EAST HERTS COUNCIL

DISTRICT PLANNING EXECUTIVE PANEL – 9 MARCH 2017

REPORT BY LEADER OF THE COUNCIL

TRANSPORT MODELLING: COMET AND VISUM TECHNICAL PAPERS

WARD(S) AFFECTED: ALL

Purpose/Summary of Report

The purpose of this report is:

- To agree the COMET Technical Paper, January 2017, as part of the evidence base to support the East Herts District Plan; and
- To note the main outputs of VISUM modelling.

RECOMMENDATIONS FOR DISTRICT PLANNING EXECUTIVE PANEL: That Council, via the Executive, be advised that:	
(A)	**the COMET Technical Paper, January 2017, be agreed as part of the evidence base to support the East Herts District Plan;**
(B)	**the outputs of VISUM modelling be noted;**
(C)	**the Head of Planning and Building Control, in consultation with the Leader of the Council, be authorised to agree the VISUM Technical Paper prior to the submission of the District Plan to the Planning Inspectorate; and**
(D)	**further transport modelling will be undertaken prior to the District Plan Examination Hearing Sessions.**

1.0 Background

1.1 Transport modelling forms an integral part of the evidence base in support of local plan preparation. The development strategy contained within the East Herts District Plan has been shaped by ongoing advice from both Hertfordshire County Council and Essex County Council in respect of highway capacity issues.

1.2 Each of the County Councils has prepared a strategic transport model in order to consider the impact of proposed growth on the highway network, and subsequently, to identify mitigation measures that can alleviate any issues that are identified.

1.3 This report presents outputs in relation to both transport models.

2.0 Report

Hertfordshire County Council – COMET Model

2.1 Hertfordshire County Council has produced a transport model known as COMET. The model takes account of proposed growth within each of the ten boroughs and districts in Hertfordshire up to 2031. However, the model does not take account of identified development locations outside of Hertfordshire, and instead uses growth projections made by the Government's Department for Transport. These projections may not fully reflect the level of growth that is being proposed within neighbouring areas, but do serve to provide an indication of potential impact.

2.2 The County Council has planned to carry out two runs of the model in support of local plan making, which have both now been undertaken. The first run takes account of all proposed growth, but only assumes that currently permitted highway schemes, or those that are highly likely to be permitted in due course, will take place in order to mitigate the impact. A full list of schemes is included on Page 14 of the technical paper. In addition, a small number of other highway works linked to some of the very large strategic sites are also taken account of; i.e. access to the Gilston Area development and the proposed link road that will be provided as part of development to the North and East of Ware.

2.3 The purpose of this initial model run is to identify where stresses on the highway network are are likely to be experienced as a result of proposed growth. These outputs can then be used in order to identify where further mitigation measures will be required.

2.4 The technical paper, which forms **Essential Reference Paper B** to this report, focuses on the outputs of the initial run that are relevant to East Herts. In particular, it identifies potential impacts on twelve specific junctions within East Herts. These are identified in Table 2 on Page 16 of the technical paper. In addition to these

junctions, an analysis has also made in relation to the five largest proposed development locations in the District: Gilston Area, Bishop's Stortford South, North and East of Ware, East of Stevenage and East of Welwyn Garden City.

2.5 The technical paper identifies areas on the highway network where greater delays will be experienced at peak times. It also provides a summary of potential mitigation options. This technical work has informed a second run of the COMET model which takes account of further identified mitigation measures. The reporting of the outcomes of this work at both countywide and district specific levels is currently ongoing and, as such, will be presented to a future meeting of this Panel.

2.6 In respect of the reporting of the first stage initial COMET run, it should be noted that the East Herts specific technical paper includes an assessment of likely impacts of growth in relation to the three Air Quality Management Areas (AQMA's) that currently exist in East Herts. This analysis is presented on Page 30.

2.7 Furthermore, the outcomes of the initial COMET model run have informed the content of the representations made by Hertfordshire County Council on the Pre-Submission version of the District Plan in respect of potential impact for East Herts. In this respect, the County Council is generally satisfied with the approach taken by East Herts in relation to the proposed locations for growth, and in transport terms considers the Plan to be 'sound' and, therefore, fit for purpose.

2.8 In addition to informing local plan making in Hertfordshire, the results of the COMET modelling will also inform the County Council's 2050 Transport Vision and the subsequent Local Transport Plan 4 (LTP4). The final version of LTP4 will include strategic schemes which would be anticipated to be delivered within the lifespan of that Plan (e.g. a strategic solution to the A414 congestion issue in Hertford). Public consultation on a draft LTP4 is expected later this year.

Essex County Council – VISUM Model

2.9 Essex County Council has also prepared a strategic transport model known as VISUM which covers the wider Harlow area. Within East Herts, the model assesses future highway capacity in Bishop's Stortford and Sawbridgeworth, as well as the area to the immediate north of Harlow within which the proposed Gilston Area

allocation is located. Unlike COMET, this model does take into account proposed growth in adjoining areas, including development in East Herts. As a result, the VISUM model is likely to provide a more accurate assessment of the impacts of growth on the eastern side of East Herts than the COMET model.

2.10 There are three Technical Papers currently in preparation which will be completed prior to submission of the District Plan to the Planning Inspectorate on 31st March 2017. The three Papers will set out the following:

- How the VISUM model has been prepared, and the inputs and assumptions that have informed it;
- The outputs arising from the modelling work; and
- A consideration of the need for a Second Stort Crossing and the potential for a Harlow Northern Bypass.

2.11 The three Papers are still in preparation and have not yet been agreed for publication by Essex County Council. As such, they cannot be presented as part of this Panel report. However, ahead of the Papers being agreed, this report identifies the main outputs from the first two Technical Papers. The outputs of the third Paper, concerning the Stort Crossing and Harlow Northern Bypass, are still emerging and are therefore not presented within this report. However, they will be presented as part of a verbal update at the Panel meeting.

Technical Paper 1: Forecast Methodology Report

2.12 The VISUM model covers the period 2014 to 2033 in order to align itself as far as possible with the local plan time horizons of East Herts, Harlow, Epping Forest and Uttlesford District Councils which run from 2011 until 2033. For the period 2011 to 2014, housing completions data provided by the respective local authorities has been utilised.

2.13 In order to assess the high level impacts of growth on the highway network in a mangeable way, the model focuses on three specific time periods: the morning peak hour (8am to 9am), the inter-peak period (11am to 12pm) and the evening peak hour (5pm to 6pm).

2.14 In addition to proposed growth in the wider Harlow area, the model includes future highways mitigation schemes which are considered highly likely to be delivered. Of particular note is the inclusion of a new M11 Junction 7a, capacity improvements to

M11 Junctions 7 and 8, the A120 Little Hadham Bypass, widening of the existing Stort Crossing between the Eastwick and Burnt Mill roundabouts and signalisation of the A1184/West Rd/Station Rd junction in Sawbridgeworth.

2.15 In addition to planned development, the model also considers the following information which can affect the number of car trips made:

- Background growth (changes in car ownership levels, population growth, changes in propensity to travel due to factors such as car and fuel cost);
- Growth in passenger numbers using Stansted Airport; and
- School demand growth.

2.16 In order to help inform local plan making, the model assessed five different spatial options which were based on different levels of housing growth within the Harlow area. These options, which were originally identified through the Sustainability Appraisal of Strategic Sptaial Options work (presented to Panel on 13th October 2016), are presented in Table 1 below.

District/Area	Option A	Option B	Option C	Option D	Option E
East Herts	15,195	13,695	16,695	14,745	16,795
Epping Forest	8,731	6,581	6,581	7,952	10,631
Harlow	7,216	7,216	7,216	7,216	7,216
Uttlesford	9,763	13,263	9,763	9,433	9,763
Total	**40,905**	**40,755**	**40,255**	**39,346**	**44,405**
Wider Harlow Area Total	**13,466**	**9,816**	**9,816**	**16,966**	**16,966**

Table 1: Options modelled by VISUM (housing completions)

2.17 With regards to East Herts, one of the most significant variables between the five options was the level of growth proposed within the Gilston Area by 2033. This varied as follows:

- Option A – 2,750 homes
- Option B – 1,250 homes
- Option C – 1,250 homes
- Option D – 4,350 homes
- Option E – 4,350 homes

2.18 The different options also assessed different levels of growth in

other strategic locations in the Harlow area, outside of East Herts District.

2.19 Employment growth was also considered throught the model. The inputs in this regard were largely based on the East of England Forecasting Model (EEFM), along with proposed employment locations contained within the respective emerging local plans. The jobs forecasts incorporated within VISUM are identified within Table 2 below.

District/Area	Option A	Option B	Option C	Option D	Option E
East Herts	2,847	2,847	2,847	1,484	2,847
Epping Forest	7,272	5,151	4,436	7,336	8,500
Harlow	8,531	8,531	8,531	8,531	8,531
Uttlesford	14,143	14,143	14,143	14,143	14,143
Total	**32,793**	**30,672**	**29,957**	**31,493**	**34,020**
Wider Harlow Area Total	**14,639**	**12,518**	**11,803**	**15,867**	**15,867**

Table 2: Options modelled by VISUM (job numbers)

2.20 Having identified the inputs for the VISUM model, the second Technical Paper explains the outputs.

Technical Paper 2: Spatial Options A to E

2.21 In terms of the number of car journeys, the model shows that there would be an increase of approximately 37% in the AM and PM peaks when comparing the base year (2014) to the end date (2033).

2.22 Average speeds across the modelled area are forecast to drop by between 13% and 17% depending on which of the five spatial options is considered. However, the main impacts on average speed are forecast to occur within Harlow. Within the Bishop's Stortford and Sawbridgeworth area, speeds are forecast to reduce by between 1% and 6% in the AM Peak and between 0% and 3% in the PM Peak.

2.23 In seeking to assess the differences between the five spatial options, the VISUM model observes differences in journey times in the AM Peak for six routes in the Harlow area. These are as follows:

1) A414 Eastwick Road to Junction 7 M11 via A414 Edinburgh Way;
2) A414 Eastwick Road to Junction 7 M11 via A1019 and A1025;
3) The Pinnacles to Hatfield Heath via Fourth Avenue, First Avenue and B183;
4) Bishop's Stortford South to Junction 7 M11 via A1184 and A414;
5) Nazeing Common to A414 via A1025; and
6) Burnt Mill to A414 via Elizabeth Way and A1169.

2.24 From an East Herts perspective, the most relevant analyses are those related to Journeys 1, 2 and 4.

2.25 For Journey 1, the difference in time when compared to the base year of 2014 (9.6 minutes) varies from an additional 3.3 minutes to 5.2 minutes depending on which of the five spatial options is observed. Options D and E show increases at the top end of that scale, while Option B, which takes account of the lowest amount of development at the Gilston Area, shows the smallest increase. Option A which includes 2,750 homes in the Gilston Area (the figure closest to that identified within the District Plan), shows an increase in journey time of 3.9 minutes.

2.26 When taking the journey in the opposite direction (Junction 7 M11 to Eastwick Road), the difference in time compared to the base year (10.6 minutes) increases between 5.2 minutes (Option A) and 9.6 minutes (Option D).

2.27 For Jouney 2, when compared to the base year (9.0 minutes), there is an observed increase of between 2.8 and 4.0 minutes. Option A shows an increase of 3.3 minutes.

2.28 Again, when taking the journey in the opposite direction, the increase in time on the base year (10.8 minutes) is between 4.0 minutes (Option A) and 6.3 minutes (Option D).

2.29 With regards to Journey 4 (Bishop's Stortford South to M11 Junction 7), the base year journey time was 17.3 minutes. It should be noted that there is alrady considerable congestion and delay on this route in peak periods. According to the model, the journey time will increase by between 1.8 minutes (Option A) and 4.9 minutes (Option E).

2.30 In the opposite direction, the base year journey time (16.6

minutes) is forecast to increase by between 2.7 minutes (Option C) and 4.9 minutes (Option D). Option A shows an increase of 2.8 minutes.

2.31 It should be noted that this iteration of the VISUM modelling did not take account of the provision of a Second Stort Crossing. The impact of this is considered as part of the third Technical Paper.

2.32 Overall, when considering the impacts of growth on the highway network in the wider Harlow area, Option A is observed to have the least impact depite not being the lowest growth option. This is likely to be because this option includes strategic growth spread fairly evenly around Harlow. Options D and E, which are both 'high growth' options, are shown to have the greatest impacts on network speeds.

2.33 In general terms, the modelling shows that the following junctions/locations in the Harlow area experience greater stress as a result of growth, and therefore that additional mitigation may be required:

- Edinburgh Way/Howard Way junction in Harlow (including adjacent Retail Park access);
- A414/B183 First Avenue junction in Harlow;
- Howard Way/Tillwicks Road and Manston Way/Tripton Road junctions in Harlow;
- B183 Gilden Way in Harlow;
- A1169/A1025 Third Avenue Corridor in Harlow
- The A1184 corridor in East Herts.

2.34 It is likely that further VISUM modelling will be required as the respective local authorities progress their local plans. However, it should be noted that the current outputs have informed the content of the representations made by Essex County Council on the Pre-Submission version of the District Plan. In this respect, the County Council is generally satisfied with the approach taken by East Herts in relation to the proposed locations for growth, and in transport terms considers the Plan to be 'sound' and, therefore, fit for purpose.

3.0 Implications/Consultations

3.1 Information on any corporate issues and consultation associated with this report can be found within **Essential Reference Paper 'A'**.

Background Papers

Sustainability Appraisal of Strategic Spatial Options for the West Essex and East Hertfordshire Housing Market Area 2016:
http://www.eastherts.gov.uk/technicalstudies

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