

OS Parcel 1570 adjoining and west of Chilgrove Drive and adjoining and North of Camp Road, Heyford Park, Ref: 21,04289/OUT

The 'Bicester Transport Model Heyford Park Update' has been used to assess the impact of this development on the surrounding area. It is vital that it is realistic because the roads to the west of the site are inappropriate for large traffic volumes. They are rural in nature; they cut through villages which bear up directly against the road; they contain hump back bridges and cannot, in places, accommodate the width of two cars. This is a sensitive area of great value, reflected in its conservation area status, and the traffic impact here needs to be taken seriously.

FITNESS FOR PURPOSE

Govt guidelines on traffic models (WebTag) state that a model's fitness for purpose depends on whether 'robust conclusions can be drawn from the model outputs'.

The Local Model Validation Report acknowledges that turning movements off the A4260 are likely to be under represented in the model because the fixed trip matrices have not been adjusted to represent less strategic 'external to external' trips. This is because limited or no observed data for origin/destination of the trips is available near to the limit of the coding. This will affect a number of villages because they lie off the A4260 at three of its junctions (North Aston Road, B4030 and A4095). It is impossible to assess the impact of this planning application if the 'without development' scenario forecasts in 2031 are unreliable.

The modelling to support this application forecasts less east/west traffic flow through the B4030/A4260 junction at Hopcroft Holt in 2031 than observed counts show in 2016. This is not credible and calls into question the legality of the S106 agreement to expand the junction as part of the Heyford Park Masterplan. It is impossible for OCC to accept both these scenarios as they conflict with each other.

The model uses trip length distributions from the 2011 census data in the matrix building process that is unlikely to fully reflect the mixed nature of the current local conditions and, in particular, potentially underestimates the frequency of shorter distance trips. There is also a need to estimate the 'internal to internal' LGV and HGV movements where limited observed data is available.

The LMVR concludes that the model is a robust basis for the purpose of environmental assessments. This would not be the case for lower Heyford and Caulcott which has a known HGV problem but is modelled as having no HGVs.

The forecasts for this application are based on observed counts dating back to 2013 at key entrance junctions to the HP site. These are out of date, OCC noted the need for new

surveys as long ago as 2018 but these were never carried out. This is important as the ongoing build out at HP would have increased traffic disproportionately at these junctions.

The above suggests that the model building information is insufficient to provide robust conclusions. WebTAG states that Highway assignment models generally need to ensure that areas outside the main area of interest which are potential alternative destinations are properly represented and ensure that the full length of trips are represented for the purpose of deriving costs. These requirements are particularly important where a highway assignment model will be linked to a demand modelling system.

MATRIX ESTIMATION

WebTAG emphasises that matrix estimation – the manipulation of the matrix to satisfy calibration and validation – should not be significant and comply with WebTAG's criteria. The criteria are not met in all four areas.

Scatter plots of matrix zonal cell values prior and post estimation – these do not generally meet the criteria for any vehicle class or peak period.

Scatter plots of zonal trip ends – these do not generally meet the criteria

Trip length distributions prior to and post matrix estimation – not met in some cases

Sector to sector level matrices – not met in most cases and some by very significant amounts.

The Local Model Validation Report says that the WebTAG criteria are too strict for this type of absolute model but that the 'absolute' form is necessary to forecast the high level of growth in Bicester. This is not supported as a justification by WebTAG which emphasises strongly that the criteria limits need to be respected.

The LMVR states that the matrix estimation statistics are a trade-off and so are considered acceptable in this case. I presume the trade-off is between the accuracy of the model matrices and the need for an absolute form. However, it is not possible to conclude from this process that the post-estimation matrices are fit for purpose. The LMVR suggests that they are if the cordon calibration meets WebTAG criteria. However, the only cordon surrounds Bicester. Validation of the trip matrix has also used a screenline but, again, only through Bicester rather than the area being assessed. No screenlines have been drawn up for trip matrix building, calibration or validation in the area being assessed around Heyford Park.

WebTAG states that if the criteria for matrix estimation has not been achieved, which is the case here, the prior matrices should be reconsidered.

CALIBRATION/VALIDATION OF THE MODEL

I have been told that the updated model validates against WebTAG because:

Turning flow calibration met WebTAG criteria (Appendix D) – while this includes surveys at most junctions, those at the entry junctions to the site date back to 2013 before much of the current build out at Heyford Park.

Car link flow calibration met WebTAG criteria (App E) – this data only relates to the area east of Heyford Park (Bicester, M40) and does not extend to the Study Area being assessed. Instead, flows were summed from the turn counts used for calibration.

Total vehicle link flow validation results were WebTAG criteria (App F) – ATC counts have not been done on links that would demonstrate impact on the following villages: North Aston, Somerton, Upper Heyford, Kirtlington, Fritwell, Caulcott and the Bartons. The counts are insufficient to validate the model for assessing impact on these villages.

Turn count validation results were within WebTAG criteria (App G) – turn counts for the great majority of the study area are absent. They only relate to east of Heyford Park and J10 of the M40 (apart from J12 and incompletely J18). There are no counts for all the other junctions within the Study Area (App A): junctions 3, 4a, 4b, 5, 6, 7, 10, 11, 13, 14, 15, 16, 17, 19, 20 and 21. This is presumably because they have already been used for calibration and validation requires independent counts.

In view of the above, the Bicester Transport Model HP Update is not fit for purpose as it is not possible to draw robust conclusions from its outputs. To summarise:

- The census data 2011, used to build the model, is unlikely to reflect current local conditions.
- Traffic from the A4260 is underestimated in the model because there is a lack of source data.
- Source data should be current or recent yet counts used for the entrance junctions to the Heyford Park site are 10 years old.
- LGVs and HGVs have been estimated where there is limited observed data. Estimates for Lower Heyford and Caulcott are incorrect and conflict with ANPR surveys supplied to LHPC by OCC.
- Matrix estimation is not compliant with WebTAG criteria and, in any case, relates to Bicester rather than the area being assessed.
- Matrix calibration/validation have used count data from cordon/screenlines at Bicester rather than the area being assessed.
- Model validation has not been achieved because link counts are insufficient and turn counts are largely absent from the area being assessed.
- The model has produced forecasts at Lower Heyford and Hopcroft Holt junction which, TetraTech agree, demand an explanation.

Absolute models such as this one are discouraged by WebTAG unless there are strong reasons for using them. Incremental demand models are preferred because they rely more on observed data and less on the mathematical specification of the model. WebTAG states that absolute models can produce large errors without comprehensive data.