MM069
Appendix 4
Statement by J Rigg (16632)

Title : **COMET Output –Graveley Road/North Road**

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Introduction

COMET is Hertfordshire County Council's (HCC) strategic multi-model transport model. This has been developed with a Base Year of 2014 and a Local Plan Future Year of 2036. This Technical Note sets out work undertaken to understand how the junction of Graveley Road/North Road is performing in the peak hours using the COMET model.

Caveats

COMET is a strategic model that was developed to represent inter-urban movements in Hertfordshire. The local performance of the COMET model both within and in the vicinity of Stevenage is unknown as no local calibration/validation data has been collected in relation to this area. This may directly impact on the results contained within this note (i.e. under or over estimation of impacts).

Base Year 2014 Model

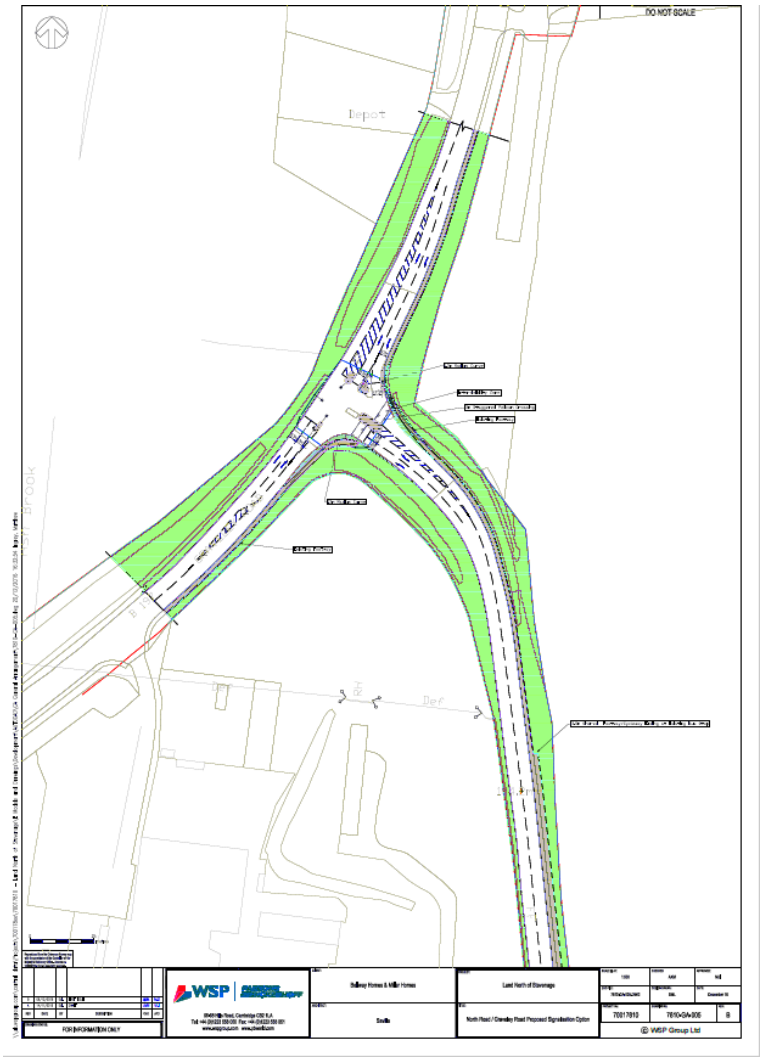
The model did not validate as well against the observed turning movements (WSP TA's Transport Survey, 2017), on the junction. This is unsurprising as COMET is not calibrated against turning movements, as it is a strategic model designed to give indications of wider traffic flows, and not assessments of specific junctions.

Future Year 2036 Model

The Future Year 2036 model scenarios include the Local Plan planning data and various transport schemes. The residential development sites (NS1-proposed 900 dwellings) and (HS03- 800 dwellings, primary school, local centre), have been incorporated into the Future Year 2036 model.

Figure 1 shows the proposed improvement scheme for the Graveley Road/North Road junction, namely an upgrade to a signalised T-Junction, as shown on drawing 7810/GA/005B and contained within Appendix L, North of Stevenage: Transport Assessment, Oct 2017.

Figure 1- the proposed improvement schemes for the Gravely Road/North Junction; upgrade to a signalised T-Junction



The scheme has been incorporated into the Future Year 2036 model within the COMET model. The node structure of the modelled scheme is shown in Figure 2 below.

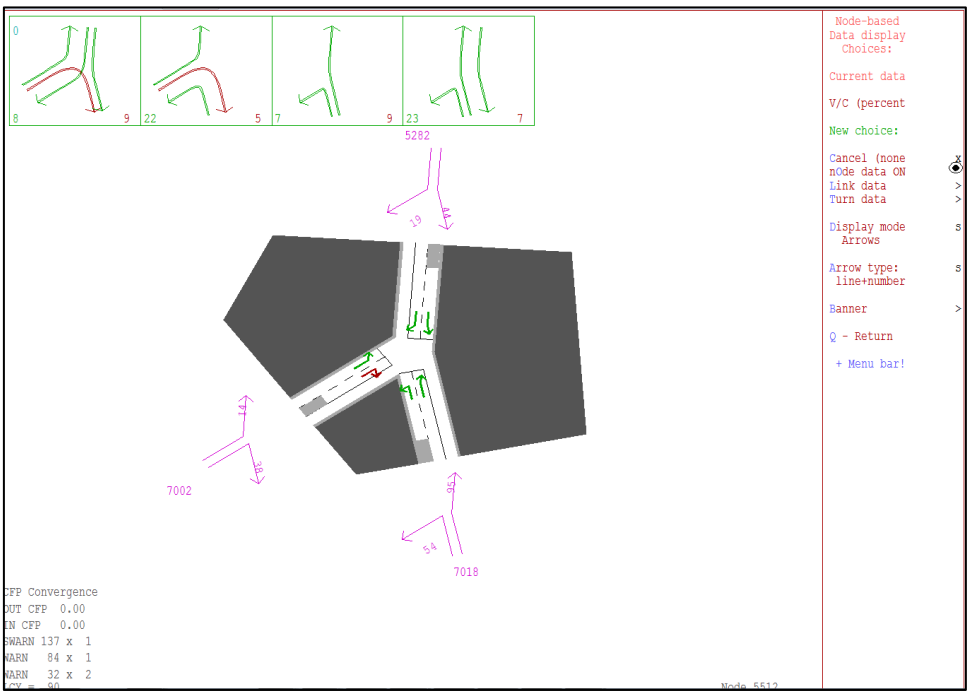
Figure 2- Graveley Road /North Road Junction COMET Layout in AM Peak (08:00-09:00)- (V/C) Vehicles to Capacity

Volume over capacity ratio is an indication of how congested a road is, as noted below:

- Under 80% is relatively free flowing;
- 80%-90% is a sign that speeds will lower and queuing at junctions will start; and
- Over 90% indicates slow moving traffic and long queues would develop at junctions.

It can be seen from Figure 2 that the VOC (91% and 101%) on the Graveley Road North and South arms will be experiencing high level of stress in the future year of 2036 in the AM Peak.

Figure 3- Graveley Road /North Road Junction COMET Layout in PM Peak (17:00-18:00)-(V/C) Vehicles to Capacity



It can be seen from Figure 3 that the VOC of 95% for North Road will mean that the link will experience a high level of stress in the future year of 2036 in the PM Peak.

The modelling suggests that the proposed signalised junction at Graveley Road/North Road and also the development accesses (NS1) and (HO3) on North Road increase junctions delays for the highway network on the adjoining highway network. The additional delays at these junctions reduce the attractiveness of these routes for through traffic on the wider local highway network.

LinSig Model Output in the HO3 development

WSP has prepared a LinSig model for this junction. The proposed signalisation of the Graveley Road/North Road junction may be found within in Appendix L, North of Stevenage: Transport Assessment, WSP, Oct 2017. Results are contained within Table 1 below.

Table 1- Output of LinSig in TA

Junction Arm	2031 AM Peak Hour Flows with Development		2031 PM Peak Hour Flows with Development	
	DoS	Queue (PCUs)	DoS	Queue (PCUs)
Graveley Road (North)	85.0%	15	84.4%	17
North Road	79.8%	10	28.6%	3
Graveley Road (South)	82.3%	9	83.7	7%

Table 13: LINSIG Summary – Graveley Road / North Road Proposed Signalisation – 2031 Flows including North Stevenage Development

The Graveley Road/North Road junction improvements have been tested using a LinSig model for the 2031 AM and PM peak hour flows as contained within the TA. These tests show that the proposed improvement will operate just within capacity. All arms have a DOS of 85%. *(Please be aware that we are not able to review the LinSig model of TA, as we do not have the model files. We are only looking into the output of the LinSig model.)* Again, this relates only to a future year of 2031.

Conclusion

This TN is undertaken for this task to understand how the junction of Graveley Road/North Road is performing in the peak hours using the COMET model. Due to the strategic nature of COMET, it should be noted that the results provided in the note is at a high-level.

The COMET model Future Year 2036 suggests that additional signalised junction at Graveley Road/north road and development accesses at North Road increase junction delays on the adjoining highway network.

The LinSig model outputs within the TA of WSP shown the signalised junction will operate just within capacity in 2031.