SOCG033

Chelmsford Local Plan

Statement of Common Ground with National Highways and Essex County Council

April 2026

Chelmsford Local Plan

Statement of Common Ground

1. Introduction

Chelmsford City Council (CCC) is reviewing the Chelmsford Local Plan adopted in 2020. This has reached submission stage (Regulation 22) following consultations on the:

- Pre-Submission (Regulation 19) Local Plan (Pre-Submission Plan for short) in Spring 2025 and
- Focused Consultation (Regulation 19) Additional Sites Document (Additional Sites Document for short) in late 2025-early 2026.

This Statement of Common Ground (SOCG) has been prepared to assist the examination of the Local Plan which comprises the Pre-Submission Plan combined with the site allocations and consequential changes and in the Additional Sites Document.

It establishes areas of agreement between National Highways, Essex County Council (ECC) and CCC in relation to National Highways representations on the Pre-Submission Plan and the Additional Sites Document. There are no areas of uncommon ground.

This SOCG also sets out agreed proposed Modifications to the Pre-Submission Plan and/or the Additional Sites Document following email exchanges between CCC and National Highways after the close of the consultations.

For the avoidance of doubt none of the proposed modifications are considered necessary to address soundness issues and instead provide factual updates, clarifications and helpful detail to the Local Plan.

The consultation responses alongside collected evidence and national planning policy and guidance have been used to develop the Local Plan.

A map of CCC's administrative area in context with its neighbouring districts and county councils is attached at Appendix A.

CCC has fully engaged with ECC and National Highways on the development of the Council's review of the adopted Local Plan from the outset. In accordance with the Town and Country Planning (Local Planning) (England) Regulations 2012, ECC and

National Highways have been formally consulted at each Regulation 18 and 19 stages of consultation together with their accompanying Integrated Impact Assessment (IIA).

It is agreed that all parties have actively co-operated (and continue to do so) on the Review of the Chelmsford Local Plan and Transport issues.

This Statement of Common Ground (SOCG) identifies specific areas of common ground between National Highways (NH), Essex County Council (ECC), and Chelmsford City Council (CCC) in relation to the:

- Agreed position in relation to the impact on the Strategic Road Network (SRN)
- Review of the Chelmsford Local Plan (Table 2). This contains more specific comments in relation to consultation responses to the Pre-Submission Plan
- Pre-Submission Highways Modelling 2024 (Table 3). This follows the more detailed order of comments made by National Highways in document Technical Note 02 Rev A
- Technical Note 06 (Table 4) which accompanied National Highways Regulation 19 consultation response in respect of the Hammonds Farm, Chelmsford – Updated Base Model.

Agreed position in respect of impact of the Strategic Road Network (SRN)

CCC, ECC and National Highways agree the following position:

The A12 DCO scheme for improvements between J19 and 25, including significant improvements to Junction 19, had its funding formally withdrawn by Government in July 2025 and therefore has been cancelled in its entirety.

The Local Plan traffic modelling (October 2025) concluded that the full package of improvements to Junction 19 of the A12, as contained within the DCO, was required to support the delivery of strategic growth identified in the Adopted Local Plan, and to achieve the associated sustainable and active travel objectives. Furthermore, the Strategic Model baseline ‘Do Nothing’ scenario (i.e. excluding Local Plan growth), which has been agreed with National Highways, demonstrates that there are existing capacity constraints at Junction 19 Boreham Interchange. The mitigation associated with the Local Plan Review growth should be proportionate to its impacts.

As part of consideration of planning applications on allocations in the Adopted Local Plan more detailed modelling has been undertaken by North Chelmsford Garden Community to identify their impact on Junction 19 and provide necessary mitigation measures to accommodate their growth.

CCC and National Highways have been working closely with Essex County Council (ECC), Homes England, the Department for Transport and developers of North Chelmsford Garden Community (an allocation in the adopted Local Plan with planning permission) to identify an alternative solution to deliver improvements required to mitigate the impact of the North Chelmsford Garden Community and to secure an appropriate funding mechanism for those works. An in-principle way forward was agreed at CCC Planning Committee on 15th December 2025 as part of the resolution to grant outline planning permission for Zones 1 and 3, to bring forward a coordinated package of improvements at Junction 19 and the nearby Beaulieu Park Station Access roundabout on the A131. Given the proximity and operational interdependency of these junctions, the agreed approach focuses on increasing capacity and improving safety to appropriately accommodate the traffic impacts arising from the proposed Local Plan growth. The funding package includes contributions from the North Chelmsford Garden Community developer consortium, ECC, National Highways and Homes England. In the case of the Homes England contribution a Material Amendment to the Grant Determination Agreement for the existing Chelmsford Housing Infrastructure Fund (HIF) award has been agreed in principle, subject to contractual conformations, contributing an additional £14m for Junction 19/ Beaulieu Park Station Access roundabout scheme. Good progress is being made and confirmation of the entire funding package is expected by the spring/summer of 2026 with works to commence the following year. An application has been made to National Highways for their £8m contribution towards Junction 19. A decision on this is expected following the publication of the next Road Investment Strategy (covering the period 2026-2031) in March 2026. ECC will confirm its £8m contribution towards Station Access Roundabout via Cabinet and enter into agreements and contracts needed to deliver the junctions. This decision is required expected in June 2026.

In light of the above further detailed traffic modelling is being undertaken to establish whether additional growth proposed through the Local Plan would necessitate further mitigation at Junction 19 over and above what is already being progressed in association with the North East Chelmsford Garden Community.

Extensive modelling has been undertaken, however, NH will require further detailed modelling work to be undertaken at the planning application stages to identify suitable mitigation and confirm access arrangements to the Hammonds Farm site at Junction 19. NH will also require further design work to be undertaken at the junction to demonstrate that the mitigation and access arrangements are deliverable.

The modelling to date indicates that the additional sites (in addition to the original LPR sites, as introduced in November) would have minimal impact upon the A12 and Junctions 17,18 and 19; and further modelling assessments with regards to these are not required for the purposes of the Local Plan.

As part of the DCO cancellation announcement, the Minister of State for Transport stated that smaller scale interventions on the A12 could still be considered where they are capable of unlocking growth. Discussions are ongoing between National Highways and Government to explore opportunities to access funding and to consider options for a phased approach to delivering improvements on the A12, including at Junction 19 Boreham Interchange, in support of the proposed Local Plan growth. It is also considered that continuing with the review of the Local Plan and its associated growth, strengthens the case for Government to prioritise Junction 19 as part of the smaller scale intervention programme referenced by the Secretary of State, by demonstrating a clear and deliverable growth proposition. It is agreed that all parties will continue to work collaboratively to lobby for further funding to secure any additional improvements that may be required.

All parties are committed to continue to work in a collaborative and constructive manor to support the progression of the Local Plan Review. As part of this ongoing engagement, National Highways will work with ECC and CCC to develop a clearer understanding of the impact of the proposed Local Plan development upon the A12, and to identify the mitigation measures that should be reflected within both the Local Plan Infrastructure Delivery Plan (IDP) and the Strategic Growth Site 16a - East Chelmsford Garden Community IDP being prepared by the site promoter in partnership with CCC.

Developers of Local Plan allocations should consider relevant mitigation measures identified within current planning documentation and/or schemes proposed as part of the latest Local Plan Review evidence base and/or schemes yet to be identified, with a view to making proportionate funding contributions towards their delivery where appropriate. This will include developing a proportionate and reasonable mitigation strategy that enables planned development to proceed, while ensuring that severe impacts on the strategic highway network are avoided.

Table 2 – Areas of Common Ground on the Review of the Chelmsford Local Plan

Proposed new text is shown in underline. Proposed deleted text is shown as ~~strikethrough~~.

Consultation Document	**Rep Number**	**Local Plan Reference** (Policy, Map, Figure, Para etc)	**Summary of representation**	**Agreed resolution and any proposed modifications**
Additional Sites Document	AS-1099	Section 1 – What Evidence have we used?	Following the unexpected withdrawal of the A12 DCO scheme affecting Junction 19, which has necessitated additional modelling and further discussions, National Highways reiterates its commitment to working closely with the authority to support plan progression. This will include developing a proportionate and reasonable mitigation strategy that enables planned development to proceed, while ensuring that severe impacts on the strategic highway network are avoided, in line with national policy.	All parties will continue to work closely to ensure appropriate and timely mitigation and its funding is in place to ensure development does not result in severe impacts on the SRN. **No modification required to the Plan.**
Pre-Submission Plan	PSQ25-6446 & PSQ25-6447	Strategic Policy S9 - Paragraph 6.91 Strategic Growth Site 16a	Where allocations are close to or adjacent to our network, there could be issues of noise and/or air quality to consider, we do not allow noise barriers or bunds on National Highways network. Suitable noise mitigation solutions must be considered during the early stages of design as this achieves better outcomes.	CCC's Air Quality Assessment (EB ref CC014) notes that there are no modelled exceedances of any of the air quality limit values in 2023, and by 2041, vehicle exhaust emissions of NOx, PM10 and PM2.5 are predicted to decrease significantly.

				Any local issues of noise and/or air quality would be appropriately considered under Policy DM29 – Protecting living and working environments, as part of any planning application close, or adjacent to the network. Strategic sites would need to consider this as part of any masterplan. **No modification required to the Plan.**
Pre-Submission Plan	PSQ25-6446 & PSQ25-6447	Strategic Policy S9 - Paragraph 6.91 Strategic Growth Site 16a	National Highways will not accept third party run off into their drainage systems. Surface water drainage needs to be considered early in the design process to ensure the most appropriate solution is found.	Surface water drainage will be appropriately considered under Policy DM18 – Flooding/SuDS. This sets out the ways to reduce surface water run-off through SuDS, and states that surface water connections should follow the sustainable drainage hierarchy with connection to the public sewerage network only made where it can be demonstrated that there are no feasible alternatives (this applies to new developments and redevelopments) and where there is no detriment to existing users. **No modification required to the Plan.**
Pre-Submission Plan	PSQ25-6446 & PSQ25-6447	Strategic Policy S9 - Paragraph 6.91 Strategic Growth Site 16a	We note that the move to fully electric vehicles is under way and that the City Council have appropriate policy in the plan to facilitate charging.	The Plan makes suitable provision for electric vehicles through its suite of policies, including Policy DM27 – Parking Standards, which requires developers to have regard to the Essex Parking Guidance Part 1 for EV parking. **No modification required to the Plan.**

Pre-Submission Plan	PSQ25-6446 & PSQ25-6447	Strategic Policy S9 - Paragraph 6.91 Strategic Growth Site 16a	We support a number of policies within the plan which seek to promote active and sustainable travel.	The Plan makes suitable provision to promote active and sustainable travel, in particular Strategic Policy S16 – Connectivity and Travel and site allocation policies. **No modification required to the Plan.**
	PSQ25-6446 & PSQ25-6447	Strategic Policy S9 - Paragraph 6.91 Strategic Growth Site 16a	Although well developed, the National Highways A12 J19 Chelmsford to J25 Marks Tey improvement scheme is not guaranteed to be delivered due to the uncertain political environment. Therefore, we require a scenario modelled where the scheme is either delayed or doesn't go ahead at all.	Recommendation TN01 R1 from National Highways, which required a sensitivity test to assess the Local Plan development impact both with and without the A12 widening DCO proposals, is considered as resolved by National Highways as the Transport Impact Appraisal of Local Plan Review Pre-Submission December 2024 (EB ref T006) sets out a `Without A12 Widening DCO Sensitivity Test'. This was further updated by the Additional Sites (Reg 19) Highways Impact Junction Modelling Appraisal October 2025 (EB ref T007). Alongside this National Highways have also carried out their own modelling scenario without the A12 DCO. **No modification required to the Plan.**
	PSQ25-6446 & PSQ25-6447	Strategic Policy S9 - Paragraph 6.91	The modelling has identified a number of locations on the Strategic Road Network (SRN) which would come under pressure from increased traffic flows. Namely junctions 17,18 and 19 on the A12. It is recommended these locations	Significant modelling work has been undertaken for Junctions 17, 18 and 19, which has been discussed and agreed between National Highways, CCC and ECC throughout the process.

		Strategic Growth Site 16a	need a more detailed assessment to understand the scale and nature of the impacts, ideally using a micro simulation model and if necessary suitable mitigation measures found to manage the impact on the junctions and the A12. Third party microsimulation modelling work undertaken by the promotors of Site 16a (Hammonds Farm) commenced in 2024 in consultation with National Highways, Essex Highways and CCC. National Highways have agreed the base model including methodology and baseline data inputs at this stage (with some limitations). National Highways have since received the future scenario model (including traffic associated with the Chelmsford Local Plan). The findings are set out in TN06 attached at Appendix B to this SOCG. We have reviewed the transport evidence base and our findings are set out in Aecom Technical note 2 Revision A attached at Appendix C to this SOCG.	**A12 J19** The modelling information provided has been thoroughly reviewed in collaboration with CCC and ECC. Flow increases associated with Hammonds Farm site (SGC16a) are predicted to be relatively low at Junction 19, with the main point of access to the Strategic Road Network being at Junction 18. Widening of the A12 South Bound off slip is proposed as mitigation, which has potential to mitigate for additional flow increases into the site from the north. However, given the complexity of Junction 19, further design and modelling work is needed at the planning application stage to confirm proposed access arrangements to the Hammonds Farm site and to mitigate for any capacity impacts at Junction 19, over and above that identified for the North Chelmsford Garden Community development. The detailed traffic modelling approach, as well as mitigation designs, will need to be agreed in discussions with the promotors of Hammonds Farm, ECC, NH, and CCC. The Hammonds Farm proposals, including internal road network, should be clarified further as part of this work.

				A12 J18 The modelling to date appear to demonstrate that a mitigation scheme could be delivered to minimise impacts on the Strategic Road Network, but there are potential impacts on the east/west approaches that need to be resolved. Further modelling work at the planning application stage is needed to further develop the mitigation proposals to avoid potential impacts on the Strategic Road Network. **A12 J17** Based on the forecasting approach adopted, it has been concluded that the Local Plan Review sites are unlikely to significantly worsen the operation of the J17 slip roads. However, this conclusion should be revisited during the next stages of Hammonds Farm modelling work. As part of this further modelling work needed at the planning application stage, the baseline assessment for all Strategic Road Network junctions is likely to need revisiting given that some limitations were identified. An updated demand forecasting approach should be agreed, using updated forecast Visum models which are under development. This

				should support further development of the mitigations identified. All parties will continue working closely in a collaborative and constructive manner with the aim of developing and agreeing the scope of the further modelling required for future planning applications as soon as possible. As part of this all parties continue to work to develop a greater understanding of the impact of the proposed Local Plan development upon the A12 and the required mitigation needed to go into the IDP. **No modification required to the Plan.**
Pre-Submission Plan	PSQ25-6446 & PSQ25-6447	Strategic Policy S9 - Paragraph 6.91 Strategic Growth Site 16a	It is noted that the draft submitted version of the Local Plan and identified allocations will increase the number of residents in proximity of the Strategic Road Network, in particular Hammonds Farm. It is likely that these locations will be impacted by noise pollution from the Strategic Road Network and raise the potential for exceedances of air quality standards for which extraordinary measures in the form of permeant speed restriction may need to be considered. This could help with flow and may be required as this section of the A12 reaches capacity. Several polices in the proposed Local Plan set out requirements for developments to	CCC's Air Quality Assessment (EB ref CC014) notes that there are no modelled exceedances of any of the air quality limit values in 2023, and by 2041, vehicle exhaust emissions of NOx, PM10 and PM2.5 are predicted to decrease significantly. Any local issues of noise and/or air quality would be appropriately considered under Policy DM29 – Protecting living and working environments, as part of any planning application close, or adjacent to the network. Strategic sites would need to consider this as part of any masterplan and future planning application stage. **No modification required to the Plan.**

			reduce their impact on or improve local air quality, but this does not directly relate to the Strategic Road Network and what mitigation may be required. We will continue to work proactively with yourselves on these matters but would recommend a specific policy which identifies how air quality and noise impacts would be monitored and managed and what interventions may be required	
Pre-Submission Plan	PSQ25-6446 & PSQ25-6447	Strategic Policy S9 - Paragraph 6.91 Strategic Growth Site 16a	Support the policies in the Plan, which ensure inclusive active and environmentally sustainable forms of travel and through promoting road safety and managing the negative effects of road traffic. National Highways look forward to working with CCC to facilitate such travel where an interface with Strategic Road Network occurs.	Joint working will continue where relevant to the SRN. Strategic Policy S16 – Connectivity and Travel sets out measures to prioritise and maximise opportunities for active and sustainable transport. New strategic scale development will be required to demonstrate how it will achieve a significant modal shift to these modes of transport. **No modification required to the Plan.**
Pre-Submission Plan	PSQ25-6446 & PSQ25-6447	Strategic Policy S9 - Paragraph 6.91 Strategic Growth Site 16a	Lorry parking is a national problem particularly in the East of England and National Highways would welcome the investigation and allocation of a dedicated lorry parking facility within local plans, ideally close to the Strategic Road Network. If this was not possible, a policy of requiring adequate lorry parking and lay over facilities at proposed employment sites and roadside service	Paragraph 7.390 of the Pre-Submission Local Plan includes reference to other complementary uses, including roadside facilities, that may be appropriate on Strategic Growth Site 16b. The request for a specific allocation for lorry parking at this stage of the Local Plan is not feasible but CCC will continue to work closely with National Highways on this matter to assist them in their need to

			facilities would be welcomed. National Highways is committed to continue to work with your authority in a collaborative and constructive manor to support the progression of the plan. To support the Local Plan, we will work with you to develop a greater understanding of the impact of the development upon the SRN.	provide such facilities. **No modification required to the Plan.**

Table 3 – Areas of Common Ground on the Pre-Submission Highways Modelling 2024

Comments by National Highways have been RAG rated in accordance with their Pre-Submission consultation response:

- Recommendations that National Highways consider important but not critical to agreement of the Local Plan are highlighted in amber
- Recommendations raised previously by National Highways that they consider have been resolved are highlighted in green.

Ref	Relevant doc ref	Summary of National Highways comments (RAG rated)	CCC agreed response with National Highways
Executive Summary	TN02RevA	There are no recommendations regarded as critical to the acceptability of the Local Plan at this stage.	**The Local Plan and its accompanying Highways evidence base is acceptable to National Highways.**
TN01 R1	TN02RevA	Given the uncertainty surrounding the A12 proposals, the TIA contains, at the request of National Highways, a sensitivity test to assess the development impact both with and without the A12 widening DCO proposals.	Recommendation TN01 R1 from National Highways, which required a sensitivity test to assess the development impact both with and without the A12 widening DCO proposals, is considered as resolved by National Highways as the Transport Impact Appraisal of Local Plan Review Pre-Submission December 2024 (EB ref T006) sets out a `Without A12 Widening DCO Sensitivity Test'. **Recommendation TN01 R1 is considered resolved.**

Ref	Relevant doc ref	Summary of National Highways comments (RAG rated)	CCC agreed response with National Highways
TN01 R2	TN02RevA	Whilst a disaggregation of the trip rates would be the preferred approach, AECOM accepts that consistency in the modelling approach across different studies is desirable. As such, it is considered that, for the purpose of assessing the impact of the Local Plan Review at a strategic level, the trip rates presented are acceptable.	**Recommendation TN01 R2 is considered resolved.**
Para 8.5	TN02RevA	More information should be provided with regards to the method of deriving the junction modelling traffic flows from the traffic count data at A12 Junction 18 so that this can be checked, (unless the modelling is superseded by the microsimulation modelling currently being undertaken by a third party)	This recommendation has been superseded by the microsimulation modelling work that has been undertaken; **Para 8.5 is considered resolved**. Outstanding concerns relating to the microsimulation modelling are covered above.
TN01 R8	TN02RevA	Microsimulation modelling should be used to model the impacts at A12 Junction 17	This recommendation has been superseded by the microsimulation modelling work that has been undertaken; **Para 8.5 is considered resolved**. Outstanding concerns relating to the microsimulation modelling are covered above.
Para 8.31 and 9.17	TN02RevA	The impact of the increase in queue length on the overbridge should be considered in the junction capacity modelling of A12 Junction 18 (unless the modelling is superseded by the microsimulation modelling currently being undertaken by a third party)	This recommendation has been superseded by the microsimulation modelling work that has been undertaken; **Para 8.31 and 9.17 is considered resolved**. Outstanding concerns relating to the microsimulation modelling are covered above.
TN01 R16	TN02RevA	The Conflict Angle and Entry Radii values have been updated. There are still some differences between the values	**Recommendation TN01 R16 is considered resolved.**

Ref	Relevant doc ref	Summary of National Highways comments (RAG rated)	CCC agreed response with National Highways
		determined by AECOM and those within the model, however, as noted in TN01, there is a degree of subjectivity involved when calculating these values. AECOM consider the updated values to be more reflective of the geometric properties of the junction.	
TN01 R6	TN02RevA	Microsimulation modelling should be used to model the impacts at A12 Junction 18	This recommendation has been superseded by the microsimulation modelling work that has been undertaken; **TN01 R6 is considered resolved**. Outstanding concerns relating to the microsimulation modelling are covered above.
TN01 06	TN02RevA	National Highways previously recommended that the entrance to the Sandon Park and Ride facility located immediately to the west of A12 Junction 18 should be modelled to determine whether there is a possibility for queueing at this junction to encroach on the A12 Junction 18 western roundabout. In response, the entrance to the Sandon Park and Ride has been modelled using LinSig.	**Recommendation TN01 06 is considered resolved.**
TN01 R4	TN02RevA	Microsimulation modelling should be used to model the impacts at A12 Junction 19	This recommendation has been superseded by the microsimulation modelling work that has been undertaken; **TN01 R4 is considered resolved**. Outstanding concerns relating to the microsimulation modelling are covered above.
TN01 R9	TN02RevA	It was previously recommended that a merge / diverge assessment should be undertaken for the SRN junctions within Chelmsford. In response, a merge /	**Recommendation TN01 R9 is considered resolved.**

Ref	Relevant doc ref	Summary of National Highways comments (RAG rated)	CCC agreed response with National Highways
		diverge assessment has been undertaken for all on- and off-slips at A12 Junctions 15 to 19.	
TN01 R10	TN02RevA	Reference should be made to DfT Circular 01/2022 'The Strategic Road Network and the Delivery of Sustainable Development', alongside Highways England's (now National Highways) 'The Strategic Road Network: Planning for the Future (A guide to working with Highways England on planning matters)' (paragraph 2.6 of TN01, Table 21)	An updated version of the TIA (T006) had been published (T006-Rev A refers) with appropriate references made within the modelling to the DfT Circular 01/2022 alongside Highways England's (now National Highways) 'The Strategic Road Network: Planning for the Future. **On this basis recommendation TN01 R10 is considered resolved.**
TN01 R12	TN02RevA	It should be clarified whether any post-opening traffic data has been collected at A12 Junction 19 for consideration within any future modelling (unless the modelling is superseded by the microsimulation modelling currently being undertaken by a third party)	This recommendation has been superseded by the microsimulation modelling work that has been undertaken; **TN01 R6 is considered resolved**. Outstanding concerns relating to the microsimulation modelling are covered above.
TN01 R17	TN02RevA	The Infrastructure Delivery Plan (IDP) should be updated to reflect the preferred option strategy	The Stage 2 IDP was published alongside the Pre-Submission Local Plan (EB ref INF005 refers) and has been updated to reflect the Pre-Submission strategy. **Recommendation TN01 R17 is considered resolved.**
TN01 R18	TN02RevA	Any mitigation measures identified on the NH network as a result of the Local Plan evidence base work should be included within the IDP as it evolves	The Stage 2 IDP was published alongside the Pre-Submission Local Plan (EB ref INF005 refers) and has been updated to reflect the Pre-Submission strategy. CCC await National Highways advice on any further mitigation required. As the IDP is a live document it can be updated should further evidence support additional mitigation. **On this basis recommendation TN01 R18 is considered resolved.**

Ref	Relevant doc ref	Summary of National Highways comments (RAG rated)	CCC agreed response with National Highways
TN01 R19	TN02RevA	The IDP Preferred Options Report should be made available to National Highways once it is available	The Stage 2 IDP was published alongside the Pre-Submission Local Plan (EB ref INF005 refers) and has been updated to reflect the Pre-Submission strategy. A further update to reflect the changes in the Additional Sites Document has been shared with National Highways. **On this basis recommendation TN01 R19 is considered resolved.**

Table 4 – Areas of Common Ground on the Hammonds Farm, Chelmsford – Updated Base Model

Ref	Relevant doc ref	Summary of National Highways comments	CCC agreed response with National Highways
Para 3.2	TN06	If these models are used for further assessment, for example A12 merge/diverge behaviours, then limitations have been highlighted which should be investigated further. Additionally, there are limitations of assessing the overall junction impacts at A12 Junction 17 as the delays on some of the approaches are not accurately represented, although we consider the models sufficiently calibrated/validated to assess the A12 off-slips.	Work continues with the promotors of Hammonds Farm (Wates Developments and Hamonds Estates LLP), National Highways, ECC and CCC to address these issues in the Hammonds Farm Modelling. This modelling is considered important but not critical to agreement of the Local Plan at this stage. The outstanding concerns are covered in the sections above and will be addressed through the more detailed modelling at the planning application stage.
Para 3.3	TN06	The models do not reflect the observed delay levels along the A12, as SLR was unable to replicate observed journey times which are significantly faster in the models compared to observations. This suggests there is significant congestion on the A12 mainline which the models do	Work continues with the promotors of Hammonds Farm (Wates Developments and Hamonds Estates LLP), National Highways, ECC and CCC to address these issues in the Hammonds Farm Modelling. This modelling is considered important but not critical to agreement of the Local Plan at this stage. The outstanding concerns are covered in the sections above and will be

Ref	Relevant doc ref	Summary of National Highways comments	CCC agreed response with National Highways
		not capture. The congestion also impacts the operation of the northbound on-slip at Junction 17 where validation of the models is also poor. SLR has suggested a DMRB assessment would be an appropriate workaround for this stage, based on available data/ information of existing network operation, so this assessment should be submitted as part of the future year impact assessment to determine the impacts on the A12 mainline.	addressed through the more detailed modelling at the planning application stage.
Para 3.4	TN06	The forecast year models should be updated in line with the latest agreed base models. SLR should carefully consider the model limitations highlighted in this TN while analysing the forecast year model outputs.	Work continues with the promotors of Hammonds Farm (Wates Developments and Hamonds Estates LLP), National Highways, ECC and CCC to address these issues in the Hammonds Farm Modelling. This modelling is considered important but not critical to agreement of the Local Plan at this stage. The outstanding concerns are covered in the sections above and will be addressed through the more detailed modelling at the planning application stage.

Areas without agreement

There are no areas of uncommon ground.

2. Governance and on-going cooperation

CCC, ECC and National Highways will continue to work collaboratively to address strategic matters that, in addition to those above, arise through the Examination in Public. This will occur on an ongoing basis.

This SOCG will be reviewed as necessary during the Examination in Public.

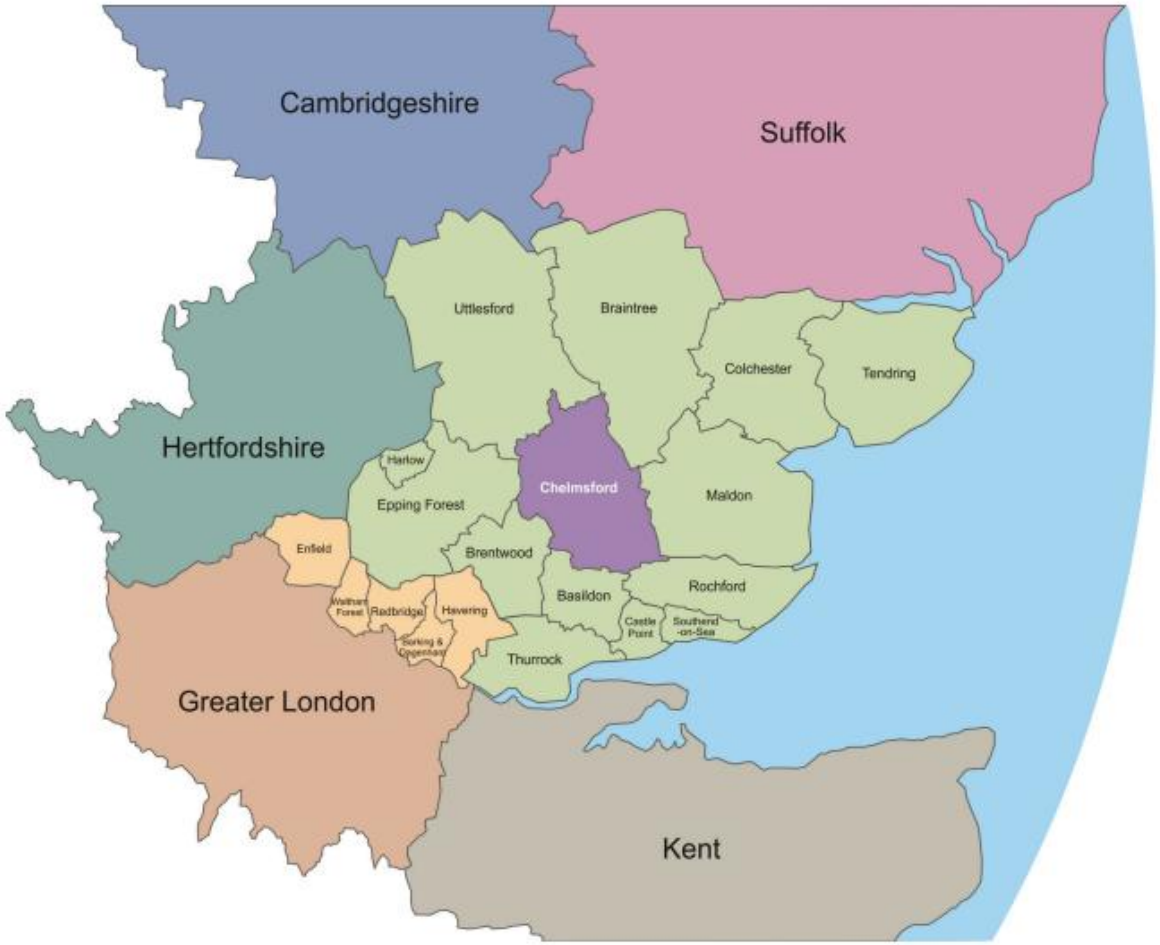
It is agreed that CCC is working collaboratively with ECC and National Highways to ensure that cross-boundary strategic issues are properly considered and where appropriate reflected in the review of the Local Plan and effective and on-going joint working has and will continue to be undertaken.

3. Signatories

Chelmsford City Council Jeremy Potter **Assistant Director – Planning and Place Shaping** Signature: *Jeremy Potter* Date: 2 April 2026	National Highways Mark Norman **Spatial Planner – Network Operations** Signature: *Mark Norman* Date: 2 April 2026	Essex County Council Graham Thomas **Head of Planning & Sustainable Development** Signature: *Graham Thomas* Date: 2 April 2026

Appendix A – Map of Chelmsford City Council's administrative area in context with its neighbouring districts and county councils.

Chelmsford City Council is adjoined by seven local planning authorities. Essex County Council is the local Highways and Transportation Authority and Education Authority. It is also responsible for the Minerals and Waste Local Plans with Southend-on-Sea Unitary Authority.



Appendix B - National Highways/AECOM Technical Note TN06

Project:	**National Highways Spatial Planning Contract 2021 – 2026**	Job No:	**60712760/ Q20DDX064.007**
Subject:	**Hammonds Farm, Chelmsford – Updated Base Model Review**		
Prepared by:	**Alice Lyon**	Date:	**10th March 2025**
Checked by:	**Jay Shah**	Date:	**12th March 2025**
Verified by:	**Phil Arnold**	Date:	**13th March 2025**
Approved by:	**Kim Pettingill**	Date:	**18th March 2025**

1. Introduction

1.1. SLR has been commissioned by Motion to develop Paramics models of the A12 (between junction 17-19), to the south and east of Chelmsford, to aid in the assessment of impacts within the study area arising from the proposed allocation of additional sites identified through the ongoing Chelmsford Local Plan Review (LPR).

1.2. The Local Planning Authority is Chelmsford City Council (CCC), with the local highway authority being Essex County Council (ECC).

1.3. National Highways (NH) previously requested AECOM to undertake a review of the Paramics base and forecast year models of A12 Junctions 17-19, developed by SLR. The purpose of the review was to establish if there are any significant issues associated with the development of the models which would affect the reliability of results.

1.4. AECOM reviewed the base model developed by SLR which underpins the forecast year modelling. Several issues were identified, and AECOM provided a list of suggestions to improve the base model (the log of comments was issued on 28th October 2024).

1.5. SLR then provided responses alongside a revised base year model which AECOM then reviewed and provided the findings and outcomes in Technical Note 05 issued on 20th December 2024.

1.6. Following this, a meeting between SLR and AECOM was held with the presence of NH on 13th January 2025 to discuss the findings and outstanding issues. SLR then issued an email response on 15th January 2025 with the agreed model coding changes, which AECOM reviewed and responded to on 13th February 2025.

1.7. SLR have now provided the updated base year model and responses (27th February 2025). AECOM has undertaken a review of the changes made to the updated base model and SLR's responses. The purpose of the present review is to identify if the previous issues have been resolved and if there are any outstanding issues.

1.8. This Technical Note (TN06) documents the findings and outcomes of AECOM's review. The Issues Log provided alongside this TN documents the issues raised throughout this review and contains the response from SLR and AECOM to each issue.

2. Key Issues and Observations

2.1. AECOM has reviewed the following information which was supplied by SLR:

- Updated Paramics Base Model;
- Updated Local Model Validation Report;
- Updated Calibration and Validation spreadsheets; and
- Base Model Audit Issues Log Responses.

2.2. The key issues highlighted previously in TN05 are discussed in this TN, alongside AECOM's position on the issues following discussions with SLR and the updated models received. The updated calibration and validation results do not largely change as a result of the updates made in the base model.

2.3. AECOM has updated the Issues Log following SLR's responses which is in a separate spreadsheet (Ref. "000314.Sp013 - Base Model Issues Log_SLR Response_Feb 2025").

2.4. As highlighted previously, the focus of the future year reporting is on the peak hours, and so AECOM has focussed the review on the middle peak hours from 08:00 – 09:00 and 17:00 – 18:00.

A12 Mainline

2.5. AECOM had raised concerns with poor journey time validation results on the A12 northbound mainline corridor in the PM peak hour (17.00 – 18.00). The updated validation results are shown in Table 1 which are worse than the previous version. SLR has acknowledged this issue and it is agreed the models will not be used to estimate the impacts on the A12 mainline and that a DMRB assessment would be more appropriate even if not ideal, in the absence of a reliable model of the A12 operation, as the models cannot be used for merge/diverge assessment. Therefore, although this issue is not resolved, no further work is expected to be done to improve the validation (Issue Log Ref. 2 and 20) at this stage.

Table 1. Journey Time Validation Result for Route 1 NB, PM Peak hour

Route	Section	Direction	1700-1800				
			Obs	Mod	Diff	Diff (%)	Pass
1	Complete	NB	523	338	-184	35%	FAIL

A12 Junction 17

Signal Coding:

2.6. AECOM identified that SLR had coded incorrect intergreen timings at the Junction 17 SB off-slip signals in the PM peak. SLR has updated the models to reflect the correct intergreen timings and AECOM has reviewed that the changes are in line with the signal specs (Issue Log Ref. 12). The update does not have any significant impact on the calibration/ validation results. Therefore, this issue is resolved.

Journey Time Validation on Slip Road:

2.7. The journey time validation for the A12 Junction 17 northbound slip road in the PM Peak hour was poor in the previous submission. This continues to fail in the updated models, as this issue relates to the A12 mainline validation issue which could not be resolved by SLR (as explained in Section 2.5). It is agreed that an assessment of the A12 merge/diverge impacts using DMRB and available data/ information, rather than the Paramics models, is the best that can be achieved at this stage. Using the model for merge/diverge assessment would not be reliable, as

the delays on the A12 and impact on this on-slip are not reflected in the model (Issue Log Ref. 21).

Journey Time Validation on Southend Road approach:

2.8. In TN 05, AECOM raised concerns about poor validation and some of the coding parameters on the Southend Road approach at Junction 17. The journey time validation along this section (Route 2, Section 3 NWB) fails significantly in the AM Peak hour with the modelled journey time significantly faster than the observed journey time as seen in Table 2 below.

Table 2. Journey Time Validation Result for Route 2, Section 3 NWB, AM Peak hour

Route	Section	Direction	0800-0900				
			Obs	Mod	Diff	Diff (%)	Pass
2	3	NWB	119	75	-44	37%	FAIL

2.9. Following the meeting in January, SLR submitted a presentation (Ref: "Southend Road Calibration Parameters Review") which contained results of different tests undertaken by SLR to improve the journey time validation. These showed that with coding different parameters in Paramics, the journey time validation results were worse in both the AM and PM Peaks. It is understood that the traffic on this approach is very sensitive in the PM Peak hour, and further calibration changes could result in a large amount of traffic being held on this approach in the forecast years, rather than travelling through the junction. AECOM's view is that the parameters coded in the previous version of the models are acceptable for the purpose of the Hammonds Farm assessment on National Highways' network, as this achieves the observed throughput of vehicles, but the models are not suitable to assess any impacts on Southend Road (Issue Log Ref. 7).

2.10. It is noted that a headway parameter of 0.5 has been applied to the Southend Road approach in the updated base model received, which was left as the default of 1 in the previously submitted models.

Conclusion:

2.11. AECOM has identified a few limitations associated with A12 Junction 17 performance in the base models. However, since the calibration and validation results on the off-slips are in line with the TAG criteria, AECOM considers the models to be sufficient to test the forecast year traffic flows and scheme impacts on the off-slips. The analysis of the forecast year models should consider the current limitations of the models.

A12 Junction 18

2.12. In the previous version of the models, it was found that the operation on the northbound slip road merge at Junction 18 with the A12 mainline link is unusual, with the vehicles on the mainline slowing down significantly to speeds as low as 5mph (Issue Log Ref. 10) even if no vehicles were approaching from the on-slip. SLR had coded parameters at this location to slow vehicles down and better match journey times on the A12. However, since journey times on the A12 did not validate in either case, and since the models are agreed not to reliably reflect A12 operation, it was agreed with SLR during the meeting that this unusual coding would be removed in the updated version of the models.

2.13. It should be noted that with the removal of these parameters, this behaviour is still observed in the model simulation some of the time although less frequently, as the vehicles are merging.

This is a known limitation of the model, and whilst AECOM accept this limitation and consider the issue resolved, it should be taken into consideration as part of the future stages of modelling and reporting.

Conclusion:

2.14. The representation of delays on the approach slip roads and on the side roads at A12 Junction 18 is considered acceptable as they are replicated reasonably well in the models.

A12 Junction 19

2.15. In TN 05, AECOM had noted that the signals coding in the Paramics models is not aligned to the actual operation as the offsets between signal stages are incorrect. However, the calibration and validation statistics suggest that these offsets do not have a large impact on the overall capacity of the junction. The revised model results also demonstrate no change in the previously presented calibration/ validation statistics at this junction. Therefore, this junction is sufficiently calibrated/ validated to assess the forecast year impacts – although the differences in signal operation between the model and observations provided by AECOM should be considered when reviewing forecast modelling.

3. Summary and Conclusion

3.1. AECOM has undertaken the review of the updated Paramics base models provided by SLR on the 27th February 2025. AECOM has reviewed the model operation and the updated calibration and validation results, to identify if the previous issues have been addressed and if there are any outstanding issues.

3.2. Based on the review, AECOM accept the model to assess the impacts of the Hammonds Farm development on the off-slips of Junctions 17-19 as the current version of the models represent its best performance within the capabilities and realms of available data. However, if these models are used for further assessment, for example A12 merge/diverge behaviours, then limitations have been highlighted which should be investigated further. Additionally, there are limitations of assessing the overall junction impacts at A12 Junction 17 as the delays on some of the approaches are not accurately represented, although we consider the models sufficiently calibrated/validated to assess the A12 off-slips.

3.3. The models do not reflect the observed delay levels along the A12, as SLR was unable to replicate observed journey times which are significantly faster in the models compared to observations. This suggests there is significant congestion on the A12 mainline which the models do not capture. The congestion also impacts the operation of the northbound on-slip at Junction 17 where validation of the models is also poor. SLR has suggested a DMRB assessment would be an appropriate workaround for this stage, based on available data/ information of existing network operation, so this assessment should be submitted as part of the future year impact assessment to determine the impacts on the A12 mainline.

3.4. AECOM suggests that the forecast year models should be updated in line with the latest agreed base models. SLR should carefully consider the model limitations highlighted in this TN while analysing the forecast year model outputs.

Appendix C – National Highways/AECOM Technical Note TN02 Rev A

Technical Note 02 Rev A

Project:	**National Highways Spatial Planning Contract 2021-2026**	Job No:	**60712760 / Q7SSX012.002**
Subject:	**Chelmsford Local Plan Review: Review of Transport Impact Appraisal of Local Plan Review Pre-Submission Document (December 2024)**		
Prepared by:	**Euan McFarlane**	Date:	**26th February 2025**
Checked by:	**Senthi Sivanathan**	Date:	**12th March 2025**
Verified by:	**Kim Pettingill**	Date:	**14th March 2025**
Approved by:	**Kim Pettingill**	Date:	**24th March 2025**

Executive Summary

Following a review of the Chelmsford Local Plan Review: Regulation 19 consultation documents associated with the Chelmsford Local Plan Review, AECOM make the following recommendations:

Recommendations regarded as critical to the acceptability of this Local Plan at this stage:

None

Recommendations regarded as important but not critical to the acceptability of this Local Plan at this stage:

1. More information should be provided with regards to the method of deriving the junction modelling traffic flows from the traffic count data at A12 Junction 18 so that this can be checked, (unless the modelling is superseded by the microsimulation modelling currently being undertaken by a third party) (paragraph 8.5);

2. **TN01_R8:** Microsimulation modelling should be used to model the impacts at A12 Junction 17 (paragraph 8.22 & 9.14);

3. The impact of the increase in queue length on the overbridge should be considered in the junction capacity modelling of A12 Junction 18 (unless the modelling is superseded by the microsimulation modelling currently being undertaken by a third party) (paragraph 8.31 & 9.17);

4. **TN01_R6:** Microsimulation modelling should be used to model the impacts at A12 Junction 18 (paragraph 8.32 & 9.18);

5. **TN01_R4:** Microsimulation modelling should be used to model the impacts at A12 Junction 19 (paragraph 8.37 & 9.23);

6. **TN01_R10:** Reference should be made to DfT Circular 01/2022 'The Strategic Road Network and the Delivery of Sustainable Development', alongside Highways England's (now National Highways) 'The Strategic Road Network: Planning for the Future (A guide to working with Highways England on planning matters)' (paragraph 2.6 of TN01, Table 21);

7. **TN01_R12:** It should be clarified whether any post-opening traffic data has been collected at A12 Junction 19 for consideration within any future modelling (unless the modelling is superseded by the microsimulation modelling currently being undertaken by a third party) (paragraph 4.9 of TN01, Table 21);

8. **TN01_R17:** The IDP should be updated to reflect the preferred option strategy (paragraph 7.4 of TN01, Table 21);

9. **TN01_R18:** Any mitigation measures identified on the NH network as a result of the Local Plan evidence base work should be included within the IDP as it evolves (paragraph 7.11 of TN01, Table 21); and

10. **TN01_R19:** The Infrastructure Delivery Plan Preferred Options Report should be made available to National Highways once it is available (paragraph 8.4 of TN01, Table 21).

1. Introduction

1.1. This Technical Note (TN02) documents a review carried out by AECOM, on behalf of National Highways, of the 'Transport Impact Appraisal of Local Plan Review Pre-Submission' document, dated December 2024, produced by Ringway Jacobs on behalf of Essex County Council as part of the Chelmsford Local Plan review (Regulation 19 consultation).

1.2. AECOM have previously undertaken a review of Regulation 18 consultation documents associated with the Chelmsford Local Plan review, documented in TN01, issued 13th June 2024, which raised a number of recommendations. It is noted that some recommendations raised in TN01 refer to other documents, updated versions of which have not been provided for review. As such, these recommendations will not be addressed within this review.

1.3. The current Chelmsford Local Plan (CLP), adopted in May 2020, has a plan period covering the period 2013 – 2036. The reviewed Local Plan will have a plan period covering the period 2022 – 2041. It is envisaged that the reviewed Local Plan will be adopted in late 2025 / early 2026.

1.4. The Strategic Road Network (SRN) within Chelmsford includes the A12 from Junction 15 at Margaretting to just east of Junction 19 at Boreham. The A12 forms a key North-East / South-West route between London and Ipswich via Chelmsford and Colchester. The junctions currently included within the detailed study area for the Local Plan are A12 Junctions 17 to 19.

1.5. Chelmsford City Council (CCC) are the local planning authority, whilst Essex County Council are the local highway authority.

1.6. TN02 will cover a review of the 'Transport Impact Appraisal of Local Plan Review Pre-Submission' document (TIA) with reference to the 'Pre-submission Regulation 19 Document' (dated February 2025) which sets out the current planning strategy between 2022-2041. Further information provided from Essex Highways on 14th March 2025 has also been reviewed as part of this TN. AECOM are to advise National Highways whether any representations at consultation should be made regarding the contents of the Local Plan in order to safeguard the operation, safety, and resilience of the SRN.

1.7. The TIA is effectively an update to the TIA submitted for the Regulation 18 consultation (dated March 2024); AECOM have not provided comments where sections of the report have not been updated and remain unchanged from the previous submission.

1.8. Where appropriate, AECOM refers to the previous review to determine whether any previous recommendations are still applicable. For example, the first recommendation listed in the executive summary of TN01 will be referred to as 'TN01_R1' in this TN02.

1.9. For ease of reference, AECOM's main comments and recommendations are presented in bold and underlined text throughout the note. Recommendations that are likely to be critical to agreement of the Local Plan are highlighted **red.** Recommendations that are considered important but not critical to agreement of the Local Plan are highlighted in **amber.** Recommendations raised previously that are considered to have been resolved are highlighted in **green.**

2. Study Context

2.1. Chelmsford City Council (CCC) is undertaking a review of their Local Plan, adopted in May 2020, to extend the Plan period by five years from 2036 to 2041. As of November 2024, the review anticipates accommodating a further 4,233 homes and 111,445 sqm of employment over that period.

2.2. The current Local Plan Pre-submission Regulation 19 document details the current housing and employment requirements in Strategic Policy S6:

- Housing: a minimum of 22,990 (net) new homes at an average rate of 1,200 (net) new homes per annum, 40 permanent pitches for Gypsies and Travellers, and 38 permanent plots for Travelling Showpeople;

- Employment: a minimum of 162,646sqm of new employment floorspace (Use Classes E(g)(i-iii), B2, and B8) in addition to existing commitments over the plan period.

2.3. The current timetable of the Chelmsford Local Plan Review is shown in Table 1. The Chelmsford Local Plan Review is currently at the Pre-Submission consultation (Regulation 19) stage, with a targeted submission date of Spring 2025. The current stage is highlighted in bold below.

Table 1: Local Plan timetable

Stage	Timeline
Consultation on Issues and Options (Regulation 18)	August 2022 - October 2022
Consultation on Preferred Options Local Plan (Regulation 18)	May 2024 - June 2024
Consultation on Pre-Submission Local Plan (Regulation 19)	**Early 2025**
Submission of the Local Plan	Spring 2025
Independent Examination	Late 2025
Adoption of the Local Plan	Late 2025/Early 2026
Review and Monitoring	Ongoing from adoption

2.4. As a result of the additional growth due to the extended Plan period, the Transport Impact Appraisal of the Local Plan Review Pre-Submission (TIA) document has been prepared to assess the traffic impact of the proposed changes to the Local Plan. The TIA also aims to assess the effectiveness of proposed infrastructure changes and active/sustainable travel mitigation measures.

2.5. The TIA focuses specifically on the following areas:

- The effect of additional traffic from additional Local Plan Allocations on the future capacity of roads and junctions within the strategic and local road networks, particularly at key junctions and across neighbouring authority boundaries.
- The effectiveness of mitigation measures proposed by developers of major planned developments in Chelmsford, specifically SGS6 – North-East Chelmsford (Chelmsford Garden Community) and SGS16a – East Chelmsford Garden Community (Hammonds Farm).
- The impact of projected traffic volumes on the accessibility of passenger transport services and the bus priority infrastructure network in Chelmsford.

2.6. The modelling carried out to date has incorporated National Highways' plans to widen the A12 carriageway between Chelmsford (Junction 19) and the A120 interchange near Colchester (Junction 25).

2.7. Despite a Development Consent Order (DCO) being granted in January 2024, funding for the scheme is now under government review following the 2024 UK General Election.

2.8. Given the uncertainty surrounding the A12 proposals, the TIA contains, at the request of National Highways, a sensitivity test to assess the development impact both with and without the A12 widening DCO proposals. This is welcomed by AECOM and, as such, **recommendation TN01_R1 is considered to be resolved.**

3. Modelling Approach

3.1. The TIA has assessed the impact of the Local Plan at a strategic level using the 2019 version of the Chelmsford VISUM Forecast Model. Whilst the model has not been reviewed by AECOM, it is understood to be accepted by National Highways for the purpose for which it is being used here. This is considered to be acceptable to AECOM.

3.2. The Chelmsford VISUM base model primarily focuses on car-based travel, including Park & Ride (P&R), but also assesses the impact of development and infrastructure proposals on passenger transport (bus and rail) generalised costs and mode share.

3.3. The geographic coverage of the model includes the following areas:

- Fully Modelled Area: The Area of Detailed Modelling (AoDM), comprising of the Chelmsford administrative area; and the remainder of the Fully Modelled Area, which includes the surrounding area of the AoDM covering Braintree to the north, the M11/A120 junction to the northwest, the A12/A120 junction to the northeast, Basildon to the south, and Brentwood and the A12/M25 junction to the southwest.
- External Area: encompassing all of mainland UK outside the Fully Modelled Area.

3.4. A forecast year of 2041 has been used to the Chelmsford Local Plan Review modelling, representing the end of the updated Plan review period.

3.5. An updated Variable Demand Model (VDM) was developed and tested as part of work to update the Chelmsford VISUM model to a 2019 base year. The VDM accounts for changes in travel behaviour – specifically the route taken, destination, and/or mode of travel choice due to a change in travel cost, through traffic intervention or changes in travel demand, often a result of network congestion.

3.6. An assessment of VDM impact on forecast flows was undertaken and findings revealed little overall change in peak hour traffic volumes across Chelmsford. However, owing to link capacity constraints along the A12, VDM was shown to reduce flows along the A12 by up to 250 vehicles southbound in the PM peak between Junctions 17 and 19.

3.7. Whilst VDM was not used in earlier stages of the Local Plan Review appraisal, a decision was made to incorporate it into the Local Pan Review Pre-Submission (LPRPS) modelling, given growing interest around development impact along the A12 corridor from National Highways with uncertainty around A12 widening proposals, and from other representations made by Parish Councils during consultation on the Preferred Spatial Approach.

3.8. Essex Highways states that it is considered that use of VDM will present a more realistic representation of traffic flow volumes along the A12 corridor and throughout the rest of the modelled network in the forecast modelling. It is stated that care has been taken in the reported analysis to account for VDM adjustments in the overall appraisal of LPRPS development impact; this is noted.

2041 Forecast Model

3.9. The version of the Chelmsford VISUM Forecast Model used to assess the impact of the Local Plan review includes the preferred 'hamburger' roundabout design at the Army and Navy junction. The Army and Navy Sustainable Transport Package (which includes the changes to the Army and Navy junction and expansion of Sandon and Chelmer Valley Park & Rides) was granted permission in November 2024.

3.10. Alongside these infrastructure proposals, the following additional infrastructure assumptions form the basis of a future year scenario:

- A12 Chelmsford to A120 widening scheme;
- Lower Thames Crossing;
- Sheepcotes Roundabout A130-A131 left turn filter as part of the A131 route-based strategy;
- Boreham Interchange (A12 Junction 19) improvements;
- Radial Distributor Road (RDR) and Northern Radial Distributor Road (NRDR);
- Chelmsford North East Bypass (CNEB);
- Beaulieu Park Rail Station;
- Expansion of Sandon P&R by 350 spaces; and
- Expansion of Chelmer Valley P&R site by 500 spaces.

3.11. It is noted that a number of the schemes listed above are future planned schemes and therefore their delivery by 2041 (or at all) is not guaranteed. The scheme of particular importance to National Highways in this context are the long-term proposals for the Boreham Interchange (A12 Junction 19) as part of the A12 Chelmsford to A120 widening scheme.

3.12. As noted previously, a sensitivity test whereby the A12 Chelmsford to A120 widening scheme does not go ahead has been undertaken for each modelling scenario. This is welcomed by AECOM.

2041 Baseline Model – Planning and Overall Growth Assumptions

3.13. The full list of existing Local Plan sites to be included in the 2041 baseline modelling for both residential and employment sites was supplied to Essex Highways by CCC in January 2024. In September 2024, an updated list detailing the latest development allocations was provided by CCC. The residential sites included within the 2041 baseline modelling are shown in Table 2, and employment sites are shown in Table 3. Sites highlighted in red are those that do not meet the minimum size requirement to be included directly within the model (50 dwellings) and instead have been accounted for within background growth calculations.

3.14. Where there are changes between the size of the allocations reported in TN01 and those presented below, the updated allocation is shown in bold with the previous allocation in parentheses.

Table 2: Residential allocations included within 2041 Baseline Modelling (as of September 2024)

Location	Site Name	Total Allocation (dwellings)
Growth Area 1		
City Centre	Chelmer Waterside Allocations	880
	Former St Peter's College Fox Crescent	185
	Riverside Ice and Leisure Land Victoria Road Chelmsford	150
	Civic Centre Land Fairfield Road Chelmsford	100
	Land West of Eastwood House Glebe Road Chelmsford	197
	Ashby House Car Parks New Street Chelmsford	80
	Chelmsford Social Club	29
	Rectory Lane Car Park West Rectory Lane Chelmsford	75
	Former Chelmsford Electrical and Car Wash Brook Street	**41** (40)
	BT Telephone Exchange Cottage Place Chelmsford	30
	Rectory Lane Car Park East Rectory Lane Chelmsford	23
	Waterhouse Lane Depot and Nursery Chelmsford	20
	Site at Play Area Woodhall Road Chelmsford	12
	British Legion New London Road Chelmsford	15
	Land rear Of 17-37 Beach's Drive Chelmsford	18
	Garage Site St Nazaire Road Chelmsford	12
	Garage Site and Land Medway Close Chelmsford	6
	Car Park R/O Bellamy Court Broomfield Road Chelmsford	10
	Rivermead, Bishop Hall Lane	**315** (new)
Writtle	Land Surrounding Telephone Exchange Ongar Road Writtle	25
W Chelmsford	West Chelmsford	880
East of Chelmsford	East of Chelmsford – Manor Farm	360
	East of Chelmsford – Land South and North of Maldon Road	174
Galleywood	Land north of Galleywood Reservoir Beehive Lane Galleywood	24
Growth Area 2		
North East Chelmsford	Chelmsford Garden Community	**5569** (6250)
Great Leighs	Great Leighs – Land at Moulsham Hall	750
	Great Leighs – Land East of London Road	**250** (190)
	Great Leighs – Land North and South of Banters Lane	100
North of Broomfield	North of Broomfield	512
Growth Area 3		
North of South Woodham Ferrers	Land North West of Hamberts Farm Bunham Road South Woodham Ferrers Chelmsford	1020
	Land North of South Woodham Ferrers Burnham Road South Woodham Ferrers Chelmsford	200
Bicknacre	South of Bicknacre	42
	St Giles Bicknacre	32
Danbury	Danbury	100

Table 3: Employment allocations included within 2041 Baseline Modelling (as of September 2024)

Location	Site Name	Total Allocation (GFA sqm)
Growth Area 1		
Great Baddow	East of Chelmsford – Land north of Maldon Road	5,000
Growth Area 2		
North East Chelmsford	North East Chelmsford	45,000
Growth Area 3		
South Woodham Ferrers	North of South Woodham Ferrers	1,200
Committed Developments (separate to growth areas)		
Springfield	Greater Beaulieu Park White Hart Lane Springfield Chelmsford	**9,969** (62,300)

3.15. It is noted that there appear to be large reductions to the size of the allocations at Chelmsford Garden Community and Greater Beaulieu Park White Hart Lane. Additionally, there are small increases to the size of the allocations at Land East of London Road and Former Chelmsford Electrical and Car Wash Brook Street allocations. There is a single new allocation of 315 dwellings at Rivermead, Bishop Hall Lane.

2041 Preferred Spatial Approach Modelling – 2036-2041

3.16. The proposed development allocations associated with the 2041 Preferred Spatial Approach have been refined by CCC following the Regulation 18 consultation in June 2024. The latest proposed development allocations, as of September 2024, are presented in Table 4.

3.17. Where there are changes between the size of the allocations reported in TN01 and those presented below, the updated allocation is shown in bold with the previous allocation in parentheses. Sites removed from the proposed allocations are highlighted in red; new additions are highlighted in green.

Table 4: Latest proposed development allocations

Location	Site Name	Residential Allocation (dwellings)	Employment Allocation (sqm)			
			Office E(g)(i)	Research and Industrial E(g)(ii)	General Industrial B2	Storage or Distribution (Warehousing) B8
Growth Area 1						
Chelmsford Urban Area	Meadows Shopping Centre and Meadows Surface Car Park	**757** (350)	-	-	-	-
	Former Kay-Metzeler premises, Brook Street	(185)	-	-	-	-
	Land between Hoffmans Way and Brook Street (Marriages Mill)	100	-	-	-	-
	Granary Car Park	**50** (60)	-	-	-	-
	Coval Lane Car Park	40	-	-	-	-
	Glebe Road Car Park	12	-	-	-	-
	Andrews Place, Waterhouse Lane	**183**	-	-	-	-
	E2V Teledyne	-	(21500)	-	(21500)	-
	Additional Employment (Unallocated) Site 1 - Victoria Road	-	1333	-	-	-
	Additional Employment (Unallocated) Site 2 - Glebe Road	-	1333	-	-	-
	Additional Employment (Unallocated) Site 3 - Navigation Road	-	1333	-	-	-
Growth Area 2						
Ford End	Land South of Ford End Primary School, Ford End	20	-	-	-	-
	Land West of Back Lane, Ford End	(20)	-	-	-	-
Boreham	Boreham, Waltham Road	-	-	-	1750	1750
North West Chelmsford	Little Boyton Hall Farm	-	-	-	3000	3000
North East Chelmsford	Chelmsford Garden Community	-	302	3265	-	8379
Growth Area 3						
South East Chelmsford	East Chelmsford Garden Community (Hammonds Farm)	3000	3841	13053	13053	13053
	Land Adjacent to A12 Junction 18	-	4669	12777	12777	12777
Bicknacre	Land at Kingsgate, Bicknacre	20	-	-	-	-
	Land West of Barbrook Way, Bicknacre	20	-	-	-	-
East Hanningfield	Land North of Abbey Fields, East Hanningfield	**11** (15)	-	-	-	-
	Land East of Highfields Mead, East Hanningfield	20	-	-	-	-

3.18. There are changes to the size of allocation of three of the sites: the Meadows Shopping Centre and Meadows Surface Car Park has more than doubled, whilst the Granary Car Park and Land North of Abbey Fields, East Hanningfield allocations have been reduced slightly.

3.19. Due to the location of the Meadows Shopping Centre and Meadows Surface Car Park site within the centre of Chelmsford, AECOM consider that the increase to the quantum of development is unlikely to have a significant effect on the SRN.

3.20. AECOM notes that three allocations have been removed entirely, those being the Former Kay-Metzeler premises, E2V Teledyne, and Land West of Back Lane allocations. Furthermore, there is an additional allocation site included at Andrews Place, Waterhouse Lane.

4. Development Trip Generation

4.1. The trip generation associated with the Local Plan developments has been based on trip rates derived from TRICS (version 7.10). The trip rates used are shown in Table 5. AECOM note that the trip rates presented in the TIA are similar to those presented previously. The changes are the addition of the C2 Student Accommodation land use and the separation of B2 and B8 land uses (and new trip rates for B8 land use).

Table 5: Proposed trip rates for Local Plan allocations

Land Use	Unit	AM Peak			Interpeak			PM Peak		
		Arrivals	Departures	Total	Arrivals	Departures	Total	Arrivals	Departures	Total
C3 Residential	Per dwelling	0.094	0.216	0.310	0.115	0.120	0.235	0.215	0.117	0.332
C2 Student Accommodation	Per dwelling	0.002	0.001	0.003	0.004	0.005	0.009	0.003	0.004	0.007
E(g) Office	Per 100sqm	0.553	0.096	0.649	0.113	0.121	0.234	0.082	0.702	0.784
B8 Industrial	Per 100sqm	0.501	0.114	0.615	0.195	0.201	0.396	0.237	0.733	0.970
B2 Industrial	Per 100sqm	0.211	0.105	0.316	0.153	0.173	0.326	0.080	0.145	0.225

4.2. AECOM stated in TN01 that it was not considered appropriate to use a single trip rate for all residential developments and recommended that separate trip rates for smaller developments that are unlikely to experience trip internalisation, and for larger developments that are likely to experience trip internalisation, should be used.

4.3. In response to this recommendation, the TIA notes that, whilst the trip rates are comparatively low, they are representative of an aspirational approach and the level of trip generation that could be achieved following the uptake of sustainable travel measures and are, therefore, considered to be aligned with the latest NPPF guidelines for Local Plan development.

4.4. Additionally, further information received from Essex Highways (EH) notes that the trip rates used within the Local Plan Review modelling are those already within the Chelmsford VISUM forecast model (although B2 Industrial and C2 Student Accommodation have subsequently been added).

4.5. It is noted by EH that this model, with the same trip rates, has previously been used to assess the impact of the changes to the Army and Navy junction and the Chelmsford North East Bypass. It was considered by EH that the same trip rates should be used when assessing the impact of the Local Plan Review to maintain consistency with previous studies.

4.6. Whilst a disaggregation of the trip rates would be the preferred approach, AECOM accepts that consistency in the modelling approach across different studies is desirable. As such, it is considered that, for the purpose of assessing the impact of the Local Plan Review at a strategic level, the trip rates presented are acceptable. **Recommendation TN01_R2 is therefore considered to be resolved.**

4.7. The trip generation for the proposed new allocation sites, separated by land use, is shown in Table 6. The trip generation is based on the trip rates presented in Table 5.

Table 6: Trip generation of proposed development allocations

Location	Site Name	Land Use Class	AM Peak		PM Peak	
			Arrivals	Departures	Arrivals	Departures
Growth Area 1						
Chelmsford Urban Area	Meadows Shopping Centre and Meadows Surface Car Park	C3	71	164	163	89
	Land between Hoffmans Way and Brook Street (Marriages Mill)	C3	9	22	22	12
	Granary Car Park	C3	5	11	11	6
	Coval Lane Car Park	C3	4	9	9	5
	Glebe Road Car Park	C3	1	3	3	1
	Andrews Place, Waterhouse Lane	C3	17	39	39	21
	Additional Employment (Unallocated) Site 1 - Victoria Road	E(g)	7	1	1	9
	Additional Employment (Unallocated) Site 2 - Glebe Road	E(g)	7	1	1	9
	Additional Employment (Unallocated) Site 3 - Navigation Road	E(g)	7	1	1	9
Growth Area 2						
Ford End	Land South of Ford End Primary School, Ford End	C3	2	4	4	2
Boreham	Boreham, Waltham Road	B2	4	2	1	3
		B8	9	2	4	13
North West Chelmsford	Little Boyton Hall Farm	B2	6	3	2	4
		B8	15	3	7	22
North East Chelmsford	Chelmsford Garden Community	E(g)	20	3	3	25
		B8	42	10	20	61
Growth Area 2						
South East Chelmsford	East Chelmsford Garden Community (Hammonds Farm)	C3	282	647	645	351
		E(g)	93	16	14	119
		B2	28	14	10	19
		B8	65	15	31	96
	Land Adjacent to A12 Junction 18	E(g)	96	17	14	122
		B2	27	13	10	19
		B8	64	15	30	94
Bicknacre	Land at Kingsgate, Bicknacre	C3	2	4	4	2
	Land West of Barbrook Way, Bicknacre	C3	2	4	4	2
East Hanningfield	Land North of Abbey Fields, East Hanningfield	C3	1	2	2	1
	Land East of Highfields Mead, East Hanningfield	C3	2	4	4	2

5. Trip Distribution and Assignment

5.1. The trip distribution and assignment for the proposed sites is based on the Chelmsford VISUM model. Donor zones (zones already present within the model) have been used to represent the trip distribution for a new development zone. This is considered by AECOM to be an appropriate way to determine the trip distribution.

5.2. AECOM commented on the trip distribution and assignment in TN01. There appears to be no changes to the trip distribution and assignment as commented on previously.

6. Mode Shift Sensitivity Test

6.1. A sensitivity test was undertaken to consider the potential network impact of a greater mode shift to active and sustainable alternatives from the Local Plan Review development sites. It is acknowledged that the trip rates for proposed development within the Local Plan are already

relatively low, and that in order to achieve the trip reductions modelled in the sensitivity test the provision and use of additional passenger transport services would need to be significantly higher than typically expected; this is noted.

6.2. AECOM note that a policy requirement stipulates a 60% mode share for active and sustainable travel at both the Hammonds Farm and North East Chelmsford Garden Community. However, this precise mode share was not directly modelled; the sensitivity test aims to provide a broader assessment of the implications of increased sustainable travel uptake across all Local Plan Review development sites.

6.3. To model this scenario, reduced trip rates were applied to both residential and employment sites within the Local Plan Review, reflecting assumptions of denser, more urban-style development and enhanced public transport provision. This approach aims to simulate a potential reduction in development-generated trips, assuming that active and sustainable transport infrastructure and services could successfully encourage greater uptake.

6.4. The approach to calculating development trip reductions has been based on Essex Passenger Transport Accessibility Level (EPTAL), a bespoke tool developed by Essex Highways. EPTAL is loosely based on the Department for Transport's PTAL methodology and is designed to estimate trip rates based on aspirational targets for sustainable transport provision.

6.5. The tool operates by drawing from a database of TRICS-surveyed development trip rates, then calculating average trip rates for each land-use classification and determines the level of local rail and bus service provision required to achieve these trip rates, using transport data from TRICS surveys.

6.6. By applying EPTAL, average trip rates and a corresponding level of passenger transport provision was established for housing and employment sites in a Suburban setting. This classification was deemed reflective of the current transport proposals for Chelmsford Local Plan developments, particularly in North-East Chelmsford and along the A12 corridor. Equivalent values were also identified for an Edge of Town Centre location, representing an aspirational target for sustainable transport provision across Local Plan developments.

6.7. The EPTAL generated trip rates are presented in Table 7. It is important to note that the EPTAL tool has not been reviewed by AECOM, and, as such, its outputs must be taken at face value.

Table 7: EPTAL derived trip rates

Type	Suburban Trip Rates	Edge of Town Trip Rates	% Reduction from Suburban to Edge of Town
Residential Houses: Privately Owned	0.121	0.105	13%
Employment (office)	1.239	1.168	6%

6.8. The reduction factors identified by the EPTAL tool were applied to the total number of Local Plan development trips and the VISUM model rerun with these values.

7. Strategic Model Outputs

7.1. The strategic model outputs are reported within Section 5 of the TIA. Of particular relevance to NH are the changes in traffic flow patterns across the strategic road network following the addition of development trips associated with the LPRPS development sites. The TIA concludes that in the 'with A12 widening DCO' scenario, the 'LPRPS development is shown to have a minimal impact on journey times along the A12 corridor which is likely a result of the network already operating over capacity in the Baseline. In addition, the impact of applying the VDM process will result in a redistribution of trips away from the A12 corridor in the peak periods, further minimising the impact the Local Plan has on journey times. This helps to explain why an increase in journey times was

reported for the A12, as part of the previous, Preferred Spatial Approach modelling (March 2024), which didn't make use of VDM.' This is noted.

7.2. In the 'without A12 widening DCO' scenario, the TIA concludes that 'as can be seen from the queue length and volume/capacity analysis in earlier sections of this report, network capacity issues are modelled along the A12 between Junction 17 and 19. A significant proportion of development trips might be expected to route along the A12 - both northbound and southbound - from Junction 18, thereby exacerbating congestion along the trunk road. The link flow difference plots show that this will increase the likelihood of traffic re-routing along rural roads to the east of the A12, impacting the villages of Boreham and Little Baddow.' This is noted.

7.3. With regards to the Mode Shift Sensitivity Test undertaken, despite a 13% reduction in residential site vehicle flows and a 6% reduction in employment site vehicle flows, the overall strategic impact remains minimal, with traffic patterns largely unchanged from the unadjusted scenario. The wider network impact highlights traffic redistribution in response to congestion.

8. Local Junction Modelling

8.1. The local junction modelling results are presented in the TIA for the "2041 Baseline" and "2041 With Local Plan" scenarios. The presented local junction modelling outputs are based on a default One-Hour demand profile for junction modelling, assuming peak flows in the middle of the hour with lower flows at the beginning and end.

8.2. However, junctions operating at full capacity with noticeable congestion may experience a flatter demand profile as drivers adjust their travel times to avoid peak congestion. In response to this, sensitivity tests using a flat demand profile have been conducted for overcapacity non-signalised junctions (junction arms with RFC values exceeding 1.0). This is welcomed.

8.3. The base year matrices for the SRN junctions modelled have been developed using turning count data collected in September 2024. AECOM have undertaken a review of the turning count data provided alongside the junction modelling. This review found minor differences between survey data and base year matrices for A12 Junctions 15, 16, and 17, with modelled flows being slightly greater than those surveyed.

8.4. However, there appear to be larger differences between the survey data from A12 Junction 18 and the base matrices used within the ARCADY model. It is noted that the modelling utilises passenger car units (PCU) as opposed to vehicles, but the differences noted are greater than would be expected due to converting from cars/HGVS to PCUs.

8.5. In addition, it is noted that a single traffic survey was undertaken at A12 Junction 18, however the junction has been modelled as two separate roundabouts. AECOM have noted some potential discrepancies between the collected data and that input into the model, and therefore **further information should be provided as to how these flows were derived.**

A12 Junction 15

8.6. A12 Junction 15 has been modelled using the ARCADY module in Junctions 10. The results of the A12 Junction 15 junction modelling are shown in Table 8. For unsignalised junctions, a ratio of flow to capacity (RFC) of 0.85 (85%) or greater indicates that a link is above capacity.

8.7. AECOM have undertaken a review of the geometry of the ARCADY model used to assess the impact of the proposed Local Plan allocations at A12 Junction 15. AECOM's review found geometric measurements that are broadly similar to those modelled, with the primary differences relating to the determination of the conflict angle. Notwithstanding this, AECOM consider the model to be reflective of the junction.

8.8. The results shown in Table 8 are from the "With A12 DCO" scenario; the results of the sensitivity test undertaken that assesses the impact of the Local Plan in the scenario that the A12 DCO scheme does not occur is discussed in Section 8.

Table 8: A12 Junction 15 ARCADY Modelling results (with A12 DCO)

Arm	AM Peak			PM Peak		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
2041 Forecast – Baseline (With A12 DCO)						
North Roundabout						
Three Mile Hill	4	6.6	0.76	4	6.6	0.76
A414	2	5.3	0.57	1	3.9	0.44
A12 NB off-slip	2	3.8	0.52	1	2.9	0.43
Golf Club	0	0	0	0	0	0
South Roundabout						
A414	3	7.3	0.74	2	4.8	0.60
A12 SB off-slip	16	62.2	0.97	1	5.8	0.44
B1002	6	52.1	0.88	2	10.1	0.54
2041 Forecast – With Local Plan (With A12 DCO)						
North Roundabout						
Three Mile Hill	4	7.1	0.78	3	6.5	0.75
A414	2	5.5	0.59	1	4	0.44
A12 NB off-slip	2	3.8	0.52	1	2.9	0.44
Golf Club	0	0	0	0	0	0
South Roundabout						
A414	4	7.9	0.76	2	4.7	0.60
A12 SB off-slip	18	71.8	0.98	1	5.8	0.44
B1002	9	74.2	0.94	2	10.2	0.54

8.9. The modelling results presented in Table 8 indicate that, in the PM peak, the north roundabout of the junction will remain within capacity in both the “2041 Forecast – Baseline” and “2041 Forecast – With Local Plan” scenarios.

8.10. In the AM peak, two arms of the southern roundabout are shown to be over capacity in both the “2041 Forecast – Baseline” and “2041 Forecast – With Local Plan” scenarios: the A12 Southbound Off-Slip and the B1002.

8.11. AECOM notes that, whilst the A12 Southbound Off-Slip arm of the southern roundabout is shown to have an RFC of 0.98 in the “2041 Forecast – With Local Plan” scenario, which is notably greater than the 0.85 threshold, the RFC of this arm is 0.97 in the “2041 Forecast – Baseline” scenario.

8.12. This indicates that the additional traffic associated with the Local Plan does not greatly affect this arm of the junction. Additionally, the modelled queue on the A12 southbound off-slip in the “2041 Forecast – With Local Plan” scenario is able to be contained within the existing infrastructure. Therefore, the impact of the Local Plan at this junction can be considered to not be severe.

A12 Junction 16

8.13. A12 Junction 16 has been modelled using the ARCADY module in Junctions 10. The results of the ARCADY modelling undertaken for A12 Junction 16 for the “With A12 DCO” scenarios are shown in Table 9.

8.14. AECOM have undertaken a review of the geometry of the ARCADY model used to assess the impact of the proposed Local Plan allocations at A12 Junction 16. AECOM’s review found geometric measurements that are broadly similar to those modelled. As such, AECOM consider the model to be reflective of the junction.

Table 9: A12 Junction 16 ARCADY Modelling results (with A12 DCO)

Arm	AM Peak			PM Peak		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
2041 Forecast – Baseline (With A12 DCO)						
North Roundabout						
B1007 (N)	131	542.4	1.30	27	139	1.05
B1007 (S)	2	10.3	0.67	6	22.4	0.85
A12 NB off-slip	1	2.7	0.29	2	4.9	0.57
South Roundabout						
B1007 (N)	29	79.8	1.01	14	43.6	0.95
B1007 (S)	1	4.2	0.37	1	4	0.35
A12 SB off-slip	5	16.6	0.83	5	13.7	0.81
2041 Forecast – With Local Plan (With A12 DCO)						
North Roundabout						
B1007 (N)	144	596.3	1.32	30	154.3	1.06
B1007 (S)	2	10	0.66	6	24	0.86
A12 NB off-slip	1	2.7	0.29	2	5	0.59
South Roundabout						
B1007 (N)	34	91.3	1.02	14	44.8	0.96
B1007 (S)	1	4.4	0.39	1	4.1	0.36
A12 SB off-slip	5	16.4	0.82	5	14.4	0.82

8.15. The modelling results presented in Table 9 indicate that the junction will experience capacity problems in the "2041 Forecast – Baseline" scenario, in particular on the B1007 (N) arm of both roundabouts at the junction. Indeed, the B1007 (N) arm of the south roundabout is forecast to experience a queue length of 29 PCUs (approx. 166m) in the AM peak. As the length of this link is approximately 100m, queueing experienced on this arm of the south roundabout could extend back onto the north roundabout. However, as the excessive queueing is forecast to occur in the 2041 Baseline scenario, the impact of the Local Plan traffic is not considered to be severe.

8.16. Additionally, the B1007 (S) arm of the north roundabout is forecast to experience an RFC of 0.85 in the PM peak in the "Without Local Plan" scenario and 0.86 in the "With Local Plan" scenario. However, the queueing experienced on this link is able to be contained within the existing infrastructure and does not extend into the south roundabout.

8.17. AECOM notes that queue on the B1007 (N) arm of the north roundabout in the AM peak in the "2041 Forecast – Baseline" scenario is stated to be 14 PCU in the TIA. However, the modelling outputs provided alongside the TIA states that the queue is forecast to be 131 PCU, as presented in Table 9.

8.18. The impact of the additional local plan traffic on the A12 arms of the junction (A12 SB and NB off-slips) appears to be minimal.

A12 Junction 17

8.19. A12 Junction 17 has been modelled using LinSig. The results of the A12 Junction 17 junction modelling are shown in Table 10. For signalised junctions, links with a degree of saturation (DoS) greater than 0.9 (90%) are considered to be above capacity.

Table 10: A12 Junction 17 LinSig Modelling results (with A12 DCO)

Arm	AM Peak			PM Peak		
	MMQ (PCU)	Delay (s/PCU)	DoS	MMQ (PCU)	Delay (s/PCU)	DoS
2041 Forecast – Baseline (With A12 DCO)						
A12 (SB off-slip)	18	20.5	0.82	17	22.9	0.80
Southend Rd (SE)	3	27	0.64	59	385.7	1.23
A130	590	771.2	1.66	521	760.3	1.64
A12 (NB off-Slip)	52	571.1	1.37	99	868.8	1.75
A1114 Southend Rd (NW)	171	815.1	1.69	163	692.4	1.52
2041 Forecast – With Local Plan (With A12 DCO)						
A12 (SB off-slip)	19	21.1	0.83	17	23.1	0.81
Southend Rd (SE)	3	36.8	0.72	49	297.3	1.25
A130	581	761.5	1.64	529	771.1	1.66
A12 (NB off-Slip)	55	592.5	1.39	87	837.4	1.70
A1114 Southend Rd (NW)	188	862	1.76	144	683.3	1.52

8.20. The modelling results shown in Table 10 indicate that the junction will be over capacity during both the AM and PM peak hours, under both Baseline and With Local Plan scenarios. Significant queues and delays are projected across all junction arms, especially Southend Road (E).

8.21. The TIA acknowledges that it was not possible to model an accurate representation of journey time delay at A12 J17 Howe Green in the base year LinSig models, as the modelling software was unable to accurately represent the impact of peak hour queuing on the A12 northbound on-slip extending back through the junction; therefore 2041 forecast junction model results and analysis of Local Plan development impact at the two junctions will require caveating. This is noted.

8.22. NH are aware that third party microsimulation modelling work of A12 Junctions 17-19 commenced in 2024 in consultation with National Highways, Essex Highways and CCC in order to assess in detail the impact of local plan traffic on this area of the network. National Highways have recently agreed the base model including methodology and baseline data inputs. National Highways expect to receive the future scenario model (including traffic associated with the Chelmsford Local Plan) imminently; we are due to review that and will come back with comments in due course. AECOM therefore **recommend that microsimulation modelling is used to assess the impacts at A12 Junction 17 (TN01 R8).**

A12 Junction 18

8.23. AECOM previously undertook a review of the geometry of an ARCADY model of A12 Junction 18 which was documented in AECOM's TN01. This review found that the geometry of the model broadly reflected that determined by AECOM, but with some minor discrepancies. It was recommended that consideration should be given to the Conflict Angles and Entry Radii within the model.

8.24. AECOM notes that the Conflict Angle and Entry Radii values have been updated. There are still some differences between the values determined by AECOM and those within the model, however, as noted in TN01, there is a degree of subjectivity involved when calculating these values. AECOM consider the updated values to be more reflective of the geometric properties of the junction and, as such, **consider recommendation TN01_R16 to be resolved.**

8.25. The recommendation raised in Paragraph 8.5 above should be taken into account when referring to the results outlined in the tables below.

8.26. The results of the ARCADY modelling undertaken for A12 Junction 18 are shown in Table 11.

Table 11: A12 Junction 18 ARCADY Modelling results (with A12 DCO)

Arm	AM Peak			PM Peak		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
2041 Forecast – Baseline (With A12 DCO)						
East Roundabout						
A12 J18 SB off-slip	1.1	6.8	0.52	4.4	23.5	0.82
Hammonds Road	2.7	15.6	0.73	1.4	14.4	0.58
A414 Maldon Road E	5.8	14	0.86	1.6	5	0.61
A414 Maldon Road bridge	1.1	3.6	0.51	3.3	7.7	0.77
West Roundabout						
A414 Maldon Road bridge	11.6	29.4	0.93	4.1	11.6	0.81
A12 J18 NB off-slip	1.1	7.1	0.53	2.4	10	0.70
Maldon Road W	2.2	9	0.69	36.7	106.4	1.04
2041 Forecast - With Local Plan (With A12 DCO)						
East Roundabout						
A12 J18 SB off-slip	1.6	9.1	0.62	31.5	126.3	1.05
Hammonds Road	50.4	181.7	1.10	4.7	31.5	0.84
A414 Maldon Road E	8.6	21.6	0.91	2.3	6.7	0.69
A414 Maldon Road bridge	1.3	4.1	0.57	4.7	10.2	0.83
West Roundabout						
A414 Maldon Road bridge	56.6	109.1	1.05	11.5	29	0.93
A12 J18 NB off-slip	1.4	8.6	0.57	6.1	24.2	0.87
Maldon Road W	3.5	13.1	0.78	106.3	294.7	1.20

8.27. The modelling results in Table 11 indicate increased pressure on the junction, especially at the eastern roundabout. The capacity of the Hammonds Road and A414 Maldon Road (east) arms is expected to be significantly affected by proposed development at Hammonds Farm and the adjacent employment site east of the A12 (south of the A414).

8.28. The results indicate that the A12 southbound off-slip is at capacity during the PM peak with the addition of the Local Plan traffic, however the increased queue length is able to be contained within the existing infrastructure; the same can be said for the A12 northbound off-slip.

8.29. Additionally, AECOM notes that the queue on the A414 Maldon Road bridge (west roundabout) is forecast to increase from 11.6 PCU (approx. 67m) in the AM Peak in the "2041 Forecast – Baseline" scenario to 56.6 PCU (approx. 320m) in the "2041 Forecast – With Local Plan" scenario.

8.30. As the available stacking capacity of the A414 Maldon Road bridge (west roundabout) link is approximately 115m, the forecast queue on this arm of the junction would encroach on the eastern roundabout of the junction.

8.31. AECOM notes that the two roundabouts appear to have been modelled separately. As such, the impact of the increase in queue length on the overbridge is not likely to have been fully captured. **The modelling should be updated to account for this.**

8.32. As noted above, NH are aware that third party microsimulation modelling work of A12 Junctions 17-19 commenced in 2024 in consultation with National Highways, Essex Highways and CCC in order to assess in detail the impact of local plan traffic on this area of the network. National Highways have recently agreed the base model including methodology and baseline data inputs. National Highways expect to receive the future scenario model (including traffic associated with the Chelmsford Local Plan) imminently; we are due to review that and will come back with comments

in due course. AECOM therefore **recommend that microsimulation modelling is used to assess the impacts at A12 Junction 18 (TN01 R6).**

8.33. Additionally, AECOM previously recommended that the entrance to the Sandon Park and Ride facility located immediately to the west of A12 Junction 18 should be modelled to determine whether there is a possibility for queueing at this junction to encroach on the A12 Junction 18 western roundabout. In response, the entrance to the Sandon Park and Ride has been modelled using LinSig. As such, **AECOM consider recommendation TN01 06 to be resolved.** The results of the Sandon Park and Ride LinSig modelling are shown in Table 12.

Table 12: Sandon Park and Ride Entrance junction LinSig Modelling Results

Arm	AM Peak			PM Peak		
	MMQ (PCU)	Delay (s/PCU)	DoS	MMQ (PCU)	Delay (s/PCU)	DoS
2041 Forecast – Baseline (With A12 DCO)						
Sandon Park and Ride	0	0	0	5.4	30	0.64
Maldon Road (E)	5.3	8	0.69	0.6	2.0	0.54
Maldon Road (W)	6.7	15.8	0.73	6.0	15.9	0.67
2041 Forecast – With Local Plan (With A12 DCO)						
Sandon Park and Ride	0	0	0	5.6	30.7	0.66
Maldon Road (E)	5.6	8.4	0.78	0.7	2.2	0.57
Maldon Road (W)	7.4	15.4	0.77	6.2	16.3	0.68

8.34. The results presented in Table 12 indicate that the Sandon Park and Ride access junction is forecast to operate within capacity in both peak periods in both the "2041 Baseline" and "2041 With Local Plan" scenarios. The modelled queues are not forecast to extend back to the western roundabout at A12 Junction 18.

A12 Junction 19

8.35. The impact of the Local Plan at A12 Junction 19 has been assessed qualitatively by referencing the outputs documented in National Highways' modelling report published in support of the proposed A12 Chelmsford to A120 widening scheme Development Consent Order (DCO) application and qualitatively assessing the potential change in flows associated with the local plan.

8.36. The DCO application utilised a VISSIM microsimulation model of A12 Junction 19 to assess the impact of the proposed widening scheme and associated junction improvements. The TIA notes that, whilst this VISSIM model has been accepted for use by the Department for Transport (DfT), it has not yet been approved by ECC. As such, a detailed local junction-level assessment incorporating the developer access proposals has not been undertaken; this is noted.

8.37. As noted above, NH are aware that third party microsimulation modelling work of A12 Junctions 17-19 commenced in 2024 in consultation with National Highways, Essex Highways and CCC in order to assess in detail the impact of local plan traffic on this area of the network. National Highways have recently agreed the base model including methodology and baseline data inputs. National Highways expect to receive the future scenario model (including traffic associated with the Chelmsford Local Plan) imminently; we are due to review that and will come back with comments in due course. AECOM therefore **recommend that microsimulation modelling is used to assess the impacts at A12 Junction 19 (TN01 R4).**

8.38. The qualitative assessment within the TIA assesses the Level of Service (LOS) for each approach arm at the interchange, as provided by the A12 DCO modelling, alongside entry and circulatory flows from the latest LPRPS strategic VISUM modelling. The LOS of a junction is based on average vehicle delay and serves as a guide for the operational efficiency of the junction. The results of the qualitative assessment are shown in Table 13.

8.39. The results presented in Table 13 indicate the A131 and A138 approach arms at Generals Lane Roundabout will likely experience greater pressure due to an increase in development trips from the Local Plan.

8.40. In the strategic modelling, the A131 approach shows notably higher PM peak hour traffic volumes and an increase in circulatory flows, which would worsen the LOS from its current D rating. Similarly, the A138 approach arm shows a smaller increase in entry flows but a significant rise in circulatory traffic, also placing additional strain on the arm, which also has a LOS of D in the VISSIM modelling.

8.41. The Beaulieu Parkway approach arm is also shown to be impacted, especially during the PM peak, with a notable increase in circulatory flows that pushes the LOS above the current 'C' category.

Table 13: Summary of A12 Junction 19 qualitative assessment

			A12 J19 VISSIM Outputs - 2042 Future Operation with Scheme (A12 DCO Modelling)				A12 J19 VISUM Outputs - 2041 Local Plan Review Pre-Submission Scenario							
			AM		PM		Approach arm flows				Circulatory flows infront of approach arms			
							Local Plan Review Scenario		Change from Baseline		Local Plan Review Scenario		Change in circulatory flows	
Junction	Approach Arms	Control	LOS	Vehicles	LOS	Vehicles	AM	PM	AM	PM	AM	PM	AM	PM
Generals Lane Roundabout	Beaulieu Parkway	Signalised	C	1418	C	1680	1647	1700	-13	1	553	775	84	233
	A12 overbridge	Signalised	C	1756	D	1102	2558	1459	150	188	926	713	17	18
	A131	Signalised	D	1487	D	1827	1004	1438	44	156	2570	1560	129	117
	A138	Signalised	D	501	D	587	655	799	39	41	1416	1638	90	182
	A138 slip (to A12 NB)	Signalised	A	1133	B	2012	1269	1239	37	9	not on circulatory	not on circulatory		
	A131 slip from bridge	Signalised	A	898	A	745	697	409	47	23	not on circulatory	not on circulatory		
	Total	**Signalised**	**C**	**7192**	**C**	**7953**	**7830**	**7044**						
Generals Farm Roundabout	A12 SB off-slip	Signalised	D	2170	D	1598	2119	1192	11	59	1103	1459	51	221
	B1137 Main Road	Signalised	D	710	D	299	587	407	54	37	763	906	17	219
	A12 overbridge	Signalised	C	1295	B	1713	1103	1459	51	221	0	0	0	0
	Hammonds Farm access	TBC	-	-	-	-	309	180	not in baseline	not in baseline	1249	1038	not in baseline	not in baseline
	Total	**Signalised**	**D**	**4174**	**C**	**3610**	**4118**	**3238**						
Drovers Way Roundabout	A131 (N)	Signalised	D	953	C	831	914	549	38	26	174	54	-2	0
	A12 NB off-slip	Signalised	C	1551	C	1409	987	1243	63	132	1088	600	37	24
	Winsford Way	Priority	C	137	D	323	27	91	0	1	1981	1817	100	155
	A131 Colchester Road	Priority	C	643	C	891	694	803	16	46	484	689	27	110
	Drovers Way	Priority	C	122	C	136	no flows	no flows			1178	1492	43	156
	Boreham Services	Priority	B	124	C	137	no flows	no flows			1178	1492	43	156
	Total	**Signalised**	**C**	**3530**	**C**	**3725**	**2622**	**2686**						

9. Local Junction Modelling – Without A12 DCO Sensitivity Test

9.1. Due to the uncertainty surrounding the proposed A12 Chelmsford to A120 widening scheme, it was recommended by National Highways that a sensitivity test should be undertaken whereby the A12 widening scheme has not been included in the 2041 future year baseline within the strategic VISUM model.

9.2. Local junction modelling was then undertaken at the A12 junctions using the outputs from the VISUM sensitivity test. The models used for the Without A12 DCO sensitivity test are the same as those reviewed previously.

A12 Junction 15

9.3. The results of the ARCADY modelling undertaken for A12 Junction 15 (Without A12 DCO scheme) are shown in Table 14.

Table 14: A12 Junction 15 ARCADY Modelling results (without A12 DCO)

Arm	AM Peak			PM Peak		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
2041 Forecast – Baseline (Without A12 DCO)						
North Roundabout						
Three Mile Hill	3.2	6.5	0.76	3.1	6.6	0.75
A414	1.4	5.37	0.59	0.8	3.92	0.44
A12 NB off-slip	1.2	3.79	0.52	0.8	2.85	0.43
Golf Club	0	0	0	0	0	0
South Roundabout						
A414	2.9	7.27	0.74	1.6	4.8	0.60
A12 SB off-slip	14.3	59.28	0.96	0.8	5.79	0.44
B1002	6.8	58.92	0.90	1.2	10.08	0.54
2041 Forecast – With Local Plan (Without A12 DCO)						
North Roundabout						
Three Mile Hill	3.4	6.87	0.77	3.0	6.51	0.75
A414	1.5	5.46	0.59	0.8	3.96	0.44
A12 NB off-slip	1.2	3.82	0.52	0.8	2.89	0.44
Golf Club	0	0	0	0	0	0
South Roundabout						
A414	3.1	7.71	0.76	1.5	4.73	0.60
A12 SB off-slip	17.8	71.83	0.98	0.8	5.75	0.44
B1002	8.7	74.2	0.94	1.2	10.15	0.54

9.4. The results presented in Table 14 indicate that, without the A12 DCO scheme, the RFC of the A12 southbound off-slip in the 2041 Baseline scenario (AM peak) is forecast to be marginally lower than if the A12 DCO scheme is constructed (0.96 vs 0.97). Additionally, the queue length forecast on this arm is shorter in the without A12 DCO scenario compared to the with A12 DCO scenario (14.3 PCU vs 16 PCU).

9.5. In the With Local Plan scenario, the RFC of the A12 southbound off-slip in the AM peak is the same (0.98) in both the without A12 DCO scenario and with A12 DCO scenario. The forecast queue is similar across both scenarios, with a forecast queue length of 17.8 PCU in the Without A12 DCO scenario and 18 PCU in the With A12 DCO scenario.

9.6. In the PM peak, all arms of the junction are forecast to operate within capacity across all scenarios.

A12 Junction 16

9.7. The results of the ARCADY modelling undertaken for A12 Junction 16 (Without A12 DCO scheme) are shown in Table 15.

Table 15: A12 Junction 16 ARCADY Modelling results (without A12 DCO)

Arm	AM Peak			PM Peak		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
2041 Forecast – Baseline (Without A12 DCO)						
North Roundabout						
B1007 (N)	128.3	529.13	1.29	27.1	143.22	1.05
B1007 (S)	2.0	10.39	0.67	5.4	22.49	0.85
A12 NB off-slip	0.4	2.67	0.29	1.3	4.84	0.57
South Roundabout						
B1007 (N)	26.1	74.85	1.00	13.7	44.03	0.95
B1007 (S)	0.6	4.26	0.37	0.5	4.01	0.35
A12 SB off-slip	4.5	16.56	0.83	4.2	13.68	0.81
2041 Forecast – With Local Plan (Without A12 DCO)						
North Roundabout						
B1007 (N)	135.7	567.89	1.31	27.3	146.24	1.05
B1007 (S)	2.0	10.45	0.68	5.8	24.03	0.86
A12 NB off-slip	0.4	2.69	0.29	1.4	5	0.58
South Roundabout						
B1007 (N)	29.7	82.77	1.01	13.7	44.03	0.95
B1007 (S)	0.7	4.51	0.40	0.6	4.09	0.36
A12 SB off-slip	4.5	16.73	0.83	4.4	14.43	0.82

9.8. The results presented in Table 15 indicate that, without the A12 DCO scheme, the RFC of the B1007 (N) arm of the south roundabout in the 2041 Baseline scenario (AM peak) is forecast to be marginally lower than if the A12 DCO scheme is constructed (1.00 vs 1.01). Additionally, the queue length forecast on this arm is shorter in the "Without A12 DCO" scenario compared to the "With A12 DCO" scenario (26 PCU vs 29 PCU). It is noted that a queue of 26 PCU would still be longer than the link and would extend into the north roundabout.

9.9. In the PM peak, the RFCs are forecast in the "Without A12 DCO" scenario are the same as those in the "With A12 DCO" scenario. The queues reported for the "Without A12 DCO" scenario are slightly shorter than those reported for the "With A12 DCO" scenario, although the differences are minimal and are not likely to have a material impact on the operation of the SRN.

9.10. In the "With Local Plan" scenario, the RFC of the B1007 (N) arm of the south roundabout in the 2041 Baseline scenario (AM peak) is forecast to be marginally lower than if the A12 DCO scheme is constructed (1.01 vs 1.02). Additionally, the queue length forecast on this arm is shorter in the "Without A12 DCO" scenario compared to the "With A12 DCO" scenario (30 PCU vs 34 PCU).

A12 Junction 17

9.11. The results of the LinSig modelling undertaken for A12 Junction 17 (Without A12 DCO scheme) are shown in Table 16.

Table 16: A12 Junction 17 LinSig Modelling results (without A12 DCO)

Arm	AM Peak			PM Peak		
	MMQ (PCU)	Delay (s/PCU)	DoS	MMQ (PCU)	Delay (s/PCU)	DoS
2041 Forecast – Baseline (Without A12 DCO)						
A12 (SB off-slip)	17.6	20.6	0.82	16.2	22.9	0.80
Southend Rd (SE)	2.4	30.4	0.66	58.8	387.9	1.23
A130	590.3	769.2	1.65	513.6	746.6	1.62
A12 (NB off-Slip)	50.9	566.7	1.36	99	868.8	1.75
A1114 Southend Rd (NW)	166.1	801.0	1.67	145.1	689.0	1.52
2041 Forecast – With Local Plan (Without A12 DCO)						
A12 (SB off-slip)	18	20.9	0.82	16.3	23.2	0.81
Southend Rd (SE)	3	36.9	0.74	48.9	4.0	1.25
A130	583.7	768.3	1.65	531.9	776	1.66
A12 (NB off-Slip)	49.9	588.9	1.38	92.9	837.4	1.70
A1114 Southend Rd (NW)	171.5	816.8	1.69	166	685.1	1.52

9.12. The results presented in Table 16 for the "Without A12 DCO" scenario at A12 Junction 17 are similar to those presented in Table 10 for the "With A12 DCO" scenario. Due to the significant capacity issues experienced at this junction, the minor differences reported between the "Without A12 DCO" and "With A12 DCO" scenarios is unlikely to have a severe impact at A12 Junction 17.

9.13. As noted above, the TIA acknowledges that it was not possible to model an accurate representation of journey time delay at A12 J17 Howe Green in the base year LinSig models, as the modelling software was unable to accurately represent the impact of peak hour queuing on the A12 northbound on-slip extending back through the junction; therefore 2041 forecast junction model results and analysis of Local Plan development impact at the two junctions will require caveating.

9.14. NH are aware that third party microsimulation modelling work of A12 Junctions 17-19 commenced in 2024 in consultation with National Highways, Essex Highways and CCC in order to assess in detail the impact of local plan traffic on this area of the network. National Highways have recently agreed the base model including methodology and baseline data inputs. National Highways expect to receive the future scenario model (including traffic associated with the Chelmsford Local Plan) imminently; we are due to review that and will come back with comments in due course. AECOM therefore **recommend that microsimulation modelling is used to assess the impacts at A12 Junction 17 (TN01 R8).**

A12 Junction 18

9.15. The results of the ARCADY modelling undertaken for A12 Junction 18 (Without A12 DCO scheme) are shown in Table 17.

Table 17: A12 Junction 18 ARCADY Modelling results (without A12 DCO)

Arm	AM Peak			PM Peak		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
2041 Forecast – Baseline (Without A12 DCO)						
East Roundabout						
A12 J18 SB off-slip	1.5	8.0	0.59	3.9	21.1	0.80
Hammonds Road	4.1	23.5	0.81	1	12.0	0.50
A414 Maldon Road E	9.3	22.7	0.91	1.5	4.7	0.59
A414 Maldon Road bridge	1	3.6	0.50	3.3	7.6	0.77
West Roundabout						
A414 Maldon Road bridge	19.1	45.3	0.97	4	11.4	0.81
A12 J18 NB off-slip	1.2	7.7	0.55	2.4	9.9	0.70
Maldon Road W	2.2	9.2	0.69	35	102	1.03
2041 Forecast - With Local Plan (Without A12 DCO)						
East Roundabout						
A12 J18 SB off-slip	2	10.1	0.67	31.9	127.6	1.05
Hammonds Road	63.3	228.0	1.14	3.9	27.0	0.81
A414 Maldon Road E	9.8	24.6	0.92	2.2	6.5	0.68
A414 Maldon Road bridge	1.3	4.0	0.56	4.7	10.2	0.83
West Roundabout						
A414 Maldon Road bridge	65.6	123.5	1.06	10.6	26.9	0.93
A12 J18 NB off-slip	1.3	8.2	0.55	5.2	20.9	0.84
Maldon Road W	3.3	12.7	0.77	105.7	288.7	1.20

9.16. The results presented in Table 17 indicate that there is likely to be an impact at A12 Junction 18 should the A12 DCO scheme not progress. The impacts are as follows:

- 2041 Baseline:
    - Increased queue length and higher RFCs on the A12 off-slips in the AM peak;
    - Increased RFC and queue length on the overbridge westbound in the AM peak which is able to be contained within the existing infrastructure however with minimal room to spare;
    - Generally, a slight decrease in the RFCs and queue lengths in the PM peak.
- 2041 With Local Plan:
    - Increased queue length and higher RFC on the A12 southbound off-slip in the AM peak;
    - Decreased queue length and lower RFC on the A12 northbound off-slip in the AM peak;
    - Increased RFC and queue length on the overbridge westbound in the AM peak;
    - Generally, a slight decrease in the RFCs and queue lengths in the PM peak.

9.17. The primary concern for National Highways, should the A12 DCO scheme not progress, is the extended queue length forecast on the overbridge westbound in the AM peak as this could extend back into the eastern roundabout even without the addition of the Local Plan traffic. **The modelling should be updated to account for this.**

9.18. As noted above, NH are aware that third party microsimulation modelling work of A12 Junctions 17-19 commenced in 2024 in consultation with National Highways, Essex Highways and CCC in order to assess in detail the impact of local plan traffic on this area of the network. National Highways have recently agreed the base model including methodology and baseline data inputs. National Highways expect to receive the future scenario model (including traffic associated with the Chelmsford Local Plan) imminently; we are due to review that and will come back with comments in due course. AECOM therefore **recommend that microsimulation modelling is used to assess the impacts at A12 Junction 18 (TN01 R6).**

9.19. Due to the possibility of interaction between the entrance of the Sandon Park and Ride and A12 Junction 18, the "Without A12 DCO" sensitivity test has also been assessed at the Sandon Park and Ride entrance junction. The results of this junction capacity assessment are shown in Table 18.

Table 18: Sandon Park and Ride Entrance Junction LinSig Modelling Results (Without A12 DCO)

Arm	AM Peak			PM Peak		
	MMQ (PCU)	Delay (s/PCU)	DoS	MMQ (PCU)	Delay (s/PCU)	DoS
2041 Forecast – Baseline (Without A12 DCO)						
Sandon Park and Ride	0	0	0	5.5	30.4	0.66
Maldon Road (E)	5.6	8.2	0.64	0.6	2.0	0.54
Maldon Road (W)	6.6	15.7	0.73	5.9	15.8	0.66
2041 Forecast – With Local Plan (Without A12 DCO)						
Sandon Park and Ride	0	0	0	5.8	31.4	0.68
Maldon Road (E)	5.5	8.1	0.67	0.6	2.2	0.57
Maldon Road (W)	7.7	16.7	0.79	6.2	16.3	0.69

9.20. The results presented in Table 18 indicate that, in the AM Peak, whilst the RFC of the Maldon Road (E) arm of the junction changes, the mean max queue (MMQ) remains steady. The queue length is such that it would not likely extend back to the west roundabout of A12 Junction 18 in both the with and without Local Plan scenarios, for both peaks.

A12 Junction 19

9.21. AECOM previously recommended that a sensitivity test should be undertaken, where the design of A12 Junction 19 remains as it is currently in the 2041 model scenarios, to test the impact of the proposed Local Plan developments on the current infrastructure.

9.22. In response, the TIA states that, due to the preliminary findings of an AECOM study (yet to be finalised) indicating that the current layout of A12 Junction 19 would not have sufficient capacity to accommodate the forecast growth, the performance of the junction has not been assessed in a "Without A12 DCO" scenario.

9.23. As noted above, NH are aware that third party microsimulation modelling work of A12 Junctions 17-19 commenced in 2024 in consultation with National Highways, Essex Highways and CCC in order to assess in detail the impact of local plan traffic on this area of the network. National Highways have recently agreed the base model including methodology and baseline data inputs. National Highways expect to receive the future scenario model (including traffic associated with the Chelmsford Local Plan) imminently; we are due to review that and will come back with comments in due course. AECOM therefore **recommend that microsimulation modelling is used to assess the impacts at A12 Junction 19 (TN01 R4).**

10. A12 Merge / Diverge Assessment

10.1. In TN01, AECOM recommended that a merge / diverge assessment should be undertaken for the SRN junctions within Chelmsford. In response, a merge / diverge assessment has been undertaken for all on- and off-slips at A12 Junctions 15 to 19. As such, **AECOM consider recommendation TN01_R9 to be resolved.**

10.2. The merge / diverge assessment has been undertaken for the 2041 Baseline (with A12 DCO) scenario, 2041 Local Plan (with A12 DCO) scenario, and 2041 Local Plan (without A12 DCO) scenario. A 2041 Baseline (without A12 DCO) scenario has not been assessed.

10.3. Table 19 shows a comparison of the merge / diverge assessment for the 2041 Baseline (with A12 DCO) and 2041 Local Plan (with A12 DCO) scenarios. Highlighted cells indicate where the recommended junction layout or number of lanes is different to the existing layout.

Table 19: Merge / diverge assessment of SRN junctions (Table 5-4 of the TIA)[1]

		Baseline Scenario			Local Plan Review Pre-Submission Scenario			Change from Baseline Assessment
A12 Junction	Slip Rd	Recommended Layout	Recommended No. of Lanes		Recommended Layout	Recommended No. of Lanes		
			Upstream	Downstream		Upstream	Downstream	
J15	NB On slip	D*	2	3*	D*	2	3*	No change
	NB Off slip	C	3	2	C	3	2	No change
	SB On slip	E	2	3	E	2	3	No change
	SB Off slip	A	2	2	A	2	2	No change
J16	NB On slip	A	2	2	A	2	2	No change
	NB Off slip	C**	3**	2	C**	3**	2	No change
	SB On slip	A	2	2	A	2	2	No change
	SB Off slip	A	2	2	A	2	2	No change
J17	NB On slip	E	2	3	E	2	3	No change
	NB Off slip	A	2	2	A	2	2	No change
	SB On slip	A	2	2	A	2	2	No change
	SB Off slip	D	3	2	D	3	2	No change
J18	NB On slip	D	2	3	D	2	3	No change
	NB Off slip	C	3	2	C	3	2	No change
	SB On slip	A	3	3	A	3	3	No change
	SB Off slip	A	3	3	A	3	3	No change
J19	NB On slip - Short	A	2	2	A	2	2	No change
	NB On-slip - Long	E	2	3	E	2	3	No change
	NB Off slip	C**	3**	2	C	3	2	No change
	SB On slip	D	2	3	D	2	3	No change
	SB Off slip	E***	4***	2	E***	4***	2	No change

10.4. The results of the merge / diverge assessment undertaken for the 2041 Local Plan (without A12 DCO) scenario are shown in Table 20. AECOM note that the assessment for the 2041 Local Plan (without A12 DCO) scenario provides the same results as that for the 2041 Local Plan (with A12 DCO) scenario for A12 Junctions 15 to 18.

[1] *Borderline B; **Borderline A; ***Borderline D (Essex Highways)

Table 20: Merge / diverge assessment of SRN junctions (2041 Local Plan (without A12 DCO) scenario)

Junction	Slip Road	Recommended Layout	Recommended no. of lanes	
			Upstream	Downstream
J15	NB On slip	D	2	3
	NB Off slip	C	3	2
	SB On slip	E	2	3
	SB Off slip	A	2	2
J16	NB On slip	A	2	2
	NB Off slip	C	3	2
	SB On slip	A	2	2
	SB Off slip	A	2	2
J17	NB On slip	E	2	3
	NB Off slip	A	2	2
	SB On slip	A	2	2
	SB Off slip	D	3	2
J18	NB On slip	D	2	3
	NB Off slip	C	3	2
	SB On slip	A	3	3
	SB Off slip	A	3	3
J19	NB On slip	E	2	3
	NB Off slip	C	3	2
	SB On slip	D	2	3
	SB Off slip	C	3	2

10.5. AECOM have undertaken a review of the results of the merge / diverge assessments undertaken and found the same recommended layouts as reported in the TIA.

11. Supporting Technical Notes

11.1. AECOM have undertaken a review of the supporting technical notes included as appendices to the TIA. The supporting technical notes are titled as follows:

- Appendix A1: TEMPro V7.2 and V8.0 Background Growth Comparison;
- Appendix A2: Pre and Post Covid-19 Traffic Flow Comparison; and
- Appendix A3: Low, Core and High Growth Scenarios.

11.2. AECOM have previously reviewed these technical notes, with the review documented in AECOM's TN01. The review undertaken as part of this task was to determine whether any changes had been made between the versions reviewed previously and the versions included as appendices to the TIA.

11.3. The review of the supporting technical notes found that minor formatting changes have occurred; however, the technical content of all three technical notes is the same as the previously reviewed documents.

12. Recommendations from TN01

12.1. AECOM note that some of the recommendations made in TN01 have been able to be resolved, whilst some remain outstanding. This is documented in Table 21.

Table 21: Status of AECOM's TN01 and TN02 recommendations

Recommendation	Status
TN01_R1: A junction capacity assessment scenario should be tested whereby the A12 proposals are not in place in the future year for each of the SRN junctions within the CCC area (paragraph 3.9 and 6.10)	This recommendation is now considered to have been **resolved**.
TN01_R2: Separate trip rates should be used for different development contexts, such as whether the development is a small or large development, and whether the development is located in an urban or rural area (paragraph 3.15)	This recommendation is now considered to have been **resolved**.
TN01_R3: Additional junction modelling should be considered at A12 Junctions 15 and 16 so that the impacts of the additional Local Plan traffic can be fully understood at these locations (paragraph 3.33)	This recommendation is now considered to have been **resolved**.
TN01_R4: A microsimulation model (VISSIM, or similar) should be used to model the impacts at A12 Junction 19 (paragraph 4.8)	NH are aware that third party microsimulation modelling work of A12 Junctions 17-19 commenced in 2024 in consultation with National Highways, Essex Highways and CCC in order to assess in detail the impact of local plan traffic on this area of the network. National Highways have recently agreed the base model including methodology and baseline data inputs. National Highways expect to receive the future scenario model (including traffic associated with the Chelmsford Local Plan) imminently; we are due to review that and will come back with comments in due course. **AECOM therefore recommend that microsimulation modelling is used to assess the impacts at A12 Junction 19.**
TN01_R5: Any growth factors used to growth traffic flows at SRN junctions should be presented (paragraph 4.10)	Traffic counts have been undertaken at this location and therefore this is now considered to have been **resolved**.
TN01_R6: The park and ride junction should be modelled using LinSig, or, ideally, the set of junctions (both A12 Junction 18 and the park and ride access) modelled using microsimulation (paragraph 4.11)	This recommendation is now considered to have been **resolved**.
TN01_R7: Evidence should be provided that shows the suitability of the synthetic demand matrices for A12 Junction 17 (paragraph 4.13)	Traffic counts have been undertaken at this location and therefore this is now considered to have been **resolved**.
TN01_R8: A microsimulation model (VISSIM, or similar) should be used to model the impacts at A12 Junction 17 (paragraph 4.14)	NH are aware that third party microsimulation modelling work of A12 Junctions 17-19 commenced in 2024 in consultation with National Highways, Essex Highways and CCC in order to assess in detail the impact of local plan

Recommendation	Status
	traffic on this area of the network. National Highways have recently agreed the base model including methodology and baseline data inputs. National Highways expect to receive the future scenario model (including traffic associated with the Chelmsford Local Plan) imminently; we are due to review that and will come back with comments in due course. **AECOM therefore recommend that microsimulation modelling is used to assess the impacts at A12 Junction 17.**
TN01_R9: Merge/diverge capacity assessments should be undertaken at all slip roads affected by an increase in traffic flows (at A12 Junctions 15-19) (paragraph 4.15)	This recommendation is now considered to have been **resolved**.
TN01_R10: Reference should be made to DfT Circular 01/2022 'The Strategic Road Network and the Delivery of Sustainable Development', alongside Highways England's (now National Highways) 'The Strategic Road Network: Planning for the Future (A guide to working with Highways England on planning matters)' (paragraph 2.6)	This recommendation is considered to remain outstanding and is therefore **reiterated**.
TN01_R11: The discrepancy between the two values of population growth presented in the Preferred Options consultation document should be clarified (paragraph 2.7)	This recommendation is now considered to have been **resolved**.
TN01_R12: It should be clarified whether any post-opening traffic data has been collected at A12 Junction 19 for consideration within any future modelling (paragraph 4.9)	This recommendation is considered to remain outstanding at present and is therefore **reiterated (unless the modelling is superseded by the microsimulation modelling currently being undertaken by a third party)**.
TN01_R13: Evidence from longer-term sources of traffic count data should be provided to show that the traffic flows gathered during this time can be accepted as representative of non-Covid traffic data (paragraph 4.12)	Traffic counts have been undertaken at this location and therefore this is now considered to have been **resolved**.
TN01_R14: The 'lane simulation' function within ARCADY would be an appropriate tool to use to resolve the issue of uneven lane utilisation (paragraph 4.17)	EH notes that the Barbara Chard method had been used to address concerns around uneven lane usage. This is considered to be appropriate and this recommendation is, therefore, considered to have been **resolved**.
TN01_R15: Evidence should be provided to show that the difference between the modelled delay and the observed delay at A12 Junction 18 will not result in an under prediction of queues on the A12 Junction 18 northbound off-slip (paragraph 4.18)	This recommendation is now considered to have been **resolved**.
TN01_R16: Consideration should be given to the geometric measurements used within the model of A12 Junction 18 (paragraph 5.9)	This recommendation is now considered to have been **resolved**.
TN01_R17: The IDP should be updated to reflect the preferred option strategy (paragraph 7.4)	It is noted that the IDP is a 'live' document and will be updated as the Local Plan develops. It is understood that the IDP will be updated in the summer, ahead of submission. This

Recommendation	Status
	recommendation is therefore considered to remain outstanding at this stage and is therefore **reiterated**.
TN01_R18: Any mitigation measures identified on the NH network as a result of the Local Plan evidence base work should be included within the IDP as it evolves (paragraph 7.11)	It is noted that the IDP is a 'live' document and will be updated as the Local Plan develops. It is understood that the IDP will be updated in the summer, ahead of submission. This recommendation is therefore considered to remain outstanding at this stage and is therefore **reiterated**.
TN01_R19: The Infrastructure Delivery Plan Preferred Options Report should be made available to National Highways once it is available (paragraph 8.4)	It is noted that the IDP is a 'live' document and will be updated as the Local Plan develops. It is understood that the IDP will be updated in the summer, ahead of submission. This recommendation is therefore considered to remain outstanding at this stage and is therefore **reiterated**.

13. Conclusion

13.1. AECOM have prepared this Technical Note (TN02) on behalf of National Highways to document a review of the Regulation 19 consultation documents associated with the emerging Chelmsford Local Plan Review.

13.2. AECOM's main comments and recommendations are presented in bold and underlined text throughout the note. Recommendations that are likely to be critical to agreement of the Local Plan are highlighted **red.** Recommendations that are considered important but not critical to agreement of the Local Plan are highlighted in **amber.** Recommendations from TN01 that are considered to have been resolved are highlighted in **green.**

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Please call 01245 606330
Spatial Planning Services
Directorate for Sustainable Communities
Chelmsford City Council
Civic Centre
Duke Street
Chelmsford
Essex
CM1 1JE

Telephone 01245 606330
planning.policy@chelmsford.gov.uk
www.chelmsford.gov.uk

Document published by
Spatial Planning Services

Chelmsford City Council