

Suffolk County Council comments on the Traffic Modelling Update Report

1. Section 2.5 Scheme impact on major routes

- 1.1. Suffolk County Council (“the County Council”) notes the changes in traffic forecasts with and without the scheme based on the CHARM2 and CHARM3a versions of the traffic model.
- 1.2. The two-way AADT forecasts as set out in Tables 2.6 and 2.7 of the Traffic Modelling Update Report (TMUR) show some noticeable changes on some sections of the scheme. We also note that the figures used in these tables represent the “Core Scenario” (as described in Tables 12.20 and 12.21 of Highway England’s response to the first written questions from the Examining Authority).
- 1.3. As such, we would suggest that, due to the evident sensitivity of the forecasts, and noting that the prevailing scenario will evolve, alongside the potential impact of the full build out of Northstowe, it remains appropriate to adopt a pragmatic approach to scheme design to ensure that it remains resilient in the face of actual traffic growth.
- 1.4. As such, the new forecasts do not diminish our concerns about the future performance of the Bar Hill to Swavesey Section and the Cambridge Northern Bypass in particular (see Statement of Common Ground between the County Council and Highways England).

2. Section 3.4 Sensitivity testing of proposed development at Northstowe

- 2.1. Paragraph 3.4.4 and the associated Table 3.5 describe a series of operational assessments that have been undertaken to test the adequacy of the designs of a series of junctions in the vicinity of Northstowe, taking in to account the full build out of that development.
- 2.2. The County Council believes that such an approach should be extended to include links (not just junctions) and in particular the operational impact of the development on the proposed weaving sections either side of Bar Hill Junction and on Cambridge Northern Bypass. [See below the County Council’s comments on Highway England’s response to questions on traffic, Question 1.12.14].

3. Section 3.5 Link capacity assessments

- 3.1. In summary, the County Council does not accept:
 - the calculation of lane capacity using Method C can be applied in Method D¹ and in particular that this can be used to indicate whether there is sufficient weaving capacity; and hence
 - the statement in paragraph 3.5.8 that “*when calculated capacities using Method C are used in the weaving calculation, there is sufficient capacity on all links to accommodate weaving flows*”.

¹ See footnote 13 to Table 3.6 and footnote 15 to Table 3.7

3.2. Tables 3.6 and 3.7 refer to the number of lanes required for weaving (Method D) using:

- 1600vph capacity; and
- An increased lane capacity calculated by Method C.

3.3. The County Council does not agree with the second option or any conclusions arising from such an appraisal as, while Method C can be used to calculate lane capacity on links, it does not take in to account the number or proportion of merging or diverging vehicles. As such it is not an appropriate means of calculating lane capacity on short weaving sections, such as between Girton Interchange and Histon Junction and Histon Junction and Milton Junction.

3.4. Therefore, in our view, the numbers in parentheses in Tables 3.6 and 3.7, which rely on the use of Method C to derive lane capacity are not robust.

3.5. DMRB Guidance TD 22/06 sets out the requirements for the provision of weaving sections for traffic between junctions and must be used for the design of schemes such as the A14 improvements. The formula to calculate the number of lanes required in Method D is set out herein, in paragraph 2.71 (a mandatory requirement). This specifically states that “D” the “*Maximum mainline flow*” should be taken “*from paragraph 3.3 in vph per lane*”.

3.6. Paragraph 3.3 (a mandatory requirement) states that “*The Highway Code advises that a minimum two-second headway should be maintained between vehicles on roads carrying fast traffic. For the purpose of designing grade separated junctions and interchanges, the maximum flow per lane for all-purpose roads as 1,600 vph.*” There is no option in TD 22/06 to consider using a higher “capacity” figure, which may be obtained through Method C.

3.7. In addition, paragraph 2.72 states (a mandatory requirement) that:

“In calculating the number of traffic lanes required (paragraph 2.71) a fractional part will inevitably require a decision to round up or down. If it is possible to vary the position of the junctions and thus increase or decrease the weaving length, the fractional part will converge approximately to a whole number of lanes and the decision is simplified. However, if this is not possible the decision becomes more difficult. Where the fractional part is small and is combined with a low weaving flow rounding down is suggested, whereas a high fractional part with a high weaving volume suggests rounding up. For example the addition of a fourth lane would have operational advantages in releasing the two middle lanes for weaving traffic. Other factors which may influence the decision are:

- i the number of lanes required for merging and diverging (paragraphs 2.29 and 2.43);*
- ii when the fractional part is about 0.5 the uncertainty of the design flows (Chapter 3) suggests always rounding up from 2 to 3 lanes;*
- iii on recreational routes there can be a high proportion of drivers who are not local and therefore behave less efficiently than commuters would at the same flow levels;*

- iv the consequences of under provision should be borne in mind, as the acquisition of land at a later date could be costly or impossible;*
- v relevant environmental factors should be taken into account.”*

- 3.8. Table 3.7 of the TMUR confirms that the proposed standard is D3AP, yet the fractional parts for the section from Girton Interchange to Histon and Histon Junction to Milton are 0.8 and 0.5, respectively, and as such the red colour coding indicates that provision is below the current standards by the design year.
- 3.9. The County Council has previously requested that the detailed appraisals behind the figures shown in Tables 3.6 and 3.7 should be made available to the examination so that a fuller discussion, in the terms paragraph 2.72 of TD22/06 envisages, can be had. This includes the provision of weaving lengths and percentage of traffic weaving on the proposed A14 improvement between:
- Girton Interchange and Histon Junction;
 - Histon Junction and Milton Junction.
 - Bar Hill and Swavesey; and
 - Brampton Hut and Brampton Interchange.
- 3.10. Notwithstanding that, the information provided to the County Council to date suggests that these figures are significant and therefore together with the number of lanes required (as calculated using Method D for the two sections on Cambridge Northern Bypass as summarised in Tables 3.6 and 3.7 of the TMUR), indicate that the design does indeed fall below current standards.
- 3.11. Paragraph 3.5.5 concludes by stating that “*From Table 3.6 and Table 3.7 it can be seen that predicted traffic flows have generally reduced, which would indicate an improved situation against that presented in the DCO application.*”
- 3.12. While in *generality*, this statement may be true, the 2035 traffic forecasts with the scheme on the Cambridge Northern Bypass increased from 96,000 AADT (CHARM1) to 104,500 AADT (CHARM2). In addition the calculated number of lanes required for the A14 Girton Interchange to Histon junction using Method D increased from 3.6 (CHARM2) to 3.8 (CHARM3), as set out in Table 3.7.
- 3.13. It is also worth noting that the County Council raised similar issues to those above in its Relevant Representation (Section 3), referring to the DCO application as submitted, i.e. that the situation is *generally* improved from that originally outlined does not necessarily indicate that it is now adequate.
- 3.14. We would continue to highlight that resilience in the scheme to accommodate future growth and meet its stated objectives is crucial. Economic benefits to Suffolk will dissipate as traffic flows increase unless the design standards are adequate.
- 3.15. As noted in our Statement of Common Ground, the County Council would therefore welcome further discussion with Highways England to ensure that there are appropriate procedures in place to address and resolve the future capacity problems on the improved Cambridge Northern Bypass and the existing A14 east of Milton.

4. Section 3.6 Merge and diverge assessments

- 4.1. The County Council welcomes the revised A14 eastbound diverge to M11 and M11 southbound to A1307 diverge arrangement at Girton (paragraphs 3.6.6 to 3.6.9 and Figure 3.3).

Suffolk County Council comments on Highway England’s response to questions on traffic

Question 1.12.1 Analysis of 2015 Road Traffic Forecasts

1. Paragraph 7 reads “*Growth in the East of England is stronger than some other regions of England, with growth being higher than across England as a whole.*”
2. In addition to this, the East of England saw the fastest employment growth in England outside of London under the previous government. This highlights the need for the scheme to be resilient to high levels of growth in the region given the importance of the A14 to the regional and, more specifically, the Suffolk economy (see the Appendix to County Council’s Written Representation).

Question 1.12.10

3. This analysis indicates that in 2035 with the scheme approximately twice as many vehicles will travel between Milton and the A14 at Ellington compared to those travelling between Milton and the A1(M) at Sawtry, indicating the relative significance of flows from Suffolk.

Question 1.12.13

4. The County Council notes the response from Highways England in particular that “*All diversion routes proposed for the new A14 would use existing nominated diversion routes, so there would be no nomination of additional existing routes. No changes are necessary because all the existing diversion routes can still be used as diversion routes for new A14.*”
5. Nevertheless, the County Council remains concerned about the impact of closing the improved A1 between Brampton Hut and Brampton interchanges and the lengthy diversion of A1 traffic onto the existing A14 west of Brampton Hut and thus suggests resilience through design in this section is particularly important.

Question 1.12.14

6. Paragraphs 84 and 98 indicate that the main differences for the Northstowe-based tests focussed on the Bar Hill and Swavesey junctions on the A14 and the local roads in the vicinity of the Northstowe development.
7. Paragraph 96 and 97 define the following forecasts:
 - the ‘Do-Something’ scenario (DS), which includes the A14 scheme and the first phase of Northstowe only;
 - the ‘Do-Something Plus’ scenario (DS+), which includes the A14 scheme in combination with the first and second phases of the Northstowe development (approximately 5,000 homes in total); and
 - the ‘Do-Something Plus Plus’ scenario (DS++) and includes the A14 scheme in combination with the full-build out of Northstowe (approximately 10,000

homes in total). This scenario has primarily been run to inform the scheme design.

8. Table 12-24 indicates the following increases in 2-Way AADT Forecasts in 2035 for DS+ and DS++:

	DS+	DS++
A14 between Swavesey to Bar Hill	104,600	110,200
A14 Histon to Milton	97,400	100,100

9. The County Council has outstanding concerns about the resilience of these sections (and indeed the Cambridge Northern Bypass more broadly) in light of the range of traffic forecasts, as expressed in this, and previous, representations.