

Witney Transport Strategy Refresh: Modelling Summary

Technical Note

To: Oxfordshire County Council

From: Joe Clabour, WYG

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Project: Witney Area Transport Strategy Refresh

Subject: Review of Witney Model Results

Ref: A101212

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1 Introduction

- 1.1.1 WYG has been appointed by Oxfordshire County Council (OCC) to further develop the transport strategy for the town of Witney. This work is necessary as a result of recent proposed changes to the West Oxfordshire District Local Plan that has seen the proposed level of development around the District increase following inspection of the previously submitted draft Plan in 2015.
- 1.1.2 The previously submitted Plan made provision for 10,500 new houses across the District. c. 3,700 homes were proposed for delivery on sites to the north, east and west of the town.
- 1.1.3 In response to the Inspector's comments on the previous Plan, an updated draft known as the Main Modifications Plan was prepared for consultation in late 2016. The Main Modifications Plan significantly increases the proposed scale of residential development across the District to c. 15,800 units.
- 1.1.4 To help inform the proposed modifications, Atkins undertook a preliminary Evaluation of Transport Impacts (ETI) report in 2016 (TRA5).
- 1.1.5 To assess the transport and highway implications of the proposed amendments to the Plan, two outline development scenarios were input to and tested using the Oxfordshire Strategic Model (OSM). Output from a third model run assessing 2013 baseline conditions was also made available to the study.
- 1.1.6 The first ("Do Minimum") scenario model run considered only developments that were already constructed or identified as committed together with accompanying committed transport and highways improvement schemes. The second ("Preferred Development")

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scenario considered the implications of delivering the full allocation of proposed (housing and employment) development sites across the District as identified by the Authority as being required to meet needs by 2031. Further details of the specific developments and assumed highway and transport mitigation proposals included in each model run are provided in the sections relating to each below. Demand flow and volume / capacity data is available in **Appendix A**.

- 1.1.7 This report summarises the key outputs and conclusions of the 2016 Atkins Report and also considers the development of further options for assessment (see Section 5).

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2 2013 Baseline Model Run

2.1.1 To identify existing performance issues on the network and as the basis for assessing previously proposed and potentially developing further potential highway and transport mitigation proposals, a review of output from the 2013 AM and PM peak Baseline models was undertaken.

2.1.2 The results indicate several areas where the existing network experiences stress during both peak periods, a summary of which is provided below:

Within Witney	
AM Peak	PM Peak
<p>Bridge Street: Northbound link operates at 104% capacity, southbound at 96% V/C. The A4095 / B4022 double mini-roundabout to the north approaches capacity operating at 91% V/C.</p> <p>Station Lane: Westbound approach to the Ducklington Lane signal junction operates at 101% V/C.</p>	<p>Bridge Street: Both northbound and southbound links operate in excess of capacity (102% and 101% respectively).</p> <p>Station Lane: The westbound approach to the Ducklington Lane signal junction operates at 101% V/C.</p> <p>B4047 Burford Road: Westbound approach to the Deer Park Road junction operates at 101% V/C.</p>
East of Witney	
AM Peak	PM Peak
<p>A40 Corridor at Eynsham: Both eastbound and westbound approaches to the Witney Road junction and the junction itself operate in excess of 95% capacity.</p> <p>The A40 / Cassington Road junction operates between 85% and 95% capacity.</p> <p>A44 Corridor between Woodstock and Oxford North: Both north and southbound links approaching the Rutten Lane / Sandy Lane roundabout at Yarnton operate in excess of 95% V/C.</p> <p>The A44 southbound links between Yarnton and Oxford operate in excess of 95% capacity.</p> <p>Wolvercote & Cutteslowe roundabouts, north Oxford: Both operate between 85% and 95% capacity with several link approaches to the Wolvercote roundabout operating above 95% capacity.</p>	<p>A40 Corridor at Eynsham: Both eastbound and westbound approaches to the Witney Road junction and the junction itself operate in excess of 95% capacity.</p> <p>The eastbound approach to the Cassington Road junction operates in excess of 95% capacity.</p> <p>A44 Corridor between Woodstock and Oxford North: Both north and southbound links approaching the Rutten Lane / Sandy Lane roundabout at Yarnton operate in excess of 95% V/C.</p> <p>The northbound link approaching the Cassington Road roundabout at Yarnton operates in excess of 95% capacity.</p> <p>Wolvercote & Cutteslowe roundabouts, north Oxford: Both operate in excess of capacity and several link approaches over 95% V/C</p>
West of Witney	
AM Peak	PM Peak
No major performance issues identified.	No major performance issues identified.

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3 Do Minimum Scenario

3.1.1 The "Do Minimum" Scenario tests the performance of the highway network in 2031 assuming delivery of development that has been constructed since the OSM model was developed in 2013 plus assumed delivery of committed development that has yet to be built out. In West Oxfordshire, the land use assumptions include a total of 5,088 new dwellings in addition to the 2013 Base Year scenario. Of these, around 1,000 houses are allocated and committed on a site adjacent to the west of Witney, north of the A40 bounded by Deer Park Road to the east and Downs Road to the west.

3.1.2 The "Do Minimum" scenario includes the following alterations to the highway network compared to the 2013 Base that are considered relevant to the study:

- Improvements to the A415 Ducklington Lane / Station Lane / Thorney Leys signal junction to deliver increased capacity and improve pedestrian / cycle amenity (this scheme was delivered in 2014);
- Delivery of a new at-grade roundabout connecting the A40 into Downs Road to provide access to the West Witney development site; and,
- Capacity upgrades to the Cutteslowe and Wolvercote roundabouts in north Oxford (scheme delivered in 2016).

3.2 KEY CONCLUSIONS

3.2.1 A summary of the key conclusions drawn from assessment of the 2031 "Do Minimum" model run output is provided below:

Within Witney

- The impact of development and wider background growth results in a marginal worsening in performance of the Bridge Street link within the town with both north and southbound links operating above 95% capacity during both AM and PM peak periods;
- The A415 Ducklington Lane / Station Lane / Thorney Leys junction improvement scheme constructed in 2014 has the effect of eliminating existing capacity issues and accommodates predicted future growth by 2031;

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- Some capacity issues remain on the B4022 Burford Road westbound approach to the Deer Park Road junction where respective AM and PM link V/Cs are recorded as 96% and 100%. Traffic flows through the junction increase marginally;
- Implementation of the A40 / Downs Road at-grade roundabout coupled with delivery of the 1,000 residential units as part of the West Witney development results in some limited capacity issues on the A40 eastbound approach to the new junction during the AM peak where link V/C operates at 92%. Delivery of the new development and new junction results in Curbridge Road northbound operating at 97% V/C during the AM peak period and limited capacity issues on the southbound link during the PM peak;
- Despite the addition of traffic on the local highway network associated with the West Witney development, the new A40 / Downs Road junction and Ducklington Lane junction improvement scheme appear to have the effect of reducing the volume of traffic on routes through the town centre (including sections of High Street, Welch Way and Ducklington Lane). It is however notable that volumes along Bridge Street increase (albeit marginally) in comparison to the 2013 Baseline.
- The reduction in demand through the town centre appears to be because of a combination of factors including:
 - Trips originating from / destined for the north of Witney use A40 Downs Road junction in preference to the A415 Ducklington Lane junction; and,
 - Some traffic choosing to route via Witan Way in preference to Ducklington Lane to gain access to / from the A40 via the A415 junction probably because of capacity enhancement of the Ducklington Lane signals making this route more attractive.

East of Witney

- Similar capacity issues are in evidence along the A40 corridor around Eynsham and the A44 between Oxford and Woodstock in the "Do Minimum" scenario as were identified in the 2013 Base model output. It is however noted that overall traffic volumes along the A40 corridor in the direct vicinity of Eynsham reduce slightly implying the overall effect of new development on the operation of the corridor is mixed however, this scenario does not include the strategic development sites at Eynsham;

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- There is some evidence of emerging capacity issues along the A4095 corridor resulting from a reasonably sizeable increase in predicted traffic flows immediately to the north of the town (+c.15% northbound, +c.50% southbound during the AM peak; +c.50% northbound, +c.20% southbound during the PM peak). This is particularly apparent on approaches A4095 / A44 Bladon Roundabout. Further assessment work would be required to understand where this traffic originates from and is destined for; and,
- Improvement schemes at the Wolvercote and Cutteslowe roundabouts that were delivered in 2016 in north Oxford all but eliminate capacity issues at both junctions and approach links.

West of Witney

- As with the 2013 Base model run, there are no major performance issues identified with the operation of the network to the west of Witney.

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4 Preferred Development Scenario

4.1.1 The "Do Minimum" Scenario tests the performance of the highway network in 2031 assuming delivery of the "Do Minimum" development plus potential housing and employment sites that have been identified by the District Council as being required to meet objectively identified needs by 2031.

4.1.2 A total of 10,800 dwellings are proposed across West Oxfordshire District in addition to the 5,088 that have already been constructed and / or are committed, 15,888 in total. Of these, an estimated 3,800 are planned for delivery on sites in and around the Witney Sub Area comprised of the c. 1,000 units as part of the committed West Witney development, c. 1,400 units as part of Witney North, c. 450 units in East Witney and around 1,000 units on smaller windfall sites distributed around the town.

4.1.3 The "Preferred Development" scenario includes the following alterations to the highway network in addition to schemes included within the "Do Minimum" scenario that are considered relevant to the study:

- Delivery of west facing slips to provide an all-movements junction on the A40 at Shores Green;
- Delivery of all phases of the North Witney Perimeter Road inclusive of improvements at Jubilee Way roundabout; and,
- Delivery of the West End Link (WEL2) providing a second crossing of the River Windrush approximately 300 metres to the north-east of Bridge Street.

4.2 KEY CONCLUSIONS

4.2.1 A summary of the key conclusions drawn from assessment of the 2031 "Preferred Development" model run output is provided below:

Within Witney

- The impact of development and wider background traffic growth associated with the "Preferred Development" scenario results in an improvement in performance of the Bridge Street link in both AM and PM peak periods. Both northbound and southbound links are predicted to operate between 85% and 95% V/C in the AM peak period. During the PM peak, period the northbound link is predicted to operate at between 85% and 95% V/C with the southbound link operating just below 85%.

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- Predicted traffic levels on Bridge Street reduce by 9% (c. 170 vehicles) during the AM peak period and by 12% (c. 230 vehicles) during the PM peak when compared to the 2031 "Do Minimum" scenario. Further predicted reductions in traffic are observed during both peak periods along Witan Way to the east of the town centre;
- The predicted level of traffic increases on the B4022 Hailey Road and highway links towards the town centre including Moorland Road, Woodford Way, Welch Way and Ducklington Lane. In part, this is because of the addition of traffic on the network associated with the proposed development at North Witney. It is also likely to be due to a transfer of trips already on the network away from routes including Bridge Street, Witan Way and Dry Lane, Deer Park Road, Tower Hill that can now route via the new WEL2 link;
- Similarly, by allowing all-movements access to / from the A40, delivery of west facing on / off slips at the Shores Green junctions appears to transfer existing trips on the network away from routes through the town centre (and during the PM peak along the north-western section of Newland) when compared to the 2031 "Do Minimum" scenario;
- Analysis of V/C output indicates capacity issues associated with traffic discharging out of the proposed East Witney development site via Cogges Hill Road onto the B4022 Oxford Hill during the PM peak period. It is however considered that this may be something of an anomaly as accompanying traffic flow data does not appear to be consistent with the emergence of issues in this location. It is recommended that further analysis be undertaken during further stages of the study;
- To the south-west of the town capacity issues that emerged on the Curbridge Road corridor within the "Do Minimum" scenario still appear to be in evidence although it should be noted that the level of additional traffic predicted because of the "Preferred Development" scenario over and above the level in the "Do Minimum" is largely negligible;
- Predicted traffic flows along the A40 to the south-west of the town because of the "Preferred Development" scenario increase by around 20% during both AM and PM peak periods when compared to the "Do Minimum" scenario. During the AM peak the A40 eastbound link approach to the proposed Downs Road roundabout operates at 99% V/C. During the PM peak, the westbound approach operates at 90% V/C.

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In both peak periods the junction itself is predicted to remain operating below 85% V/C.

East of Witney

- There is a significant predicted exacerbation of link and junction capacity issues along the A40 corridor towards Oxford to the east of the town, particularly near Eynsham and Cassington. It is notable though that the predicted increase in traffic associated with the "Preferred Development" when compared to the "Do Minimum" is reasonably small during both AM and PM peak periods. Further investigation of how the proposed implementation of bus priority measures along the A40 corridor in this location and the impact of wider developments across the District will be necessary to understand the reasons behind the worsening in performance;
- Emerging capacity issues along the A4095 corridor to the north-east of the town identified in the "Do Minimum" scenario results are worsened because of the "Preferred Development" scenario. As with the A40 corridor though, further analysis of the impact of wider developments across the District will be necessary to understand the causes in more detail; and,
- Improvement schemes at the Wolvercote and Cutteslowe roundabouts delivered in 2016 in north Oxford all but eliminate capacity issues at both junctions and approach links.

West of Witney

- As with the 2013 Base model and 2031 "Do Minimum" model runs, there are no major performance issues identified with the operation of the network to the west of Witney.

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5 Development of Further Options for Assessment

- 5.1.1 Following assessment of the previous model results as presented in Chapters 3 and 4 above, work has commenced to develop further options for assessment using the OSM.
- 5.1.2 In each case, it is proposed to increase the scale of residential development proposed by an additional c. 600 - 700 units bringing the total proposed within the Witney Sub Area to 4,400.
- 5.1.3 As a starting assumption, the key transport and highways mitigation proposals as set out within the "Preferred Development" scenario would be retained within the assessment.
- 5.1.4 The development of additional options for assessment seeks to build on and lock in the benefits of the emerging strengths of the "Preferred Development" scenario strategic infrastructure package including:
- the apparent effectiveness of new infrastructure in pushing through-traffic out of the town centre onto more appropriate peripheral routes (notably the A40 via both Shores Green and the new Downs Road junctions); and
 - the impact of the WEL2 link in reducing pressure on Bridge Street and transferring through-traffic out of sensitive routes within the town centre.
- 5.1.5 Each scenario has been so developed to investigate ways of maximising the benefits of new infrastructure proposed, focussing particularly on the potential to implement step-change improvements to the town centre environment, particularly the need to improve air quality issues around Bridge Street.
- 5.1.6 At the current time, proposals to assess further development and mitigation options are at an early stage however key features of the options selected for assessment and the reasons for their selection are set out below:

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Option 2A: Increasing town centre/ retail pedestrian amenity and improvements to Air Quality Management Area

5.1.7 Option 2A includes the following key highway schemes and alterations:

- All strategic schemes as modelled previously including the Northern Perimeter Road, WEL2, Shores Green Slips, Ducklington Lane signals improvement and at-grade A40 / Downs Road junction;
- Implementation of a $\frac{3}{4}$ gyratory system using a combination of the B4022 West End / A4095 Bridge Street / A4095 Mill Street that would be made one-way in a clockwise direction and the WEL2 that would allow two-way traffic. It is anticipated that each of the one-way links would (or at least could) be reduced to a single running lane to allow delivery of potential improvements to pedestrian amenity and / or possibly provide for segregated contra-flow facilities for public transport vehicles;
- Simplification of layout arrangements at both the West End / Bridge Street and Bridge Street / High Street / Mill Street junctions;
- Implementation of improvements to pedestrian amenity on High Street between its junction with Witan Way and Corn Street and along the eastern section of Welch Way between its junctions with Woodford Way and High Street. Assume closed to vehicles for modelling purposes; and,
- Implementation of a short stretch of one-way restriction along the central section of Corn Street between its junctions with Holloway Road and Market Square restricting traffic to eastbound only to allow reasonable access whilst reducing opportunity for through-movements within the town centre.

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Option 3Ai: Resolution of Air Quality in Bridge Street

5.1.8 Option 3Ai includes the following key highway schemes and alterations:

- All strategic schemes as modelled previously including the Northern Perimeter Road, WEL2, Shores Green Slips, Ducklington Lane signals improvement and at-grade A40 / Downs Road junction;
- Bridge Street closed to traffic between its junctions with West End to the north and High Street / Mill Street to the south;
- Simplification of layout arrangements at both the West End / Bridge Street and Bridge Street / High Street / Mill Street junctions;
- Implementation of improvements to pedestrian amenity on High Street between its junction with Witan Way and Corn Street and along the eastern section of Welch Way between its junctions with Woodford Way and High Street. Assume closed to vehicles for modelling purposes; and,
- Implementation of a short stretch of one-way restriction along the central section of Corn Street between its junctions with Holloway Road and Market Square restricting traffic to eastbound only to allow reasonable access whilst reducing opportunity for through-movements within the town centre.

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Option 3Aii: Demonstrating the Need for the WEL2 Link

5.1.9 Option 3Aii includes the following key highway schemes and alterations:

- All strategic schemes as modelled for Option 3Ai **except for the WEL2 that is not included**. This scenario is tested to demonstrate the need for the WEL2 link in accommodating through and cross-town traffic movements;
- Implementation of improvements to pedestrian amenity on key retail areas of High Street between its junction with Witan Way and Corn Street and along the eastern section of Welch Way between its junctions with Woodford Way and High Street. Assume closed to vehicles for modelling purposes; and,
- Implementation of a short stretch of one-way restriction along the central section of Corn Street between its junctions with Holloway Road and Market Square restricting traffic to eastbound only to allow reasonable access whilst reducing opportunity for through-movements within the town centre.

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Appendix A
Traffic Flow & Volume / Capacity Data

Demand Flow		2013 Baseline		2031 Do minimum		2031 Preferred Development Scenario	
		AM	PM	AM	PM	AM	PM
A4095 Bridge Street	Northbound	909	917	916	883	842	861
A4095 Bridge Street	Southbound	916	975	965	937	811	798
A4095 Mill Street	Eastbound	421	350	435	343	358	329
A4095 Mill Street	Westbound	297	319	284	306	258	288
B4022 West End	Northbound	239	339	229	290	164	126
B4022 West End	Southbound	373	265	294	212	209	147
High Street	Northbound	504	591	486	560	487	534
High Street	Southbound	635	679	690	679	555	512
Witan Way (South of Langdale Gate)	Northbound	70	253	178	256	125	241
Witan Way (South of Langdale Gate)	Southbound	203	38	308	255	263	162
Witan Way (North of Langdale Gate)	Northbound	47	194	172	252	120	237
Witan Way (North of Langdale Gate)	Southbound	200	36	305	252	260	160
Witan Way (South of High Street)	Northbound	46	129	138	192	88	181
Witan Way (South of High Street)	Southbound	170	35	260	190	221	116
Newland	Eastbound	560	606	508	548	462	509
Newland	Westbound	517	539	498	500	396	239
Oxford Hill	Eastbound	312	380	273	305	831	764
Oxford Hill	Westbound	351	317	298	238	663	519
Jubilee Way	Northbound	172	131	134	126	287	302
Jubilee Way	Southbound	115	134	99	137	268	316
A4095 Woodgreen	Northbound	151	231	151	224	158	280
A4095 Woodgreen	Southbound	180	167	168	161	188	171
B4022 Hailey Road	Northbound	160	185	157	170	358	497
B4022 Hailey Road	Southbound	221	181	182	155	494	377
New Yatt Road	Northbound	104	125	99	117	180	219
New Yatt Road	Southbound	116	119	111	119	179	169
Crawley Road	Eastbound	151	84	111	57	166	127
Crawley Road	Westbound	79	154	71	120	150	195
Dry Lane	Northbound	327	459	403	647	258	487
Dry Lane	Southbound	382	251	552	417	420	238
A4095 NE of Jubilee Way (at North Leigh)	Northbound	501	297	565	443	791	647
A4095 NE of Jubilee Way (at North Leigh)	Southbound	338	553	507	655	683	993
Welch Way	Eastbound	404	340	286	283	336	277
Welch Way	Westbound	375	602	357	428	267	349
Corn Street	Eastbound	72	62	84	80	77	65
Corn Street	Westbound	82	117	82	76	71	72
High Street (north of Witan Way)	Northbound	504	591	486	560	487	534
High Street (north of Witan Way)	Southbound	635	679	690	679	555	512
High Street (between Witan Way and Welch Way)	Northbound	458	462	348	368	399	353
High Street (between Witan Way and Welch Way)	Southbound	464	644	431	489	334	395
High Street (between Welch Way and Corn Street)	Northbound	72	64	85	82	78	66
High Street (between Welch Way and Corn Street)	Southbound	63	62	81	77	69	71
A415 Ducklington Lane (North section)	Northbound	467	468	313	336	288	508
A415 Ducklington Lane (North section)	Southbound	535	497	423	349	545	340
A415 Ducklington Lane (south section)	Northbound	1029	1019	1017	990	894	1160
A415 Ducklington Lane (south section)	Southbound	905	793	1027	1003	1120	915
Station Lane	Eastbound	596	405	767	614	660	601
Station Lane	Westbound	256	218	559	699	477	594
Curbridge Road (North of Mirfield Road)	Northbound	356	234	443	303	483	393
Curbridge Road (North of Mirfield Road)	Southbound	337	581	436	622	400	634
Deer Park Road (South of Burford Road)	Northbound	135	208	164	225	146	188
Deer Park Road (South of Burford Road)	Southbound	116	84	218	152	234	149
Deer Park Road (North of Range Road)	Northbound	63	114	94	98	77	72
Deer Park Road (North of Range Road)	Southbound	23	6	77	70	90	61
Deer Park Road (North of Curbridge Road)	Northbound	185	276	423	292	386	259
Deer Park Road (North of Curbridge Road)	Southbound	175	137	309	353	310	348
B4047 Burford Road (east of Downs Road)	Eastbound	631	556	680	631	713	660
B4047 Burford Road (east of Downs Road)	Westbound	412	490	379	518	392	498
B4047 Burford Road (west of Downs Road)	Eastbound	657	492	605	485	668	516
B4047 Burford Road (west of Downs Road)	Westbound	347	496	313	493	331	485
Downs Road (South of Burford Road)	Northbound	79	159	147	209	127	216
Downs Road (South of Burford Road)	Southbound	170	89	138	89	144	84
A40 (west of Downs Road)	Eastbound	1254	924	1645	1074	1676	1292
A40 (west of Downs Road)	Westbound	663	1191	790	1467	1080	1717
A40 (between Downs Road and Ducklington Lane)	Eastbound	1254	924	1746	1365	1959	1556
A40 (between Downs Road and Ducklington Lane)	Westbound	663	1191	1049	1422	1456	1772
A40 (between Ducklington Lane and Shores Green)	Eastbound	1351	949	1511	1313	2077	1534
A40 (between Ducklington Lane and Shores Green)	Westbound	927	1267	1135	1118	1628	1816
A40 (east of Shores Green)	Eastbound	1472	1324	1607	1541	1923	1255
A40 (east of Shores Green)	Westbound	1268	1535	1365	1235	1275	1282
A40 (West of Cuckoo Lane)	Eastbound	1472	1324	1607	1541	1923	1255
A40 (West of Cuckoo Lane)	Westbound	1268	1535	1365	1188	1275	1208
A4095 (Between B4022 double roundabouts)	Eastbound	934	808	912	839	908	891
A4095 (Between B4022 double roundabouts)	Westbound	716	847	814	863	696	680
A4095 Burford Road (East of Tower Hill)	Eastbound	628	427	613	490	612	515
A4095 Burford Road (East of Tower Hill)	Westbound	354	434	286	472	283	477
A4095 Curbridge Road (South of Deer Park Road)	Northbound	599	437	983	622	971	683
A4095 Curbridge Road (South of Deer Park Road)	Southbound	514	718	768	1222	702	1180
A4095 Curbridge Road (North of Deer Park Road)	Northbound	439	306	564	383	606	487
A4095 Curbridge Road (North of Deer Park Road)	Southbound	421	709	551	796	520	796
Cogges Hill Road	Northbound	273	279	267	304	435	297
Cogges Hill Road	Southbound	285	303	267	306	306	421
West End Link	Northbound					344	566
West End Link	Southbound					450	356
Shores Green Slips	Eastbound Off slip					433	457
Shores Green Slips	Eastbound On Slip	122	375	96	228	279	177
Shores Green Slips	Westbound Off Slip	340	269	230	117	188	72
Shores Green Slips	Westbound On Slip					542	606

Link V/C		2013 Baseline		2031 Do minimum		2031 Preferred Development Scenario	
		AM	PM	AM	PM	AM	PM
		A4095 Bridge Street	Northbound	104	102	103	101
A4095 Bridge Street	Southbound	96	101	102	102	85	82
A4095 Mill Street	Eastbound	59	51	60	50	50	47
A4095 Mill Street	Westbound	34	35	32	34	26	28
B4022 West End	Northbound	24	35	24	30	18	13
B4022 West End	Southbound	19	13	15	11	10	7
High Street	Northbound	62	72	59	69	59	65
High Street	Southbound	52	61	55	54	43	42
Witan Way (South of Langdale Gate)	Northbound	6	22	16	23	11	22
Witan Way (South of Langdale Gate)	Southbound	12	2	18	15	16	10
Witan Way (North of Langdale Gate)	Northbound	2	10	9	13	6	12
Witan Way (North of Langdale Gate)	Southbound	18	3	27	23	24	14
Witan Way (South of High Street)	Northbound	7	28	19	42	12	39
Witan Way (South of High Street)	Southbound	8	2	13	9	11	6
Newland	Eastbound	31	34	29	32	26	29
Newland	Westbound	62	67	65	67	51	30
Oxford Hill	Eastbound	9	12	8	9	29	23
Oxford Hill	Westbound	51	54	29	34	72	81
Jubilee Way	Northbound	10	7	8	7	15	16
Jubilee Way	Southbound	33	44	44	45	69	60
A4095 Woodgreen	Northbound	8	13	8	12	9	15
A4095 Woodgreen	Southbound	12	11	11	10	15	15
B4022 Hailey Road	Northbound	8	10	8	9	19	27
B4022 Hailey Road	Southbound	25	20	20	17	46	35
New Yatt Road	Northbound	6	7	6	7	10	13
New Yatt Road	Southbound	7	6	6	7	9	9
Crawley Road	Eastbound	17	10	13	7	17	15
Crawley Road	Westbound	6	9	5	7	11	13
Dry Lane	Northbound	37	51	46	73	29	55
Dry Lane	Southbound	60	39	83	67	68	40
A4095 NE of Jubilee Way (at North Leigh)	Northbound	35	21	39	31	56	45
A4095 NE of Jubilee Way (at North Leigh)	Southbound	24	38	36	47	49	71
Welch Way	Eastbound	44	36	31	31	37	30
Welch Way	Westbound	32	51	29	35	22	29
Corn Street	Eastbound	8	7	9	8	8	7
Corn Street	Westbound	5	6	5	4	4	4
High Street (north of Witan Way)	Northbound	62	72	59	69	59	65
High Street (north of Witan Way)	Southbound	52	61	55	54	43	42
High Street (between Witan Way and Welch Way)	Northbound	46	40	32	32	39	30
High Street (between Witan Way and Welch Way)	Southbound	14	18	12	14	10	11
High Street (between Welch Way and Corn Street)	Northbound	9	10	11	11	9	8
High Street (between Welch Way and Corn Street)	Southbound	6	6	8	8	7	7
A415 Ducklington Lane (North section)	Northbound	24	23	16	17	15	26
A415 Ducklington Lane (North section)	Southbound	19	18	15	12	20	12
A415 Ducklington Lane (south section)	Northbound	62	59	41	38	36	43
A415 Ducklington Lane (south section)	Southbound	45	39	26	25	28	23
Station Lane	Eastbound	49	28	38	31	33	30
Station Lane	Westbound	101	101	28	35	24	30
Curbridge Road	Northbound	18	12	23	17	25	21
Curbridge Road	Southbound	17	29	22	31	20	31
Deer Park Road (South of Burford Road)	Northbound	32	44	31	46	28	42
Deer Park Road (South of Burford Road)	Southbound	7	5	12	8	13	8
Deer Park Road (North of Range Road)	Northbound	2	4	3	3	2	2
Deer Park Road (North of Range Road)	Southbound	2	1	7	8	8	7
Deer Park Road (North of Curbridge Road)	Northbound	6	9	13	9	12	8
Deer Park Road (North of Curbridge Road)	Southbound	21	15	43	41	44	43
B4047 Burford Road (east of Downs Road)	Eastbound	49	43	53	49	55	51
B4047 Burford Road (east of Downs Road)	Westbound	53	71	50	71	51	70
B4047 Burford Road (west of Downs Road)	Eastbound	48	35	44	35	48	37
B4047 Burford Road (west of Downs Road)	Westbound	25	35	21	34	22	34
Downs Road	Northbound	16	37	29	49	25	50
Downs Road	Southbound	8	5	7	4	7	4
A40 (west of Downs Road)	Eastbound	33	24	92	55	99	69
A40 (west of Downs Road)	Westbound	18	30	17	31	23	36
A40 (between Downs Road and Ducklington Lane)	Eastbound	33	24	47	36	51	41
A40 (between Downs Road and Ducklington Lane)	Westbound	18	30	51	75	70	90
A40 (between Ducklington Lane and Shores Green)	Eastbound	36	28	39	36	52	38
A40 (between Ducklington Lane and Shores Green)	Westbound	25	30	30	30	43	47
A40 (east of Shores Green)	Eastbound	73	65	80	77	96	62
A40 (east of Shores Green)	Westbound	33	35	35	32	33	32
A40 (West of Cuckoo Lane)	Eastbound	15	13	37	35	44	28
A40 (West of Cuckoo Lane)	Westbound	89	97	97	88	91	91
A4095 (Between B4022 double roundabouts)	Eastbound	99	85	97	90	98	95
A4095 (Between B4022 double roundabouts)	Westbound	88	98	98	99	82	77
A4095 Burford Road (East of Tower Hill)	Eastbound	67	45	65	52	66	56
A4095 Burford Road (East of Tower Hill)	Westbound	82	101	96	100	95	100
A4095 Curbridge Road (South of Deer Park Road)	Northbound	57	43	97	60	96	66
A4095 Curbridge Road (South of Deer Park Road)	Southbound	36	50	54	86	50	83
A4095 Curbridge Road (North of Deer Park Road)	Northbound	25	18	31	22	33	27
A4095 Curbridge Road (North of Deer Park Road)	Southbound	42	68	64	91	60	90
Cogges Hill Road	Northbound	72	50	47	97	84	141
Cogges Hill Road	Southbound	3	3	3	3	3	4
West End Link	Northbound					32	52
West End Link	Southbound					39	35
Shores Green Slips	Eastbound Off slip					31	33
Shores Green Slips	Eastbound On Slip	12	32	11	20	26	14
Shores Green Slips	Westbound Off Slip	24	17	17	9	14	5
Shores Green Slips	Westbound On Slip					46	48

Volume over Capacity	>85%	6	7	8	9	8	7
	>100%	2	4	2	3	0	2

Node V/C		2013 Baseline		2031 Do minimum		2031 Preferred Development Scenario	
		AM	PM	AM	PM	AM	PM
A4095 Bridge Street / Wood Green / B4022 West End / Newlands junction	35015	91%	76%	91%	86%	81%	76%