

**BLOOR HOMES EASTERN LTD**

**COLCHESTER EiP: TIPTREE TOPIC PAPER – REVIEW  
OF COTTEE TRANSPORT REPORT**

**LAND NORTH OF TIPTREE  
ESSEX**

**TECHNICAL NOTE**

**REPORT REF.  
2102970-01**

**April 2021**

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## Contents

	Page
1. Introduction .....	1
2. Review of Cottee report .....	1
3. Summary, Conclusions and Recommendations.....	7

## Document Control Sheet

REV	ISSUE PURPOSE	AUTHOR	CHECKED	APPROVED	DATE
-	Draft for Review	ML	DH	ML	20/04/2021
	Final	ML	DH 	ML 	23/04/21

## Distribution

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## **1. Introduction**

- 1.1. Ardent Consulting Engineers (ACE) is retained by Bloor Homes Eastern Ltd to advise on the highways and transportation aspects relating to the proposed development of land at Maldon Road, Tiptree, Essex.
- 1.2. The local planning authority is Colchester Borough Council (CBC), while the local highway authority is Essex County Council (ECC).
- 1.3. Highways England (HE) is the highway authority for the dual carriageway A12 trunk road, which passes about 2km to the north west of Tiptree and is proposed to be widened to 3 lanes in each direction, with a combination of online widening (e.g. along the Kelvedon/Feering Bypass) and new sections of offline alignment (e.g. linking the Kelvedon and Witham Bypasses, avoiding Rivenhall End).
- 1.4. This Technical Note has been prepared to review the report prepared by Cottee Transport Planning entitled *Review of Transport Issues raised by the Tiptree Neighbourhood Plan* (January 2021), which was appended to *Topic Paper 6: Updates relating to Tiptree* prepared by CBC for the Colchester Local Plan Examination in Public (EiP). The Cottee report was commissioned by CBC.
- 1.5. Following this introduction, the remainder of this report is structured as follows:
  - **Section 2.0** provides a synopsis and review of the Cottee report, and the Jacobs report for the A12 J24 that informs part of it; and
  - **Section 3.0** provides a summary, conclusions and recommendations.

## **2. Review of Cottee report**

- 2.1. The Cottee report considers the expected trip generation of proposed residential allocations on the northern edge of Tiptree, providing a total of 625 dwellings, and proposed in the Neighbourhood Plan (NP) as follows: -
  - Highland Nursery: 220 dwellings (plus 6,000m<sup>2</sup> of employment);
  - Elms Farm: 230 dwellings; and

- Tower End: 175 dwellings.
- 2.2. In conjunction with the development on these 3 NP sites, a new link road, circa 1.3km long, would be provided between the B1023 Kelvedon Road and the B1022 Colchester Road around the northern edge of the village, parallel to Oak Road. Cottee suggest that in the interim, unspecified measures would be installed on Oak Road to prevent existing “rat-running” traffic from using this route, although the volume of such traffic is not quantified, with no surveys having been undertaken to identify this. Such measures would then increase the volume of traffic through the B1022 Maypole Road/B1023 Church Road//Maldon Road/Kelvedon Road double mini roundabout until the new link was completed.
- 2.3. Weekday peak hour vehicle trip generation has been based on two-way trip rates of 0.6 per dwelling, which is reasonable. This gives a total of 375 vehicle movements for the residential elements, plus a further 30 for the employment element, so 405 in total.
- 2.4. Cottee has derived trip distribution from 2011 Census Travel to Work Origin-Destination (O-D) data for the resident population of Tiptree. This is set out in **Table 2-1** below, together with that derived by ACE in our July 2019 Transport Assessment (TA) for the 2019 application for the scheme at Maldon Road, which considered trips by journey purpose, with different distributions applied to work, education, leisure and shopping trips, based on the existing road network. This has been modified to reassign trips predicted to use Braxted Park Road with the existing road network to access the A12 at Rivenhall to Inworth Road.
- 2.5. We have also set out the distribution adopted in the August 2018 TA prepared by Croft Transport Solutions for the planning application submitted by Gladman Ltd for the residential development of up to 200 dwellings at Barbrook Lane, Tiptree (consented upon appeal). This was derived from existing traffic flows through the village, and so also did not take account of the new J24. The Croft TA does not provide details of distribution beyond the village so some of the trips to/from the south of Tiptree may be expected to reassign (from Braxted Park Road to Inworth Road), although it is likely that at least some trips between the north of the village and the A12 south west already use the B1023 route. The Croft distribution also does not show any trips confined within the village centre e.g. to shops and schools.

Link	Distribution						
	Cottee	Bloor scheme (ACE)			Gladman scheme (Croft)		
		Weekday am peak	Weekday pm peak	Average	Weekday am peak	Weekday pm peak	Average
B1022 north (Maypole Road/Colchester Road)	20%	25%	7%	16%	18%	27%	22%
B1023 west (Kelvedon Road/Inworth Road)	60%	45%	53%	49%	35%	36%	36%
Centre (Church Road)	5%	13%	17%	15%	-	-	-
B1023 south (Factory Hill)	-	6%	8%	7%	-	-	-
B1022 south (Maldon Road)	15%	11%	15%	13%	47%	37%	42%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

**Table 2-1: Comparison of assumed trip distribution (source: Croft/ACE)**

- 2.6. **Table 2-1** indicates that the two approaches give broadly similar results, although the Cottee distribution possibly under-estimates the proportion of traffic to/from the village centre (e.g. to Asda, Tesco and St Luke's Primary School on Church Road), while the Croft distribution perhaps over-estimates that to/from Maldon Road.
- 2.7. Using the Cottee distribution gives approximately 240 two-way trips along the B1023 Inworth Road/Kelvedon Road as a result of the development on the 3 NP sites in each weekday peak hour.

### **Jacobs report and A12 J24 SATURN modelling**

- 2.8. The Cottee report refers to the Jacobs report *J24 Junction Strategy Technical Note* prepared for HE for the proposed new J24 on the widened A12 alignment, to the south east of Feering, on Inworth Road. This was appended to the HE report *A12 Chelmsford to A120 widening: Scheme Assessment Report Addendum – 2020*.
- 2.9. Cottee refer to the SATURN congested assignment modelling undertaken for the preferred J24 option (Option F) for a future assessment year of 2042. It is unclear from the Jacobs report as to the level of future development assumed in Tiptree.

The SATURN modelling predicted an increase of 1,224 Passenger Car Units (PCUs) in the weekday morning peak hour, and 826 in the evening peak hour (two-way), on the B1023 Inworth Road/Kelvedon Road between the new A12 J24 and Tiptree compared to the Do Nothing (Base) Case with the existing road network and the same development assumptions. This gives two-way flows of around 2,000 vehicles per hour on the B1023, which Cottee notes would be very unlikely to be sustainable as this is around the capacity of such a link, a view with which we concur.

- 2.10. Cottee consider that these modelled flows include traffic from the 3 NP sites, although this is unclear. The SATURN model for the A120 scheme was developed by Jacobs in 2016 using traffic survey data collected in April 2016. The National Trip Ends Model (NTEM) v7.2 assumes an increase of only 666 households in Census Middle Super Output Area (MSOA) Colchester 020 (which covers Tiptree) between 2016 and 2042.
- 2.11. This compares to the 200 on the Barbrook Lane site plus the 625 on the 3 NP sites, together with those consented but not built in 2016 on the Jam Factory (244 dwellings), Grange Road (103) and land off Chapel Lane (39, Berryfield Close) sites. The SATURN modelling may well therefore under-estimate the scale of development in Tiptree and this needs to be clarified, as well as the assumed locations of development within the village as this will affect the route assignment of trips to/from the A12 in the Base and J24 Option F Case model runs.
- 2.12. The SATURN modelling also predicted respective decreases of 332 and 299 two-way movements on Braxted Park Road between Rivenhall End and the B1022 south west of Tiptree in each peak hour. This suggests that traffic between London/Chelmsford and Tiptree is expected to reassign from the current route via Braxted Park Road and the B1021 Maldon Road onto the new A12, J24 and Inworth Road. It is most likely to be to/from the southern end of the village, with that to/from the northern end more likely to already use the Inworth Road route to travel to/from the A12 at Kelvedon (J23). Therefore this would be traffic not currently travelling through the B1022/B1023 double mini roundabout.
- 2.13. Some of the increase on Inworth Road is also presumably due to development within Tiptree. How much of the increase is due to traffic between the area south of

Colchester and the A12 south west reassigning to the new J24 is unclear. Select Link Analysis should be undertaken using the model to identify this.

2.14. Jacobs also refer to the potential new A12 J23 with the realigned A120, which is proposed to be diverted south of its current alignment to the west of Braintree. J24 Option F is expected to have a worst-case (i.e. minimum) weaving length from J23 of 1.2km; this compares to the minimum requirement of 1km for an all-purpose rural trunk road as required by the *Design Manual for Roads and Bridges (CD122)*. If the A120 scheme is confirmed, the A12 Junction 24 Option F would not preclude the provision of the new J23 with the A120 as it allows for more than this minimum requirement.

2.15. However, as the weaving section in this scenario between J23 and J24 is less than 2km, a weaving section lanes calculation check would be required, which is based on the number of lanes available and the predicted traffic flows. These are stated to not yet be available, so there is a risk that once they have been derived, the calculation may show that a 1.2km length is inadequate, which would require the A120 scheme to seek a "Departure from Standard" to avoid the need to provide a fourth lane on the A12.

2.16. Jacobs considered that if this risk transpires, a Departure would be considered acceptable here, but until this can be confirmed, there remains a risk that a fourth lane between J23 and J24 would need to be included in the A120 scheme scope. Due to the expectation that a Departure would be granted, if this risk does transpire and considering the number of events that would have to occur for it to materialise, Jacobs consider this risk to be "low/medium". It is unclear whether the requirement to provide a fourth lane would result in J24 not being provided at Inworth Lane and having to be located further east to achieve the weaving length required for a 3-lane arrangement.

### **Cottee assessment of traffic increases**

2.17. Cottee claim that with the new northern link road between the B1023 and the B1022, the increase in traffic through the double mini roundabout resulting from development on the 3 NP sites would be reduced from 200 to 41 two-way movements in each weekday peak hour. However we cannot reproduce this figure on the basis of 5% of traffic to/from the village centre and 15% to/from Maldon (from the

Croft/Gladman distribution), which gives an increase of 81 movements; adopting ACE's distribution would give increases 73 and 97 respectively in each weekday peak hour. Obviously this traffic would still pass through the double mini roundabout whether or not a northern link road was provided. Neither can we replicate Cottee's predicted increase in traffic on Kelvedon Road with the link road in place.

2.18. As Cottee acknowledge, further work is required to identify what the benefit of the northern link road would be in terms of the expected reduction in the volume of peak hour traffic from Oak Road and the double mini roundabout. It would not remove traffic travelling between the A12 and the southern part of Tiptree reassigning to J24 for example.

2.19. However, Cottee state that such work does not need to be undertaken until a planning application is submitted. We strongly disagree with this stance if the perceived benefits of the northern link road are to be in any way a determinant factor in policies within the emerging Development Plan. Without this additional work to inform policies, there is no justification for policies supporting delivery of this new link road, nor justification for a spatial strategy which is predicated on the benefits that link is assumed to achieve. From our past experience, we note ECC/Essex Highways routinely undertake studies for the various Districts within the County to ascertain the combined traffic impact of proposed site allocations, and also the impact of any new link roads such as that proposed here. It is far from clear why such work has not been undertaken in this instance.

2.20. Cottee also state that: *traffic from Tiptree and villages to the south and east should not be discouraged from using Braxted Park Road to access the A12 widening scheme at Rivenhall when it directly leads to an adverse impact on the amenity of Tiptree village centre and Inworth. It is recommended that this issue is raised with HE / ECC.* Traffic generated by development located in the south of the village would still use Braxted Park Road to access the A12 south west, and with the new J24, with such development, flows on this route would still be reduced compared to the Base Case.

### **Pedestrian linkages**

2.21. Existing pedestrian linkages to the north of Tiptree are poor. From the Highland Nursery and Tower End NP sites, there is no footway on the north side of the B1023 Kelvedon Road to the west of the Oak Road junction, while east of there is one on



the north side of the road only. Therefore pedestrians walking into the village centre must cross the road to the footway on the inside of a bend where visibility to the right/east when crossing from south to north is restricted. The footway to the east of the Oak Road junction running on the north side of the road alongside the Baynards School is narrow, with no scope for widening other than by acquiring land from the school.

2.22. There is also no footway provision on the section of Oak Road west of the Townsend Road junction, and on the northern section of Townsend Road itself north of the school. Furthermore, there is also no footway on New Road north of its junction with the B1022 Colchester Road/Oak Road so there would be no direct pedestrian route from the eastern part of the Elms Farm NP site into the village centre.

2.23. It is therefore unclear whether footways between the NP sites and the village centre could be improved to provide direct and safe pedestrian routes without requiring third party land outside the existing adopted highway.

### **3. Summary, Conclusions and Recommendations**

3.1. The Cottee report considers the expected trip generation of 3 residential allocations on the northern edge of Tiptree proposed in the NP, totalling 625 dwellings plus some employment use, together with a new link road between the B1023 Kelvedon Road and the B1022 Colchester Road around the northern edge of the village, running parallel to Oak Road.

3.2. The trip rates used by Cottee to derive the expected weekday peak hour trip generation of the 3 proposed NP sites are reasonable. However the trip distribution potentially over-estimates the proportion of trips travelling towards the A12 and under-estimates that travelling into the village centre.

3.3. It is unclear from the Jacobs J24 SATURN modelling work where the additional trips predicted to assign to the B1023 Inworth Road/Kelvedon Road are travelling to/from, and how many of these would assign to a new northern link road between the B1023 and B1022. Some are likely to be between the A12 and the southern part of Tiptree, with the modelling showing predicted reductions in flows on Braxted Park Road as a result of the new J24, and these would not reassign to the new link road.

It is also unclear what has been assumed in terms of the scale and location of future housing development within Tiptree for the SATURN modelling.

- 3.4. Further work should therefore be undertaken to inform the Local Plan to quantify this, in order to provide the requisite justification for proposed policies predicated on assumptions around the new link road and its benefits. To defer such work until a planning application(s) is submitted would be patently inappropriate, if the assumed benefits of the new link road are to form part of the basis for Local Plan policies. Such work is usually undertaken by ECC on behalf of District Councils within the County to ascertain the combined impact of proposed site allocations, and it is unclear why it has not been undertaken in this instance. No information is currently available, neither from surveys of current traffic “rat running” via Oak Road and the B1022/B1023 double mini roundabout, nor from the Jacobs SATURN model, and this should be undertaken, with Origin-Destination (registration numberplate matching) surveys of traffic using Oak Road, and select link analysis using the model.
- 3.5. We are also unable to replicate the predicted increases in weekday peak hour flows through the B1022/B1023 double mini roundabout predicted by Cottee as a result of development of the 3 NP sites with the link road, and clarification is required on the methodology used.
- 3.6. It is also unclear whether pedestrian linkages between the 3 NP sites and the village could be improved without requiring third party land outside the existing adopted highway. At present there are narrow footways, or none at all, on sections of Kelvedon Road, Oak Road, Townsend Road and New Road.