

TECHNICAL NOTE

Job Name: Up to 60 dwellings and public open space with associated works - Land and former Buildings UH11 442 456 466 467 468 470 471 481 492 493 529 593 596 Dow Street Upper Heyford **Planning Reference 13/1811/OUT**

Job No: 23824

Note No: 001

Date: March 2014

Prepared By: Spiro Panagi

Subject: **Response to Transport Comments Made in Planning Response 12th February 2014**

Item	Subject
1.	<p>Introduction</p> <p>This note has been prepared following receipt of comments from Cherwell DC as Local Planning Authority (LPA) and Oxfordshire CC as Local Highway Authority (LHA). The comments have been provided as part of the consultation process and are set out in the correspondence dated 12th February 2014.</p> <p>This note aims to address the comments relating to transport, for ease of reference where comments are addressed directly they have been included within the start of the section.</p>
2.	<p>Recent Policy Changes</p> <p>Since the submission of the TS, the National Planning Practice Guidance (NPPG) has been published online effective from the 6th March 2014. The ministerial statement that accompanied it confirmed that the government has cancelled all previous planning practice guidance documents.</p> <p>The National Planning Practice Guidance provides the overarching framework within which the transport implications of development should be considered. It provides advice on the preparation of Transport Assessment, Transport Statements and Travel Plans.</p> <p>One of the key principles set out states that 'Travel Plans, Transport Assessments and Statements should be...proportionate to the size and scope of the proposed development to which they relate and build on existing information wherever possible'</p>

DOCUMENT ISSUE RECORD

Technical Note No	Rev	Date	Prepared	Checked	Reviewed (Discipline Lead)	Approved (Project Director)
23824 /018/TN001	-	27.03.14	Spiro Panagi	Fraser Reid		
Job No/Brief/TN001	A					
23824 /018/TN001	B	22.04.14	Alice Saunders	Dawn Wylie	Dawn Wylie	Matt Whiston

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Item	Subject
3.	<p>Background</p> <p>In terms of background, a Transport Assessment (TA) was prepared by Arup in 2007 and agreed through the planning process. The TA was used by the LHA to assess the traffic impact of the proposals for 1,075 dwellings at Heyford Park.</p> <p>More recently, the work undertaken as part of the application for 60 dwellings intended to demonstrate that the previous TA was undertaken in a time of economic growth and traffic predictions were influenced by this. Since 2006 a retraction in traffic has been observed country-wide and this has not changed even now that economic recovery has occurred. This retraction in traffic could be for a number of reasons, such as more home working or other changes in working practices. These changes have been confirmed by TEMPRO, the industry standard way that traffic growth rates are calculated. TEMPRO release 6.2 includes changes to reflect changes to GDP, car ownership and employment forecasts (affects commuting).</p> <p>The Transport Statement (TS) submitted to support the application for 60 dwellings closely followed the work that was undertaken in the 2007 TA. In addition it was demonstrated that the predictions that were made in 2007 have now not occurred (as of 2013).</p> <p>The comments have been reviewed and PBA has provided further information in order to facilitate a dialogue with the LHA to resolve any outstanding concerns.</p>
4.	<p>The LHA made a number of comments, these are shown below and, where possible addressed by PBA:</p> <p><i>The LHA do not accept the Transport Statement (TS) as accurate. The start date appears to be in correct [sic]. They do not accept the economic downturn argument can be applied to traffic at Heyford.</i></p> <p>The TS followed the methodology that was set out in the Arup 2007 TA which was agreed through the planning process. Further information will be given via PBA's additional work through this note.</p> <p>It is not understood which date appears incorrect, please clarify. Post Meeting Note: Judy Kelly and Andrew Lewis do not what this comment refers to</p> <p>Traffic reduction has been observed in the country as a whole, it is also accepted throughout the industry that this has had an affect on traffic and growth rates have impacted o previous predictions.</p> <p>The TS initial assessment work quantified the existing traffic on the network, through surveys in 2013 and compared this to surveys undertaken in 2006. In addition to this, the predictions made in the Arup TA for the future year of 2013 were compared.</p> <p>The initial steps have been set out more clearly in the following way:</p> <p>The surveys undertaken in 2006 compared to the surveys of the same junctions again in 2013 are show below in Table 1.1.</p>



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Item	Subject																																										
	Table 1.1 – 2006 and 2013 Surveyed Traffic Flows																																										
	<table border="1"> <thead> <tr> <th rowspan="2" style="background-color: #003366; color: white;">Location</th> <th colspan="2" style="background-color: #003366; color: white;">2006 Observed Flows</th> <th colspan="2" style="background-color: #003366; color: white;">2013 Observed Flows</th> </tr> <tr> <th style="background-color: #003366; color: white;">AM Junction Totals</th> <th style="background-color: #003366; color: white;">PM Junction Totals</th> <th style="background-color: #003366; color: white;">AM Junction Totals</th> <th style="background-color: #003366; color: white;">PM Junction Totals</th> </tr> </thead> <tbody> <tr> <td>1. Somerton Road / Camp Road junction</td> <td style="text-align: center;">363</td> <td style="text-align: center;">365</td> <td style="text-align: center;">288</td> <td style="text-align: center;">297</td> </tr> <tr> <td>2. Camp Road / Kirtlington Road junction</td> <td style="text-align: center;">304</td> <td style="text-align: center;">345</td> <td style="text-align: center;">249</td> <td style="text-align: center;">250</td> </tr> <tr> <td>3. Camp Road / Chilgrove Drive / Minor Road junction</td> <td style="text-align: center;">460</td> <td style="text-align: center;">501</td> <td style="text-align: center;">410</td> <td style="text-align: center;">376</td> </tr> <tr> <td>4. B430 / B4030 Heyford Road / B4030 Bicester Road junction (Middleton Stoney)</td> <td style="text-align: center;">1460</td> <td style="text-align: center;">1492</td> <td style="text-align: center;">1134</td> <td style="text-align: center;">1206</td> </tr> <tr> <td>5. A4260 Oxford Road / B4030 junction</td> <td style="text-align: center;">1671</td> <td style="text-align: center;">1114</td> <td style="text-align: center;">1431</td> <td style="text-align: center;">1344</td> </tr> <tr> <td style="text-align: center;">Total</td> <td style="text-align: center;">4258</td> <td style="text-align: center;">3817</td> <td style="text-align: center;">3512</td> <td style="text-align: center;">3473</td> </tr> </tbody> </table>				Location	2006 Observed Flows		2013 Observed Flows		AM Junction Totals	PM Junction Totals	AM Junction Totals	PM Junction Totals	1. Somerton Road / Camp Road junction	363	365	288	297	2. Camp Road / Kirtlington Road junction	304	345	249	250	3. Camp Road / Chilgrove Drive / Minor Road junction	460	501	410	376	4. B430 / B4030 Heyford Road / B4030 Bicester Road junction (Middleton Stoney)	1460	1492	1134	1206	5. A4260 Oxford Road / B4030 junction	1671	1114	1431	1344	Total	4258	3817	3512	3473
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	<p>The traffic shown above are the total movements through each junction. The surveys confirm that, on the whole traffic in 2013 is less than that surveyed in 2006 even when surveyed 7 years later. The table below quantifies the difference:</p>																																										
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	<p>In the 7 years which have passed between the 2006 and 2013 surveys it can be clearly seen that traffic did not experience growth, as originally predicted. Furthermore</p>																																										



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	<p>traffic recorded at these key junctions was, on the whole, less than recorded in 2006.</p> <p>In addition to the traffic survey comparison, PBA attempted to demonstrate that the ARUP TA predictions for 2013 traffic growth is also, on the whole, less than that forecasted. This would be logical given the lower base traffic surveys.</p> <p>The issues raised by the Local Authority appear to exist with the methodology that was used.</p>
5.	<p><i>Parking standards referred to are (again) those of Oxford City</i></p> <p>It is assumed that the comment above indicates that the parking standards are not deemed appropriate for the Heyford scheme. Therefore the TS text could be amended as follows:</p> <p>Vehicular parking will be provided in accordance with the appropriate OCC standards 'Transport for New Developments Parking Standards for New Residential Developments (December 2011)' or updated policy guidance at the time. The car parking requirements which are set out in the current document relate to maximum parking standards for 'All areas in Oxfordshire (other than Oxford and Cherwell Urban Areas).</p> <p>This will require a slight increase in parking provision in any forthcoming masterplan.</p>
6.	<p><i>The TS relies heavily on data from the Arup 2007 TA, this data is not replicated in this document, making it difficult to compare and check figures and assumptions.</i></p> <p>Relevant extracts from the Arup TA can be found at Appendix A of this note.</p>
7.	<p><i>The manual 2013 traffic surveys carried out at the five junctions (ref. Section 5.3) only comprise one day of data and refer to roadworks occurring on that day. This is not considered a representative survey. At least two days should be surveyed in normal traffic conditions.</i></p> <p>Section 5.3 of the PBA TS, sets out the surveys were undertaken on Tuesday 25th June 2013 and confirms that the road works were only present in one section of Camp Road. The TS also confirms that the roadworks were operational during the interpeak periods only. The route was signposted with times of work shown clearly and the route remained open through the survey peak periods.</p> <p>In order to ensure that data obtained was unaffected by the roadwork signs, short comparison surveys were undertaken. These additional surveys at the 3 junctions on Camp Road were used to check that the original surveys were a good representation of the local traffic. The check confirmed little difference, therefore in order for consistency across the other surveyed junction the original survey information was used for assessments purposes.</p> <p>The additional surveys are included with this note and are for information purposes only. See Appendix B.</p> <p>The ARUP TA did not contain any traffic survey data within the Appendices and only summarised the surveys that were undertaken. The PBA assessment work was based on AM and PM surveys of 5 junctions, 3 of which had an additional check survey. The proposals for 60 dwellings present a limited scale development. The traffic impact of the proposals will be significantly lower than that of 1,075 dwellings.</p>

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8.	<p><i>The 2007 Arup TA originally reviewed 12 junctions in the vicinity and identified six of these to be capacity tested. This TS only looks at five of those six junctions and for the purposes of robustness should consider all six.</i></p> <p>As set out earlier in this note, the ARUP TA was undertaken to support a development proposal for 1,075 new dwellings. The PBA TS was undertaken to support a development of 60 dwellings.</p> <p>The TS prepared by PBA is in line with current policy, in particular NPPG where it confirms that <i>'Travel Plans, Transport Assessments and Statements should be proportionate to the size and scope of the proposed development to which they relate and build on existing information where possible.'</i></p> <p>The surveys which were presented in the TS were originally undertaken to support ongoing internal work. The 5 junctions selected were considered to be of relevance to the site but were not intended to replicate ARUP work. The survey information was used to inform the PBA TS work later in 2013.</p> <p>The study area selected for the TS covers five junctions that were considered to be key in assessing traffic impact arising from the proposed development for 60 dwellings. The ARUP TA included count data but not analysis for 12 junctions; these were used for comparison. The ARUP TA does list six junctions that appear to be assessed and the PBA study area includes four of those junctions. See Appendix C for locations of counts from both the Arup TA and the 60 dwellings TS.</p> <p>Post Meeting Note: Judy Kelly will see if OCC have count data to compare one other location.</p> <p>The impact of the proposed 60 dwellings has been considered over an appropriate study area to consider impact in each direction, it is considered adequate given the findings that traffic levels are lower than originally predicted.</p>
9.	<p><i>Reference is made to an additional survey carried out on Thursday 27th June, this data has not been included for consideration</i></p> <p>The additional surveys are discussed in item 7, above, and are included with this note for information purposes at Appendix B.</p>
10.	<p><i>Section 5.2 is flawed for a number of reasons:</i></p> <p><i>'2013 Existing Situation' traffic has been calculated using Arup 2007 TA data, specifically by deducting 2006 traffic flows in Figures 5/6 from Figures 7/8 and adding to Figures 15/16[sic].</i></p> <p>The figure numbers have been noted incorrectly in the TS. Figure numbers 15 and 16 should have been referenced as Figures 9 and 10.</p> <p><i>Deducting 2006 traffic flows in Figures 5/6 from Figures 7/8 actually provides negative data. Clearly this cannot be a correct means of determining the level of traffic generated by Heyford Park in 2006.</i></p> <p>Figures 5 and 6 of the Arup report illustrate 2006 AM and PM Av Weekday Traffic Flows with existing site traffic. Figures 7 and 8 illustrate the 2006 AM and PM Av</p>



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	<p>Weekday Base Traffic Flows. The difference of the two sets of figures will provide the existing development traffic. Copies of the relevant flow diagrams from the Arup TA can be found at Appendix A, alongside comparison flow diagrams at Appendix D.</p> <p>One negative number has been found to exist in the PM peak for the southbound left turn movement from Somerton Road to Camp Road. These flows been replicated from the Arup report, however we are unable to determine the origin of this negative number and there is no count data included with their TA. The turning movement results in a -9 after the calculations have been undertaken. The comparison of the 2006 to 2013 observed traffic flows concluded 68 fewer vehicles were recorded at this junction. Therefore this is would not change the overall results of the PBA work. For information, the figures are included at Appendix E.</p> <p><i>Figures 15/16 actually refer to traffic flows at Junction 10 of the M40, clearly irrelevant to this exercise.</i></p> <p>This has now been corrected; Figures 9 and 10 were intended to be noted not 15 and 16.</p> <p><i>The above flawed approach is a convoluted way to determine existing traffic flows that would be more reliably obtained by simply carrying out an up-to-date survey of traffic to the site. An up-to-date survey would also enable a direct comparison of operations at Heyford Park in 2006 and 2013. I am unclear whether the site was more heavily used in 2006, particularly the flying field site but also potentially the existing residential element.</i></p> <p>For clarity the methodology is as follows:</p> <ul style="list-style-type: none"> • Surveys of five junctions previously identified as strategically relevant used to study the area for the 60 dwellings proposals. • Comparison of the '2013 observed flows' to the ARUP '2006 observed flows'. Draw conclusions – traffic is lower overall. • Compare the forecast ARUP 2013 traffic flows to '2013 observed flows'. However, the ARUP TA assumed that the proposed development at Heyford Park would be built out by 2013. This is not the case and the comparison to be made should include a 2013 forecast background traffic and the unchanged existing Heyford Park Traffic. This was not a step which was included with the ARUP TA. <p>Therefore PBA calculated ARUP's '2013 forecast plus existing site traffic with no additional development' by:</p> <p>Deducted the Average 2006 traffic flows (without existing traffic) (ARUP Figures 5 and 6) from the Average 2006 Weekday Base Flows (ARUP Figures 7 and 8) to obtain the 'Existing Site Traffic Flows'.</p> <p>Added the 'Existing Site Traffic Flows' to the Average Weekday flows (ARUP Figures 9 and 10) to create a 2013 forecast year.</p> <p>Compared the 2013 ARUP forecast to the 2013 surveys.</p> <p>Notwithstanding the above, the 2006 traffic flows observed in the ARUP report are still on the whole, higher than the PBA 2013 observed traffic flows.</p>

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11.	<p><i>Table 5.1 has a number of errors, however in light of the above comment ref Section 5.2, the methodology is flawed in any case.</i></p> <p>The table contained within this note has been updated and contains the corrected information.</p> <p>The methodology is not considered to be flawed, however, it is understood that there is a need to discuss this to ensure that it is understood.</p>
12.	<p><i>Section 6.3 uses the same trip rates in the Arup 2007 TA to estimate the traffic generation of the proposed 60 dwellings. Whilst there may not be much difference, I would like to see use of the TRICS database which will hold more up to date survey data and could therefore provide a more up to date likely traffic generation.</i></p> <p>The trip rates used by Arup were 0.8, which are considered high for residential trip rates and hence were replicated for robustness in the 60 dwellings TS. TRICS analysis of similar sites is included at Appendix F and show a trip rate of 0.58; therefore it is considered the approach taken was robust.</p>
13.	<p><i>Figures 4 and 5 in the TS appendix have a number of errors when compared with the manual count data. Also Figure 5 repeatedly refers to AM peak when actually it is looking at the PM peak, which is confusing.</i></p> <p>Agreed there do appear to be errors and Figure is titled PM Peak although individual junctions are labelled AM Peak. These will be updated and attached to this note at Appendix D.</p>



TECHNICAL NOTE



Appendix A - Arup TA Flow Diagrams



TECHNICAL NOTE



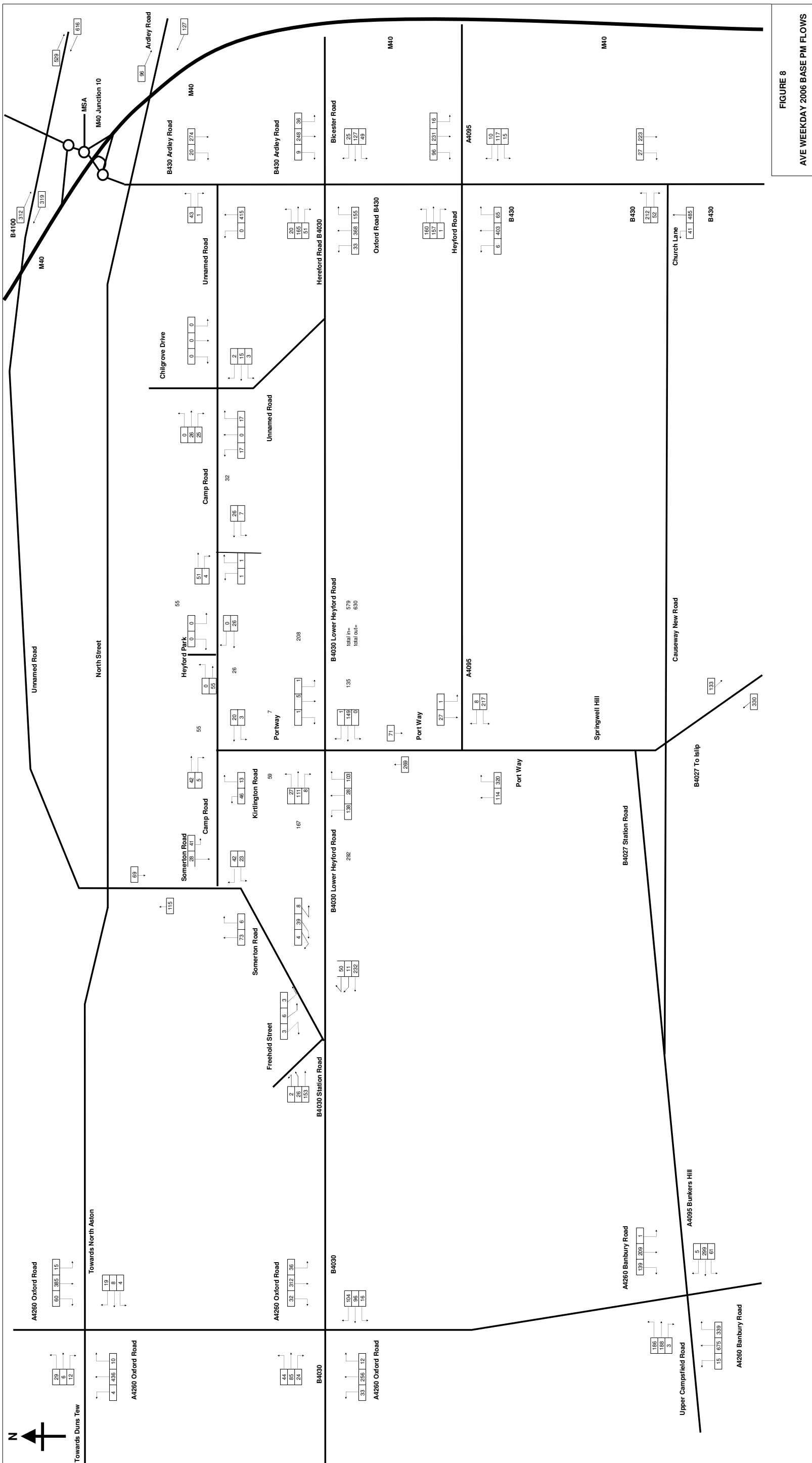


FIGURE 8
AVE WEEKDAY 2006 BASE PM FLOWS

Appendix B – Supplementary Traffic Survey Data



TECHNICAL NOTE



Heyford Park - Manual Traffic Survey, Thursday 27th June 2013

Produced by Community Systems Ltd.

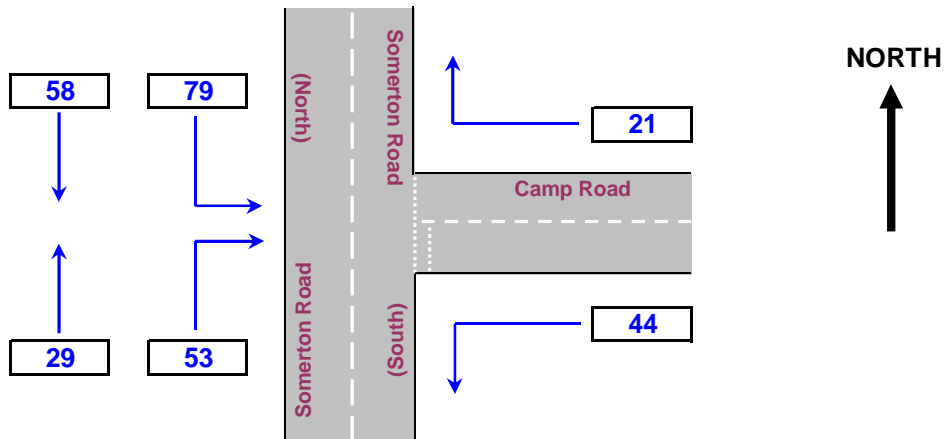
Junction: (1) Somerton Road / Camp Road

Vehicle Class:

Start Time:

End Time:

Peak Hour



Note: The diagram above is schematic only and may not completely represent the exact layout of the actual junction surveyed
Please do NOT insert or delete rows or columns in the data sheets to the left of this diagram as this may result in erratic or inaccurate results

Heyford Park - Manual Traffic Survey, Thursday 27th June 2013

Produced by Community Systems Ltd.

Junction: (1) Somerton Road / Camp Road

Approach: Somerton Road (North)

TIME	Left to Camp Road						S/B to Somerton Road (South)						TOTAL			
	PCL	MCL	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCL	MCL	CAR	LGV		OGV1	OGV2	BUS
0700 - 0715																
0715 - 0730																
0730 - 0745			15	1			1	17			12	1	1			14
0745 - 0800			22	1	1		1	25			10	1	1			12
Hourly Total			37	2	1		2	42			22	2	2			26
0800 - 0815			13	2				15			14	3	3			20
0815 - 0830			20	2				22			10	1	1			12
0830 - 0845																
0845 - 0900																
Hourly Total			33	4			4	37			24	4	4			32
0900 - 0915																
0915 - 0930																
0930 - 0945																
0945 - 1000																
Hourly Total																
Session Total			70	6	1		2	79			46	6	6			58

1600 - 1615																
1615 - 1630																
1630 - 1645																
1645 - 1700																
Hourly Total																
1700 - 1715			7	2				9			7	3				10
1715 - 1730			5	2				7			4		1			5
1730 - 1745			9					9				1				10
1745 - 1800			6					6						1		5
Hourly Total			27	4			4	31			24	4	1			30
1800 - 1815																
1815 - 1830																
1830 - 1845																
1845 - 1900																
Hourly Total																

Session Total			27	4			4	31			24	4	1			30
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Heyford Park - Manual Traffic Survey, Thursday 27th June 2013

Produced by Community Systems Ltd.

Junction: (1) Somerton Road / Camp Road

Approach: Camp Road

TIME	Left to Somerton Road (South)							Right to Somerton Road (North)								
	PCL	MCL	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCL	MCL	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715																
0715 - 0730																
0730 - 0745	1		6				3	10			3		1			4
0745 - 0800			5	1			1	7			6	1			1	8
Hourly Total	1		11	1			4	17			9	1	1		1	12
0800 - 0815		1	5	4	2		2	14			4	1				5
0815 - 0830			12				1	13			4					4
0830 - 0845																
0845 - 0900																
Hourly Total	1	1	17	4	2		3	27			8	1				9
0900 - 0915																
0915 - 0930																
0930 - 0945																
0945 - 1000																
Hourly Total																
Session Total	1	1	28	5	2		7	44			17	2	1		1	21

1600 - 1615																
1615 - 1630																
1630 - 1645																
1645 - 1700																
Hourly Total																
1700 - 1715			16	4			1	21			23	2	1			26
1715 - 1730		1	17					18			17	1				18
1730 - 1745			12	1	1	1	2	17			17	2				19
1745 - 1800			13	3				16			19	2				21
Hourly Total	1	1	58	8	1	1	3	72			76	7	1			84
1800 - 1815																
1815 - 1830																
1830 - 1845																
1845 - 1900																
Hourly Total																
Session Total	1	1	58	8	1	1	3	72			76	2	1		1	84

Heyford Park - Manual Traffic Survey, Thursday 27th June 2013

Produced by Community Systems Ltd.

Junction: (1) Somerton Road / Camp Road

Approach: Somerton Road (South)

TIME	N/B to Somerton Road (North)						Right to Camp Road									
	PCL	MCL	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCL	MCL	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715																
0715 - 0730																
0730 - 0745			10					10			9	1			1	11
0745 - 0800	1		7	1	1		1	11			14	1				15
Hourly Total	1		17	1	1		1	21			23	2			1	26
0800 - 0815			4					4			10					10
0815 - 0830			2	1			1	4			15		1			17
0830 - 0845																
0845 - 0900																
Hourly Total			6	1			1	8			25		1			27
0900 - 0915																
0915 - 0930																
0930 - 0945																
0945 - 1000																
Hourly Total																
Session Total	1		23	2	1		2	29			48	2	1	1	1	53

1600 - 1615																
1615 - 1630																
1630 - 1645																
1645 - 1700																
Hourly Total																
1700 - 1715			9	2				11			5	2		1	1	10
1715 - 1730			13	1	1			15			7	1	1			9
1730 - 1745			11	2				13	1		9	2				12
1745 - 1800			11	2				13			6	2				8
Hourly Total			44	7	1		52	52	1	1	27	7	1	1	1	39
1800 - 1815																
1815 - 1830																
1830 - 1845																
1845 - 1900																
Hourly Total																
Session Total			44	7	1		52	52	1	1	27	7	1	1	1	39

Heyford Park - Manual Traffic Survey, Thursday 27th June 2013

Produced by Community Systems Ltd.

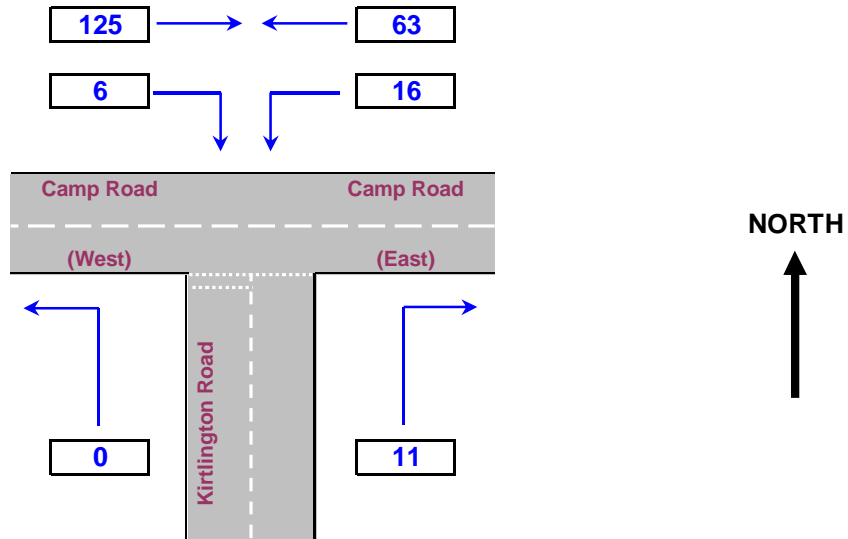
Junction: (2) Camp Road / Kirtlington Road

Vehicle Class:

Start Time:

End Time:

Peak Hour



Note: The diagram above is schematic only and may not completely represent the exact layout of the actual junction surveyed
Please do NOT insert or delete rows or columns in the data sheets to the left of this diagram as this may result in erratic or inaccurate results

Heyford Park - Manual Traffic Survey, Thursday 27th June 2013

Produced by Community Systems Ltd.

Junction: (2) Camp Road / Kirtlington Road

Approach: Camp Road (East)

TIME	Left to Kirtlington Road						W/B to Camp Road (West)									
	PCL	MCL	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCL	MCL	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715																
0715 - 0730					1						8	1				
0730 - 0745			2					3							3	13
0745 - 0800			6					6		10		2			3	15
Hourly Total			8		1			9	1	18	3	3			6	28
0800 - 0815			5					5		9		4	2		1	17
0815 - 0830			2					2		16		1			1	18
0830 - 0845																
0845 - 0900																
Hourly Total			7					7	1	25	5	2			2	35
0900 - 0915																
0915 - 0930																
0930 - 0945																
0945 - 1000																
Hourly Total																
Session Total			15		1			16	1	43	8	2			8	63
1600 - 1615																
1615 - 1630																
1630 - 1645																
1645 - 1700																
Hourly Total																
1700 - 1715			8	1				9		38	6	1			1	47
1715 - 1730			5	1				6		30	1					32
1730 - 1745			6					6		27	1	1	1		2	32
1745 - 1800			1					1		32	4					36
Hourly Total			20	2				22	2	127	12	2	1		3	147
1800 - 1815																
1815 - 1830																
1830 - 1845																
1845 - 1900																
Hourly Total																
Session Total			20	2				22	2	127	12	2	1		3	147

Heyford Park - Manual Traffic Survey, Thursday 27th June 2013

Produced by Community Systems Ltd.

Junction: (2) Camp Road / Kirtlington Road

Approach: Kirtlington Road

TIME	Left to Camp Road (West)						Right to Camp Road (East)									
	PCL	MCL	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCL	MCL	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715																
0715 - 0730																
0730 - 0745											1					1
0745 - 0800											4	1				5
Hourly Total											5	1				6
0800 - 0815											2					2
0815 - 0830											3					3
0830 - 0845																
0845 - 0900																
Hourly Total											5					5
0900 - 0915																
0915 - 0930																
0930 - 0945																
0945 - 1000																
Hourly Total																
Session Total											10	1				11

1600 - 1615																
1615 - 1630																
1630 - 1645																
1645 - 1700																
Hourly Total																
1700 - 1715			1								3	2				5
1715 - 1730			2								3	2			1	6
1730 - 1745			3	1							5					5
1745 - 1800			1	1							3					3
Hourly Total			7	2							14	4			1	19
1800 - 1815																
1815 - 1830																
1830 - 1845																
1845 - 1900																
Hourly Total																
Session Total			7	2							14	4			1	19

Heyford Park - Manual Traffic Survey, Thursday 27th June 2013

Produced by Community Systems Ltd.

Junction: (2) Camp Road / Kirtlington Road

Approach: Camp Road (West)

TIME	E/B to Camp Road (East)						Right to Kirtlington Road									
	PCL	MCL	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCL	MCL	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715																
0715 - 0730																
0730 - 0745			22	3			3	28			2					2
0745 - 0800			35	1	1		1	38			2					2
Hourly Total			57	4	1		4	66			4					4
0800 - 0815			23	2				25								
0815 - 0830			30	2	1	1		34			2					2
0830 - 0845																
0845 - 0900																
Hourly Total			53	4	1	1		59			2					2
0900 - 0915																
0915 - 0930																
0930 - 0945																
0945 - 1000																
Hourly Total																
Session Total			110	8	2	1	4	125			6					6
1600 - 1615																
1615 - 1630																
1630 - 1645																
1645 - 1700																
Hourly Total																
1700 - 1715			11	4		1		16			1					1
1715 - 1730			14	3	1			18								
1730 - 1745	1		18	2	1			22								
1745 - 1800			12	2				14								
Hourly Total	1		55	11	2	1		70			1					1
1800 - 1815																
1815 - 1830																
1830 - 1845																
1845 - 1900																
Hourly Total																
Session Total	1		55	11	2	1	4	70			1					1

Heyford Park - Manual Traffic Survey, Thursday 27th June 2013

Produced by Community Systems Ltd.

Junction: (3) Chilgrove Drive / Minor Road / Camp Road

Approach: Chilgrove Drive

TIME	Left to Minor Road						S/B to Camp Road (South)						Right to Camp Road (West)												
	PCL	MCL	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCL	MCL	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCL	MCL	CAR	LGV	OGV1	OGV2	BUS	TOTAL	
0700 - 0715																									
0715 - 0730																									
0730 - 0745																									
0745 - 0800																									
Hourly Total																									
0800 - 0815																									
0815 - 0830																									
0830 - 0845																									
Hourly Total																									
0900 - 0915																									
0915 - 0930																									
0930 - 0945																									
0945 - 1000																									
Hourly Total																									
Session Total																									
1600 - 1615																									
1615 - 1630																									
1630 - 1645																									
1645 - 1700																									
Hourly Total																									
1700 - 1715																									
1715 - 1730																									
1730 - 1745																									
1745 - 1800																									
Hourly Total																									
1800 - 1815																									
1815 - 1830																									
1830 - 1845																									
1845 - 1900																									
Hourly Total																									
Session Total																									

Heyford Park - Manual Traffic Survey, Thursday 27th June 2013

Produced by Community Systems Ltd.

Junction: (3) Chilgrove Drive / Minor Road / Camp Road

Approach: Minor Road

TIME	Left to Camp Road (South)						W/B to Camp Road (West)						Right to Chilgrove Drive											
	PCL	MCL	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCL	MCL	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCL	MCL	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715																								
0715 - 0730																								
0730 - 0745			1	1		1		3			19	1				21								
0745 - 0800			1				1	2			21	4	1	2		28								
Hourly Total			2	1	1	1	1	5			40	5	1	3		49								
0800 - 0815			1	1				2			17					19								
0815 - 0830			2					2			19			1		20								
0830 - 0845																								
0845 - 0900																								
Hourly Total			3	1				4			36			1		39								
0900 - 0915																								
0915 - 0930																								
0930 - 0945																								
0945 - 1000																								
Hourly Total																								
Session Total			5	2		1	1	9			76	5	1	4		88								
1600 - 1615																								
1615 - 1630																								
1630 - 1645																								
1645 - 1700																								
Hourly Total																								
1700 - 1715																								
1715 - 1730			2	1	1			4			18					19								
1730 - 1745											14	4	1	1		20			1				1	
1745 - 1800			2					3			16			2		18								
Hourly Total			4	1	1	1	1	7			57	4	1	3		66			1				1	
1800 - 1815																								
1815 - 1830																								
1830 - 1845																								
1845 - 1900																								
Hourly Total																								
Session Total			4	1	1	1	1	7			57	4	1	3		66			1				1	

Heyford Park - Manual Traffic Survey, Thursday 27th June 2013

Produced by Community Systems Ltd.

Junction: (3) Chilgrove Drive / Minor Road / Camp Road

Approach: Camp Road (South)

TIME	Left to Camp Road (West)							N/B to Chilgrove Drive							Right to Minor Road									
	PCL	MCL	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCL	MCL	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCL	MCL	CAR	LGV	OGV1	OGV2	BUS	TOTAL
0700 - 0715																								
0715 - 0730																								
0730 - 0745			22					22																
0745 - 0800	1	1	19	3			4	28																
Hourly Total	1	1	41	3			4	50											1	1	1			2
0800 - 0815			22	4			1	27											2	1	1			4
0815 - 0830			21	2				23																
0830 - 0845																								
0845 - 0900																								
Hourly Total			43	6			1	50											2	1	1			4
0900 - 0915																								
0915 - 0930																								
0930 - 0945																								
0945 - 1000																								
Hourly Total																								
Session Total	1	1	84	9			5	100											3	1	1	1		6
1600 - 1615																								
1615 - 1630																								
1630 - 1645																								
1645 - 1700																								
Hourly Total																								
1700 - 1715			22	3	1			26												1				1
1715 - 1730			19	1				20											2					2
1730 - 1745			25	1			1	28														1		1
1745 - 1800			20	1	1			22											3					3
Hourly Total			86	6	2		1	96											5	1	1	1		7
1800 - 1815																								
1815 - 1830																								
1830 - 1845																								
1845 - 1900																								
Hourly Total																								
Session Total	1	1	86	6	2		1	96											5	1	1	1		7

Heyford Park - Manual Traffic Survey, Thursday 27th June 2013

Produced by Community Systems Ltd.

Junction: (3) Chilgrove Drive / Minor Road / Camp Road

Approach: Camp Road (West)

TIME	Left to Chilgrove Drive						E/B to Minor Road						Right to Camp Road (South)											
	PCL	MCL	CAR	LGV	OGV1	OGV2	TOTAL	PCL	MCL	CAR	LGV	OGV1	OGV2	BUS	TOTAL	PCL	MCL	CAR	LGV	OGV1	OGV2	BUS	TOTAL	
0700 - 0715																								
0715 - 0730																								
0730 - 0745										12	5						1	28	4					33
0745 - 0800									1	14	1	2					20	5					1	26
Hourly Total									1	26	6	2	2		37	1	48	9					1	59
0800 - 0815										17							26	1		1				29
0815 - 0830										17	1	1					22	4						26
0830 - 0845																								
0845 - 0900																								
Hourly Total									34	1	1	1	1		37		48	5	1				1	55
0900 - 0915																								
0915 - 0930																								
0930 - 0945																								
0945 - 1000																								
Hourly Total																								
Session Total								1	60	7	3	3	3		74	1	96	14	1				2	114
1600 - 1615																								
1615 - 1630																								
1630 - 1645																								
1645 - 1700																								
Hourly Total																								
1700 - 1715										32	7				40		48	5						53
1715 - 1730										21	2				25	1	26	2						29
1730 - 1745									1	21	1			1	25	1	30	1						32
1745 - 1800									1	20	1	1			23	1	19	1						21
Hourly Total									2	94	11	1	4	1	113	2	123	9						135
1800 - 1815																								
1815 - 1830																								
1830 - 1845																								
1845 - 1900																								
Hourly Total																								
Session Total								2	94	11	1	4	1	1	113	2	123	9					2	135

Appendix C – Survey Location Diagrams



TECHNICAL NOTE



A3 1 2 3 4 5 6
A B C D E F G



Keynote:
● Classified Turning Count Location
--- Automated Traffic Count

Issue	Date	By	Chkd	Appd
01	06/02/07	NS	IGC	IGC

First Issue

ARUP

The Arup Campus, Blythe Gate, Blythe Valley Park
 Solihull, West Midlands B90 8AE
 Tel +44(0)121 213 3000 Fax +44(0)121 213 3001
 www.arup.com

Client
North Oxfordshire Consortium

Job Title
**Heyford Park
 Transport Assessment**

Drawing Title
**Highway Network
 Traffic Survey Locations**

Scale at A3 1:50000

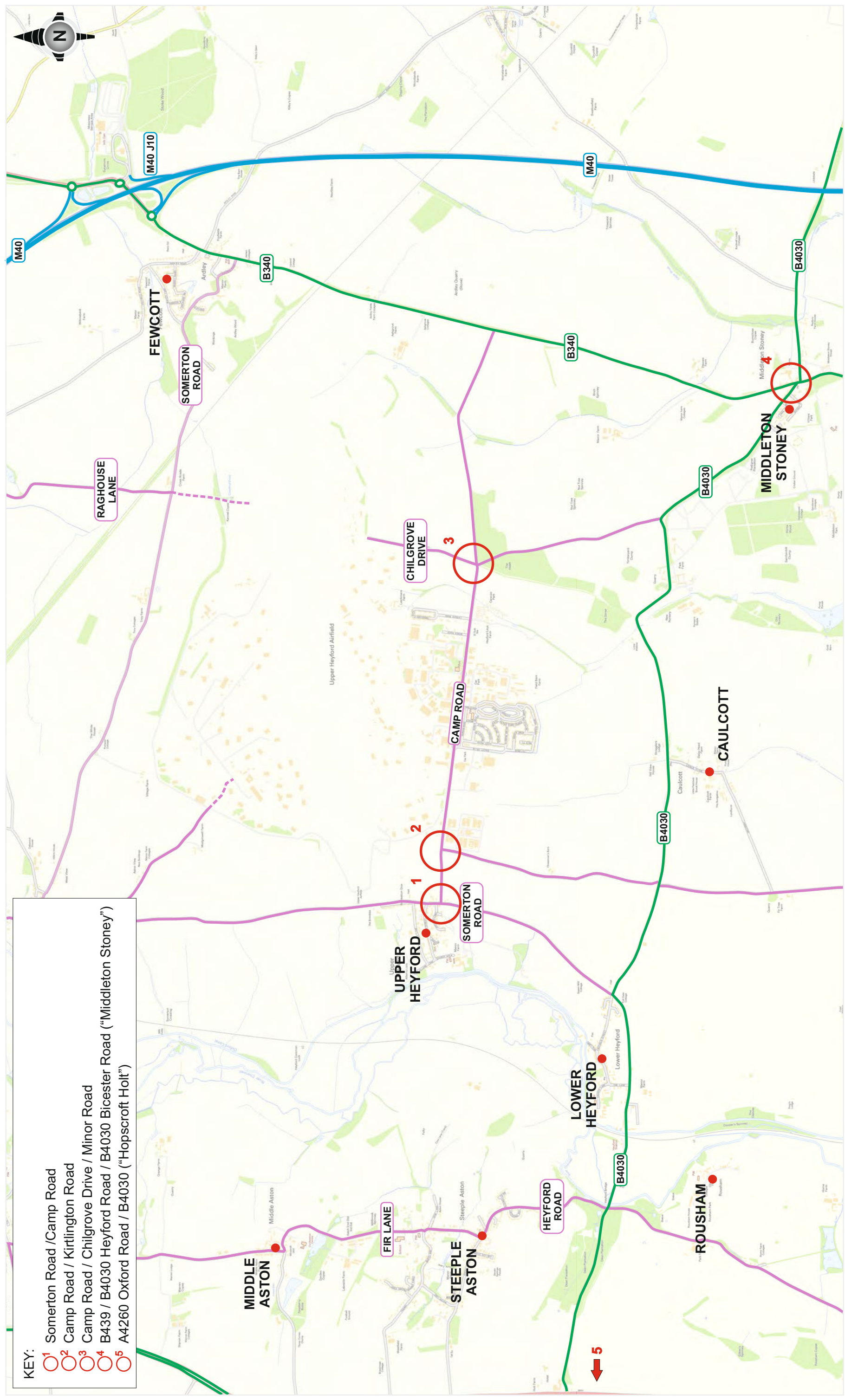
Plot ID

Drawing Status
Information

Job No
120669-00

Drawing No
Figure 3

Issue
01



KEY:

- 1 Somerton Road / Camp Road
- 2 Camp Road / Kirtlington Road
- 3 Camp Road / Chilgrove Drive / Minor Road
- 4 B439 / B4030 Heyford Road / B4030 Bicester Road ("Middleton Stoney")
- 5 A4260 Oxford Road / B4030 ("Hopcroft Holt")

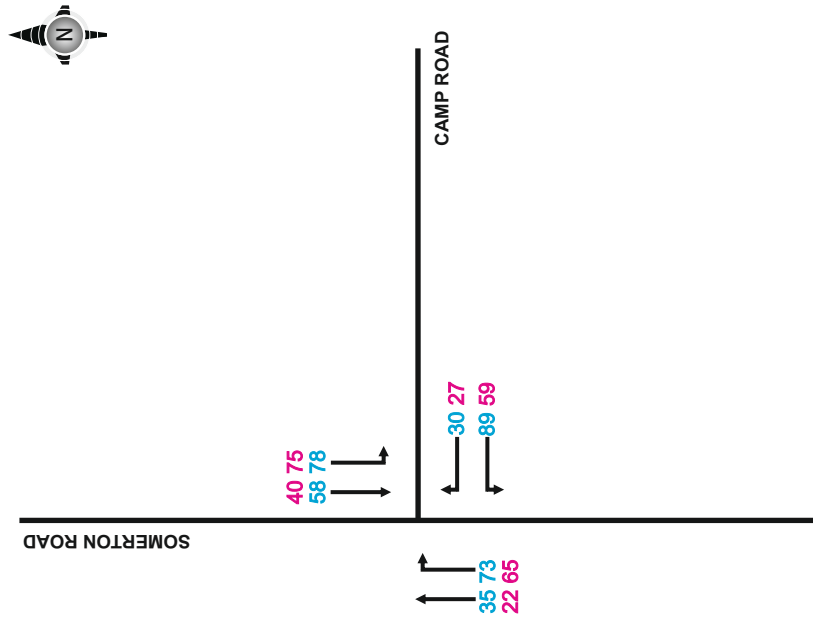
<p>Client</p> <p>DORCHESTER GROUP</p> <p>Contains Ordnance Survey data © Crown copyright and database right 2012.</p>	<p>OUTLINE APPLICATION FOR UP TO 60 DWELLINGS ON THE FORMER PRIMARY SCHOOL SITE, HEYFORD PARK TRANSPORTATION STATEMENT</p> <p>2013 TRAFFIC SURVEY LOCATIONS</p>		<p>FIGURE 3</p> <p>A</p>								
	<p>Logo: peterbrett</p> <p>Offices throughout the UK and Europe</p> <p>www.peterbrett.com</p>	<p>Revision History:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Mark</th> <th>Revision</th> <th>Date</th> <th>Drawn</th> <th>Checked</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>Location of Junction 5 Revised</td> <td>AS</td> <td>22.04.14</td> <td>DW</td> </tr> </tbody> </table>		Mark	Revision	Date	Drawn	Checked	A	Location of Junction 5 Revised	AS
Mark	Revision	Date	Drawn	Checked							
A	Location of Junction 5 Revised	AS	22.04.14	DW							

Appendix D – Comparison Flow Diagrams

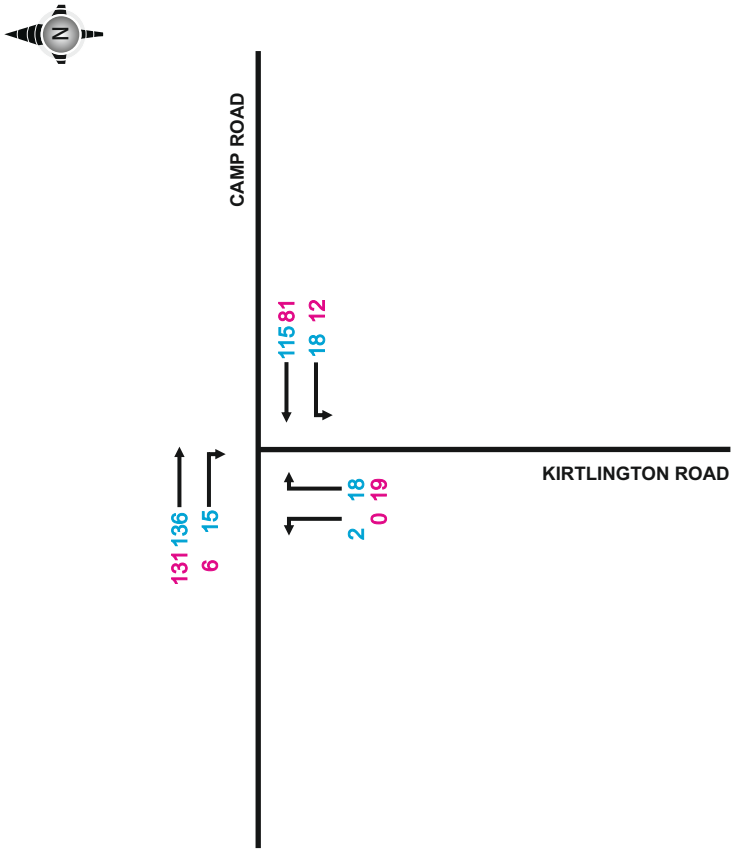


TECHNICAL NOTE

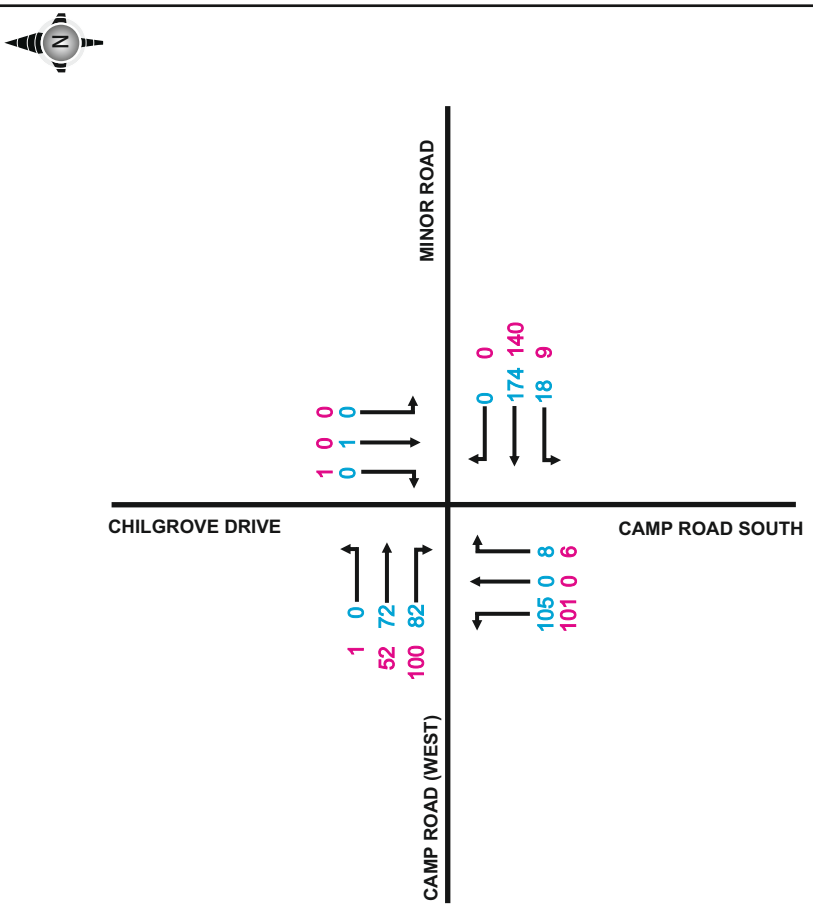




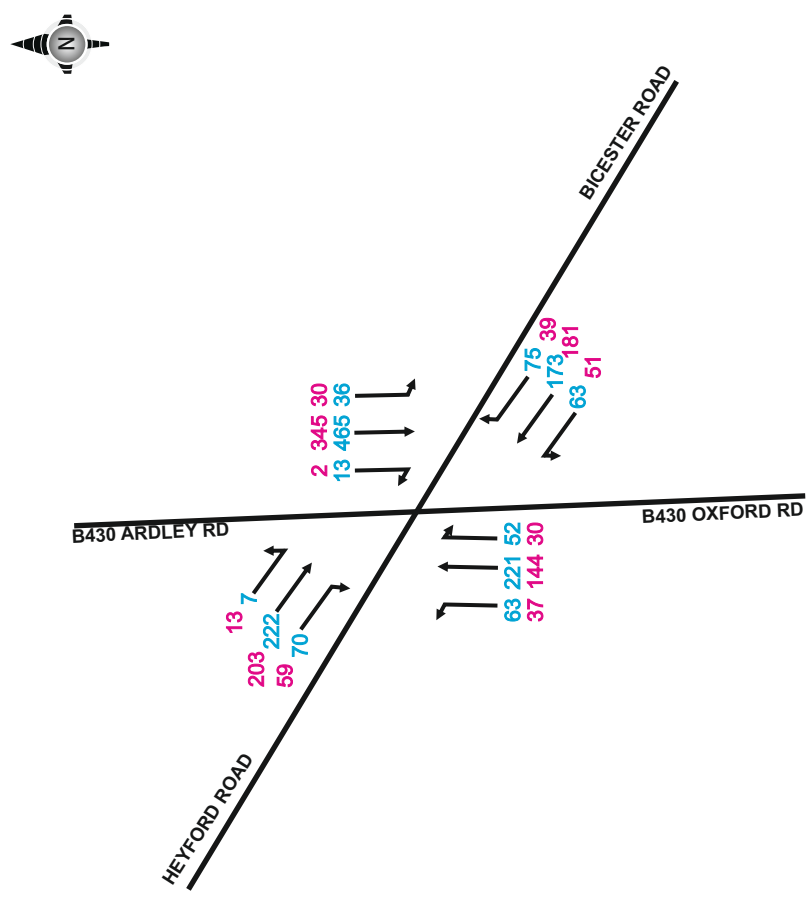
AM Peak Observed Flows
Junction 1 : Somerton Road / Camp Road



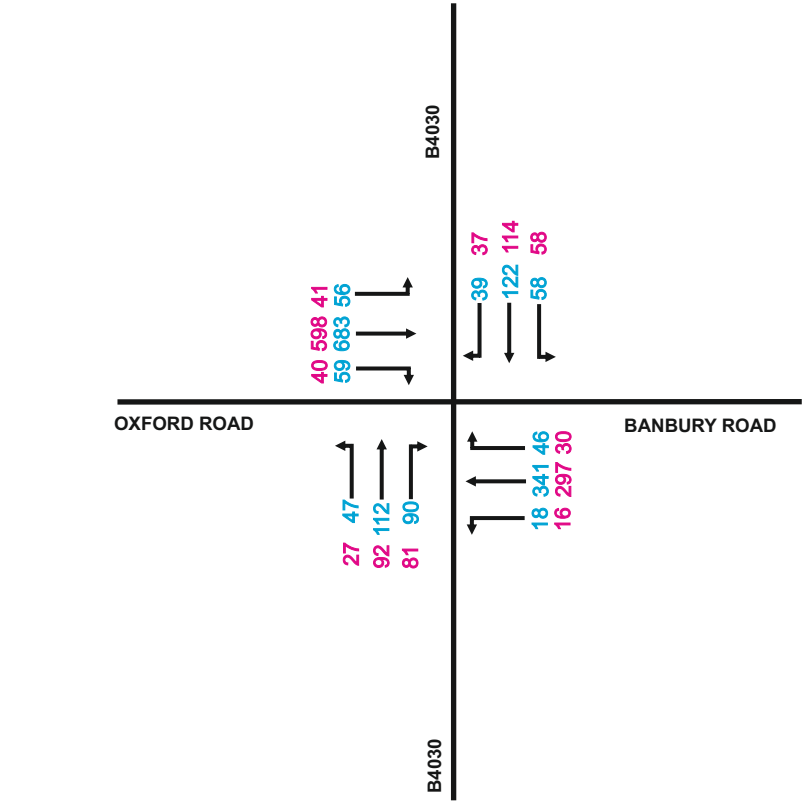
AM Peak Observed Flows
Junction 2 : Camp Road / Kirtlington Road



AM Peak Observed Flows
Junction 3 : Camp Road / Chilgrove Drive / Minor Road



AM Peak Observed Flows
Junction 4 : "Middleton Stoney"



AM Peak Observed Flows
Junction 5 : "Hopscroft Holt"

KEY:

- XX 2006 AM Observed Traffic Flow (Taken from Arup Transport Assessment)
- XX 2013 AM Observed Traffic Flow

NOTE: CYCLIST FLOWS HAVE NOT BEEN INCLUDED



Client

DORCHESTER GROUP

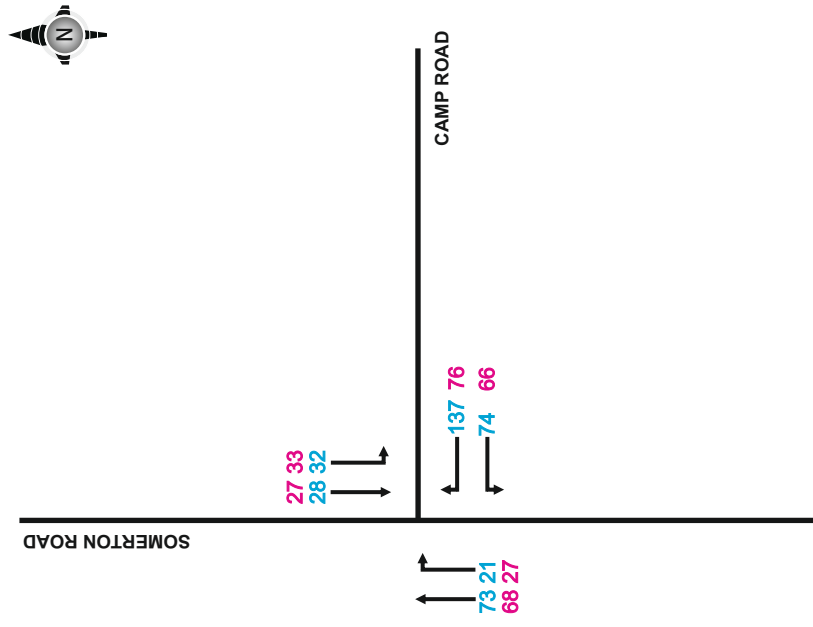
OUTLINE APPLICATION FOR UP TO 60 DWELLINGS ON THE FORMER PRIMARY SCHOOL SITE, HEYFORD PARK
TRANSPORTATION STATEMENT

2006 & 2013 OBSERVED VEHICULAR TRAFFIC FLOWS
AM PEAK PERIOD (08:00 - 09:00)

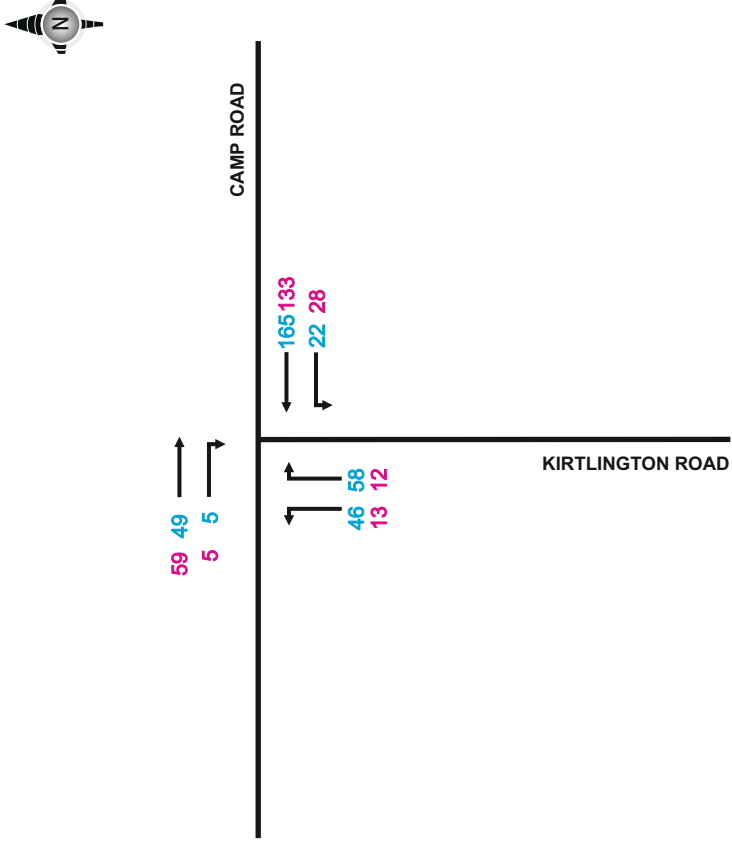
Mark	Revision	Date	Scale	Drawn by	Checked by
A	Minor amendments following OCC comments	18.11.2013	A3 - N.T.S	ASa	SP
AS		28.03.14			
SP					

FIGURE 4

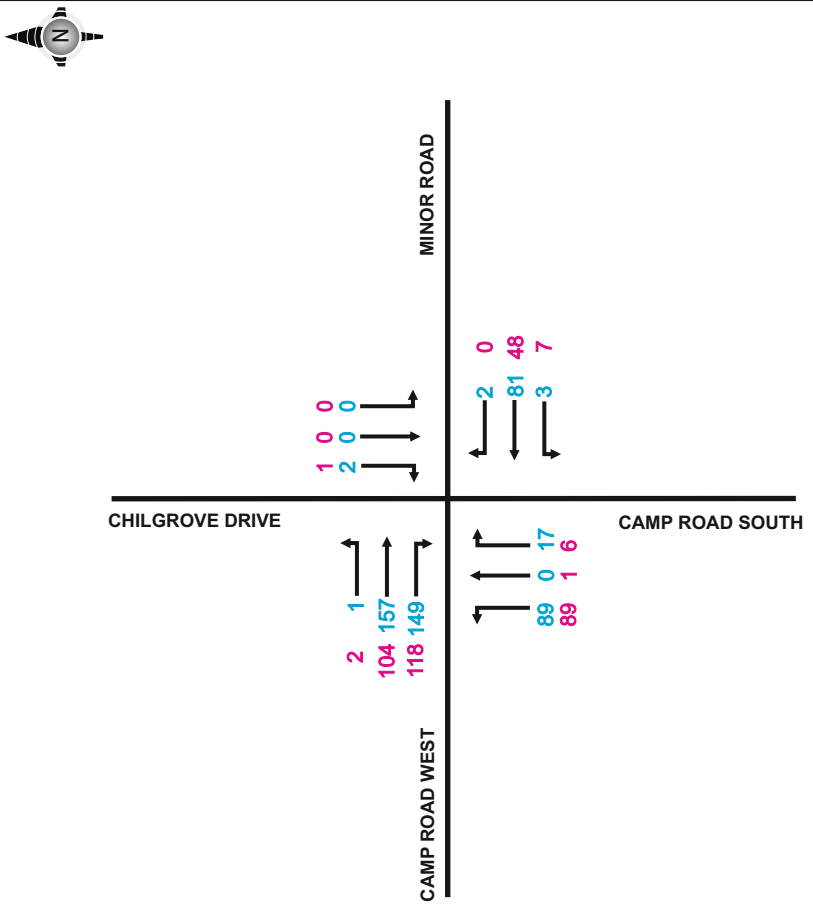
A



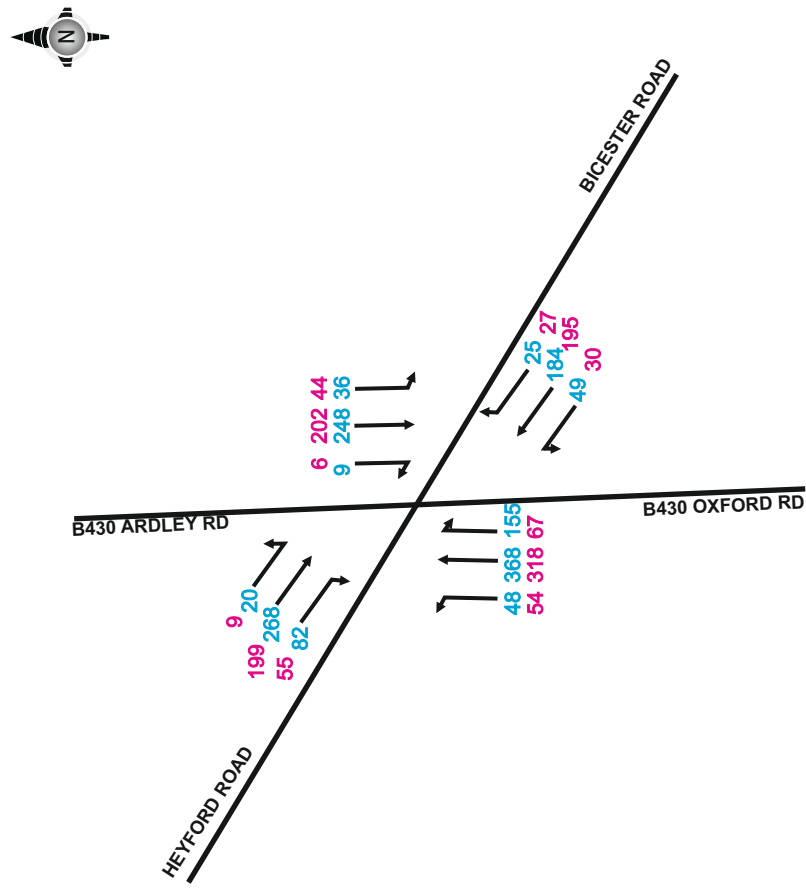
PM Peak Observed Flows
Junction 1 : Somerton Road / Camp Road



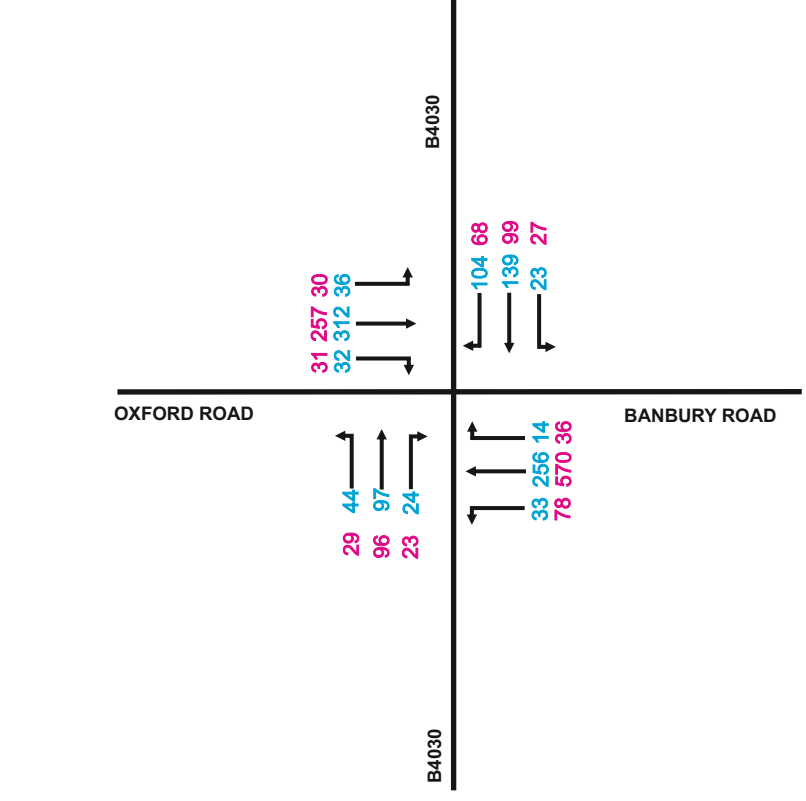
PM Peak Observed Flows
Junction 2 : Camp Road / Kirtlington Road



PM Peak Observed Flows
Junction 3 : Camp Road / Chilgrove Drive / Minor Road



PM Peak Observed Flows
Junction 4 : "Middleton Stoney"



PM Peak Observed Flows
Junction 5 : "Hopscroft Holt"

KEY:

- XX 2006 PM Observed Traffic Flow (Taken from Arup Transport Assessment)
- XX 2013 PM Observed Traffic Flow

NOTE: CYCLIST FLOWS HAVE NOT BEEN INCLUDED

Client
DORCHESTER GROUP



OUTLINE APPLICATION FOR UP TO 60 DWELLINGS ON THE FORMER PRIMARY SCHOOL SITE, HEYFORD PARK
TRANSPORTATION STATEMENT

2006 & 2013 OBSERVED VEHICULAR TRAFFIC FLOWS
PM PEAK PERIOD (17:00 - 18:00)

Mark	Revision	Date	Scale	Drawn by	Checked by
A	Minor amendments following OCC comments	18.11.2013	A3 - N.T.S	ASa	SP
AS		28.03.14			
SP					
Chkd					

FIGURE 5

A

Appendix E – Development Flows (2006)



TECHNICAL NOTE





With existing site
 Base
 Resubstant (Existing Site)

Appendix F – TRICS Data



TECHNICAL NOTE



TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

03	SOUTH WEST	
	CW CORNWALL	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NY NORTH YORKSHIRE	1 days
09	NORTH	
	CB CUMBRIA	1 days
10	WALES	
	CP CAERPHILLY	1 days
11	SCOTLAND	
	FI FIFE	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Filtering Stage 2 selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Number of dwellings
 Actual Range: 41 to 115 (units:)
 Range Selected by User: 30 to 200 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/05 to 30/05/13

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	2 days
Tuesday	1 days
Friday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	4
Edge of Town	1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	3
No Sub Category	2

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Filtering Stage 3 selection:

Use Class:

C3 5 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:

1,001 to 5,000 3 days

5,001 to 10,000 2 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000 2 days

25,001 to 50,000 3 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0 3 days

1.1 to 1.5 2 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No 5 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

LIST OF SITES relevant to selection parameters

1	CB-03-A-04	SEMI DETACHED		CUMBRIA
	MOORCLOSE ROAD			
	SALTERBACK			
	WORKINGTON			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:		82	
	Survey date: FRIDAY		24/04/09	Survey Type: MANUAL
2	CP-03-A-02	SEMI DETACHED		CAERPHILLY
	THE RISE			
	PENGAM			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Number of dwellings:		41	
	Survey date: MONDAY		05/09/05	Survey Type: MANUAL
3	CW-03-A-02	SEMI D./DETACHED		CORNWALL
	BOSVEAN GARDENS			
	TRURO			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:		73	
	Survey date: TUESDAY		18/09/07	Survey Type: MANUAL
4	FI-03-A-02	SEMI DETACHED		FIFE
	WAROUT ROAD			
	GLENROTHES			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:		58	
	Survey date: MONDAY		16/05/05	Survey Type: MANUAL
5	NY-03-A-06	BUNGALOWS & SEMI DET.		NORTH YORKSHIRE
	HORSEFAIR			
	BOROUGHBRIDGE			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:		115	
	Survey date: FRIDAY		14/10/11	Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

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

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	74	0.070	5	74	0.209	5	74	0.279
08:00 - 09:00	5	74	0.154	5	74	0.407	5	74	0.561
09:00 - 10:00	5	74	0.214	5	74	0.217	5	74	0.431
10:00 - 11:00	5	74	0.187	5	74	0.209	5	74	0.396
11:00 - 12:00	5	74	0.203	5	74	0.190	5	74	0.393
12:00 - 13:00	5	74	0.195	5	74	0.201	5	74	0.396
13:00 - 14:00	5	74	0.187	5	74	0.182	5	74	0.369
14:00 - 15:00	5	74	0.217	5	74	0.247	5	74	0.464
15:00 - 16:00	5	74	0.271	5	74	0.176	5	74	0.447
16:00 - 17:00	5	74	0.333	5	74	0.201	5	74	0.534
17:00 - 18:00	5	74	0.369	5	74	0.214	5	74	0.583
18:00 - 19:00	5	74	0.225	5	74	0.163	5	74	0.388
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.625			2.616			5.241

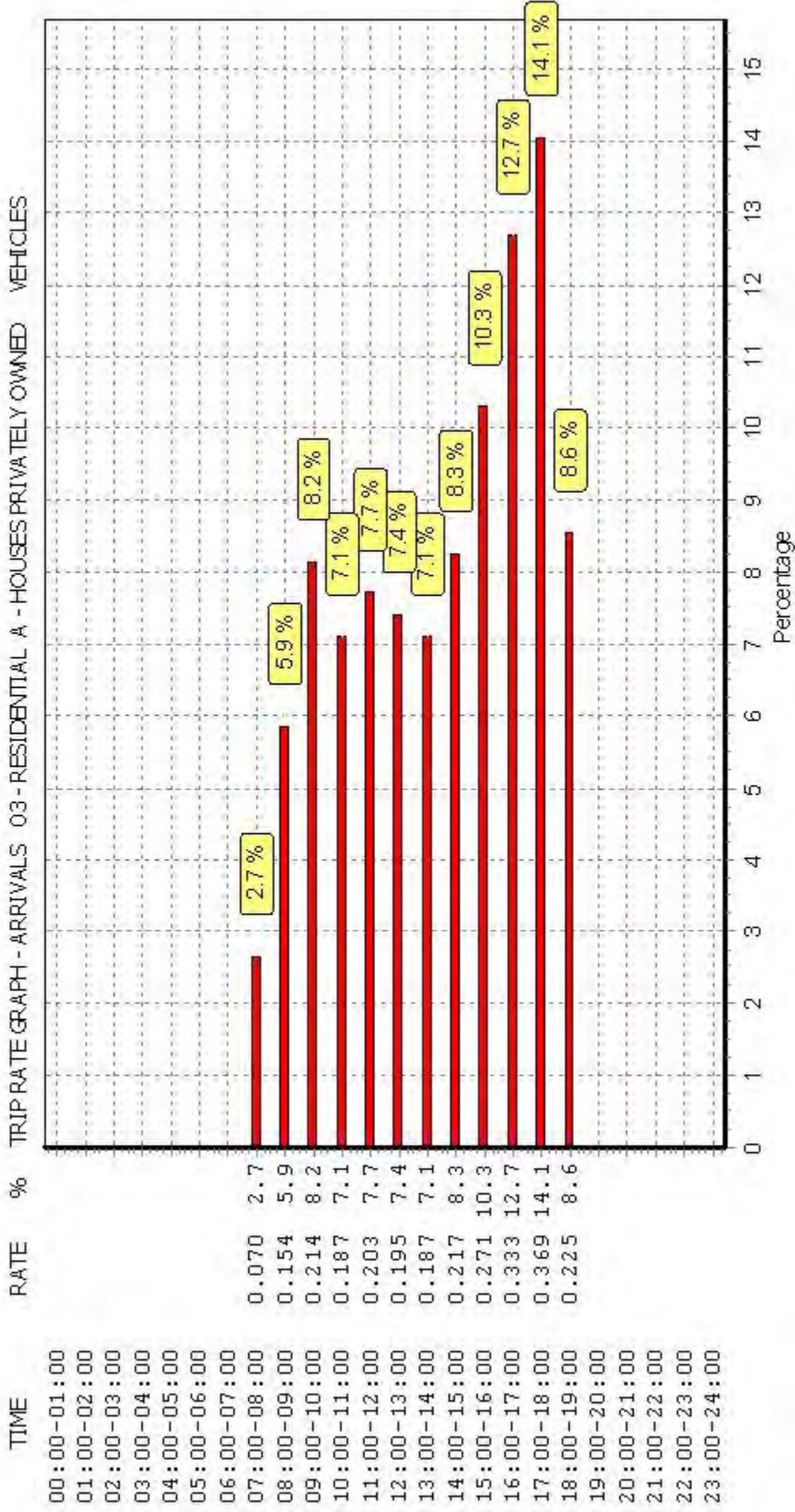
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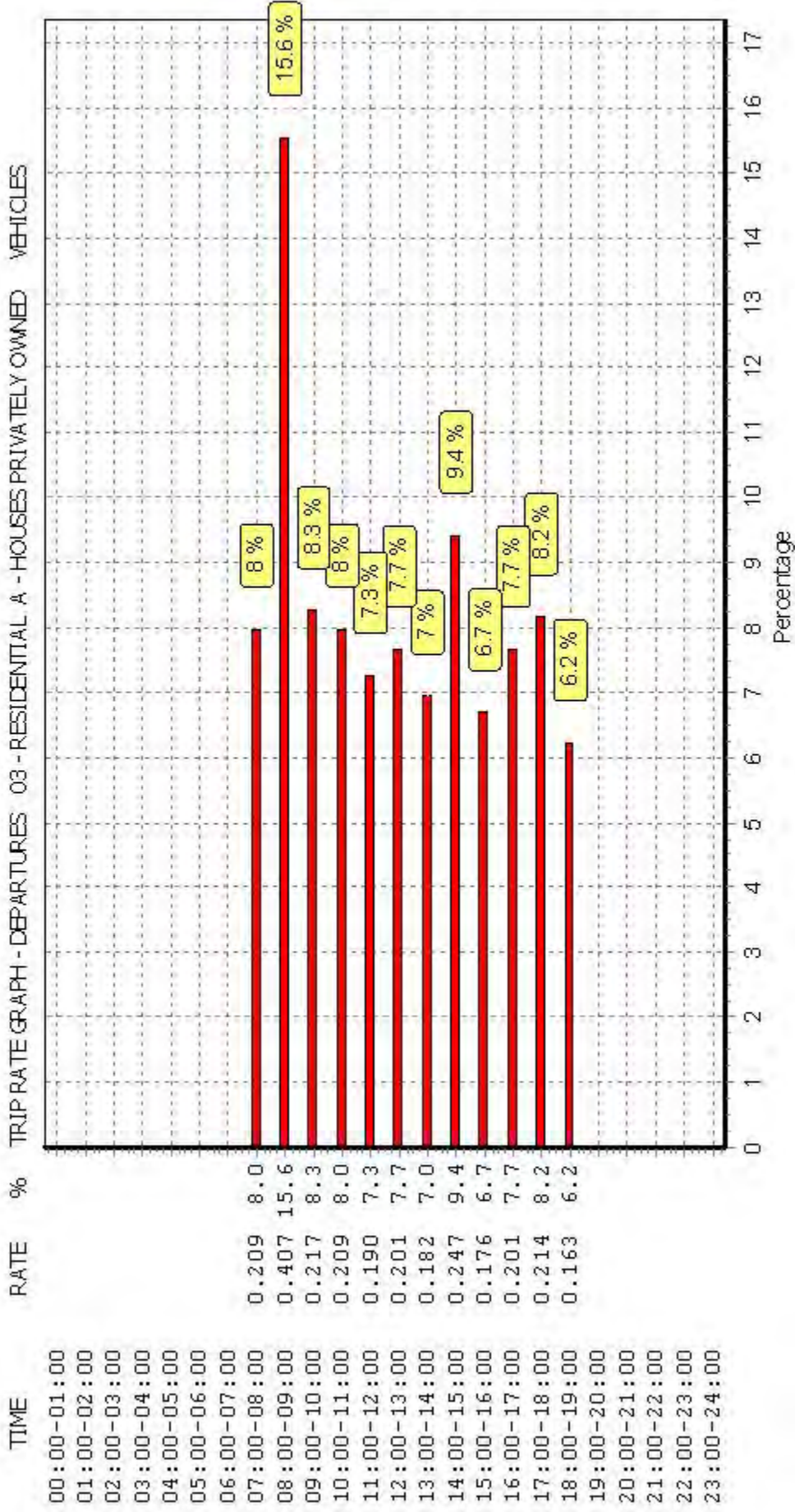
Parameter summary

Trip rate parameter range selected: 41 - 115 (units:)
 Survey date date range: 01/01/05 - 30/05/13
 Number of weekdays (Monday-Friday): 5
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 0

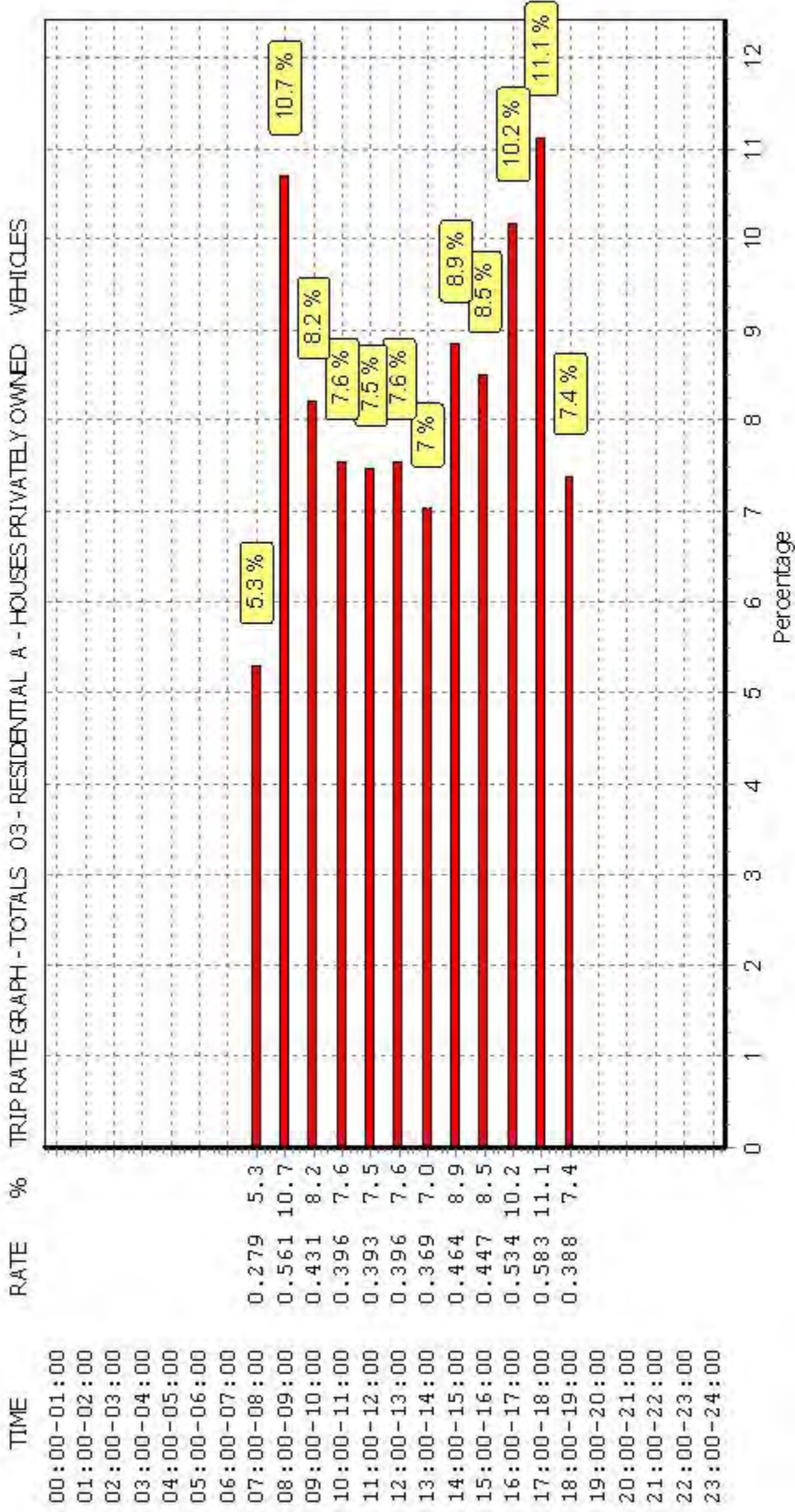
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This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



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

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	74	0.000	5	74	0.000	5	74	0.000
08:00 - 09:00	5	74	0.000	5	74	0.000	5	74	0.000
09:00 - 10:00	5	74	0.000	5	74	0.000	5	74	0.000
10:00 - 11:00	5	74	0.005	5	74	0.000	5	74	0.005
11:00 - 12:00	5	74	0.000	5	74	0.003	5	74	0.003
12:00 - 13:00	5	74	0.003	5	74	0.000	5	74	0.003
13:00 - 14:00	5	74	0.005	5	74	0.000	5	74	0.005
14:00 - 15:00	5	74	0.003	5	74	0.011	5	74	0.014
15:00 - 16:00	5	74	0.000	5	74	0.000	5	74	0.000
16:00 - 17:00	5	74	0.000	5	74	0.000	5	74	0.000
17:00 - 18:00	5	74	0.000	5	74	0.000	5	74	0.000
18:00 - 19:00	5	74	0.000	5	74	0.000	5	74	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.016			0.014			0.030

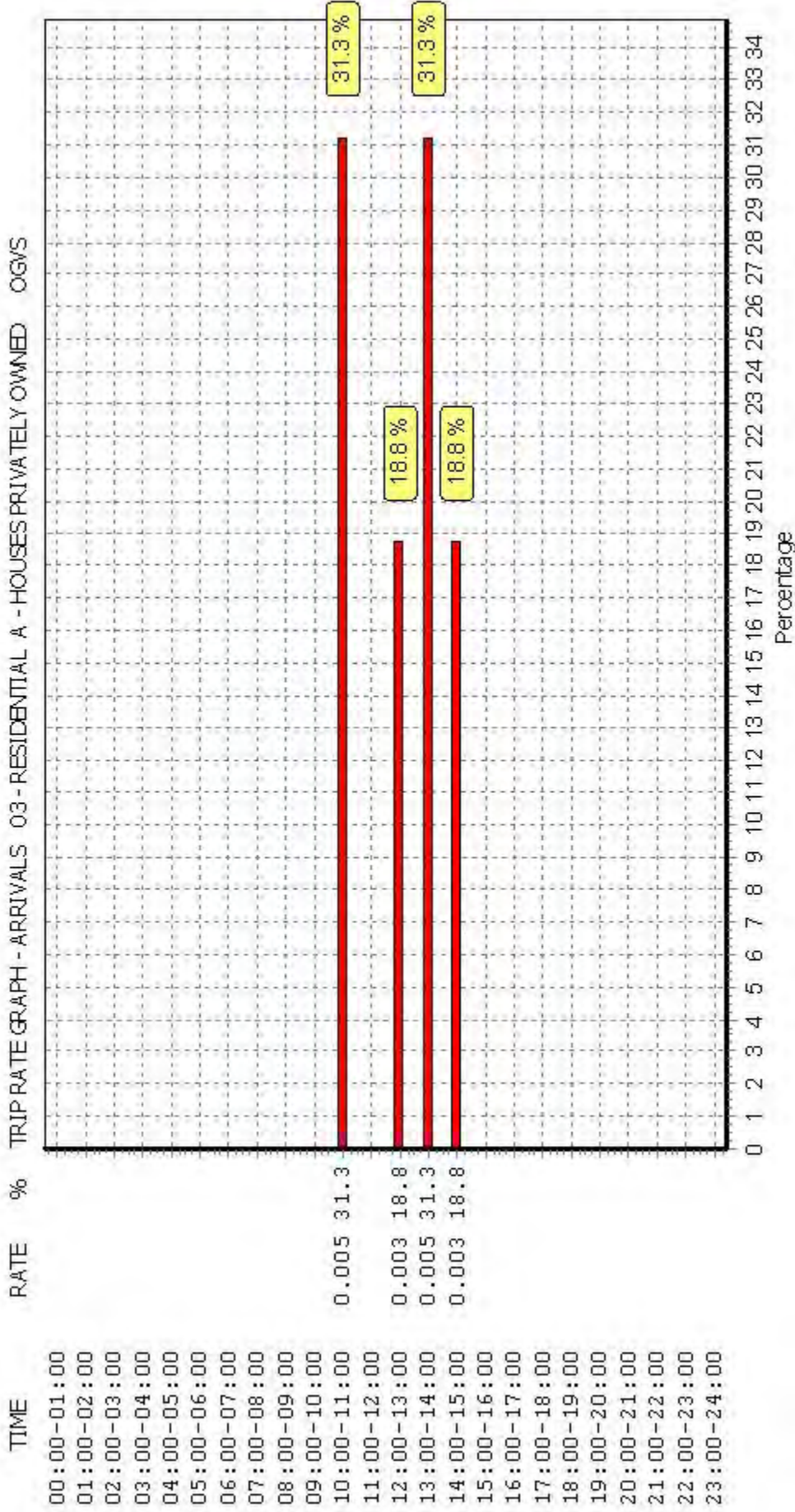
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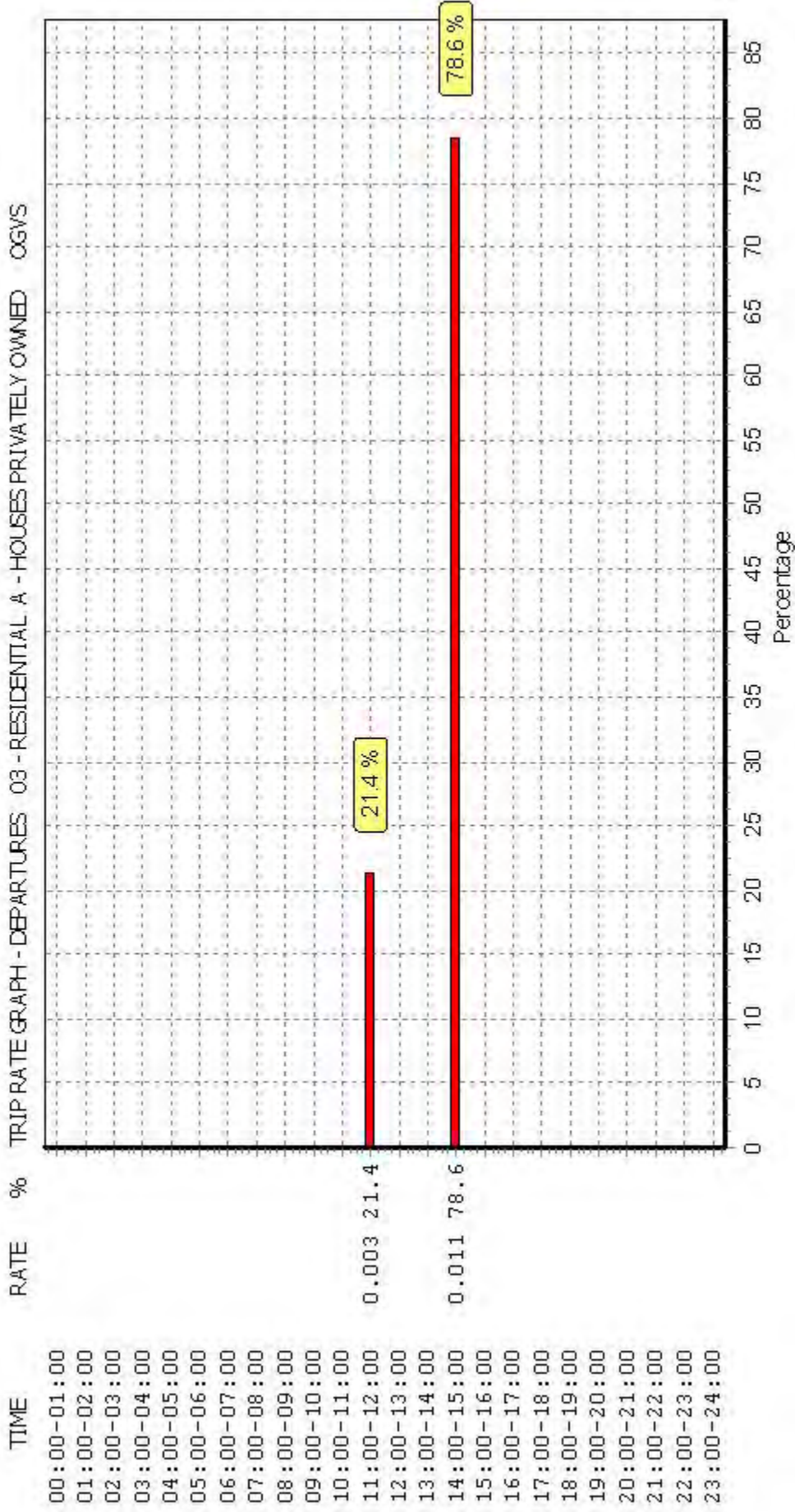
Parameter summary

Trip rate parameter range selected: 41 - 115 (units:)
 Survey date date range: 01/01/05 - 30/05/13
 Number of weekdays (Monday-Friday): 5
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 0

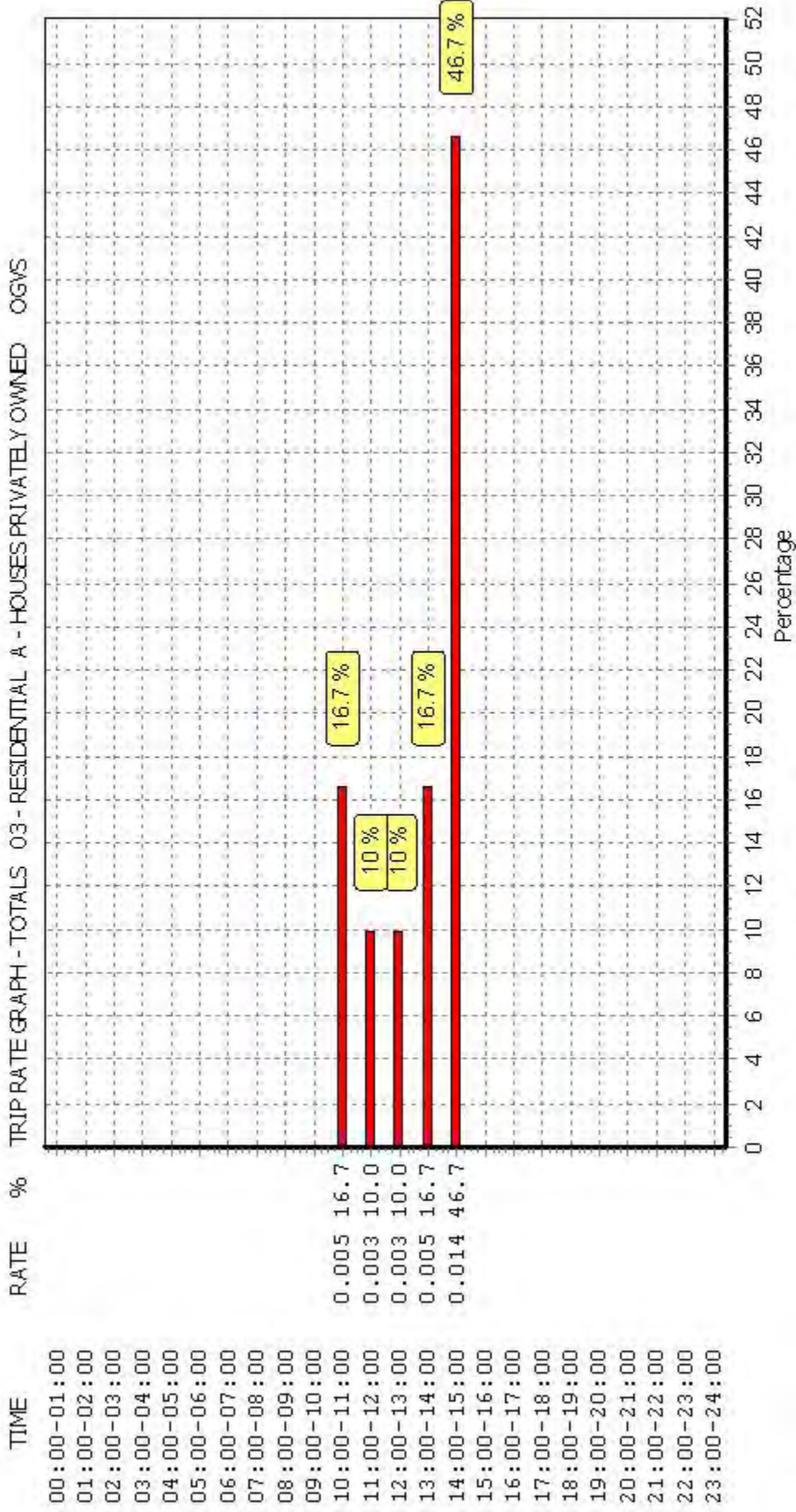
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



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This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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

PSVS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	74	0.000	5	74	0.000	5	74	0.000
08:00 - 09:00	5	74	0.000	5	74	0.000	5	74	0.000
09:00 - 10:00	5	74	0.000	5	74	0.000	5	74	0.000
10:00 - 11:00	5	74	0.000	5	74	0.000	5	74	0.000
11:00 - 12:00	5	74	0.000	5	74	0.000	5	74	0.000
12:00 - 13:00	5	74	0.000	5	74	0.000	5	74	0.000
13:00 - 14:00	5	74	0.000	5	74	0.000	5	74	0.000
14:00 - 15:00	5	74	0.000	5	74	0.000	5	74	0.000
15:00 - 16:00	5	74	0.000	5	74	0.000	5	74	0.000
16:00 - 17:00	5	74	0.000	5	74	0.000	5	74	0.000
17:00 - 18:00	5	74	0.000	5	74	0.000	5	74	0.000
18:00 - 19:00	5	74	0.000	5	74	0.000	5	74	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.000			0.000			0.000

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

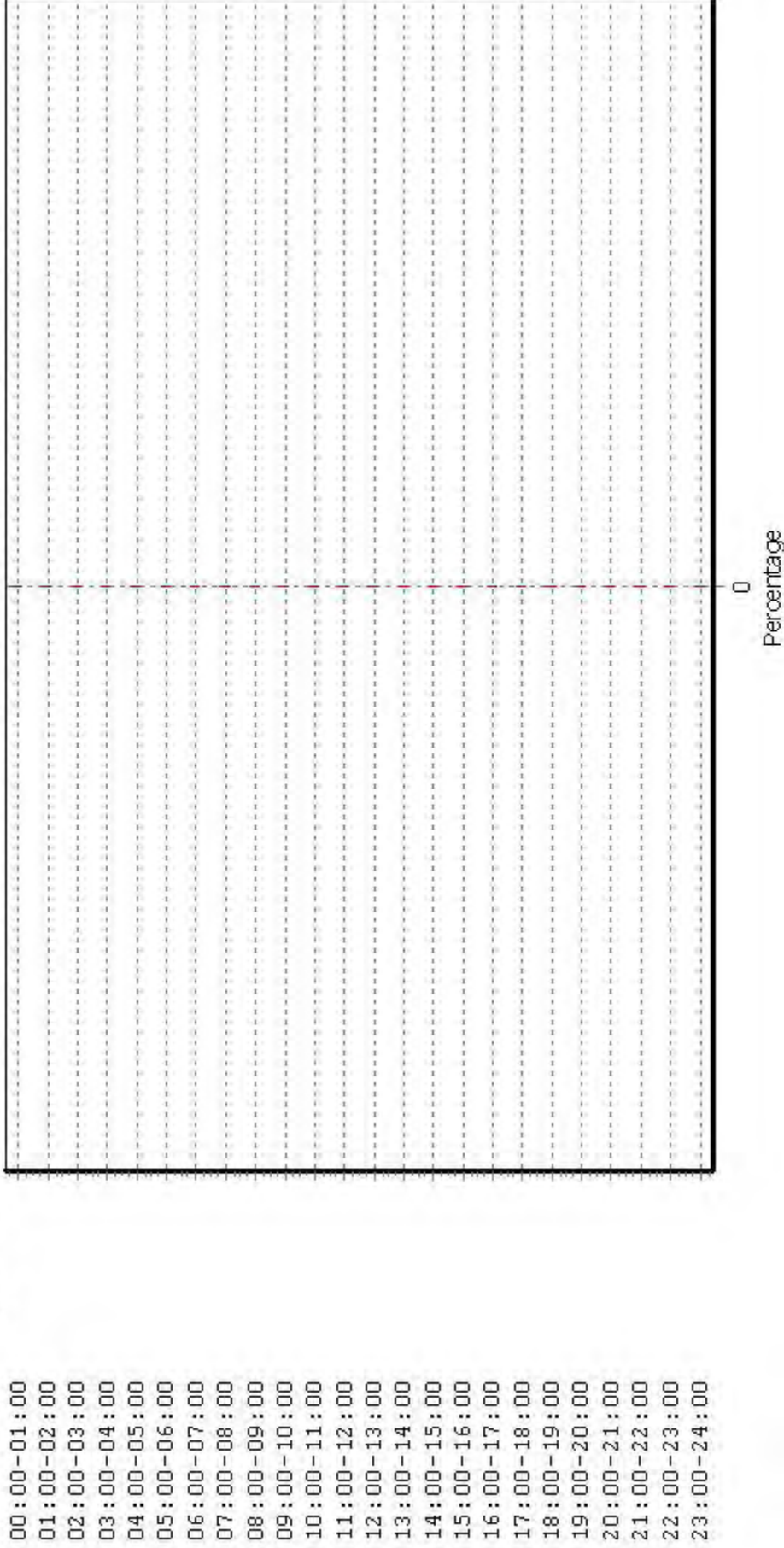
To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

Parameter summary

Trip rate parameter range selected: 41 - 115 (units:)
 Survey date date range: 01/01/05 - 30/05/13
 Number of weekdays (Monday-Friday): 5
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE GRAPH - ARRIVALS 03 - RESIDENTIAL A - HOUSES PRIVATELY OWNED PSYS

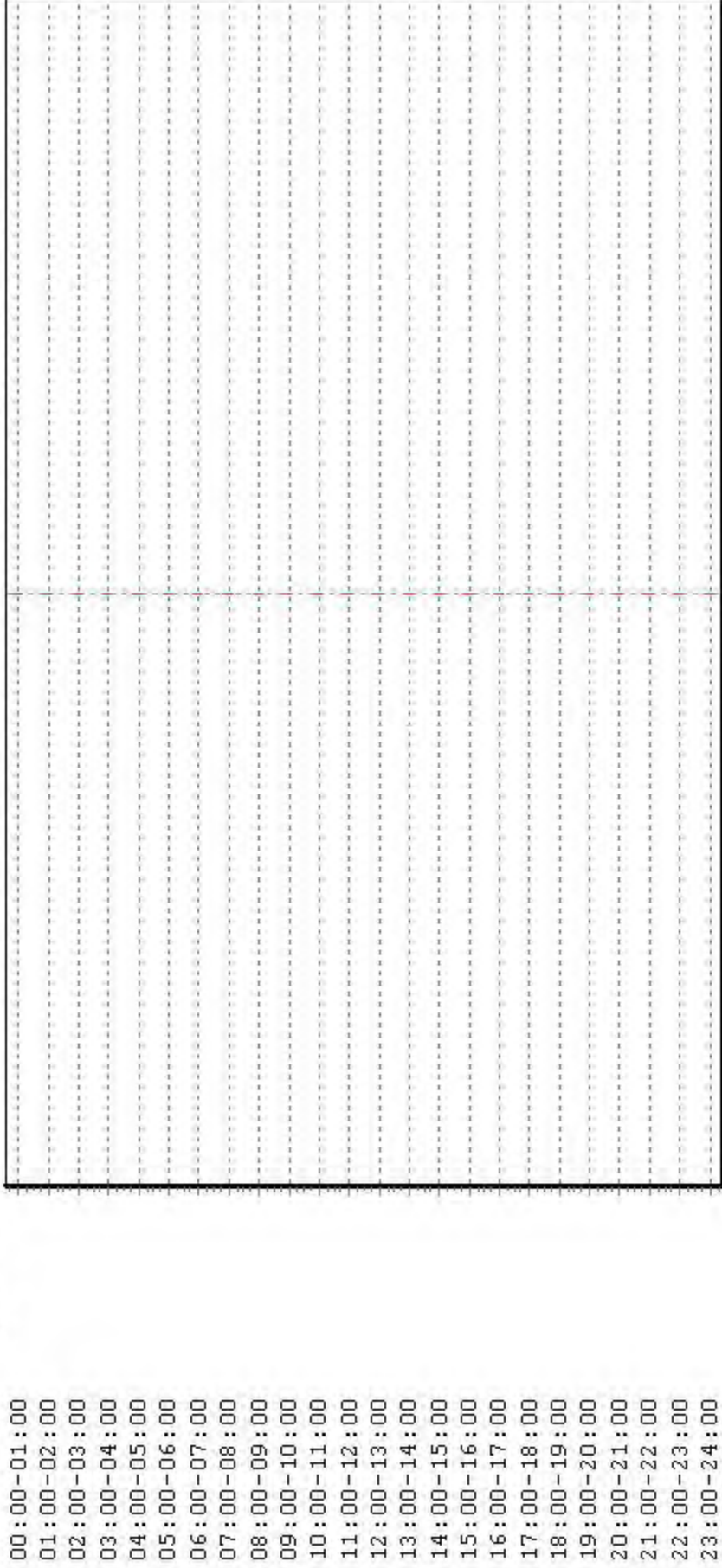


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Peter Brett Associates Queen Square Bristol

Licence No: 706710

TRIP RATE GRAPH - DEPARTURES 03 - RESIDENTIAL A - HOUSES PRIVATELY OWNED PSVS



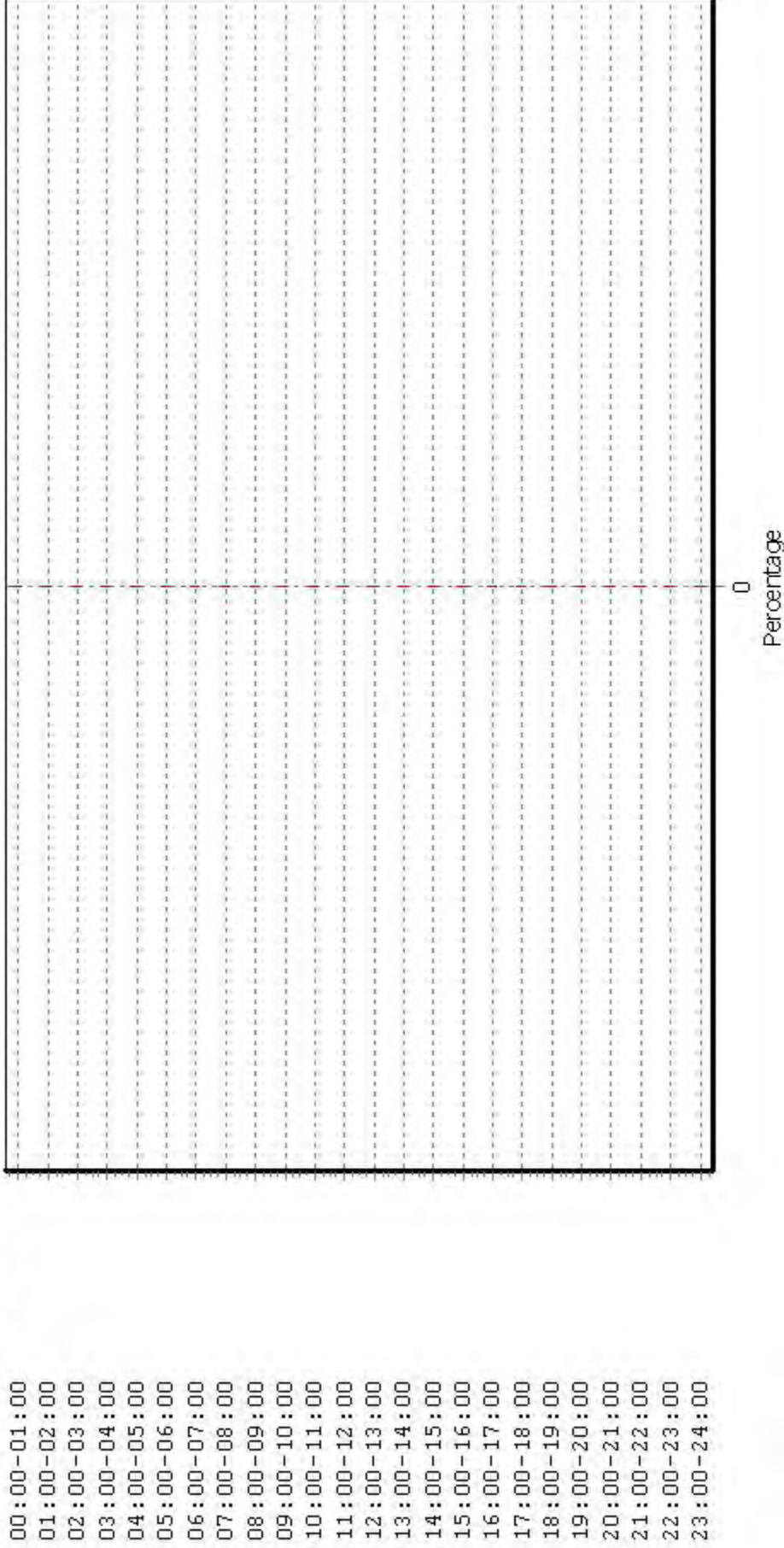
0
Percentage

This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

Peter Brett Associates Queen Square Bristol

Licence No: 706710

TRIP RATE GRAPH - TOTALS 03 - RESIDENTIAL A - HOUSES PRIVATELY OWNED PSVS



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

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

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	74	0.000	5	74	0.000	5	74	0.000
08:00 - 09:00	5	74	0.005	5	74	0.000	5	74	0.005
09:00 - 10:00	5	74	0.000	5	74	0.000	5	74	0.000
10:00 - 11:00	5	74	0.003	5	74	0.008	5	74	0.011
11:00 - 12:00	5	74	0.003	5	74	0.000	5	74	0.003
12:00 - 13:00	5	74	0.003	5	74	0.005	5	74	0.008
13:00 - 14:00	5	74	0.003	5	74	0.003	5	74	0.006
14:00 - 15:00	5	74	0.000	5	74	0.003	5	74	0.003
15:00 - 16:00	5	74	0.003	5	74	0.005	5	74	0.008
16:00 - 17:00	5	74	0.008	5	74	0.014	5	74	0.022
17:00 - 18:00	5	74	0.011	5	74	0.008	5	74	0.019
18:00 - 19:00	5	74	0.008	5	74	0.003	5	74	0.011
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.047			0.049			0.096

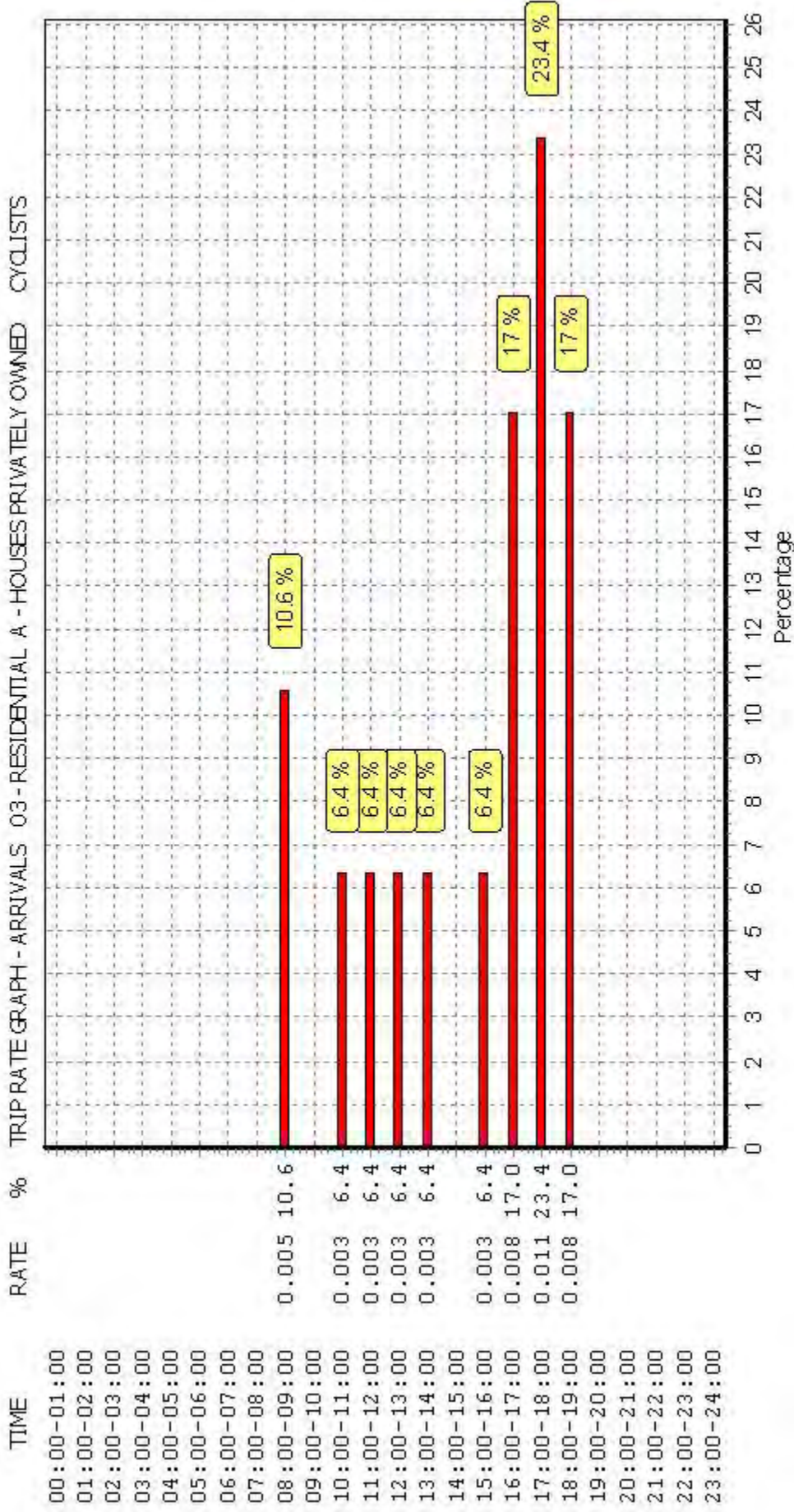
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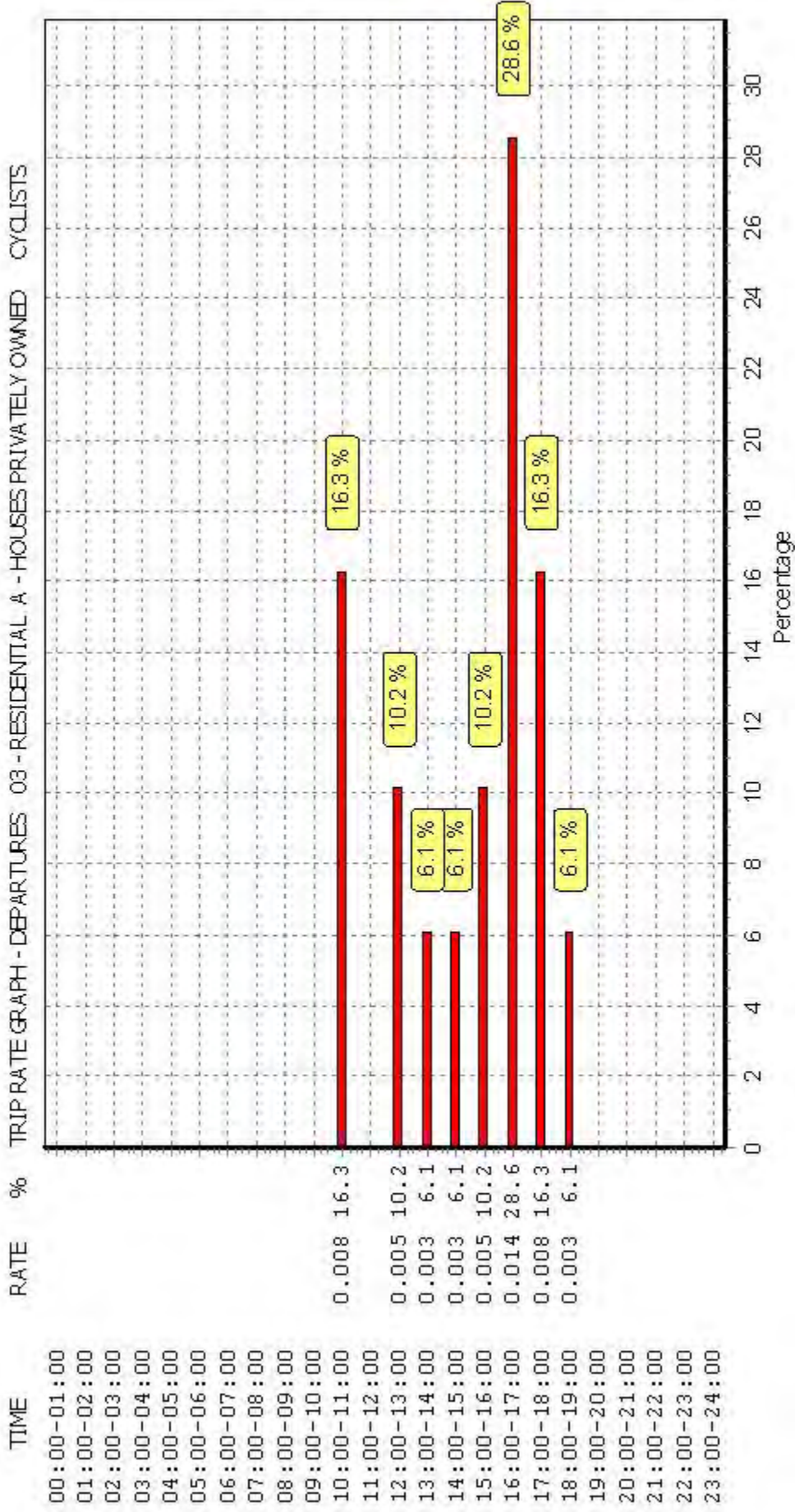
Parameter summary

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 Survey date date range: 01/01/05 - 30/05/13
 Number of weekdays (Monday-Friday): 5
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 0

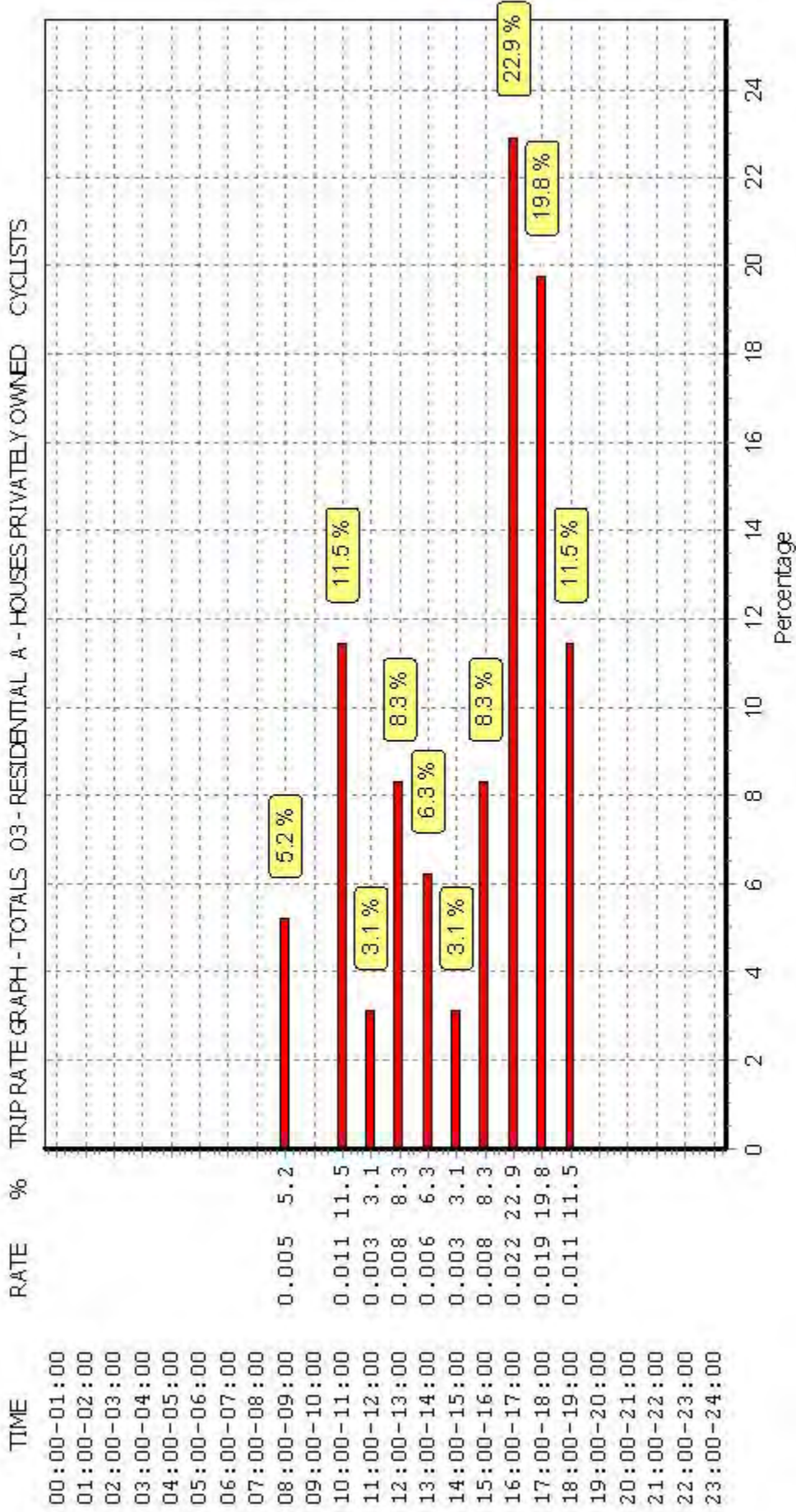
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9 Trip generation

9.1 Residential

Trip generation rates for the residential units were agreed with Oxfordshire County Council and are shown in Table 9.1 along with the number of trips generated.

Table 9.1 Trip Rates for New Residential Development

Peak Hour	Trip Generation Rates (per dwelling)			Number of Trips		
	Arrivals	Departures	Total	Arrivals	Departures	Total
AM	0.17	0.63	0.80	183	677	860
PM	0.51	0.29	0.80	548	312	860

From Table 9.1 it can be seen that the 1075 dwellings will generate 860 trips in both the AM and PM peak hours.

9.2 Employment

The following areas of commercial development are proposed for the site:

- B1 Office - 15,658sqm
- B2 Office - 17,996sqm
- B8 Storage – 86,113sqm

Trip generation rates for commercial land uses were developed from TRICS and subsequently amended and agreed with Oxfordshire County Council. These are shown in Tables 9.2 to 9.4 along with the numbers of trips generated.

Table 9.2: Trip Rates for B1 Employment Development

Peak Hour	Trip Generation Rates (per 100sqm)			Number of Trips		
	Arrivals	Departures	Total	Arrivals	Departures	Total
AM	1.81	0.28	2.09	283	44	327
PM	0.42	1.62	2.04	66	254	320

From Table 9.2 it can be seen that the 15,658sqm of B1 employment land use will generate 327 trips in the AM and 320 trips in the PM peak hours.

Table 9.3: Trip Rates for B2 Employment Development

Peak Hour	Trip Generation Rates (per 100sqm)			Number of Trips		
	Arrivals	Departures	Total	Arrivals	Departures	Total
AM	1.09	0.35	1.44	196	63	259
PM	0.21	0.83	1.04	38	149	187

From Table 9.3 it can be seen that the 17,996sqm of B2 employment land use will generate 259 trips in the AM and 187 trips in the PM peak hours.

