 5.1.50) would be unlikely to occur within the Development scenario, as any significant increases in queues forming on this approach would likely result in traffic re-assigning onto less congested routes which the isolated junction models are not able to reflect
- The Reference Case scenario is predicted to operate well over-capacity, suggesting that LCC have approved developments that contribute to the already congested conditions predicted at this location.

**Junction 3 - A582 Flensburg Way/A582 Croston Road/Fidler Lane/Croston Road Roundabout**

*Modelled Junction Performance*

- The modelling indicates that this junction is operating over capacity, in the PM period, within the baseline scenario, notably on the A582 Croston Road approaches to the junction.
- The 2035 Reference Case scenario predicts that the junction will be over capacity in both the AM and PM, with a queue of over 500 PCUs reported on the A582 Croston Road approach in the PM period.
- The inclusion of the Pickerings Farm development traffic increases the levels of queuing and delay experienced on the arms noted as being over capacity, with a maximum increase of 17 PCUs.

*Development Impact*

- The modelling impacts reported indicate that the junction is operating well above capacity within the Reference Case. The number of vehicles queued and the level of delay reported in this scenario is simply unrealistic with these impacts never likely to occur given the re-routing and re-timing of trips which would occur in response to this level of delay.

**Junction 4 - A582 Croston Road/A582 Farington Road/Centurion Way Roundabout**

*Modelled Junction Performance*

- The LCC modelling indicates that again this junction is operating over capacity in baseline scenario, most notably on the A582 Farrington Road and A582 Croston Road approaches in both the AM and PM.
- The model performance on these approach arms deteriorates further in the 2035 Reference scenario, with RFC values reported of greater than 1.0 in both the AM and PM.
- The modelling suggests that with the inclusion of the Pickerings Farm development trips, queues are predicted to increase by a maximum over 200 vehicles in the AM period.
- In line with the LCC comments on junctions that return RFC values of more than 1.0 (as is the case in the 2035 Reference scenario for this junction), the magnitude by which the queues and delay increases in the Development scenario is not truly representative of absolute values and the results simply prove the overcapacity arms remain over capacity regardless of the inclusion of the development.

*Development Impact*

- The modelling indicates that this junction is likely to be well over-capacity in the Reference Case scenario, and therefore no reliable outputs related to the Development impacts can be obtained from this modelling.
- The level of delay reported in the Reference Case scenario is unrealistic, with queues of over 670 PCUs reported in the PM peak hour. In reality re-timing of trips or re-assignment would occur to avoid the worst of these queues.

**Junction 5 - A582 Lostock Lane/A582 Farington Road/A5083 Stanifield Lane/B5254 Watkin Lane Signalised Roundabout**

*Modelled Junction Performance*

- The LCC modelling indicates that within the 2018 baseline scenario, the junction is operating over capacity, with a PRC value of -1.4% in the AM and -8.1% in the PM.

- LCC present additional 'local observations' of the junction and have included adjusted saturation flows in an attempt to better model the junction performance, however, they conclude that the modelling suggests limited congestion issues at the junction, and this is noted as erroneous.
- LCC note that a solution to the limitations of their modelling would be the use of a microsimulation model, one such as the South Ribble microsimulation model built by Vectos, however determine that the use of a Microsim model was too time and resource hungry to be undertaken. It is claimed by LCC that their modelling should therefore be used to indicate the step difference between the scenarios.
- The 2035 Reference scenario presents B5254 Watkin Lane as of concern (>90% DoS) in both the AM and PM, and A5083 Stanifield Lane and A582 Farrington Road of concern in the PM.
- The 2035 Development scenario presented indicates that the conditions would worsen with around a 100 PCU queue increase on the B5254 Watkin Lane approach.
- Notably queue conditions are predicted to worsen to a much lower extent on the A582 and Stanifield Lane arms (maximum of 14 PCU increase on these arms).

*Development Impact*

- The LCC modelling for this junction suggests significant impacts will occur once the Pickerings Farm development is included within the modelling. This is notable on the B5254 Watkin Lane approach to the junction.
- The microsimulation modelling has indicated queue increases at this junction, these impacts were much lower, given the re-assignment possible within the microsimulation model which is not able to be reflected within the LCC modelling.
- Alternative routing via the Cawsey Link (also not accounted for within the LCC flows) and Brownedge Road is possible to avoid the worst of this queueing, and on this basis meaning that, via LCCs approach, the development impact is over-stated.

**Junction 6 - A582 Penwortham Way/Chain House Lane Signalised Crossroads**

*Modelled Junction Performance*

- The LCC modelling indicates that the junction operates within capacity in the baseline scenario, but that in the Reference scenario, the Chain House Lane eastbound approach becomes over capacity in the AM.
- With the inclusion of the development trips, the junction operation becomes marginally worsened with the largest increase in queues being 6 PCUs.

*Development Impact*

- LCC note that given the increases to this junction are marginal, minor junction changes should be sufficient to manage traffic flows following the inclusion of the development in 2035. It is assumed this relates to signal timing optimisation.
- Based upon these modelled results, there is no notable impact on this junction once the development trips are included.

**Junction 7 - M65/A6/A582 Signalised Roundabout**

*Modelled Junction Performance*

- The LCC modelling predicts that this junction is operating over-capacity during the PM in the baseline scenario, with the overall junction PRC being -16.90%, whilst the AM is operating within capacity.

- In the Reference scenario, the junction performance worsens, in both the AM and PM periods, with the PRC reported at -28.8% in the AM and -34.2% in the PM.
- Following the inclusion of the development trips, the PRC reported worsens to -41.50% and -46.00% in the AM and PM respectively. This equates to a maximum queue increase of 40 PCUs in the AM period, and 10 PCUs in the PM period, both of which occur on the A582 Lostock Lane approach to the roundabout.

*Development Impact*

- The LCC modelling indicates that the operation of this junction will worsen with the inclusion of development trips, with the most notable impact occurring on the A582 Lostock Lane approach. This issue is reflected to a much lesser extent within the microsimulation model, with this tool enabling re-assignment to occur to avoid the worst of these queues.
- It is notable that the junction is predicted to operate well over-capacity in the Reference Case, suggesting that LCC have already accepted development that will have an impact at this location. Nevertheless the LCC modelling predicts the Pickerings Farm would add 40 vehicles to the queues reported on the A582 Lostock Lane approach.
- In the event of a 81 vehicle queue forming, as reported in the Reference Case on this approach, a significant re-timing of trips or shift away from travelling would occur, resulting in the impacts being far less than reported.

**LCC Modelling Assessment Summary**

116. Upon review of the LCC isolated junction modelling, it is clear that the majority of the junctions assessed are reported to operate at or over-capacity in the Reference Case scenario. This suggests that LCC has already permitted developments to the extent that the junction will be over capacity but is not seeking to address the issue. Rather it is implied that now the junction is over capacity it is the responsibility of Pickerings Farm to resolve that issue and ensure that the junction operates within capacity for LCC to consider the impact acceptable.

117. Having reviewed the predicted development impacts, it is clear that at the majority of junctions considered, the inclusion of the Pickerings Farm development traffic has very little impact on the level of delay and queueing reported at each junction, and any locations where a notable impact is reported, it is where the modelling is already predicting unrealistic levels of impact (e.g. 500+ vehicle queues on the A582 approaches to the A582/Croston Road roundabouts).

118. At locations where such extensive levels of queueing are being reported (in the Reference Case and With Development scenarios), re-timing of trips or reassignment of traffic would occur to reduce the effects, or in practice they would not occur in the first place. This is not captured within LCCs approach to modelling the development impacts.

119. Based upon the LCC modelling, the Pickerings Farm impact is being assessed in a theoretical over-capacity, theoretically gridlocked network, which is unrealistic. Therefore, the true impact of the development trips cannot be discerned.

120. They range from either minimal change in junction performance to significant increase in already unrealistic model outputs e.g. from **678** PCU queues to **877** PCUs queues (on the A582 Farington Road approach to the A582 Croston Road/A582 Farington Road/Centurion Way roundabout – Paragraph 5.1.60), neither of which would occur in reality.

121. LCC has projected that these conditions will occur via their treatment of uncertainty within the traffic models and their belief that the development will generate higher traffic volumes than we consider to be realistic. We believe that if the uncertain elements of the LCC traffic flows were to be removed

(background traffic growth), there would be sufficient headroom within the resultant flows to accommodate the development traffic flows and the volume of traffic considered within the 2035 Reference Case modelling still be lower than currently assumed.

122. On this basis, it is not considered appropriate to rely on the isolated junction modelling, particularly given how much uncertainty is contained within the traffic estimates at this stage due to LCCs decision to give greater weight to uncertain aspects of traffic growth than those related to the development proposals which form the basis of the assessment.

## Vectos Modelling Sensitivity Testing

123. Following receipt of LCCs PoE we have undertaken a number of sensitivity test scenarios to demonstrate the predicted development impact, taking into account a number of comments received by LCC on the modelling.

124. These revised tests have been undertaken within the same version of the model that was updated to address all comments raised within the WSP/NH model audit. The Reference Case and Development Case model scenarios have also been updated at the following signal junctions/roundabouts to reflect the staging arrangements and green times included within the LCC LinSig modelling (as set out in LCC Appendix 17).

- A582/A6/M65 roundabout
- A582/Watkin Lane/Stanifield Lane roundabout
- A582/Flensburg Way roundabout
- A582 Penwortham Way/Chain House Lane signalised crossroads
- B5254 Watkin Lane/Brownedge Road and B5254 Leyland Road/Coote Lane signalised T-junctions

125. This was initially considered an unnecessary complication within the original modelling, since the modelling already sufficiently demonstrated the effects of including the development traffic on the highway network.

126. However, it is accepted that the is some value in applying adjustments to the microsimulation model based on the outcome of the isolated junction models as it provides for a more 'optimal' model scenario since the signal times have been adjusted, based on the algorithms within Linsig, to create an optimal set of signal times which can then be fed back in to the model such that the junctions are better able to accommodate the projected traffic flows.

127. Including the optimised signal times within the Reference Case and the Development Case still means that the development assumptions (and associated effects) are the distinguishing element between the two scenarios but the starting point is likely to be a network which has more capacity as a result of the changes to the signal times.

128. The outputs from this updated testing have been summarised to present the modelled journey times, across the 12-hour modelled period (not just the peak hours as per LCC), on the key corridors shown within **Figure 3** (A582 and B5254). These routes have been presented in order to provide a means of assessing the predicted impact of including the development on a corridor by corridor basis.

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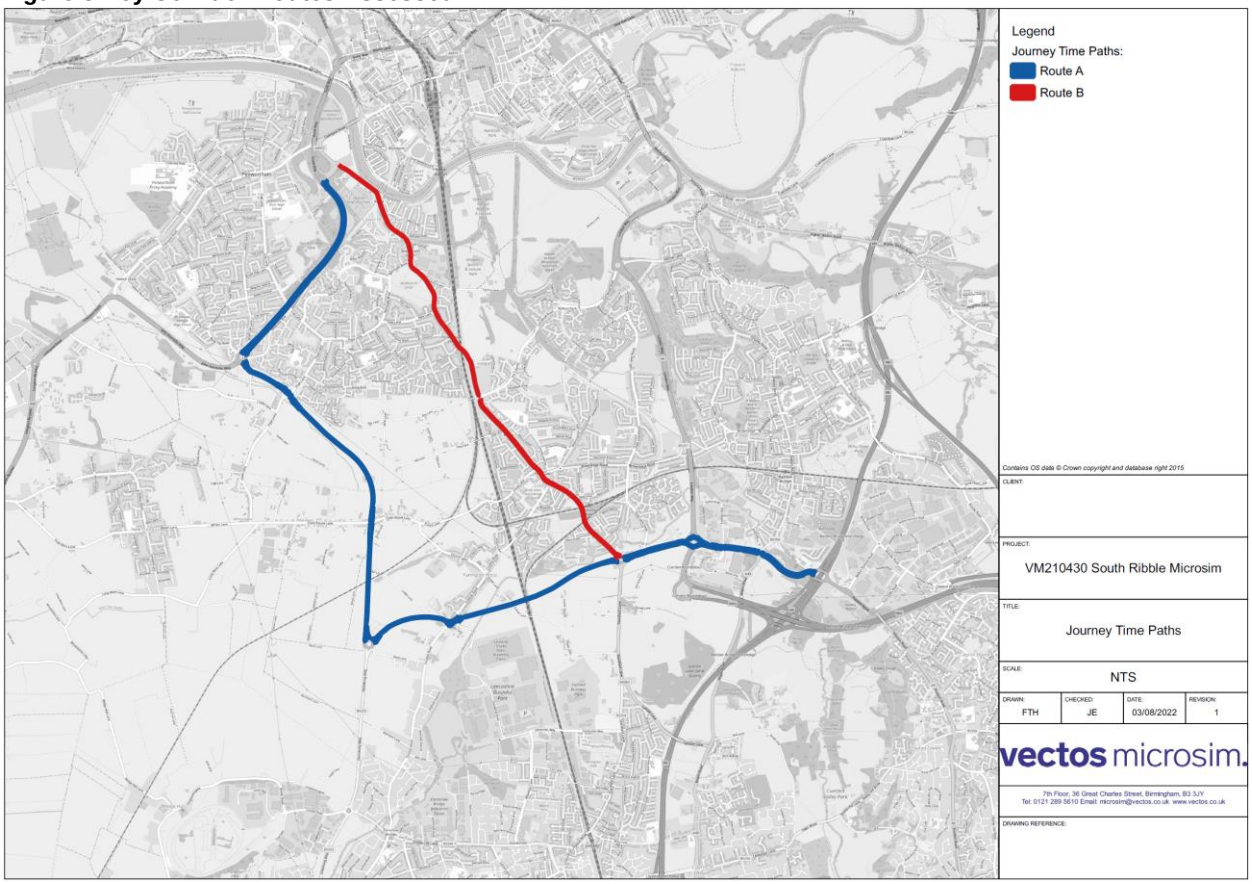
**Figure 3 Key Corridor Routes Assessed**




129. The following scenarios have been tested and reported on within this section of this note:

- **Test 1 – Development Impact** – *Reference Case vs Development Case*
- **Test 2 – Development Sensitivity Test** – *Reference Case vs Development Case (inclusive of uplifted development trip generation)*
- **Test 3** – **Background Traffic Uplift Test** - *Uplifted Traffic Impact – Reference Case (inc 10% background traffic uplift) vs Development Case (inc 10% background traffic uplift)*

Test 1 – Development Impact

130. As detailed above, the development impact has been presented within the following graphs, based upon the model scenarios that have been updated to address all comments raised in the NH/WSP model audit, and inclusive of signal timings from the LCC LinSig models. The resultant journey times on the A582 and B5254 corridors are presented within the following **Figure 4** to **Figure 7:**

**Figure 4 Journey Time Impacts – A582 Corridor - Northbound**

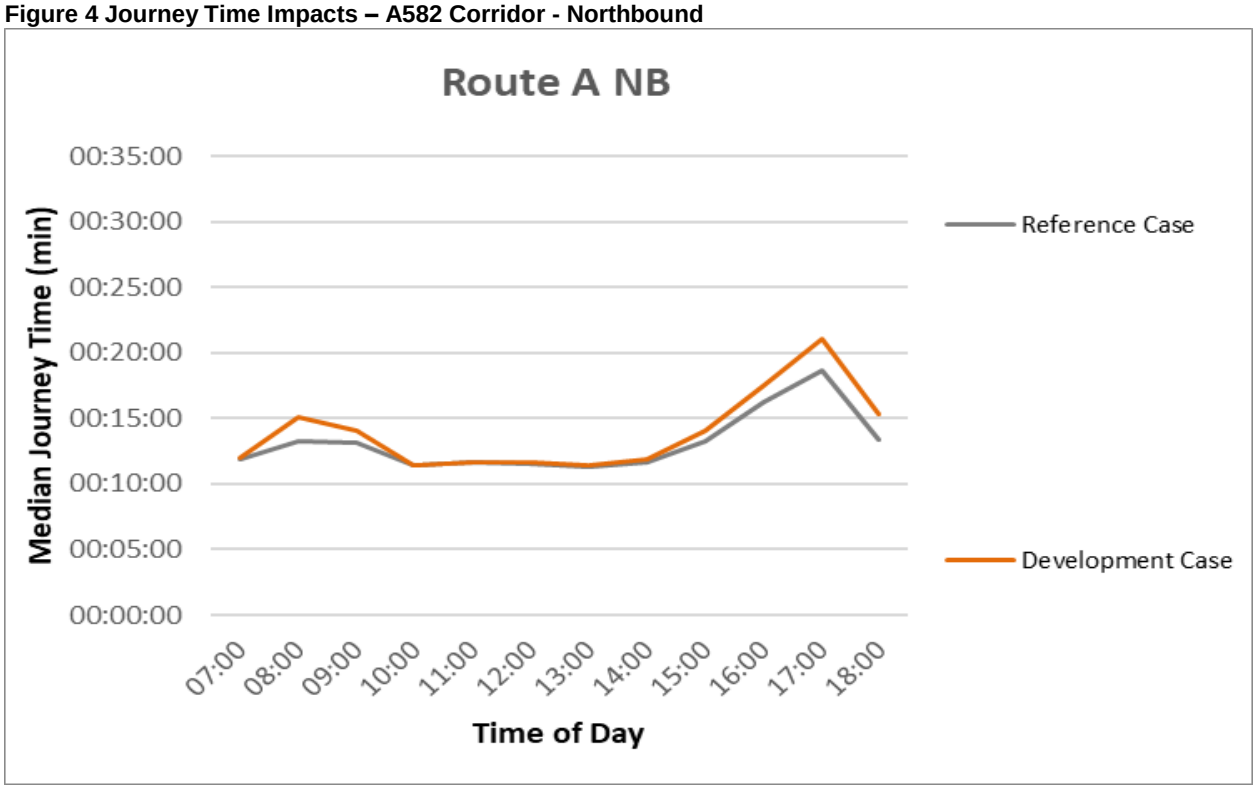



**Figure 5 Journey Time Impacts – A582 Corridor - Southbound**


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**Figure 6 Journey Time Impacts – B5254 Corridor - Northbound**

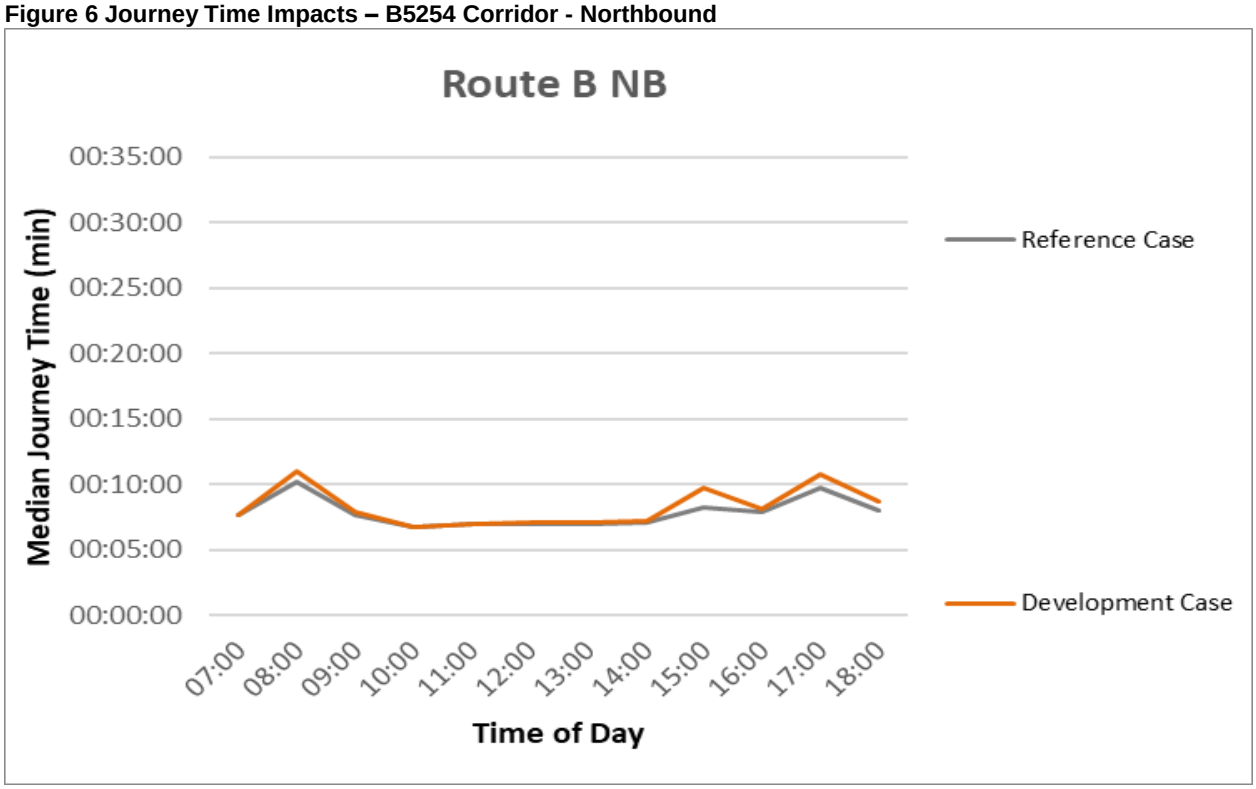
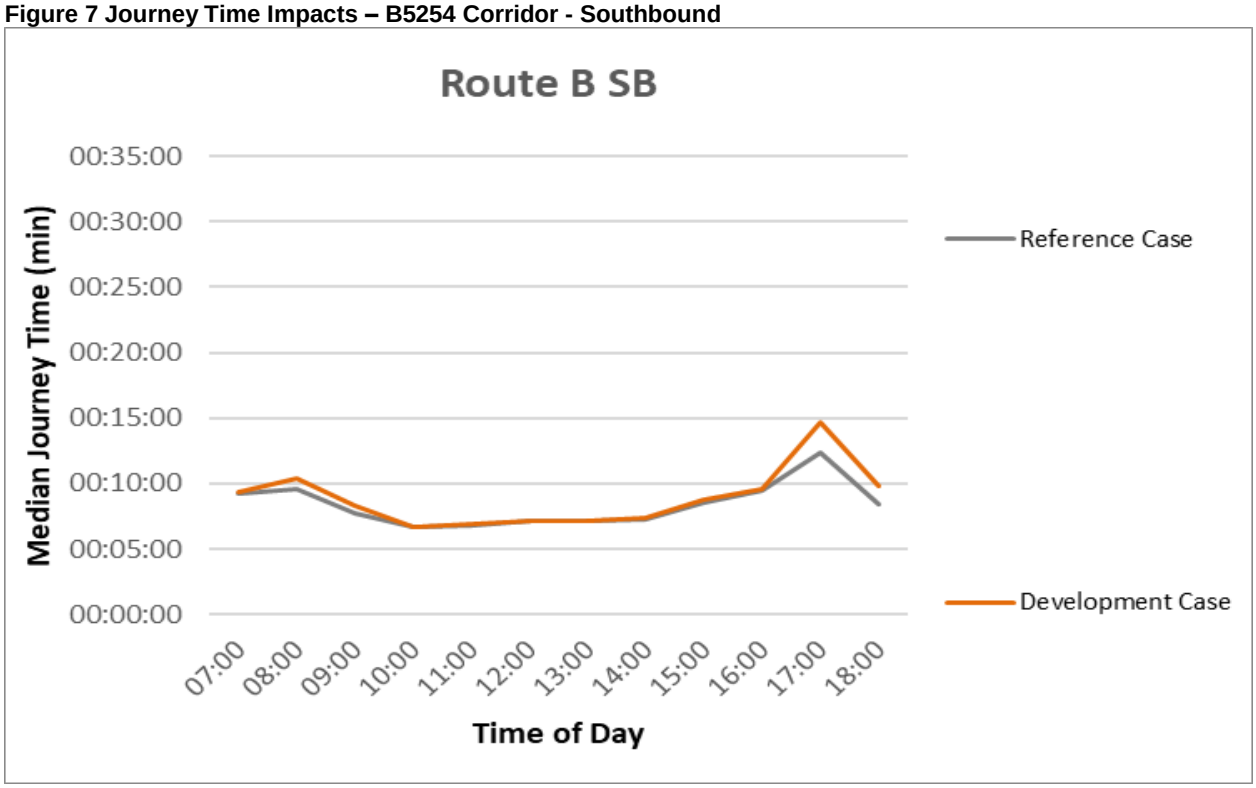



**Figure 7 Journey Time Impacts – B5254 Corridor - Southbound**

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131. Analysis of the journey time results presented within **Figure 4** to **Figure 7** indicates that the development impacts across the 12 hour period considered are minimal, with the journey times on both the A582 and B5254 corridor on the most part being within 60 seconds of those reported in the Reference Case across the day.

132. Within the PM peak hour (1700-1800) the difference between the Reference Case and Development Case journey times does increase to a maximum of 2 minutes 20 seconds, (Route A NB), however, this reflects the maximum difference in journey times along the corridor, and in the context of the Reference Case journey times on this route being almost 19 minutes in the peak hour, a 2 minute increase in the busiest hour is not considered significant.

Test 2 – Development Trip Generation Sensitivity Test

133. As per Test 1, an uplifted development trip generation impact has been presented within the following graphs. The uplifted development trip generation has been assessed in response to LCC comments on the trip generation within the PoE (Paragraph 4.1.52). Previous sensitivity testing has been undertaken by Vectos around an uplift to the originally assumed trip generation, which has been assumed again for this test, as detailed in the following table.

**Table 12 Development Trip Totals Assessed**

| | LCC Development Trips | | Vectos Original Development Trips | | Vectos Sensitivity Test Development Trips | |
|---|---|---|---|---|---|---|
| | AM Peak Hour | PM Peak Hour | AM Peak Hour | PM Peak Hour | AM Peak Hour | PM Peak Hour |
| Arrivals | 160 | 377 | 107 | 292 | 148 | 406 |
| Departures | 472 | 260 | 392 | 126 | 540 | 217 |
| Total | **632** | **637** | **499** | **418** | **688** | **623** |

134. The sensitivity test trip generation adopted is higher than the trip generation assumed by LCC for the AM peak hour (56 trips higher) and marginally lower for the PM peak hour (16 trips lower). Although it has only been possible to compare the peak hour trip generation (as these were the only rates provided by LCC), the trip generation we have adopted within this sensitivity test has been uplifted across the 12 hour modelled period.

135. The resultant journey times on the A582 and B5254 corridors are presented within the following **Figure 8 to Figure 11:**

**Figure 8 Journey Time Impacts (Development Trip Gen Sensitivity Test) – A582 Corridor – Northbound**

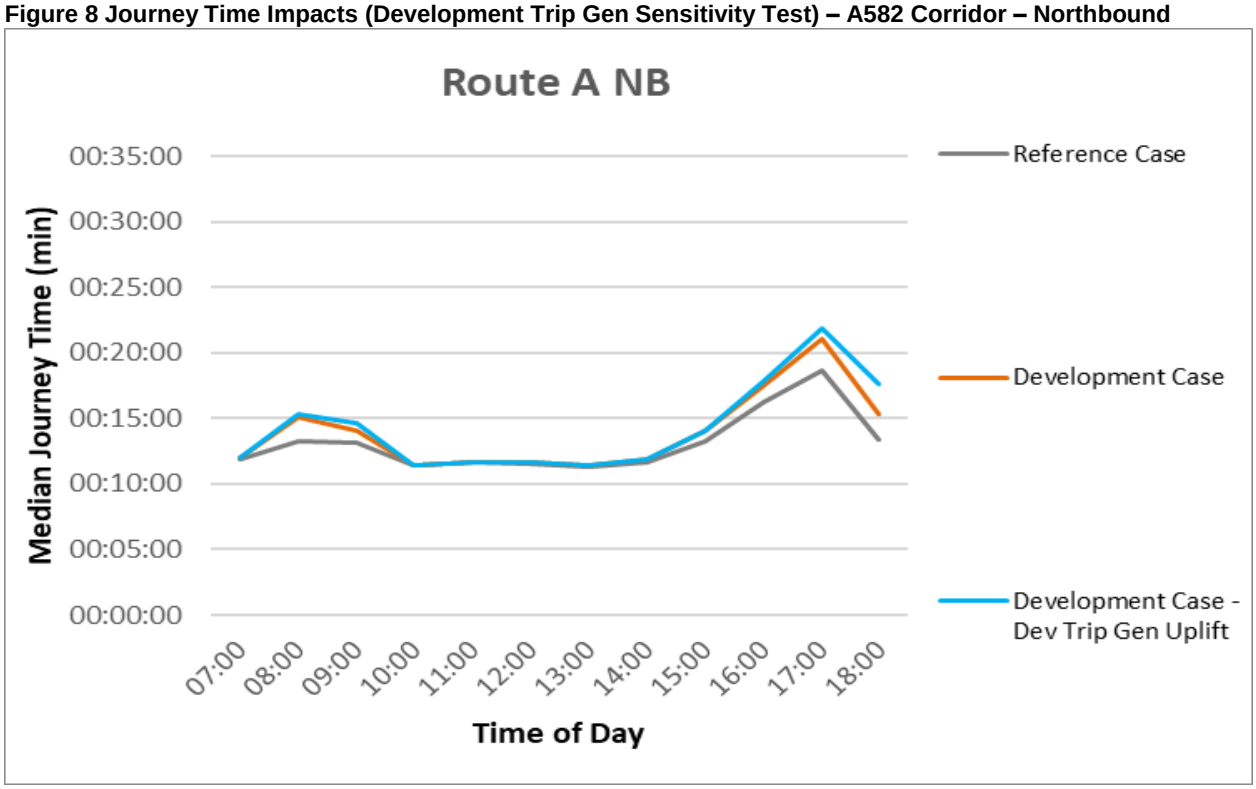


**Figure 9 Journey Time Impacts (Development Trip Gen Sensitivity Test) – A582 Corridor - Southbound**

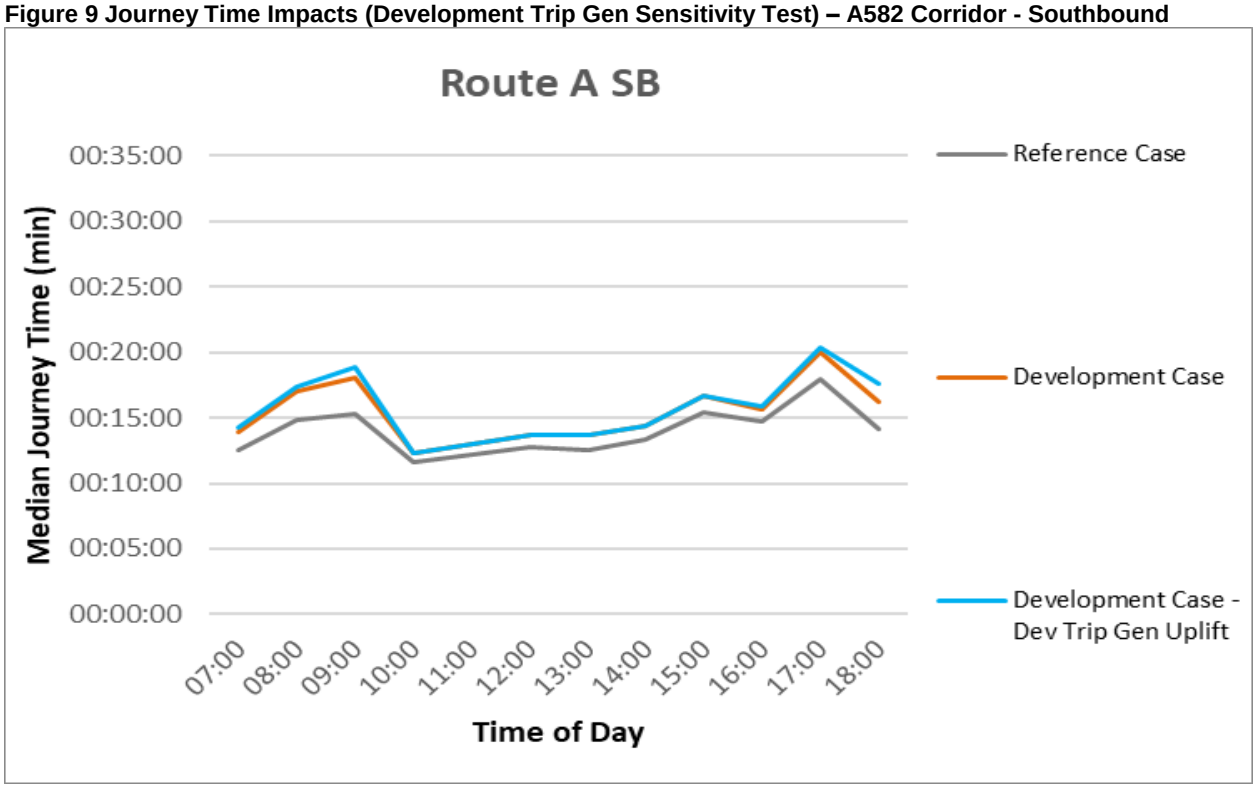


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**Figure 10 Journey Time Impacts (Development Trip Gen Sensitivity Test) – B5254 Corridor - Northbound**

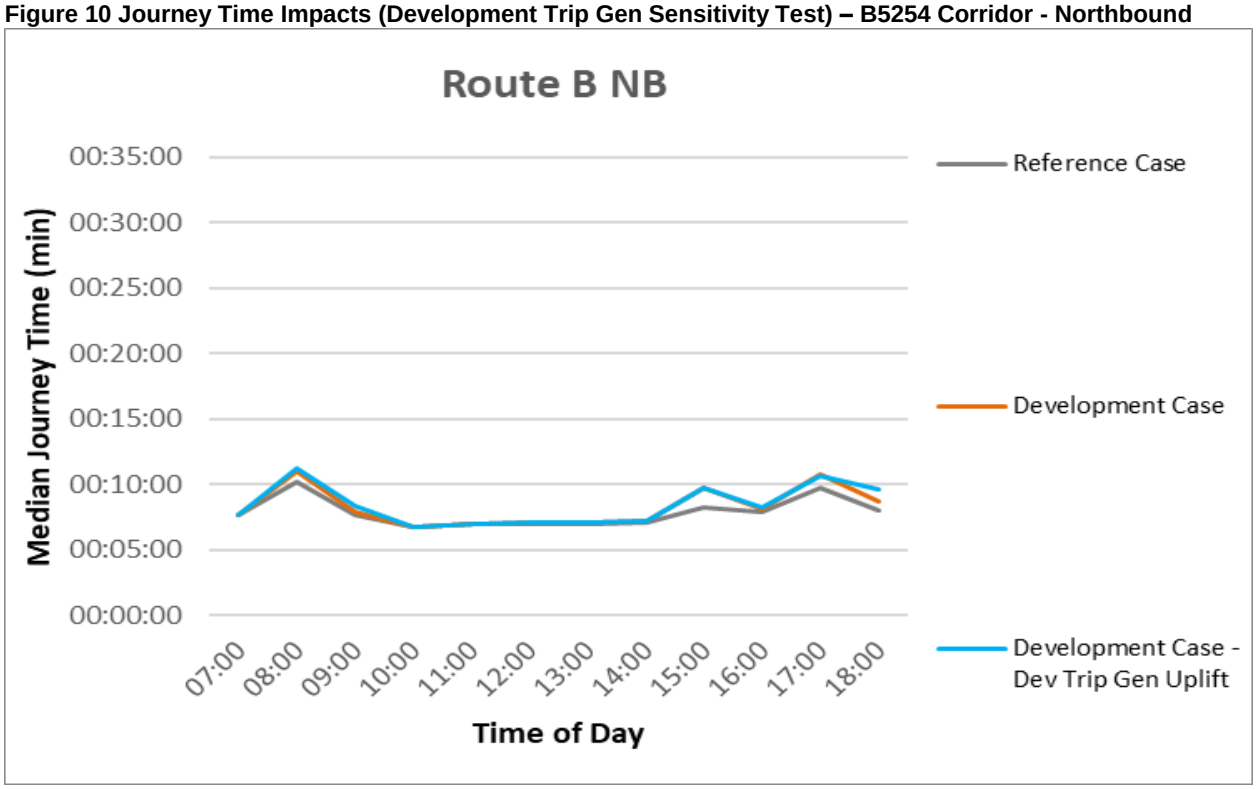
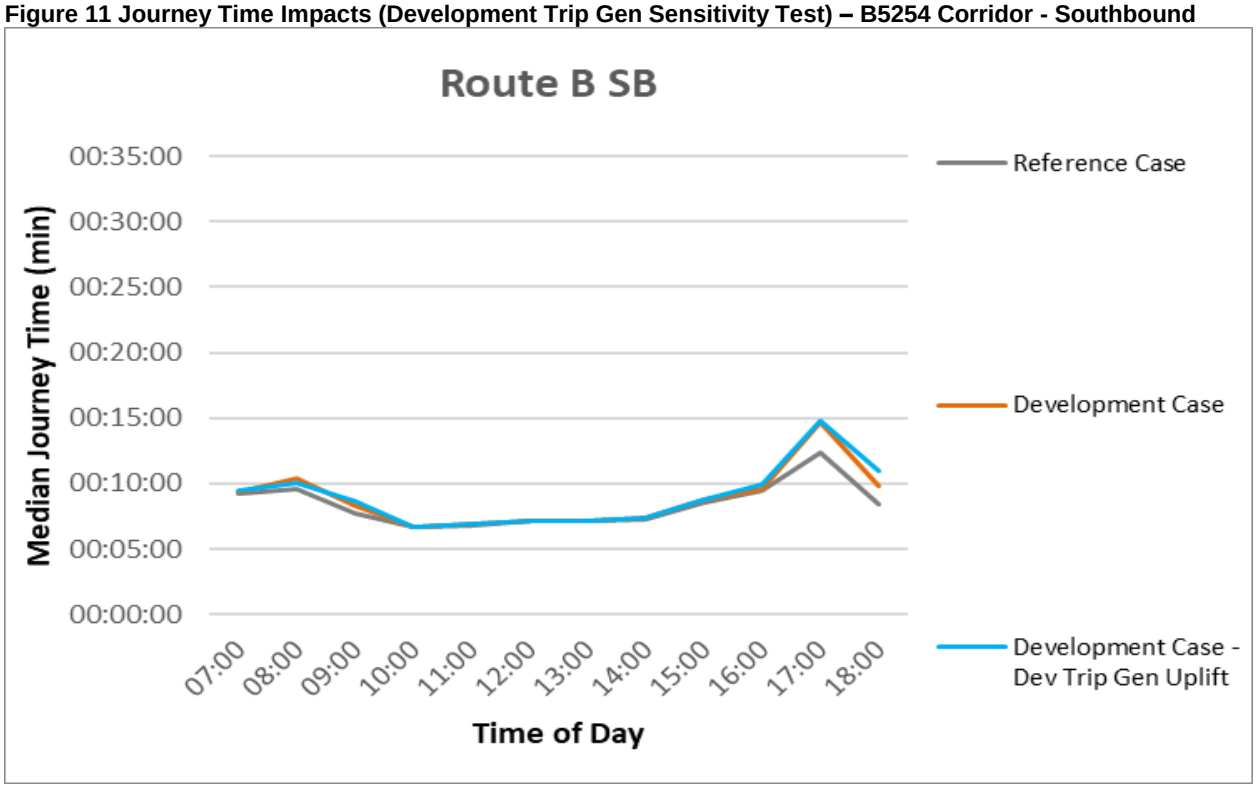



**Figure 11 Journey Time Impacts (Development Trip Gen Sensitivity Test) – B5254 Corridor - Southbound**

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136. The results presented in **Figure 8** to **Figure 11** indicate the modelled impact on journey times across the key corridors, once an uplifted trip generation has been assigned to the Pickerings Farm development traffic. As set out within **Table 15**, the uplifted trip generation tested is higher than that assumed by LCC for the AM peak hour, and marginally lower for the PM peak hour.

137. It is clear from the journey time results presented within these graphs, that the uplifted trip generation has no significant impact on the originally reported Development Case journey times, with the most notable difference reported being around a 60 second increases on Route A NB in the PM peak hour.

138. On the basis of the results reported within these figures, and considering that the sensitivity test trip generation are broadly in line with those derived by LCC, it is clear that there will be no notable change to the originally reported model results if the development trip generation was to be increased in response to the LCC comments on the trip rates.

Test 3 – Background Demands Uplift Sensitivity Test

139. A further sensitivity test that has been reported within this document relates to the uplift in background traffic demands assigned to the model. This is specifically in response to concerns raised by LCC relates to the data underpinning the development of the Vectos microsimulation model.

140. When considering the outputs from this scenario it is important to be cognisant of the limitations of the approach. It is unrealistic to expect all traffic to increase proportionally by 10% across the network as the reality is that traffic growth will be focussed in specific areas and/or as routes become more congested other demand responses will kick in. Neither of these are responses are given any weight in this simplified adjustment.

141. As presented within **Table 1** and **Table 2** of this note, a blanket 10% uplift has been applied to the Vectos model demands as a sensitivity test.

142. Noting the limitations, this assessment still has some value as it demonstrates that, regardless of the background traffic flows adopted within the modelling, the relative impact of the development trips remains unchanged. Where the network may become more congested, and journey times increase as a result, this occurs within the Reference Case and not the development case. The development effect is 'incremental' to the effect of the 10% and in most cases remains proportional within both the core test and the 10% sensitivity test.

143. The uplift has been applied to both the development case and the Reference Case as it provides an equivalent benchmark against which to consider the development effects.

144. The resultant journey time outputs for the key corridors have been reported from the 10% demand uplift scenarios, alongside the originally reported results.

145. This demonstrates that the originally reported conclusions remain consistent, regardless of the volume of background traffic included within the model. The journey time outputs for the A582 and B5254 corridors are presented within the following figures.

**Figure 12 Journey Time Impacts (Background Demands Uplift Sensitivity Test) – A582 Corridor - Northbound**

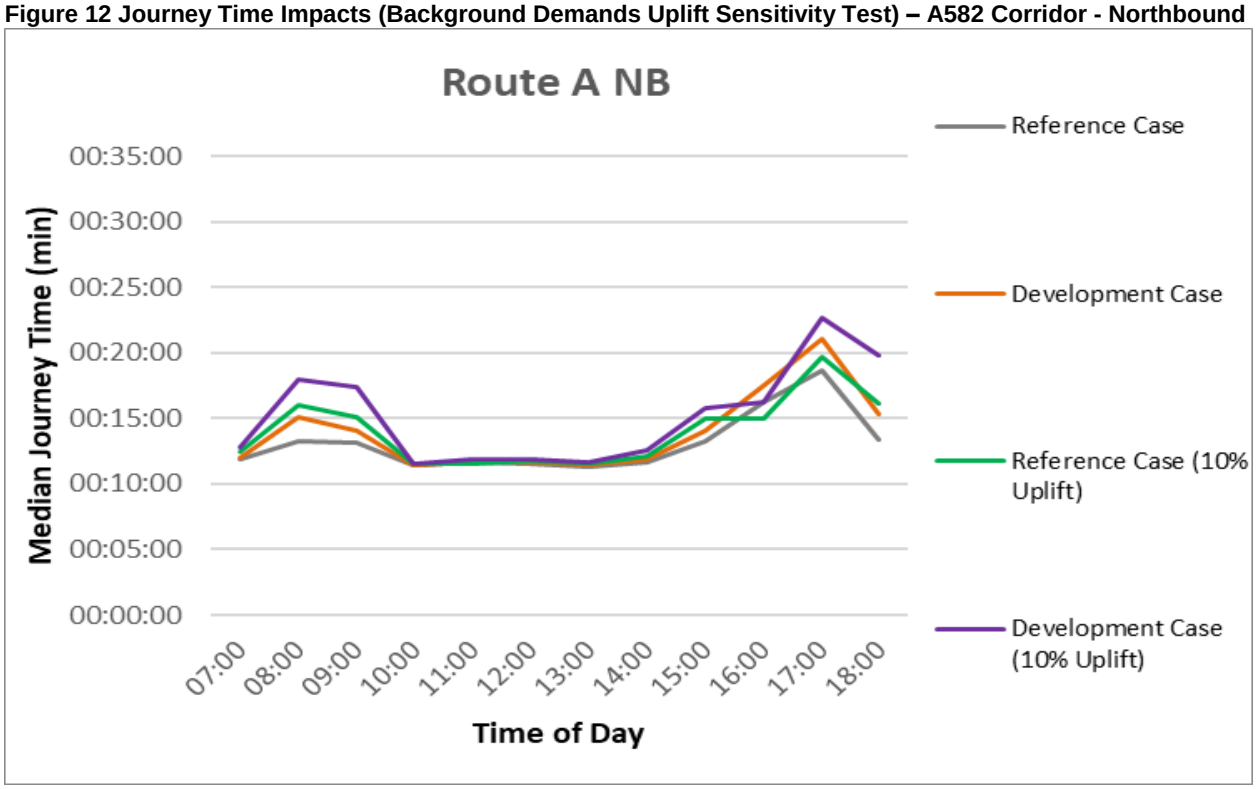



**Figure 13 Journey Time Impacts (Background Demands Uplift Sensitivity Test) – A582 Corridor - Southbound**

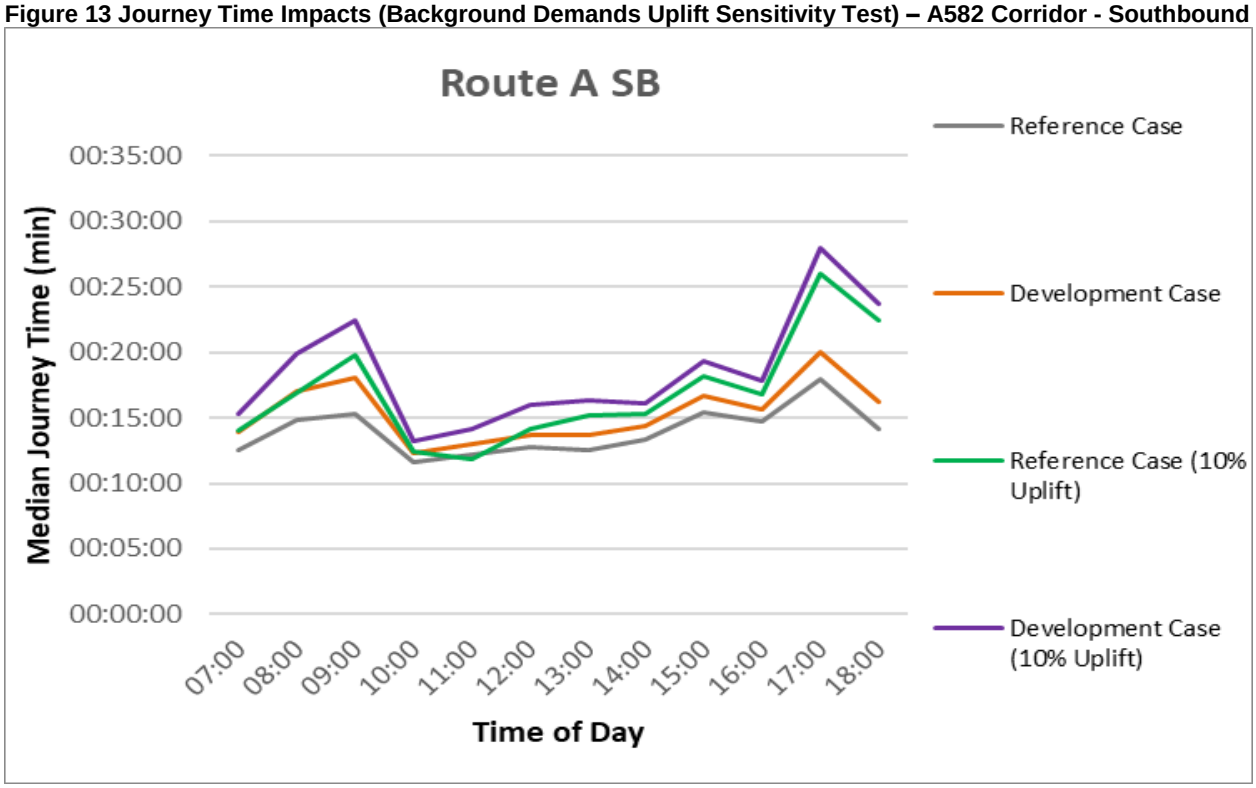


**Figure 14 Journey Time Impacts (Background Demands Uplift Sensitivity Test) – B5254 Corridor - Northbound**

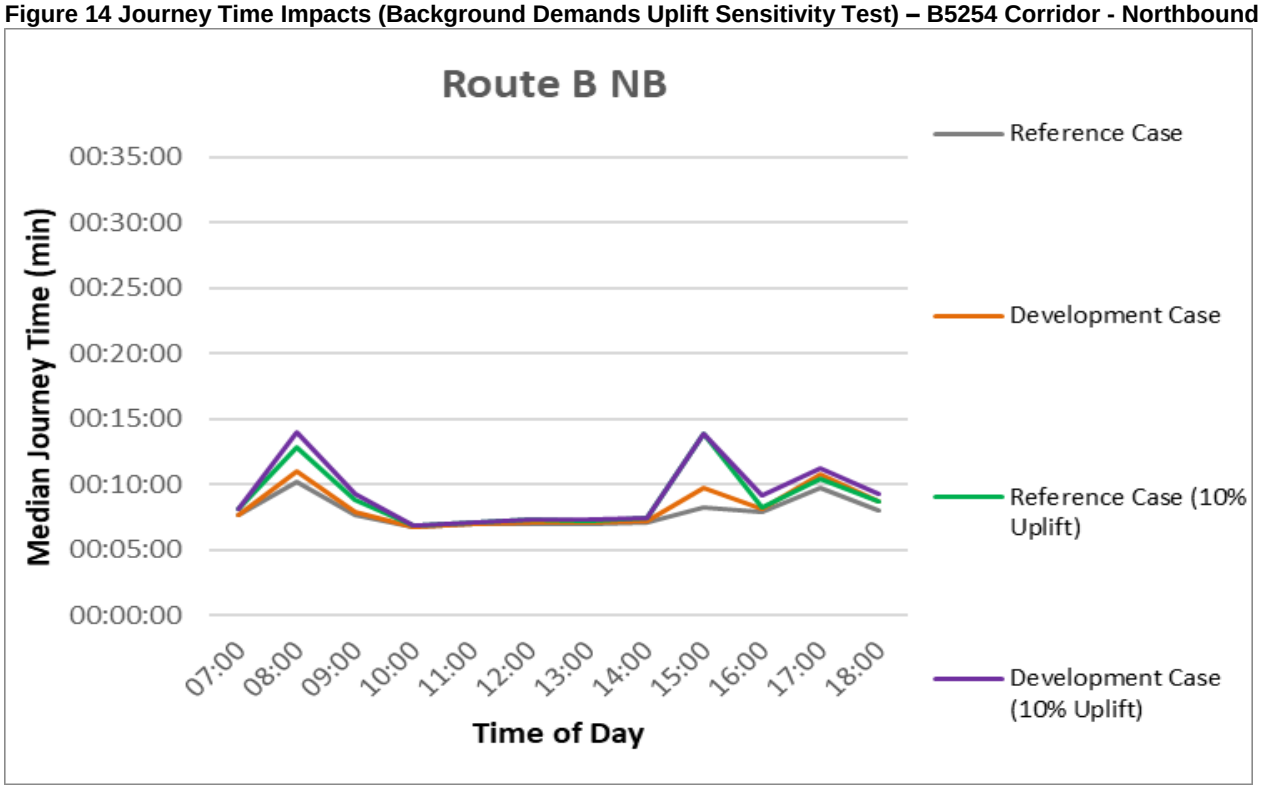
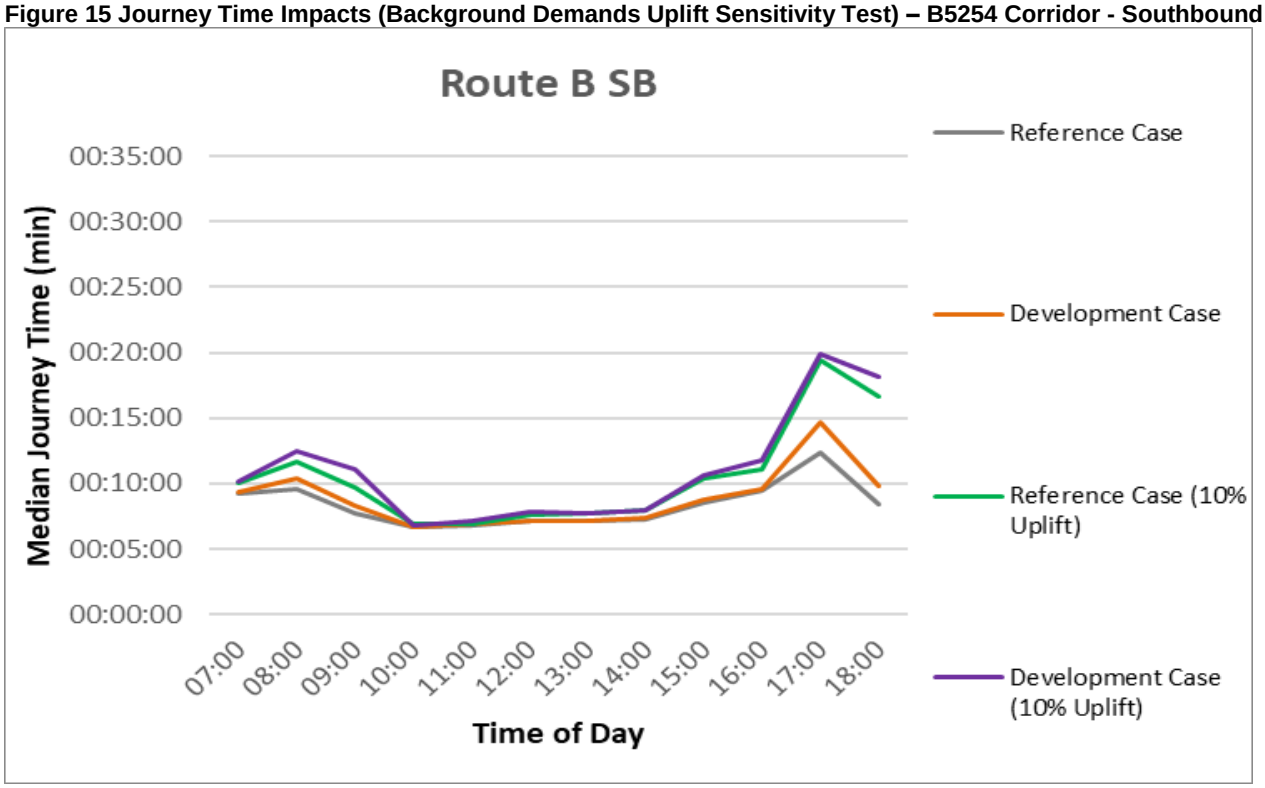



**Figure 15 Journey Time Impacts (Background Demands Uplift Sensitivity Test) – B5254 Corridor - Southbound**

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146. The journey time results presented for the key corridors in the previous **Figure 12** to **Figure 15** provides the outputs from the uplifted background demands test undertaken by Vectos. This journey time analysis demonstrates that, regardless of the volume of traffic considered within the modelling, the magnitude of change between the Reference Case and Development Case scenario remains broadly consistent.

147. The journey times reported in the uplifted demands scenarios are higher than the originally reported outputs, however, this is the case for both the Reference Case and Development Case scenarios. Critically, the 'step change' in modelling outcomes is broadly consistent. The development, at times, induces increases in journey times which are similar in magnitude, when compared to the reference case journey times, with or without the 10% uplift.

148. Upon comparing the differences between the uplifted Reference Case and Development Case scenarios, it is clear that that across the 12 hour period model the remains little impact of including the development trips, with the most notable impacts occurring in the PM peak hour on Route A NB, where the largest increase in journey times is just over 2 minutes, which is in-line with the magnitude of impact reported within the original model results and not considered significant in the context of a route which is 4km in length.

# Appendix MARebuttal 2

Technical Note 15: Model Briefing Note

vectos microsim.

# South Ribble Paramics Model
# Model Briefing Note

August 2022

## Introduction

1. The purpose of this note is to provide a direct response to any comments within the LCC Proof of Evidence (PoE) which comment on the Paramics model suitability or reliability. The following sets out the comments made by LCC, before providing a response to each.

## Modelling Comments and Vectos Response

Microsimulation Modelling

2. Paragraph 4.1.36 of the LCC PoE states:

> *"The WSP report highlights 11 red issues relating to model coding, and 4 red and 3 amber relating to signal coding. Signal specifications do not match that modelled. Also, 3 red and 2 amber link coding issues, where the input is not matching that from satellite images. All have the potential to significantly influence model performance. A large number of red and amber issues bring into question the reliability of the model to replicate the base scenario"*

3. Following on from the above, Paragraph 4.1.37 of the PoE states:

> *It is surprising and a concern that WSP indicate that actual signal timings have not been used in the base model, whether at signalised junctions or signalised roundabouts. The accuracy of the junctions modelled has been brought into question by the NH review for example where a number of approach lanes have not been included correctly*

4. In developing the Base model we have included signal staging/timings based upon controller specs, where available. Where this information was not available, the staging/timings were included based upon the LinSig models used in the previous Transport Assessment submitted for this site.

5. On the basis that LCC has agreed to the LinSig models produced by Croft it is not clear why LCC considers this to be unacceptable. This point was also made in our response to the NH/WSP audit whilst also acknowledging that we would happily update the signal timings based on more recent information if NH/WSP or LCC were able to make that information available (specifically in response to point 54 within the Audit Comments Log file issued to NH/WSP on 27th May 2022).

6. Further to this, comments on the link coding were also addressed when responding to the audit comments. Regardless of the fact that the original base model matches the observed data well across the entire network, suggested edits were made in response to the audit, and the resultant calibration/validation of the model was revisited, to demonstrate how these changes had no resultant

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impact on the model performance. This was demonstrated within the pack of information issued to NH/WSP in response to the model audit on 27th May 2022.

7. The audit also refers to the number of approach lanes not being included correctly at the A582/A6/M65 roundabout (see paragraph 4.1.37 of the PoE), where recent improvement features at this junction had not been included within the original model. Upon recent of this comment from NH/WSP the coding was refined in line with the latest on-street layout, and the base model performance reviewed to ensure that observed conditions were still being reflected within the calibration/validation statistics.

Committed Development

8. Paragraph 4.1.72 outlines the following in relation to the inclusion of committed development traffic within our modelling:

---

*It is unclear how traffic from the committed developments have been applied in the Appellants' assessment. This is a direct result of the Appellants' approach which does not allow scrutiny. This is a consistent issue with the Appellants technical evidence. This was highlighted in our statutory comments but no further detail has been provided by the Appellants. By contrast the LCC assessment follows an industry standard approach, where the application of committed development and all other assumptions are clearly set out and can be examined through individual worksheets and flow diagrams.*

---

9. Full detail on the inclusion of the committed development traffic within our modelling has been provided within a supporting technical note (*VM210430.TN003 Model Forecasting Note*). This details the sites included, the trip generation and distribution adopted, and the access strategy for each site.

10. The inclusion of committed developments within our modelling is in line with the sites included within the Croft assessment, and therefore is consistent with the approach adopted by LCC. LCC at no point have asked to review the forecast inclusions within the modelling, or for us to provide a run through of what we have included by the way of committed developments. Had LCC requested this we would have been able to provide data in a format different to that which was provided to enable LCC to complete these checks. At all times the traffic models and associated inputs and associated have been provided for checking and review purposes.

Modelling Results and Supporting Audit Trail

11. Within the paragraphs 4.1.81 to 4.1.91 of the LCC PoE, a review of the modelling results presented within the Transport Assessment has been undertaken. The various journey time routes referred to within the following section are presented within **Figure 1** overleaf:

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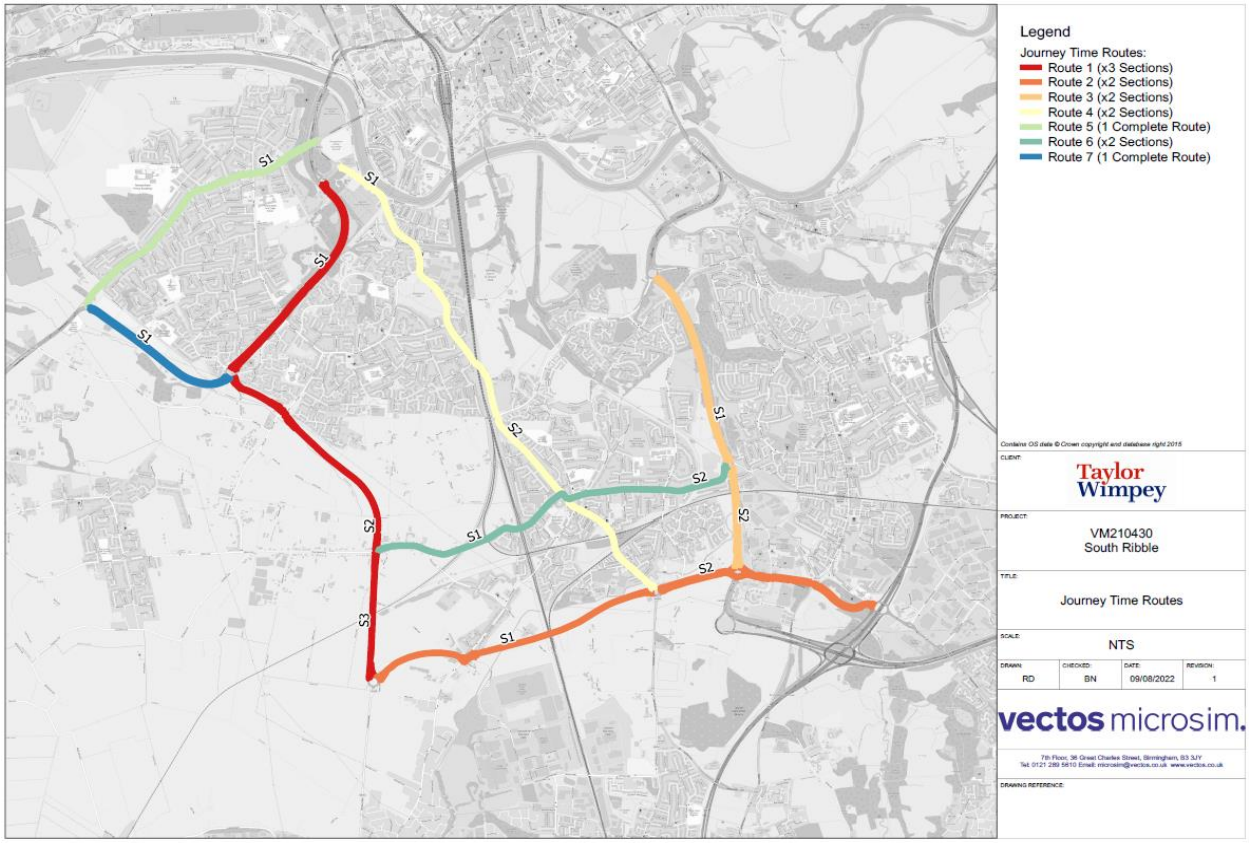
**Figure 1: Journey Time Routes**




12. A number of comments have been raised by LCC on the modelling results which are set out below and responded to within the following text:

---

*I would note, in Table 7.3 of the TA, for a scenario with no dualling of the A582, when the development (1,100 unit scenario) is added to the network (with committed development – 2031, PM Peak) on Route 2, A582 Eastbound (Tank roundabout towards the motorway), traffic flows and average journey times reduce by 17 seconds.*

---

13. There are a number of reasons for the results reported within the microsimulation will occur, primarily related to the relationship between route choice, congestion and also inherent simulation run variability (intended to reflect the daily variation which naturally occurs in traffic conditions). This does not mean that the models are flawed as is suggested by LCC. There are a number of possible explanations as to why the pattern identified on this corridor during the PM peak hour may occur including:

- The microsimulation model dynamic assignment tool, with variations between model runs inbuilt to reflect the day to day variations in traffic conditions on a network. Therefore journey times vary between scenarios

- It is entirely possible that traffic is re-assigning within the model to avoid queues on the route in question, which in turn may lead to a slightly fewer vehicles being reported on this route.
- Given the small proportion of total traffic flows that the development traffic makes up on this part of the network, it is not anticipated that this would lead to an notable worsening of already congested conditions in this area
- The 17 second reduction relates to a difference of between 592 seconds (Reference Case) and 575 seconds (Development Case). In the context of the total journey time reported for this corridor, this 17 second reduction is a minor change and likely a reflection of variation between model scenarios/runs.

14. Further to this, Paragraph 4.1.83 states the following:

---

*Also in Table 7.3 of the TA, in the opposite direction (westbound) the model indicates that the journey time on this route is 1,158 seconds (19.3mins) to travel circa 4km (without development); this equates to vehicles driving at an average speed of circa 7.6mph for the whole corridor. The modelling indicates this increases to 1,310 seconds (22.8mins) with development (1100 unit scenario); this equates to vehicles driving at an average speed of circa 6.5mph for the whole corridor. These modelled results are not highlighted as a concern by the Appellants. The TA in paragraphs 4.18 onwards, states that a "Vision and Validate" approach has been adopted. The Appellants has been clear that the success of "Vision and Validate" is reliant on increased congestion and reduced network reliability to drive modal shift from the car. Therefore, the model results are not seen as a concern to the Appellants. However, it most certainly is a concern to the Highway Authority whose responsibility is for network reliability and safety of all users.*

---

15. As noted within the LCC isolated junction analysis there are a number of junctions on this part of the network that are reported as operating over capacity even in the baseline scenario, and the level of delay reported on this corridor within the microsimulation is broadly in line with those conclusions.

16. As highlighted within our previous analysis of the model outputs, any impact associated within the development are predicted to occur for a short time period in the PM peak hour, with only negligible changes to journey times reported when considering the impact across the day.

17. LCC has highlighted a concern that a circa 19.3 minute journey over 4km may now take circa 22.8 mins within the busiest peak hour. It is unlikely that, across such a long distance, these differences would be noticed by road users. LCC note concerns around average speeds being as low as 6.5 mph within the Development case but as this is only 1 mph slower than is the case within the Reference Case it cannot be construed that this is a severe impact to be associated with the development. Rather it is symptomatic of the effects of general traffic on the network.

18. On this basis, and considering the Reference Case conditions highlighted within the LCC modelling, it is likely that this level of increase in journey times reported would lead to a re-timing of trips, or switch away from the private car use to avoid the worst of these delays. This step change in travel behaviour has not been accounted for within the Paramics modelling, for simplicity and to ensure transparency, and therefore these outputs should be considered a worst case representation of predicted traffic impacts.

19. It should also be noted that the results presented represent a ‘worst-case’ scenario, as a forecast traffic model is simply an indicator of potential change. As is often the case, the forecasts applied within the traffic models are often not fully realised, as behaviour change occurs, and drivers respond in ways that don’t involve simply sitting in traffic queues regardless of the amount of delay.

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20. Further to this, Paragraph 4.1.84 states the following

> *A further example of surprising results is found In Table 7.5 of the TA, on Route 4 (B5254 Leyland Road, Penwortham Bridge to Stanifield roundabout) in a no A582 dualling scenario. In the PM peak, Southbound, the modelled journey time is 771 seconds (12.85mins) to travel circa 4.2km in a without development scenario. This equates to vehicles driving at an average speed of circa 11.8mph for the whole corridor. With development (1100 units but having only 40 units served off Bee Lane), the journey time increases to 917seconds (15.29mins).*

21. In response to the above point, it is again important to point out that this increase in journey times is reported for the PM peak hour only, with impacts across the rest of the day being negligible. It is also important to note that the signal timings at the A582/Watkin Lane/Stanifield Lane roundabout have been adjusted within the Development Case scenario in an attempt to maximise throughput on the A582 arms, which in turn worsens the performance of the B5254 SB approach referred to in this comment.

22. Following the update to the models recently undertaken, in which signal timings have been optimised in line with the LinSig models, this journey time impact is reduced (difference between Reference and Development is now less than 2 minutes), as highlighted within the following **Figure 2**.

23. This would indicate that the increase in delay originally reported within the TA can be reduced through improvements to the modelled signal timings assigned to the A582/Watkin Lane/Stanifield Lane roundabout.

**Figure 2: Journey Time Routes – Route 4**

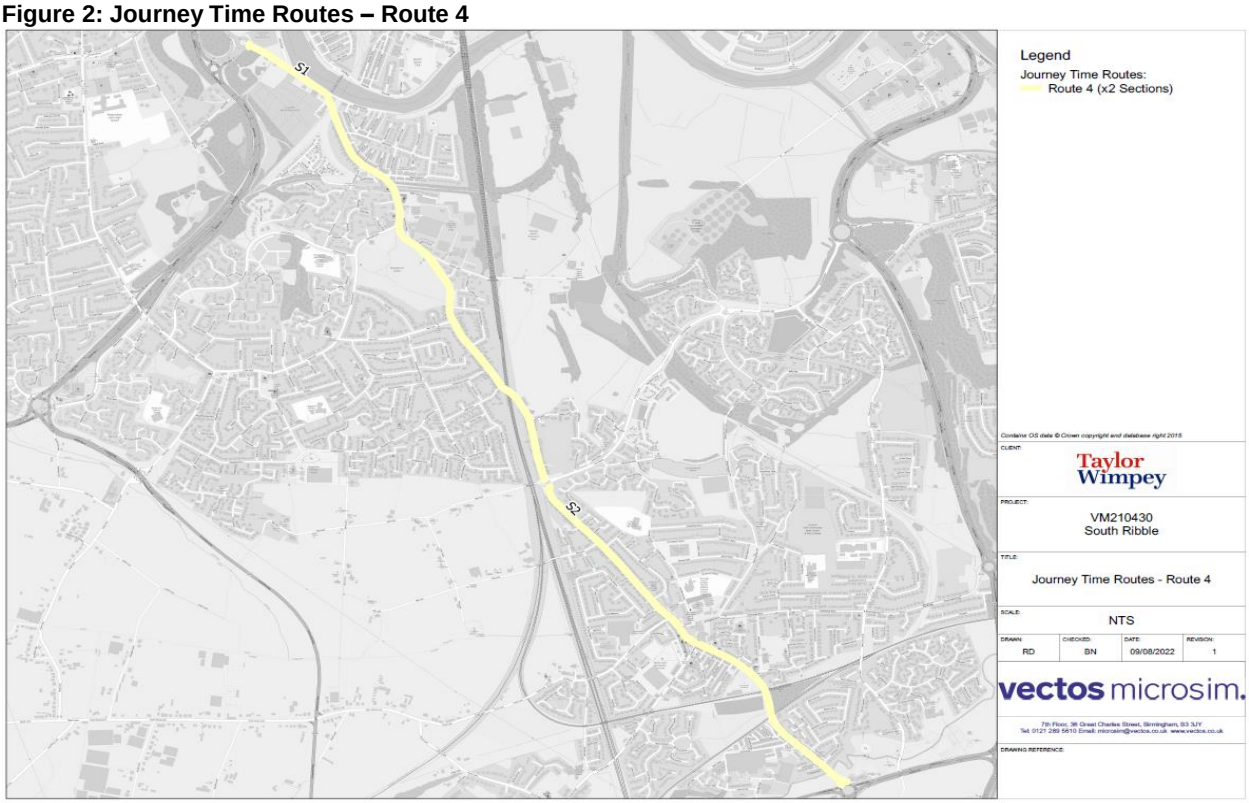
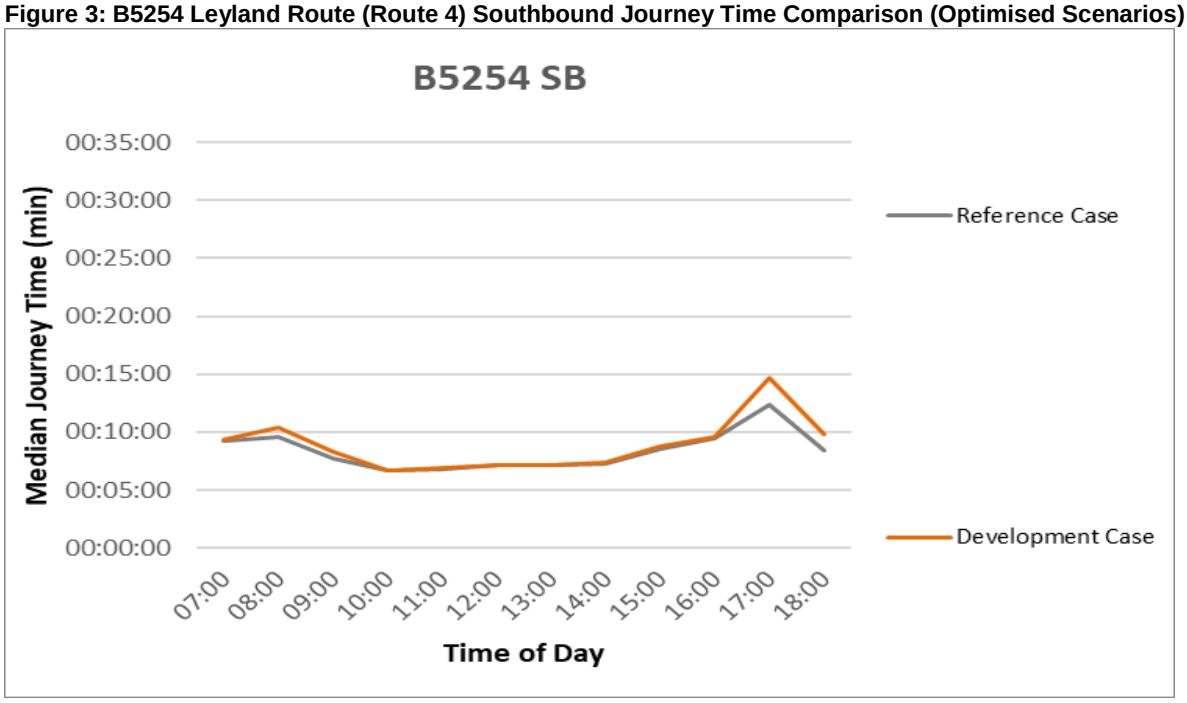


**Figure 3: B5254 Leyland Route (Route 4) Southbound Journey Time Comparison (Optimised Scenarios)**




24. Further to this, Paragraph 4.1.85 states the following

> *In Table 7.7 of the TA, on Route 6 (B5257 Coote Lane-Brownedge Road) PM peak, EB without development, the modelled journey time is 656 seconds (10.9mins) to travel circa 4km; without development this equates to vehicles driving at an average speed of circa 13.7mph for the whole corridor. With development (1100 unit scenario) this increases to 832 seconds (13.9mins); this equates to vehicles driving at an average speed of circa 10.8mph for the whole corridor. Again, this is not a concern to the Appellants.*

25. The journey times recorded for this section of the network are influenced by the traffic signals at the staggered crossroads of the B5254 Leyland Road/Coote Lane and B5254 Leyland Road/Brownedge Road junction, and by queues that form on approach to the A6/Brownedge Road roundabout. Within the Development Case scenario, traffic signals have been adjusted in an attempt to maximise throughput on the B5254, with a resultant increase in journey times on Coote Lane.

26. Following a review of the isolated junction models, optimised timings have been included at this location which in turns has reduced journey times on this approach, with the resultant impacts demonstrated within **Figure 5**.

**Figure 4: Journey Time Routes – Route 6**

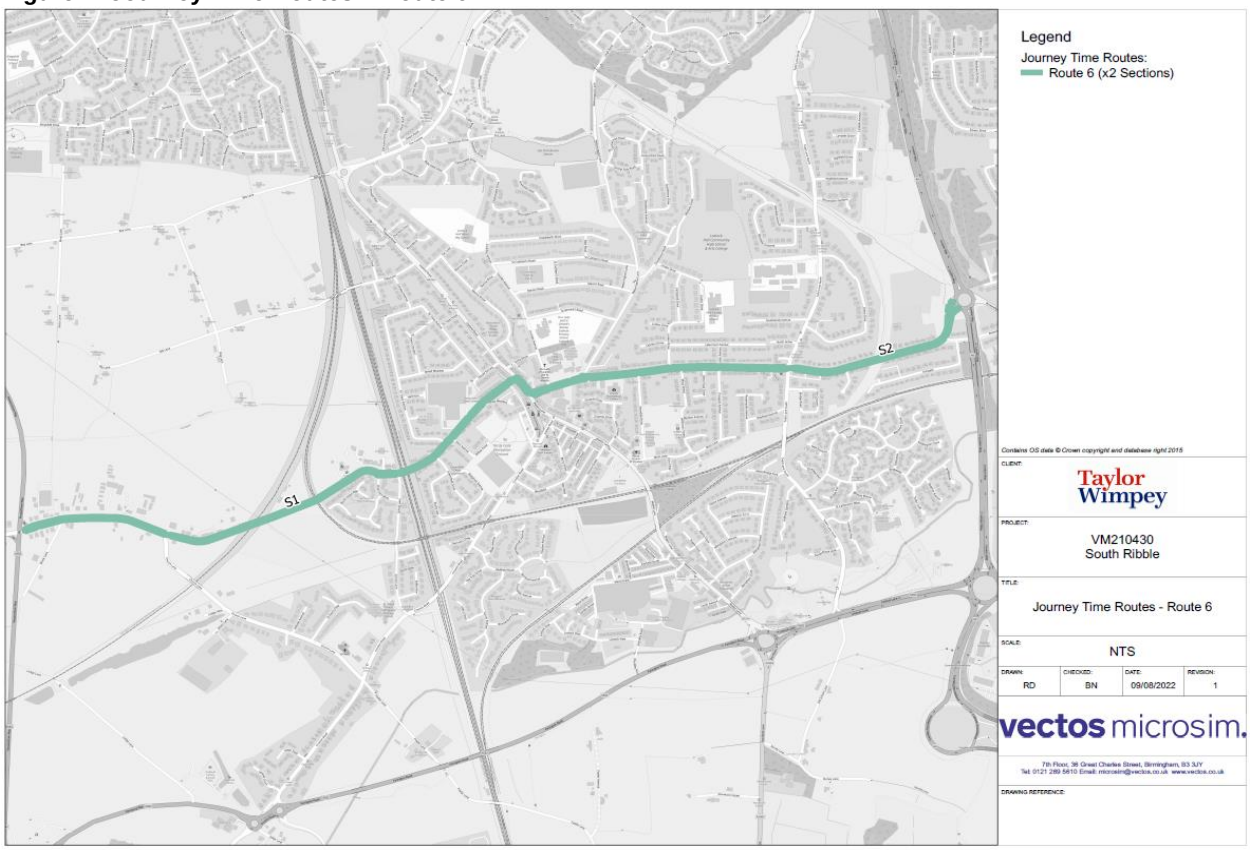
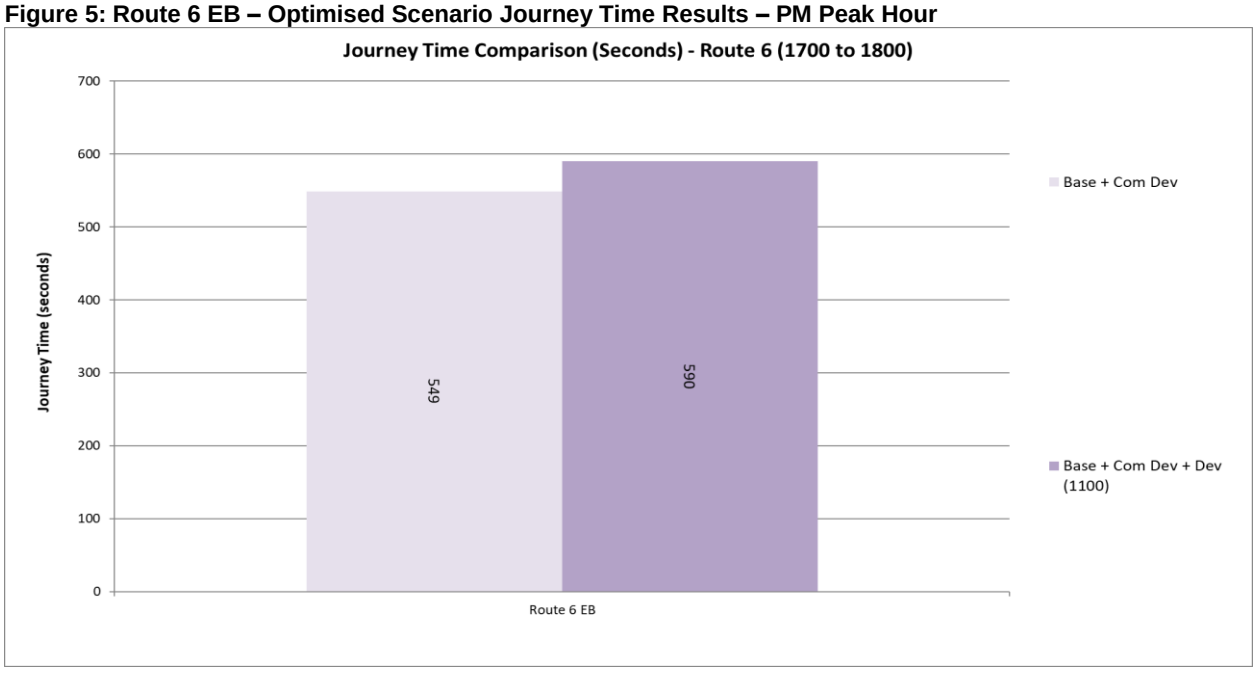



**Figure 5: Route 6 EB – Optimised Scenario Journey Time Results – PM Peak Hour**

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27. In addition to this, within the original Development Case scenario, queues form on the Brownedge Road approach to the A6/Brownedge Road roundabout during the PM peak, as some traffic will re-assign onto this route within the model at the busiest time.

28. With the optimised signal timings included at the A582/Watkin Lane/Stanifield Lane junction, the propensity for re-assignment is reduced, as lower delays on the A582 lead to less re-routing onto alternative routes, and as a result, journey time impacts on Route 6 are reduced.

29. Further to this, Paragraph 4.1.86 states the following

> *The inconsistencies in the modelling results are further highlighted by Table 7.14. On route 6 (Coote Lane-Brownedge Road) in an eastbound direction, when the development scale increases from 1100 to 1350 (-without dualling) the model shows the route to be 49 seconds faster.*

30. In response to the issue highlighted above, it is important to note that the overall journey time reported for Route 6 WB for the PM peak hour is in excess of 25 minutes. On this basis a reduction in journey times of around 49 seconds reflects a very small change in the total journey time reported for this route, and is simply a reflection of the variation between model runs (as set out in Paragraph 12 of this note).

31. This does not mean that there are inconsistencies in the models, as is suggested by LCC, more so that these small changes in journey times between scenarios (relative to the total journey time for the route recorded) reflects the variations between model runs inbuilt to reflect the day to day variations in traffic conditions on a network.

32. A final comment on the TA modelling results is within Paragraph 4.1.87 within the LCC PoE, which states:

> *With regard to the Appellants assessment of journey times this clearly highlights concerns with their "Vision and Validate" approach. The Appellants own results show that on the A582 with average speeds as low as 7.6mph, this has not driven a step change towards sustainable modes in this area. Similarly on the B5254 (Leyland Road) with average speeds of 11.8mph, this has not driven a step change towards sustainable modes in this area.*

33. As outlined in the response to previous queries on the modelling outputs, the journey times and speeds referred to in the above comment are predicted to occur for a short time period in the PM peak hour, with only negligible changes to journey times reported when considering the impact across the day.

34. In this context the modelling is demonstrating a ‘worst-case’ scenario, whereby the largest impacts on the network are reported, without any changes to the model demands to reflect a re-timing of trips. This approach has been adopted within the modelling in order to be as transparent as possible.

35. It is unlikely that these impacts will be fully realised, as it is likely that behaviour change will occur, with drivers responding in ways that don’t involve simply sitting in traffic queues regardless of the amount of delay.

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36. LCC have also provided a comment on the traffic flows reported on the SRN, within Paragraph 4.1.91:

> *I would highlight that these results on the strategic network raise concerns. At a number of locations highlighted in Table 7.16, I question the results, as traffic levels reduce on the network when development is added (1100 unit scenario). This occurs during the PM peak, for example: South of M6 J29 where there is a reduction of 439 trips (with development scenario); North of M6 J29 shows a reduction of 212 trips; East of M6 J29 a reduction of 82 trips; and West of M6 J29 a reduction 111 trips. This concern is further compounded when the development scenario increase to 1350 units. This results in additional trip reductions (when compared to the 1100 unit scenario), which is again not logical.*

37. It should be noted that the original model runs contained congestion around the M6/M65 junction during the busiest points in the PM period. In the Development Case this resulted in a small reduction in the traffic traversing the links assessed in this scenario relative to the Reference Case.

38. Following receipt of comments on the modelling from the NH/WSP audit, and the optimisation of signal timings at the A582/Watkin Lane/Stanifield Lane and A582/A6/M65 junction, this issue has been removed. The result is a more logical pattern of flows on the motorway mainline.

39. The resultant flows on the M6 and M65 have been reported for the optimised Reference and Development Case scenarios in the following table (reported in line with Table 7.16 within the TA).

**Table 1 SRN Link Flow Results – Optimised Model Scenarios**

| | AM Peak Hour (0800-0900) | | PM Peak Hour (1700-1800) | |
|---|---|---|---|---|
| | Reference Case | Development Case | Reference Case | Development Case |
| Link 1 (south of M6 J29) | 7280 | 7282 | 7667 | 7671 |
| Link 3 (north of M6 J29) | 5693 | 5711 | 6156 | 6166 |
| Link 6 (east of M6 J29) | 4221 | 4243 | 4356 | 4385 |
| Link 8 (M65 west of M6 J29) | 3663 | 3689 | 3845 | 3829 |

LCC Highways Traffic Assessment

40. Chapter 5 of the LCC PoE presents the traffic assessment undertaken by LCC. Paragraph 5.1.5 states the following:

> *I do not agree that the Vectos assessment provides a clear, accurate and auditable representation of the typical network conditions or a realistic forecast of the future conditions. I have therefore conducted my own assessment of the network and the development, in order to identify the true impacts of this development*

41. LCC has not provided evidence to support the statement that the base scenario does not reflect observed conditions, or that the forecast scenarios are realistic. Rather the inference here is that LCC considered that the model should be busier.

42. This does not recognise that the model reflects the observed conditions as collected and reported within the LMVR in line with standard practice. Nor does it recognise that, within Systras audit, they concluded that the model reflected observed conditions well and that the routes chosen for journey time validation were sensible, achieved a good level of fit and exceeded TAG guidance.

43. Although a number of comments were raised on the model by NH/WSP in their audit, these were all addressed, with an updated model and outputs issued to NH/WSP. NH/WSP also concluded within para 2.6.3 of their audit that "the calibration of the morning and peak hours of 08:00-09:00 and 17:00-18:00 appears reasonable given the size of the model being calibrated."

44. There has also been no evidence provided by LCC to demonstrate that the model does not replicate known congestion issues. LCCs comments comprise anecdotal assumptions on the network performance, rather than empirical queue or journey time comparisons against the model (as we have produced).

45. The traffic model reflects queues at key junctions on the A582 corridor and this is demonstrated by the ability for the model to match journey time observations within the same network. Therefore, it is unclear whether LCC have reviewed the model operation in detail prior to determining that the model is not reflecting expected conditions.

46. This is also conflicting with the comments made by LCC on Paragraphs 4.1.83 (responded to above), whereby LCC are suggesting that conditions within the Reference Case are already of significant concern. The inference in the comments in Paragraph 5.1.5 is that the modelling does not incorporate sufficient future year traffic growth, so on this basis, but given the high journey times on the A582 and B5254 corridors that LCC have flagged, it is not clear which elements of the forecasting LCC deem unrealistic.

47. Further to this, in deriving traffic forecasts within their assessment LCC have stated (paragraph 5.1.20)

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*The TEMPro version used is not the latest. LCC IT service who manages software updates has not yet made the update available to officers. If the latest version was applied would result in slightly higher growth rates.*

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48. Having applied the same assumptions within TEMPRO as LCC, using the latest version of TEMPRO (Version 7.2c), the growth factors derived are 12.2% in the AM and 11.1% in the PM, the LCC benchmark growth figures are 13.4% and 12.6%. LCC indicate that, had they used the most recent version of TEMPRO the growth forecasts would be higher. LCC appears to expect traffic growth forecasting to continue to result in higher and higher traffic growth projections when, demonstrably, this is not the case.

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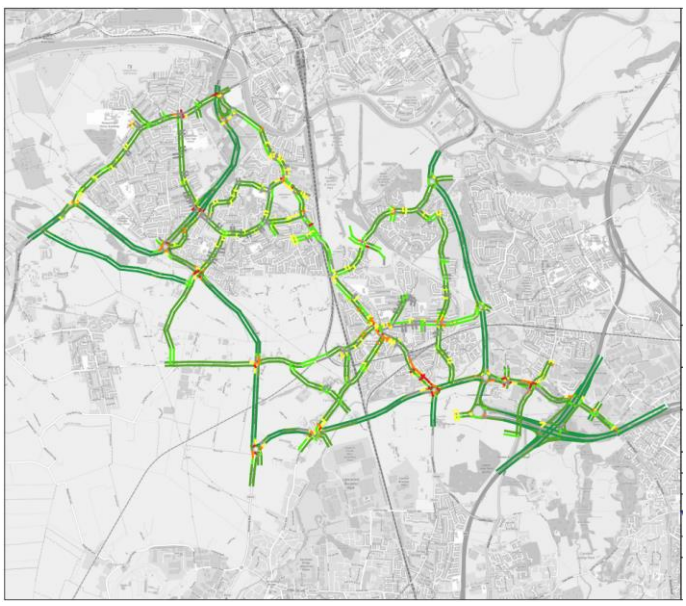
# Appendix MARebuttal 3

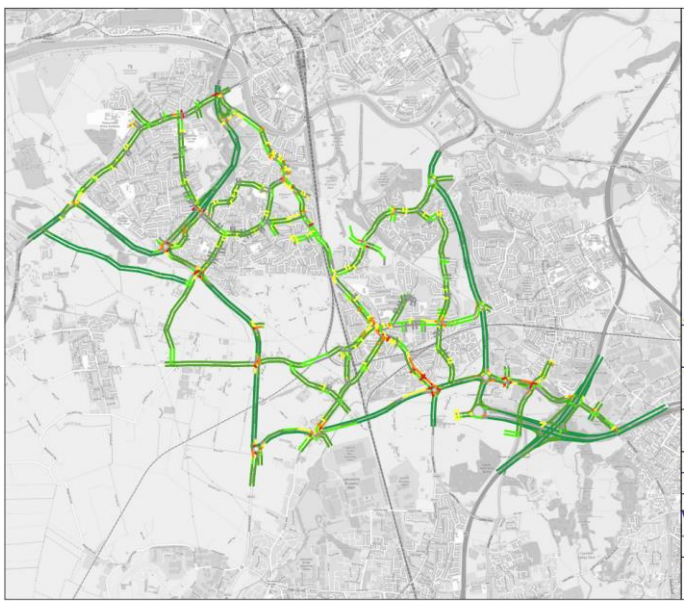
Average Link Speed Plots

Reference

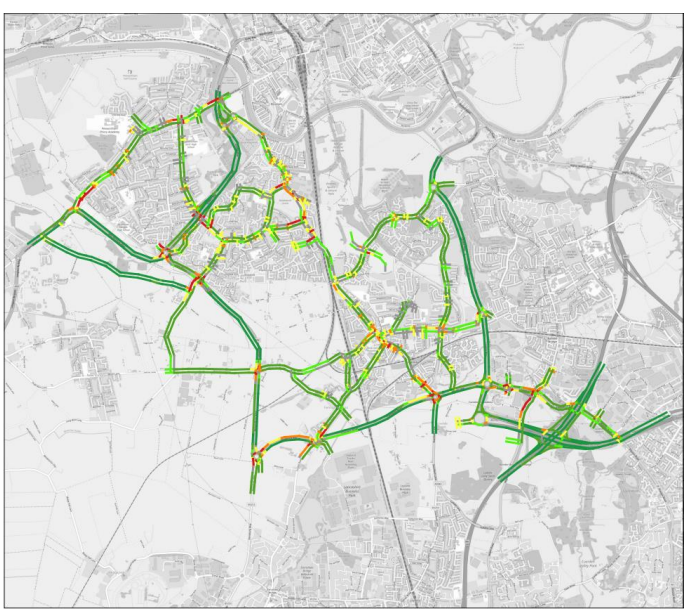
Development

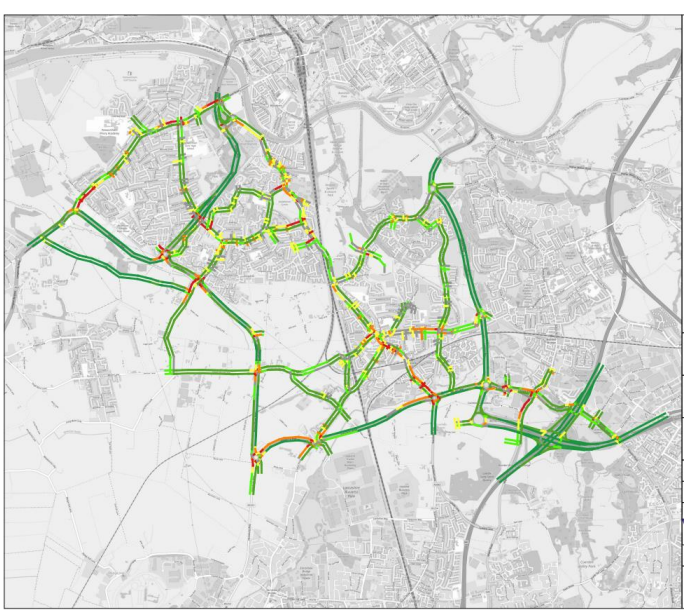
07:00 to 08:00



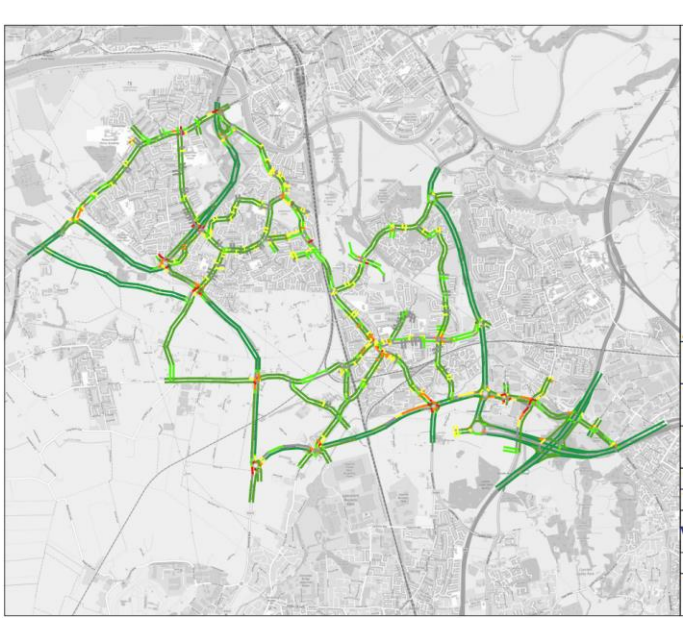


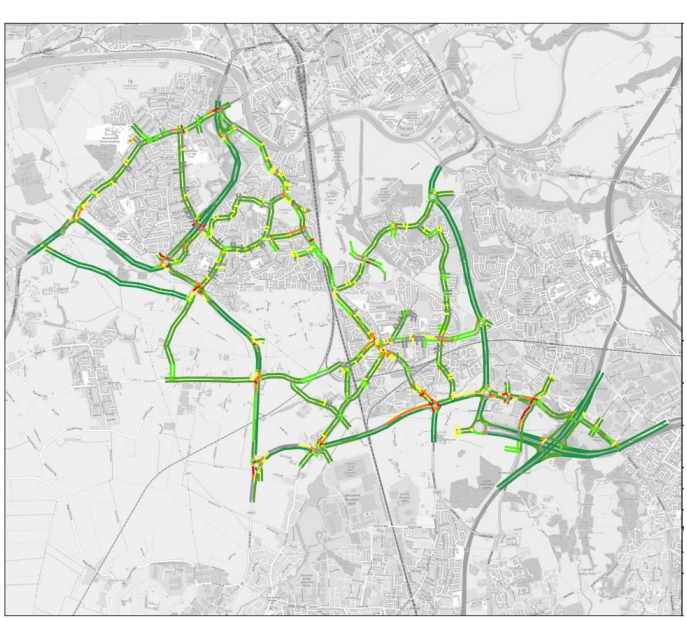
08:00 to 09:00





09:00 to 10:00

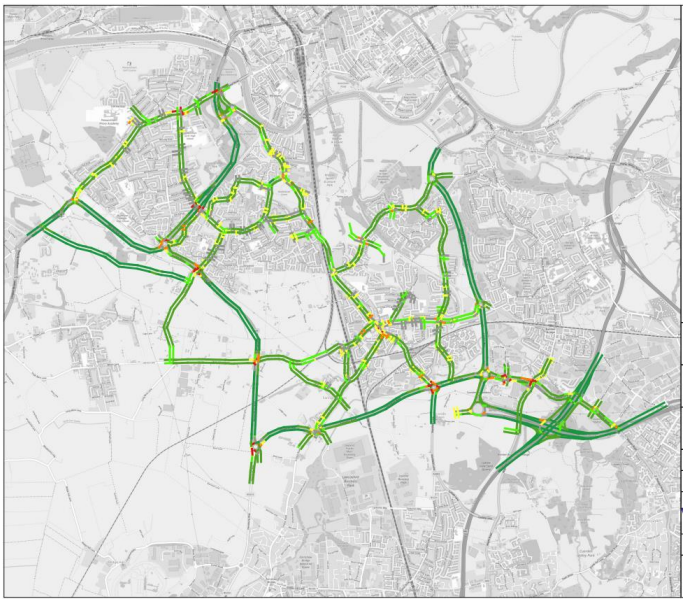


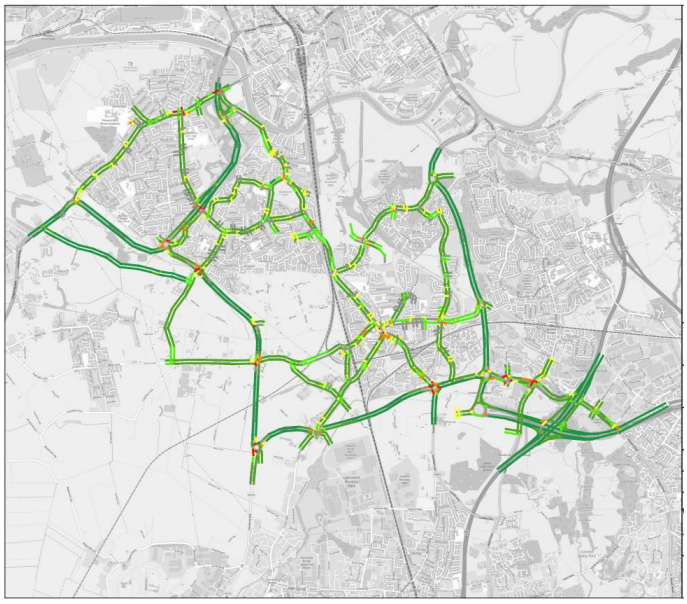


Reference

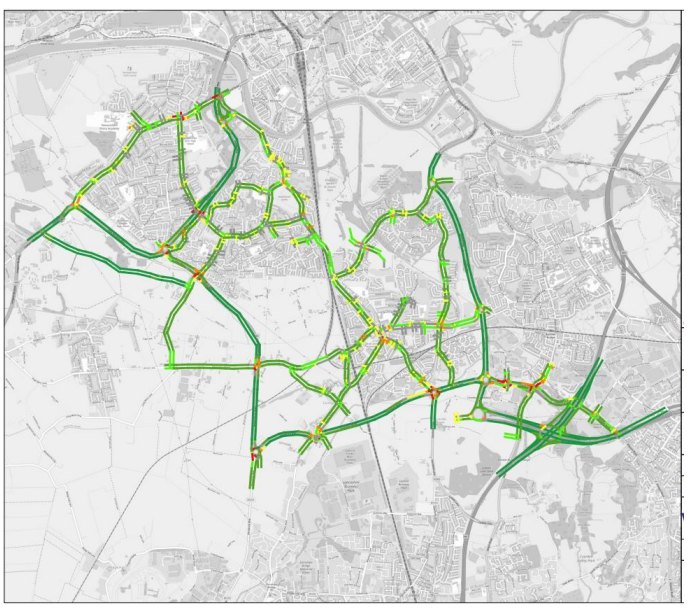
Development

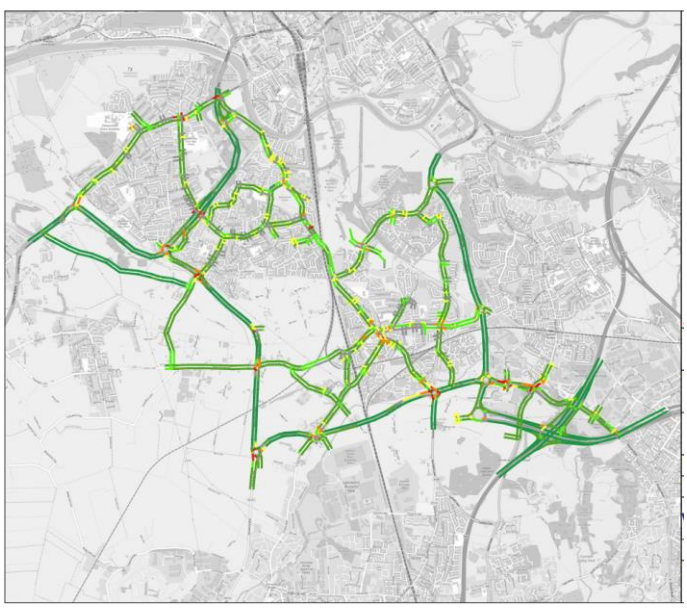
10:00 to 11:00





11:00 to 12:00





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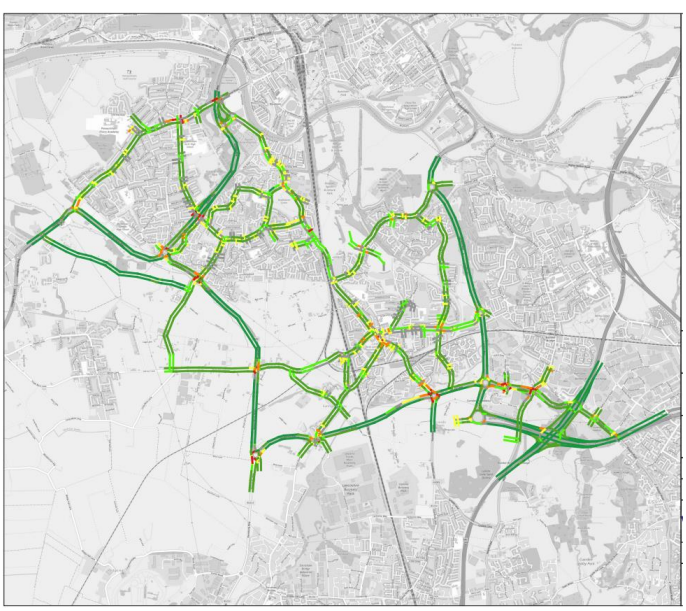
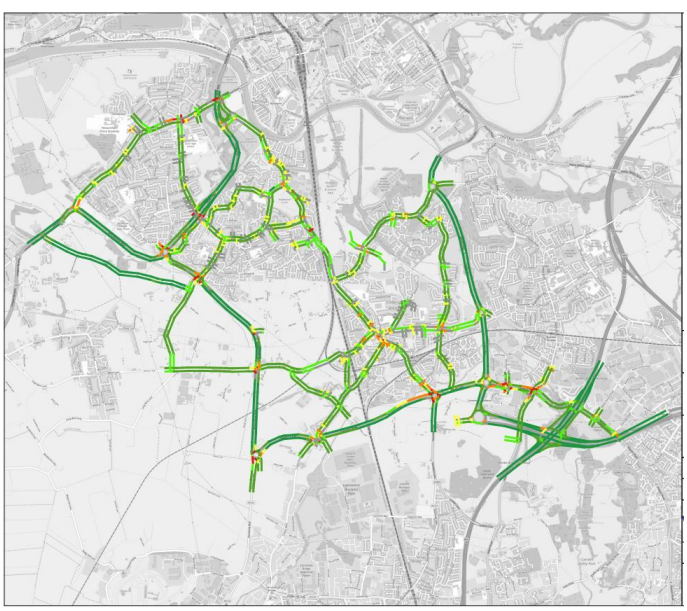
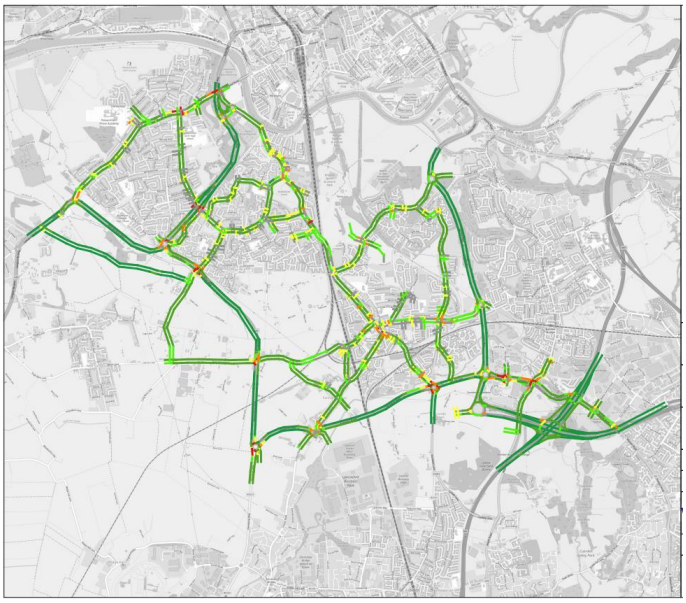


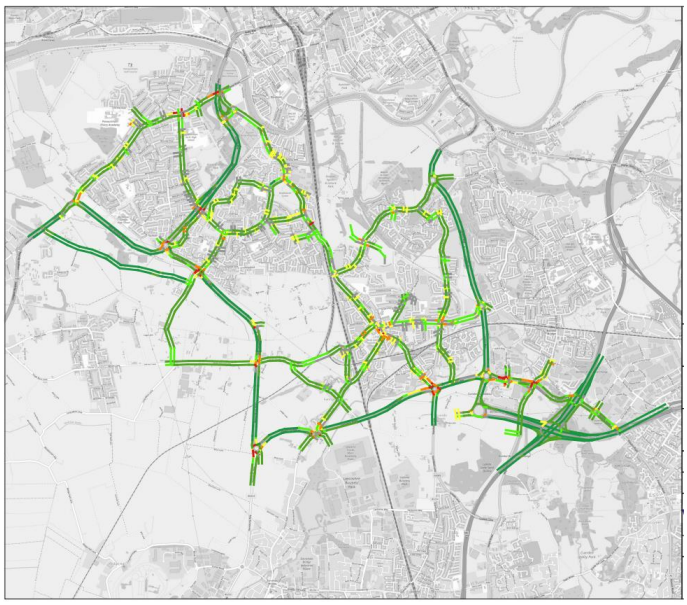


Reference

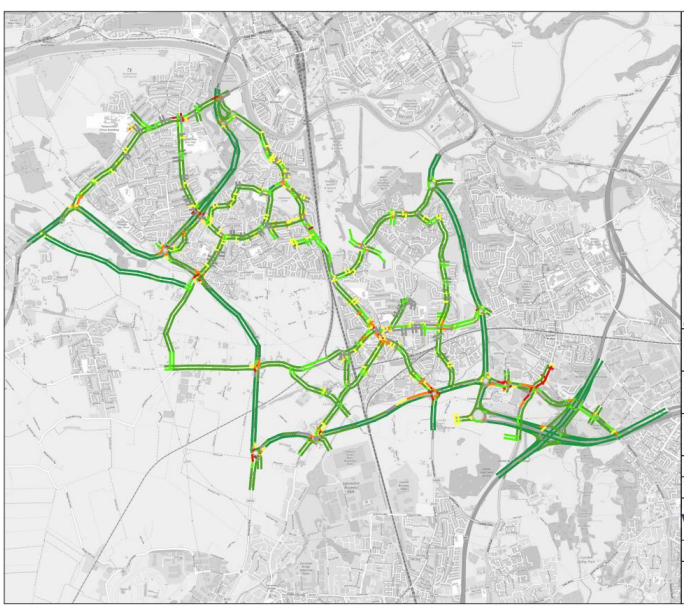
Development

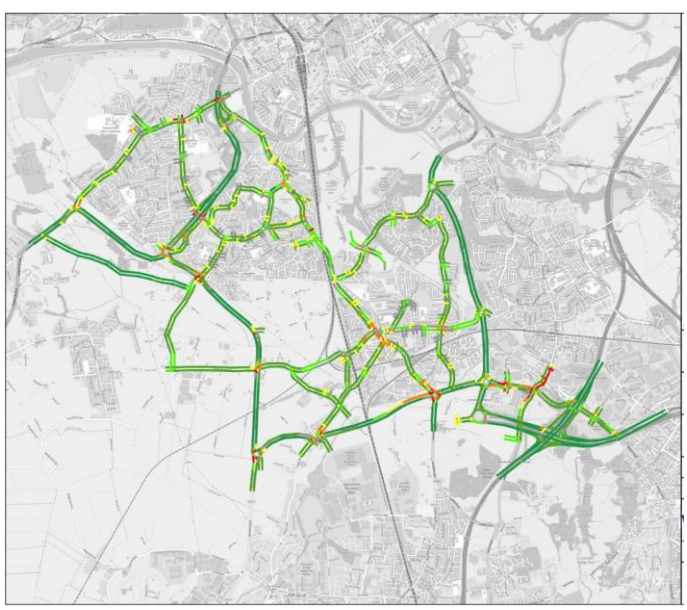
13:00 to 14:00



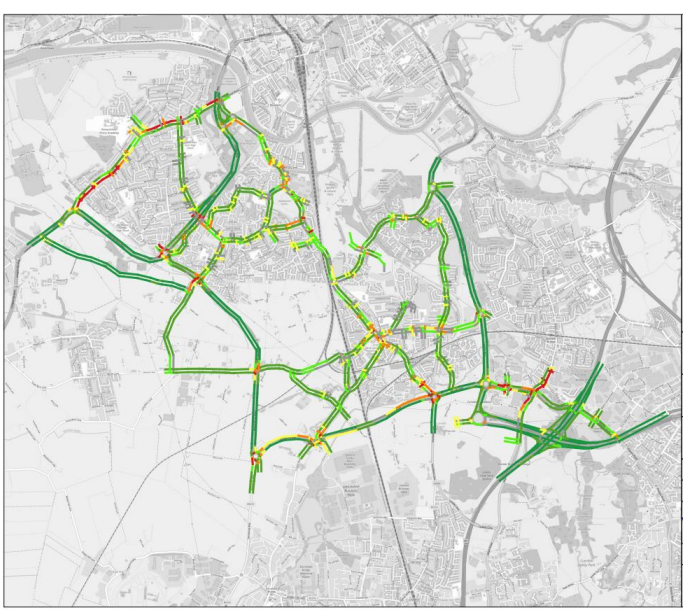


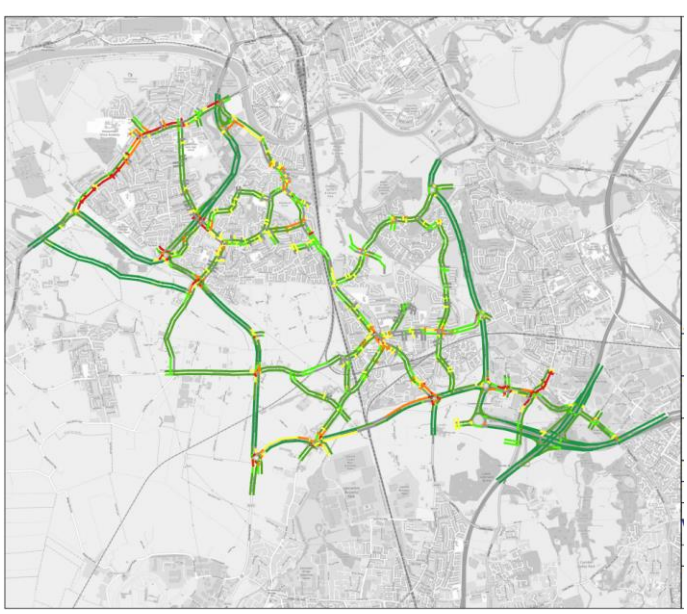
14:00 to 15:00





15:00 to 16:00





Reference

Development

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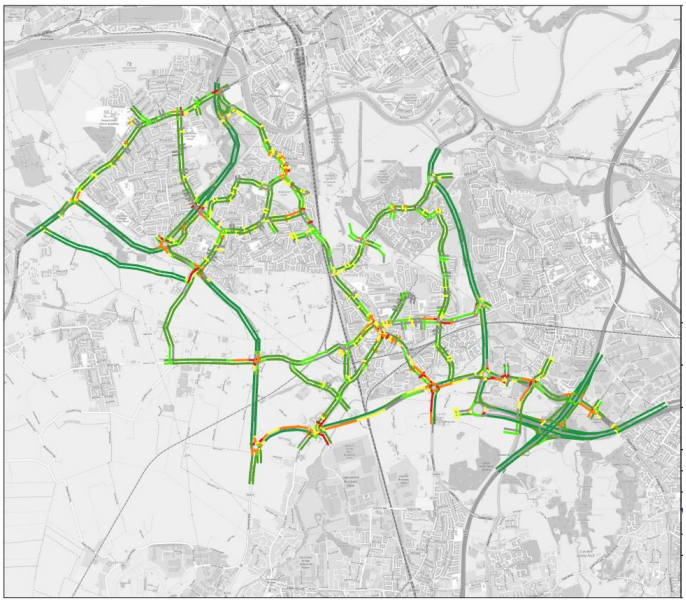
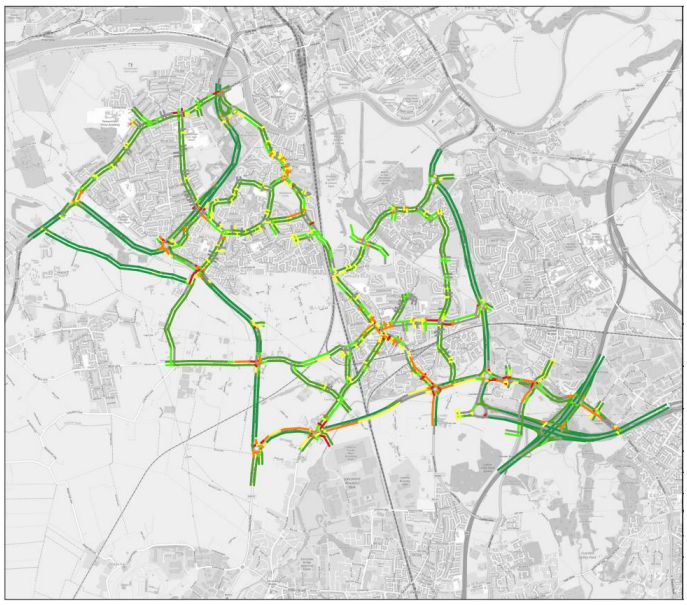
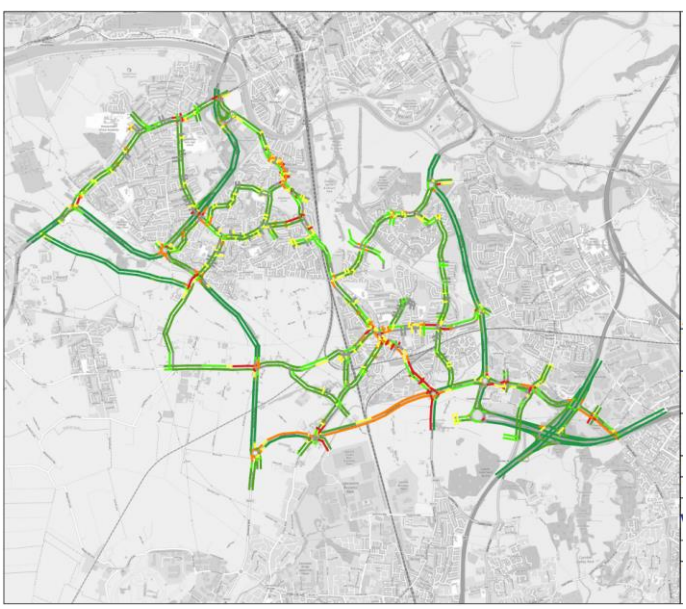
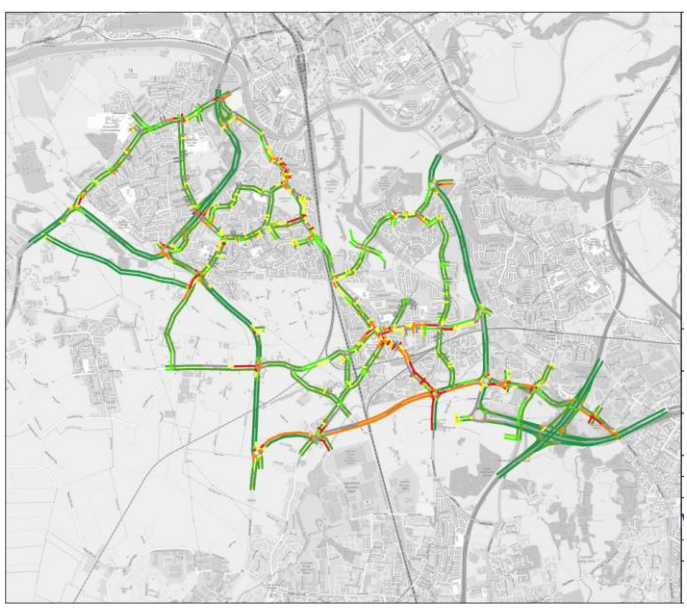


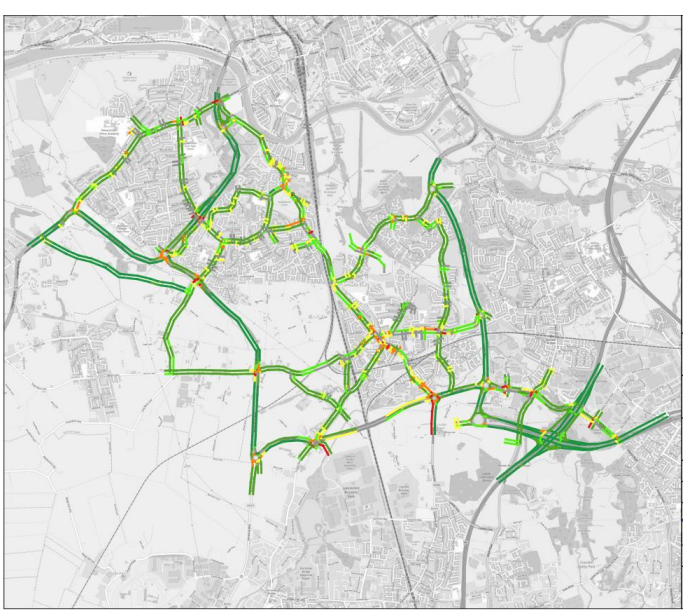


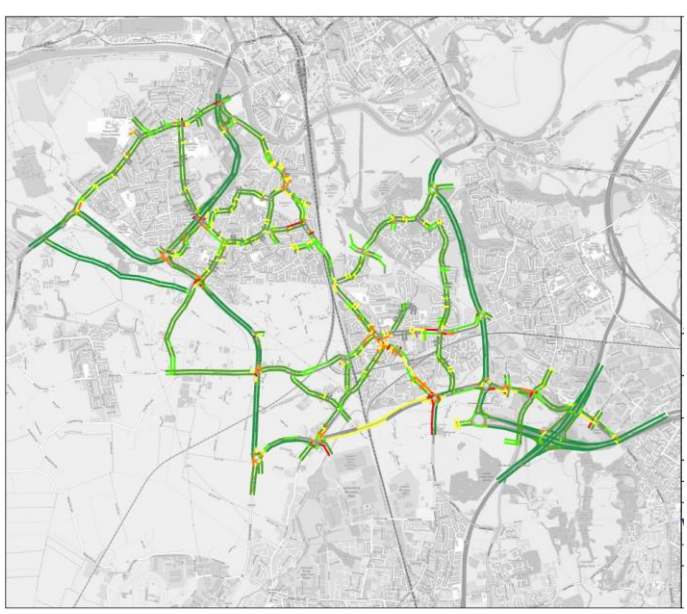
17:00 to 18:00





18:00 to 19:00





# Appendix MARebuttal 4

NH Letter 28th July 2022

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Assistant Spatial Planner
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Store Street
Manchester M1 2WD

Janice Crook
The Planning Service
South Ribble Borough Council
Civic Centre
West Paddock
Leyland
Lancashire PR25 1DH

28th July 2022

**Sent Via Email**

Dear Janice,

**Planning Consultations 07/2021/00886/ORM (development of up to 920 dwellings) and 07/2021/00887/ORM (development of up to 180 dwellings)**

**Land at Pickerings Farm, Penwortham**

We write in connection with the above planning proposals that are currently subject to an appeal (reference APP/F2360/W/22/3295498) against a determination of refusal of planning consent by South Ribble Borough Council (SRBC).

National Highways has been appointed by the Secretary of State for Transport as strategic highway company under the provisions of the Infrastructure Act 2015 and is the highway authority, traffic authority and street authority for the Strategic Road Network (SRN). The SRN is a critical national asset and as such we work to ensure that it operates and is managed in the public interest, both in respect of current activities and needs as well as in providing effective stewardship of its long-term operation and integrity.

National Highways' approach to engaging with the planning system is governed by the advice and guidance set out in:

- The Strategic Road Network Planning for the Future - A Guide to Working with Highways England on Planning Matters (2015).

As a statutory consultee in the planning system, National Highways has a regulatory duty to co-operate. Consequently, National Highways are obliged to give consideration to all proposals received and to provide appropriate, timely and substantive responses.

This letter clarifies the position of Nation Highways on both proposals in advance of the appeal hearing.

**Background**

National Highways were consulted by South Ribble District Council on two residential planning applications submitted by Taylor Wimpey and Homes England for the site known as Pickering's Farm, Penwortham, Preston amounting to 1,100 dwellings, which is allocated for residential development in the current South Ribble Local Plan. Although two separate applications, the two developments have been assessed within the same Transport Assessment prepared by the developers transport consultants, Vectos.

We note that the two planning applications for the site were refused at Planning Committee by SRBC in November 20210. Subsequently, the promoters of the scheme have decided to appeal the decision (Appeal Reference: APP/F2360/W/22/3295502) with the Planning Inquiry opening date set for August 2022.

National Highways provided comments on the Transport Assessment (TA) and Travel Plan prior to the planning committee meeting but had not reached an agreement on the suitability of the evidence provided.

Since that time Vectos have sought to engage with National Highways, but we have found the strength of their cooperation lacking, with confirmation of their client's intention to appeal not provided to us until March 2022. The outcome of the discussions to date is that National Highways has been unable to form a view on the proposals based upon evidence that is acceptable to us.

Against this background, and so that National Highways is able to reach an evidenced view on the, we have therefore had to undertake our own analysis in conjunction with colleagues at Lancashire County Council Highways (LCC). The company wishes to put on record its disappointment at the need to resort to investing its own resources in completing work that should have been undertaken adequately by the applicants. As a statutory consultee, we feel that in this case this is necessary and has been done in the interests of informing SRBC.

As part of the appeal process, LCC have undertaken a revised trip generation exercise for the proposed developments, which we have reviewed and comment on where it is relevant to our original consultation response.

.

The following information has been provided to us by LCC:

- Pickering's Croft Analysis updated by LCC May 22 V5.xlsx ['the spreadsheet']

**Traffic Surveys**
We have checked the traffic surveys used to determine the baseline conditions and peak hour identification within the spreadsheet.

In line with DfT Tag Unit M1.2 traffic surveys should be carried out during a 'neutral' or 'representative' month avoiding the main and local holiday periods. A neutral period is defined in DfT Tag Unit M1.2 to be Monday to Thursdays from March through to November (excluding August) provided adequate lighting is available and avoiding all weeks before/after Easter, the Thursday before and all of the week of a bank holiday, and the school holidays.

Is it noted within the spreadsheet that the surveys were carried out on the following dates:

- Wednesday 4th July 2018
- Tuesday 13th September 2018
- Wednesday 14th September 2018

We therefore conclude that the traffic surveys were carried out during a 'neutral period' in compliance with DfT Tag Unit M1.2.

National Highways can confirm that we have not identified any issues with the survey data included within the spreadsheet.

**Committed Developments**
We have reviewed the flow diagrams for each of the committed developments for the AM and PM peak periods. LCC have stated that the committed developments included are consistent with those requested by SRBC, which we therefore have accepted.

It should be noted that committed developments are a matter to be agreed with the Local Highway Authority/Local Planning Authority and not National Highways. However, we note that the number of trips forecast to enter/exit each of the sites are consistent across the flow diagrams, with all trips accounted for.

Within the spreadsheet, the following trip rates have been provided for the development:

*Table 1 Development Trip Rate*

| Land Use: Houses | AM Peak 0800 to 0900 | | PM Peak 1700 to 1800 | |
|---|---|---|---|---|
| | Arrivals | Departures | Arrivals | Departures |
| Trip rate per unit | 0.15 | 0.43 | 0.34 | 0.24 |

It is not stated within the spreadsheet what criteria has been used to derive the trip rates and whether these trip rates are vehicle only or all-person trip rates.

In order to validate the rates used, we have interrogated TRICS to derive rates for the proposed development to determine if those provided in Table 1 are appropriate.

We have applied the following criteria to TRICS:

- Land Use: 03 Residential A – Houses Privately Owned
- Regions – all excluding Greater London, Scotland, Wales, Northern Ireland and the Republic of Ireland
- Locations – Edge of Town and Neighbourhood Centre
- Date of Survey – 01/01/2017 to 23/11/21

We derived the following trip rates from TRICS, shown in Table 2.

*Table 2 WSP Trip Rates*

| Land Use: Houses | AM Peak 0800 to 0900 | | PM Peak 1700 to 1800 | |
|---|---|---|---|---|
| | Arrivals | Departures | Arrivals | Departures |
| Trip rate per unit | 0.15 | 0.34 | 0.32 | 0.15 |

**National Highways therefore accepts the trip rates used by LCC as appropriate for the development proposals.**

### TEMPRO Traffic Growth Factors

We have reviewed the TEMPRO factors provided by Lancashire County Council for 2018-2035, although we have been unable to exactly replicate the factors (due to a difference in Tempro dataset versions) we consider that the input parameters used are appropriate.

**National Highways have discussed with LCC the approach taken to derive the TEMPRO rates and consider the input parameters to be appropriate**.

### Census Data

We have reviewed the 2011 Census Journey to Work Data (WU03EW – Location of usual residence and place of work by method of travel to work MSOA level) for the place of work Middle Super Output Area South Ribble 006.

**We accept that data used as being appropriate for this proposed development**.

## Trip Distribution

We have reviewed the trip distribution which uses 2011 Census Journey to Work Data (WU03EW – Ribble 006). We have reviewed the routing used and accept those used to be appropriate for each census tract.

**National Highways consider the trip distribution to be appropriate for use**.

## Traffic Impact on the SRN

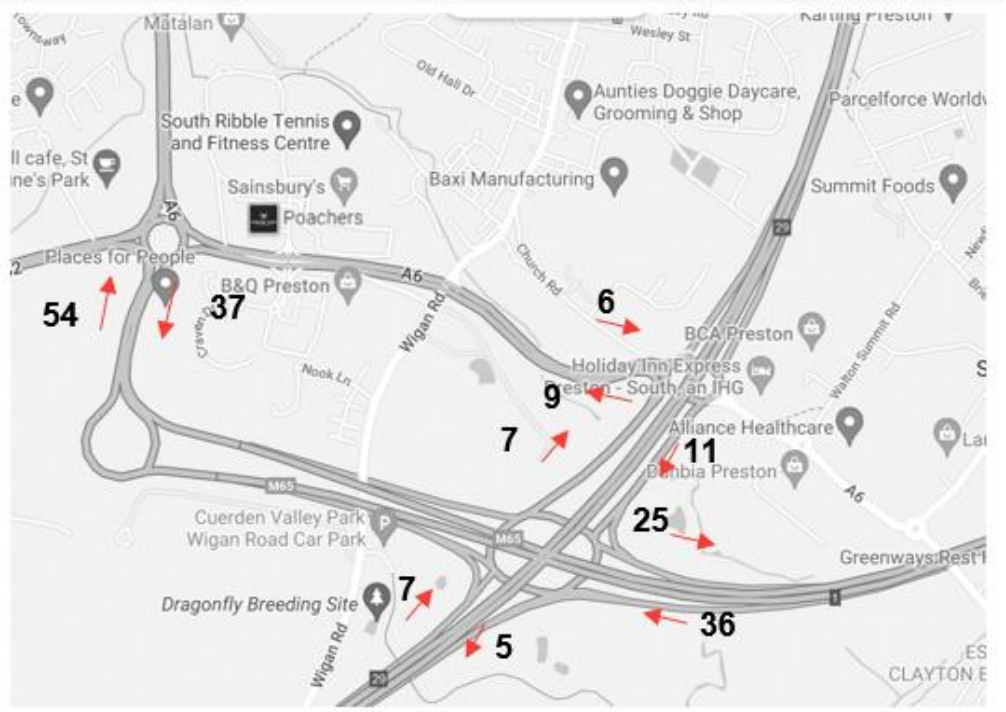
We visited the M6/M65 interchange on Wednesday 29th June 2022 during the evening peak hour in order to observe the current operation of interchange. No extensive queuing was observed that blocked back to neighbouring junctions or onto the M6 mainline.

Based on an assumption of 1,100 dwellings, the proposed development will generate 608 two-way trips in the AM peak and 614 two-way trips in the PM peak.

The forecast number of additional trips at the M6/M65 interchange as a result of the proposed development are shown in Figure 1 and Figure 2.

*Figure 1 AM Peak Development Impact on SRN*

*Figure 2 PM Peak Development Impact on SRN*




In the morning peak period 61 passenger car units (PCU) are forecast to pass through the M6/M65 junction (45 eastbound and 16 westbound) to/from Blackburn. 29 PCU are forecast to use the interchange entering or leaving the M6, this equates to only 1 PCU every 2 minutes. 16 PCU travel through the M6/A6 junction equating to only 1 PCU every 4 minutes.

Similarly in the evening peak period, an additional 61 PCU are forecast to travel through the M6/M65 Junction (25 eastbound and 66 westbound). An additional 1 PCU every 2 minutes are forecast to travel to/from the M6, 30 PCU in total. Finally, 15 PCU are forecast to use the M6/A6 junction, 1 PCU every 4 minutes.

At this level of traffic impact, we consider that the impact on the M6 and M65 as a result of the proposed development in would be negligible.

## Safety Analysis

National Highways has reviewed the accident history of the extent of the SRN covering M6 Junctions 29, 29a and terminus of the M56 (including the part-roundabout that is a part of the Local network) over the most recent 6 year period 2016-2021. The numbers of recorded incidents by severity for this period are shown below:

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | Total |
|---|---|---|---|---|---|---|---|
| Serious | **1** | **1** | **3** | **1** | **1** | **1** | **8** |
| Slight | **14** | **5** | **11** | **0** | **6** | **5** | **41** |
| Total | **15** | **6** | **14** | **1** | **7** | **6** | **49** |

Over this period, the general trend is towards of reduction in accidents, and there have been no fatalities recorded.

We have looked at the causality factors behind the safety record of each junction and they are characteristic of junction locations of this type, with the majority of accidents being due to loss of control, and shunt-type incidents.

National Highways is of the view that the SRN likely to be most impacted by traffic from this development does not have a particularly poor accident record and is typical for motorway junctions.

**Given the level of anticipated additional traffic movements generated by this site, we would not expect this situation to change significantly, although it is to be acknowledged that increases in traffic are likely to increase the likelihood of vehicle collisions, all things being equal**.

**Conclusion**

National Highways' view is that, as far as the SRN itself is concerned, the traffic impact of the development would be unlikely to be classed as severe within the context of DfT Circular 02/2013 or result in a material detrimental to existing levels of safety. Consequently, National Highways would have no objection to the aforementioned planning applications, currently subject to appeal, coming forward from the perspective as the operator of the SRN.

We hope that you will find our observations helpful.

Yours sincerely,

Warren Hilton

Warren Hilton

North West Spatial Planning Team

# Appendix MARebuttal 5

LCC PRoW Letter November 2021

## Janice Crook

**From:** Andersen, Linda <Linda.Andersen@lancashire.gov.uk>
**Sent:** 29 October 2021 18:19
**To:** Janice Crook
**Subject:** FW: 07/2021/00886/ORM Pickering's Farm Site, Penwortham - Lancashire County Council - Public rights of Way response
**Attachments:** 07 2021 00886 ORM Overlay 1.pdf



**07/2021/00886/ORM Pickering's Farm Site, Penwortham**
**(Land east of Penwortham Way and west of Leyland Road)**

| | |
|---|---|
| **Reference** | 07/2021/00886/ORM |
| **Alternative Reference** | |
| **Location** | Pickering's Farm Site, Penwortham (Land east of Penwortham Way and west of Leyland Road) |
| **Proposal** | Outline planning application with all matters reserved except for the principal means of access for a residential-led mixed-use development of up to 920 dwellings (Use Classes C3 and C2), a local centre including retail, employment and community uses (Use Classes E and Sui Generis), a two form entry primary school (Use Class F), green infrastructure, and associated infrastructure following the demolition of certain existing buildings |
| **Map Ref** | 353129 / 426043 |
| **Footpaths Affected** | **Fp57 South Ribble Penwortham (7-9-Fp57)**<br>Fp56 South Ribble Penwortham (7-9-Fp56)<br>Fp55 South Ribble Penwortham (7-9-Fp55)<br>Fp54 South Ribble Penwortham (7-9-Fp54)<br>Fp52 South Ribble Penwortham (7-9-Fp52)<br>Fp50 South Ribble Penwortham (7-9-Fp50)<br>Fp49 South Ribble Penwortham (7-9-Fp49)<br>Fp46 South Ribble Penwortham (7-9-Fp46)<br>Fp43 South Ribble Penwortham (7-9-Fp43)<br>Fp4 South Ribble Farington (7-4-Fp4) |
| **Possible 106** | Y |
| **Contact** | Mrs Janice Crook Tel: 01772 625413<br>Email: janice.crook@southribble.gov.uk |
| **Response Date** | 10/10/2021 |
| **Web Link** | https://publicaccess.southribble.gov.uk/online-applications/simpleSearchResults.do?action=firstPage |

**For the attention of Janice Crook – South Ribble Planning**

Lancashire County Council – Public rights of Way have the following observations to be taken into account and **also do not support the application at this point;**

Project plan 0574 MP_00_1004 indicates footpath **7-9-FP42** to be outside the application site boundary, however the attached overlay show the definitive line of the footpath to be within the application boundary to Bee Lane.

- ***To improve connectivity from the development to local amenities the full length of footpath 7-9-FP42 should be upgraded to provide a multi use path. The path is to be a minimum width of 3 meters with a tarmac surface.***

PROW acknowledges that the line of Footpath **7-9-FP43** is shown as being widened from the point it joins the proposed exercise track from the main site entrance to Bee Lane
. The section of footpath FP43 between the proposed exercise track and the western application boundary at Penwortham Way is to be retain as a footpath.

- ***On reflection continuing the proposed exercise track to Penwortham Way on the western boundary of the application would provide greater connectivity for users traveling north along the Penwortham Way shared use path.***
- ***As such the full length of the route Footpath 7-9-FP43 follows should be replaced with a cycle path, providing greater connectivity to the new shared use route along Penwortham Way being created as part of the A582 duelling.***
- ***If any of the works are unable to be delivered directly by the applicant then a developer contribution by means of a S106 Agreement should be sought to complete the improvements.***
- ***It is requested that footpath 7-9-FP43 be diverted south to the main entrance of the site, across the pedestrian crossing (linked to the request below) and a new 2m surfaced footpath, with a 3m wide recorded width, be created on the western side of the A582 heading north to link back with 7-5-FP24.***
- ***The path on the west of the A582 to be continued south from the pedestrian crossing at the site entrance to link with 7-5-FP25. If any of the works are unable to be delivered directly by the applicant then a developer contribution by means of a S106 Agreement should be sought to complete the improvements.***

- ***The necessity for a controlled crossing on the A582 Penwortham Way at the main entrance of the site remains. The controlled crossing is required to secure the safe passage of users on footpath 7-9-FP43 and 7-5-FP24, which crossing the busy A582.***

- ***Project plan 0574 MP_00_1004 excluded the previously requested shared use route upgrade of 7-5-FP55 between Cross Borough Link Road, which runs through the development, and 7-9-FP57. It is requested that this link is created.***

Footpath **7-9-FP46** links to the development to the wider residential area and local amenities via Moss Lane.

- ***To improve connectivity for shared use footpath 46 between Moss Lane and Bramble Court to be resurfaced to a width of 3m. If works are unable to be delivered directly by the applicant then a developer contribution by means of a S106 Agreement should be sought to complete the resurfacing.***

- ***Although there is a proposed southern link to the development for shared use via the main site access road there is no shared use connectivity to Nib Lane on the east of the development. To provide connectivity between Nib Lane and the Leyland Loop/proposed cycle path along Penwortham Way footpath 7-9-FP54 (between A582 and footpath 7-4-FP4), footpath 7-9-FP54 (between footpath 7-4-FP4 and proposed main site access road), footpath 7-9-FP56 and 7-9-Fp57 should be upgraded to a 3m wide share use path.***

- ***A new footpath link should be created within the development between footpath 7-9-Fp54 and 7-9-FP55 south of Mole Hill Cottage, along the northern boundary of the application boundary.***

The following **S106 requests** are still required

**7-9-FP 52** – Widening and Resurface of footpath between Bee Lane and Sumter Croft - **£21,400**

**7-9-FP46** – Widen and resurface Footpath 7-9-FP46 between Moss Lane and Bramble Court **£14,600**.

Central Greenspace including Preston Junction and links to Avenham Park, Guild Wheel and Preston City Centre, Preston Station including access to University of Lancashire and links to BAE systems. Use of this network will be greatly increased by development including site revenue costs of dog bins etc. Surfacing a network improvements **£750,000**. Approximately 5km of network improvements and connecting links needed.

**Total S106 request £786,000**

**Diversions**
If a diversion is necessary within the development a Diversion needs to be certified prior to commencing works

**Temporary closure**
If works relating to the application are likely to cause a health and safety risk to users of public rights of way a temporary closure needs to be in place prior to work commencing.

**Landscaping**
Landscaping needs to be at least 3 metres away from a public right of way either within the proposed development site or in the vicinity – this is to prevent health and safety risks to the public with overhanging branches and foliage or roots growing through the footpath surface creating future maintenance issues.

**Drainage/ground level**
The applicant should ensure any drainage or changes in ground level take into account public rights of way so that surface water is not channelled towards or over a public right of way to prevent flooding and future maintenance issues.

Regards
Linda Andersen – Public rights of Way

Linda Andersen – Public Rights of Way Officer (Development)
Lancashire County Council
Tel; 01772 532613
Mob; 07717 815086
Linda.Andersen@lancashire.gov.uk

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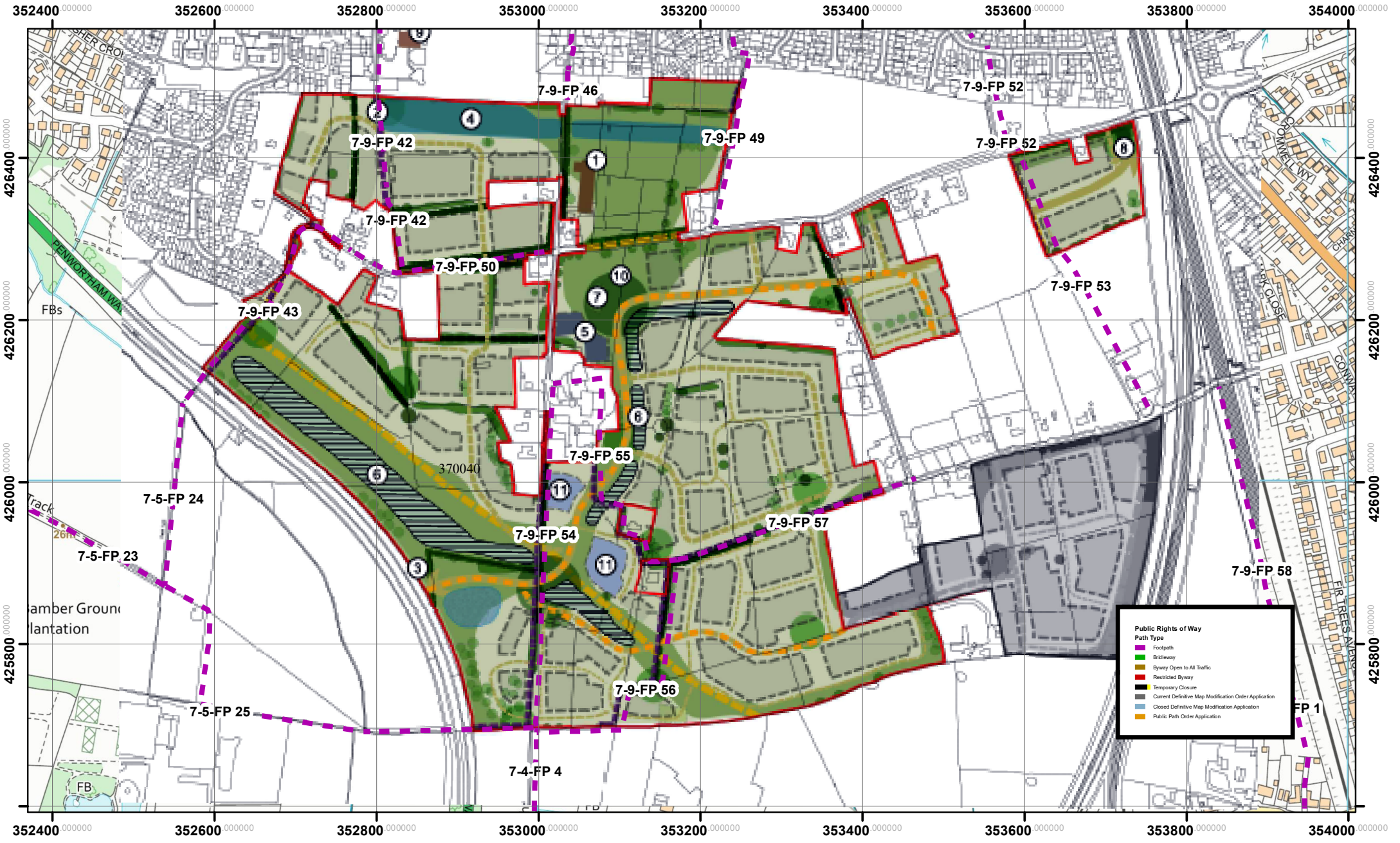


| Lancashire County Council | Public Rights Of Way<br>prow@lancashire.gov.uk<br>01772 530317 | 07/2021/00886/ORM Pickering's Farm Site, Penwortham | 1:6,000 | N W E S |
|---|---|---|---|---|

The digitised Rights of Way information should be used for guidance only as its accuracy cannot be guaranteed. Rights of Way information must be verified on the current Definitive Map before being supplied or used for any purpose.

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