

## **S106 Agreement – Justification for Route Protection of the SE Bicester Perimeter Road – The Policy Context**

### **Justification for Route Protection**

Improvements to the peripheral routes serving Bicester have been and continue to remain an integral part of Oxfordshire County Council's (OCC) policy requirements for Bicester. These requirements arise from an understanding of the overall growth ambition set out within the master-plan developed and agreed on a joint basis between the County Council, Cherwell District Council and Bicester Town Council.

The provision of a South East Perimeter Road is one of a number of long term schemes identified by the County Council within the Transport Strategy for Bicester as being essential in order to facilitate the town's future growth. Securing and delivering such a strategic route is supported in terms of policy by the Oxfordshire Local Transport Plan 2011 - 2030 (April 2011).

“Policy G4: “Oxfordshire County Council will seek, as a priority, external funding to deliver transport improvements within and around Eco-Bicester;

Policy SD2: Oxfordshire County Council will secure contributions from new developments towards improvements for all modes of transport. This can be financial contributions or direct works for the mitigation of adverse transport impacts to the immediate locality and/or wider area improvements;

Chapter 16, Paragraph 16.47 of the Bicester Area Strategy”.

Paragraph 41 of the National Planning Policy Framework also states “Local Planning Authorities should identify and protect where there is robust evidence, sites and routes which could be critical in developing infrastructure to widen transport choice”.

Any development proposal on the Graven Hill site must provide for and require dedication of sufficient land as to enable the perimeter road to be constructed as part of the agreed master-plan; which in itself underpins the planning framework within the emerging Local Plan.

### **Route Protection**

The perimeter road route that is to be protected is to be up to 15m (i.e. 7.3m carriageway, 3m footway/cycleway with 2 x 2m verges, swales and lighting infrastructure) and will follow the same alignment of the Access Road to serve the Graven Hill development. A (up to) 12m road width is not considered adequate enough i.e. can only provide a 7.3m carriageway and 2 x 2m verges.

The design of the Access Road needs to allow for the construction of the South East Perimeter Road for Bicester.

This route must be secured, and the required land protected for highway purposes, within the S106 Agreement. OCC would not have this route dedicated straight away, just protected with an option for OCC to call upon its dedication within 10 years. This route would also need to be safeguarded i.e. not built upon.

During S106 negotiations for specific transport infrastructure requirements for 11/01494/OUT, Oxfordshire County Council agreed not to seek a strategic transport financial contribution (approximately £4m) for the Bicester Area Strategy on the basis that the South East Perimeter Road route would be safeguarded/dedicated.

### **Summary**

The required route protection for the South East Perimeter Road is supported in terms of policy by the Oxfordshire Local Transport Plan 2011 - 2030 (amended April 2012) and the National Planning Policy Framework.

## **The Evidence Base**

### **Supporting in Emerging Local Plan**

The Bicester Masterplan and Movement Study have identified the need for a new link road to achieve the necessary improvements to the peripheral routes in Bicester to accommodate Cherwell's long term growth.

The Bicester Movement Study reports there is already a considerable demand for travel on the A41 to the south of the town, particularly between Bicester and junction 9 of the M40. The proposals within the Local Plan and Masterplan are both focussed on encouraging a greater proportion of journeys to remain within the town. The associated Movement Study encourages a greater degree of travel by sustainable modes. However the growth planned for the town and increases in levels of background traffic will result in an increase in the amount of traffic on the road network which will have a severe impact on the operation of the highway network and its ability to accommodate planned economic and housing growth.

Without measures being introduced to encourage traffic to use alternate routes, levels of traffic travelling on the Central Corridor (Kings End / Queens Avenue / Buckingham Road) are expected to increase significantly as a result of predicted growth. In particular the following junctions are predicted to be operating at or over reasonable capacity:

- Junction of A41 / Oxford Road;
- Junction of Kings End / Middleton Stoney Road;
- Junction of Queens Avenue / St. Johns Street;
- 3 arm roundabout of Field Street / Banbury Road / Buckingham Road

With the expected redevelopment of Graven Hill (and potentially East Bicester development site) future demand for road based commercial / employment related traffic in Bicester can be expected to be primarily focused to the eastern side of the town, with much of the traffic associated with the employment sites identified accessing the A4421 directly. This will be further compounded by Bicester Business Park. A significant amount of housing (2700 plus) is also proposed on the eastern side will create more pressure on the network in this area.

The levels of growth proposed within the Local Plan and Masterplan period can be expected to both exacerbate existing issues and to raise new transport and travel issues that will need to be mitigated or addressed. Two key issues remain:

- Increased congestion and journey times on the Eastern Perimeter route and on the A41 to the south of Bicester
- An increase in the severance effect of the A41 (east), as traffic levels and congestion on this link increases particularly when taking into account the potential redevelopment of Graven Hill immediately to the south

### **Initial option appraisal and sifting**

Traffic modelling (using the Bicester SATURN model) was conducted to produce a qualitative assessment on six main corridors which included improvements to existing highway capacity and new routes to the east and west of the town. This established the economic, social and environmental benefits of each corridor.

Options which provided new or improved routes to the south-east of the town, particularly those which provide a new route bypassing the existing A41 to the immediate south of the town, are expected to have the largest economic benefits. Specifically these options are considered most likely to improve journey times on the A41, including access to and from the M40. These options would also provide improved access to major local employment sites and offer the most potential for agglomeration benefits (i.e. improving employment and business related access between Bicester, Oxford and Aylesbury). The county council will continue to work with the Highways Agency and developers to resolve issues at M40 Junction 9 after full realisation of the benefits of the current Phase 2 improvements (due to commence in April 2014).

South-east options which provide new road links are also expected to have the greatest benefits in terms of Social Impacts, specifically by helping to reduce the severance impacts of the A41 between new development sites to the south and the remainder of Bicester and by offering the greatest potential for achieving accident reductions.

This initial assessment identified a new peripheral route to the south-east of the town (A41 to A4421) provides the most overall benefits. When considering Local Plan growth and in conjunction with schemes to deter traffic along the central corridor (Queens Avenue) and improvements to the existing eastern ring road (Charbridge Lane) a link to the south-east will reduce flows on the two most congested parts of the network. The number of two way trips on the A41 south of the town is predicted to reduce by 1438 in the morning peak hour and 1989 in the evening peak, with two way trips on the A41 east (Boundary Way) reducing by a similar degree (1478 in the morning peak hour and 1856 in the evening).

Additionally, a significant improvement in the journey times around the eastern side of the town, with travel times reducing by 255.8 seconds for northbound journeys and 91.36 seconds for southbound journeys in the morning peak hour and 167.88 seconds northbound and 81.58 seconds southbound in the evening peak hour (although much of this benefit is realised on the initial section of the route bypassing the current A41 south of the town).

### **Further assessment**

For robustness, a quantitative assessment has been carried out on the three routes that had the greatest benefit from the initial sifting report - two to the south-east and one to the north-west. An additional option optimising sustainable modes was added to the assessment. The economic appraisal was carried out using TUBA and a reference 'base' case was constructed - "All Proposed Growth" (APG) - which seeks to maximise the use of the existing highway network with all development 100% built out, up to approximately 2040, including network changes. Trip rates have been established using existing TAs or TRICS database.

Option 1	All Proposed Growth
Option 2	Optimisation of sustainable modes
Option 3	Route 1B – Vendee Drive/NW Bicester/Caversfield
Option 4	Route 2C – A41 Vendee Drive roundabout/Graven Hill/East Bicester/Charbridge Lane
Option 5	Route 3 – A41 (EWR1 alignment)/Graven Hill/East Bicester/Charbridge Lane

### **Model Comparisons**

Option 1 is the worst performing option in terms of both over capacity queuing, average speed and travel time. This is a significant increase over the 2012 levels. Option 5 performs best in these same three areas. Option 2 has the lowest total travel distance. This is as expected as here are fewer vehicle trips in the matrices.

Options 4 and 5 show significant reductions on the A41 (Boundary Way). Option 3 sees the largest reduction on Kings End northbound although the southbound flows on this link remains largely static in all options.

### **Economic Assessment (TUBA)**

Assessments have been carried out with Option 1 being taken as the reference case compared with all options. Options 4 and 5 were shown to provide the most benefits. Although it should be noted that none of the options completely mitigate the impact of the growth and the rest of the emerging movement strategy would be required alongside any new link road. Network summary statistics are below:

#### AM Peak Model Network Summary Statistics

Option:	2012	1	2	3	4	5
Total Travel Time (PCU Hrs)	3,078	4,224	4,156	4,173	4,117	4,121
Total Travel Distance (PCU Kms)	237,614	270,750	269,550	270,662	269,721	269,724

Average Speed (Kph)	77.2	64.1	64.9	64.9	65.5	65.4
Over Capacity Queues PCU (Hrs)	218	623	601	608	559	575

#### PM Peak Model Network Summary Statistics

Option:	2012	1	2	3	4	5
Total Travel Time (PCU Hrs)	3,163	4,734	4,612	4,641	4,607	4,579
Total Travel Distance (PCU Kms)	243,640	284,220	282,519	284,093	282,933	282,928
Average Speed (Kp)	77.0	60.0	61.3	61.2	61.4	61.8
Over Capacity Queues PCU (Hrs)	188	833	761	775	730	723

Option 3 does show benefits in the north western areas of the town and more benefits for the central corridor, but does not relieve the A41. Although removing unnecessary vehicular traffic from the central corridor remains part of the transport strategy for the town, resolving congestion on the A41 is critical because of its links to economic development sites. There are already issues along the A41 and these will worsen in the short term as developments along the route are implemented, whereas the issues in the north western part of the town will become evident over a longer period of time.

The modelling suggests that both south eastern options would relieve the A41 to a significant degree (1400 less vehicles predicted in a peak hour), therefore improving journey times and access to economic development sites. Options 4 and 5 perform the best overall and offer the most benefits to the overall network, which will help to deliver the planned growth.


At this stage in the assessment process, it has been possible to look at the financial benefit of each option compared to a 'do minimum' (Option 1) situation. This analysis shows the most economic benefits would be gained from either of the south eastern routes. Benefit cost ratio analysis of individual options will be carried out as part of the next stage, when preliminary design provides cost estimates.

Present Value Benefits have also been calculated and, although should not be used in isolation, provide indicative differences between options.

Opt1 vs Opt2	£23,599,000
Opt1 vs Opt3	£32,247,000
Opt1 vs Opt4	£51,843,000
Opt1 vs Opt5	£56,855,000

## **Conclusions**

In summary, the options increase in benefit compared to Option 1 in the following order:

- Option 3 (Route 1b)                      Least benefit
  - Option 2 (OST)
  - Option 4 (Route 2c)
  - Option 5 (Route 3)                      Most benefit
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This modelling work will provide the evidence base for local plan submission and Local Transport Plan update.

## **Next steps**

Options 4 and 5 will be taken forward for further analysis and design, to include full economic and environmental appraisals, feasibility including deliverability and an assessment of costs. Both recommended options use the same alignment from Graven Hill to A4421 (Buckingham Road).

Further work is also required in response to the publication of the SHMA and the impact of the potential closure of the London Road level crossing due to East West Rail. Initial investigations in to the latter suggest that any resolution to the closure would only provide necessary benefits with a south eastern perimeter route in place.