



# Hemel Hempstead Transport Model - 2031 Scenario Testing (July 2015)



## Explanatory Note

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### Purpose

This explanatory note has been prepared jointly by Hertfordshire County Council (HCC) and Dacorum Borough Council (DBC) to explain some of the assumptions and conclusions arising from the latest run of the Hemel Hempstead Transport Model (Paramics model). The model run has been commissioned to help understand the impact of the level of new housing development proposed under the Pre-Submission Site Allocations DPD (September 2014) on the local road network in the town and the likely need for a range of transport improvements. This will form part of the latter document's evidence base.

Transport models can be complex and technical and DBC and HCC are keen to ensure that the wider role of the modelling and context is properly understood.

### Background

Jacobs has been appointed by HCC and DBC to run an update of the Hemel Hempstead Transport Model (Paramics model). HCC and DBC need to test whether the level of new (housing) development up to 2031, as identified in the Pre-Submission Site Allocations DPD (September 2014) (i.e. the 2031 demand scenario), can be accommodated by the local road network in the town.

This report provides an update to the results of previous model runs:

1. 2008 base model (May 2009).
2. 'Do minimum' models for 2021 and 2031- accompanied by a Future Years Issues Report (May 2009).
3. LDF Option Test Western Hemel (August 2010).
4. Combined Local Plan Test (July 2012).
5. Morrisons Development Test (Summer 2013).

Further information regarding the assumptions and outcome for the above model runs is available on request. Model runs 1-4 were used to help inform Dacorum's

Core Strategy (together with more detailed transport studies relating to key development sites). Model run 5 was used to test the impact of a new Morrisons supermarket and associated development in the town centre. Whilst this scheme is no longer being progressed, some of the outputs and assumptions from that model run remain valid and have been carried forward into the 2031 test.

Jacobs were originally asked to run the model with base development data as at 1<sup>st</sup> April 2012. However, this work was set aside in favour of a more up to date position on development (i.e. as at 1<sup>st</sup> April 2014) and to also test changes to the capacity of a number of housing sites in the Site Allocations DPD.

The main differences between the assumptions underpinning the current and previous model runs are as follows:

- The model has chiefly been calibrated with data using a base date of 2012. However, for the purposes of testing trip generation and distribution, it does include housing schemes as at 1<sup>st</sup> April 2014 in order to test the latest available information on development.
- The current model includes new sites that have come forward since or are programmed (i.e. the Sappi Graphics site in Nash Mills).
- Mitigation measures identified as being necessary from the 2013 Morrisons and town centre redevelopment tests have been coded in as it is assumed that these would still be needed even with the change in focus of the development. These differ from the measures assumed in the original future year issues tests undertaken in 2009 because of the update in relation to the town centre redevelopment proposals.
- The model tests have specifically been undertaken to assess the implications of residential development on the Hemel Hempstead urban area.
- The model excludes any commercial development that will form part of the Maylands Gateway area. For information, AECOM have been commissioned by HCC/LEP to undertake separate modelling specifically for the Eastern Hemel area which will cover this and the wider Maylands Gateway Corridor area and land to the east of Hemel Hempstead in St Albans District. The results of the study are anticipated to be published end 2015 / early 2016.
- The scale of developments has changed between the model runs following progress on a number of schemes. Since 2009 a number of proposed developments have now been built out (e.g. Kodak (Image) site and the Snow Centre) and there has been refinement of dwelling numbers particularly in the town centre.
- Trip generation rates applied for the outer town centre sites that form the bulk of the new housing development (e.g. West Hemel Hempstead (LA3), Marchmont Farm (LA1) and Old Town (LA2) sites) are as per the agreed trip rates from the Western Hemel Transport Appraisal. These are relatively high

and assume a worst case scenario (i.e. there is no internalisation of trips within the development site due to the provision of on-site facilities such as schools and local shops). The trip rates used are higher than those applied in the 2009 tests.

- As the work is based on a standalone highways model it is assumed that there is no mode shift or shift in the time people are likely to travel (peak spreading). This therefore assumes that current trends of car travel continue into the future.

### **2031 model run outputs:**

Key points to note from the latest 2015 model run are as follows:

- The conclusions broadly reflect the outcomes of the 2010 and 2012 model runs.
- The model has been run at 85% of the maximum flow levels to help identify locations where there are capacity issues and where mitigation measures are likely to be required.
- The results indicate that assuming relatively high vehicle trip generation and no modal shift that the existing highway network cannot accommodate the full proposed level of traffic from the Local Plan residential sites.
- It highlights capacity issues on parts of the network and the need for appropriate highway improvements.
- Some highway mitigation measures have been identified and in some cases these have changed since earlier testing work due to changes in the scale and location of proposed residential development (including assumptions for the three Local Allocations around the town (LA1<sup>1</sup>, LA2 and LA3)).
- The measures proposed are conceptual and require further feasibility work before being taken forward.
- The measures proposed at this stage are relatively small scale and generally achievable within existing highway boundaries meaning potentially they should be deliverable.
- It assumes that the proposed relocation of the bus station from Waterhouse Street to the Marlowes takes place as programmed.

However these findings need to be considered in the following context:

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<sup>1</sup> The capacity figure assumed in the model for Local Allocation LA1 (Marchmont Farm) is 300 (as per the Core Strategy). In the Pre-Submission Site Allocations DPD the capacity of this site is indicated as a range (200-350 units). This potential increase in the numbers of homes is not considered to have a significant impact upon the results of the model.

- Relatively high vehicle trip rates have been applied to the outer town centre development sites. The role of the model is to identify stress in the local road network and to suggest how such demand can be accommodated. Its function is not to judge the suitability of individual schemes.
- The model does not include any assumptions relating to modal shift e.g. through potential improvements to the rail network should the Crossrail extension be progressed.
- The number of vehicle trips in the model can therefore be considered to represent a worst case and the 85% of trips test may be a more realistic scenario in this context.
- Some mitigation measures are factored in to the model. These include measures which are planned or underway (e.g. the conversion of the High Street to one way operation and the proposed bus station relocation). The model also includes development accesses associated with the major sites and town centre in addition to offsite mitigation measures proposed for the West Hemel Hempstead development and town centre.
- The model has not yet tested improvements to the Maylands Growth corridor or modifications to the Green Lane/Breakspear Way junctions.
- The model identifies some possible mitigation measures, but these will need to be subject to further testing and review to ensure their effectiveness.
- Other mitigation measures will be refined and developed further as part of future development schemes and/or infrastructure projects (e.g. those funded directly by the LEP).
- As mentioned above, the model does not take account of any future development to the east of Hemel Hempstead in St Albans District or commercial development associated with the East Hemel Hempstead Area Action Plan. This will need to be the subject of future testing and modelling.
- The 2031 run does not model the detailed working on Junction 8 of the M1, although assumptions are made for the additional trips expected to and from this junction. However, the model is currently being extended to cover this junction as part of the East Hemel Infrastructure study.
- The model has included a very high assumption for homes delivered through identified sites of less than 25 units and windfall sites. This means that the model tests a higher overall housing figure for the town than that identified through the Core Strategy. It is therefore very much a 'worst case scenario.'

## **Next Steps**

The 2031 model report forms part of the evidence base for the Site Allocations DPD alongside other technical work. It will help explain DBC's position over the impact of new development on the road network in the town at the forthcoming submission and examination stages of this document.

Following publication of the 2031 model report, DBC and HCC will also begin work on a new 'Growth and Transport Plan' for the town. This document will look in more detail at the pressure points on the network identified by the model and consider what additional mitigation measures are required to address these. If necessary, this plan will include further modelling work to test the effectiveness of different potential measures. It will also assist with prioritising and programming mitigation measures to ensure funding continues to be directed to the areas in greatest need.

The East Hemel Infrastructure study will identify transport infrastructure required to support commercial and residential development in the Maylands area. This will include a review of the mitigation measures identified as part of this modelling work.

Further modelling work for Hemel Hempstead (and potentially Berkhamsted and Tring) will be required to inform the early partial review of the Core Strategy (through production of a new single Local Plan), should this propose a higher level of development than currently planned.