A5/A47/B4666 DODWELLS ROUNDABOUT, HINCKLEY

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UPDATED CAPACITY ASSESSMENT

engineering the future

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1. INTRODUCTION

1.1. In May 2000, planning permission was granted on appeal to Crest Strategic Projects Ltd for residential and commercial development on two sites off Coventry Road, Hinckley:

- Application No 99/00047/OUT – Residential development on land south of Coventry Road, Hinckley (250 dwellings)
- Application No 99/00048/OUT – Employment Uses B1,B2 and B8 on land north of Coventry Road and east of Harrowbrook Industrial Estate, Hinckley (11,200 sq m).

The location of the sites is indicated on **Figures 1 and 2.**

1.2. The permissions included conditions that no more than 100 dwellings or 5,000 sq m of employment should be occupied until improvements had been carried out to Dodwells Roundabout, the junction between the A5, A47 and Coventry Road to the west of the sites. As a trunk road the A5, together with Dodwells Roundabout, is the responsibility of the Highways Agency. The improvements to Dodwells comprised major alterations to the geometry of the existing roundabout together with the installation of traffic signals on the roundabout. This "interim improvement scheme" would be undertaken in advance of an anticipated final scheme identified by WS Atkins for the Highways Agency in the A5 Route Strategy Study published in November 1998.

1.3. The improvements to be implemented by Crest Nicholson were justified on the basis of a detailed Transport Assessment undertaken in 1999 in support of the planning applications, and subsequent discussions between TPK Consulting (Crest Nicholson's transport consultants at the time) and the Highways Agency.

1.4. So far as the Dodwells Roundabout is concerned, the Traffic Assessment is believed to have adopted the standard approach of:-

a) Identifying the existing vehicle movements through the junction.
b) Estimating traffic flows at a future assessment year (or years) by applying a growth factor to these base flows.
c) Adding the traffic which the proposed development was estimated to generate, together with traffic from other committed development in the area.

1.5. Growth factors published by the Government are believed to have been used to growth the base traffic flows. Such factors take into account, inter alia, the anticipated growth of the economy, estimated population increases, and likely car ownership changes. There is an inherent element of double counting in predicting future traffic flows using this standard methodology as traffic generated by a specific development will of course form part of the natural growth of the area. Thus adding development traffic to growth has the potential to result in an over-estimation of future traffic flows. Furthermore, this methodology, if applied to a discrete part of the network, takes no account of the ability of other adjacent parts of the network to accommodate the level of background growth predicted, and the predicted increase at the assessment junction may never be realised in practice.

1.6. A number of subsequent applications have been submitted to vary conditions and to alter the quantity of development on the two sites. In consequence, a total of 422 dwellings have now been constructed and occupied on land to the south of Coventry Road, but construction has not yet commenced on the employment site to the north.

1.7. However, the improvements to Dodwells Roundabout have yet to be undertaken. The purpose of this report is to examine the need, as it exists in late 2008, for such improvements.

2. ASSESSMENT OF DODWELLS ROUNDABOUT 1999-2006

2.1. The starting point for the original assessment of Dodwells Roundabout was a traffic turning count undertaken in 1999 and supplied to TPK Consulting by Oscar Faber (the Highways Agency's consultants at that time).

2.2. At the time of the original assessment, funding for the Highways Agency's comprehensive improvement scheme for Dodwells Roundabout was expected to be available in 2005. The interim layout would need to function until that date, and a future assessment year of 2005 was accordingly identified for the interim improvement.

2.3. Accordingly, the operation of Dodwells Roundabout in its present unsignalised form was tested using ARCADY with 2005 forecast traffic flows including traffic generated by committed development in the area but excluding the Crest Nicholson proposals for the land north and south of Coventry Road.

2.4. The results of the original analysis are as follows.

Table 2.1 Results of 1999 ARCADY Assessment – 2005 Base plus Committed

Approach	Entry Flows	Max RFC	Max Queue vehicles
	AM Peak		
A. A5 West	1830	1.211	119
B. Dodwells Road	1146	1.152	92
C. Coventry Road	732	1.199	73
D. A5 East	1144	0.875	6
	PM Peak		
A. A5 West	1664	1.037	50
B. Dodwells Road	1068	0.971	16
C. Coventry Road	708	0.96	12
D. A5 East	1174	0.937	11

Source: Appendix 1 of Briefing Note 'A5 Dodwells Roundabout Development Funded Improvement Scheme', TPK Report 13109/01, 31 August 2000

2.5. It can be seen that the original assessment predicted that by 2005 all arms would be operating with an RFC significantly above the normally acceptable 0.85 figure without the development. This justified a requirement for measures to improve the capacity of the roundabout in association with the development.

2.6. An improvement scheme comprising geometry alterations and signalisation was agreed and assessed with TRANSYT. This assessment included the proposed developments north and south of Coventry Road as well as 2005 forecast traffic and committed development. A comparison of queue lengths with the existing layout and interim layout is set out in **Table 2.2.** One of the criteria was the ability to demonstrate a nil detriment performance of Dodwells Roundabout

following the development. The modelled queues reproduced in **Table 2.2** indicate that most approaches were expected to experience less queuing, and that overall the junction would operate no worse.

Table 2.2 Comparison of Queue Lengths: Existing & Interim Layouts 1999 Assessment

Approach	2005 Base – Existing Layout	2005 With Development – Interim Layout
	AM Peak	
A. A5 West	119	94
B. Dodwells Road	92	74
C. Coventry Road	73	11
D. A5 East	6	14
	PM Peak	
A. A5 West	50	46
B. Dodwells Road	16	36
C. Coventry Road	12	10
D. A5 East	11	13

Source: Table 1 of Briefing Note *A5 Dodwells Roundabout Development Funded Improvement Scheme*, TPK Report 13109/01, 31 August 2000

2.7. A planning application for a revised site mix (400 dwellings and 7,000 sq m employment) was submitted in 2002. This was accompanied by a Transport Assessment prepared by WSP, but which made use of the original work by TPK Consulting. It found that the interim scheme at Dodwells Roundabout would operate slightly better with the revised proposals than with the original development proposals. (Source: *Coventry Road, Hinckley: Supplementary Transportation Assessment Report*, WSP, 9 May 2002)

2.8. A further Transport Statement was prepared by WSP on behalf of Crest Nicholson (Midlands) Ltd in March 2006 to clarify the level of development that the site and local highway network, and Dodwells Roundabout in particular, can support. (*Transport Statement: Addendum to Supplementary Transport Assessment Report dated 9 May 2002*, WSP. 20 March 2006.) As part of this exercise, new peak hour turning counts were carried out at Dodwells in January 2006 which would have included most but not all of the residential development south of Coventry Road.

2.9. A comparison of the 2006 count with 2005 growthed flows shows that traffic flows at Dodwells Roundabout had not increased by the levels originally predicted. Flows had in fact decreased, as shown in **Table 2.3**.

Table 2.3 Comparison of 2005 Growthed and 2006 Observed Counts

Approach	2005 Growthed from 1999[1]	2006 Observed[2]	Difference
	AM Peak		
A. A5 West	1830	1356	-446
B. Dodwells Road	1146	747	-359
C. Coventry Road	732	576	-248
D. A5 East	1144	698	-404
Total Entry Flow	**4852**	**3377**	**-1475**
	PM Peak		
A. A5 West	1664	1254	-412
B. Dodwells Road	1068	792	-223
C. Coventry Road	708	512	-305
D. A5 East	1174	686	-462
Total Entry Flow	**4614**	**3244**	**-1370**

Source: 1. Appendix 1 of Briefing Note 'A5 Dodwells Roundabout Development Funded Improvement Scheme', TPK Report 13109/01, 31 August 2000
2. Tables 4.1 & 4.2 of *Transport Statement: Addendum to Supplementary Transport Assessment Report dated 9 May 2002*, WSP. 20 March 2006.

2.10. For the 2006 assessment, to take into account the unbuilt residential element, traffic from a further 122 dwellings was added to the surveyed flows together with traffic from other committed development in Hinckley and from the revised commercial element (8,500sq m). This 2006 assessment did not consider the operation of the roundabout as existing but only tested the interim signalised scheme with 2007 and 2017 forecast traffic flows, using TRANSYT. The analysis concluded that overall the junction operated better in 2007 than was previously modelled and that up to 8,500 sq m of commercial development would be acceptable.

3. ASSESSMENT OF DODWELLS ROUNDABOUT 2008

3.1. In light of the escalating costs of the originally agreed interim scheme for Dodwells Roundabout, and the time that has elapsed since its original requirement, PFA Consulting has been requested to reconsider the need for the interim improvements.

3.2. As a result of the discrepancy between the 2006 observed count and the 2005 growthed flows described in paragraph 2.9, the first step was to commission a new traffic survey. This took place on Tuesday 9 September 2008. The results are summarised in **Figure 3**. **Table 3.1** compares the results of the 2008 survey with the 2005 predicted traffic flows. The 2008 survey confirms the results of the 2006 count carried out for WSP. The 2005 predicted flows have simply not materialised and actual flows are very much lower than those originally assessed.

Table 3.1 Comparison of 2005 Predicted and 2008 Actual Traffic Flows

Approach	2005 Predicted Flows [(1)]	2008 Actual Flows [(2)]	Difference
	AM Peak		
A. A5 West	1830	1347	-483
B. Dodwells Road	1146	721	-425
C. Coventry Road	732	512	-220
D. A5 East	1144	943	-201
Total Entry Flow	**4852**	**3523**	**-1329**
	PM Peak		
A. A5 West	1664	1458	-206
B. Dodwells Road	1068	804	-264
C. Coventry Road	708	489	-219
D. A5 East	1174	778	-396
Total Entry Flow	**4614**	**3529**	**-1085**

Source: (1) Appendix 1 of Briefing Note 'A5 Dodwells Roundabout Development Funded Improvement Scheme', TPK Report 13109/01, 31 August 2000
(2) Survey by CTS Traffic & Transportation Ltd for PFA Consulting/Crest Nicholson, 9 September 2008

3.3. Accordingly, the original ARCADY model has been re-run using these actual 2008 flows. It has also been possible to further refine the original ARCADY model as a detailed topographical survey is now available for the junction. This allows a more accurate measurement of the roundabout geometry than was originally input utilising Ordnance Survey mapping of the junction. The effect of this more accurate geometry is relatively minor but nevertheless is material to an accurate modelling exercise. The results of the ARCADY modelling of the existing operation of the roundabout (at 2008) are summarised in **Table 3.2,** and the ARCADY printouts are included in **Appendix A**. This analysis includes the

whole of the residential development south of Coventry Road, which had been completed by the time of the survey in September 2008.

Table 3.2 Results of 2008 ARCADY Assessment – Surveyed Traffic Flows

Approach	Entry Flows (1)	Max RFC	Max Queue (2)
	AM Peak		
A. A5 West	1347	0.751	3
B. Dodwells Road	721	0.708	2
C. Coventry Road	512	0.576	1
D. A5 East	943	0.804	4
	PM Peak		
A. A5 West	1458	0.764	3
B. Dodwells Road	804	0.726	3
C. Coventry Road	489	0.514	1
D. A5 East	778	0.661	2

Source: (1) Survey by CTS Traffic & Transportation Ltd for PFA Consulting/Crest Nicholson, 9 September 2008
(2) Observed queue lengths fluctuate considerably but disperse very quickly so that the modelled queues are considered to be representative.

3.4. This demonstrates that the existing roundabout layout was within capacity in 2008, contrary to the predictions for 2005 discussed in paragraphs 2.3 – 2.5 above, and justifies the decision to reassess the need for the interim improvement scheme. Should the improvements be found to be unnecessary, a planning application will be submitted under S73 of the Town and Country Planning Act 1990 to vary the condition attached to the original consents. Such an application is likely to be submitted during 2009. An assessment of Dodwells Roundabout has therefore been carried out for 2019, ten years after the application date, in accordance with the recommendation in *Guidance on Transport Assessment* for schemes affecting the strategic road network.

3.5. As explained in paragraphs 1.6 and 3.3, the residential development on land south of Coventry Road which was the subject of the original application 99/00047/OUT has been completed, and traffic generation by the development is therefore included in the survey on 9 September 2008. However, no development has so far taken place on the land north of Coventry Road. The site has now been acquired from Crest Nicholson by Tungsten Properties Ltd, and the site is known as Tungsten Park. Planning consent was granted in December 2007 for 9,363 sq m Class B1, B2, B8 and Sui Generis uses (Application No. 07/01150/FUL). A second application (No. 07/00529/FUL) for 11,015 sq m Class B1, B2, B8 and Sui Generis car showrooms was refused on appeal for reasons relating to the effect on the Ashby Canal Conservation Area. However, the Inspector commented that, although the proposal would result in an increase in floorspace in comparison to the approved scheme, he was satisfied that the road network would be able to accommodate the additional traffic generated and that there would be no adverse impact on highway safety.

To take the worst case for this assessment a floorspace of 11,015 sq m has therefore been assumed for Tungsten Park.

3.6. In discussions the Highways Agency has requested that, as well as Tungsten Park, other committed development in the area should be specifically taken into account in the 2019 assessment. Information on committed development has been obtained from Hinckley and Bosworth Borough Council's *Residential Land Availability Monitoring Statement for the period 1/04/07 – 31/03/08*, which includes a schedule of land available for housing development at Appendix 8 and a summary of employment land availability at Appendix 10. This has been supplemented by reference to the Borough Council's online planning applications register. Committed development considered relevant to this assessment is summarised in **Table 3.3**; the location of these developments is indicated on **Figure 4**. Other development in the Hinckley area will be taken into account in the application of growth factors derived from TEMPRO and NRTF, to be discussed below.

Table 3.3 Committed and Proposed Development in the Dodwells Area

Application No.	Site	Proposal
Residential		
05/00335	Hollycroft Estate Outlands Drive	322 homes
05/00266	Motor Holdings, 310 Coventry Road	13 apartments
07/00742	Dennis House, 4 Hawley Road	56 Sheltered units
07/01030	Recreation Ground, Brodick Road	49 homes
Employment		
06/01252	EME Site, Nutts Lane	212 sq m B1 Office 631 sq m B2/B8
06/00759	EME Site, Nutts Lane	522 sq m B1/B2/B8
07/00231	Jarvis Porter, Coventry Road	9,427 sq m A1/A3/B8
07/00687	Wheatfield Way, Hinckley Fields Industrial Estate	2,338 sq m B1 Office
n/a	Tungsten Park, Coventry Road	3,312 sq m B1 Office 5.890 sq m B1/B2/B8 1,813 sq m Car Showroom **11,015 sq m Total**
n/a	Former Greyhound Stadium	86 homes

3.7. In addition to the committed development, Crest Nicholson have indicated their intention to submit a planning application for 86 dwellings at the former Greyhound Stadium as an extension of the existing, now completed, residential development south of Coventry Road. This development has therefore been included in the updated analysis.

3.8. Trip generation by the committed development, by Tungsten Park and by the former Greyhound Stadium site has been estimated based on the TRICS trip generation database. TRICS output is included in **Appendix B** and predicted trip generation is set out in **Appendix C**.

3.9. Distribution of traffic generated by Tungsten Park, by the former Greyhound stadium and by committed development has been based upon the distribution given in Appendix A of the *Transport Statement: Addendum to Supplementary Transport Assessment Report dated 9 May 2002*, prepared by WSP in March 2006. This is in turn derived from a gravity model prepared by TPK Consulting and agreed with the Highways Agency for the 1999-2000 Appeal. This distribution is reproduced in **Appendix D.** The distribution of traffic at Dodwells Roundabout generated by each element of development is set out in **Appendix C.**

3.10. To assess the operation of Dodwells Roundabout in 2019, the 2008 traffic counts have been factored to 2019 using the National Road Traffic Forecasts adjusted for local circumstances using TEMPRO data for Hinckley. Traffic predicted to be generated by committed development, by Tungsten Park and by the former Greyhound Stadium is then added.

3.11. Observed traffic flows at Dodwells roundabout during the AM peak in 1999 are available from an ARCADY assessment contained in Appendix 1 of the Briefing Note *'A5 Dodwells Roundabout Development Funded Improvement Scheme'*, TPK Report 13109/01, 31 August 2000. Traffic growth at Dodwells Roundabout between 1999 and 2008 has been calculated and compared with the NRTF low and central forecasts for the same period. The comparison is set out in **Table 3.4.**

Table 3.4 Comparison of growth between 1999 and 2008

	AM Peak Entry Flow to Dodwells Roundabout		Growth Factor 1999 - 2008
	1999	**2008**	
Observed	3428	3525	1.0282
NRTF Low	n/a	n/a	1.1090
NRTF Central	n/a	n/a	1.1603

3.12. Observed growth in traffic at Dodwells Roundabout between 1999 and 2008 was therefore less than 3%, compared with the NRTF low forecast of almost 11% and central forecast of 16%. This low rate of growth can be confirmed by a comparison of the 1999 entry flow to the roundabout with the 2006 observed flow in the AM peak (given in Table 2.3 above):

1999 AM peak entry flow 3428
2006 AM peak entry flow 3377

3.13. As explained in paragraph 1.5, growth here may well be constrained by the ability of other adjacent parts of the network to accommodate additional traffic. The relatively low growth observed to 2008 does not appear to be only a result of the current economic conditions. NRTF low growth rates have therefore been adopted to estimate growth over the period 2008 to 2019.

3.14. TEMPRO is a trip end model based upon local planning data. Since committed development in the vicinity of Dodwells Roundabout has been specifically modelled in this assessment, this development has been removed from the TEMPRO model before calculation of growth factors to avoid double counting. The adjusted 2008 – 2019 growth factors to be applied to 2008 base traffic are:

AM Peak	1.0737
PM Peak	1.0752

The growth factor calculations are set out in **Appendix E**, and the 2019 forecast flows at Dodwells Roundabout including committed development are given in **Appendix C**.

3.15. The ARCADY assessments of the existing roundabout layout were repeated for 2019 forecast flows including committed development but without Tungsten Park, for 2109 flows with both committed development and Tungsten Park and for 2109 flows with committed development and Tungsten Park and the former Greyhound Stadium. The results are summarised in **Tables 3.5** for committed development and in **Table 3.6** for committed development, Tungsten Park and the former Greyhound Stadium. The ARCADY printout is given in **Appendix A**.

Table 3.5 Results of 2019 ARCADY Assessment with Committed Development

Approach	Entry Flows (1)	Max RFC	Max Queue (2)
	AM Peak		
A. A5 West	1516	0.863	6
B. Dodwells Road	860	0.902	8
C. Coventry Road	578	0.723	3
D. A5 East	1053	0.957	14
	PM Peak		
A. A5 West	1663	0.898	8
B. Dodwells Road	934	0.901	8
C. Coventry Road	607	0.697	2
D. A5 East	894	0.818	4

Table 3.6 Results of 2019 ARCADY Assessment with Committed Development, Tungsten Park and the former Greyhound Stadium

Approach	Entry Flows (1)	Max RFC	Max Queue (2)
	AM Peak		
A. A5 West	1564	0.898	8
B. Dodwells Road	865	0.943	11
C. Coventry Road	615	0.767	3
D. A5 East	1083	0.994	22
	PM Peak		
A. A5 West	1682	0.913	9
B. Dodwells Road	936	0.916	9
C. Coventry Road	683	0.783	3
D. A5 East	906	0.847	5

3.16. The conclusions which can be drawn from this further modelling of the junction indicate that the original assessment was extremely pessimistic and in fact, at 2008 with the residential element fully built out the junction is operating within acceptable parameters (**Table 3.2**). Even when the predicted traffic flows from 11,015 sq m of commercial development at the as yet unbuilt Tungsten Park and 86 homes at the former Greyhound Stadium are added, and an assessment year of 2019 is considered, the existing roundabout still operates with an RFC of less than 1.0 and the level of queuing remain acceptable (**Table 3.6**).

3.17. Had the results been in this form when the original assessment was undertaken, we believe that it would have been concluded that the developments north and south of Coventry Road would have no significant impact upon the operation of Dodwells Roundabout and accordingly it would not have been proper to require the development to fund the interim improvements. Accordingly, it is considered appropriate to submit a Section 73 application to vary planning permissions Nos. 99/00047/OUT and No 99/00048/OUT.

4. SUMMARY AND CONCLUSIONS

4.1. In 2000 planning permission was granted on appeal for commercial and residential development on land north and south of Coventry Road, Hinckley. The permissions included conditions that limited the amount of development until interim improvements had been carried out to Dodwells Roundabout, the junction between the A5 trunk road, the A47 and Coventry Road to the west of the sites. A total of 422 dwellings have now been constructed and occupied on the land to the south of Coventry Road. Construction has not yet commenced on the commercial site to the north, and the improvements to Dodwells Roundabout have yet to be undertaken. This report examines the current need for such improvements.

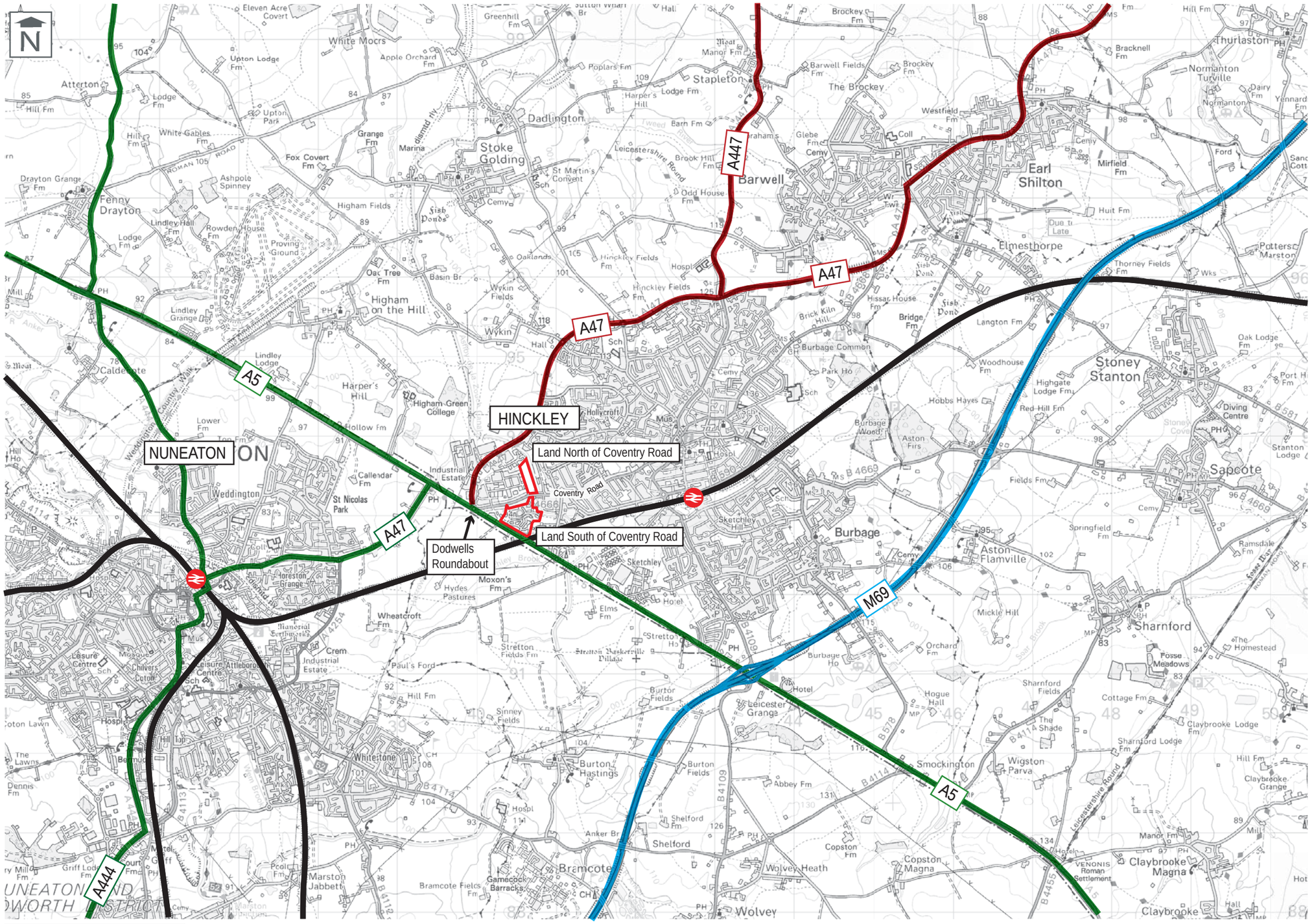
4.2. The original assessment examined the operation of Dodwells Roundabout in 2005 with forecast flows including generated by committed development in the area. An ARCADY assessment of the existing layout predicted that by 2005 all arms would be operating with an RFC above 0.85 without the development at Coventry Road. This justified a requirement for measures to improve the capacity of the roundabout to cater for the development. An improvement scheme comprising geometric alterations and signalisation was agreed with the Highways Agency and assessed using TRANSYT.

4.3. However, the traffic flows predicted for 2005 have not materialised, and actual flows are very much lower than those originally assessed. This is confirmed by surveys in both 2006 and 2008. The original ARCADY model has been rerun with observed 2008 flows and demonstrates that the existing roundabout layout was within capacity in 2008, with the whole of the residential development south of Coventry Road complete.

4.4. A further ARCADY assessment of the existing roundabout layout has therefore been carried out for 2019, including committed development in the area. This indicates that even when the predicted traffic flows from 11,015 sq m of commercial development at Tungsten Park and 86 homes at the former Greyhound Stadium are added, the existing roundabout still operates in 2019 with an RFC of less than 1, and the level of queuing remains acceptable.

4.5. It is concluded that the original assessment of the capacity of Dodwells Roundabout was extremely pessimistic. Had the current results been available, it would have been concluded that the developments north and south of Coventry Road would have no significant effect on the operation of the roundabout, and accordingly the interim improvements would not have been required.

Figures



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Site Boundary (indicative only)

Client

Crest Nicholson (Midlands) Ltd

Project

Dodwells Roundabout, Hinckley

Drawing Title

Strategic Location Plan

Figure No

Figure 1

Date	November 2008
Scale	See Scale Bar
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File Ref	C540/Figures/Fig1.ai
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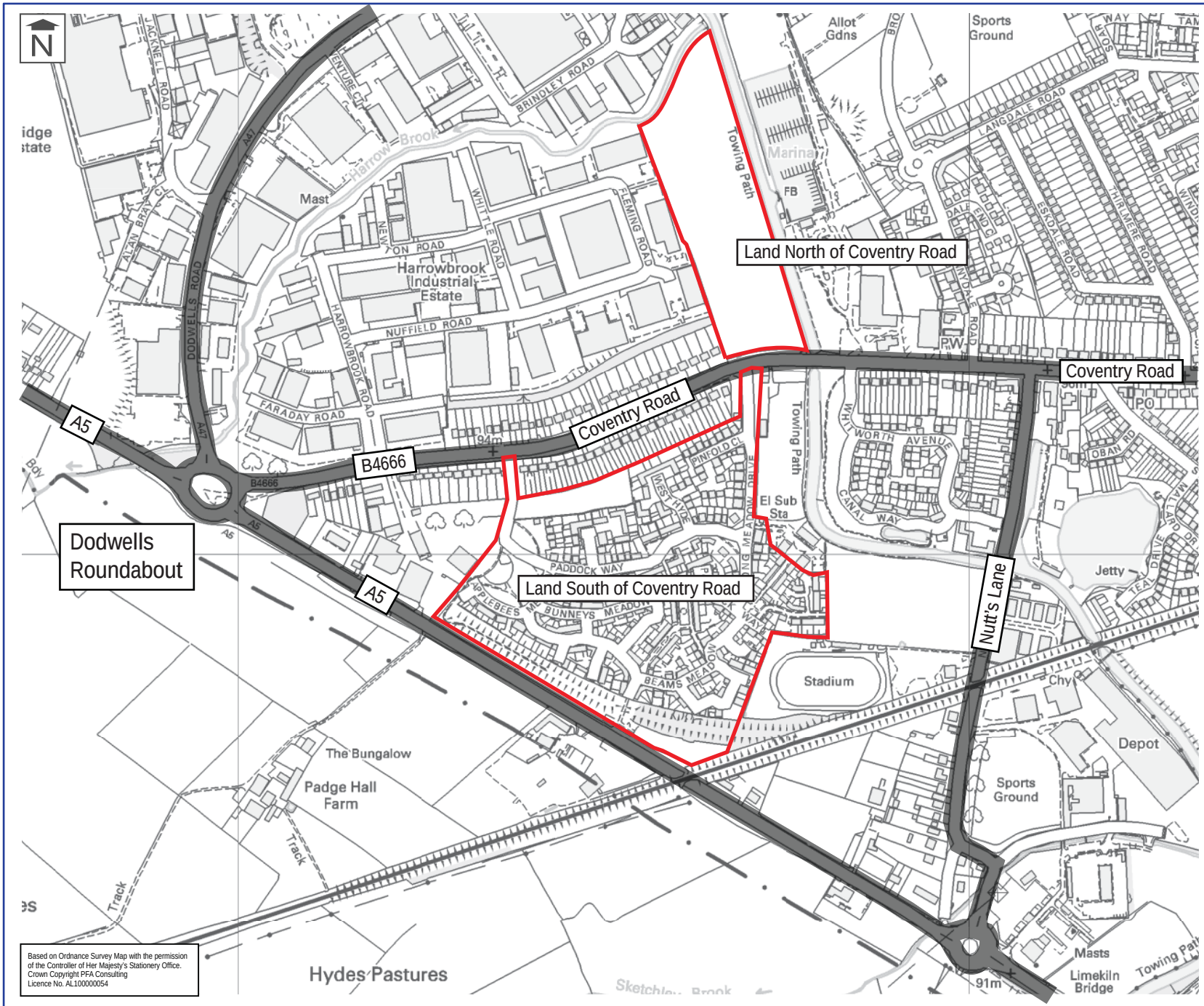

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Site Boundary (indicative only)

0 250m

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Crest Nicholson (Midlands) Ltd

Project

Dodwells Roundabout, Hinckley

Figure Title

Local Context Plan

Figure No

Figure 2

Date	November 2008
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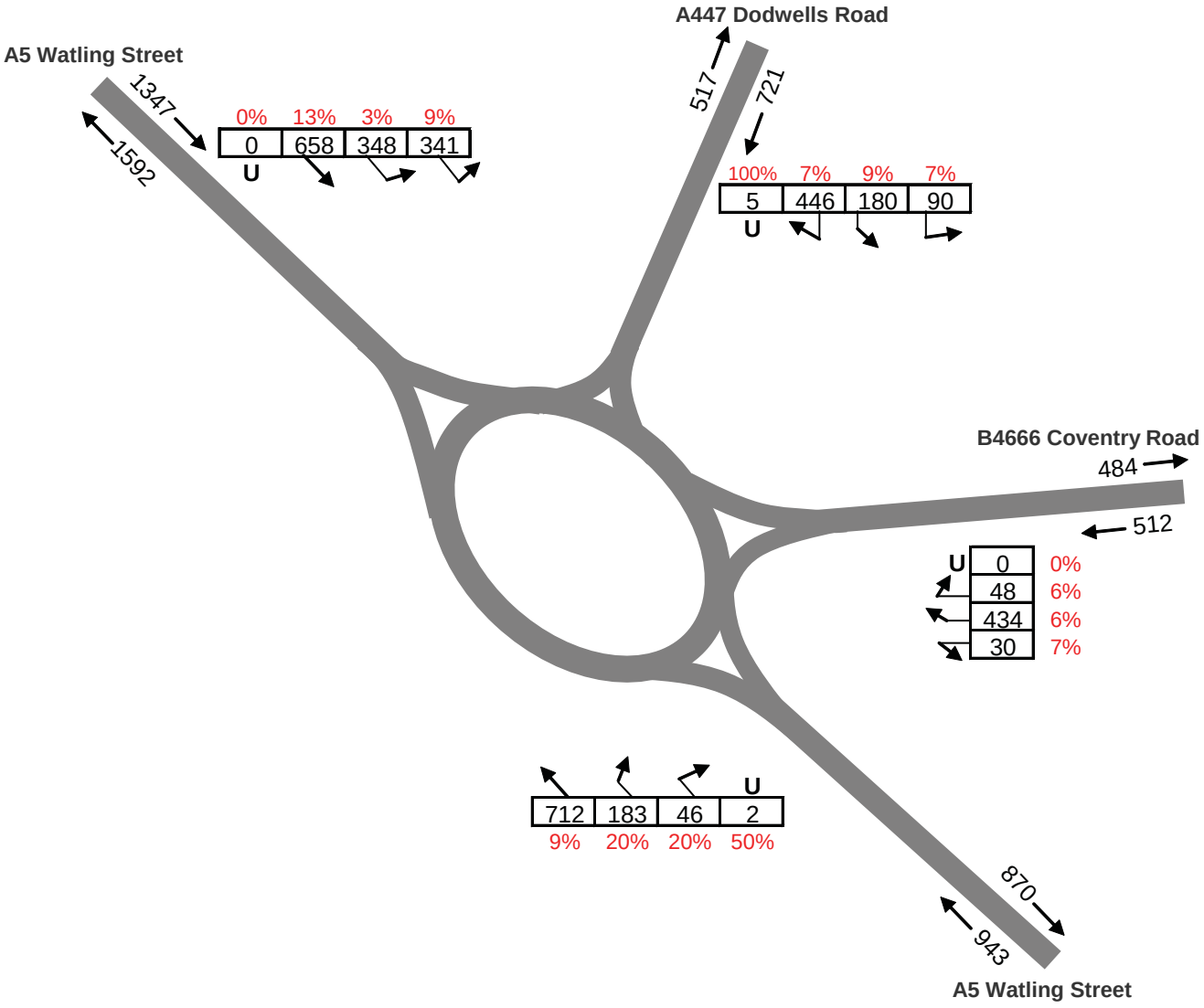
Scale	See Scale Bar
File Ref	C540/Figures/Fig2.ai
Drg No	C540_201

All Vehicles (%HGV)



Source: Survey on Tuesday 9 September 2008

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Crest Nicholson (Midlands) Ltd

Project
Dodwells Roundabout, Hinckley

Figure Title
Turning Movements
AM Peak (08:00 - 09:00)

Figure No
Figure 3a

Date	November 2008
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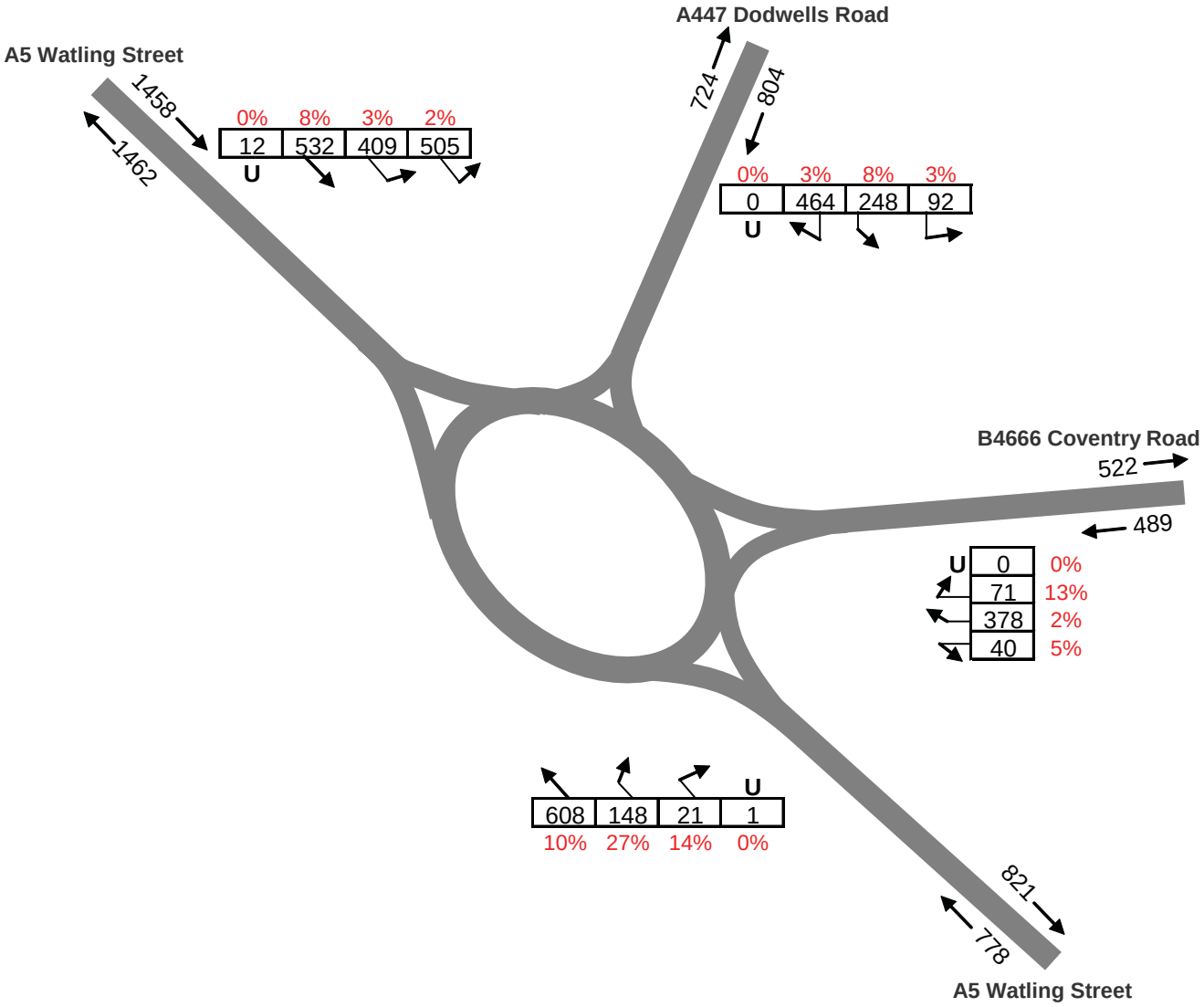

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Project
Dodwells Roundabout, Hinckley

Figure Title
Turning Movements
PM Peak (17:00 - 18:00)

Figure No
Figure 3b

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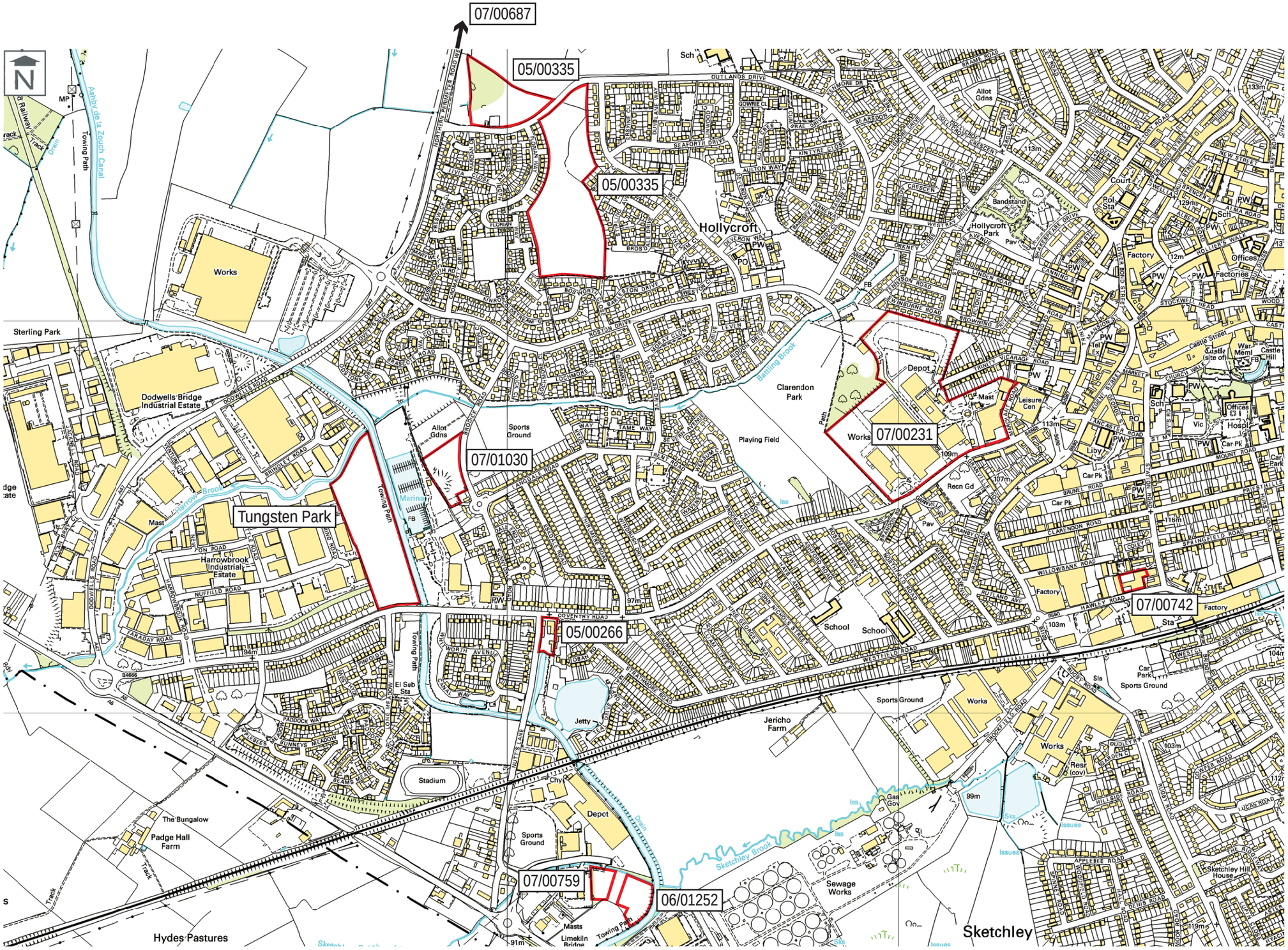
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Hollycroft
Works
Sterling Park
Dodwells Bridge Industrial Estate
Allot Gdns
Sports Ground
Playing Field
Clarendon Park
Depot
Works
07/00231
07/01030
Tungsten Park
Harrowbrook Industrial Estate
Mast
Marina
Towing Path
Ashby de la Zouch Canal
Sketchley Brook
Jetty
Jericho Farm
Sports Ground
Works
Works
Resr (cov)
05/00266
School
School
Factory
Factory
07/00742
Stadium
The Bungalow
Padge Hall Farm
Depot
Sports Ground
Sewage Works
07/00759
06/01252
Masts
Limekiln Bridge
Hydes Pastures
Sketchley
Sketchley Hill House
Castle (site of)
Offices
Factories
Offices
Hospl
Leisure Cen
Tel Ex
Liby
Vic
Recn Gd
Car Pk
Sta
Pol Sta
Court
Bandstand
Hollycroft Park
Castle Hill
War Memi
Allot Gdns
Sch
Sch
Sch

Appendices

Appendix A

APPENDIX A1
ARCADY ASSESSMENT OF DODWELLS ROUNDABOUT
2008 OBSERVED FLOWS
AM PEAK

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

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Crowthorne House Fax: +44 (0) 1344 770864
Nine Mile Ride Email: softwarebureau@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:- "f:\Workfile\C540\ARCADY\November 2008 Work\AM Peak.vai" (drive-on-the-left) at 12:49:52 on Thursday, 27 November 2008

FILE PROPERTIES

RUN TITLE: C540 - Dodwells Roundabout AM Peak - Based on Topo Survey
LOCATION: Hinkley
DATE: 26/11/08
CLIENT: Crest
ENUMERATOR: paulk [97MXW0J]
JOB NUMBER: C540
STATUS:
DESCRIPTION:

INPUT DATA

ARM A - A5 Watling Street (West)
ARM B - Dodwells Road
ARM C - Coventry Road
ARM D - A5 Watling Street (East)

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	4.00	10.00	28.00	35.00	70.00	24.0	0.623	39.769
ARM B	3.50	7.00	16.50	50.00	100.00	17.0	0.482	30.303
ARM C	3.75	8.00	15.50	22.00	76.00	33.0	0.498	30.188
ARM D	4.50	7.50	25.50	50.00	74.00	37.5	0.541	33.843

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2008 AM Peak Observed Flows

ARM	FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	16.84	25.26	16.84
ARM B	15.00	45.00	75.00	9.01	13.52	9.01
ARM C	15.00	45.00	75.00	6.40	9.60	6.40
ARM D	15.00	45.00	75.00	11.79	17.68	11.79

DEMAND SET TITLE: 2008 AM Peak Observed Flows

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
07.45 - 09.15	ARM A	0.000	0.253	0.258	0.488
		0.0	341.0	348.0	658.0
		(0.0)%	(9.1)%	(3.2)%	(13.1)%
	ARM B	0.619	0.007	0.125	0.250
		446.0	5.0	90.0	180.0
		(6.5)%	(100.0)%	(6.7)%	(9.4)%
	ARM C	0.848	0.094	0.000	0.059
		434.0	48.0	0.0	30.0
		(5.5)%	(6.3)%	(0.0)%	(6.7)%
	ARM D	0.755	0.194	0.049	0.002
		712.0	183.0	46.0	2.0
		(9.3)%	(20.2)%	(19.6)%	(50.0)%

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	16.84	33.91	0.497		0.0	1.0	14.3		0.06
ARM B	9.01	21.63	0.417		0.0	0.7	10.3		0.08
ARM C	6.40	20.19	0.317		0.0	0.5	6.7		0.07
ARM D	11.79	24.25	0.486		0.0	0.9	13.5		0.08

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	20.11	33.44	0.601		1.0	1.5	21.7		0.07
ARM B	10.76	20.36	0.529		0.7	1.1	16.0		0.10
ARM C	7.64	18.53	0.412		0.5	0.7	10.1		0.09
ARM D	14.08	23.07	0.610		0.9	1.5	22.1		0.11

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	24.62	32.81	0.750		1.5	2.9	41.1		0.12
ARM B	13.18	18.64	0.707		1.1	2.3	32.4		0.18
ARM C	9.36	16.31	0.574		0.7	1.3	18.8		0.14
ARM D	17.24	21.49	0.802		1.5	3.8	50.9		0.22

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	24.62	32.78	0.751		2.9	3.0	44.2		0.12
ARM B	13.18	18.60	0.708		2.3	2.4	35.3		0.18
ARM C	9.36	16.25	0.576		1.3	1.3	20.0		0.14
ARM D	17.24	21.45	0.804		3.8	3.9	58.1		0.24

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
ARM A	20.11	33.40	0.602		3.0	1.5	23.9		0.08
ARM B	10.76	20.30	0.530		2.4	1.1	18.0		0.11
ARM C	7.64	18.45	0.414		1.3	0.7	11.1		0.09
ARM D	14.08	23.01	0.612		3.9	1.6	25.7		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
ARM A	16.84	33.89	0.497		1.5	1.0	15.3		0.06
ARM B	9.01	21.59	0.418		1.1	0.7	11.2		0.08
ARM C	6.40	20.13	0.318		0.7	0.5	7.2		0.07
ARM D	11.79	24.20	0.487		1.6	1.0	14.9		0.08

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	1.0	*
08.15	1.5	*
08.30	2.9	***
08.45	3.0	***
09.00	1.5	**
09.15	1.0	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.7	*
08.15	1.1	*
08.30	2.3	**
08.45	2.4	**
09.00	1.1	*
09.15	0.7	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.5	
08.15	0.7	*
08.30	1.3	*
08.45	1.3	*
09.00	0.7	*
09.15	0.5	

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.9	*
08.15	1.5	**
08.30	3.8	****
08.45	3.9	****
09.00	1.6	**
09.15	1.0	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1847.0	1231.3	160.4	0.09	160.4	0.09
B	988.6	659.1	123.1	0.12	123.1	0.12
C	702.1	468.0	74.0	0.11	74.0	0.11
D	1293.1	862.0	185.2	0.14	185.2	0.14
ALL	4830.8	3220.5	542.7	0.11	542.8	0.11

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

========== end of file ==========

[Printed at 12:50:23 on 27/11/2008]

APPENDIX A2
ARCADY ASSESSMENT OF DODWELLS ROUNDABOUT
2008 OBSERVED FLOWS
PM PEAK

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

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RG40 3GA,UK

THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:- "f:\Workfile\C540\ARCADY\November 2008 Work\PM Peak.vai" (drive-on-the-left) at 12:59:28 on Thursday, 27 November 2008

FILE PROPERTIES

RUN TITLE: C540 - Dodwells Roundabout PM Peak - based on Topo Survey
LOCATION: Hinkley
DATE: 03/10/08
CLIENT: Crest
ENUMERATOR: paulk [97MXW0J]
JOB NUMBER: C540
STATUS:
DESCRIPTION:

INPUT DATA

ARM A - A5 Watling Street (West)
ARM B - Dodwells Road
ARM C - Coventry Road
ARM D - A5 Watling Street (East)

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	4.00	10.00	28.00	35.00	70.00	24.0	0.623	39.769
ARM B	3.50	7.00	16.50	50.00	100.00	17.0	0.482	30.303
ARM C	3.75	8.00	15.50	22.00	76.00	33.0	0.498	30.188
ARM D	4.50	7.50	25.50	50.00	74.00	37.5	0.541	33.843

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2008 PM Peak Observed

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	18.23	27.34	18.23
ARM B	15.00	45.00	75.00	10.05	15.08	10.05
ARM C	15.00	45.00	75.00	6.11	9.17	6.11
ARM D	15.00	45.00	75.00	9.73	14.59	9.73

DEMAND SET TITLE: 2008 PM Peak Observed

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.45 - 18.15	ARM A	0.008	0.346	0.281	0.365
		12.0	505.0	409.0	532.0
		(0.0)%	(2.2)%	(2.7)%	(8.1)%
	ARM B	0.577	0.000	0.114	0.308
		464.0	0.0	92.0	248.0
		(3.4)%	(0.0)%	(3.3)%	(7.7)%
	ARM C	0.773	0.145	0.000	0.082
		378.0	71.0	0.0	40.0
		(1.9)%	(12.7)%	(0.0)%	(5.0)%
	ARM D	0.781	0.190	0.027	0.001
		608.0	148.0	21.0	1.0
		(10.0)%	(27.0)%	(14.3)%	(0.0)%

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	18.23	35.89	0.508		0.0	1.0	14.9		0.06
ARM B	10.05	23.02	0.437		0.0	0.8	11.1		0.08
ARM C	6.11	21.12	0.289		0.0	0.4	5.9		0.07
ARM D	9.73	24.18	0.402		0.0	0.7	9.7		0.07

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	21.76	35.46	0.614		1.0	1.6	22.8		0.07
ARM B	12.00	21.86	0.549		0.8	1.2	17.4		0.10
ARM C	7.30	19.55	0.373		0.4	0.6	8.7		0.08
ARM D	11.61	23.06	0.504		0.7	1.0	14.6		0.09

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	26.65	34.88	0.764		1.6	3.1	44.1		0.12
ARM B	14.70	20.29	0.724		1.2	2.5	35.1		0.17
ARM C	8.94	17.44	0.513		0.6	1.0	14.9		0.12
ARM D	14.22	21.55	0.660		1.0	1.9	26.9		0.13

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	26.65	34.87	0.764		3.1	3.2	47.5		0.12
ARM B	14.70	20.26	0.726		2.5	2.6	38.4		0.18
ARM C	8.94	17.38	0.514		1.0	1.0	15.7		0.12
ARM D	14.22	21.51	0.661		1.9	1.9	28.7		0.14

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	21.76	35.44	0.614		3.2	1.6	25.1		0.07
ARM B	12.00	21.81	0.550		2.6	1.2	19.5		0.10
ARM C	7.30	19.47	0.375		1.0	0.6	9.3		0.08
ARM D	11.61	23.01	0.505		1.9	1.0	16.0		0.09

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	18.23	35.88	0.508		1.6	1.0	16.0		0.06
ARM B	10.05	22.99	0.437		1.2	0.8	12.1		0.08
ARM C	6.11	21.07	0.290		0.6	0.4	6.3		0.07
ARM D	9.73	24.14	0.403		1.0	0.7	10.4		0.07

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.0	*
17.15	1.6	**
17.30	3.1	***
17.45	3.2	***
18.00	1.6	**
18.15	1.0	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.8	*
17.15	1.2	*
17.30	2.5	***
17.45	2.6	***
18.00	1.2	*
18.15	0.8	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.6	*
17.30	1.0	*
17.45	1.0	*
18.00	0.6	*
18.15	0.4	

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.7	*
17.15	1.0	*
17.30	1.9	**
17.45	1.9	**
18.00	1.0	*
18.15	0.7	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1999.2	1332.8	170.5	0.09	170.5	0.09
B	1102.5	735.0	133.7	0.12	133.7	0.12
C	670.5	447.0	60.8	0.09	60.8	0.09
D	1066.8	711.2	106.4	0.10	106.4	0.10
ALL	4839.0	3226.0	471.3	0.10	471.4	0.10

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

========== end of file ==========

[Printed at 12:59:38 on 27/11/2008]

APPENDIX A3
ARCADY ASSESSMENT OF DODWELLS ROUNDABOUT
2019 PLUS COMMITTED DEVELOPMENT
(WITHOUT TUNGSTEN PARK)
AM PEAK

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

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RG40 3GA,UK

THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:- "f:\Workfile\C540\ARCADY\November 2008 Work\AM Peak.vai" (drive-on-the-left) at 12:58:29 on Thursday, 27 November 2008

FILE PROPERTIES

RUN TITLE: C540 - Dodwells Roundabout AM Peak - Based on Topo Survey
LOCATION: Hinkley
DATE: 26/11/08
CLIENT: Crest
ENUMERATOR: paulk [97MXW0J]
JOB NUMBER: C540
STATUS:
DESCRIPTION:

INPUT DATA

ARM A - A5 Watling Street (West)
ARM B - Dodwells Road
ARM C - Coventry Road
ARM D - A5 Watling Street (East)

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	4.00	10.00	28.00	35.00	70.00	24.0	0.623	39.769
ARM B	3.50	7.00	16.50	50.00	100.00	17.0	0.482	30.303
ARM C	3.75	8.00	15.50	22.00	76.00	33.0	0.498	30.188
ARM D	4.50	7.50	25.50	50.00	74.00	37.5	0.541	33.843

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2019 AM Peak Plus Com

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	18.95	28.43	18.95
ARM B	15.00	45.00	75.00	10.75	16.13	10.75
ARM C	15.00	45.00	75.00	7.22	10.84	7.22
ARM D	15.00	45.00	75.00	13.16	19.74	13.16

DEMAND SET TITLE: 2019 AM Peak Plus Com

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
07.45 - 09.15	ARM A	0.000	0.264	0.270	0.466
		0.0	400.0	410.0	706.0
		(0.0)	(9.1)	(3.2)	(13.1)
	ARM B	0.617	0.006	0.115	0.262
		531.0	5.0	99.0	225.0
		(6.5)	(100.0)	(6.7)	(9.4)
	ARM C	0.837	0.090	0.000	0.073
		484.0	52.0	0.0	42.0
		(5.5)	(6.3)	(0.0)	(6.7)
	ARM D	0.726	0.206	0.066	0.002
		764.0	217.0	70.0	2.0
		(9.3)	(20.2)	(19.6)	(50.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	18.95	33.44	0.567		0.0	1.3	18.7		0.07
ARM B	10.75	20.83	0.516		0.0	1.1	15.1		0.10
ARM C	7.22	19.05	0.379		0.0	0.6	8.8		0.08
ARM D	13.16	23.31	0.565		0.0	1.3	18.3		0.10

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	22.63	32.87	0.688		1.3	2.2	31.1		0.10
ARM B	12.84	19.40	0.662		1.1	1.9	26.9		0.15
ARM C	8.63	17.18	0.502		0.6	1.0	14.4		0.12
ARM D	15.72	21.96	0.716		1.3	2.4	34.1		0.16

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	27.71	32.17	0.861		2.2	5.7	74.9		0.20
ARM B	15.72	17.52	0.897		1.9	6.8	83.0		0.42
ARM C	10.57	14.78	0.715		1.0	2.4	32.7		0.23
ARM D	19.25	20.23	0.951		2.4	11.0	123.2		0.52

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	27.71	32.10	0.863		5.7	6.0	87.9		0.22
ARM B	15.72	17.43	0.902		6.8	7.8	110.9		0.53
ARM C	10.57	14.61	0.723		2.4	2.5	37.1		0.25
ARM D	19.25	20.11	0.957		11.0	13.9	189.0		0.76

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
ARM A	22.63	32.70	0.692		6.0	2.3	37.1		0.10
ARM B	12.84	19.26	0.667		7.8	2.1	36.4		0.18
ARM C	8.63	16.91	0.510		2.5	1.1	16.8		0.12
ARM D	15.72	21.76	0.722		13.9	2.7	56.5		0.21

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
ARM A	18.95	33.40	0.567		2.3	1.3	20.5		0.07
ARM B	10.75	20.77	0.518		2.1	1.1	17.0		0.10
ARM C	7.22	18.95	0.381		1.1	0.6	9.6		0.09
ARM D	13.16	23.23	0.567		2.7	1.3	20.8		0.10

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	1.3	*
08.15	2.2	**
08.30	5.7	******
08.45	6.0	******
09.00	2.3	**
09.15	1.3	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	1.1	*
08.15	1.9	**
08.30	6.8	*******
08.45	7.8	********
09.00	2.1	**
09.15	1.1	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.6	*
08.15	1.0	*
08.30	2.4	**
08.45	2.5	***
09.00	1.1	*
09.15	0.6	*

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	1.3	*
08.15	2.4	**
08.30	11.0	**********
08.45	13.9	**********
09.00	2.7	***
09.15	1.3	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	2078.8	1385.8	270.2	0.13	270.2	0.13
B	1179.2	786.2	289.3	0.25	289.3	0.25
C	792.6	528.4	119.3	0.15	119.3	0.15
D	1443.9	962.6	442.0	0.31	442.1	0.31
ALL	5494.4	3663.0	1120.8	0.20	1120.9	0.20

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

========== end of file ==========

[Printed at 12:58:38 on 27/11/2008]

APPENDIX A4
ARCADY ASSESSMENT OF DODWELLS ROUNDABOUT
2019 PLUS COMMITTED DEVELOPMENT
(WITHOUT TUNGSTEN PARK)
PM PEAK

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

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Run with file:- "f:\Workfile\C540\ARCADY\November 2008 Work\PM Peak.vai" (drive-on-the-left) at 13:03:02 on Thursday, 27 November 2008

FILE PROPERTIES

RUN TITLE: C540 - Dodwells Roundabout PM Peak - based on Topo Survey
LOCATION: Hinkley
DATE: 03/10/08
CLIENT: Crest
ENUMERATOR: paulk [97MXW0J]
JOB NUMBER: C540
STATUS:
DESCRIPTION:

INPUT DATA

ARM A - A5 Watling Street (West)
ARM B - Dodwells Road
ARM C - Coventry Road
ARM D - A5 Watling Street (East)

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	4.00	10.00	28.00	35.00	70.00	24.0	0.623	39.769
ARM B	3.50	7.00	16.50	50.00	100.00	17.0	0.482	30.303
ARM C	3.75	8.00	15.50	22.00	76.00	33.0	0.498	30.188
ARM D	4.50	7.50	25.50	50.00	74.00	37.5	0.541	33.843

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2019 PM Peak Plus Com

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	20.79	31.18	20.79
ARM B	15.00	45.00	75.00	11.68	17.51	11.68
ARM C	15.00	45.00	75.00	7.59	11.38	7.59
ARM D	15.00	45.00	75.00	11.18	16.76	11.18

DEMAND SET TITLE: 2019 PM Peak Plus Com

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.45 - 18.15	ARM A	0.008	0.356	0.292	0.344
		13.0	592.0	486.0	572.0
		(0.0)	(2.2)	(2.7)	(8.1)
	ARM B	0.578	0.000	0.109	0.313
		540.0	0.0	102.0	292.0
		(3.4)	(0.0)	(3.3)	(7.7)
	ARM C	0.750	0.132	0.000	0.119
		455.0	80.0	0.0	72.0
		(1.9)	(12.7)	(0.0)	(5.0)
	ARM D	0.732	0.211	0.056	0.001
		654.0	189.0	50.0	1.0
		(10.0)	(27.0)	(14.3)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	20.79	35.22	0.590		0.0	1.4	20.6		0.07
ARM B	11.68	22.13	0.528		0.0	1.1	15.8		0.09
ARM C	7.59	20.12	0.377		0.0	0.6	8.7		0.08
ARM D	11.18	23.09	0.484		0.0	0.9	13.4		0.08

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	24.82	34.66	0.716		1.4	2.5	35.2		0.10
ARM B	13.94	20.79	0.670		1.1	2.0	28.0		0.14
ARM C	9.06	18.35	0.494		0.6	1.0	13.9		0.11
ARM D	13.34	21.78	0.613		0.9	1.6	22.3		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	30.40	33.91	0.897		2.5	7.5	95.6		0.24
ARM B	17.07	19.04	0.897		2.0	6.9	84.3		0.39
ARM C	11.10	16.09	0.689		1.0	2.1	29.6		0.19
ARM D	16.34	20.09	0.814		1.6	4.0	53.5		0.25

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	30.40	33.87	0.898		7.5	8.0	117.4		0.28
ARM B	17.07	18.95	0.901		6.9	7.8	111.4		0.49
ARM C	11.10	15.92	0.697		2.1	2.2	33.0		0.21
ARM D	16.34	19.98	0.818		4.0	4.3	62.5		0.27

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	24.82	34.60	0.717		8.0	2.6	43.2		0.11
ARM B	13.94	20.65	0.675		7.8	2.1	37.4		0.17
ARM C	9.06	18.08	0.501		2.2	1.0	16.0		0.11
ARM D	13.34	21.61	0.617		4.3	1.6	26.6		0.13

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	20.79	35.20	0.591		2.6	1.5	22.6		0.07
ARM B	11.68	22.07	0.529		2.1	1.1	17.8		0.10
ARM C	7.59	20.03	0.379		1.0	0.6	9.5		0.08
ARM D	11.18	23.02	0.485		1.6	1.0	14.8		0.08

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.4	*
17.15	2.5	**
17.30	7.5	*******
17.45	8.0	********
18.00	2.6	***
18.15	1.5	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.1	*
17.15	2.0	**
17.30	6.9	*******
17.45	7.8	********
18.00	2.1	**
18.15	1.1	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.6	*
17.15	1.0	*
17.30	2.1	**
17.45	2.2	**
18.00	1.0	*
18.15	0.6	*

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.9	*
17.15	1.6	**
17.30	4.0	****
17.45	4.3	****
18.00	1.6	**
18.15	1.0	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	2280.3	1520.2	334.6	0.15	334.6	0.15
B	1280.7	853.8	294.8	0.23	294.9	0.23
C	832.3	554.9	110.8	0.13	110.8	0.13
D	1225.9	817.2	193.0	0.16	193.0	0.16
ALL	5619.2	3746.1	933.3	0.17	933.4	0.17

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

========== end of file ==========

[Printed at 13:03:17 on 27/11/2008]

APPENDIX A5
ARCADY ASSESSMENT OF DODWELLS ROUNDABOUT
2019 PLUS COMMITTED DEVELOPMENT
WITH TUNGSTEN PARK
AM PEAK

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

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Run with file:- "f:\Workfile\C540\ARCADY\November 2008 Work\AM Peak.vai" (drive-on-the-left) at 12:56:30 on Thursday, 27 November 2008

FILE PROPERTIES

RUN TITLE: C540 - Dodwells Roundabout AM Peak - Based on Topo Survey
LOCATION: Hinkley
DATE: 26/11/08
CLIENT: Crest
ENUMERATOR: paulk [97MXW0J]
JOB NUMBER: C540
STATUS:
DESCRIPTION:

INPUT DATA

ARM A - A5 Watling Street (West)
ARM B - Dodwells Road
ARM C - Coventry Road
ARM D - A5 Watling Street (East)

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	4.00	10.00	28.00	35.00	70.00	24.0	0.623	39.769
ARM B	3.50	7.00	16.50	50.00	100.00	17.0	0.482	30.303
ARM C	3.75	8.00	15.50	22.00	76.00	33.0	0.498	30.188
ARM D	4.50	7.50	25.50	50.00	74.00	37.5	0.541	33.843

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2019 AM Peak Plus Com Plus Tungsten Park

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	19.54	29.31	19.54
ARM B	15.00	45.00	75.00	10.81	16.22	10.81
ARM C	15.00	45.00	75.00	7.55	11.33	7.55
ARM D	15.00	45.00	75.00	13.52	20.29	13.52

DEMAND SET TITLE: 2019 AM Peak Plus Com Plus Tungsten Park

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) / (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C	ARM D
07.45 - 09.15	ARM A	0.000 0.0 (0.0)	0.256 400.0 (9.1)	0.292 457.0 (3.2)	0.452 706.0 (13.1)
	ARM B	0.614 531.0 (6.5)	0.006 5.0 (100.0)	0.120 104.0 (6.7)	0.260 225.0 (9.4)
	ARM C	0.826 499.0 (5.5)	0.089 54.0 (6.3)	0.000 0.0 (0.0)	0.084 51.0 (6.7)
	ARM D	0.706 764.0 (9.3)	0.201 217.0 (20.2)	0.091 99.0 (19.6)	0.002 2.0 (50.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	19.54	33.24	0.588		0.0	1.4	20.3		0.07
ARM B	10.81	20.37	0.531		0.0	1.1	16.0		0.10
ARM C	7.55	19.05	0.396		0.0	0.7	9.4		0.09
ARM D	13.52	23.16	0.584		0.0	1.4	19.7		0.10

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	23.33	32.61	0.715		1.4	2.5	35.0		0.11
ARM B	12.91	18.85	0.685		1.1	2.1	29.6		0.16
ARM C	9.02	17.19	0.525		0.7	1.1	15.6		0.12
ARM D	16.15	21.80	0.741		1.4	2.7	38.1		0.17

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	28.57	31.90	0.896		2.5	7.4	94.0		0.25
ARM B	15.81	16.89	0.936		2.1	9.1	104.3		0.53
ARM C	11.04	14.86	0.743		1.1	2.7	36.9		0.25
ARM D	19.78	20.09	0.984		2.7	14.8	156.1		0.64

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	28.57	31.82	0.898		7.4	8.0	116.4		0.30
ARM B	15.81	16.77	0.943		9.1	11.3	155.4		0.76
ARM C	11.04	14.65	0.754		2.7	2.9	42.8		0.27
ARM D	19.78	19.95	0.992		14.8	21.1	272.8		1.08

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
ARM A	23.33	32.34	0.721		8.0	2.7	44.3		0.12
ARM B	12.91	18.63	0.693		11.3	2.3	46.7		0.22
ARM C	9.02	16.79	0.537		2.9	1.2	18.9		0.13
ARM D	16.15	21.52	0.751		21.1	3.2	86.8		0.30

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
ARM A	19.54	33.19	0.589		2.7	1.4	22.5		0.07
ARM B	10.81	20.30	0.533		2.3	1.2	18.1		0.11
ARM C	7.55	18.94	0.399		1.2	0.7	10.4		0.09
ARM D	13.52	23.07	0.586		3.2	1.4	22.7		0.11

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	1.4	*
08.15	2.5	**
08.30	7.4	*******
08.45	8.0	********
09.00	2.7	***
09.15	1.4	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	1.1	*
08.15	2.1	**
08.30	9.1	*********
08.45	11.3	***********
09.00	2.3	**
09.15	1.2	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.7	*
08.15	1.1	*
08.30	2.7	***
08.45	2.9	***
09.00	1.2	*
09.15	0.7	*

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	1.4	*
08.15	2.7	***
08.30	14.8	***************
08.45	21.1	*********************
09.00	3.2	***
09.15	1.4	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	2143.2	1428.8	332.6	0.16	332.6	0.16
B	1186.1	790.7	370.1	0.31	370.1	0.31
C	828.2	552.1	133.9	0.16	133.9	0.16
D	1483.7	989.1	596.3	0.40	596.3	0.40
ALL	5641.2	3760.8	1432.8	0.25	1433.0	0.25

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

========== end of file ==========

[Printed at 12:56:43 on 27/11/2008]

APPENDIX A6
ARCADY ASSESSMENT OF DODWELLS ROUNDABOUT
2019 PLUS COMMITTED DEVELOPMENT
WITH TUNGSTEN PARK
PM PEAK

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

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Run with file:- "f:\Workfile\C540\ARCADY\November 2008 Work\PM Peak.vai" (drive-on-the-left) at 13:00:52 on Thursday, 27 November 2008

FILE PROPERTIES

RUN TITLE: C540 - Dodwells Roundabout PM Peak - based on Topo Survey
LOCATION: Hinkley
DATE: 03/10/08
CLIENT: Crest
ENUMERATOR: paulk [97MXW0J]
JOB NUMBER: C540
STATUS:
DESCRIPTION:

INPUT DATA

ARM A - A5 Watling Street (West)
ARM B - Dodwells Road
ARM C - Coventry Road
ARM D - A5 Watling Street (East)

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	4.00	10.00	28.00	35.00	70.00	24.0	0.623	39.769
ARM B	3.50	7.00	16.50	50.00	100.00	17.0	0.482	30.303
ARM C	3.75	8.00	15.50	22.00	76.00	33.0	0.498	30.188
ARM D	4.50	7.50	25.50	50.00	74.00	37.5	0.541	33.843

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2019 PM Peak Plus Com Plus Tungsten Park

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	20.92	31.39	20.92
ARM B	15.00	45.00	75.00	11.69	17.53	11.69
ARM C	15.00	45.00	75.00	8.49	12.73	8.49
ARM D	15.00	45.00	75.00	11.26	16.89	11.26

DEMAND SET TITLE: 2019 PM Peak Plus Com Plus Tungsten Park

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) / (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C	ARM D
16.45 - 18.15	ARM A	0.008 13.0 (0.0)	0.354 592.0 (2.2)	0.297 497.0 (2.7)	0.342 572.0 (8.1)
	ARM B	0.578 540.0 (3.4)	0.000 0.0 (0.0)	0.110 103.0 (3.3)	0.312 292.0 (7.7)
	ARM C	0.732 497.0 (1.9)	0.124 84.0 (12.7)	0.000 0.0 (0.0)	0.144 98.0 (5.0)
	ARM D	0.726 654.0 (10.0)	0.210 189.0 (27.0)	0.063 57.0 (14.3)	0.001 1.0 (0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	20.92	35.14	0.596		0.0	1.5	21.0		0.07
ARM B	11.69	22.02	0.531		0.0	1.1	16.0		0.10
ARM C	8.49	20.12	0.422		0.0	0.7	10.5		0.09
ARM D	11.26	22.81	0.494		0.0	1.0	13.9		0.09

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	24.99	34.55	0.723		1.5	2.6	36.4		0.10
ARM B	13.96	20.66	0.675		1.1	2.0	28.6		0.15
ARM C	10.13	18.36	0.552		0.7	1.2	17.4		0.12
ARM D	13.45	21.45	0.627		1.0	1.6	23.6		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	30.60	33.78	0.906		2.6	8.1	102.2		0.26
ARM B	17.09	18.90	0.905		2.0	7.3	88.5		0.41
ARM C	12.41	16.11	0.770		1.2	3.1	42.1		0.25
ARM D	16.47	19.70	0.836		1.6	4.6	60.0		0.28

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	30.60	33.74	0.907		8.1	8.8	127.9		0.30
ARM B	17.09	18.79	0.910		7.3	8.4	119.3		0.53
ARM C	12.41	15.93	0.779		3.1	3.4	49.1		0.28
ARM D	16.47	19.57	0.841		4.6	4.9	72.1		0.31

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	24.99	34.48	0.725		8.8	2.7	45.4		0.11
ARM B	13.96	20.50	0.681		8.4	2.2	39.1		0.17
ARM C	10.13	18.06	0.561		3.4	1.3	20.9		0.13
ARM D	13.45	21.24	0.633		4.9	1.8	28.8		0.14

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	20.92	35.11	0.596		2.7	1.5	23.2		0.07
ARM B	11.69	21.96	0.532		2.2	1.2	18.0		0.10
ARM C	8.49	20.03	0.424		1.3	0.7	11.5		0.09
ARM D	11.26	22.73	0.495		1.8	1.0	15.4		0.09

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.5	*
17.15	2.6	***
17.30	8.1	********
17.45	8.8	*********
18.00	2.7	***
18.15	1.5	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.1	*
17.15	2.0	**
17.30	7.3	*******
17.45	8.4	********
18.00	2.2	**
18.15	1.2	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.7	*
17.15	1.2	*
17.30	3.1	***
17.45	3.4	***
18.00	1.3	*
18.15	0.7	*

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.0	*
17.15	1.6	**
17.30	4.6	*****
17.45	4.9	*****
18.00	1.8	**
18.15	1.0	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	2295.4	1530.3	356.0	0.16	356.1	0.16
B	1282.1	854.7	309.5	0.24	309.6	0.24
C	931.1	620.7	151.5	0.16	151.5	0.16
D	1235.5	823.6	213.8	0.17	213.8	0.17
ALL	5744.0	3829.3	1030.9	0.18	1031.0	0.18

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

========== end of file ==========

[Printed at 13:01:04 on 27/11/2008]

APPENDIX A7
ARCADY ASSESSMENT OF DODWELLS ROUNDABOUT
2019 PLUS COMMITTED DEVELOPMENT
WITH TUNGSTEN PARK AND GREYHOUND STADIUM DEVELOPMENT
AM PEAK

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

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Run with file:- "f:\Workfile\C540\ARCADY\November 2008 Work\AM Peak.vai" (drive-on-the-left) at 12:57:34 on Thursday, 27 November 2008

FILE PROPERTIES

RUN TITLE: C540 - Dodwells Roundabout AM Peak - Based on Topo Survey
LOCATION: Hinkley
DATE: 26/11/08
CLIENT: Crest
ENUMERATOR: paulk [97MXW0J]
JOB NUMBER: C540
STATUS:
DESCRIPTION:

INPUT DATA

ARM A - A5 Watling Street (West)
ARM B - Dodwells Road
ARM C - Coventry Road
ARM D - A5 Watling Street (East)

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	4.00	10.00	28.00	35.00	70.00	24.0	0.623	39.769
ARM B	3.50	7.00	16.50	50.00	100.00	17.0	0.482	30.303
ARM C	3.75	8.00	15.50	22.00	76.00	33.0	0.498	30.188
ARM D	4.50	7.50	25.50	50.00	74.00	37.5	0.541	33.843

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2019 AM Peak Plus Com Plus Tungsten Park Plus Greyhound

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	19.55	29.32	19.55
ARM B	15.00	45.00	75.00	10.81	16.22	10.81
ARM C	15.00	45.00	75.00	7.69	11.53	7.69
ARM D	15.00	45.00	75.00	13.54	20.31	13.54

DEMAND SET TITLE: 2019 AM Peak Plus Com Plus Tungsten Park Plus Greyhound

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
07.45 - 09.15	ARM A	0.000	0.256	0.293	0.451
		0.0	400.0	458.0	706.0
		(0.0)%	(9.1)%	(3.2)%	(13.1)%
	ARM B	0.614	0.006	0.120	0.260
		531.0	5.0	104.0	225.0
		(6.5)%	(100.0)%	(6.7)%	(9.4)%
	ARM C	0.823	0.088	0.000	0.089
		506.0	54.0	0.0	55.0
		(5.5)%	(6.3)%	(0.0)%	(6.7)%
	ARM D	0.705	0.200	0.092	0.002
		764.0	217.0	100.0	2.0
		(9.2)%	(20.1)%	(19.5)%	(0.0)%

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.45-08.00									
ARM A	19.55	33.24	0.588		0.0	1.4	20.4		0.07
ARM B	10.81	20.36	0.531		0.0	1.1	16.0		0.10
ARM C	7.69	19.06	0.403		0.0	0.7	9.7		0.09
ARM D	13.54	23.15	0.585		0.0	1.4	19.8		0.10

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.00-08.15									
ARM A	23.34	32.62	0.716		1.4	2.5	35.0		0.11
ARM B	12.91	18.84	0.685		1.1	2.1	29.6		0.16
ARM C	9.18	17.19	0.534		0.7	1.1	16.2		0.12
ARM D	16.17	21.78	0.742		1.4	2.8	38.4		0.17

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	28.59	31.91	0.896		2.5	7.4	94.3		0.25
ARM B	15.81	16.89	0.936		2.1	9.1	104.6		0.53
ARM C	11.24	14.87	0.756		1.1	2.9	39.1		0.26
ARM D	19.80	20.06	0.987		2.8	15.2	158.5		0.66

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	28.59	31.83	0.898		7.4	8.0	116.8		0.30
ARM B	15.81	16.76	0.943		9.1	11.4	156.0		0.76
ARM C	11.24	14.66	0.767		2.9	3.1	45.7		0.29
ARM D	19.80	19.92	0.994		15.2	21.7	279.9		1.10

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
ARM A	23.34	32.34	0.722		8.0	2.7	44.5		0.12
ARM B	12.91	18.62	0.693		11.4	2.4	46.9		0.22
ARM C	9.18	16.79	0.547		3.1	1.2	19.7		0.14
ARM D	16.17	21.50	0.752		21.7	3.2	89.8		0.31

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
ARM A	19.55	33.19	0.589		2.7	1.4	22.5		0.07
ARM B	10.81	20.29	0.533		2.4	1.2	18.2		0.11
ARM C	7.69	18.95	0.406		1.2	0.7	10.7		0.09
ARM D	13.54	23.07	0.587		3.2	1.4	22.8		0.11

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	1.4	*
08.15	2.5	**
08.30	7.4	*******
08.45	8.0	********
09.00	2.7	***
09.15	1.4	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	1.1	*
08.15	2.1	**
08.30	9.1	*********
08.45	11.4	***********
09.00	2.4	**
09.15	1.2	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.7	*
08.15	1.1	*
08.30	2.9	***
08.45	3.1	***
09.00	1.2	*
09.15	0.7	*

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	1.4	*
08.15	2.8	***
08.30	15.2	***************
08.45	21.7	**********************
09.00	3.2	***
09.15	1.4	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	2144.6	1429.7	333.5	0.16	333.5	0.16
B	1186.1	790.7	371.2	0.31	371.2	0.31
C	843.3	562.2	141.1	0.17	141.1	0.17
D	1485.0	990.0	609.2	0.41	609.3	0.41
ALL	5659.0	3772.7	1455.0	0.26	1455.1	0.26

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

========== end of file ==========

[Printed at 12:57:43 on 27/11/2008]

APPENDIX A8
ARCADY ASSESSMENT OF DODWELLS ROUNDABOUT
2019 PLUS COMMITTED DEVELOPMENT
WITH TUNGSTEN PARK AND GREYHOUND STADIUM DEVELOPMENT
PM PEAK

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

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THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:- "f:\Workfile\C540\ARCADY\November 2008 Work\PM Peak.vai" (drive-on-the-left) at 13:02:05 on Thursday, 27 November 2008

FILE PROPERTIES

RUN TITLE: C540 - Dodwells Roundabout PM Peak - based on Topo Survey
LOCATION: Hinkley
DATE: 03/10/08
CLIENT: Crest
ENUMERATOR: paulk [97MXW0J]
JOB NUMBER: C540
STATUS:
DESCRIPTION:

INPUT DATA

ARM A - A5 Watling Street (West)
ARM B - Dodwells Road
ARM C - Coventry Road
ARM D - A5 Watling Street (East)

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	4.00	10.00	28.00	35.00	70.00	24.0	0.623	39.769
ARM B	3.50	7.00	16.50	50.00	100.00	17.0	0.482	30.303
ARM C	3.75	8.00	15.50	22.00	76.00	33.0	0.498	30.188
ARM D	4.50	7.50	25.50	50.00	74.00	37.5	0.541	33.843

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2019 PM Peak Plus Com Plus Tungsten Park Plus Greyhound

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	21.02	31.54	21.02
ARM B	15.00	45.00	75.00	11.70	17.55	11.70
ARM C	15.00	45.00	75.00	8.54	12.81	8.54
ARM D	15.00	45.00	75.00	11.32	16.99	11.32

DEMAND SET TITLE: 2019 PM Peak Plus Com Plus Tungsten Park Plus Greyhound

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) / (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C	ARM D
16.45 - 18.15	ARM A	0.008 13.0 (0.0)%	0.352 592.0 (2.2)%	0.300 505.0 (2.7)%	0.340 572.0 (8.1)%
	ARM B	0.577 540.0 (3.4)%	0.000 0.0 (0.0)%	0.111 104.0 (3.3)%	0.312 292.0 (7.7)%
	ARM C	0.732 500.0 (1.9)%	0.123 84.0 (12.7)%	0.000 0.0 (0.0)%	0.145 99.0 (5.0)%
	ARM D	0.722 654.0 (10.0)%	0.209 189.0 (27.0)%	0.068 62.0 (14.3)%	0.001 1.0 (0.0)%

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	21.02	35.10	0.599		0.0	1.5	21.3		0.07
ARM B	11.70	21.94	0.533		0.0	1.1	16.2		0.10
ARM C	8.54	20.12	0.424		0.0	0.7	10.6		0.09
ARM D	11.32	22.79	0.497		0.0	1.0	14.1		0.09

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	25.11	34.50	0.728		1.5	2.6	37.1		0.10
ARM B	13.97	20.57	0.679		1.1	2.1	29.1		0.15
ARM C	10.19	18.36	0.555		0.7	1.2	17.7		0.12
ARM D	13.52	21.43	0.631		1.0	1.7	23.9		0.13

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	30.75	33.73	0.912		2.6	8.5	106.7		0.27
ARM B	17.11	18.79	0.911		2.1	7.7	91.8		0.43
ARM C	12.49	16.13	0.774		1.2	3.2	42.8		0.26
ARM D	16.56	19.68	0.841		1.7	4.7	61.7		0.28

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	30.75	33.68	0.913		8.5	9.4	135.4		0.32
ARM B	17.11	18.67	0.916		7.7	8.9	125.9		0.56
ARM C	12.49	15.94	0.783		3.2	3.4	50.2		0.29
ARM D	16.56	19.55	0.847		4.7	5.1	74.8		0.32

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	25.11	34.43	0.729		9.4	2.8	47.0		0.12
ARM B	13.97	20.40	0.685		8.9	2.2	40.6		0.18
ARM C	10.19	18.04	0.565		3.4	1.3	21.3		0.13
ARM D	13.52	21.21	0.638		5.1	1.8	29.5		0.14

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	21.02	35.06	0.600		2.8	1.5	23.5		0.07
ARM B	11.70	21.88	0.535		2.2	1.2	18.2		0.10
ARM C	8.54	20.02	0.426		1.3	0.8	11.6		0.09
ARM D	11.32	22.71	0.499		1.8	1.0	15.6		0.09

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.5	*
17.15	2.6	***
17.30	8.5	*********
17.45	9.4	*********
18.00	2.8	***
18.15	1.5	**

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.1	*
17.15	2.1	**
17.30	7.7	********
17.45	8.9	*********
18.00	2.2	**
18.15	1.2	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.7	*
17.15	1.2	*
17.30	3.2	***
17.45	3.4	***
18.00	1.3	*
18.15	0.8	*

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.0	*
17.15	1.7	**
17.30	4.7	*****
17.45	5.1	*****
18.00	1.8	**
18.15	1.0	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	2306.4	1537.6	371.0	0.16	371.1	0.16
B	1283.5	855.6	321.7	0.25	321.7	0.25
C	936.5	624.4	154.2	0.16	154.2	0.16
D	1242.3	828.2	219.8	0.18	219.8	0.18
ALL	5768.7	3845.8	1066.6	0.18	1066.7	0.18

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

========== end of file ==========

[Printed at 13:02:18 on 27/11/2008]

Appendix B

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : D - INDUSTRIAL ESTATE

VEHICLES

Selected regions and areas:

03	**SOUTH WEST**		
	CW	CORNWALL	1 days
	WL	WILTSHIRE	1 days
04	**EAST ANGLIA**		
	CA	CAMBRIDGESHIRE	1 days
05	**EAST MIDLANDS**		
	LN	LINCOLNSHIRE	1 days
06	**WEST MIDLANDS**		
	WM	WEST MIDLANDS	1 days
07	**YORKSHIRE & NORTH LINCOLNSHIRE**		
	KH	KINGSTON UPON HULL	1 days
	WY	WEST YORKSHIRE	1 days
08	**NORTH WEST**		
	LC	LANCASHIRE	1 days

Main parameter selection:

Parameter: Gross floor area
Range: 1197 to 9835 (units: sqm)

Date Range: 01/01/00 to 13/05/08

Selected survey days:

Tuesday	3 days
Thursday	2 days
Friday	3 days

Selected survey types:

Manual count	8 days
Directional ATC Count	0 days

Selected Locations:

Edge of Town Centre	1
Suburban Area (PPS6 Out of Centre)	2
Edge of Town	5

Selected Location Sub Categories:

Industrial Zone	6
Residential Zone	1
Built-Up Zone	1

Optional parameter selection:

Use Class:

Not Known	3 days
B1	1 days
B2	1 days

Optional parameter selection (Cont.):

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	2 days
15,001 to 20,000	4 days
25,001 to 50,000	1 days

Population within 5 miles:

5,001 to 25,000	1 days
25,001 to 50,000	1 days
50,001 to 75,000	2 days
125,001 to 250,000	2 days
250,001 to 500,000	1 days
500,001 or More	1 days

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	5 days

Travel Plan:

Not Known	2 days
No	6 days

LIST OF SITES relevant to selection parameters

1 **CA-02-D-01** **IND. ESTATE, PETERBOROUGH** **CAMBRIDGESHIRE**
STURROCK WAY
BRETTON
PETERBOROUGH
Total Gross floor area: 4300 sqm
Survey date: TUESDAY *13/05/08* *Survey Type: MANUAL*

2 **CW-02-D-02** **INDUSTRIAL ESTATE, CAMBORNE** **CORNWALL**
DRUIDS ROAD

CAMBORNE
Total Gross floor area: 6515 sqm
Survey date: FRIDAY *21/09/07* *Survey Type: MANUAL*

3 **KH-02-D-02** **INDUSTRIAL ESTATE, HULL** **KINGSTON UPON HULL**
BOULEVARD STREET

KINGSTON UPON HULL
Total Gross floor area: 2220 sqm
Survey date: THURSDAY *18/10/01* *Survey Type: MANUAL*

4 **LC-02-D-04** **INDUSTRIAL ESTATE, GARSTANG** **LANCASHIRE**
GREEN LANE WEST

GARSTANG
Total Gross floor area: 4555 sqm
Survey date: FRIDAY *16/06/06* *Survey Type: MANUAL*

5 **LN-02-D-01** **INDUSTRIAL ESTATE, GRANTHAM** **LINCOLNSHIRE**
BELTON LANE

GRANTHAM
Total Gross floor area: 5347 sqm
Survey date: THURSDAY *12/05/05* *Survey Type: MANUAL*

6 **WL-02-D-01** **IND. ESTATE, WOOTTON BASSETT** **WILTSHIRE**
MARLBOROUGH ROAD

WOOTTON BASSETT
Total Gross floor area: 7050 sqm
Survey date: TUESDAY *03/10/06* *Survey Type: MANUAL*

7 **WM-02-D-01** **INDUSTRIAL EST., BIRMINGHAM** **WEST MIDLANDS**
MELCHETT ROAD
KINGS NORTON
BIRMINGHAM
Total Gross floor area: 2510 sqm
Survey date: FRIDAY *24/03/00* *Survey Type: MANUAL*

8 **WY-02-D-01** **INDUSTRIAL ESTATE, LEEDS** **WEST YORKSHIRE**
PARK HOUSE WEST

LEEDS
Total Gross floor area: 4225 sqm
Survey date: TUESDAY *19/04/05* *Survey Type: MANUAL*

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE

VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30	0	0	0.000	0	0	0.000	0	0	0.000
00:30 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 01:30	0	0	0.000	0	0	0.000	0	0	0.000
01:30 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 02:30	0	0	0.000	0	0	0.000	0	0	0.000
02:30 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 03:30	0	0	0.000	0	0	0.000	0	0	0.000
03:30 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 04:30	0	0	0.000	0	0	0.000	0	0	0.000
04:30 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 05:30	0	0	0.000	0	0	0.000	0	0	0.000
05:30 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 06:30	0	0	0.000	0	0	0.000	0	0	0.000
06:30 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 07:30	7	4652	0.169	7	4652	0.123	7	4652	0.292
07:30 - 08:00	7	4652	0.405	7	4652	0.126	7	4652	0.531
08:00 - 08:30	8	4384	0.433	8	4384	0.214	8	4384	0.647
08:30 - 09:00	**8**	**4384**	**0.436**	8	4384	0.217	8	4384	0.653
09:00 - 09:30	8	4384	0.365	8	4384	0.262	8	4384	0.627
09:30 - 10:00	8	4384	0.268	8	4384	0.254	8	4384	0.522
10:00 - 10:30	8	4384	0.268	8	4384	0.282	8	4384	0.550
10:30 - 11:00	8	4384	0.248	8	4384	0.245	8	4384	0.493
11:00 - 11:30	8	4384	0.257	8	4384	0.225	8	4384	0.482
11:30 - 12:00	8	4384	0.279	8	4384	0.311	8	4384	0.590
12:00 - 12:30	8	4384	0.316	8	4384	0.365	8	4384	0.681
12:30 - 13:00	8	4384	0.302	8	4384	0.331	8	4384	0.633
13:00 - 13:30	8	4384	0.282	8	4384	0.274	8	4384	0.556
13:30 - 14:00	8	4384	0.274	8	4384	0.274	8	4384	0.548
14:00 - 14:30	8	4384	0.282	8	4384	0.191	8	4384	0.473
14:30 - 15:00	8	4384	0.194	8	4384	0.299	8	4384	0.493
15:00 - 15:30	8	4384	0.259	8	4384	0.242	8	4384	0.501
15:30 - 16:00	8	4384	0.259	8	4384	0.271	8	4384	0.530
16:00 - 16:30	8	4384	0.205	8	4384	0.339	8	4384	0.544
16:30 - 17:00	8	4384	0.271	8	4384	0.365	8	4384	0.636
17:00 - 17:30	8	4384	0.188	**8**	**4384**	**0.570**	**8**	**4384**	**0.758**
17:30 - 18:00	8	4384	0.080	8	4384	0.268	8	4384	0.348
18:00 - 18:30	7	4652	0.074	7	4652	0.163	7	4652	0.237
18:30 - 19:00	7	4652	0.034	7	4652	0.074	7	4652	0.108
19:00 - 19:30	0	0	0.000	0	0	0.000	0	0	0.000
19:30 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 20:30	0	0	0.000	0	0	0.000	0	0	0.000
20:30 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 21:30	0	0	0.000	0	0	0.000	0	0	0.000
21:30 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 22:30	0	0	0.000	0	0	0.000	0	0	0.000
22:30 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 23:30	0	0	0.000	0	0	0.000	0	0	0.000
23:30 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			6.148			6.285			12.433

Parameter summary

Trip rate parameter range selected:	1197 - 9835 (units: sqm)
Survey date date range:	01/01/00 - 13/05/08
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Optional parameters used in selection:	NO
Surveys manually removed from selection:	0

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 14 - CAR SHOW ROOMS
Category : A - CAR SHOW ROOMS

VEHICLES

Selected regions and areas:

02	**SOUTH EAST**		
	BD	BEDFORDSHIRE	1 days
	SC	SURREY	1 days
03	**SOUTH WEST**		
	DV	DEVON	1 days
05	**EAST MIDLANDS**		
	DS	DERBYSHIRE	1 days
	LE	LEICESTERSHIRE	1 days
	NR	NORTHAMPTONSHIRE	1 days
06	**WEST MIDLANDS**		
	WM	WEST MIDLANDS	1 days
07	**YORKSHIRE & NORTH LINCOLNSHIRE**		
	WY	WEST YORKSHIRE	1 days
08	**NORTH WEST**		
	GM	GREATER MANCHESTER	1 days
09	**NORTH**		
	TV	TEES VALLEY	1 days

Main parameter selection:

Parameter: Gross floor area
Range: 1045 to 2900 (units: sqm)

Date Range: 01/01/00 to 22/05/07

Selected survey days:

Monday	3 days
Tuesday	4 days
Wednesday	3 days

Selected survey types:

Manual count	10 days
Directional ATC Count	0 days

Selected Locations:

Suburban Area (PPS6 Out of Centre)	6
Edge of Town	4

Selected Location Sub Categories:

Commercial Zone	2
Residential Zone	3
No Sub Category	5

Optional parameter selection:

Use Class:

Sui Generis	10 days

Optional parameter selection (Cont.):

Population within 1 mile:

5,001 to 10,000	1 days
10,001 to 15,000	4 days
15,001 to 20,000	2 days
20,001 to 25,000	1 days
25,001 to 50,000	2 days

Population within 5 miles:

100,001 to 125,000	1 days
125,001 to 250,000	3 days
250,001 to 500,000	5 days
500,001 or More	1 days

Car ownership within 5 miles:

0.6 to 1.0	5 days
1.1 to 1.5	3 days
1.6 to 2.0	2 days

Travel Plan:

Not Known	1 days
No	9 days

LIST OF SITES relevant to selection parameters

1 **BD-14-A-01** **DAEWOO, LUTON** **BEDFORDSHIRE**
DUNSTABLE ROAD

LUTON
Total Gross floor area: 1925 sqm
Survey date: MONDAY *05/07/04* *Survey Type: MANUAL*

2 **DS-14-A-01** **VAUXHALL, ILKESTON** **DERBYSHIRE**
STATION ROAD

ILKESTON
Total Gross floor area: 3221 sqm
Survey date: WEDNESDAY *16/06/04* *Survey Type: MANUAL*

3 **DV-14-A-01** **MERCEDES BENZ, PLYMOUTH** **DEVON**
TAVISTOCK ROAD
DERRIFORD
PLYMOUTH
Total Gross floor area: 2900 sqm
Survey date: WEDNESDAY *06/07/05* *Survey Type: MANUAL*

4 **GM-14-A-02** **BENTLEY, MANCHESTER** **GREATER MANCHESTER**
CHESTER ROAD
STRETFORD
MANCHESTER
Total Gross floor area: 1675 sqm
Survey date: MONDAY *24/05/04* *Survey Type: MANUAL*

5 **LE-14-A-02** **JAGUAR, LEICESTER** **LEICESTERSHIRE**
NARBOROUGH ROAD

LEICESTER
Total Gross floor area: 1148 sqm
Survey date: TUESDAY *15/06/04* *Survey Type: MANUAL*

6 **NR-14-A-01** **TOYOTA, NORTHAMPTON** **NORTHAMPTONSHIRE**
FERRIS ROW
RIVERSIDE BUSINESS PARK
NORTHAMPTON
Total Gross floor area: 1100 sqm
Survey date: TUESDAY *22/05/07* *Survey Type: MANUAL*

7 **SC-14-A-02** **HONDA, WEYBRIDGE** **SURREY**
QUEENS ROAD

WEYBRIDGE
Total Gross floor area: 1700 sqm
Survey date: TUESDAY *18/10/05* *Survey Type: MANUAL*

8 **TV-14-A-03** **VOLKSWAGEN, DARLINGTON** **TEES VALLEY**
A68 WEST AUCKLAND ROAD
FAVERDALE
DARLINGTON
Total Gross floor area: 2750 sqm
Survey date: MONDAY *25/04/05* *Survey Type: MANUAL*

9 **WM-14-A-01** **MERCEDES BENZ, BIRMINGHAM** **WEST MIDLANDS**
A441 PERSHORE ROAD
KINGS NORTON
BIRMINGHAM
Total Gross floor area: 1160 sqm
Survey date: TUESDAY *21/03/00* *Survey Type: MANUAL*

10 **WY-14-A-02** **FORD, NEAR HALIFAX** **WEST YORKSHIRE**
MOORSIDE
MOORSIDE
NEAR HALIFAX
Total Gross floor area: 1870 sqm
Survey date: WEDNESDAY *14/09/05* *Survey Type: MANUAL*

TRIP RATE for Land Use 14 - CAR SHOW ROOMS/A - CAR SHOW ROOMS

VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	4	2113	0.497	4	2113	0.118	4	2113	0.615
08:00 - 09:00	**9**	**1990**	**1.106**	9	1990	0.296	**9**	**1990**	**1.402**
09:00 - 10:00	10	1907	0.713	10	1907	0.493	10	1907	1.206
10:00 - 11:00	10	1907	0.582	10	1907	0.566	10	1907	1.148
11:00 - 12:00	10	1907	0.603	10	1907	0.692	10	1907	1.295
12:00 - 13:00	10	1907	0.614	10	1907	0.692	10	1907	1.306
13:00 - 14:00	10	1907	0.650	10	1907	0.561	10	1907	1.211
14:00 - 15:00	10	1907	0.650	10	1907	0.666	10	1907	1.316
15:00 - 16:00	10	1907	0.608	10	1907	0.671	10	1907	1.279
16:00 - 17:00	10	1907	0.488	10	1907	0.582	10	1907	1.070
17:00 - 18:00	10	1907	0.341	**10**	**1907**	**0.933**	10	1907	1.274
18:00 - 19:00	9	1905	0.128	9	1905	0.449	9	1905	0.577
19:00 - 20:00	5	2292	0.044	5	2292	0.105	5	2292	0.149
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			7.024			6.824			13.848

Parameter summary

Trip rate parameter range selected:	1045 - 2900 (units: sqm)
Survey date date range:	01/01/00 - 22/05/07
Number of weekdays (Monday-Friday):	10
Number of Saturdays:	0
Number of Sundays:	0
Optional parameters used in selection:	NO
Surveys manually removed from selection:	0

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : A - HOUSES PRIVATELY OWNED

VEHICLES

Selected regions and areas:

02	**SOUTH EAST**		
	BD	BEDFORDSHIRE	2 days
	EX	ESSEX	1 days
	SC	SURREY	1 days
03	**SOUTH WEST**		
	CW	CORNWALL	2 days
	GS	GLOUCESTERSHIRE	1 days
	WL	WILTSHIRE	1 days
04	**EAST ANGLIA**		
	CA	CAMBRIDGESHIRE	2 days
	SF	SUFFOLK	2 days
05	**EAST MIDLANDS**		
	DS	DERBYSHIRE	1 days
	LE	LEICESTERSHIRE	1 days
	LN	LINCOLNSHIRE	2 days
	NT	NOTTINGHAMSHIRE	1 days
06	**WEST MIDLANDS**		
	ST	STAFFORDSHIRE	1 days
	WM	WEST MIDLANDS	2 days
	WO	WORCESTERSHIRE	4 days
07	**YORKSHIRE & NORTH LINCOLNSHIRE**		
	NY	NORTH YORKSHIRE	1 days
08	**NORTH WEST**		
	LC	LANCASHIRE	2 days
	MS	MERSEYSIDE	1 days
09	**NORTH**		
	CB	CUMBRIA	1 days
	TV	TEES VALLEY	1 days
	TW	TYNE & WEAR	1 days

Main parameter selection:

Parameter: Number of households
Range: 10 to 400 (units:)

Date Range: 01/01/00 to 13/05/08

Selected survey days:

Monday	4 days
Tuesday	12 days
Wednesday	4 days
Thursday	11 days

Selected survey types:

Manual count	31 days
Directional ATC Count	0 days

Selected Locations:

Edge of Town Centre	2
Suburban Area (PPS6 Out of Centre)	11
Edge of Town	16
Neighbourhood Centre (PPS6 Local Centre)	2

Selected Location Sub Categories:

Residential Zone	25
No Sub Category	6

Optional parameter selection:

Use Class:

C3	31 days

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	4 days
10,001 to 15,000	9 days
15,001 to 20,000	12 days
20,001 to 25,000	3 days
25,001 to 50,000	2 days

Population within 5 miles:

5,001 to 25,000	1 days
25,001 to 50,000	4 days
50,001 to 75,000	1 days
75,001 to 100,000	5 days
100,001 to 125,000	4 days
125,001 to 250,000	13 days
250,001 to 500,000	3 days

Car ownership within 5 miles:

0.6 to 1.0	14 days
1.1 to 1.5	17 days

Travel Plan:

Not Known	4 days
No	27 days

LIST OF SITES relevant to selection parameters

1 **BD-03-A-01** **SEMI DETACHED, LUTON** **BEDFORDSHIRE**
NEW BEDFORD ROAD

LUTON
Total Number of households: 131
Survey date: THURSDAY *08/07/04* *Survey Type: MANUAL*

2 **BD-03-A-02** **SEMI DETACHED, LUTON** **BEDFORDSHIRE**
RIDDY LANE

LUTON
Total Number of households: 82
Survey date: TUESDAY *06/07/04* *Survey Type: MANUAL*

3 **CA-03-A-01** **SEMI D./TERRACED, CAMBRIDGE** **CAMBRIDGESHIRE**
FALLOWFIELD
CHESTERTON
CAMBRIDGE
Total Number of households: 124
Survey date: TUESDAY *06/02/01* *Survey Type: MANUAL*

4 **CA-03-A-02** **MIXED HOUSES, PETERBOROUGH** **CAMBRIDGESHIRE**
THORPE ROAD

PETERBOROUGH
Total Number of households: 363
Survey date: THURSDAY *13/05/04* *Survey Type: MANUAL*

5 **CB-03-A-02** **SEMI DETACHED, WORKINGTON** **CUMBRIA**
HAWKSHEAD AVENUE

WORKINGTON
Total Number of households: 40
Survey date: MONDAY *20/06/05* *Survey Type: MANUAL*

6 **CW-03-A-01** **TERRACED, PENZANCE** **CORNWALL**
ALVERTON ROAD

PENZANCE
Total Number of households: 13
Survey date: THURSDAY *30/06/05* *Survey Type: MANUAL*

7 **CW-03-A-02** **SEMI D./DETATCHED, TRURO** **CORNWALL**
BOSVEAN GARDENS

TRURO
Total Number of households: 73
Survey date: TUESDAY *18/09/07* *Survey Type: MANUAL*

8 **DS-03-A-01** **SEMI D./TERRACED, DRONFIELD** **DERBYSHIRE**
THE AVENUE
HOLMESDALE
DRONFIELD
Total Number of households: 20
Survey date: THURSDAY *22/06/06* *Survey Type: MANUAL*

9 **EX-03-A-01** **SEMI-DET., STANFORD-LE-HOPE** **ESSEX**
MILTON ROAD
CORRINGHAM
STANFORD-LE-HOPE
Total Number of households: 237
Survey date: TUESDAY *13/05/08* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

10 **GS-03-A-01** **SEMI D./TERRACED, GLOUCESTER** **GLOUCESTERSHIRE**
KINGSHOLM ROAD
KINGSHOLM
GLOUCESTER
Total Number of households: 73
Survey date: TUESDAY *25/05/04* *Survey Type: MANUAL*

11 **LC-03-A-22** **BUNGALOWS, BLACKPOOL** **LANCASHIRE**
CLIFTON DRIVE NORTH

BLACKPOOL
Total Number of households: 98
Survey date: TUESDAY *18/10/05* *Survey Type: MANUAL*

12 **LC-03-A-29** **DETACHED/SEMI D., BLACKBURN** **LANCASHIRE**
REVIDGE ROAD
FOUR LANE ENDS
BLACKBURN
Total Number of households: 185
Survey date: THURSDAY *10/06/04* *Survey Type: MANUAL*

13 **LE-03-A-01** **DETACHED, MELTON MOWBRAY** **LEICESTERSHIRE**
REDWOOD AVENUE

MELTON MOWBRAY
Total Number of households: 11
Survey date: TUESDAY *03/05/05* *Survey Type: MANUAL*

14 **LN-03-A-01** **MIXED HOUSES, LINCOLN** **LINCOLNSHIRE**
BRANT ROAD
BRACEBRIDGE
LINCOLN
Total Number of households: 150
Survey date: TUESDAY *15/05/07* *Survey Type: MANUAL*

15 **LN-03-A-02** **MIXED HOUSES, LINCOLN** **LINCOLNSHIRE**
HYKEHAM ROAD

LINCOLN
Total Number of households: 186
Survey date: MONDAY *14/05/07* *Survey Type: MANUAL*

16 **MS-03-A-01** **TERRACED, RUNCORN** **MERSEYSIDE**
PALACE FIELDS AVENUE

RUNCORN
Total Number of households: 372
Survey date: THURSDAY *06/10/05* *Survey Type: MANUAL*

17 **NT-03-A-03** **SEMI DETACHED,KIRKBY-IN-ASHFD** **NOTTINGHAMSHIRE**
B6018 SUTTON ROAD

KIRKBY-IN-ASHFIELD
Total Number of households: 166
Survey date: WEDNESDAY *28/06/06* *Survey Type: MANUAL*

18 **NY-03-A-01** **MIXED HOUSES,NORTHALLERTON** **NORTH YORKSHIRE**
GRAMMAR SCHOOL LANE

NORTHALLERTON
Total Number of households: 52
Survey date: TUESDAY *25/09/07* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

19 **SC-03-A-03** **DETACHED, EAST MOLESEY** **SURREY**
A3050 HURST ROAD
HURST PARK
EAST MOLESEY
Total Number of households: 54
Survey date: TUESDAY *12/11/02* *Survey Type: MANUAL*

20 **SF-03-A-01** **SEMI DETACHED, IPSWICH** **SUFFOLK**
A1156 FELIXSTOWE ROAD
RACECOURSE
IPSWICH
Total Number of households: 77
Survey date: WEDNESDAY *23/05/07* *Survey Type: MANUAL*

21 **SF-03-A-02** **SEMI DET./TERRACED, IPSWICH** **SUFFOLK**
STOKE PARK DRIVE
MAIDENHALL
IPSWICH
Total Number of households: 230
Survey date: THURSDAY *24/05/07* *Survey Type: MANUAL*

22 **ST-03-A-03** **MIXED HOUSES, STAFFORD** **STAFFORDSHIRE**
QUEENSVILLE

STAFFORD
Total Number of households: 224
Survey date: TUESDAY *04/07/00* *Survey Type: MANUAL*

23 **TV-03-A-01** **MIXED HOUSES/FLATS, HARTLEPL** **TEES VALLEY**
POWLETT ROAD

HARTLEPOOL
Total Number of households: 225
Survey date: THURSDAY *14/04/05* *Survey Type: MANUAL*

24 **TW-03-A-01** **SEMI DETACHED, SUNDERLAND** **TYNE & WEAR**
LEECHMERE ROAD
HILLVIEW
SUNDERLAND
Total Number of households: 81
Survey date: WEDNESDAY *18/09/02* *Survey Type: MANUAL*

25 **WL-03-A-01** **SEMI D./TERRACED W. BASSETT** **WILTSHIRE**
MAPLE DRIVE

WOOTTON BASSETT
Total Number of households: 99
Survey date: MONDAY *02/10/06* *Survey Type: MANUAL*

26 **WM-03-A-02** **DETACHED/SEMI D., STRBRIDGE** **WEST MIDLANDS**
HEATH STREET

STOURBRIDGE
Total Number of households: 12
Survey date: WEDNESDAY *26/04/06* *Survey Type: MANUAL*

27 **WM-03-A-03** **MIXED HOUSING, COVENTRY** **WEST MIDLANDS**
BASELEY WAY
ROWLEYS GREEN
COVENTRY
Total Number of households: 84
Survey date: MONDAY *24/09/07* *Survey Type: MANUAL*

LIST OF SITES relevant to selection parameters (Cont.)

28 **WO-03-A-01** **DETACHED, BROMSGROVE** **WORCESTERSHIRE**
MARLBOROUGH AVENUE
ASTON FIELDS
BROMSGROVE
Total Number of households: 10
Survey date: THURSDAY *23/06/05* *Survey Type: MANUAL*

29 **WO-03-A-02** **SEMI DETACHED, REDDITCH** **WORCESTERSHIRE**
MEADOWHILL ROAD

REDDITCH
Total Number of households: 48
Survey date: TUESDAY *02/05/06* *Survey Type: MANUAL*

30 **WO-03-A-05** **TERRACED/DET., BROMSGROVE** **WORCESTERSHIRE**
ST GODWALDS ROAD
ASTON FIELDS
BROMSGROVE
Total Number of households: 215
Survey date: THURSDAY *23/05/02* *Survey Type: MANUAL*

31 **WO-03-A-06** **DET./TERRACED, BROMSGROVE** **WORCESTERSHIRE**
ST GODWALDS ROAD
ASTON FIELDS
BROMSGROVE
Total Number of households: 232
Survey date: THURSDAY *30/06/05* *Survey Type: MANUAL*

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

VEHICLES

Calculation factor: 1 HHOLDS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. HHOLDS	Trip Rate	No. Days	Ave. HHOLDS	Trip Rate	No. Days	Ave. HHOLDS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	31	128	0.077	31	128	0.262	31	128	0.339
08:00 - 09:00	31	128	0.159	**31**	**128**	**0.418**	31	128	0.577
09:00 - 10:00	31	128	0.172	31	128	0.216	31	128	0.388
10:00 - 11:00	31	128	0.151	31	128	0.185	31	128	0.336
11:00 - 12:00	31	128	0.195	31	128	0.178	31	128	0.373
12:00 - 13:00	31	128	0.211	31	128	0.191	31	128	0.402
13:00 - 14:00	31	128	0.180	31	128	0.193	31	128	0.373
14:00 - 15:00	31	128	0.197	31	128	0.194	31	128	0.391
15:00 - 16:00	31	128	0.288	31	128	0.217	31	128	0.505
16:00 - 17:00	31	128	0.324	31	128	0.211	31	128	0.535
17:00 - 18:00	**31**	**128**	**0.393**	31	128	0.238	**31**	**128**	**0.631**
18:00 - 19:00	31	128	0.300	31	128	0.246	31	128	0.546
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			2.647			2.749			5.396

Parameter summary

Trip rate parameter range selected:	10 - 400 (units:)
Survey date date range:	01/01/00 - 13/05/08
Number of weekdays (Monday-Friday):	31
Number of Saturdays:	0
Number of Sundays:	0
Optional parameters used in selection:	NO
Surveys manually removed from selection:	0

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : C - FLATS PRIVATELY OWNED
VEHICLES

Selected regions and areas:

06	WEST MIDLANDS		
	WM	WEST MIDLANDS	2 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NY	NORTH YORKSHIRE	1 days

Main parameter selection:

Parameter: Number of households
Range: 12 to 30 (units:)

Date Range: 01/01/96 to 07/05/08

Selected survey days:

Monday	1 days
Tuesday	1 days
Friday	1 days

Selected survey types:

Manual count	3 days
Directional ATC Count	0 days

Selected Locations:

Suburban Area (PPS6 Out of Centre)	1
Neighbourhood Centre (PPS6 Local Centre)	2

Selected Location Sub Categories:

Residential Zone	2
No Sub Category	1

Optional parameter selection:

Use Class:

C3	3 days

Population within 1 mile:

5,001 to 10,000	1 days
15,001 to 20,000	2 days

Population within 5 miles:

5,001 to 25,000	1 days
125,001 to 250,000	2 days

Car ownership within 5 miles:

0.6 to 1.0	2 days
1.1 to 1.5	1 days

Travel Plan:

Not Known	2 days
No	1 days

LIST OF SITES relevant to selection parameters

1 NY-03-C-01 BLOCKS OF FLATS, NTHALLERTON NORTH YORKSHIRE
BOROUGHBRIDGE ROAD
ROMANBY
NORTHALLERTON
Total Number of households: 30
Survey date: MONDAY 22/09/03 Survey Type: MANUAL

2 WM-03-C-01 FLATS, BIRMINGHAM WEST MIDLANDS
WAKE GREEN ROAD
MOSELEY
BIRMINGHAM
Total Number of households: 26
Survey date: FRIDAY 16/06/00 Survey Type: MANUAL

3 WM-03-C-02 FLATS, BIRMINGHAM WEST MIDLANDS
WAKE GREEN ROAD
MOSELEY
BIRMINGHAM
Total Number of households: 24
Survey date: TUESDAY 14/11/00 Survey Type: MANUAL

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED
VEHICLES
Calculation factor: 1 HHOLDS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. HHOLDS	Trip Rate	No. Days	Ave. HHOLDS	Trip Rate	No. Days	Ave. HHOLDS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	3	27	0.025	3	27	0.163	3	27	0.188
08:00 - 09:00	3	27	0.063	3	27	0.225	3	27	0.287
09:00 - 10:00	3	27	0.087	3	27	0.113	3	27	0.200
10:00 - 11:00	3	27	0.125	3	27	0.100	3	27	0.225
11:00 - 12:00	3	27	0.063	3	27	0.087	3	27	0.149
12:00 - 13:00	3	27	0.163	3	27	0.113	3	27	0.276
13:00 - 14:00	3	27	0.087	3	27	0.100	3	27	0.187
14:00 - 15:00	3	27	0.087	3	27	0.087	3	27	0.174
15:00 - 16:00	3	27	0.138	3	27	0.163	3	27	0.301
16:00 - 17:00	3	27	0.150	3	27	0.050	3	27	0.200
17:00 - 18:00	3	27	0.212	3	27	0.087	3	27	0.299
18:00 - 19:00	3	27	0.188	3	27	0.087	3	27	0.275
19:00 - 20:00	2	25	0.160	2	25	0.140	2	25	0.300
20:00 - 21:00	2	25	0.100	2	25	0.100	2	25	0.200
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			1.646			1.615			3.261

Parameter summary

Trip rate parameter range selected:	12 - 30 (units:)
Survey date date range:	01/01/96 - 07/05/08
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Optional parameters used in selection:	NO
Surveys manually removed from selection:	0

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : F - SHELTERED ACCOMMODATION

VEHICLES

Selected regions and areas:

02	**SOUTH EAST**		
	KC	KENT	2 days
04	**EAST ANGLIA**		
	SF	SUFFOLK	1 days
08	**NORTH WEST**		
	LC	LANCASHIRE	1 days
09	**NORTH**		
	CB	CUMBRIA	1 days

Main parameter selection:

Parameter: Number of households
Range: 19 to 124 (units:)

Date Range: 01/01/00 to 21/11/03

Selected survey days:

Tuesday	1 days
Wednesday	1 days
Thursday	2 days
Friday	1 days

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

Selected Locations:

Edge of Town Centre	2
Suburban Area (PPS6 Out of Centre)	1
Edge of Town	2

Selected Location Sub Categories:

Residential Zone	3
Built-Up Zone	2

Optional parameter selection:

Use Class:

C3	5 days

Population within 1 mile:

5,001 to 10,000	2 days
15,001 to 20,000	1 days
25,001 to 50,000	1 days
50,001 to 100,000	1 days

Optional parameter selection (Cont.):

Population within 5 miles:

25,001 to 50,000	1 days
50,001 to 75,000	1 days
125,001 to 250,000	3 days

Car ownership within 5 miles:

0.6 to 1.0	2 days
1.1 to 1.5	3 days

Travel Plan:

Not Known	2 days
No	3 days

LIST OF SITES relevant to selection parameters

1 **CB-03-F-01** **SHELTERED HOUSING, CARLISLE** **CUMBRIA**
BOTCHERBY AVENUE
BOTCHERBY
CARLISLE
Total Number of households: 30
Survey date: TUESDAY *28/10/03* *Survey Type: MANUAL*

2 **KC-03-F-02** **SHELTERED HOUS., MAIDSTONE** **KENT**
UNION STREET

MAIDSTONE
Total Number of households: 80
Survey date: THURSDAY *14/06/01* *Survey Type: MANUAL*

3 **KC-03-F-03** **SHELTERED HOU.,NR MAIDSTONE** **KENT**
TERRY WALK

LEYBOURNE
Total Number of households: 44
Survey date: FRIDAY *21/11/03* *Survey Type: MANUAL*

4 **LC-03-F-01** **SHELTERED HOUSING, PRESTON** **LANCASHIRE**
ST PAULS ROAD

PRESTON
Total Number of households: 53
Survey date: WEDNESDAY *18/06/03* *Survey Type: MANUAL*

5 **SF-03-F-01** **SHELTERED HOUSING, IPSWICH** **SUFFOLK**
VALLEY ROAD

IPSWICH
Total Number of households: 55
Survey date: THURSDAY *26/09/02* *Survey Type: MANUAL*

TRIP RATE for Land Use 03 - RESIDENTIAL/F - SHELTERED ACCOMMODATION

VEHICLES

Calculation factor: 1 HHOLDS

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. HHOLDS	Trip Rate	No. Days	Ave. HHOLDS	Trip Rate	No. Days	Ave. HHOLDS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	5	52	0.050	5	52	0.031	5	52	0.081
08:00 - 09:00	5	52	0.103	5	52	0.103	5	52	0.206
09:00 - 10:00	5	52	0.111	5	52	0.122	5	52	0.233
10:00 - 11:00	5	52	0.111	**5**	**52**	**0.134**	**5**	**52**	**0.245**
11:00 - 12:00	5	52	0.088	5	52	0.095	5	52	0.183
12:00 - 13:00	**5**	**52**	**0.126**	5	52	0.103	5	52	0.229
13:00 - 14:00	5	52	0.053	5	52	0.065	5	52	0.118
14:00 - 15:00	5	52	0.076	5	52	0.084	5	52	0.160
15:00 - 16:00	5	52	0.069	5	52	0.057	5	52	0.126
16:00 - 17:00	5	52	0.095	5	52	0.111	5	52	0.206
17:00 - 18:00	5	52	0.080	5	52	0.076	5	52	0.156
18:00 - 19:00	5	52	0.050	5	52	0.065	5	52	0.115
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			1.012			1.046			2.058

Parameter summary

Trip rate parameter range selected:	19 - 124 (units:)
Survey date date range:	01/01/00 - 21/11/03
Number of weekdays (Monday-Friday):	5
Number of Saturdays:	0
Number of Sundays:	0
Optional parameters used in selection:	NO
Surveys manually removed from selection:	0

Appendix C

C540 Dodwells Roundabout, Hinckley

2008 AM Peak Source: Survey on 9 September 2008

		A	B	C	D	Total
A5 Watling St West	A	0	341	348	658	1347
A47 Dodwells Road	B	446	5	90	180	721
B4666 Coventry Road	C	434	48	0	30	512
A5 Watling Street East	D	712	183	46	2	943
Total		1592	577	484	870	3523

2008 PM Peak Source: Survey on 9 September 2008

		A	B	C	D	Total
A5 Watling St West	A	12	505	409	532	1458
A47 Dodwells Road	B	464	0	92	248	804
B4666 Coventry Road	C	378	71	0	40	489
A5 Watling Street East	D	608	148	21	1	778
Total		1462	724	522	821	3529

Tempro 2008-2019
AM 1.0737
PM 1.0752

(NRTF Low)

2019 AM Peak

		A	B	C	D	Total
A5 Watling St West	A	0	366	374	706	1446
A47 Dodwells Road	B	479	5	97	193	774
B4666 Coventry Road	C	466	52	0	32	550
A5 Watling Street East	D	764	196	49	2	1012
Total		1709	620	520	934	3783

2019 PM Peak

		A	B	C	D	Total
A5 Watling St West	A	13	543	440	572	1568
A47 Dodwells Road	B	499	0	99	267	864
B4666 Coventry Road	C	406	76	0	43	526
A5 Watling Street East	D	654	159	23	1	837
Total		1572	778	561	883	3794

CJM/PK
26 November 2008

C540 Dodwells Roundabout, Hinckley
EME Site, Nutts Lane (Applications 06/01252/REM & 07/00759/REM)
Both B1/B2/B8

849 sqm B1/B2/B8
522 sqm of B1/B2/B8

AM Peak

	Arrivals	Departures	Total
Trip Rate per 100 sq m			
Industrial Estate	0.869	0.431	1.300
Trips	12	6	18

Distribution (at Dodwells Roundabout Only)

		A	B	C	D	Total
A5 Watling St West	A			36.80%		
A47 Dodwells Road	B			3.20%		
B4666 Coventry Road	C	36.80%	3.20%		22.50%	62.50%
A5 Watling Street East	D			22.50%		
Total				62.50%		

Source: WSP TS Addendum, March 2006, Appendix A

Distribution of trips (Dodwells only)

		A	B	C	D	Total
A5 Watling St West	A			4		
A47 Dodwells Road	B			0		
B4666 Coventry Road	C	2	0		1	4
A5 Watling Street East	D			3		
Total				7		11

CJM/PK
26 November 2008

C540 Dodwells Roundabout, Hinckley
EME Site, Nutts Lane (Applications 06/01252/REM & 07/00759/REM)
Both B1/B2/B8

849 sqm B1/B2/B8
522 sqm of B1/B2/B8

PM Peak

	Arrivals	Departures	Total
Trip Rate per 100 sq m			
Industrial Estate	0.268	0.838	1.106
Trips	4	11	15

Distribution (at Dodwells Roundabout Only)

		A	B	C	D	Total
A5 Watling St West	A			36.80%		
A47 Dodwells Road	B			3.20%		
B4666 Coventry Road	C	36.80%	3.20%		22.50%	62.50%
A5 Watling Street East	D			22.50%		
Total				62.50%		

Source: WSP TS Addendum, March 2006, Appendix A

Distribution of trips (Dodwells only)

		A	B	C	D	Total
A5 Watling St West	A			1		
A47 Dodwells Road	B			0		
B4666 Coventry Road	C	4	0		3	7
A5 Watling Street East	D			1		
Total				2		9

CJM/PK
26 November 2008

C540 Dodwells Roundabout, Hinckley
Jarvis Porter development (Application 07/00231/OUT)
9427 sq m A1
Transco existing so ignored
Trips towards Dodwells taken from TA/Addendum for Jarvis Porter prepared by WSP
50/50 split

AM Peak

	Arrivals	Departures	Total
Trips	45	9	54

Distribution (at Dodwells Roundabout Only)

		A	B	C	D	Total
A5 Watling St West	A			58.90%		
A47 Dodwells Road	B			5.10%		
B4666 Coventry Road	C	58.90%	5.10%		36.00%	100.00%
A5 Watling Street East	D			36.00%		
Total				100.00%		

Source: WSP TS Addendum, March 2006, Appendix A

Distribution of trips (Dodwells only)

		A	B	C	D	Total
A5 Watling St West	A			27		
A47 Dodwells Road	B			2		
B4666 Coventry Road	C	5	0		3	9
A5 Watling Street East	D			16		
Total				45		54

CJM/PK
26 November 2008

C540 Dodwells Roundabout, Hinckley
Jarvis Porter development (Application 07/00231/OUT)
9427 sq m A1
Transco existing so ignored
Trips towards Dodwells taken from TA/Addendum for Jarvis Porter prepared by WSP
50/50 split

PM Peak

	Arrivals	Departures	Total
Trips	60	65	125

Distribution (at Dodwells Roundabout Only)

		A	B	C	D	Total
A5 Watling St West	A			58.90%		
A47 Dodwells Road	B			5.10%		
B4666 Coventry Road	C	58.90%	5.10%		36.00%	100.00%
A5 Watling Street East	D			36.00%		
Total				100.00%		

Source: WSP TS Addendum, March 2006, Appendix A

Distribution of trips (Dodwells only)

		A	B	C	D	Total
A5 Watling St West	A			35		
A47 Dodwells Road	B			3		
B4666 Coventry Road	C	38	3		23	65
A5 Watling Street East	D			22		
Total				60		125

CJM/PK
26 November 2008

C540 Dodwells Roundabout, Hinckley
Dennis House, 4 Hawley Road, Hinckley (Application 07/00742/OUT)
56 Sheltered Units

AM Peak

	Arrivals	Departures	Total
Trip Rates	0.103	0.103	0.206
Trips	6	6	12

Distribution (at Dodwells Roundabout Only)

		A	B	C	D	Total
A5 Watling St West	A			36.80%		
A47 Dodwells Road	B			3.20%		
B4666 Coventry Road	C	36.80%	3.20%			40.00%
A5 Watling Street East	D					
Total				40.00%		

Source: WSP TS Addendum, March 2006, Appendix A

Distribution of trips (Dodwells only)

		A	B	C	D	Total
A5 Watling St West	A			2		
A47 Dodwells Road	B			0		
B4666 Coventry Road	C	2	0		0	2
A5 Watling Street East	D			0		
Total				2		5

Trips to/from A5 East via B4109

CJM/PK
26 November 2008

C540 Dodwells Roundabout, Hinckley
Dennis House, 4 Hawley Road, Hinckley (Application 07/00742/OUT)
56 Sheltered Units

PM Peak

	Arrivals	Departures	Total
Trip Rates	0.08	0.076	0.156
Trips	4	4	9

Distribution (at Dodwells Roundabout Only)

		A	B	C	D	Total
A5 Watling St West	A			36.80%		
A47 Dodwells Road	B			3.20%		
B4666 Coventry Road	C	36.80%	3.20%			40.00%
A5 Watling Street East	D					
Total				40.00%		

Source: WSP TS Addendum, March 2006, Appendix A

Distribution of trips (Dodwells only)

		A	B	C	D	Total
A5 Watling St West	A			2		
A47 Dodwells Road	B			0		
B4666 Coventry Road	C	2	0		0	2
A5 Watling Street East	D			0		
Total				2		3

Trips to/from A5 East via B4109

CJM/PK
26 November 2008

C540 Dodwells Roundabout, Hinckley
13 Apartments **310 Coventry Road, Hinckley (Application 05/00266)**
49 Homes **Recreation Ground, Brodick Road, Hinckl (Application 07/01030/FUL)**

AM Peak

	Arrivals	Departures	Total
Flats	0.063	0.225	0.287
Homes	0.159	0.418	0.577
Trips	9	23	32

Distribution (at Dodwells Roundabout Only)

		A	B	C	D	Total
A5 Watling St West	A			36.80%		
A47 Dodwells Road	B					
B4666 Coventry Road	C	36.80%			22.50%	59.30%
A5 Watling Street East	D			22.50%		
Total				59.30%		

Source: WSP TS Addendum, March 2006, Appendix A

Distribution of trips (Dodwells only)

		A	B	C	D	Total
A5 Watling St West	A			3		
A47 Dodwells Road	B			0		
B4666 Coventry Road	C	9	0		5	14
A5 Watling Street East	D			2		
Total				5		19

Trips to/from Dowells Road via Brodick Road/Roston Drive

CJM/PK
26 November 2008

C540 Dodwells Roundabout, Hinckley
13 Apartments **310 Coventry Road, Hinckley (Application 05/00266)**
49 Homes **Recreation Ground, Brodick Road, Hinckl (Application 07/01030/FUL)**

PM Peak

	Arrivals	Departures	Total
Flats	0.212	0.087	0.299
Homes	0.393	0.238	0.631
Trips	22	13	35

Distribution (at Dodwells Roundabout Only)

		A	B	C	D	Total
A5 Watling St West	A			36.80%		
A47 Dodwells Road	B					
B4666 Coventry Road	C	36.80%			22.50%	59.30%
A5 Watling Street East	D			22.50%		
Total				59.30%		

Source: WSP TS Addendum, March 2006, Appendix A

Distribution of trips (Dodwells only)

		A	B	C	D	Total
A5 Watling St West	A			8		
A47 Dodwells Road	B			0		
B4666 Coventry Road	C	5	0		3	8
A5 Watling Street East	D			5		
Total				13		21

Trips to/from Dowells Road via Brodick Road/Roston Drive

CJM/PK
26 November 2008

C540 Dodwells Roundabout, Hinckley
Hollycroft Estate, Outlands Drive, Hinckley (Application 05/00335)
322 Houses

AM Peak

	Arrivals	Departures	Total
Trip Rates	0.159	0.418	0.577
Trips	51	135	186

Distribution (at Dodwells Roundabout Only)

		A	B	C	D	Total
A5 Watling St West	A		36.80%			
A47 Dodwells Road	B	36.80%			22.50%	59.30%
B4666 Coventry Road	C					
A5 Watling Street East	D		22.50%			
Total			59.30%			

Source: WSP TS Addendum, March 2006, Appendix A

Distribution of trips (Dodwells only)

		A	B	C	D	Total
A5 Watling St West	A		19			
A47 Dodwells Road	B	50			30	80
B4666 Coventry Road	C					
A5 Watling Street East	D		12			
Total			30			110

Trips to/from Coventry Road via Brodick Road/Roston Drive

CJM/PK
26 November 2008

C540 Dodwells Roundabout, Hinckley
Hollycroft Estate, Outlands Drive, Hinckley (Application 05/00335)
322 Houses

PM Peak

	Arrivals	Departures	Total
Trip Rates	0.393	0.238	0.631
Trips	127	77	203

Distribution (at Dodwells Roundabout Only)

		A	B	C	D	Total
A5 Watling St West	A		36.80%			
A47 Dodwells Road	B	36.80%			22.50%	59.30%
B4666 Coventry Road	C					
A5 Watling Street East	D		22.50%			
Total			59.30%			

Source: WSP TS Addendum, March 2006, Appendix A

Distribution of trips (Dodwells only)

		A	B	C	D	Total
A5 Watling St West	A		47			
A47 Dodwells Road	B	28			17	45
B4666 Coventry Road	C					
A5 Watling Street East	D		28			
Total			75			120

Trips to/from Coventry Road via Brodick Road/Roston Drive
Distribution from WSP report altered to reflect access to Hollycroft via Dodwells Road rather than Coventry Road

CJM/PK
26 November 2008

C540 Dodwells Roundabout, Hinckley
Mouchel Parkman development Wheatfield W (Application 05/00335)
2,338sqm B1 Office

AM Peak

	Arrivals	Departures	Total
Trip Rates	1.736	0.269	2.005
Trips	41	6	47

Distribution (at Dodwells Roundabout Only)

		A	B	C	D	Total
A5 Watling St West	A		36.80%			
A47 Dodwells Road	B	36.80%			22.50%	59.30%
B4666 Coventry Road	C					
A5 Watling Street East	D		22.50%			
Total			59.30%			

Source: WSP TS Addendum, March 2006, Appendix A

Distribution of trips (Dodwells only)

		A	B	C	D	Total
A5 Watling St West	A		15			
A47 Dodwells Road	B	2			1	4
B4666 Coventry Road	C					
A5 Watling Street East	D		9			
Total			24			28

Trips to/from Coventry Road via Local Roads
Distribution from WSP report altered to reflect access to Hollycroft via Dodwells Road rather than Coventry Road

CJM/PK
26 November 2008

C540 Dodwells Roundabout, Hinckley
Mouchel Parkman development Wheatfield W (Application 05/00335)
2,338sqm B1 Office

PM Peak

	Arrivals	Departures	Total
Trip Rates	0.26	1.449	1.709
Trips	6	34	40

Distribution (at Dodwells Roundabout Only)

		A	B	C	D	Total
A5 Watling St West	A		36.80%			
A47 Dodwells Road	B	36.80%			22.50%	59.30%
B4666 Coventry Road	C					
A5 Watling Street East	D		22.50%			
Total			59.30%			

Source: WSP TS Addendum, March 2006, Appendix A

Distribution of trips (Dodwells only)

		A	B	C	D	Total
A5 Watling St West	A		2			
A47 Dodwells Road	B	12			8	20
B4666 Coventry Road	C					
A5 Watling Street East	D		1			
Total			4			24

Trips to/from Coventry Road via Local Roads
Distribution from WSP report altered to reflect access to Hollycroft via Dodwells Road rather than Coventry Road

CJM/PK
26 November 2008

C540 Dodwells Roundabout, Hinckley

Tungsten Park Development flows based on site GFA of 11,015sqm

3,312 sqm of B1 office
5,890 sqm of B1/B2/B8
1,813 sqm of Car Sales/Rental

AM Peak

	Arrivals	Departures	Total
Trip Rate per 100 sq m			
B1 Office	1.736	0.269	2.005
Industrial Estate	0.869	0.431	1.300
Car Sales/Rental	1.106	0.296	1.402
Trips	129	40	168

Distribution (at Dodwells Roundabout Only)

		A	B	C	D	Total
A5 Watling St West	A			36.80%		
A47 Dodwells Road	B			3.20%		
B4666 Coventry Road	C	36.80%	3.20%		22.50%	62.50%
A5 Watling Street East	D			22.50%		
Total				62.50%		

Source: WSP TS Addendum, March 2006, Appendix A

Distribution of trips from 11,015 sq m industrial (Dodwells only)

		A	B	C	D	Total
A5 Watling St West	A			47		
A47 Dodwells Road	B			4		
B4666 Coventry Road	C	15	1		9	25
A5 Watling Street East	D			29		
Total				80		105

CJM/PK
26 November 2008

C540 Dodwells Roundabout, Hinckley

Tungsten Park Development flows based on site GFA of 11,015sqm

3,312 sqm of B1 office
5,890 sqm of B1/B2/B8
1,813 sqm of Car Sales/Rental

PM Peak

	Arrivals	Departures	Total
Trip Rate per 100 sq m			
B1 Office	0.26	1.449	1.709
Industrial Estate	0.268	0.838	1.106
Car Showroom	0.341	0.933	1.274
Trips	31	114	145

Distribution (at Dodwells Roundabout Only)

		A	B	C	D	Total
A5 Watling St West	A			36.80%		
A47 Dodwells Road	B			3.20%		
B4666 Coventry Road	C	36.80%	3.20%		22.50%	62.50%
A5 Watling Street East	D			22.50%		
Total				62.50%		

Source: WSP TS Addendum, March 2006, Appendix A

Distribution of trips from 11,015 sq m industrial (Dodwells only)

		A	B	C	D	Total
A5 Watling St West	A			11		
A47 Dodwells Road	B			1		
B4666 Coventry Road	C	42	4		26	71
A5 Watling Street East	D			7		
Total				19		91

CJM/PK
26 November 2008

C540 Dodwells Roundabout, Hinckley
2008 Base flows factored to 2019 plus Committed Development

2019 plus Committed Development AM Peak

		A	B	C	D	Total
A5 Watling St West	A	0	400	410	706	1516
A47 Dodwells Road	B	531	5	99	225	861
B4666 Coventry Road	C	484	52	0	42	579
A5 Watling Street East	D	764	217	70	2	1054
Total		1779	675	580	976	4009

2019 plus Committed Development PM Peak

		A	B	C	D	Total
A5 Watling St West	A	13	592	486	572	1663
A47 Dodwells Road	B	540	0	102	292	933
B4666 Coventry Road	C	455	80	0	72	607
A5 Watling Street East	D	654	189	50	1	894
Total		1661	861	638	936	4097

CJM/PK
26 November 2008

C540 Dodwells Roundabout, Hinckley
2008 Base flows factored to 2019 plus Committed Development and Tungsten Park

2019 plus Committed Development and Tungsten Park AM Peak

		A	B	C	D	Total
A5 Watling St West	A	0	400	457	706	1564
A47 Dodwells Road	B	531	5	104	225	865
B4666 Coventry Road	C	499	54	0	51	603
A5 Watling Street East	D	764	217	99	2	1083
Total		1794	676	660	985	4115

2019 plus Committed Development and Tungsten Park PM Peak

		A	B	C	D	Total
A5 Watling St West	A	13	592	497	572	1674
A47 Dodwells Road	B	540	0	103	292	934
B4666 Coventry Road	C	497	84	0	98	679
A5 Watling Street East	D	654	189	57	1	901
Total		1703	865	658	962	4188

CJM/PK
26 November 2008

C540 Dodwells Roundabout, Hinckley

Greyhound Site - Distribution of trips at Dodwells Roundabout

AM Peak

	Arrivals	Departures	Total
Trips	2	12	14

Distribution (at Dodwells Roundabout Only)

		A	B	C	D	Total
A5 Watling St West	A			58.90%		
A47 Dodwells Road	B			5.10%		
B4666 Coventry Road	C	58.90%	5.10%		36.00%	100.00%
A5 Watling Street East	D			36.00%		
Total				100.00%		

Source: WSP TS Addendum, March 2006, Appendix A

Distribution of trips (Dodwells only)

		A	B	C	D	Total
A5 Watling St West	A			1		
A47 Dodwells Road	B			0		
B4666 Coventry Road	C	7	1		4	12
A5 Watling Street East	D			1		
Total				2		14

CJM/PK
26 November 2008

C540 Dodwells Roundabout, Hinckley

Greyhound Site - Distribution of trips at Dodwells Roundabout

PM Peak

	Arrivals	Departures	Total
Trips	13	5	18

Distribution (at Dodwells Roundabout Only)

		A	B	C	D	Total
A5 Watling St West	A			58.90%		
A47 Dodwells Road	B			5.10%		
B4666 Coventry Road	C	58.90%	5.10%		36.00%	100.00%
A5 Watling Street East	D			36.00%		
Total				100.00%		

Source: WSP TS Addendum, March 2006, Appendix A

Distribution of trips (Dodwells only)

		A	B	C	D	Total
A5 Watling St West	A			8		
A47 Dodwells Road	B			1		
B4666 Coventry Road	C	3	0		2	5
A5 Watling Street East	D			5		
Total				13		18

CJM/PK
26 November 2008

C540 Dodwells Roundabout, Hinckley
2008 Base flows factored to 2019 plus Committed Development, Tungsten Park and Greyhound Stadium

2019 plus Committed Development, Tungsten Park and Greyhound Stadium AM Peak

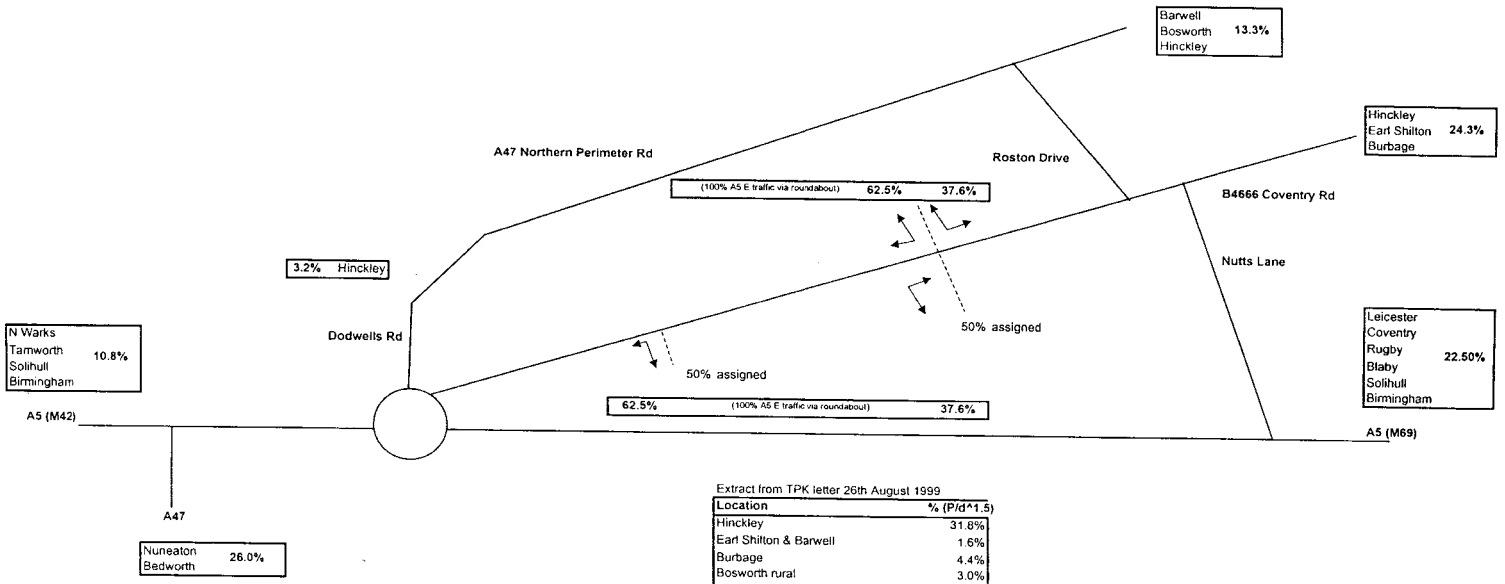
		A	B	C	D	Total
A5 Watling St West	A	0	400	458	706	1565
A47 Dodwells Road	B	531	5	104	225	865
B4666 Coventry Road	C	506	54	0	55	615
A5 Watling Street East	D	764	217	100	2	1084
Total		1801	677	662	989	4129

2019 plus Committed Development, Tungsten Park and Greyhound Stadium PM Peak

		A	B	C	D	Total
A5 Watling St West	A	13	592	505	572	1682
A47 Dodwells Road	B	540	0	104	292	935
B4666 Coventry Road	C	500	84	0	99	684
A5 Watling Street East	D	654	189	62	1	905
Total		1706	865	671	964	4206

CJM/PK
26 November 2008

Appendix D



Extract from TPK letter 26th August 1999

Location	% (P/d^1.5)
Hinckley	31.8%
Earl Shilton & Barwell	1.6%
Burbage	4.4%
Bosworth rural	3.0%
Nuneaton	23.3%
Bedworth	2.7%
Blaby	1.9%
Coventry	6.6%
Rugby	1.9%
Leicester	6.6%
North Warwickshire	3.3%
Tamworth	2.0%
Birmingham	8.6%
Solihull	2.4%
	100.1%

Coventry Road, Hinckley

Distribution for Development Traffic

WSP

TITLE:

Coventry Road, Hinckley

11050652

FIGURE No:

Appendix A

Y:\Coventry Rd, Hinckley 11050652\DRAWINGS\Graphics\Appendix A.dwg 10 Oct, 2006 - 10:42am

Appendix E

TRAFFIC GROWTH CALCULATIONS
C540 Dodwells Roundabout

TRAFFIC GROWTH: 2008 to 2019

Traffic Growth factors to be applied to base traffic using factors derived from TEMPRO (Version 5.4) and NRTF.

Local Tempro Zone: Hinckley (Zone)

	2008	2019	Growth
Household	19543	20946	1403
Jobs	28806	31251	2445

TEMPRO5 Local AM Peak Hour Factors

Weekday AM Peak Car Driver Trip End Growth for Hinckley (Zone)

Origin 1.034
Destination 1.1 Average: 1.067

Tempro adjusted to take account of committed develoment modelled

440 homes	31%
639 jobs (1)	26%

(1) Jobs estimated based on *Employment densities; a simple guide* English Partnerships, September 2001

TEMPRO5 Local PM Peak Hour Factors

Weekday PM Peak Car Driver Trip End Growth for Hinckley (Zone)

Origin 1.090
Destination 1.047 Average: 1.069

This local growth factor should be tailored by applying the ratio of the national traffic growth factor derived from NRTF growth factors to the national average day car driver trip ends derived from TEMPRO5.

NRTF

Low Growth
2008 to 2019 1.122

TEMPRO5

Average Day Car Driver Trip End Growth for GB:

Origin 1.115
Destination 1.115 Average: 1.115

Adjusted Local Peak Period AM Growth Factors to be applied to Base Traffic

2008 to 2019

$$\frac{1.067}{1.115} \times 1.122 = \mathbf{1.0737}$$

Adjusted Local Peak Period PM Growth Factors to be applied to Base Traffic

2008 to 2019

$$\frac{1.069}{1.115} \times 1.122 = \mathbf{1.0752}$$

PK 26.11.08