

APPENDIX 1

Hertfordshire Highway Capacity

Technical Note:

TPA Consulting

Ptarmigan Ware Limited

Land North and East of Ware
Hertfordshire

Project Reference: 1404-61/TN/15B

Technical Note



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1 INTRODUCTION

- 1.1 Transport Planning Associates (TPA) has been commissioned by Ptarmigan Ware Limited (Ptarmigan) to provide transport planning consultancy services in respect of the proposed residential allocation of Land North and East of Ware under Policies WARE 1 and WARE 2 in the Pre Submission Version of the District Plan.
- 1.2 The draft allocation is for 1,000 new homes within the plan period to 2033, it is considered that the allocation has capacity for up to 1,500 new homes, albeit Ptarmigan do not agree that the remaining 500 homes must be deferred until after the end of the plan period by reason of insufficient highway capacity. A proposed development of this size requires careful consideration in terms of transport and, as a result, TPA has extensively liaison liaised with Hertfordshire County Council (County Council) and East Herts District Council (District Council) scoped and validated a micro-simulation Paramics model to assess the transport impact of such a development on the existing highway network in the local area.

2 THE PARAMICS MODEL

- 2.1 The Paramics model replicates the proposed allocation of 1,500 homes, 2 primary schools, 1 secondary school, employment and local centres along with an internal link road with primary accesses on to the A1170 and Widbury Hill.
- 2.2 The detailed assumption for external and internal trips have been shared and agreed with the County Council.
- 2.3 As part of the mitigation package, it has been proposed that a high frequency circular bus route would be provided with improvements to the existing bus infrastructure to encourage new and existing residents to use this mode of travel. Therefore, a mode switch assumption of between 20 and 30% has been allowed for trips along the bus route. For the 1500 unit development a 15 minute frequency circular bus route would be delivered and consequently a 30% bus mode switch have been applied.
- 2.4 A site visit has been undertaken to assess the potential for enhancements to the High Street of Ware, and to increase the vibrancy of the town centre as a destination for visitors. The aim is to restore the balance of the space so that its design will enable it to be perceived primarily as a community street rather than engineered as a road for through-traffic. By increasing the attractiveness of the space for visitors it is hoped that those occupying proposed new housing developments will make Ware their primary destination for shopping and also be encouraged to visit using non-car based alternatives. A preliminary sketch of the proposed changes to Ware town centre have been shared with the County Council.
- 2.5 Personalised Travel Planning involves targeted marketing techniques which aim to encourage a switch from car based trips to more walking, cycling and public transport use through a combination of tailored travel advice, information and incentives. The report "Personalised travel planning: evaluation of 14 pilots part funded by DfT" concluded that personalised travel planning can achieve a mode switch away from the private car onto other forms of transport at a rate of between 5 and 20%. It is therefore reasonable to assume a conservative 10% success rate in Ware which as a result have been applied to the modelling for residential trips within Ware, excluding trips to/from the station.

3 RESULTS

3.1 In terms of delay; the results of the modelling indicate that the additional delay to selected journey times is under 60 seconds on any of the routes in the 1,500 home scenario. The majority of the routes within the model which have been reported are over 2 kilometres. As a result, the increase of delay of the proposed site on any route generally does not exceed 10 seconds per 100m in any scenario. The routes that have been analysed can be seen in the **Figure 1** below.

3.2 **Figure 1 Journey time routes**



3.3 Summarising the journey times predicted along the routes illustrated above and comparing these against the baseline assessment reveal the results in **Table 3.1** below. As can be seen the 1,500 home scenario performs better in the AM and provides a net benefit to the network, whilst still only resulting in a 32 second net increase during the PM peak across all routes.

Table 3.1 Journey time comparison against baseline

Route	Length (m)	AM		PM	
		1000 Homes (s)	1500 Homes (s)	1000 Homes (s)	1500 Homes (s)
1	2271	-27	-36	-3	44
4a	714	27	32	-15	27

7E	3503	-18	-27	1	60
7W	3456	0	3	10	23
8	1623	-44	-80	-103	-104
9	2318	-16	-35	-32	-43
10	1675	47	14	21	25
Total	N/A	-31	-129	-121	32

3.4 It is understood that a development in Ware may potentially have a wider impact on the strategic road which as of yet has not been covered by the modelling presented to the County Council. The model is being extended as a result. In particular, the County Council has highlighted a concern of the westbound A414 towards Hertford. The initial extended modelling results support the earlier results and will be available early 2017. A basic calculation however using previous assumptions derived by the County Council demonstrates that the number of vehicles (123 in the AM peak) predicted by the development in westbound direction plus the committed sites (162 in the AM peak) will be within what has previously been deemed acceptable during 2007 (2007 surveyed traffic flows). **Table 3.2** below illustrates the historic flows for ease of reference.

Table 3.2 Peak hour traffic flows at HCC monitoring site at A414 at Rush Green

Year	AM peak 0800-0900		PM peak 1700-1800	
	Eastbound	Westbound	Eastbound	Westbound
2006	1118	1915	1744	1315
2007	1119	1919	1711	1340
2008	1028	1825	1634	1322
2009	1056	1801	1572	1277
2010	1011	1801	1555	1249
2011	1003	1830	1579	1289
2012	939	1654	1543	1214
2013/14	N/A	N/A	N/A	N/A
2015	815	1629	1615	1161
2006-2015	-27% (-303)	-15% (-286)	-7% (-129)	-12% (-154)

Source: Hertfordshire County Council's letter of 27 July 2015 to East Herts District Council

Note: Monitoring Site was not operation during 2013 & 2014

- 3.5 TPA undertook a further link count at the same location as the council for the westbound direction during the AM peak hour on the 17th March 2016. The resulting traffic flow was 1615 vehicles thus indicating a continued decline.

4 CONCLUSION

- 4.1 The modelling results demonstrate that the net impact on journey times are predicted to be similar for both the 1,000 and 1,500 home scenarios and therefore there is no reason for delaying the delivery of the additional 500 homes until suitable highway mitigation has been implemented on the local and strategic highway network.
- 4.2 Microsimulation has the added benefit of not predicting a one number answer. The average journey time is built up by a variety of journey times that together makes up an average. The 95% confidence level illustrate that it is a 95% probability that the population mean lies within these plotted confidence levels, i.e the average journey time could have been different.
- 4.3 As the population mean referred to above is predicted to sometimes be the same as the Base situation, if not, even better, the conclusion is that **none** of the development scenarios are predicted to have a severe impact on the journey times through the town centre of Ware; especially a development of 1,500 homes due to additional sustainable transport modes being provided. Based on journey time all of the proposed development scenarios are therefore considered **acceptable**. It is also therefore concluded that 1,500 homes is achievable without highway detriment prior to 2033 without the need for any major interventions.
- 4.4 The calculations undertaken for the A414 illustrates that the predicted volume of traffic from the 1,500 home development is lower than the volume of traffic recorded on this route in 2007. It is therefore concluded that the impact by the development on the A414 **cannot be considered materially adverse**.

DOCUMENT SIGNATURE AND REVIEW SHEET

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