

LDF PMB and MAG Combined Group

Core Strategy Workshop 10 – December 16th 2011 Non-technical Forecasting Addendum Report 2 – Review of Yeovil Eco-Urban Extension

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Purpose

To highlight the findings of the latest traffic modelling study, that assesses the various options for locating Yeovil's urban extension and in respect of

- relative advantages and disadvantages of the emerging southern preferred option for the urban extension (and in particular compared against a north western option)
- relative impacts of the options on the Cartgate junction with A3088 and A303.

Recommendation

That the Project Management Board

1. note the contents and findings of the Latest (3rd) Parsons Brinkerhoff report (Addendum Report 2 – draft 2.2 – Review of Yeovil Eco Town extension)
2. endorse the conclusion below of this report derived from consideration of the Parsons Brinkerhoff (3rd) report to the effect that the emerging option for the urban extension to the south of Yeovil (Option 9c in the Parsons Brinkerhoff report) be favoured over other options in traffic terms and in particular the comparable option to the north west of Yeovil (Option 10 in the Parsons Brinkerhoff report)

Background

The latest traffic report into Yeovil's urban extension produced by Parsons Brinkerhoff again follows two similar studies that were published earlier this year; the February 2011 report had a 6 week consultation period, and indicated Option 5: Brympton and Coker as the most favourable location based upon the relative performance in traffic terms and costs associated with off-site mitigation schemes. An Addendum report (June 2011) was produced to address concerns raised during public consultation on the first report – this principally involved extending the tests of full and partial eco success to the three northern options, and modelling two roundabouts originally missing. Option 1: Lufton West and Option 5: Brympton and Coker performed with least impact on the road network in the June Addendum report, but it was concluded that the differences between options were small, and therefore transportation could not be used in isolation from other planning matters to determine the most appropriate location for Yeovil's urban extension.

The first traffic study was discussed at the Yeovil workshop PMB of June 14th 2011. At the following PMB meeting (July 5th), transport issues at Yeovil were again discussed, in light of the Addendum Report. Members at this second meeting resolved to endorse a third report by Parsons Brinkerhoff in order to

- address the likely reduced scale of the urban extension
- present an option for consideration to the north west of Yeovil that does not access the A3088 or Tintinhull Rd.
- model in detail the likely impact of the various options on the Cartgate junction with the A303

Report

Parsons Brinckerhoff have undertaken a Study to consider the potential impact on the highway network of the different options for the proposed eco-urban extension at

Yeovil (see appendix 1). At the time of writing this report the Council has requested several outstanding amendments to be made to the Study (see appendix 2). The findings of the Study are however robust enough without these amendments within it in order for members to conclude on its main findings.

This third study was produced principally to test four further options (Options 7-10 below) that have emerged as a result of ongoing Core Strategy work, and to assess the impact on Cartgate Roundabout in greater detail.

The modelling assumes that the proposed Western Corridor improvements are all in place. Should this not be the case then the traffic flows in the west/north west of Yeovil are shown as better than would actually be the case – this means that there is a risk associated with development in this sector that the model could be misleading.

Approximate costs of road infrastructure requirements of Options 1-6 were included in the first report (February 2011). The forthcoming Infrastructure Delivery Plan is dealing specifically with the development options and the respective infrastructure costs, including transport infrastructure. In the meantime, following concerns raised by Members at the Councillor workshop on October 13th, a separate study 'Highway Infrastructure Requirements for Yeovil Urban Extensions' has recently been produced by Somerset County Council that assesses the preliminary cost estimates of Options 7 and 9, alongside the previous work on Options 1 – 6. This estimates the cost of highways infrastructure for Option 7 to the north west of Yeovil as £9.4m, and Option 9 to the south of Yeovil and the emerging preferred option as £2m.

Options and demand scenarios

The following table summarises the nine locations that have been considered as development options, with Options 7-10 newly derived in this latest report (see main report in app 1 for maps showing these options):

- Option 1: Lufton West
- Option 2: Combe Street Lane
- Option 3: East Yeovil and Over Compton
- Option 4: East Coker, Keyford and Barwick
- Option 5: Brympton and Coker
- Option 6: East Coker and Keyford
- Option 7: Lufton West (lower scale of development, with direct access to A3088 Cartgate link)
- Option 8: Lufton West (lower scale of development, without direct access to A3088 Cartgate link)
- Option 9: East Coker, Keyford and Barwick (lower scale of development, amalgamates parts of Options 4 and 6).
- Option 10: Lufton West (lower scale of development, access on to Thorne Lane/Ball's Hill only).

Options 1-6 are based upon the size of the urban extension being 3,719 dwellings and 23 ha of employment land whilst Options 7-10 assume a reduced amount of development with 2,500 dwellings and 13.5 ha employment land.

Levels of car traffic demand from different scenarios were applied as reductions to the overall total of trips from the development. Three different traffic demand scenarios were modelled for each option, namely:

- Non-eco traffic – fail to meet sustainable travel targets, due to conventional travel demand patterns for Yeovil i.e. relatively high car usage; approximately 70% of all journeys from the urban extension made by private car.

- Partial eco-success – fail to fully meet the sustainable travel targets, but high levels are achieved; 60% of all journeys made by the car.
- Eco success – sustainable travel targets are met; 50% of all journeys made by non-car modes.

A Reference Case is established to provide a baseline situation against which all different option scenarios can be compared, and relates to the Yeovil road network in 2026 without the Urban Extension with all houses in the Core Strategy located around Yeovil rather than in a large single location.

Town-wide road impacts

This element of the study assesses the impact on the Yeovil road network as a whole, and on journey times for six identified routes. The statistics include average delay per vehicle, average vehicle speed, and total hours spent by all vehicles in over-capacity queues. The eco-success scenarios perform better in comparison with the non-eco traffic scenarios. However, the modelling results indicate severe congestion in the future under all development options, implying the need for some form of mitigation. Each development option will have a very similar impact on the Yeovil road network; although there will be “hot spots” in congestion on different parts of the network depending on the location of the urban extension, the overall impact of the location is minimal.

Similar conclusions are set out regarding the impact on journey times for the six identified routes, with eco-success generally meaning lower journey times, and relatively small differences between each option.

Localised impacts

This part of the study focuses on the amount of traffic forecast to use specific roads, and the performance of key junctions. Around 20 roads have been analysed, both within Yeovil and on key routes in proximity to the town. The results of this show that the majority of traffic flow changes increase or decrease by under 10% compared to the Reference Case.

There are few impacts outside the +/-10% threshold in any Option Scenario combination away from the Urban Extension sites themselves. This is to be expected, as traffic related to the proposed developments is a relatively small proportion of total traffic on the network. Where there are large changes in flow on the key routes these are primarily on links proximate to the development sites and in the direction of the prevailing peak. The results also show that the impact is quickly dissipated as traffic thins away from the development locations.

Depending upon which option is chosen, the roads that would see significant traffic flow changes are: Western Avenue (Options 1, 7, 8, 10); Lyde Road (Options 2, 3); A359 Mudford Road (Option 2); A37 Dorchester Road (Options 4, 6); A3088 Watercombe Lane (Options 4, 5, 6, 9, 10); A30 West Coker Road (Options 5, 6); Tintinhull Road (Option 8); Hendford Hill (Options 4, 5, 6, 9).

In relation to option 9 the emerging preferred option the local impact on traffic flows in excess of 10% are experienced at Hendford Hill and Watercombe Lane. By 2026 the increased flows in these parts of the road system are 25% reducing to 14% with eco town traffic standards at Hendford Hill and 38% reducing to 24% at Watercombe Lane. In relation to option 10 the impact on traffic flows on an assumed improved Western Avenue is 28% (as there is considered no prospect of reaching eco standards here now reduced figure of impact is given). In the rush hours the Hendford traffic will be delayed by 10 seconds going in to Yeovil in the morning and

26 seconds going out in the evening. The impacts in terms of time delay for the other impacts at Watercombe and Western Avenue are not given in the Parsons Brinkerhoff report.

In order to assess the impact of the potential development options upon junction performance, 11 junctions have been analysed and the level of congestion at each has been forecast. This demonstrates that the morning peak is expected to experience the greatest increases in congestion. The following junctions will require attention due to the high levels of congestion predicted at these locations:

- Horsey roundabout
- Hospital roundabout
- Fiveways roundabout
- A30 Sherborne Road/Lyde Road mini roundabout
- Combe Street Lane mini roundabout.

Overall, assessment of the localised impacts on roads and junctions indicate no clear difference between the different options and scenarios that were tested, other than a lower impact where sustainable travel has been successful. Even the relatively small traffic impacts of an eco development will likely require mitigation on the road network.

Impacts on Cartgate Roundabout

This latest study uses an additional assessment tool to more accurately forecast how the Cartgate Roundabout will perform in 2026. The morning peak will cause congestion on the A303 west arm of the Cartgate Roundabout for all option scenarios, although this is not forecast to exceed the design capacity of the arm and therefore queues and delays are expected to remain low. Capacity and delay problems are not forecast for the other arms, and no one location stands out as having less of an impact on Cartgate Roundabout, and there are negligible differences between the different traffic demand scenarios. However modellers have expressed doubts as to the veracity of these results in relation to Cartgate.

It is important to note that comments on this study have not yet been received from the Highways Agency, although they would have “significant and serious concerns about a proposal for direct access on to the A3088 Cartgate link because of its potential to have direct and detrimental impact on the operation of Cartgate Roundabout and traffic flows on the A303 on this part of the network.” Stephen Walford (SCC Transport Policy Manager) will raise the findings of the latest study at a meeting with the Highways Agency on December 22nd, and is also attempting to get an initial response from them prior to today’s PMB meeting. In the absence of formal comments from the Highways Agency on the latest study at the time of writing, it is worth reiterating their previous comments: they stated in consultation on the draft Core Strategy (incorporating preferred options) that Yeovil’s urban extension should be located as far away from the A303 as practicable, and supported the southern option for the urban extension in principle subject to the emergence of more detailed proposals; and they were content with the findings of the first Yeovil traffic modelling report (February 2011) “as expected the modelling shows that development to the south of Yeovil is preferable and we are reassured that negative impacts of the proposed urban extension on the A303 are likely to be limited to the Cartgate Roundabout.”

Conclusions

Overall, there is little difference in terms of traffic impact in Yeovil between the urban extension options, with only Option 2 performing markedly worse. Background traffic growth (from growth in car use and growth in the size of Yeovil) is the main

contributor to deterioration of the highway network performance, although the successful implementation of sustainable travel at any location would improve its performance. This means that the impact of any given development option for the urban extension will not be discernable on Yeovil as a whole compared to the 2026 Reference Case, and the impacts are generally localised. Given the baseline congestion in the 2026 Reference Case, there will be a general requirement for traffic demand management measures and highway infrastructure improvements across Yeovil whichever option is chosen, with several key junctions requiring attention as demand exceeds capacity leading to queues and delays. Even the relatively small traffic impacts of an eco development will likely require mitigation. In this regard the emerging preferred option to the south of Yeovil, which is capable of achieving eco town travel standards, is considered better in traffic terms than those other options where eco standards cannot reasonably be achieved (including options to the north west).

It is interesting to note that the reduced scale urban extension development (Option 9) has greater transport impacts than the larger scale development in similar areas south of Yeovil, despite the overall level of development at Yeovil being the same for all option and scenario tests. This finding is of value as it shows that concentrating the development would have merits in transport terms.

In relation to localised impacts the emerging preferred option to the south does have a more marked local impact than the norm for Hendford Hill and Watercombe Lane. The north western option 10 without access to Cartgate link or Tintinhull Rd also has a local impact greater than the norm on an improved Western Avenue. In the context of the increased traffic delays throughout the town by 2026 the increased delays at Hendford Hill of 10 seconds in the morning and 26 seconds in the evening are not thought to be of major impact in determining which option should be developed.

The impact on Western Avenue of delay would of course be greater should the road not be fully improved. The risk of this must be a factor to bear in mind in determining which option to choose for growth.

The County Council and Highways Agency have both expressed support for development further away from the A303 and the Highways Agency has been asked to review this stance in the light of the report now presented. At the time of writing and despite several approaches the Agency's position in the light of the report is still to be forwarded. These comments will be forwarded to Members of the PMB orally should they be obtained prior to the next workshop or otherwise in writing once received.

Finally the County Council have refined likely costs in relation to off site transport works required with the various options. The emerging preferred option is cheapest at £2m whilst the northwest option incorporating a link onto the A3088 is dearest at £9.4m whilst an option here without the link would be £7m (although there is some doubt that the County Highway Authority would sanction such a major amount of development solely to be accessed off Thorne lane)