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## **High Level Review of the Transport Assessment**

### **Northgate End Car Park Development, Bishops Stortford**

# DOCUMENT CONTROL

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# 1 Background

- 1.1.1 Edwards & Edwards Consultancy Ltd (EAE) have been commissioned by the Bishops Stortford Civic Federation (BSCF) to undertake a high level review of the Transport Assessment (TA) that has been submitted in support of planning application (3/18/0432/FUL) for a Northgate End Car Park Development.
- 1.1.2 The objective is to review the evidence as presented in the TA and to provide the BSCF with:
- An understanding of the assumptions that have been made by the authors of the TA
  - Potential queries/observations that the BSCF may wish to use when formulating their response to the planning application.
- 1.1.3 It should be noted that in the limited time available for undertaking this study EAE cannot guarantee to have identified all the issues that may concern BSCF within the TA. More detailed investigations may be required to provide BSCF with additional insight.

# 2 Summary

- 2.1.1 The following sections provide a summary of our findings relating to assumptions and outputs contained within the Transport Assessment.

## 2.2 Justification for the multi-storey car park

- 2.2.1 The TA states that the proposal would provide a net increase of 197 spaces (excluding the private spaces for the proposed flats). However, based upon omissions and assumptions implicitly made in the TA, then 76 of these spaces are already accounted for, leaving a net increase of 121 spaces.
- 49 spaces that are now operational at No1 the Causeway, but which would be lost with the Old River Lane development
  - Some 20 spaces would be lost at Waitrose (see paragraph 2.6.1 below). The junction design would require the removal of around 20 spaces at the side of the Waitrose store. It is not discussed in the TA as to where these spaces would be relocated. As the TA is silent on this matter it would be prudent to assume that they would be lost.
  - 7 spaces for the B1 office space proposed as part of the development. This is new demand within the town, and the 7 spaces need to be subtracted from the net increase in spaces available. (see section 2.4 below)
- 2.2.2 Herts County Council requested a justification of car park need at the scoping meeting held with the developer on 16<sup>th</sup> November 2017 (para 1.3.2 of the TA). However, the TA does not provide a justification for the need. The TA provides some evidence that the existing car parks are very close to capacity and then simply states that the previous planning application on the Old River Lane site (3/10/1964/OP) had approval for 600 spaces.

**2.2.3 The TA does not justify the NEED for additional parking. Based upon the evidence above the multi-storey would potentially provide a net increase in 121 spaces. Given the very high occupancy of the existing car parks this may help meet suppressed demand and unmet need. This TA does not demonstrate that this car park would satisfy the need for already approved development (eg Bishops Stortford North) nor future retail/residential/commercial development in Bishops Stortford town centre (eg at old river lane)**

## **2.3 Car Parking Spaces for the proposed residential flats**

2.3.1 The adopted East Herts District Council (EHDC) parking standards (from 2008) requires a maximum of 22 spaces for the 15 flats. However, 9 spaces are proposed for 15 flats with no justification as to how this figure is derived. Para 4.5.5 in the TA, in the section relating to parking for the office development, notes that the parking standards for East Herts are being updated as part of the Local Plan, and that with a 50% discount for being located in a sustainable location the 1 bedroom flats would require 0.75 spaces, and the 2 bedroom flats would require 1 space.

2.3.2 With six 1-bedroom and nine 2-bedroom flats this would lead to a requirement of 13.5 spaces which would be rounded to 14 spaces.

**2.3.3 The TA thus has a shortfall of 5 spaces for residential part of the development with respect to that required in the emerging Local Plan.**

## **2.4 Car parking for the new Commercial (B1) office space**

2.4.1 7 spaces for the B1 office space are required as part of the development. This is new demand within the town, and would be met by using spaces within the proposed car park.

**2.4.2 As the provision of car parking is a new requirement it will reduce the net increase in spaces available in the multi-storey car park by 7 spaces.**

## **2.5 Traffic Surveys**

2.5.1 Traffic surveys are required to be undertaken during a 'neutral' period during which 'normal' flows of traffic would be expected to be observed. There is no absolute definition of when 'neutral' occurs as it will depend on the location. However, this definition usually means during school term time. Spring and Autumn are usually considered neutral due to the absence of school holidays

2.5.2 The traffic surveys of the key junctions were undertaken in the week commencing Friday 7 July 2017, with the surveys undertaken on Tuesday 11th, Wednesday 12th and Thursday 13<sup>th</sup> used to determine the traffic flows

**2.5.3 In this case, the survey was not undertaken in a 'neutral period', due to the fact that the survey was undertaken after Bishops Stortford College had finished for the summer term and July is the beginning of the traditional holiday period and traffic is generally lighter than 'normal'.**

2.5.4 In particular in this week, it should be noted:

- Bishops Stortford College finished for the summer term on Friday 7<sup>th</sup> July 2017, with a speech day on Saturday 8<sup>th</sup>. The Traffic surveys undertaken on Tuesday 11<sup>th</sup>, Wednesday 12<sup>th</sup> and Thursday 13<sup>th</sup> will be impacted due to lower levels of travel by the day pupils (and parents), non-resident staff, and deliveries
- 5<sup>th</sup> form and 6<sup>th</sup> form students are generally not required to attend school following their exams
- Households without children use this period to take holidays, so commuting and shopping trips can reduce.

**2.5.5 These surveys have been used to determine the observed traffic condition for vehicle flows, traffic queues and turning movements that have been used in the modelling. Consequently these do not appear to provide a robust dataset with which to assess the junction or the network performance. To use these traffic surveys in the TA the developer would need to justify how/why these traffic surveys are robust, and represent volumes and patterns of travel on a 'normal' day.**

## **2.6 Land ownership related to the car park junction design**

- 2.6.1 The drawing of the proposed junction to access the car-parks shows changes that extend beyond land owned by the Highways Authority and into the Waitrose car park. As shown on the plan the junction will remove an estimated 20 spaces from Waitrose (estimated using google maps).
- 2.6.2 The ownership of this land is not stated in the TA. However, even if the land is owned by East Herts District Council (EHDC) there is still a risk to delivery and at the very least the potential for delay due to the difficulties of renegotiating a new lease with Waitrose. Without an agreement then the junction as described in the TA could not be delivered.
- 2.6.3 **We would expect the TA to identify land ownership issues and demonstrate that the highways measures are deliverable. As it stands the TA does not demonstrate that the developer can deliver the design as proposed.**

## **2.7 Design of Junction**

- 2.7.1 The space available within the junction where vehicles can wait whilst waiting to turn right without blocking other traffic is very limited. In particular, eastbound on Link Road there is no space where right-turning only traffic can wait before the signals, and only one space after the signals. If more than one eastbound vehicle is turning into Waitrose, then all eastbound traffic will be blocked.
- 2.7.2 A detailed critique of the junction design has not been undertaken as part of this exercise, but the 4 way junction at Link Road, Multi-storey-Waitrose does not appear fully worked up. It appears to have some aspects of a 'standard' priority junction with traffic signals added rather than a 'fully designed' signalised junction.

**2.7.3 It is suggested that this is raised with the Highway Authority / Planning Authority**

## 2.8 Delivery Vehicles at Waitrose

2.8.1 Delivery vehicles use the service road to access to provide deliveries to the store. This is accessed from the Rye Street/Hadham Road junction. The junction drawing in the appendix shows the departure of the HGVs, but it does not show how HGV's or other vehicles will enter the service road (presumably the YMCA will need access too!)

**2.8.2** Swept Path analysis was provided for HGVs exiting the site. **It is not clear how any vehicle will enter the Waitrose service road from Hadham Road. This needs to be clearly stated and if access is required it is recommended that 'Swept Path' analysis is undertaken as appropriate to ensure safe access.**

## 2.9 Multi-storey Car Park Trip Generation

2.9.1 As a 'stand-alone' application to replace existing car parks and to potentially provide additional spaces to meet suppressed demand (which the high occupancy rates of the car parks imply), the approach used to estimate the demand for parking at the proposed site and the change in route cars could take to access the new entrance is sensible. It should be noted however, that due to the time available to undertake this review a formal check on the calculations included in the TA appendices has not been undertaken.

2.9.2 However, both the approved and future development within the town could change the mix of land-uses within the town (for-instance) between office and retail, which could affect the peak times when the car parks would be used. An increased proportion of office space could increase weekday peak time arrivals and departures, whilst increased retail would lead increases in Saturday usage.

2.9.3 In addition, approved housing developments in the North of the town could increase the flow through Hadham Road and Rye Street.

2.9.4 Given that this application is a likely consequence of a possible Old River Lane development it would have been sensible to show the **need** for parking for the different land uses in order that the demand at the new car park could be estimated. For instance, it has not been established whether the 581 spaces proposed is greater or less than is **needed** within the town centre.

2.9.5 It should be noted that the assessment for parking is undertaken assuming the car park has a capacity of 625 vehicles. No justification is given for this 7.6% uplift beyond the comment that it provides a 'robust assessment'.

## 2.10 The Estimate of Trips to/from the 15 dwellings and the 396sqm of B1 office space

2.10.1 An assessment based on the TRICS database is an industry standard tool used to estimate the numbers of vehicles that can arrive or depart from a new development.

2.10.2 Details of how they were calculated have not been checked, but the trip rates for the residential and commercial are broadly in line with what would be expected from developments of this type. Note, however that the trip rates are an average, meaning that for 50% of sites the trip rate would be higher.

2.10.3 In this case, however, the trip volumes are low and the trips related to the flats will not have a material impact on the assessment or modelling given the scale of the other changes. The trips related to the commercial development are implicitly included in the modelling as they are assumed to be included within the numbers of vehicles that access the car park.

## 2.11 Assumptions related to the assessment of the proposed development

**2.11.1 As noted in section 2.5 (above) the Traffic surveys were not undertaken during a neutral month, and in particular not during the term time of the Bishops Stortford College. Consequently, the traffic count data that was used in the modelling is unlikely to be robust as it is likely to be lower than that on a 'normal' 'average' day, and likely to have different patterns of movement particularly at the Rye Street-Hadham Road-Link Road junction.**

2.11.2 It is assumed for the assessment that the delivery of a car park, signalling of Rye Street/Hadham Road junction and the delivery of the access to the new car park and Waitrose would occur in 2020. The TA then sets out to undertake an assessment of the impact in this opening year of 2020 and then 5 years in the future in 2025. It also undertakes an assessment in 2033 which is the year of the emerging East Herts local plan.

2.11.3 **In order to forecast changes (increases) of future year traffic within the town, the TA does not take into account any local developments (either approved or future).** It solely relies on TEMPRO<sup>1</sup> to provide estimates of traffic growth. This Department for Transport (DfT) tool provides a broad estimate of growth over a fairly large area and is valuable when looking to judge either broad estimate of the change, or to provide estimates of growth where the broad background level of growth will be representative.

2.11.4 This is not the case in the centre of Bishops Stortford. Specific committed (ie those with planning approval) developments should have been included in determining traffic volumes (including Bishops Stortford North (BSN), and other developments within the town). It might also have expected to have included trips related to the Goods Yard and Old River Lane given that these are likely to materially affect traffic within the town

2.11.5 Given the scale of development (both approved and future) within the town this does not appear to be reasonable nor robust. It specifically does not explicitly include committed (ie approved) development within Stortford which includes BSN) and it does not address whether the scale of the increase is sensible given the growth considered within the town. As well as growth is does not consider whether the patterns of movements would change (for instance could the proportion of vehicles using Rye Street and Hadham Road change). This concern is directly linked to the observation that the NEED for the car park has not been quantified.

2.11.6 TEMPRO estimates that on average traffic could grow by around

- 3% between 2017 and 2020,
- 11% between 2017 and 2025 and
- 18% between 2017 and 2033

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<sup>1</sup> A DfT tool for estimating traffic growth over a wide area.

2.11.7 In order to estimate the non-car-park traffic in each future year this growth factor is used on each link in the network. Consequently, the volume of traffic grows, but the patterns of movements stay the same.

**2.11.8 Given that the design and operation of the junction and signals is critically dependent on the appropriate level of traffic on each link, the modelling is not likely to provide a reliable estimate of traffic impact.**

## **2.12 Highways Impact: Assessment of the modelling**

2.12.1 It has already been noted that the traffic counts used to determine the flows were based upon traffic counts obtained during a non-neutral period, and that local developments have not informed the estimate of traffic growth. Consequently this calls into question the outcomes obtained from the modelling.

2.12.2 Note also that the model assumes that as soon as the car enters the car park entrance it no longer has an effect on the network. **Thus the model does not consider the effect of traffic 'blocking back' from the car park entrance.** The effect of this blocking back can be seen at the Aldi car park on London Road where cars entering will queue and block the highway because vehicles that are in the process of parking near the entrance will prevent further vehicles from entering. This can be mitigated and minimised by the design of the car park entrance. The design of the multi-storey car park *may* address this concern, but it is not addressed in the TA. No mention is made of this for the Waitrose car park

2.12.3 Consequently there are concerns related to the robustness of the outputs obtained from the modelling. However, given this disclaimer, the outputs from the modelling are commented on below.

### **2.12.4 In summary modelling shows:**

- **The existing Hadham Road/Rye Street junctions is already close to capacity**
- **The new 'combined Rye Street and carpark' junction is shown to be operating very poorly in the in the morning peak hour from the moment that the new car park is delivered and would be operating poorly from 2025 on Saturdays. In contrast the junction is shown to operate below capacity in the evening peak, even in 2033. This means that that there will be queues and delay in the morning peak and on Saturdays, and that small changes in traffic flows could have a large impact on journey times, and the predictability of journey times.**
  - **It is beyond the scope of this study to determine why the junction appears to 'work' in the evening, but not in the morning. However, from a brief look at the results in the main report (not the appendices), the reason for this could be due to the eastbound traffic turning into the car parks blocking traffic on Link Road. As previously noted the design does not provide for space for cars to queue when waiting to turn. Note, however, that this is speculation.**

2.12.5 In more detail:

- The model uses a software package called Arcady to model the existing roundabout without the proposed development in 2017 and 2020, and a Linsig model to assess the impact of the combined Rye Street junction and car park entrance with the proposed development in 2020, 2025 and 2033

- The Rye Street junction is shown to be very close to capacity in 2017 using the traffic flows observed in July as the basis. All the arms are over 80%<sup>2</sup> capacity, with the worst arm from Rye Street at 96% capacity. We would expect the County Council Highways to be aware of this, and to be looking for opportunities to improve this through external or central funding, or through mitigation required to support specific planning applications (such as this application)
- The combined Rye Street junction and car park entrance is modelled assuming the car park has been delivered. The results show that as soon as the junction is built it will be immediately under stress in the morning peak hour. The results show that it would operate with a practical reserve capacity (PRC<sup>3</sup>) of 1%. This is a very low level of reserve capacity for a 'new' junction. This results in an average<sup>4</sup> queue length of 19 vehicles on Rye Street and 21 vehicles on Hadham Road. 21 vehicles would correspond to a distance of around 126m (at 6.0m spacing allowed per car) and traffic would queue past the North Street roundabout<sup>5</sup>. The Arcady model only predicted a maximum queue of 9 and 8 vehicles on these two arms. By 2020 the junction is operating with a Practical Reserve Capacity of -10.6% (ie it is 10% over capacity).
- It should also be noted that in the AM peak, Link road Eastbound approaching the car park entrance is predicted to have an average queue of 11 vehicles. Thus car will be queueing back from the car park entrance to the Rye Street junction, and cars turning into the car park will be blocking the movements of vehicles not using the car park.
- In the PM Peak the junction appears to operate well with a large amount of reserve capacity even in 2033.
- On Saturdays the junction is shown to be operating within capacity, however by 2025 the junction is shown to be operating in excess of capacity.

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<sup>2</sup> Typically, a junction is considered to be 'stressed' when over 80% capacity. Even at 100% capacity the junction will still operate. In a busy location like this it would be expected that a junction is operated close to capacity. As the junction becomes more stressed there would potentially be increases in start-stop traffic, accidents, and the unpredictability of the journey time. This is due to small changes in flow potentially leading to a large build up of queues

<sup>3</sup> Practical Reserve Capacity (PRC): A measure of how much spare capacity is available. As the figure approaches zero and then turns negative it shows that the junction will not be operating efficiently, and that queue and delays will increase and journey time variability will increase.

<sup>4</sup> Mean Maximum Queue (MMQ): The maximum queue length is estimated every 10 minutes (say), giving 6 measurements in an hour. The average of these maximums is the MMQ.

<sup>5</sup> Note that this queueing has not been taken into account in the assessment of the Hadham Road/North Street junction undertaken in section 5 of the TA