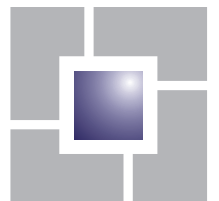


Woodstock East, Oxfordshire

A44 Junction Sensitivity Test



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Woodstock East, Oxfordshire

***A44 Junction
Sensitivity Test***

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RJM/NES 15291-12c A44 Sensitivity Testing

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1.0 Introduction

- 1.1 Woodstock East has been developed around a public transport oriented transport strategy. At present the absence of bus priority measures on the corridor means that buses experience congestion in peak hours (the bus timetable is extended by 18 minutes) i.e. no competitive advantage and comparable delay to cars. To deliver this, it is proposed that the infrastructure works on the A44 corridor should seek to provide sufficient additional capacity to offset the traffic generation from the development site and reallocate road space/green time to minimise the delay to buses on the corridor. This would offer quicker journey times for travellers on the corridor (particularly bound for Oxford) and reduce car use/parking requirements (in constrained destinations such as Oxford).
- 1.2 Within the Transport Assessment, there is a target to reduce the number of car trips during the AM peak hour period by 250 vph. This would not be wholly achieved by a shift from car to buses (circa 130 vph from the Link and Ride) but reflects other network changes such as the rebalancing of the priorities at the Wolvercote Roundabout (via signalisation).
- 1.3 In addition improvements to bus journey times are likely to result in a mode shift from the existing bus catchment area. No explicit estimate of the direct increase of bus use from the bus priority was made within the TA and therefore the assessment was considered to be conservative.
- 1.4 It was agreed with OCC to undertake sensitivity testing of the assumptions to understand whether the parking at the interchange was required for development at Woodstock. The scenario adopted is based on no reduction in traffic on the corridor. This is considered to be an extreme scenario however as set out below the results demonstrated that the proposed works are sufficient to mitigate the development irrespective as to whether the parking at the interchange was provided.
- 1.5 This assessment demonstrates that even without any reduction in the base flow, the junction improvements identified within the TA provide appropriate mitigation for the development in the context of NPPF.
- 1.6 The findings of this note do not change the conclusions of the Transport Assessment or of the Environmental Statement and respective Addenda. The Air Quality and Noise

assessments within the Environmental Statement do not in any event make any allowance for a reduction in the base traffic due to mode shift and therefore remain robust.

2.0 Future Year

2.1 The junctions has been tested using the scenario:

- up to 1,200 dwellings, including affordable housing and up to 120 unit care village (C2) with associated publically accessible ancillary facilities;
- site for a new primary school;
- up to 930sqm of retail space;
- up to 13,800sqm of locally led employment (B1/B2/B8) including transport interchange;
- site for a Football Association step 5 football facility with publically accessible ancillary facilities;
- public open space; and,
- associated infrastructure, engineering and ancillary works.

2.2 No allowance made for an underlying mode shift/reassignment on the base network. The assessment adopts the trip generation and distribution assumptions agreed with OCC and set out in the TA Addendum.

2.3 The junction models have all been upgraded from v8 to v9. Whilst this is a largely cosmetic change – fundamentally the capacity relationships have not changed – the models have been reviewed to ensure that existing conditions are replicated.

2.4 The full LINSIG & ARCADY reports are appended.

2.5 **Table 1** shows the results of the Bladon Roundabout. It is proposed that the Bladon roundabout would be fully signalised. The results below show that it would operate within capacity in the future year with no mode shift or reassignment.



Table 1 Bladon Roundabout (Option 2 - no MS/RA)

	AM		PM	
	Practical Reserve Capacity	Total Network Delay (pcuHr)	Practical Reserve Capacity	Total Network Delay (pcuHr)
Signal Option	5.8%	32.57	11.4%	35.75

2.6 **Table 2** shows the results of the Langford Lane traffic signal T junction. No works are proposed at this location. The results below show that it would operate within capacity in the future year with no mode shift or reassignment.

Table 2 A44 - Langford Lane (Option 2 - no Ms/RA)

Arm	AM		PM	
	Deg of Sat %	Max Q	Deg of Sat %	Max Q
A44 Woodstock (N) Ahead	78.5%	16.6	53.0%	8.6
A44 Woodstock (N) Ahead	78.4%	16.5	52.8%	8.6
Langford Lane Right	65.6%	3.5	70.9%	6.8
Langford Lane Right	65.6%	3.5	70.6%	6.8
A44 Woodstock (S) Right	86.3%	12.3	68.2%	6.4
A44 Woodstock (S) Ahead	30.8%	3.0	56.4%	9.3
A44 Woodstock (N) Ahead	30.8%	3.0	56.3%	9.3

2.7 **Table 3** shows the results of the A44 – Spring Hill Road roundabout. It is proposed that the hatching on the immediate approach to the roundabout would be removed. The results below show that it would operate within capacity in the future year with no mode shift or reassignment.

Table 3 A44 Spring Hill Road (Option 2 - no MS/RA)

Arm	AM			PM		
	RFC	Queue	Delay (sec)	RFC	Queue	Delay (sec)
A44 Woodstock Rd (S)	0.37	2.0	5.08	0.85	5.5	10.83
Spring Hill Road	0.06	0.1	10.03	0.33	0.5	31.72
A44 Woodstock Rd (N)	0.74	2.9	6.72	0.75	3.0	7.17

2.8 **Table 4** shows the results of the Begbroke Science Park traffic signal T junction. No works are proposed at this location. The results below show that it would operate within capacity in the future year with no mode shift or reassignment.



Table 4 Begbroke Science Park/ A44 Woodstock Road

Arm	AM		PM	
	Deg of Sat %	Max Q	Deg of Sat %	Max Q
Begbroke Science Park Left	7.7%	0.4	38.8%	2.4
Begbroke Science Park Right	11.1%	0.5	56.0%	2.8
A44 Woodstock Road (S) Ahead	56.3%	10.3	73.2%	16.4
A44 Woodstock Road (S) Ahead	57.6%	11.5	74.3%	18.1
A44 Woodstock Road (S) Right	63.0%	3.2	1.3%	0.1
A44 Woodstock Road (N) Left Ahead	79.8%	18.5	76.7%	17.3
A44 Woodstock Road (N) Ahead	78.9%	17.0	75.5%	15.7

2.9 **Table 5** shows the results of the A44 – Sandy Lane – Rutten Lane roundabout. It is proposed that the hatching on the immediate approach to the roundabout would be removed. The results below show that it would operate within capacity in the future year with no mode shift or reassignment.

Table 5 A44 - Sandy Lane - Rutten Lane Roundabout

Arm	AM			PM		
	RFC	Queue	Delay (sec)	RFC	Queue	Delay (sec)
Sandy Ln	0.20	0.3	4.72	0.25	0.3	5.31
A44 Woodstock Rd (S)	0.50	1.0	2.72	0.64	1.8	3.78
Rutten Lane	0.56	1.2	17.11	0.89	7.0	106.16
A44 Woodstock Rd (N)	0.62	1.6	3.84	0.65	1.9	4.17

2.10 **Table 6** shows the results of the A44 – Cassington Road Roundabout. It is proposed that the roundabout would be fully signalised. The results below show that it would operate within capacity in the future year with no mode shift or reassignment.



Table 6 A44 - Cassington Road roundabout

Arm	AM		PM	
	Deg of Sat %	Max Q	Deg of Sat %	Max Q
A44 Woodstock Road (N) Ahead Right Left	84.1%	8.8	89.7%	13.5
Right Right2	21.3%	0.9	33.2%	1.5
A44 Woodstock Road (S) Ahead Ahead2	51.0%	5.6	72.0%	10.7
A44 Woodstock Road (S) Ahead	51.0%	5.6	72.0%	10.7
Cassington Road Ahead Left	42.4%	1.5	51.6%	2.7
Cassington Road Ahead	28.3%	0.8	41.5%	1.8
Right Ahead	57.2%	3.0	61.5%	3.3
Right	64.6%	3.5	69.6%	4.0
Turnpike Left Ahead	0.2%	0.0	2.7%	0.0

2.11 **Table 7** shows the results of the Loop Farm Roundabout. It is proposed that the roundabout would be fully signalised. The results below show that it would operate within capacity in the future year with no mode shift or reassignment.

Table 7 Loop Farm roundabout

Signal Option	AM		PM	
	Practical Reserve Capacity	Total Network Delay (pcuHr)	Practical Reserve Capacity	Total Network Delay (pcuHr)
Signal Option	22.7%	15.13	9.2%	25.75

2.12 **Table 8** shows the results of the Peartree Roundabout. The signalisation of this junction was proposed as part of the Northern Gateway development. As can be seen from the results the degree of saturation on some of the links will approach 100% where there is no mode shift or reassignment on the A44 corridor.

Table 8 Peartree roundabout

Signal Option	AM		PM	
	Practical Reserve Capacity	Total Network Delay (pcuHr)	Practical Reserve Capacity	Total Network Delay (pcuHr)
Signal Option	-5.7	93.15	-10.3	110.63

3.0 Conclusion

3.1 Overall the capacity testing shows that the proposed signalisation of the Cassington Road and Loop Farm roundabouts will release additional capacity to fully accommodate

the additional development traffic which will allow the existing capacity constraints on the upstream roundabouts to be removed.

- 3.2 Whilst the ability of enabling interchange from car to bus at Woodstock is considered to be beneficial the testing shows that it is not required to make the development acceptable in NPPF terms. As such there is full flexibility in the implementation of the interchange without materially impacting on the overall transport strategy for the site.
- 3.3 Notwithstanding this, ultimately the public transport oriented strategy seeks more reliable and rapid bus travel on the A44, and irrespective of whether the interchange proceeds. This will have benefits not only for residents within the proposed development but for the wider Cherwell and West Oxfordshire catchment area of the S3 service.
- 3.4 The findings of this note do not change the conclusions of the Transport Assessment or of the Environmental Statement and respective Addenda. The Air Quality and Noise assessments within the Environmental Statement do not in any event make any allowance for a reduction in the base traffic due to mode shift and therefore remain robust.